

# MLESEEEY<sup>®</sup> TOOLS



## TR10

Handheld Infrared Thermal Imager

Návod k použití



## O produktu

**Děkujeme váš nákup ruční infračervené termokamery Milesee TR10. Pro zajištění optimálního používání a pochopení fungování zařízení si, prosím, pečlivě přečtěte uživatelskou příručku. Model TR10 se může pochlubit sadou funkcí navržených pro efektivitu při údržbě a inspekčních úkolech, díky nimž je detekce teploty přesnější a uživatelsky přívětivější.**

## Hlavní funkce zařízení TR10

- Barevný displej LCD G2,8": Nabízí rozsáhlou zobrazovací plochu pro snadnou identifikaci a analýzu poruchových zón.
- Nastavitelná emisivita: Umožňuje personalizované nastavení pro zvýšení přesnosti detekce na základě různých materiálů.
- Zachycení a uložení obrazu: Vybaveno možností pořizovat snímky a ukládat je do vestavěné 8GB paměti, která pojme až 30 000 snímků s údaji o teplotě pro srovnávací analýzu.
- Pohodlný přenos dat: Zařízení je vybaveno připojením USB pro rychlý a snadný export snímků do PC.
- Integrovaná lithiová baterie: Je vybaveno vestavěnou baterií a nabíjecím rozhraním typ-C, které zjednodušuje proces nabíjení a přenosu dat.
- Automatické sledování horkých a studených míst: Automatická identifikace a zaměření nejvyšších a nejnižších teplotních bodů pozorované scény, což zlepšuje diagnostické možnosti.
- Křížový zaměřovač na displeji pro snadné zaměření místa měření.
- Přizpůsobitelné teplotní alarmy: Umožňuje nastavení individuálních alarmů vysoké a nízké teploty, což usnadňuje okamžité zaměření pozornosti ke kritickým oblastem.
- Široký rozsah měření teploty: Vhodné pro různé průmyslové aplikace: přesně měří teploty až do 550 °C.

Přenosný a uživatelsky přívětivý design: Vhodný pro profesionály v oblasti údržby a kontroly, nabízí praktické řešení pro efektivní sledování a detekci teploty.

## Bezpečnostní pokyny



Abyste zajistili přesnost měření a svou bezpečnost, používejte tento výrobek přesně podle pokynů uvedených v návodu k použití. Upozorňujeme, že nedodržení těchto pokynů může vést k poškození, na které se nevztahuje záruční servis.



Chcete-li vyčistit vnější část tohoto zařízení, jemně ji otřete vlhkým hadříkem nebo jemným mýdlovým roztokem. Na kryt, čočky a okýnka přístroje nepoužívejte abrazivní čisticí prostředky, izopropylalkohol ani žádná rozpouštědla, protože tyto látky mohou způsobit poškození.



Nepoužívejte tento výrobek v prostředí, které je hořlavé, výbušné, s vysokým obsahem páry nebo vlhkosti nebo obsahuje korozivní látky. Používání přístroje v těchto podmínkách by mohlo zhoršit jeho výkon a představovat bezpečnostní riziko.



Pokud dojde k poškození, pádu nebo jakékoli jinému poškození výrobku, okamžitě jej přestaňte používat. Další používání výrobku za těchto podmínek může vést k nepřesným měřením a může ohrozit bezpečnost.



Pro získání přesných údajů o teplotě nastavte správnou emisivitu cílového materiálu.



Během napájení se zařízení zahřívá, to může ovlivnit přesnost měření. Proto je doporučeno nepoužívat zařízení během nebo bezprostředně po nabíjení.



Spořtebování energie může zvýšit teplotu produktu, pro zvýšení přesnosti měření teploty dodržujte doporučení zapnout zařízení 2 minuty před použitím, pokud zařízení nebylo delší dobu používáno.



## Vzhled zařízení



**1. Nabíjecí port USB-C**

**2. Obrazovka LCD**

**3. Záznam paměti obrázků**

**4. Nahoru/dolů/doleva/doprava**

Krátké stisknutí pro navigaci

**5. Zapnutí/vypnutí/návrat**

Dlouhým stisknutím zapnete nebo vypnete

Krátké stisknutí pro návrat

**6. Nastavení**

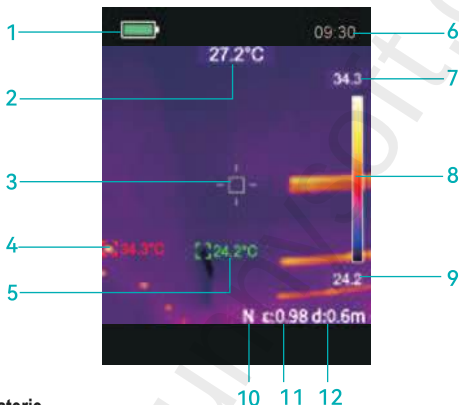
Krátké stisknutí pro vstup do možností nastavení

**7. Termokamera**

**8. Zachycení obrázku**

Krátké stisknutí pro zachycení obrázků a uložení

## Ikony na displeji



1. Stav baterie
2. Středová teplota
3. Středový bod/křížové vlasy
4. Maximální teplota a poloha
5. Minimální teplota a poloha
6. Čas
7. Maximální teplota na sloupci
8. Teplotní sloupec
9. Minimální teplota na sloupci
10. N: Normální (normální teplotní rozsah)  
(Poznámka: Při výběru vysokoteplotního rozsahu se N posune na H)
11. Emise
12. Vzdálenost detekce

## Rozhraní nastavení

|                                                                                     |                    |                                                                                   |                     |
|-------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------|---------------------|
|    |                    |  |                     |
|    | Emissivity         | 0.98 >                                                                            | Emisivita           |
|    | Distance           | 0.6m >                                                                            | Vzdálenost          |
|    | Temp Range         | >                                                                                 | Rozsah teplot       |
|    | Temperature Units  | >                                                                                 | Jednotky teploty    |
|    | Palette            | >                                                                                 | Paleta              |
|    | HI/LO Alarm        | >                                                                                 | HI/LO alarm         |
|    | Display            | >                                                                                 | Displej             |
|    | Display Brightness | >                                                                                 | Jas displeje        |
|    | Date & Time        | >                                                                                 | Datum a čas         |
|    | Correction         | >                                                                                 | Korekce             |
|   | USB Mode           | >                                                                                 | Režim USB           |
|  | Snap Mode          | >                                                                                 | Režim zachycení     |
|  | Auto Power Off     | >                                                                                 | Automatické vypnutí |
|  | Language           | >                                                                                 | Jazyk               |
|  | Format Disk        | >                                                                                 | Formátování         |

|                                                                                   |               |      |
|-----------------------------------------------------------------------------------|---------------|------|
|  | Factory Reset | >    |
|  | Dev Info      | TR10 |

Tovární nastavení

Info o zařízení

## Pokyny nastavení

- Stisknutím tlačítka SET vstupte do nabídky nastavení.
- Pomocí tlačítka p q (nahoru/dolů) přejděte na požadovanou možnost a opětovným stisknutím tlačítka SET přejděte do nastavení.
- Tlačítkem p q upravte hodnoty nebo vyberte dílčí možnosti.
- Potvrdit a uložit změny stisknutím tlačítka SET
- Pro návrat do hlavní nabídky nastavení krátce stiskněte 

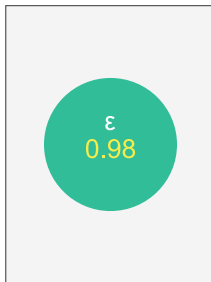
## Emisivita

Správná volba emisivity je pro přesné měření teploty zásadní, protože výrazně ovlivňuje údaje o povrchové teplotě. Chcete-li nastavit hodnotu emisivity, stiskněte tlačítko SET a přejděte do rozhraní nastavení.

Hodnotu nastavte pomocí p q

Po dokončení nastavení se krátkým stisknutím tlačítka  vrátíte do hlavní nabídky nastavení.

|                                                                                     |                     |
|-------------------------------------------------------------------------------------|---------------------|
|    | <<                  |
|    | Emissivity 0.98 >   |
|  | Distance 1.0m >     |
|  | Temp Range >        |
|  | Temperature Units > |
|  | Palette >           |
|  | HI/LO Alarm >       |



Poznámka: Emisivitu lze nastavit v rozsahu hodnot od 0,01 do 0,99. Hodnoty emisivity běžných materiálů jsou uvedeny v tabulce níže.

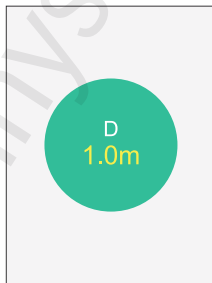
## Emisivita běžných předmětů

| Materiály       | Emisivita | Materiály     | Emisivita |
|-----------------|-----------|---------------|-----------|
| Dřevo           | 0.85      | Blokový papír | 0.86      |
| Voda            | 0.96      | Polykarbonát  | 0.8       |
| Cihly           | 0.75      | Beton         | 0.97      |
| Nerezová ocel   | 0.14      | Oxid měďnatý  | 0.78      |
| Lepicí páska    | 0.96      | Litina        | 0.81      |
| Hliníková deska | 0.09      | Rez           | 0.8       |
| Měděný plech    | 0.96      | Sádra         | 0.75      |
| Černý hliník    | 0.75      | Barva         | 0.9       |
| Lidská kůže     | 0.98      | Guma          | 0.95      |
| Asfalt          | 0.96      | Půda          | 0.93      |
| PVC plast       | 0.93      |               |           |

## Nastavení vzdálenosti

Pro zvýšení přesnosti detekce teploty nastavte před měření informace o vzdálenosti. Chcete-li nastavit vzdálenost, vyberte možnost distance (vzdálenost a stisknutím tlačítka SET přejděte do rozhraní pro nastavení hodnoty. Pomocí tlačítek p q nastavte hodnotu vzdálenosti v rozsahu 0,3 až 3 metry. Po dokončení nastavení stiskněte tlačítko  pro návrat do hlavní nabídky nastavení.

|                                                                                   |                   |        |
|-----------------------------------------------------------------------------------|-------------------|--------|
|  | <<                |        |
|  | Emissivity        | 0.98 > |
|  | Distance          | 1.0m > |
|  | Temp Range        | >      |
|  | Temperature Units | >      |
|  | Palette           | >      |
|  | HI/LO Alarm       | >      |



## Rozsah teplot

Chcete-li nastavit teplotní rozsah, vyberte možnost Temp range a stisknutím SET vstupte do nastavení. Pomocí tlačítka p q přepínáte mezi možnostmi Normal a High (normální a vysoký) teplotní rozsah. Stisknutím SET potvrdíte volbu. Chcete-li se vrátit do hlavní nabídky nastavení, stiskněte tlačítko .

Normální teplotní rozsah je od -20 °C do 150 °C, rozsah vysokých teplot je od 100°C do 550°C.

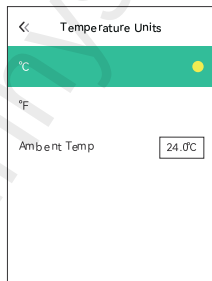
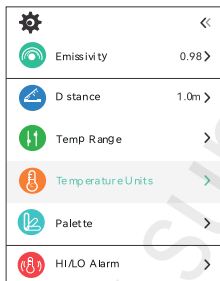
**Poznámka:** Přepínání mezi teplotními rozsahy trvá přibližně 10 sekund. Než budete pokračovat v dalších operacích nebo měření teploty, vyčkejte, až přístroj přepnutí dokončí.

|                                                                                                     |        |
|-----------------------------------------------------------------------------------------------------|--------|
|                    | <<     |
|  Emissivity        | 0.98 > |
|  Distance          | 1.0m > |
|  Temp Range        | >      |
|  Temperature Units | >      |
|  Palette           | >      |
|  HI/LO Alarm      | >      |

|                     |                                                                                   |
|---------------------|-----------------------------------------------------------------------------------|
| <<                  | Temp Range                                                                        |
| Normal(-20°C~150°C) |  |
| High(100°C~550°C)   |                                                                                   |
|                     |                                                                                   |
|                     |                                                                                   |
|                     |                                                                                   |

## Jednotka

Chcete-li nastavit jednotku, vyberte možnost Unit a stisknutím tlačítka SET vstupte do nastavení. Tlačítkem p q přepínáte mezi °C a °F. Stisknutím tlačítka SET potvrďte výběr. Stisknutím tlačítek p q přejděte na nastavení teploty okolí, které zvyšuje přesnost měření u materiálů s nízkou emisivitou, jako je kov nebo sklo. Poté stiskněte tlačítko SET pro zadání nastavení. Stisknutím tlačítek p q zadejte teplotu okolí. Chcete-li se vrátit do hlavní nabídky nastavení, stiskněte tlačítko 





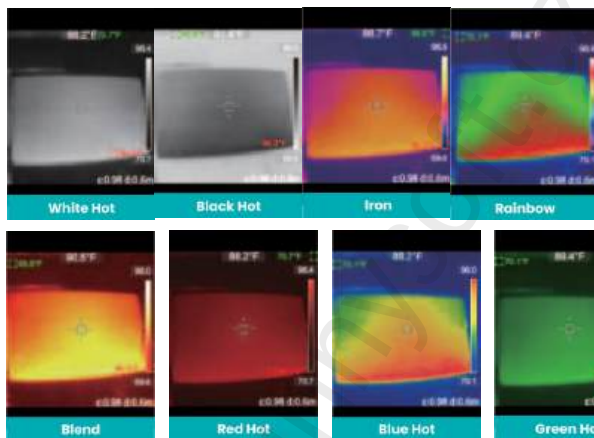
## Paleta

Chcete-li nastavit paletu barev, vyberte možnost Palette a stisknutím SET vstupte do nastavení. Pomocí tlačítek p q přepínejte mezi 8 barevnými paletami (Bílá horká, Černá horká, Žehlička, Duha, Směs, Červená horká, Modrá horká, Zelená horká) . Stisknutím tlačítka SET potvrďte výběr. Chcete-li se vrátit do hlavní nabídky nastavení, stiskněte tlačítko ① .

|                                                                                   |                   |        |
|-----------------------------------------------------------------------------------|-------------------|--------|
|  |                   | <<     |
|  | Emissivity        | 0.98 > |
|  | Distance          | 1.0m > |
|  | Temp Range        | >      |
|  | Temperature Units | >      |
|  | Palette           | >      |
|  | HI/LO Alarm       | >      |

|           |                                                                                   |
|-----------|-----------------------------------------------------------------------------------|
| <<        | Palette                                                                           |
| White Hot |  |
| Black Hot |                                                                                   |
| Iron      |                                                                                   |
| Rainbow   |                                                                                   |
| Blend     |                                                                                   |
| Red Hot   |                                                                                   |

|           |         |
|-----------|---------|
| <<        | Palette |
| Blue Hot  |         |
| Green Hot |         |
|           |         |
|           |         |
|           |         |



Poznámky: Krátkým stisknutím tlačítka **p** **q** (nahoru/dolů) lze rychle přejít najiné barevné palety.

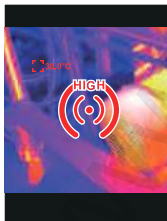
## HI/LO alarm (alarm vysoké a nízké teploty)

Chcete-li upravit nastavení alarmu vysoké/nízké teploty, vyberte možnost High/LO temperature a stisknutím SET vstupte do rozhraní pro nastavení hodnot. Opětovným stisknutím tlačítka **p** q zapnete nebo vypnete alarm vysoké/nízké teploty a potvrďte stisknutím tlačítka SET. Pomocí tlačítka **p** q nastavte hodnotu teploty a stiskněte tlačítko SET pro potvrzení nastavení. Po dokončení stiskněte tlačítko **ⓘ** pro návrat do hlavní nabídky nastavení.

|                   |        |
|-------------------|--------|
|                   | <<     |
| Emissivity        | 0.98 > |
| Distance          | 1.0m > |
| Temp Range        | >      |
| Temperature Units | >      |
| Palette           | >      |
| HI/LO Alarm       | >      |

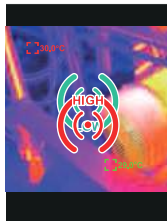
|                 |      |
|-----------------|------|
| << HI/LO Alarm  |      |
| HI Alarm Enable |      |
| LO Alarm Enable |      |
| High Temp Alarm | 30°C |
| Low Temp Alarm  | 29°C |



Alarm vysoké teploty



Alarm nízké teploty

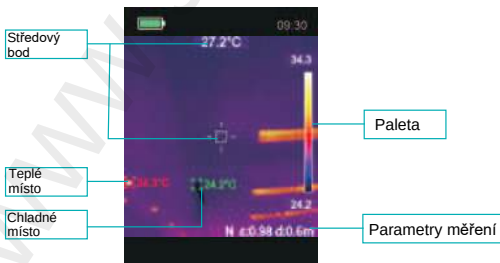
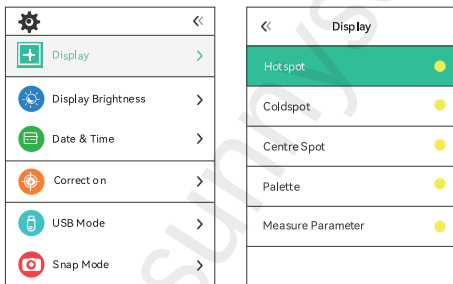


Alarm vysoké teploty  
a alarm nízké teploty

**Poznámky:** Výchozí hodnota nastavení prahu alarmu vysoké teploty je vždy vyšší než hodnota alarmu nízké teploty.

## Možnosti zobrazení

Vyberte možnost Display Options (Možnosti zobrazení) a stisknutím tlačítka SET vstupte do rozhraní nastavení. Stisknutím tlačítka p q přejděte na různé prvky zobrazení a stisknutím tlačítka SET zapněte nebo vypněte prvky zobrazení (High/Low Temp Dot, Center Dot, Palette (barevný pruh), parametr (nastavená emisivita a vzdálenost)). Po dokončení stiskněte tlačítko  pro návrat do hlavního menu nastavení.



## Jas

Chcete-li upravit jas obrazovky, vyberte možnost Brightness a stisknutím tlačítka SET vstupte do nastavení. Pomocí tlačítka p q vyberte mezi možnostmi nízkého, středního a vysokého jasu. Potvrďte nastavení stisknutím tlačítka SET, poté pro návrat do hlavního menu stiskněte tlačítko 

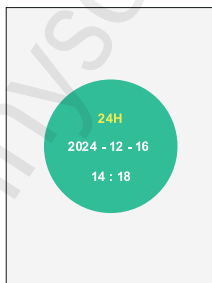
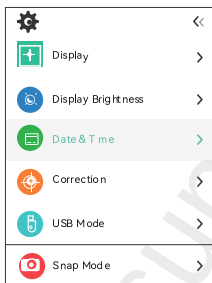
|                                                                                                      |    |
|------------------------------------------------------------------------------------------------------|----|
|                     | << |
|  Display            | >  |
|  Display Brightness | >  |
|  Date & Time        | >  |
|  Correct on         | >  |
|  USB Mode           | >  |
|  Snap Mode          | >  |

|      |                                                                                   |
|------|-----------------------------------------------------------------------------------|
| <<   | Display Brightness                                                                |
| Low  |  |
| Mid  |                                                                                   |
| High |                                                                                   |
|      |                                                                                   |
|      |                                                                                   |

## Datum a čas

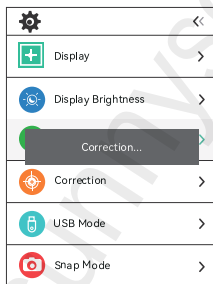
Chcete-li nastavit datum a čas, vyberte možnost Datum a čas a stisknutím tlačítka SET vstupte do nastavení. Tlačítkem p q přepínáte mezi formáty 12H a 24H. Pomocí tlačítka ◀ / ▶ přejděte napožadované pole nastavení. Nastavte hodnotu pomocí tlačítka p q

Po dokončení se stisknutím tlačítka ⓘ vraťte do hlavní nabídky nastavení.



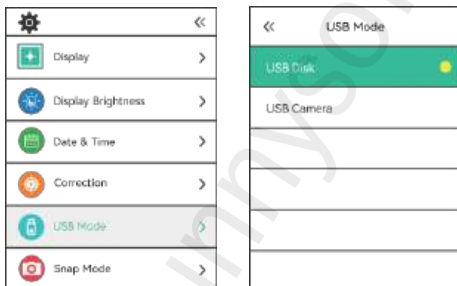
## Korekce

Po určité době používání může dojít ke zhoršení čistoty obrazu v důsledku šumu, který vzniká na tepelném snímači. Vyberte možnost Correction (Korekce) a stisknutím tlačítka SET proveďte korekci, abyste odstranili šumy a zajistili optimální čistotu termálního obrazu.



## Režim USB

Vyberte USB Mode a stiskněte tlačítko SET pro vstup do rozhraní. Stisknutím tlačítek  $\leftarrow$   $\rightarrow$  přepínáte mezi položkami USB Disk a USB Camera, potvrďte výběr stisknutím tlačítka SET. Po dokončení nastavení a návrat do hlavní nabídky stiskněte 



1. Nastavte režim USB na USB Disk, abyste mohli procházet obrázky na počítači, který připojíte k počítači pomocí kabelu USB.

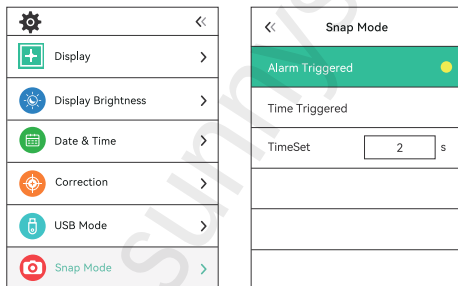


**Poznámka:** Chcete-li aktivovat režim U-Disk, restartujte termokameru a poté připojte kabel USB. Nepřejmenovávejte složku Image ani soubory obrázků, abyste zabránili chybám při čtení.



## Režim snap - pořízení snímku

Vyberte možnost Snap Mode a stisknutím tlačítka SET vstupte do rozhraní nastavení. Opětovným stisknutím tlačítka SET zapněte/vypněte možnost Alarm triggered (snímek pořízen, když teplota překročí nastavenou mezní hodnotu) a možnost Time Triggered (snímek pořízen každých N nastavených sekund) a stisknutím tlačítka  $\text{p q}$  nastavte časování. Po dokončení stiskněte tlačítko  pro návrat do hlavní nabídky nastavení.



## Automatické vypnutí

Chcete-li upravit časování automatického vypnutí, vyberte možnost Auto Power off a stisknutím tlačítka SET přejděte do nastavení. Pomocí tlačítek p q procházejte mezi časovými možnostmi (5Min/10Min/30Min/off). Pro potvrzení výběru stiskněte tlačítko SET, a poté stiskněte tlačítko  pro návrat do nabídky nastavení.

|                                                                                   |    |    |                |        |
|-----------------------------------------------------------------------------------|----|----|----------------|--------|
|  | << | << | Auto Power Off | >      |
|  |    |    |                |        |
|  |    |    | Language       | >      |
|  |    |    | Format Disk    | >      |
|  |    |    | Factory Reset  | >      |
|  |    |    | Dev Info       | TR10 > |
|                                                                                   |    |    |                |        |

|        |                                                                                   |
|--------|-----------------------------------------------------------------------------------|
| <<     | Auto Power Off                                                                    |
| 5 Min  |  |
| 10 Min |                                                                                   |
| 30 Min |                                                                                   |
| Off    |                                                                                   |
|        |                                                                                   |
|        |                                                                                   |

## Jazyk

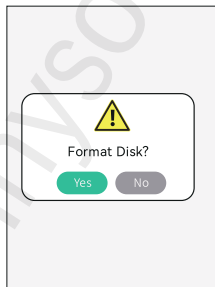
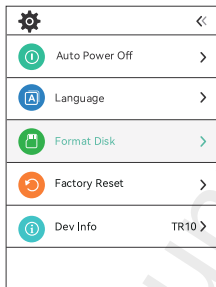
Chcete-li nastavit jazyk, vyberte možnost Jazyk a stisknutím SET vstupte do nastavení. Pomocí tlačítek p q přepínejte jazyky. Stisknutím tlačítka SET potvrďte volbu. Chcete-li se vrátit do hlavní nabídky nastavení, stiskněte tlačítko 

|                                                                                                  |        |
|--------------------------------------------------------------------------------------------------|--------|
|                 | <<     |
|  Auto Power Off | >      |
|  Language       | >      |
|  Format Disk    | >      |
|  Factory Reset  | >      |
|  Dev Info       | TR10 > |
|                                                                                                  |        |

|          |                                                                                   |
|----------|-----------------------------------------------------------------------------------|
| <<       | Language                                                                          |
| English  |  |
| Deutsch  |                                                                                   |
| Français |                                                                                   |
| Italiano |                                                                                   |
| Español  |                                                                                   |
| 中文       |                                                                                   |

## Formátování disku

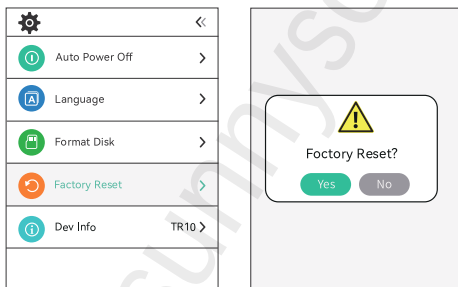
Chcete-li disk naformátovat, vyberte možnost Formátovat disk a stisknutím SET vstupte do nastavení. Pomocí tlačítek ▲ ▼ ◀ ▶ přepínejte mezi možnostmi "Yes/No" (Ano/Ne). Potvrďte svou volbu stisknutím tlačítka SET, poté stiskněte tlačítko  pro návrat do hlavní nabídky nastavení.



**Poznámka:** Při používání funkce Format Disk buďte obezřetní. Potvrzením této akce dojde k trvalému vymazání všech dat na disku.

## Tovární nastavení

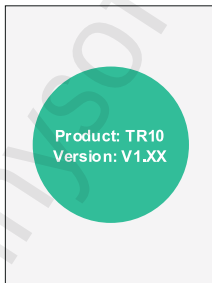
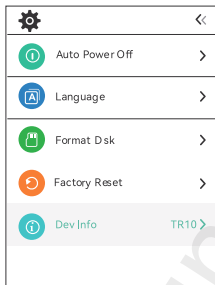
Chcete-li povolit obnovení továrního nastavení, vyberte možnost Obnovení továrního nastavení a stisknutím tlačítka SET vstupte do nastavení. Pomocí tlačítek ▲ ▼ ◀ ▶ přepínejte mezi možnostmi "Ano/Ne". Potvrďte svou volbu stisknutím tlačítka SET, poté se stisknutím tlačítka  vraťte do hlavní nabídky nastavení.



**Poznámka:** Při používání funkce obnovení továrního nastavení buďte obezřetní. Potvrzením této akce dojde k trvalému vymazání všech dat na disku.

## Info o zařízení - Dev Info

Tuto možnost otevřete stisknutím tlačítka SET a zkontrolujte obecné informace o vývoji zařízení.



## Procházení obrázků

Kliknutím na tlačítko 5 pořídíte termální snímky s komplexními termálními daty, která se automaticky uloží na disk. Krátkým stisknutím tlačítka  vstupte do fotoalba a stisknutím tlačítka SET vstupte do fotoalba. Stisknutím tlačítka ▲ ▼ procházejte různé snímky a stisknutím tlačítka SET otevřete konkrétní snímek. Obrázky jsou řazeny chronologicky.

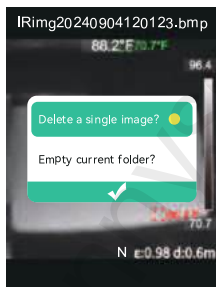


| << Album 1/1                                                                        |        |
|-------------------------------------------------------------------------------------|--------|
|    | 202409 |
|  | 202408 |
|                                                                                     |        |
|                                                                                     |        |
|                                                                                     |        |

| << Photo 1/1                                                                        |                      |
|-------------------------------------------------------------------------------------|----------------------|
|    | IR mg20240904 120123 |
|  | IR mg20240904 120121 |
|                                                                                     |                      |
|                                                                                     |                      |
|                                                                                     |                      |

## Odstranění obrázku

Po otevření konkrétního obrázku můžete krátkým stisknutím tlačítka SET zvolit odstranění jednotlivého obrázku nebo aktuálního fotoalba.





## Specifikace

|                                  |                                                                                                   |
|----------------------------------|---------------------------------------------------------------------------------------------------|
| <b>Model</b>                     | TR10                                                                                              |
| NETD                             | < 50mK                                                                                            |
| Superrozlišení                   | 192X192                                                                                           |
| Minimální zobrazovací vzdálenost | 0.3m                                                                                              |
| HFOV                             | 50°×50°                                                                                           |
| IFOV                             | 8.89 mrad                                                                                         |
| Snímková frekvence               | 25 Hz                                                                                             |
| Ohnisková vzdálenost             | 1.35mm                                                                                            |
| Hrubá skladovací kapacita        | 8GB                                                                                               |
| Využitelná úložná kapacita       | 6GB                                                                                               |
| Výstupní port                    | Typ C                                                                                             |
| Baterie                          | 3,7 V, 3000 mAh<br>Dobíjecí lithiová                                                              |
| Rozsah měření teploty            | -20 °C až 550 °C                                                                                  |
| Přesnost                         | +2°C/+2%                                                                                          |
| Kapacita úložiště obrázků        | 30 000                                                                                            |
| Formát obrázku                   | JPEG                                                                                              |
| Obrazovka                        | 2,8" LCD displej                                                                                  |
| Maximální velikost obrázku       | 240 X 240                                                                                         |
| Palety barev                     | Bílá horká, černá horká,<br>železná, duhová, směs,<br>červená horká, modrá<br>horká, zelená horká |
| Rozměry                          | 224 × 76 × 91 mm                                                                                  |
| Čistá hmotnost                   | 345 g                                                                                             |

## Kontaktní informace

Shenzhen Mileseey Technology Co., Ltd.

Přidat: 3601 Block A, Tanglang Town Plaza West, Fuguang Communi- ty,  
Taoyuan Street, Nongshan District, Shenzhen, Čína

Webové stránky:

Website: [www.mileseey.net](http://www.mileseey.net)

Store: [www.mileseeytools.com](http://www.mileseeytools.com)

E-mail: [service@mileseey.com](mailto:service@mileseey.com)

### **Dodavatel/Distributor**

Sunnysoft s.r.o.

Kovanecká 2390/1a

190 00 Praha 9

Česká republika

[www.sunnysoft.cz](http://www.sunnysoft.cz)

# MILESEEY<sup>®</sup> TOOLS



## TR10

Handheld Infrared Thermal Imager

**User Manual**



## Product Overview

Thank you for your purchase of the Mileseeey TR10 handheld infrared thermal camera. To ensure optimal use and understanding of this device, please carefully read the user guide provided. The TR10 model boasts a suite of features designed for efficiency in maintenance and inspection tasks, making temperature detection more accurate and user-friendly.

## Key Features of The TR10

- **2.8-Inch Color LCD Display:** Offers an expansive viewing area to easily identify and analyze fault zones.
- **Adjustable Emissivity:** Allows for personalized settings to refine detection accuracy based on different materials.
- **Image Capture and Storage:** Equipped with the capability to take pictures and save them within a built-in 8GB memory, accommodating up to 30,000 images with temperature data for comprehensive analysis.
- **Convenient Data Transfer:** Features a USB connection for quick and easy export of images to PC terminals.
- **Integrated Lithium Battery:** Comes with a built-in battery and a TYPE-C charging interface, simplifying the charging process and data transfer.
- **Automatic Hot and Cold Spot Tracking:** Automatically identifies and locks onto the highest and lowest temperature points within a scene, enhancing diagnostic capabilities.
- **Cross-hair display** for easy targeting of measuring spot.
- **Customizable Temperature Alarms:** Enables setting of individual high and low temperature alarms, facilitating immediate attention to critical areas.
- **Extensive Temperature Range Measurement:** Capable of accurately measuring temperatures up to 550°C, suitable for a variety of industrial applications.

● **Portable and User-Friendly Design:** Ideal for professionals in maintenance and inspection, offering a practical solution for effective temperature monitoring and detection.

## Safety Instructions



- To ensure the accuracy of your measurements and your safety, please use this product strictly according to the guidelines provided in the user manual. Please be aware that failing to adhere to these instructions may lead to damages that are not covered under our free warranty service.



- To clean the exterior of this device, gently wipe it with a damp cloth or a mild soap solution. Avoid using abrasive cleaners, isopropyl alcohol, or any solvents on the instrument's casing, lens, and windows, as these substances can cause damage.



- Avoid operating this product in environments that are flammable, explosive, high in steam or humidity, or contain corrosive substances. Using the device under these conditions could impair its performance and pose safety risks.



- Cease using the product immediately if it becomes damaged, has been dropped, or has been modified in any way. Continuing to use the product under these conditions may lead to inaccurate measurements and could compromise safety.



- Please adjust to the correct emissivity of the target material to obtain an accurate temperature readouts.



- During charging, the product's internal temperature increases, potentially affecting measurement accuracy. Therefore, it is advised not to perform measurements while the device is charging or immediately after charging.



- Due to power consumption potentially raising the product's internal temperature, to maintain measurement accuracy, please allow the device to warm up for 2 minutes before use if it has not been used for a long time.

## Appearance



**1. USB-C Charging Port**

**2. LCD Screen**

**3. Picture Memory Record**

**4. Up/Down/Left/Right**

Short Press to Navigate

**5. Power on/off/Return**

Long Press to Power on Or off

Short Press to Return

**6. Settings**

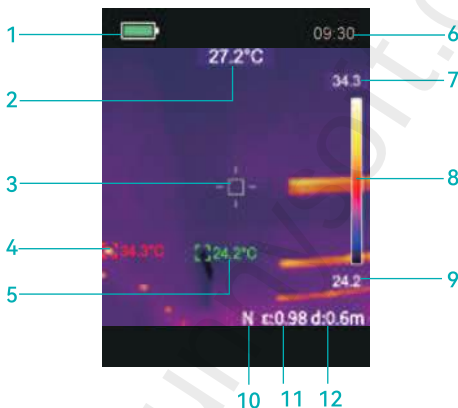
Short Press to Enter Setting Options

**7. Thermal Camera**

**8. Picture Capturing**

Short Press to Captures Pictures And Save

## Display Icon



1. Battery Status
2. Center Temperature
3. Center Point/Cross-Hairs
4. Max Temperature And Position
5. Min Temperature And Position
6. Time
7. Max Temperature On The Bar
8. Temperature Bar
9. Min Temperature On The Bar
10. N: Normal  
(Note: N will be shifted to H when High Temp Range is selected)
11. Emissivity
12. Detection Distance



## Setting Interface

|                                                                                     |                    |        |
|-------------------------------------------------------------------------------------|--------------------|--------|
|    |                    | <<     |
|    | Emissivity         | 0.98 > |
|    | Distance           | 0.6m > |
|    | Temp Range         | >      |
|    | Temperature Units  | >      |
|    | Palette            | >      |
|    | HI/LO Alarm        | >      |
|    | Display            | >      |
|    | Display Brightness | >      |
|    | Date & Time        | >      |
|    | Correction         | >      |
|    | USB Mode           | >      |
|   | Snap Mode          | >      |
|  | Auto Power Off     | >      |
|  | Language           | >      |
|  | Format Disk        | >      |

|                                                                                   |               |      |
|-----------------------------------------------------------------------------------|---------------|------|
|  | Factory Reset | >    |
|  | Dev Info      | TR10 |

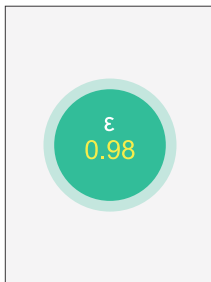
## Setting Instructions

- Press Button **SET** to enter the settings menu.
- Navigate to your desired option using Button ▲ / ▼ (up/down), and press Button **SET** again to access the setting.
- Adjust values or select sub-options using Button ▲ / ▼.
- Confirm and save your changes by pressing Button **SET**.
- To return to the main settings menu, briefly press Button .

## Emissivity

Choosing the correct emissivity is crucial for accurate temperature measurements since it greatly influences the surface temperature readings. To set the emissivity value, press Button **SET** and navigate to the setting interface. Adjust the value using Button ▲ / ▼. Once the adjustment is complete, a short press of Button  will return you to the main settings menu.

|                                                                                     |                     |
|-------------------------------------------------------------------------------------|---------------------|
|    | <<                  |
|    | Emissivity 0.98 >   |
|   | Distance 1.0m >     |
|  | Temp Range >        |
|  | Temperature Units > |
|  | Palette >           |
|  | HI/LO Alarm >       |



**Note:** Emissivity settings range from 0.01 to 0.99. For emissivity values of common materials, consult the table provided in the appendix.

### Emissivity Of Common Objects

| Materials       | Emissivity | Materials     | Emissivity |
|-----------------|------------|---------------|------------|
| Wood            | 0.85       | Black Paper   | 0.86       |
| Water           | 0.96       | Polycarbonate | 0.8        |
| Brick           | 0.75       | Concrete      | 0.97       |
| Stainless Steel | 0.14       | Copper Oxide  | 0.78       |
| Adhesive Tape   | 0.96       | Cast Iron     | 0.81       |
| Aluminium Plate | 0.09       | Rust          | 0.8        |
| Copper Plate    | 0.96       | Gypsum        | 0.75       |
| Black Aluminum  | 0.75       | Paint         | 0.9        |
| Human Skin      | 0.98       | Rubber        | 0.95       |
| Asphalt         | 0.96       | Soil          | 0.93       |
| PVC Plastic     | 0.93       |               |            |

## Distance Setting

For enhanced accuracy in temperature detection, set the distance information prior to measurement. To adjust the distance, select the distance option and press Button **SET** to access the value setting interface. Use Button ▲ / ▼ to adjust the distance value within the range of 0.3 to 3 meters. Once the adjustment is complete, press Button ① to return to the main settings menu.

|                                                                                   |                   |        |
|-----------------------------------------------------------------------------------|-------------------|--------|
|  |                   | <<     |
|  | Emissivity        | 0.98 > |
|  | Distance          | 1.0m > |
|  | Temp Range        | >      |
|  | Temperature Units | >      |
|  | Palette           | >      |
|  | HI/LO Alarm       | >      |



## Temp Range

To set the temperature range, select the Temp range option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to toggle between Normal and High Temperature range options. Press Button **SET** to confirm your selection. To return to the main settings menu, press Button ①. The Normal Temperature range is from -20°C to 150°C, and the High Temperature range is from 100°C to 550°C.

**Note:** Switching between temperature ranges takes around 10 seconds. Please wait for the device to complete the switch before proceeding with other operations or temperature measurements.

|                                                                                                     |        |
|-----------------------------------------------------------------------------------------------------|--------|
|                    | <<     |
|  Emissivity        | 0.98 > |
|  Distance          | 1.0m > |
|  Temp Range        | >      |
|  Temperature Units | >      |
|  Palette           | >      |
|  HI/LO Alarm       | >      |

|                     |                                                                                   |
|---------------------|-----------------------------------------------------------------------------------|
| <<                  | Temp Range                                                                        |
| Normal(-20°C~150°C) |  |
| High(100°C~550°C)   |                                                                                   |
|                     |                                                                                   |
|                     |                                                                                   |
|                     |                                                                                   |
|                     |                                                                                   |

## Unit

To set the unit, select the Unit option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to toggle between °C and °F. Press Button **SET** to confirm your selection. Press ▲ / ▼ to navigate to the ambient temperature setting, which enhances measurement accuracy for low emissivity materials, like metal or glass. Then Press Set button to enter the setting. Press ▲ / ▼ to input the ambient temperature value. To return to the main settings menu, press Button .

|                                                                                                     |        |
|-----------------------------------------------------------------------------------------------------|--------|
|                    | <<     |
|  Emissivity        | 0.98 > |
|  Distance          | 1.0m > |
|  Temp Range        | >      |
|  Temperature Units | >      |
|  Palette           | >      |
|  HI/LO Alarm       | >      |

|              |                                                                                   |
|--------------|-----------------------------------------------------------------------------------|
| <<           | Temperature Units                                                                 |
| °C           |  |
| °F           |                                                                                   |
| Ambient Temp | 24.0°C                                                                            |
|              |                                                                                   |
|              |                                                                                   |
|              |                                                                                   |

## Palette

To set the color palette, select the Palette option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to toggle 8 color palettes (White Hot, Black Hot, Iron, Rainbow, Blend, Red Hot, Blue Hot, Green Hot) . Press Button **SET** to confirm your selection. To return to the main settings menu, press Button (⏮) .

|                                                                                   |                   |        |
|-----------------------------------------------------------------------------------|-------------------|--------|
|  |                   | ⏮      |
|  | Emissivity        | 0.98 > |
|  | Distance          | 1.0m > |
|  | Temp Range        | >      |
|  | Temperature Units | >      |
|  | Palette           | >      |
|  | HI/LO Alarm       | >      |

|           |                                                                                   |
|-----------|-----------------------------------------------------------------------------------|
| ⏮         | Palette                                                                           |
| White Hot |  |
| Black Hot |                                                                                   |
| Iron      |                                                                                   |
| Rainbow   |                                                                                   |
| Blend     |                                                                                   |
| Red Hot   |                                                                                   |

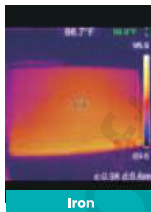
|           |         |
|-----------|---------|
| ⏮         | Palette |
| Blue Hot  |         |
| Green Hot |         |
|           |         |
|           |         |
|           |         |



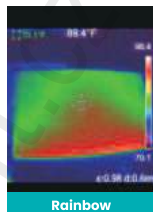
White Hot



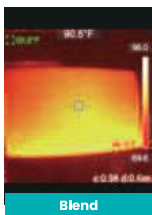
Black Hot



Iron



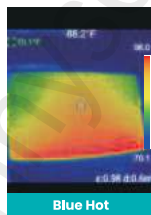
Rainbow



Blend



Red Hot



Blue Hot



Green Hot

**Notes:** Short press Button ▲ / ▼ (up/down) can quick access the change of different color palettes.



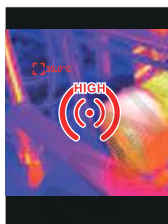
## HI/LO Alarm

To adjust the High/Low temperature alarm settings, select the High/LO temperature option and press Button **SET** to enter the value setting interface. Press Button **▲** / **▼** again to toggle the High/Low temperature alarm on or off, and press button **SET** to confirm. Use Button **▲** / **▼** to adjust the temperature value, and press Button **SET** to confirm your setting. Once complete, press Button **⏪** to return to the main settings menu.

|                   |        |
|-------------------|--------|
|                   | <<     |
| Emissivity        | 0.98 > |
| Distance          | 1.0m > |
| Temp Range        | >      |
| Temperature Units | >      |
| Palette           | >      |
| HI/LO Alarm       | >      |

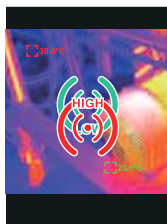
|                 |      |
|-----------------|------|
| << HI/LO Alarm  |      |
| HI Alarm Enable |      |
| LO Alarm Enable |      |
| High Temp Alarm | 30°C |
| Low Temp Alarm  | 29°C |
|                 |      |
|                 |      |



High Temp Alarm



Low Temp Alarm


High Temp Alarm And  
Low Temp Alarm

**Notes:** The default setting value for the high temperature alarm threshold is always higher than that of the low temperature alarm.

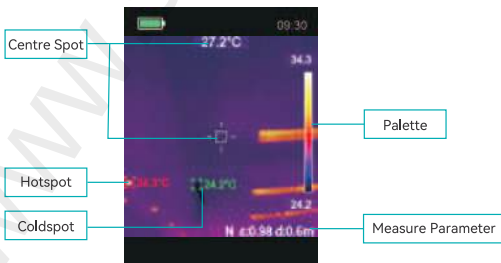
## Display Options

Select the Display Options and press Button **SET** to enter the setting interface. Press Button ▲ / ▼ scroll the different display elements and press Button **SET** to toggle the display elements on or off(High/Low Temp Dot, Center Dot, Palette(color bar), parameter(the set emissivity and distance)).

Once complete, press Button ① to return to the main settings menu.

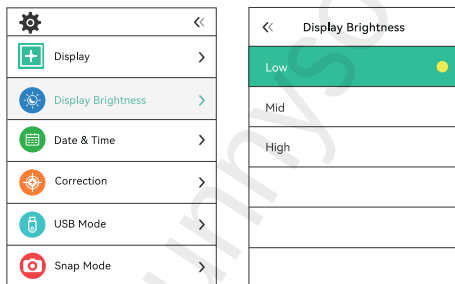
|                                                                                                      |    |
|------------------------------------------------------------------------------------------------------|----|
|                     | << |
|  Display            | >  |
|  Display Brightness | >  |
|  Date & Time        | >  |
|  Correction         | >  |
|  USB Mode           | >  |
|  Snap Mode          | >  |

|                   |                                                                                   |
|-------------------|-----------------------------------------------------------------------------------|
| <<                | Display                                                                           |
| Hotspot           |  |
| Coldspot          |  |
| Centre Spot       |  |
| Palette           |  |
| Measure Parameter |  |
|                   |                                                                                   |



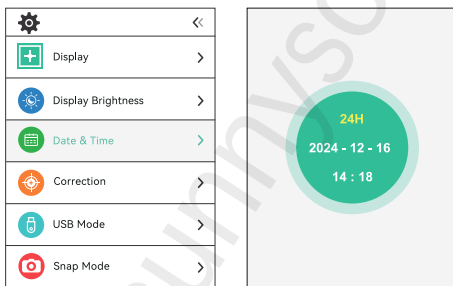
## Brightness

To adjust the screen brightness, select the Brightness option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to cycle through the low, middle, and high brightness options. Confirm your selection by pressing Button **SET** , then press Button (⏏) to return to the main settings menu.



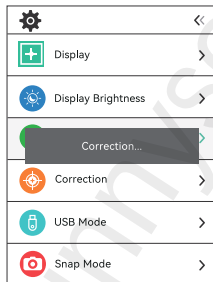
## Date & Time

To set the date and time, select the date & time option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to toggle between the 12H and 24H formats. Navigate to the desired setting field using Button ◀ / ▶ (left/right) . Adjust the value with Button ▲ / ▼ (up/down) . Once complete, press Button (Ⓜ) to return to the main settings menu.



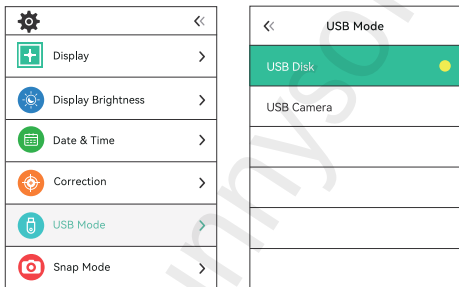
## Correction

The image clarity may compromise due to the noises produced on thermal sensor after a period of use. Select the Correction option and press Button **SET** to process the correction to eliminate the noises, ensuring the optimal clarity of thermal image.



## USB Mode

Select the USB Mode option and press Button **SET** to enter the setting interface. Press Button ▲ / ▼ again to toggle the USB Disk and USB Camera, and press Button **SET** to confirm your setting. Once complete, press Button (⏮) to return to the main settings menu.



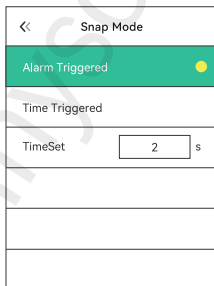
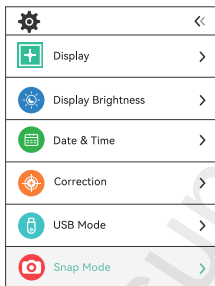
●1. Set the USB mode to USB Disk to browse pictures on the PC connecting the device to a computer with the USB cable.



**Note:** To activate U-Disk mode, restart the thermal imager and then connect the USB cable. Do not rename the Image folder or image files to prevent reading errors.

## Snap Mode

Select the Snap Mode option and press Button **SET** to enter the setting interface. Press Button **SET** again to toggle on/off the Alarm triggered option (picture captured when temperature exceeds the set threshold) and Time Triggered Option (picture captured every N seconds set), and press Button ▲ / ▼ to set the timing. Once complete, press Button (⏏) to return to the main settings menu.



## Auto Power Off

To adjust the auto power off timing, select the Auto Power off option and press Button **SET** to access the settings. Use Button ▲ / ▼ to cycle through the time options (5Min/10Min/30Min/off). Confirm your selection by pressing Button **SET**, and press Button ① again to return to the settings menu.

|                                                                                                  |        |
|--------------------------------------------------------------------------------------------------|--------|
|                 | <<     |
|  Auto Power Off | >      |
|  Language       | >      |
|  Format Disk    | >      |
|  Factory Reset  | >      |
|  Dev Info       | TR10 > |
|                                                                                                  |        |

|        |                                                                                   |
|--------|-----------------------------------------------------------------------------------|
| <<     | Auto Power Off                                                                    |
| 5 Min  |  |
| 10 Min |                                                                                   |
| 30 Min |                                                                                   |
| Off    |                                                                                   |
|        |                                                                                   |



## Language

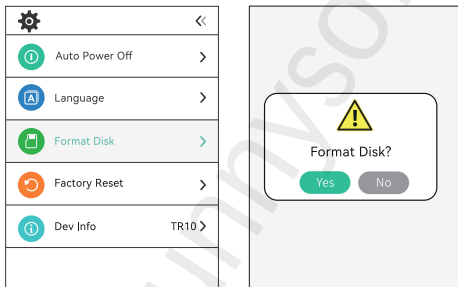
To set the language, select the Language option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to toggle different languages. Press Button **SET** to confirm your selection. To return to the main settings menu, press Button .

|                                                                                                  |        |
|--------------------------------------------------------------------------------------------------|--------|
|                 | <<     |
|  Auto Power Off | >      |
|  Language       | >      |
|  Format Disk    | >      |
|  Factory Reset  | >      |
|  Dev Info       | TR10 > |

|          |                                                                                   |
|----------|-----------------------------------------------------------------------------------|
| <<       | Language                                                                          |
| English  |  |
| Deutsch  |                                                                                   |
| Français |                                                                                   |
| Italiano |                                                                                   |
| Español  |                                                                                   |
| 中文       |                                                                                   |

## Format Disk

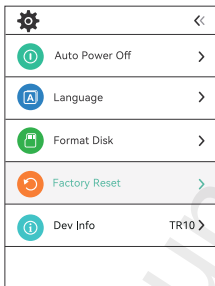
To format the disk, select the Format Disk option and press Button **SET** to enter the settings. Use Button ▲ / ▼ / ◀ / ▶ to toggle between the "Yes/No" options. Confirm your choice by pressing Button **SET** , then press Button (⏮) to return to the main settings menu.



**Note:** Exercise caution when using the Format Disk function. Confirming this action will erase all data on the disk permanently.

## Factory Reset

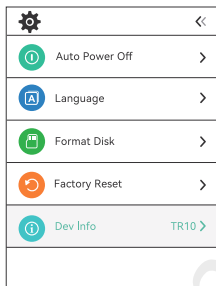
To enable factory reset, select the Factory Reset option and press Button **SET** to enter the settings. Use Button ▲ / ▼ / ◀ / ▶ to toggle between the "Yes/No" options. Confirm your choice by pressing Button **SET** , then press Button (ⓘ) to return to the main settings menu.



**Note:** Exercise caution when using the Factory Reset function. Confirming this action will erase all data on the disk permanently.

## Dev Info

Access this option by pressing button **SET** to check the general developing information of the device.



## Browse Image

Click button 5 to capture thermal images with comprehensive thermal data, which will be automatically saved to the disk. Short press button  to enter the photo album, and press button **SET** to enter the photo album interface. Press button **▲** / **▼** to cycle through different pictures and press button **SET** to open specific picture. The pictures are listed in a chronological order.

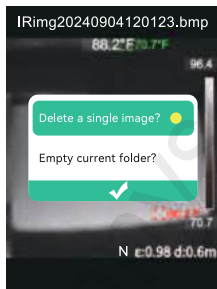


| << Album 1/1                                                                       |        |
|------------------------------------------------------------------------------------|--------|
|   | 202409 |
|  | 202408 |
|                                                                                    |        |
|                                                                                    |        |
|                                                                                    |        |

| << Photo 1/1                                                                       |                     |
|------------------------------------------------------------------------------------|---------------------|
|   | IRimg20240904120123 |
|  | IRimg20240904120121 |
|                                                                                    |                     |
|                                                                                    |                     |
|                                                                                    |                     |

## Image Deletion

Once opening a specific picture, short press button **SET** to choose to delete a single picture or current photo album.



## Specification:

|                             |                                                                                |
|-----------------------------|--------------------------------------------------------------------------------|
| Model                       | TR10                                                                           |
| NETD                        | < 50mK                                                                         |
| Super-Resolution            | 192X192                                                                        |
| Minimum Imaging Distance    | 0.3m                                                                           |
| HFOV                        | 50°×50°                                                                        |
| IIFOV                       | 8.89 mrad                                                                      |
| Frame Rate                  | 25 Hz                                                                          |
| Focal Length                | 1.35mm                                                                         |
| Gross Storage Capacity      | 8GB                                                                            |
| Usable Storabe Capacity     | 6GB                                                                            |
| Output Port                 | Type-C                                                                         |
| Battery                     | 3.7V, 3000mAh<br>Rechargeable Lithium                                          |
| Temperature Measuring Range | -20°C to 550°C                                                                 |
| Accuracy                    | ±2°C/+2%                                                                       |
| Picture Storage Capacity    | 30,000                                                                         |
| Picture Format              | JPEG                                                                           |
| Screen                      | 2.8" LCD Display                                                               |
| Max Picture Size            | 240 x 240                                                                      |
| Color Palettes              | White Hot, Black Hot, Iron,<br>Rainbow, Blend, Red Hot,<br>Blue Hot, Green Hot |
| Dimensions                  | 224*76*91mm                                                                    |
| Net Weight                  | 345g                                                                           |

## Warranty Terms

### **Warranty Period:**

◆ This product has one year guarantee in the precondition of non-artificial damage.

### **Within the warranty period, certain maintenance costs will be charged under following cases:**

- ◆ Damages caused by improper usage or maintenance of the machine;
- ◆ The machine had been disassembled or mended by non-authorized third party;
- ◆ Without the warranty card or purchase invoice;
- ◆ The serial number on the warranty card is different with the one on product;
- ◆ The serial number has been altered or abraded;
- ◆ Damaged by any force majeure factors,
- ◆ Replacement of worn out accessories;
- ◆ Damages caused by abnormal factors such as the temperature/humidity in usage;
- ◆ Damages caused by improper operation.

**Please send machine with warranty card & purchase invoice to local dealer if maintenance needed. The warranty card will not be reissued if lost; please keep it carefully for maintenance.**



## Contact Information

**Shenzhen Mileseey Technology Co., Ltd.**

Add: No.3601 Block A, Tanglang Town Plaza West, Fuguang Community, Taoyuan Street, Nanshan District, Shenzhen, China

Website: [www.mileseey.net](http://www.mileseey.net)

Store: [www.mileseeytools.com](http://www.mileseeytools.com)

E-mail: [service@mileseey.com](mailto:service@mileseey.com)

Made in China

## Mileseey Technology (US) Inc.

Office Add: 17800 CASTLETON ST STE 665 CITY OF INDUSTRY, CA 91748

Manufacturer: Shenzhen Mileseey Technology Co., Ltd.

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Store: [www.mileseeytools.com](http://www.mileseeytools.com)

E-mail: [service@mileseey.com](mailto:service@mileseey.com)

Made in China



FR

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FR

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électroniques usagés à des points de  
collecte correspondants.

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[www.quefairedermendeschets.fr](http://www.quefairedermendeschets.fr)

# MILESEEY<sup>®</sup> TOOLS



## TR10

Handheld Infrared Thermal Imager

**User Manual**

HANDBUCH



## Produktübersicht

Vielen Dank für Ihren Kauf der händchenhaltenden Infrarot-Wärmebildkamera Mileseeey TR10. Um eine optimale Nutzung und Verständnis dieses Geräts sicherzustellen, lesen Sie bitte sorgfältig das mitgelieferte Benutzerhandbuch. Das Modell TR10 bietet eine Reihe von Funktionen, die für Effizienz bei Wartungs- und Inspektionsaufgaben entwickelt wurden und die Temperaturerkennung genauer und benutzerfreundlicher machen.

## Hauptmerkmale des TR10

- **2,8-Zoll-Farb-LCD-Display:** Bietet eine großzügige Anzeigefläche, um Fehlerzonen leicht zu erkennen und zu analysieren.
- **Einstellbarer Emissionsgrad:** Ermöglicht personalisierte Einstellungen zur Verbesserung der Erfassungsgenauigkeit basierend auf verschiedenen Materialien.
- **Bildaufnahme und -speicherung:** Ausgestattet mit der Fähigkeit, Bilder aufzunehmen und sie in einem integrierten 8-GB-Speicher zu speichern, der Platz für bis zu 30.000 Bilder mit Temperaturdaten für umfassende Analysen bietet.
- **Bequemer Datenübertrag:** Verfügt über eine USB-Verbindung für schnelle und einfache Übertragung von Bildern auf PC-Terminals.
- **Integrierter Lithium-Akku:** Kommt mit einem integrierten Akku und einem Ladeanschluss vom Typ C, um den Ladevorgang und den Datentransfer zu vereinfachen.
- **Automatische Verfolgung von heißen und kalten Stellen:** Identifiziert automatisch die höchsten und niedrigsten Temperaturpunkte innerhalb einer Szene und verbessert so die diagnostischen Fähigkeiten.
- **Fadenkreuzanzeige** zur einfachen Ausrichtung des Messpunktes.
- **Anpassbare Temperaturalarme:** Ermöglichen das Einstellen individueller Warnungen für hohe und niedrige Temperaturen und erleichtern so die sofortige Aufmerksamkeit auf kritische Bereiche.

- Umfangreiche Temperaturbereichsmessung: Kann Temperaturen bis zu 550 °C genau messen und ist somit für eine Vielzahl von industriellen Anwendungen geeignet.
- Tragbares und benutzerfreundliches Design: Ideal für Fachleute in Wartung und Inspektion, bietet eine praktische Lösung für effektive Temperaturüberwachung und -erkennung.

## Sicherheitshinweise



- Um die Genauigkeit Ihrer Messungen und Ihre Sicherheit zu gewährleisten, verwenden Sie dieses Produkt bitte streng nach den Richtlinien im Benutzerhandbuch. Bitte beachten Sie, dass ein Nichtbeachten dieser Anweisungen zu Schäden führen kann, die nicht durch unseren kostenlosen Garantieservice abgedeckt sind.



- Um die Außenseite dieses Geräts zu reinigen, wischen Sie sie bitte vorsichtig mit einem feuchten Tuch oder einer milden Seifenlösung ab. Verwenden Sie keine abrasiven Reiniger, Isopropylalkohol oder Lösungsmittel auf dem Gehäuse, der Linse und den Fenstern des Instruments, da diese Substanzen Schäden verursachen können.



- Vermeiden Sie den Betrieb dieses Produkts in Umgebungen, die entzündlich, explosiv sind.



- Beenden Sie die Verwendung des Produkts sofort, wenn es beschädigt wurde, heruntergefallen ist oder in irgendeiner Weise modifiziert wurde. Die fortgesetzte Verwendung des Produkts unter diesen Bedingungen kann zu ungenauen Messungen führen und die Sicherheit beeinträchtigen.



- Bitte passen Sie den Emissionsgrad des Zielastmaterials entsprechend an, um genaue Temperaturmessungen zu erhalten.



- Während des Ladevorgangs steigt die interne Temperatur des Produkts möglicherweise an, was die Messgenauigkeit beeinträchtigen kann. Daher wird empfohlen, während des Ladevorgangs oder unmittelbar nach dem Laden keine Messungen durchzuführen.



- Aufgrund des möglichen erhöhten Stromverbrauchs, der die interne Temperatur des Produkts beeinflussen kann, lassen Sie das Gerät bitte 2 Minuten lang aufwärmen, bevor Sie es verwenden, wenn es längere Zeit nicht benutzt wurde, um die Messgenauigkeit zu gewährleisten.

## Erscheinung



### 1. USB-C-Ladeanschluss

### 2. LCD-Bildschirm

### 3. Bildspeicheraufzeichnung

### 4. Auf/Ab/Links/Rechts

Kurz drücken zum Navigieren

### 5. Ein-/Ausschalten/Zurück

Lange drücken zum Ein- oder Ausschalten

Kurz drücken zum Zurückkehren

### 6. Einstellungen

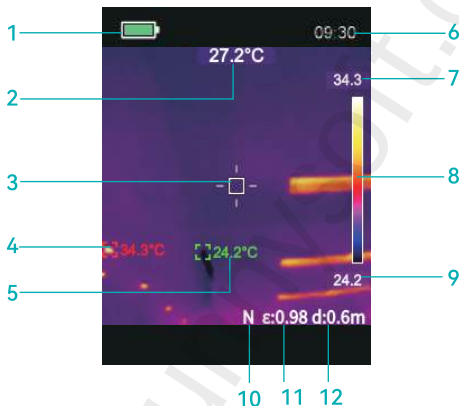
Kurz drücken, um Einstellungsoptionen aufzurufen

### 7. Wärmebildkamera

### 8. Bildaufnahme

Kurz drücken, um Bilder aufzunehmen und zu speichern

## Anzeigesymbol



1. Akku-Status

2. Temperatur der Zentrale

3. Mittelpunkt/Kreuzungspunkte

4. Maximale Temperatur und Position

5. Min. Temperatur und Position

6. Zeit

7. Maximale Temperatur auf dem Balken

8. Temperaturbalken

9. Min. Temperatur auf dem Balken

10. N: Normal

(Hinweis: N wird zu H verschoben, wenn der Hochtemperaturbereich gewählt wird)

11. Emissionsgrad

12. Erkennungsabstand



## Einstellungsschnittstelle

|                                                                                     |                      |        |
|-------------------------------------------------------------------------------------|----------------------|--------|
|    |                      | <<     |
|    | Emissionsgrad        | 0.98 > |
|    | Entfernung           | 0.6m > |
|    | Temperaturbereich    | >      |
|    | Temperatureinheiten  | >      |
|    | Palette              | >      |
|    | HI/LO Alarm          | >      |
|    | Anzeige              | >      |
|    | Display-Helligkeit   | >      |
|    | Datum und Uhrzeit    | >      |
|    | Berichtigung         | >      |
|    | USB-Modus            | >      |
|   | Fangmodus            | >      |
|  | Ausschalten          | >      |
|  | Sprache              | >      |
|  | Diskette Formatieren | >      |

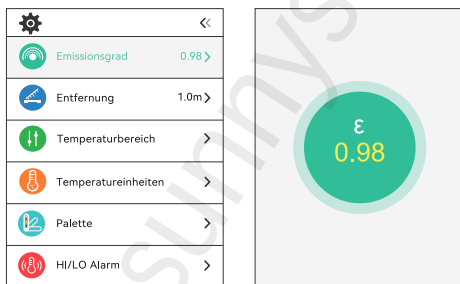
|                                                                                   |            |      |
|-----------------------------------------------------------------------------------|------------|------|
|  | Werksreset | >    |
|  | Dev Info   | TR10 |

## Einstellanweisungen

- Drücken Sie die Taste **SET** um das Einstellungs Menü zu öffnen.
- Navigieren Sie mit der Taste ▲ / ▼ (hoch/runter) zu Ihrer gewünschten Option und drücken Sie dann erneut die Taste **SET** um auf die Einstellung zuzugreifen.
- Passen Sie die Werte an oder wählen Sie Unteroptionen mit der Taste ▲ / ▼ aus.
- Bestätigen und speichern Sie Ihre Änderungen, indem Sie die Taste **SET** drücken.
- Um zum Hauptmenü der Einstellungen zurückzukehren, drücken Sie kurz die Taste .

## Emissionsfähigkeit

Die Auswahl des richtigen Emissionsgrads ist entscheidend für genaue Temperaturmessungen, da er die Oberflächentemperaturmessungen stark beeinflusst. Um den Emissionsgradwert einzustellen, drücken Sie die Taste **SET** und navigieren Sie zur Einstellungsschnittstelle. Passen Sie den Wert mit der Taste **▲** / **▼** an. Sobald die Anpassung abgeschlossen ist, kehren Sie mit einem kurzen Druck auf die Taste **Ⓢ** zum Hauptmenü der Einstellungen zurück.



**Hinweis:** Die Emissionsgrad-Einstellungen reichen von 0,01 bis 0,99. Für Emissionsgradwerte gängiger Materialien finden Sie eine Tabelle im Anhang.

**Emissionsgrad gängiger Objekte**

| <b>Materialien</b>  | <b>Emissionsgrad</b> | <b>Materialien</b> | <b>Emissionsgrad</b> |
|---------------------|----------------------|--------------------|----------------------|
| Holz                | 0.85                 | Schwarzes Papier   | 0.86                 |
| Wasser              | 0.96                 | Polycarbonat       | 0.8                  |
| Ziegelstein         | 0.75                 | Beton              | 0.97                 |
| Edelstahl           | 0.14                 | Kupferoxid         | 0.78                 |
| Klebeband           | 0.96                 | Gusseisen          | 0.81                 |
| Aluminiumplatte     | 0.09                 | Rost               | 0.8                  |
| Kupferplatte        | 0.96                 | Gips               | 0.75                 |
| Schwarzes Aluminium | 0.75                 | Farbe              | 0.9                  |
| Menschliche Haut    | 0.98                 | Gummi              | 0.95                 |
| Asphalt             | 0.96                 | Erde               | 0.93                 |
| PVC-Plastik         | 0.93                 |                    |                      |

## Entfernungseinstellung

Für eine verbesserte Genauigkeit bei der Temperaturmessung, stellen Sie die Distanzinformationen vor der Messung ein. Wählen Sie die Distanzoption und drücken Sie die Taste **SET** um auf das Werteeinstellungsmenü zuzugreifen. Verwenden Sie die Taste ▲ / ▼ um den Distanzwert im Bereich von 0,3 bis 3 Metern anzupassen. Sobald die Einstellung abgeschlossen ist, drücken Sie die Taste (1) um zum Hauptmenü der Einstellungen zurückzukehren.

|                                                                                                       |        |
|-------------------------------------------------------------------------------------------------------|--------|
|                      | <<     |
|  Emissionsgrad       | 0.98 > |
|  Entfernung          | 1.0m > |
|  Temperaturbereich   | >      |
|  Temperatureinheiten | >      |
|  Palette             | >      |
|  HI/LO Alarm         | >      |



## Temperaturbereich

Um den Temperaturbereich einzustellen, wählen Sie die Option 'Temperaturbereich' aus und drücken Sie die Taste **SET** um die Einstellungen zu öffnen. Verwenden Sie die Taste ▲ / ▼ um zwischen den Optionen 'Normal' und 'Hoher Temperaturbereich' umzuschalten. Drücken Sie die Taste **SET** um Ihre Auswahl zu bestätigen. Um zum Hauptmenü der Einstellungen zurückzukehren, drücken Sie die Taste . Der normale Temperaturbereich liegt zwischen -20°C und 150°C, und der hohe Temperaturbereich liegt zwischen 100°C und 550°C.

**Hinweis:** Das Umschalten zwischen den Temperaturbereichen dauert etwa 10 Sekunden. Bitte warten Sie, bis das Gerät den Wechsel abgeschlossen hat, bevor Sie mit anderen Operationen oder Temperaturmessungen fortfahren.

|                                                                                                       |        |
|-------------------------------------------------------------------------------------------------------|--------|
|                      | <<     |
|  Emissionsgrad       | 0.98 > |
|  Entfernung          | 1.0m > |
|  Temperaturbereich   | >      |
|  Temperatureinheiten | >      |
|  Palette             | >      |
|  HI/LO Alarm         | >      |

|                     |                                                                                   |
|---------------------|-----------------------------------------------------------------------------------|
| <<                  | Temperaturbereich                                                                 |
| Normal(-20°C~150°C) |  |
| Hoch(100°C~550°C)   |                                                                                   |
|                     |                                                                                   |
|                     |                                                                                   |
|                     |                                                                                   |

## Einheit

Um das Gerät einzustellen, wählen Sie die Option Einheit aus und drücken Sie die Taste **SET** um die Einstellungen einzugeben. Verwenden Sie die Schaltfläche ▲ / ▼ um zwischen °C und °F umzuschalten. Drücken Sie die Taste **SET** um Ihre Auswahl zu bestätigen. Drücken Sie ▲ / ▼ um zur Umgebungstemperatureinstellung zu navigieren, was die Messgenauigkeit für Materialien mit niedrigem Emissionsgrad wie Metall oder Glas verbessert. Drücken Sie dann die Set -Taste, um die Einstellung einzugeben. Drücken Sie ▲ / ▼ um den Umgebungstemperaturwert einzugeben. Um zum Haupteinstellungsmenü zurückzukehren, drücken Sie die Taste (ⓘ) .

|                                                                                                       |        |
|-------------------------------------------------------------------------------------------------------|--------|
|                      | <<     |
|  Emissionsgrad       | 0.98 > |
|  Entfernung          | 1.0m > |
|  Temperaturbereich   | >      |
|  Temperatureinheiten | >      |
|  Palette             | >      |
|  HI/LO Alarm         | >      |

|                      |                                                                                   |
|----------------------|-----------------------------------------------------------------------------------|
| <<                   | Temperatureinheiten                                                               |
| °C                   |  |
| °F                   |                                                                                   |
| Umgebungs Temperatur | 24.0°C                                                                            |
|                      |                                                                                   |
|                      |                                                                                   |
|                      |                                                                                   |

## Farbpalette

Um die Farbpalette einzustellen, wählen Sie die Option 'Palette' aus und drücken Sie die Taste **SET** um die Einstellungen zu öffnen. Verwenden Sie die Taste ▲ / ▼ um zwischen 8 Farbpaletten (Weiß heiß, Schwarz heiß, Eisen, Regenbogen, Mischung, Rot heiß, Blau heiß, Grün heiß) zu wechseln. Drücken Sie die Taste **SET** um Ihre Auswahl zu bestätigen. Um zum Hauptmenü der Einstellungen zurückzukehren, drücken Sie die Taste .

|                                                                                                       |        |
|-------------------------------------------------------------------------------------------------------|--------|
|                      | <<     |
|  Emissionsgrad       | 0.98 > |
|  Entfernung          | 1.0m > |
|  Temperaturbereich   | >      |
|  Temperatureinheiten | >      |
|  Palette             | >      |
|  HI/LO Alarm         | >      |

| << Palette                                                                                  |
|---------------------------------------------------------------------------------------------|
| Weiß heiß  |
| Schwarz heiß                                                                                |
| Eisen                                                                                       |
| Regenbogen                                                                                  |
| Mischung                                                                                    |
| Rot heiß                                                                                    |

| << Palette |
|------------|
| Blau heiß  |
| Grün heiß  |
|            |
|            |
|            |

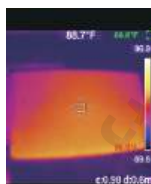




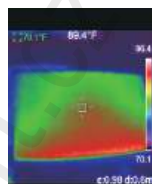
Weiß heiß



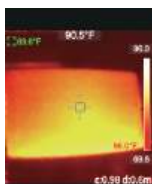
Schwarz heiß



Eisen



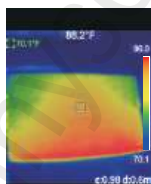
Regenbogen



Mischung



Rot heiß



Blau heiß



Grün heiß

**Anmerkungen:** Ein kurzer Druck auf die Taste ▲ / ▼ (hoch/runter) ermöglicht einen schnellen Zugriff auf die Änderung verschiedener Farbpaletten.

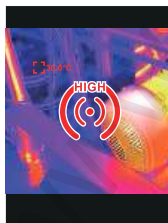
## Hoch-/Tief-Alarm

Um die Einstellungen für den Hoch-/Tief-Temperaturalarm anzupassen, wählen Sie die Option 'Hoch/LO-Temperatur' und drücken Sie die Taste **SET** um die Werteeinstellungsschnittstelle zu öffnen. Drücken Sie die Taste **▲** / **▼** erneut, um den Hoch-/Tief-Temperaturalarm ein- oder auszuschalten, und drücken Sie dann die Taste **SET** um zu bestätigen. Verwenden Sie die Taste **▲** / **▼** um den Temperaturwert anzupassen, und drücken Sie die Taste **SET** um Ihre Einstellung zu bestätigen. Sobald die Einstellung abgeschlossen ist, drücken Sie die Taste **ⓘ** um zum Hauptmenü der Einstellungen zurückzukehren.

|                                                                                                       |        |
|-------------------------------------------------------------------------------------------------------|--------|
|                      | <<     |
|  Emissionsgrad       | 0.98 > |
|  Entfernung          | 1.0m > |
|  Temperaturbereich   | >      |
|  Temperatureinheiten | >      |
|  Palette             | >      |
|  HI/LO Alarm         | >      |

|                     |                                                                                   |
|---------------------|-----------------------------------------------------------------------------------|
| <<                  | HI/LO Alarm                                                                       |
| HI Alarm Aktivieren |  |
| LO Alarm Aktivieren |  |
| HochTempAlarm       | 30°C                                                                              |
| NiedrTempAlarm      | 29°C                                                                              |
|                     |                                                                                   |
|                     |                                                                                   |



HochTempAlarm



NiedrTempAlarm


HochTempAlarm und  
NiedrTempAlarm

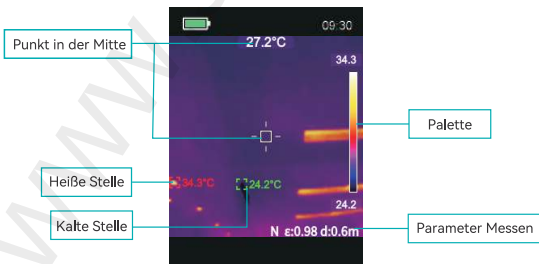
**Notiz:** Der Standardwert für die Hochtemperaturalarmgrenze ist immer höher als der für den Tieftemperaturalarm.

## Anzeigeeoptionen

Wählen Sie die Anzeigeeoptionen und drücken Sie die Taste **SET** um das Einstellungsmenü zu öffnen. Drücken Sie die Taste **▲** / **▼** um durch die verschiedenen Anzeigeelemente zu blättern, und drücken Sie die Taste **SET** um die Anzeigeelemente ein- oder auszuschalten (Hoch-/Tief-Temp-Punkt, Zentrumspunkt, Farbpalette, Parameter (der eingestellte Emissionsgrad und die Entfernung)).

|                                                                                                      |    |
|------------------------------------------------------------------------------------------------------|----|
|                     | << |
|  Anzeige            | >  |
|  Display-Helligkeit | >  |
|  Datum und Uhrzeit  | >  |
|  Berichtigung       | >  |
|  USB-Modus          | >  |
|  Fangmodus          | >  |

|                    |                                                                                   |
|--------------------|-----------------------------------------------------------------------------------|
| <<                 | Anzeige                                                                           |
| Heiße Stelle       |  |
| Kalte Stelle       |  |
| Punkt in der Mitte |  |
| Palette            |  |
| Parameter Messen   |  |
|                    |                                                                                   |



## Brightness

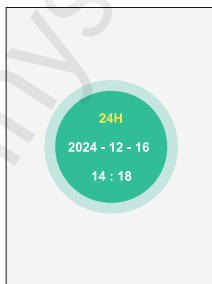
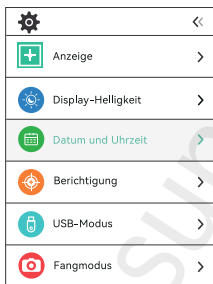
Um die Bildschirmhelligkeit anzupassen, wählen Sie die Option 'Helligkeit' aus und drücken Sie die Taste **SET** um die Einstellungen zu öffnen. Verwenden Sie die Taste ▲ / ▼ um zwischen den Optionen niedrige, mittlere und hohe Helligkeit zu wechseln. Bestätigen Sie Ihre Auswahl, indem Sie die Taste **SET** drücken, und drücken Sie dann die Taste (ⓘ) um zum Hauptmenü der Einstellungen zurückzukehren.

|                                                                                                      |    |
|------------------------------------------------------------------------------------------------------|----|
|                     | << |
|  Anzeige            | >  |
|  Display-Helligkeit | >  |
|  Datum und Uhrzeit  | >  |
|  Berichtigung       | >  |
|  USB-Modus          | >  |
|  Fangmodus          | >  |

|         |                                                                                   |
|---------|-----------------------------------------------------------------------------------|
| <<      | Display-Helligkeit                                                                |
| Niedrig |  |
| Mittel  |                                                                                   |
| Hoch    |                                                                                   |
|         |                                                                                   |
|         |                                                                                   |
|         |                                                                                   |

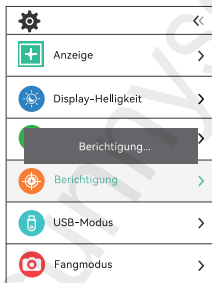
## Datum & Uhrzeit

Um das Datum und die Uhrzeit einzustellen, wählen Sie die Option 'Datum & Uhrzeit' aus und drücken Sie die Taste **SET** um die Einstellungen zu öffnen. Verwenden Sie die Taste ▲ / ▼ um zwischen den 12-Stunden- und 24-Stunden-Formaten zu wechseln. Navigieren Sie mit der Taste ◀ / ▶ (links/rechts) zum gewünschten Einstellungsfeld. Passen Sie den Wert mit der Taste ▲ / ▼ (hoch/runter) an. Sobald die Einstellung abgeschlossen ist, drücken Sie die Taste ① um zum Hauptmenü der Einstellungen zurückzukehren.



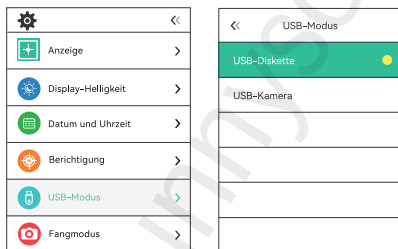
## Korrektur

Die Bildklarheit kann aufgrund der Geräusche, die nach einem Gebrauchszeitraum auf dem Wärmesensor erzeugt werden, beeinträchtigen. Wählen Sie die Korrekturoption aus und drücken Sie die Taste **SET** um die Korrektur zu verarbeiten, um die Geräusche zu beseitigen, um die optimale Klarheit des thermischen Bildes zu gewährleisten.

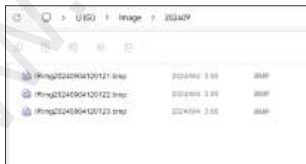


## USB-Modus

Wählen Sie die Option 'USB-Modus' aus und drücken Sie die Taste **SET** um das Einstellungs Menü zu öffnen. Drücken Sie die Taste ▲ / ▼ erneut, um zwischen USB-Disk und USB-Kamera zu wechseln, und drücken Sie die Taste **SET** um Ihre Einstellung zu bestätigen. Sobald die Einstellung abgeschlossen ist, drücken Sie die Taste (⏮) um zum Hauptmenü der Einstellungen zurückzukehren.



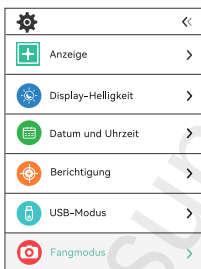
●1. Stellen Sie den USB-Modus auf USB-Diskette, um Bilder auf dem PC zu durchsuchen, indem Sie das Gerät mit dem USB-Kabel an einen Computer anschließen.



**Notiz:** Um den U-Disk-Modus zu aktivieren, starten Sie das Wärmebildgerät neu und schließen Sie dann das USB-Kabel an. Benennen Sie den Bildordner oder die Bilddateien nicht um, um Lesefehler zu vermeiden.

## Aufnahme-Modus

Wählen Sie die Option 'Aufnahme-Modus' aus und drücken Sie die Taste **SET** um das Einstellungsmenü zu öffnen. Drücken Sie die Taste **SET** erneut, um die Option für Alarmauslösung (Bildaufnahme bei Überschreiten des eingestellten Schwellenwerts) und die Option für zeitgesteuerte Aufnahmen (Bildaufnahme alle N Sekunden) ein- oder auszuschalten, und drücken Sie die Taste ▲ / ▼ um die Zeit festzulegen. Sobald die Einstellung abgeschlossen ist, drücken Sie die Taste  um zum Hauptmenü der Einstellungen zurückzukehren.





## Automatisches Ausschalten.

Um die Zeit für die automatische Abschaltung anzupassen, wählen Sie die Option 'Automatische Abschaltung' aus und drücken Sie die Taste **SET** um auf die Einstellungen zuzugreifen. Verwenden Sie die Taste **▲** / **▼** um durch die Zeitoptionen (5Min/10Min/30Min/Aus) zu blättern. Bestätigen Sie Ihre Auswahl durch Drücken der Taste **SET** und drücken Sie dann erneut die Taste **ⓘ** um zum Einstellungs-  
menü zurückzukehren.

|                                                                                                        |        |
|--------------------------------------------------------------------------------------------------------|--------|
|                       | <<     |
|  Ausschalten          | >      |
|  Sprache              | >      |
|  Diskette Formatieren | >      |
|  Werksreset           | >      |
|  Dev Info             | TR10 > |
|                                                                                                        |        |

|        |                                                                                   |
|--------|-----------------------------------------------------------------------------------|
| <<     | Ausschalten                                                                       |
| 5 Min  |  |
| 10 Min |                                                                                   |
| 30 Min |                                                                                   |
| Aus    |                                                                                   |
|        |                                                                                   |
|        |                                                                                   |

## Sprache

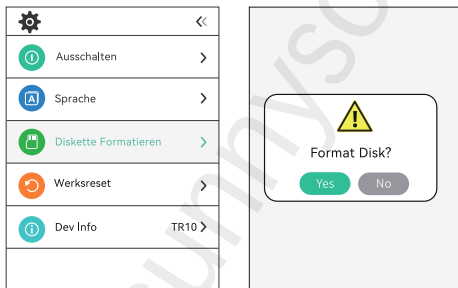
Um die Sprache einzustellen, wählen Sie die Option 'Sprache' aus und drücken Sie die Taste **SET** um die Einstellungen zu öffnen. Verwenden Sie die Taste ▲ / ▼ um zwischen verschiedenen Sprachen zu wechseln. Drücken Sie die Taste **SET** um Ihre Auswahl zu bestätigen. Um zum Hauptmenü der Einstellungen zurückzukehren, drücken Sie die Taste ⓘ .

|                                                                                   |                      |        |
|-----------------------------------------------------------------------------------|----------------------|--------|
|  |                      | <<     |
|  | Ausschalten          | >      |
|  | Sprache              | >      |
|  | Diskette Formatieren | >      |
|  | Werkreset            | >      |
|  | Dev Info             | TR10 > |
|                                                                                   |                      |        |

|          |         |
|----------|---------|
| <<       | Sprache |
| English  |         |
| Deutsch  |         |
| Français |         |
| Italiano |         |
| Español  |         |
| 中文       |         |

## Festplatte formatieren

Um die Festplatte zu formatieren, wählen Sie die Option 'Festplatte formatieren' aus und drücken Sie die Taste **SET** um die Einstellungen zu öffnen. Verwenden Sie die Taste **▲** / **▼** / **◀** / **▶** um zwischen den Optionen 'Ja/Nein' zu wechseln. Bestätigen Sie Ihre Auswahl, indem Sie die Taste **SET** drücken, und drücken Sie dann die Taste **ⓘ** um zum Hauptmenü der Einstellungen zurückzukehren.



**Notiz:** Seien Sie vorsichtig bei der Verwendung der Funktion 'Festplatte formatieren'. Die Bestätigung dieser Aktion löscht alle Daten auf der Festplatte dauerhaft.

## Werkseinstellungen zurücksetzen

Um das Zurücksetzen auf die Werkseinstellungen zu aktivieren, wählen Sie die Option 'Werkseinstellungen zurücksetzen' aus und drücken Sie die Taste **SET** um die Einstellungen zu öffnen. Verwenden Sie die Taste ▲ / ▼ / ◀ / ▶ um zwischen den Optionen 'Ja/Nein' zu wechseln. Bestätigen Sie Ihre Auswahl, indem Sie die Taste **SET** drücken, und drücken Sie dann die Taste (Ⓢ) um zum Hauptmenü der Einstellungen zurückzukehren.



**Notiz:** Seien Sie vorsichtig bei der Verwendung der Funktion 'Werkseinstellungen zurücksetzen'. Die Bestätigung dieser Aktion löscht alle Daten auf der Festplatte dauerhaft.

## Device Information

Um auf diese Option zuzugreifen, drücken Sie die Taste **SET** um die allgemeinen Entwicklerinformationen des Geräts zu überprüfen.

|                                                                                                        |        |
|--------------------------------------------------------------------------------------------------------|--------|
|                       | <<     |
|  Ausschalten          | >      |
|  Sprache              | >      |
|  Diskette Formatieren | >      |
|  Werksreset           | >      |
|  Dev Info             | TR10 > |



## Bilder durchsuchen

Klicken Sie auf die Taste 5, um Wärmebilder mit umfassenden Wärmedaten aufzunehmen, die automatisch auf der Festplatte gespeichert werden. Drücken Sie kurz die Taste  um das Fotoalbum aufzurufen, und drücken Sie die Taste **SET** um die Benutzeroberfläche des Fotoalbums aufzurufen. Drücken Sie die Taste  /  um durch die verschiedenen Bilder zu blättern, und drücken Sie die Taste **SET** um ein bestimmtes Bild zu öffnen. Die Bilder sind in chronologischer Reihenfolge aufgelistet.

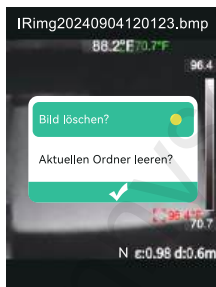


| << Album 1/1                                                                        |        |
|-------------------------------------------------------------------------------------|--------|
|    | 202409 |
|  | 202408 |
|                                                                                     |        |
|                                                                                     |        |
|                                                                                     |        |
|                                                                                     |        |

| << Foto 1/1                                                                         |                     |
|-------------------------------------------------------------------------------------|---------------------|
|    | IRimg20240904120123 |
|  | IRimg20240904120121 |
|                                                                                     |                     |
|                                                                                     |                     |
|                                                                                     |                     |
|                                                                                     |                     |

## Bildlöschung

Wenn Sie ein bestimmtes Bild geöffnet haben, drücken Sie kurz die Taste **SET** um ein einzelnes Bild oder das aktuelle Fotoalbum zu löschen.



## Specification:

|                               |                                                                                            |
|-------------------------------|--------------------------------------------------------------------------------------------|
| Modell                        | TR10                                                                                       |
| NETD                          | < 50mK                                                                                     |
| Super-Resolution              | 192X192                                                                                    |
| Mindestabstand zur Bildgebung | 0.3m                                                                                       |
| HFOV (Horizontales Sichtfeld) | 50°×50°                                                                                    |
| IFOV (Infrarotfeldsicht)      | 8.89 mrad                                                                                  |
| Bildrate                      | 25 Hz                                                                                      |
| Brennweite                    | 1.35mm                                                                                     |
| Bruttospeicherkapazität       | 8GB                                                                                        |
| Nutzbare Speicherkapazität    | 6GB                                                                                        |
| Ausgangsanschluss             | Type-C                                                                                     |
| Batterie                      | 3.7V, 3000mAh<br>Rechargeable Lithium                                                      |
| Temperaturmessbereich         | -20°C to 550°C                                                                             |
| Genauigkeit                   | ±2°C/+2%                                                                                   |
| Bildspeicherkapazität         | 30,000                                                                                     |
| Bildformat                    | JPEG                                                                                       |
| Bildschirm                    | 2.8" LCD Display                                                                           |
| Maximale Bildgröße            | 240 x 240                                                                                  |
| Farbpaletten                  | Weiß heiß, Schwarz heiß, Eisen,<br>Regenbogen, Mischung, Rot<br>heiß, Blau heiß, Grün heiß |
| Abmessungen                   | 224*76*91mm                                                                                |
| Nettogewicht                  | 345g                                                                                       |



## Garantiebedingungen

### **Warranty Period:**

◆ This product has one year guarantee in the precondition of non-artificial damage.

### **Within the warranty period, certain maintenance costs will be charged under following cases:**

- ◆ Dieses Produkt hat eine Garantie von einem Jahr unter der Voraussetzung, dass keine künstlichen Schäden vorliegen.
- ◆ Innerhalb des Garantiezeitraums werden bestimmte Wartungskosten unter folgenden Fällen berechnet:
- ◆ Schäden, die durch unsachgemäße Verwendung oder Wartung der Maschine verursacht wurden;
- ◆ Die Maschine wurde von nicht autorisierten Dritten zerlegt oder repariert;
- ◆ Ohne Garantiekarte oder Kaufrechnung;
- ◆ Die Seriennummer auf der Garantiekarte unterscheidet sich von der auf dem Produkt;
- ◆ Die Seriennummer wurde verändert oder abgerieben;
- ◆ Beschädigt durch höhere Gewalt;
- ◆ Austausch von abgenutzten Zubehörteilen;
- ◆ Schäden, die durch abnormale Faktoren wie Temperatur/-Feuchtigkeit bei der Verwendung verursacht wurden;
- ◆ Schäden, die durch unsachgemäße Bedienung verursacht wurden.

**Bitte senden Sie die Maschine mit Garantiekarte und Kaufrechnung an den örtlichen Händler, wenn Wartungsarbeiten erforderlich sind. Die Garantiekarte wird nicht erneut ausgestellt, wenn sie verloren geht; bitte bewahren Sie sie sorgfältig für Wartungszwecke auf.**

## Kontaktinformationen

**Shenzhen Mileseey Technology Co., Ltd.**

Adresse: No.3601 Block A, Tanglang Town Plaza West, Fuguang Community, Taoyuan Street, Nanshan District, Shenzhen, China

Website: [www.mileseey.net](http://www.mileseey.net)

Geschäft: [www.mileseeytools.com](http://www.mileseeytools.com)

E-mail: [service@mileseey.com](mailto:service@mileseey.com)

Made in China

**Lieferant/Vertriebspartner**

Sunnysoft s.r.o.

Kovanecká 2390/1a

190 00 Prag 9

Tschechische Republik

[www.sunnysoft.cz](http://www.sunnysoft.cz)

## Mileseey Technology (US) Inc.

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Manufacturer: Shenzhen Mileseey Technology Co., Ltd.

Add: No.3601 Block A, Tanglang Town Plaza West, Fuguang Community, Taoyuan Street, Nanshan District, Shenzhen, China

Store: [www.mileseeytools.com](http://www.mileseeytools.com)

E-mail: [service@mileseey.com](mailto:service@mileseey.com)

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tous les appareils électriques et  
électroniques usagés à des points de  
collecte correspondants.  
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[www.quefairedermidechets.fr](http://www.quefairedermidechets.fr)

# MILESEEY<sup>®</sup> TOOLS



## TR10

Handheld Infrared Thermal Imager

Használati utasítás



## A termékről

**Köszönjük, hogy megvásárolta a Mileseey TRIO kézi infravörös hőkamerát. Kérjük, olvassa el figyelmesen a felhasználói kézikönyvet, hogy biztosítsa a készülék optimális használatát és működésének megértését. A TRIO a karbantartási és ellenőrzési feladatok hatékonyságát szolgáló funkciókkal büszkélkedhet, amelyek a hőmérséklet-érzékelést pontosabbá és felhasználóbarátabbá teszik.**

## A TR10 fő jellemzői

- G2,8"-os színes LCD-kijelző: nagy kijelzőfelületet kínál a hibahelyek könnyű azonosításához és elemzéséhez.
  - Állítható emissziós képesség: lehetővé teszi a személyre szabott beállításokat a különböző anyagokon alapuló érzékelési pontosság növelésére.
  - Képek rögzítése és tárolása: A beépített 8 GB-os memóriában akár 30 000 képet is tárolhat a hőmérsékleti adatokkal együtt az összehasonlító elemzéshez.
  - Kényelmes adatátvitel: a készülék USB-csatlakozóval rendelkezik a képek gyors és egyszerű exportálásához a számítógépre.
  - Integrált lítium akkumulátor: Beépített akkumulátorral és C-típusú töltőcsatlakozóval rendelkezik a töltési és adatátviteli folyamat egyszerűsítése érdekében.
  - Automatikus forró és hideg követése: automatikusan azonosítja és megcélozza a megfigyelt helyszín legmagasabb és legalacsonyabb hőmérsékleti pontjait, javítva ezzel a diagnosztikai képességeket.
  - A kijelzőn megjelenő célkereszt a mérési hely könnyű megcélzásához.
  - Testreszabható hőmérsékleti riasztások: lehetővé teszi, hogy egyedi magas és alacsony hőmérsékleti riasztásokat állítson be, így könnyen a kritikus területekre összpontosíthatja az azonnali figyelmet.
  - Széles hőmérséklet-mérési tartomány: alkalmas különböző ipari alkalmazásokhoz
- Alkalmazások: 550 °C-ig pontosan méri a hőmérsékletet.

Hordozható és felhasználóbarát kialakítás: Alkalmas karbantartó és ellenőrző szakemberek számára, praktikus megoldást kínál a hatékony hőmérséklet-ellenőrzéshez és -érzékeléshez.

## Biztonsági utasítások



A mérési pontosság és az Ön biztonsága érdekében használja a terméket pontosan a útmutatóban leírtak szerint. Felhívjuk figyelmét, hogy az utasítások be nem tartása a garanciális szerviz által nem fedezett károkat okozhat.



A készülék külsejének tisztításához óvatosan törölje át nedves ruhával vagy enyhe szappanoldattal. Ne használjon , izopropil-alkoholt vagy bármilyen oldószert a készülék borításán, lencsén vagy ablakain, anyagok károsodást okozhatnak.



Ne használja ezt a terméket gyúlékony, robbanásveszélyes, magas gőz- vagy nedvességtartalmú, illetve maró anyagokat tartalmazó környezetben. A termék ilyen körülmények között történő használata ronthatja a teljesítményét és biztonsági kockázatot jelenthet.



Ha a termék megsérült, leesett vagy más módon sérült, azonnal hagyja abba a használatát. A termék ilyen körülmények között történő további használata pontatlan mérésekhez vezethet, és veszélyeztetheti a biztonságot.



A pontos hőmérsékleti adatok eléréséhez állítsa be a célanyag megfelelő emissziós képességét.



Mivel a készülék a bekapcsolás során felmelegszik, ez befolyásolhatja a mérés pontosságát. Ezért ajánlott, hogy a készüléket ne használja töltés közben vagy közvetlenül töltés után.



Az energiatakarékosság növelheti a termék hőmérsékletét, a hőmérsékletmérés pontosságának növelése érdekében kövesse az ajánlást, hogy a készüléket használat előtt 2 perccel kapcsolja be, ha a készüléket hosszabb ideig nem használták.

## A készülék megjelenése



**1. USB-C töltőport**

**2. LCD képernyő**

**3. Képmemória rögzítés**

**4. Fel/le/balra/jobbra**

Navigálás rövid megnyomásával

**5. Be/ki/vissza kapcsoló**

Hosszan nyomja meg a be- vagy kikapcsoláshoz

Rövid megnyomás a visszatéréshez

**6. Beállítások**

A beállítási lehetőségek megnyomásával lépjen be a beállítási lehetőségekbe

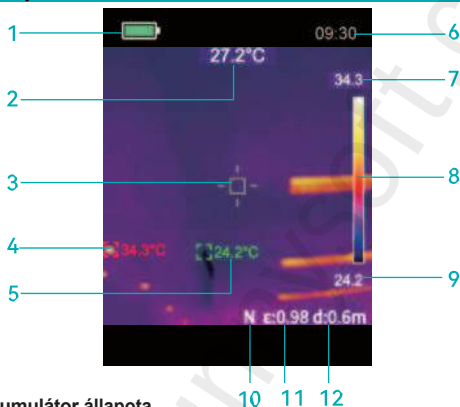
**7. Hőkamera**

**8. Képfelvétel**

Képek rögzítéséhez és mentéséhez nyomja meg röviden a gombot



## Ikonok a kijelzőn



1. Az akkumulátor állapota
2. Középhőmérséklet
3. Középső pont/kereszt haj
4. Maximális hőmérséklet és helyzet
5. Minimális hőmérséklet és helyzet
6. Idő
7. Maximális hőmérséklet az oszlopon
8. Hőmérséklet oszlop
9. Minimális hőmérséklet az oszlopon
10. N: Normál (normál )

(Megjegyzés: A magas hőmérsékleti tartomány kiválasztásakor az N átkerül H-ra)

11. Kibocsátás
12. Érzékelési távolság

|   |                    |                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------|
|                                                                                    | Emissivity         | 0.98 > Emissziós        |
|                                                                                    | Distance           | 0.6m > tényező Távolság |
|                                                                                    | Temp Range         | > Hőmérséklet-          |
|                                                                                    | Temperature Units  | > tartomány             |
|                                                                                    | Palette            | > Hőmérsékleti          |
|                                                                                    | HI/LO Alarm        | > egység Raklap         |
|                                                                                    | Display            | > HI/LO                 |
|                                                                                    | Display Brightness | > riasztás              |
|                                                                                    | Date & Time        | > Kijelző               |
|                                                                                    | Correction         | > A kijelző             |
|                                                                                    | USB Mode           | > fényereje             |
|                                                                                   | Snap Mode          | > Dátum és idő          |
|                                                                                  | Auto Power Off     | > korrekció USB         |
|                                                                                  | Language           | > mód Rögzítési         |
|                                                                                  | Format Disk        | > mód                   |
|                                                                                                                                                                     |                    | > Automatikus           |
|                                                                                                                                                                     |                    | > kikapcsolás Nyelv     |
|                                                                                                                                                                     |                    | > Formázás              |

|                                                                                   |               |      |
|-----------------------------------------------------------------------------------|---------------|------|
|  | Factory Reset | >    |
|  | Dev Info      | TRIO |

Gyári beállítások

Eszközinformáció

## Beállítási utasítások

- Nyomja meg a SET gombot a beállítási menübe való belépéshez.
- A ▲▼ (fel/le) gombbal görgessen a kívánt opcióhoz, majd nyomja meg ismét a SET gombot a beállítások megadásához.
- ▲▼A gombbal szerkesztheti az értékeket vagy választhat alopciókat.
- A SET gomb megnyomásával erősítse meg és mentse el a változtatásokat.
- A fő beállítási menübe való visszatéréshez nyomja meg röviden a 

## Emissziós képesség

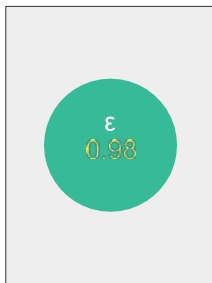
Az emissziós tényező helyes megválasztása elengedhetetlen a pontos hőmérsékletméréshez, mivel jelentősen befolyásolja a felületi hőmérsékleti adatokat. Az emissziós érték beállításához nyomja meg a SET gombot, és lépjen a beállítási felületre.

Állítsa be az értéket ▲▼

Ha a beállítások befejeződtek, nyomja meg röviden a  a visszatéréshez a fő beállítások menübe.

 a visszatéréshez

|                                                                                     |                     |
|-------------------------------------------------------------------------------------|---------------------|
|    | <<                  |
|    | Emissivity 0.98 >   |
|   | Distance 1.0m >     |
|  | Temp Range >        |
|  | Temperature Units > |
|  | Palette >           |
|  | HI/LO Alarm >       |



Megjegyzés: Az emissziós tényező 0,01 és 0,99 közötti értéktartományban állítható be. Emissziós értékek

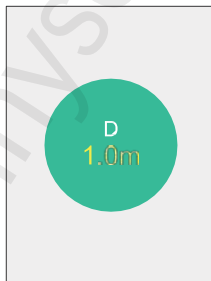
A leggyakoribb anyagok az alábbi táblázatban találhatók.

## Közönséges tárgyak emissziója

| Anyagok           | Emissziós képesség | Anyagok      | Emissziós képesség |
|-------------------|--------------------|--------------|--------------------|
| Fa                | 0.85               | Jegyzetpapír | 0.86               |
| Víz               | 0.96               | Polikarbonát | 0.8                |
| Téglák            | 0.75               | Beton        | 0.97               |
| Rozsdamentes acél | 0.14               | Réz-oxid     | 0.78               |
| Ragasztószalag    | 0.96               | Öntöttvas    | 0.81               |
| Alumínium lemez   | 0.09               | Vágja        | 0.8                |
| Rézlemez          | 0.96               | Gipsz        | 0.75               |
| Fekete alumínium  | 0.75               | Színes       | 0.9                |
| Emberi bőr        | 0.98               | Gumi         | 0.95               |
| Aszfalt           | 0.96               | Talaj        | 0.93               |
| PVC műanyag       | 0.93               |              |                    |

## A távolság beállítása

A hőmérséklet-érzékelés pontosságának növelése érdekében a mérés előtt állítsa be a távolságadatokat. A távolság beállításához válassza ki a távolság opciót, és a SET gomb megnyomásával lépjen a kezelőfelületre az érték beállításához. A ▲▼ gombokkal állítsa be a távolság értékét 0,3 és 3 méter között. Ha a beállítás befejeződött, nyomja meg a  a fő beállítási menübe való visszatéréshez.



## Hőmérséklet-tartomány

A hőmérséklet-tartomány beállításához válassza a Temp range lehetőséget, majd a SET gomb megnyomásával lépjen be a beállításokba. ▲▼ válthat a normál és a magas hőmérsékleti tartomány között. Nyomja meg a gombot. SET a kiválasztás megerősítéséhez. A fő beállítási menübe való visszatéréshez nyomja meg (⏮)

A normál hőmérséklet-tartomány -20°C és 150°C között, a magas hőmérséklet-tartomány 100°C és 550°C között van.

**Megjegyzés:** A hőmérséklet-tartományok közötti váltás körülbelül 10 vesz igénybe. Várja meg, amíg a készülék befejezi a váltást, mielőtt további műveleteket vagy hőmérsékletméréseket folytatna.

|                                                                                                     |        |
|-----------------------------------------------------------------------------------------------------|--------|
|                    | «      |
|  Emissivity        | 0.98 > |
|  Distance          | 1.0m > |
|  Temp Range        | >      |
|  Temperature Units | >      |
|  Palette           | >      |
|  Hi/LO Alarm      | >      |

|                                                                                                       |            |
|-------------------------------------------------------------------------------------------------------|------------|
| «                                                                                                     | Temp Range |
| Normal(-20°C-150°C)  |            |
| High(100°C-550°C)                                                                                     |            |
|                                                                                                       |            |
|                                                                                                       |            |
|                                                                                                       |            |
|                                                                                                       |            |

## Egység

Az egység beállításához válassza az Unit (Egység) lehetőséget, majd nyomja meg a SET gombot a beállítások megadásához. ▲▼Nyomja meg a gombot a °C és °F közötti váltáshoz. Nyomja meg a SET gombot a választás megerősítéséhez. ▲▼Nyomja meg a gombokat a környezeti hőmérséklet beállításra való átváltáshoz, ami növeli a mérések pontosságát az alacsony emissziós képességű anyagok, például fém vagy üveg esetében. Ezután nyomja meg a SET gombot a beállítás megadásához. Nyomja meg a ▲▼ gombokat a környezeti hőmérséklet beállításához. A fő beállítási menübe való visszatéréshez nyomja meg a 



## Paletta

A színpaletta beállításához válassza a Paletta lehetőséget, majd nyomja meg a SET gombot a beállítások megadásához. ▲▼ A gombokkal válthat a 8 színpaletta között (White Hot, Black Hot, Iron, Rainbow, Blend, Red Hot, Blue Hot, Green ). Nyomja meg a SET gombot a választás megerősítéséhez. A fő beállítási menübe való visszatéréshez nyomja meg a

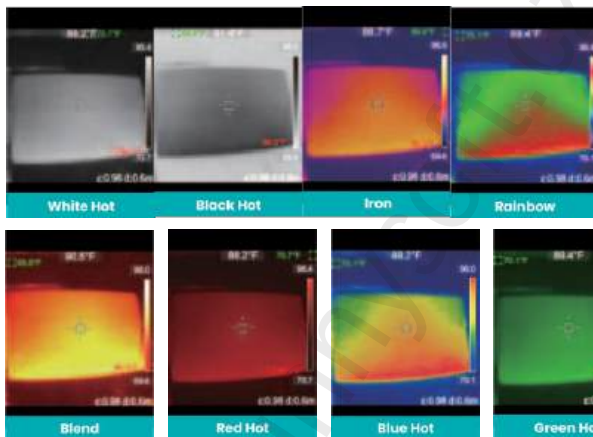


|                   |        |
|-------------------|--------|
|                   | <<     |
| Emissivity        | 0.98 > |
| Distance          | 1.0m > |
| Temp Range        | >      |
| Temperature Units | >      |
| Palette           | >      |
| HI/LO Alarm       | >      |

|           |         |
|-----------|---------|
| <<        | Palette |
| White Hot |         |
| Black Hot |         |
| Iron      |         |
| Rainbow   |         |
| Blend     |         |
| Red Hot   |         |

|           |         |
|-----------|---------|
| <<        | Palette |
| Blue Hot  |         |
| Green Hot |         |
|           |         |
|           |         |
|           |         |





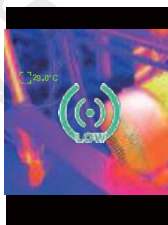
▲ ▼ Megjegyzések: a gomb rövid megnyomásával gyorsan léphet (fel/le) a legváltozatosabb színpaletták.

## HI/LO riasztás (magas és alacsony hőmérséklet riasztás)

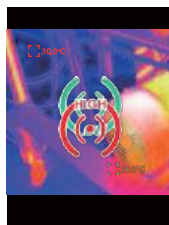
A magas/alacsony hőmérséklet riasztási beállításainak módosításához válassza a Magas/alacsony hőmérséklet lehetőséget, majd nyomja meg a SET gombot az értékbeállítási felületre való belépéshez. ▲▼Nyomja meg ismét a magas/alacsony hőmérséklet riasztás be- vagy kikapcsolásához, és erősítse meg a SET gomb megnyomásával. Agombbal állítsa be a hőmérséklet értékét, majd a SET gombbal erősítse meg a beállítást. Ha végzett, nyomja meg a  gombot a fő beállítási menübe való visszatéréshez



Folyamatos hőmérséklet riasztás



Alacsony hőmérséklet riasztás



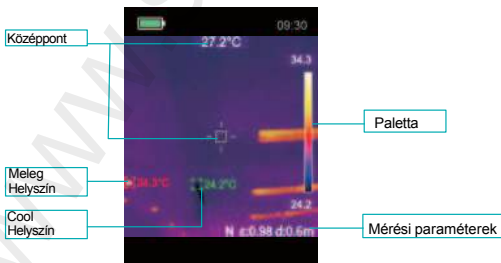
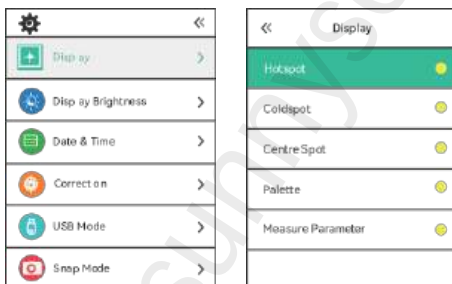
Alacsony hőmérséklet riasztás

és alacsony hőmérséklet riasztás

**Megjegyzések:** A magas hőmérséklet riasztási küszöbértékének alapértelmezett beállítása mindig magasabb, mint az alacsony hőmérséklet riasztási beállítása.

## Megjelenítési lehetőségek

Válassza ki a Display Options (Kijelzési beállítások) lehetőséget, és nyomja meg a SET gombot a beállítási felületre való belépéshez. Nyomja meg a ▲▼ gombot a különböző kijelzőelemekhez való görgetéshez, és nyomja meg a SET gombot a kijelzőelemek (High/Low Temp Dot, Center Dot, Palette (színsáv), Parameter (emisszió és távolság beállítása)) be- vagy kikapcsolásához. Ha végzett, nyomja meg a  gombot a fő beállítási menübe való visszatéréshez.



## Fényerő

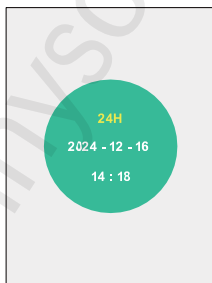
A képernyő fényerejének beállításához válassza a Brightness (Fényerő) lehetőséget, majd nyomja meg a SET gombot a beállítások megnyomásához. A ▲ ▼ gombbal válasszon az Alacsony, Közepes és Magas fényerő között. Erősítse meg a beállításokat a SET gomb megnyomásával, majd nyomja meg a gombot a főmenübe való visszatéréshez.



## Dátum és idő

A dátum és az idő beállításához válassza a Dátum és idő lehetőséget, majd nyomja meg a SET gombot a beállítások megadásához. ▲▼◀ / ▶A gombbal válthat a 12H és 24H formátum között. A gombbal navigálhat a kívánt beállítási mezőre. Állítsa be az értéket a gombbal ▲▼

Ha végzett, nyomja meg a gombot  Vissza a fő beállítások menübe.



## Helyesbítés

Egy bizonyos használati idő után a kép tisztasága romolhat a hőérzékelőn keletkező zaj miatt. Válassza ki a Korrektúra lehetőséget, és nyomja meg a SET gombot a korrekció elvégzéséhez, hogy eltávolítsa a zajt és biztosítsa a hőkép optimális tisztaságát.

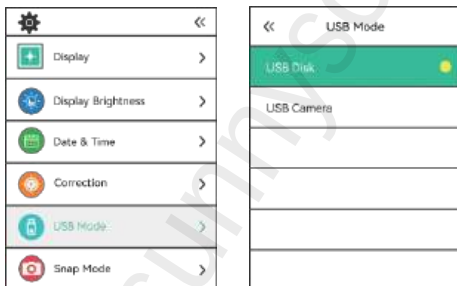


## USB mód

Válassza ki az USB módot, és nyomja meg a SET gombot a belépéshez.

interfész. ▲▼Nyomja meg a gombokat az USB lemez és az USB kamera közötti váltáshoz, majd erősítse meg a választást a SET gomb megnyomásával.

Ha befejezte a beállításokat, és visszatért a főmenübe, (ⓘ)



1. Állítsa az USB módot USB lemezre, hogy a számítógépen lévő képeket az USB-kábellel a számítógéphez csatlakoztatott számítógépen böngészhesse.

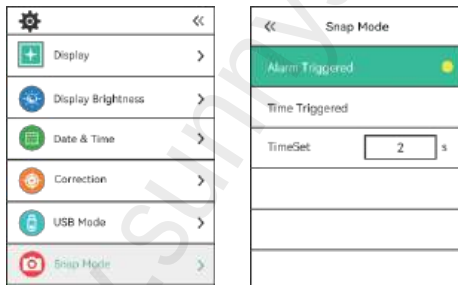


**Megjegyzés:** Az U-Disk üzemmód aktiválásához indítsa újra a hőkamerát, majd csatlakoztassa az USB-kábelt. Az olvasási hibák elkerülése érdekében ne nevezze át a Kép mappát vagy a képfájlokat.

## Snap mód - pillanatfelvétel készítése

Válassza ki a Snap Mode lehetőséget, és nyomja meg a SET gombot a beállítási felületre való belépéshez. Nyomja meg ismét a SET gombot a Riasztás kiváltása (a pillanatfelvétel akkor készül, ha a hőmérséklet meghaladja a beállított) és az Idő kiváltása (N beállított másodpercenként készül pillanatfelvétel) opció engedélyezéséhez/letiltásához, majd nyomja meg a SET gombot.

▲▼ állítsa be az időzítést. Ha végzett, nyomja meg a gombot  gombot a fő beállítási menübe való visszatéréshez.





## Automatikus leállás

Az automatikus kikapcsolás időzítésének beállításához válassza az Auto Power off (Automatikus kikapcsolás) lehetőséget, majd nyomja meg a SET gombot a beállítások megadásához.

▲ ▼ A gombokkal görgessen az időbeállítások között (5Min/10Min/30Min/off). Nyomja meg a SET gombot a kiválasztás megerősítéséhez, majd nyomja meg a  gombot a beállítások menübe való visszatéréshez.



## Nyelv

A nyelv beállításához válassza a Language (Nyelv) lehetőséget, majd a SET gomb megnyomásával lépjen be a beállításokba. ▲▼ A gombok segítségével váltson nyelvet.

Nyomja meg a SET gombot a kiválasztás megerősítéséhez. A fő beállítási menübe való nyomja meg a 



## A lemez formázása

A lemez formázásához válassza a Lemez formázása lehetőséget, majd nyomja meg a SET gombot a beállítások megadásához. ▲▼◀▶ válthat az "Igen/Nem" között. Erősítse meg a választást a SET gomb megnyomásával, majd nyomja meg a  gombot a fő beállítási menübe való visszatéréshez.



**Megjegyzés:** Legyen óvatos a Lemez formázása funkció használatakor. A művelet megerősítése véglegesen törli a lemezen lévő összes adatot.

## Gyári beállítások

A gyári visszaállítás engedélyezéséhez válassza a Gyári visszaállítás lehetőséget, majd a SET gomb megnyomásával lépjen be a beállításokba.

▲▼◆A váltson az "Igen/Nem" opciók között.  
SET gombot , majd nyomja meg a gombot a ① főbeállítási menübe való visszatéréshez.



**Megjegyzés:** Legyen óvatos a gyári visszaállítás funkció használatakor. Legyen óvatos a művelet megerősítésekor, amely véglegesen törli a lemezen lévő összes adatot.

## Eszköz-info - Dev Info

Ennek a lehetőségnek a megnyitásához nyomja meg a SET gombot, és ellenőrizze a készülék fejlesztésével kapcsolatos általános információkat.



## Képek böngészése

Kattintson az 5. gombra, ha átfogó hőképeket szeretne készíteni, amelyek automatikusan elmentésre kerülnek a lemezre.  Nyomja meg röviden a gombot a fényképalbumba való belépéshez, és nyomja meg a SET lépjen be a fényképalbumba. Nyomja meg a   görgessen a különböző képek között, majd nyomja meg a SET gombot a konkrét kép. A képek időrendi sorrendben vannak elhelyezve.

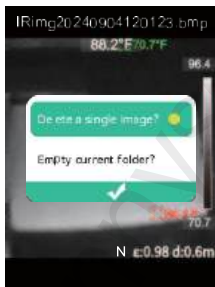


| ◀ Album                                                                                    | 1/1 |
|--------------------------------------------------------------------------------------------|-----|
|  202409   |     |
|  202408 |     |
|                                                                                            |     |
|                                                                                            |     |
|                                                                                            |     |

| ◀ Photo                                                                                               | 1/1 |
|-------------------------------------------------------------------------------------------------------|-----|
|  Rmg20240904120123   |     |
|  Rmg20240904120121 |     |
|                                                                                                       |     |
|                                                                                                       |     |
|                                                                                                       |     |

## Kép törlése

Egy adott kép megnyitása után röviden megnyomhatja a SET gombot.  
egyetlen kép vagy az aktuális fényképalbum törlése.



## Szállító/forgalmazó

Sunnysoft s.r.o.  
Kovanecká 2390/1a  
190 00 Prága 9  
Cseh Köztársaság  
[www.sunnysoft.cz](http://www.sunnysoft.cz)

## Műszaki adatok

|                                |                                                                                         |
|--------------------------------|-----------------------------------------------------------------------------------------|
| <b>Modell</b>                  | TR10                                                                                    |
| NETD                           | < 50mK                                                                                  |
| Szuperfelbontás                | 192X192                                                                                 |
| Minimális látótávolság         | 0.3m                                                                                    |
| HFOV                           | 50°x50°                                                                                 |
| IFOV                           | 8.89 mrad                                                                               |
| Képkocka sebesség              | 25 Hz                                                                                   |
| Gyújtótávolság                 | 1.35mm                                                                                  |
| Bruttó tárolókapacitás         | 8GB                                                                                     |
| Felhasználható tárolókapacitás | 6GB                                                                                     |
| Kimeneti port                  | C típus                                                                                 |
| Akkumulátorok                  | 3,7 V, 3000 mAh<br>Újratölthető lítium                                                  |
| Hőmérséklet mérési tartomány   | -20 °C-tól 550 °C-ig                                                                    |
| Pontosság                      | +2°C/+2%                                                                                |
| Kép tárolási kapacitás         | 30 000                                                                                  |
| Képfórmátum                    | JPEG                                                                                    |
| Pillanatkép a                  | 2,8" LCD kijelző                                                                        |
| Maximális képméret             | 240 X 240                                                                               |
| Színpaletták                   | Fehér forró, fekete forró, vas, szivárvány, keverék, vörös forró, kék forró, zöld forró |
| Méretek                        | ××224 76 91 mm                                                                          |
| Nettó súly                     | 345 g                                                                                   |



# MILESEEY<sup>®</sup> TOOLS



## TR10

Handheld Infrared Thermal Imager

### User Manual



## Product Overview

Thank you for your purchase of the Mileseeey TR10 handheld infrared thermal camera. To ensure optimal use and understanding of this device, please carefully read the user guide provided. The TR10 model boasts a suite of features designed for efficiency in maintenance and inspection tasks, making temperature detection more accurate and user-friendly.

## Key Features of The TR10

- **2.8-Inch Color LCD Display:** Offers an expansive viewing area to easily identify and analyze fault zones.
- **Adjustable Emissivity:** Allows for personalized settings to refine detection accuracy based on different materials.
- **Image Capture and Storage:** Equipped with the capability to take pictures and save them within a built-in 8GB memory, accommodating up to 30,000 images with temperature data for comprehensive analysis.
- **Convenient Data Transfer:** Features a USB connection for quick and easy export of images to PC terminals.
- **Integrated Lithium Battery:** Comes with a built-in battery and a TYPE-C charging interface, simplifying the charging process and data transfer.
- **Automatic Hot and Cold Spot Tracking:** Automatically identifies and locks onto the highest and lowest temperature points within a scene, enhancing diagnostic capabilities.
- **Cross-hair display** for easy targeting of measuring spot.
- **Customizable Temperature Alarms:** Enables setting of individual high and low temperature alarms, facilitating immediate attention to critical areas.
- **Extensive Temperature Range Measurement:** Capable of accurately measuring temperatures up to 550°C, suitable for a variety of industrial applications.

● **Portable and User-Friendly Design:** Ideal for professionals in maintenance and inspection, offering a practical solution for effective temperature monitoring and detection.

## Safety Instructions



- To ensure the accuracy of your measurements and your safety, please use this product strictly according to the guidelines provided in the user manual. Please be aware that failing to adhere to these instructions may lead to damages that are not covered under our free warranty service.



- To clean the exterior of this device, gently wipe it with a damp cloth or a mild soap solution. Avoid using abrasive cleaners, isopropyl alcohol, or any solvents on the instrument's casing, lens, and windows, as these substances can cause damage.



- Avoid operating this product in environments that are flammable, explosive, high in steam or humidity, or contain corrosive substances. Using the device under these conditions could impair its performance and pose safety risks.



- Cease using the product immediately if it becomes damaged, has been dropped, or has been modified in any way. Continuing to use the product under these conditions may lead to inaccurate measurements and could compromise safety.



- Please adjust to the correct emissivity of the target material to obtain an accurate temperature readouts.



- During charging, the product's internal temperature increases, potentially affecting measurement accuracy. Therefore, it is advised not to perform measurements while the device is charging or immediately after charging.



- Due to power consumption potentially raising the product's internal temperature, to maintain measurement accuracy, please allow the device to warm up for 2 minutes before use if it has not been used for a long time.

## Appearance



**1. USB-C Charging Port**

**2. LCD Screen**

**3. Picture Memory Record**

**4. Up/Down/Left/Right**

Short Press to Navigate

**5. Power on/off/Return**

Long Press to Power on Or off

Short Press to Return

**6. Settings**

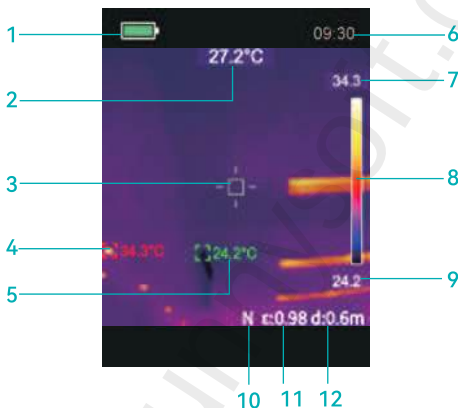
Short Press to Enter Setting Options

**7. Thermal Camera**

**8. Picture Capturing**

Short Press to Captures Pictures And Save

## Display Icon



1. Battery Status
2. Center Temperature
3. Center Point/Cross-Hairs
4. Max Temperature And Position
5. Min Temperature And Position
6. Time
7. Max Temperature On The Bar
8. Temperature Bar
9. Min Temperature On The Bar
10. N: Normal  
(Note: N will be shifted to H when High Temp Range is selected)
11. Emissivity
12. Detection Distance

## Setting Interface

|                                                                                     |                    |        |
|-------------------------------------------------------------------------------------|--------------------|--------|
|    |                    | <<     |
|    | Emissivity         | 0.98 > |
|    | Distance           | 0.6m > |
|    | Temp Range         | >      |
|    | Temperature Units  | >      |
|    | Palette            | >      |
|    | HI/LO Alarm        | >      |
|    | Display            | >      |
|    | Display Brightness | >      |
|    | Date & Time        | >      |
|    | Correction         | >      |
|    | USB Mode           | >      |
|   | Snap Mode          | >      |
|  | Auto Power Off     | >      |
|  | Language           | >      |
|  | Format Disk        | >      |

|                                                                                   |               |      |
|-----------------------------------------------------------------------------------|---------------|------|
|  | Factory Reset | >    |
|  | Dev Info      | TR10 |

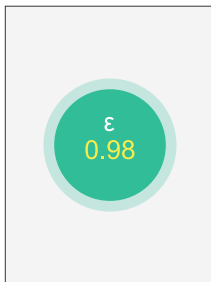
## Setting Instructions

- Press Button **SET** to enter the settings menu.
- Navigate to your desired option using Button ▲ / ▼ (up/down), and press Button **SET** again to access the setting.
- Adjust values or select sub-options using Button ▲ / ▼.
- Confirm and save your changes by pressing Button **SET**.
- To return to the main settings menu, briefly press Button .

## Emissivity

Choosing the correct emissivity is crucial for accurate temperature measurements since it greatly influences the surface temperature readings. To set the emissivity value, press Button **SET** and navigate to the setting interface. Adjust the value using Button ▲ / ▼. Once the adjustment is complete, a short press of Button  will return you to the main settings menu.

|                                                                                     |                     |
|-------------------------------------------------------------------------------------|---------------------|
|    | <<                  |
|    | Emissivity 0.98 >   |
|   | Distance 1.0m >     |
|  | Temp Range >        |
|  | Temperature Units > |
|  | Palette >           |
|  | HI/LO Alarm >       |





**Note:** Emissivity settings range from 0.01 to 0.99. For emissivity values of common materials, consult the table provided in the appendix.

## Emissivity Of Common Objects

| Materials       | Emissivity | Materials     | Emissivity |
|-----------------|------------|---------------|------------|
| Wood            | 0.85       | Black Paper   | 0.86       |
| Water           | 0.96       | Polycarbonate | 0.8        |
| Brick           | 0.75       | Concrete      | 0.97       |
| Stainless Steel | 0.14       | Copper Oxide  | 0.78       |
| Adhesive Tape   | 0.96       | Cast Iron     | 0.81       |
| Aluminium Plate | 0.09       | Rust          | 0.8        |
| Copper Plate    | 0.96       | Gypsum        | 0.75       |
| Black Aluminum  | 0.75       | Paint         | 0.9        |
| Human Skin      | 0.98       | Rubber        | 0.95       |
| Asphalt         | 0.96       | Soil          | 0.93       |
| PVC Plastic     | 0.93       |               |            |

## Distance Setting

For enhanced accuracy in temperature detection, set the distance information prior to measurement. To adjust the distance, select the distance option and press Button **SET** to access the value setting interface. Use Button ▲ / ▼ to adjust the distance value within the range of 0.3 to 3 meters. Once the adjustment is complete, press Button ① to return to the main settings menu.

|                                                                                   |                   |        |
|-----------------------------------------------------------------------------------|-------------------|--------|
|  |                   | <<     |
|  | Emissivity        | 0.98 > |
|  | Distance          | 1.0m > |
|  | Temp Range        | >      |
|  | Temperature Units | >      |
|  | Palette           | >      |
|  | HI/LO Alarm       | >      |



## Temp Range

To set the temperature range, select the Temp range option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to toggle between Normal and High Temperature range options. Press Button **SET** to confirm your selection. To return to the main settings menu, press Button ①. The Normal Temperature range is from -20°C to 150°C, and the High Temperature range is from 100°C to 550°C.

**Note:** Switching between temperature ranges takes around 10 seconds. Please wait for the device to complete the switch before proceeding with other operations or temperature measurements.

|                                                                                                     |        |
|-----------------------------------------------------------------------------------------------------|--------|
|                    | <<     |
|  Emissivity        | 0.98 > |
|  Distance          | 1.0m > |
|  Temp Range        | >      |
|  Temperature Units | >      |
|  Palette           | >      |
|  HI/LO Alarm       | >      |

|                     |                                                                                   |
|---------------------|-----------------------------------------------------------------------------------|
| <<                  | Temp Range                                                                        |
| Normal(-20°C~150°C) |  |
| High(100°C~550°C)   |                                                                                   |
|                     |                                                                                   |
|                     |                                                                                   |
|                     |                                                                                   |
|                     |                                                                                   |

## Unit

To set the unit, select the Unit option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to toggle between °C and °F. Press Button **SET** to confirm your selection. Press ▲ / ▼ to navigate to the ambient temperature setting, which enhances measurement accuracy for low emissivity materials, like metal or glass. Then Press Set button to enter the setting. Press ▲ / ▼ to input the ambient temperature value. To return to the main settings menu, press Button .

|                                                                                                     |        |
|-----------------------------------------------------------------------------------------------------|--------|
|                    | <<     |
|  Emissivity        | 0.98 > |
|  Distance          | 1.0m > |
|  Temp Range        | >      |
|  Temperature Units | >      |
|  Palette           | >      |
|  HI/LO Alarm       | >      |

|              |                                                                                   |
|--------------|-----------------------------------------------------------------------------------|
| <<           | Temperature Units                                                                 |
| °C           |  |
| °F           |                                                                                   |
| Ambient Temp | 24.0°C                                                                            |
|              |                                                                                   |
|              |                                                                                   |
|              |                                                                                   |

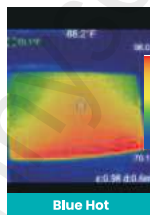
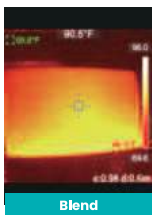
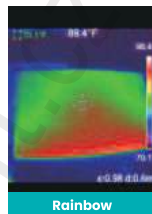
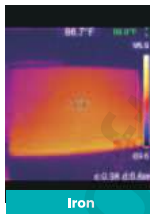
## Palette

To set the color palette, select the Palette option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to toggle 8 color palettes (White Hot, Black Hot, Iron, Rainbow, Blend, Red Hot, Blue Hot, Green Hot) . Press Button **SET** to confirm your selection. To return to the main settings menu, press Button (⏮) .

|                                                                                                     |        |
|-----------------------------------------------------------------------------------------------------|--------|
|                    | <<     |
|  Emissivity        | 0.98 > |
|  Distance          | 1.0m > |
|  Temp Range        | >      |
|  Temperature Units | >      |
|  Palette           | >      |
|  HI/LO Alarm       | >      |

|           |                                                                                   |
|-----------|-----------------------------------------------------------------------------------|
| <<        | Palette                                                                           |
| White Hot |  |
| Black Hot |                                                                                   |
| Iron      |                                                                                   |
| Rainbow   |                                                                                   |
| Blend     |                                                                                   |
| Red Hot   |                                                                                   |

|           |         |
|-----------|---------|
| <<        | Palette |
| Blue Hot  |         |
| Green Hot |         |
|           |         |
|           |         |
|           |         |



**Notes:** Short press Button ▲ / ▼ (up/down) can quick access the change of different color palettes.

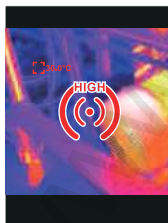
## HI/LO Alarm

To adjust the High/Low temperature alarm settings, select the High/LO temperature option and press Button **SET** to enter the value setting interface. Press Button **▲** / **▼** again to toggle the High/Low temperature alarm on or off, and press button **SET** to confirm. Use Button **▲** / **▼** to adjust the temperature value, and press Button **SET** to confirm your setting. Once complete, press Button **⏮** to return to the main settings menu.

|                   |        |
|-------------------|--------|
|                   | <<     |
| Emissivity        | 0.98 > |
| Distance          | 1.0m > |
| Temp Range        | >      |
| Temperature Units | >      |
| Palette           | >      |
| HI/LO Alarm       | >      |

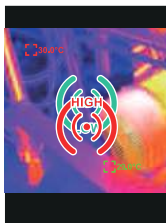
|                 |      |
|-----------------|------|
| << HI/LO Alarm  |      |
| HI Alarm Enable |      |
| LO Alarm Enable |      |
| High Temp Alarm | 30°C |
| Low Temp Alarm  | 29°C |
|                 |      |
|                 |      |



High Temp Alarm



Low Temp Alarm


High Temp Alarm And  
Low Temp Alarm

**Notes:** The default setting value for the high temperature alarm threshold is always higher than that of the low temperature alarm.

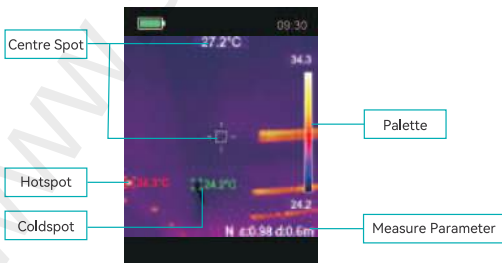
## Display Options

Select the Display Options and press Button **SET** to enter the setting interface. Press Button **▲** / **▼** scroll the different display elements and press Button **SET** to toggle the display elements on or off(High/Low Temp Dot, Center Dot, Palette(color bar), parameter(the set emissivity and distance)).

Once complete, press Button **Ⓢ** to return to the main settings menu.

|                                                                                                      |    |
|------------------------------------------------------------------------------------------------------|----|
|                     | << |
|  Display            | >  |
|  Display Brightness | >  |
|  Date & Time        | >  |
|  Correction         | >  |
|  USB Mode           | >  |
|  Snap Mode          | >  |

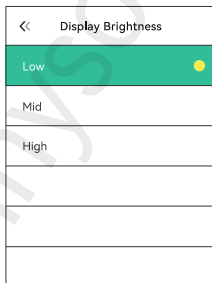
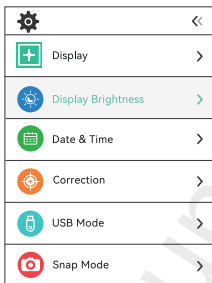
|                   |                                                                                   |
|-------------------|-----------------------------------------------------------------------------------|
| <<                | Display                                                                           |
| Hotspot           |  |
| Coldspot          |  |
| Centre Spot       |  |
| Palette           |  |
| Measure Parameter |  |
|                   |                                                                                   |





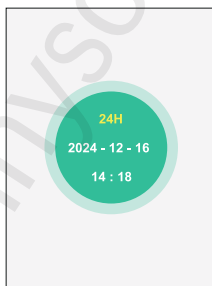
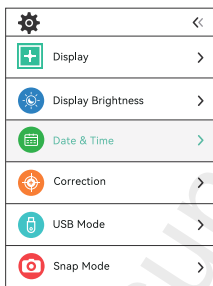
## Brightness

To adjust the screen brightness, select the Brightness option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to cycle through the low, middle, and high brightness options. Confirm your selection by pressing Button **SET**, then press Button (⏮) to return to the main settings menu.



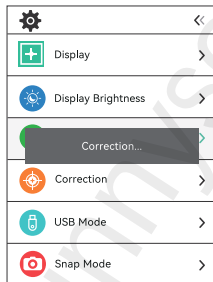
## Date & Time

To set the date and time, select the date & time option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to toggle between the 12H and 24H formats. Navigate to the desired setting field using Button ◀ / ▶ (left/right) . Adjust the value with Button ▲ / ▼ (up/down) . Once complete, press Button (Ⓢ) to return to the main settings menu.



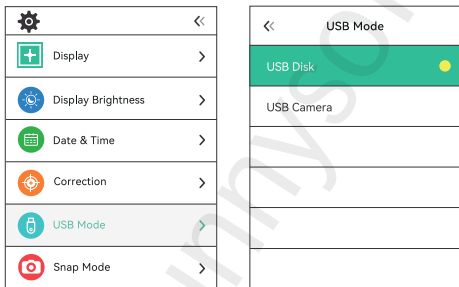
## Correction

The image clarity may compromise due to the noises produced on thermal sensor after a period of use. Select the Correction option and press Button **SET** to process the correction to eliminate the noises, ensuring the optimal clarity of thermal image.



## USB Mode

Select the USB Mode option and press Button **SET** to enter the setting interface. Press Button ▲ / ▼ again to toggle the USB Disk and USB Camera, and press Button **SET** to confirm your setting. Once complete, press Button (⏮) to return to the main settings menu.



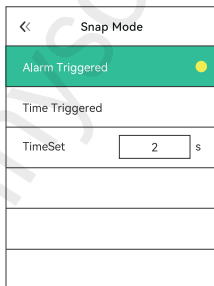
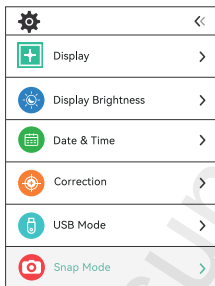
●1. Set the USB mode to USB Disk to browse pictures on the PC connecting the device to a computer with the USB cable.



**Note:** To activate U-Disk mode, restart the thermal imager and then connect the USB cable. Do not rename the Image folder or image files to prevent reading errors.

## Snap Mode

Select the Snap Mode option and press Button **SET** to enter the setting interface. Press Button **SET** again to toggle on/off the Alarm triggered option (picture captured when temperature exceeds the set threshold) and Time Triggered Option (picture captured every N seconds set), and press Button ▲ / ▼ to set the timing. Once complete, press Button (⏏) to return to the main settings menu.



## Auto Power Off

To adjust the auto power off timing, select the Auto Power off option and press Button **SET** to access the settings. Use Button **▲** / **▼** to cycle through the time options (5Min/10Min/30Min/off). Confirm your selection by pressing Button **SET**, and press Button **ⓘ** again to return to the settings menu.

|                                                                                                  |        |
|--------------------------------------------------------------------------------------------------|--------|
|                 | <<     |
|  Auto Power Off | >      |
|  Language       | >      |
|  Format Disk    | >      |
|  Factory Reset  | >      |
|  Dev Info       | TR10 > |
|                                                                                                  |        |

|        |                                                                                   |
|--------|-----------------------------------------------------------------------------------|
| <<     | Auto Power Off                                                                    |
| 5 Min  |  |
| 10 Min |                                                                                   |
| 30 Min |                                                                                   |
| Off    |                                                                                   |
|        |                                                                                   |

## Language

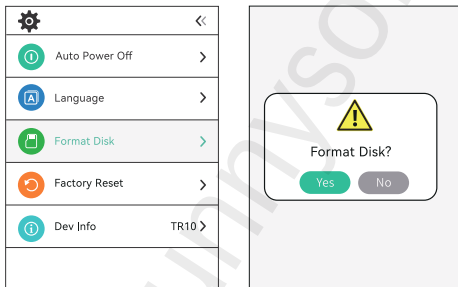
To set the language, select the Language option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to toggle different languages. Press Button **SET** to confirm your selection. To return to the main settings menu, press Button .

|                                                                                                  |        |
|--------------------------------------------------------------------------------------------------|--------|
|                 | <<     |
|  Auto Power Off | >      |
|  Language       | >      |
|  Format Disk    | >      |
|  Factory Reset  | >      |
|  Dev Info       | TR10 > |

|          |                                                                                   |
|----------|-----------------------------------------------------------------------------------|
| <<       | Language                                                                          |
| English  |  |
| Deutsch  |                                                                                   |
| Français |                                                                                   |
| Italiano |                                                                                   |
| Español  |                                                                                   |
| 中文       |                                                                                   |

## Format Disk

To format the disk, select the Format Disk option and press Button **SET** to enter the settings. Use Button ▲ / ▼ / ◀ / ▶ to toggle between the "Yes/No" options. Confirm your choice by pressing Button **SET** , then press Button (⏮) to return to the main settings menu.

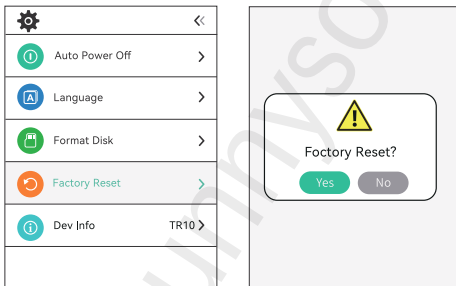


**Note:** Exercise caution when using the Format Disk function. Confirming this action will erase all data on the disk permanently.



## Factory Reset

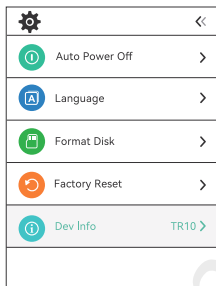
To enable factory reset, select the Factory Reset option and press Button **SET** to enter the settings. Use Button ▲ / ▼ / ◀ / ▶ to toggle between the "Yes/No" options. Confirm your choice by pressing Button **SET**, then press Button (ⓘ) to return to the main settings menu.



**Note:** Exercise caution when using the Factory Reset function. Confirming this action will erase all data on the disk permanently.

## Dev Info

Access this option by pressing button **SET** to check the general developing information of the device.



## Browse Image

Click button 5 to capture thermal images with comprehensive thermal data, which will be automatically saved to the disk. Short press button  to enter the photo album, and press button **SET** to enter the photo album interface. Press button **▲** / **▼** to cycle through different pictures and press button **SET** to open specific picture. The pictures are listed in a chronological order.

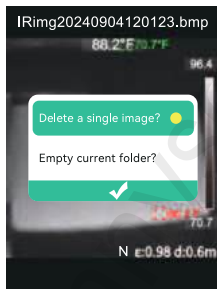


| << Album 1/1                                                                       |        |
|------------------------------------------------------------------------------------|--------|
|   | 202409 |
|  | 202408 |
|                                                                                    |        |
|                                                                                    |        |
|                                                                                    |        |

| << Photo 1/1                                                                       |                     |
|------------------------------------------------------------------------------------|---------------------|
|   | IRimg20240904120123 |
|  | IRimg20240904120121 |
|                                                                                    |                     |
|                                                                                    |                     |
|                                                                                    |                     |

## Image Deletion

Once opening a specific picture, short press button **SET** to choose to delete a single picture or current photo album.



## Specification:

|                             |                                                                                |
|-----------------------------|--------------------------------------------------------------------------------|
| Model                       | TR10                                                                           |
| NETD                        | < 50mK                                                                         |
| Super-Resolution            | 192X192                                                                        |
| Minimum Imaging Distance    | 0.3m                                                                           |
| HFOV                        | 50°×50°                                                                        |
| IIFOV                       | 8.89 mrad                                                                      |
| Frame Rate                  | 25 Hz                                                                          |
| Focal Length                | 1.35mm                                                                         |
| Gross Storage Capacity      | 8GB                                                                            |
| Usable Storabe Capacity     | 6GB                                                                            |
| Output Port                 | Type-C                                                                         |
| Battery                     | 3.7V, 3000mAh<br>Rechargeable Lithium                                          |
| Temperature Measuring Range | -20°C to 550°C                                                                 |
| Accuracy                    | ±2°C/+2%                                                                       |
| Picture Storage Capacity    | 30,000                                                                         |
| Picture Format              | JPEG                                                                           |
| Screen                      | 2.8" LCD Display                                                               |
| Max Picture Size            | 240 x 240                                                                      |
| Color Palettes              | White Hot, Black Hot, Iron,<br>Rainbow, Blend, Red Hot,<br>Blue Hot, Green Hot |
| Dimensions                  | 224*76*91mm                                                                    |
| Net Weight                  | 345g                                                                           |

## Warranty Terms

### Warranty Period:

◆ This product has one year guarantee in the precondition of non-artificial damage.

### Within the warranty period, certain maintenance costs will be charged under following cases:

- ◆ Damages caused by improper usage or maintenance of the machine;
- ◆ The machine had been disassembled or mended by non-authorized third party;
- ◆ Without the warranty card or purchase invoice;
- ◆ The serial number on the warranty card is different with the one on product;
- ◆ The serial number has been altered or abraded;
- ◆ Damaged by any force majeure factors,
- ◆ Replacement of worn out accessories;
- ◆ Damages caused by abnormal factors such as the temperature/humidity in usage;
- ◆ Damages caused by improper operation.

**Please send machine with warranty card & purchase invoice to local dealer if maintenance needed. The warranty card will not be reissued if lost; please keep it carefully for maintenance.**

## Contact Information

### **Shenzhen Mileseey Technology Co., Ltd.**

Add: No.3601 Block A, Tanglang Town Plaza West, Fuguang Community, Taoyuan Street, Nanshan District, Shenzhen, China

Website: [www.mileseey.net](http://www.mileseey.net)

Store: [www.mileseeytools.com](http://www.mileseeytools.com)

E-mail: [service@mileseey.com](mailto:service@mileseey.com)

Made in China

## Mileseey Technology (US) Inc.

Office Add: 17800 CASTLETON ST STE 665 CITY OF INDUSTRY, CA 91748

Manufacturer: Shenzhen Mileseey Technology Co., Ltd.

Add: No.3601 Block A, Tanglang Town Plaza West, Fuguang Community, Taoyuan Street, Nanshan District, Shenzhen, China

Store: [www.mileseeytools.com](http://www.mileseeytools.com)

E-mail: [service@mileseey.com](mailto:service@mileseey.com)

Made in China



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électroniques usagés à des points de  
collecte correspondants.  
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[www.quefairedermidechets.fr](http://www.quefairedermidechets.fr)



# MILESEEY<sup>®</sup> TOOLS



## TR10

Handheld Infrared Thermal Imager

Инструкции за употреба



## За продукта

**Благодарим ви за покупката на ръчната инфрачервена термовизионна камера MileseeY TR10. Моля, прочетете внимателно ръководството за потребителя, за да осигурите оптимална употреба и разбиране на работата на устройството. TR10 се отличава с набор от функции, предназначени за ефективност на задачите по поддръжка и инспекция, които правят откриването на температурата по-точно и удобно за потребителя.**

## Основни характеристики на TR10

- G2.8" цветен LCD дисплей: предлага голяма изобразителна площ за лесно идентифициране и анализ на зоните на повреда.
  - Регулируема емисионна способност: позволява персонализирани настройки за повишаване на точността на откриване в зависимост от различните материали.
  - Заснемане и съхранение на изображения: Снабден е с възможност за заснемане на изображения и съхраняването им във вградената памет с капацитет 8 GB, която може да побере до 30 000 изображения с данни за температурата за сравнителен анализ.
  - Удобен трансфер на данни: устройството е оборудвано с USB връзка за бързо и лесно експортиране на изображения към компютър.
  - Вградена литиева батерия: разполага с вградена батерия и интерфейс за зареждане Type-C, за да опрости процеса на зареждане и прехвърляне на данни.
  - Автоматично проследяване на горещи и студени : автоматично идентифициране и насочване към най-високите и най-ниските температурни точки на наблюдаваната сцена, което подобрява диагностичните възможности.
  - Кръстосване на дисплея за лесно насочване на мястото на измерване.
  - Аларми за температура с възможност за персонализиране: позволява ви да задавате индивидуални аларми за висока и ниска температура, което улеснява насочването на вниманието към критичните области.
  - Широк диапазон на измерване на температурата: подходящ за различни индустриални приложения
- приложения: измерва с точност температури до 550 °C.

Преносим и удобен за употреба дизайн: Подходящ за специалисти по поддръжка и инспекция, той предлага практично решение за ефективно наблюдение и откриване на температурата.

## Инструкции за безопасност



За да се гарантира точността на измерването и вашата безопасност, използвайте този продукт точно според инструкциите в ръководството за . Моля, имайте предвид, че неспазването на тези инструкции може да доведе до повреди, които не се покриват от гаранционното обслужване.



За да почистите външната страна на устройството, внимателно я избършете с влажна кърпа или мек сапунен разтвор. Не използвайте абразивни почистващи препарати, изопропилов алкохол или каквито и да било разтворители върху капака, лещите или прозорците на устройството, тъй като вещества могат да причинят повреда.



Не използвайте този продукт в среда, която е запалима, взривоопасна, с високо съдържание на пара или влага, или съдържа корозивни вещества. Използването на продукта при тези условия може да влоши работата му и да създаде опасност за безопасността.



Ако продуктът е повреден, изпуснат или повреден по друг начин, незабавно спрете да го използвате. Продължителната употреба на продукта при тези условия може да доведе до неточни измервания и да застраши безопасността.



За да получите точни данни за температурата, задайте правилната емисионна способност на целевия материал.



Тъй като устройството се загрева по време на включване, това може да повлияе на точността на измерването. Затова се препоръчва да не използвате устройството по време на зареждане или непосредствено след него.



Пестенето на енергия може да повиши температурата на продукта, за да се повиши точността на измерването на температурата, следвайте препоръката да включите устройството 2 минути преди употреба, ако устройството не е било използвано дълго време.

## Външен вид на устройството



**1. USB-C порт за зареждане**

**2. LCD екран**

**3. Запис на изображения в паметта**

**4. Нагоре/надолу/наляво/надясно**

Кратко натискане за навигация

**5. Включване/изключване/връщане**

Дълго натискане, за да включите или изключите

Кратко натискане за връщане

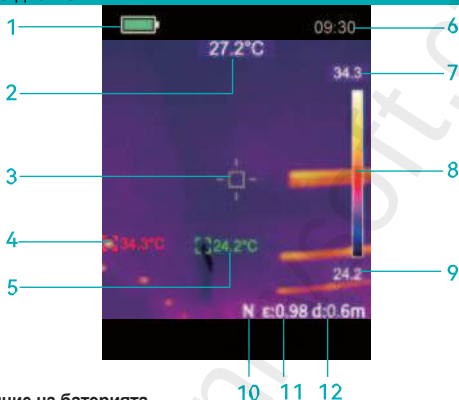
**6. Настройки**

Кратко натискане за влизане в опциите за настройка

**7. Термовизионна камера**

**8. Заснемане на изображения**

Кратко натискане за заснемане на изображения и запазване



1. Състояние на батерията
  2. Централна температура
  3. Централна точка/ кръстосана коса
  4. Максимална температура и позиция
  5. Минимална температура и положение
  6. Време
  7. Максимална температура на колоната
  8. Температурна колона
  9. Минимална температура на колоната
  10. N: Нормално (нормален температурен )
- (Забележка: При избор на висок температурен диапазон N се измества към H)
11. Емисии
  12. Разстояние на откриване

|   |                    |                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------------|
|                                                                                    | Emissivity         | 0.98 > Емисионност       |
|                                                                                    | Distance           | 0.6m > Разстояние        |
|                                                                                    | Temp Range         | > Температурен диапазон  |
|                                                                                    | Temperature Units  | > Температурни единици   |
|                                                                                    | Palette            | > Палет                  |
|                                                                                    | HI/LO Alarm        | > Аларма                 |
|                                                                                    | Display            | > HI/LO Дисплей          |
|                                                                                    | Display Brightness | > Яркост на дисплея      |
|                                                                                    | Date & Time        | > Корекция на дата и час |
|                                                                                    | Correction         | > Режим USB              |
|                                                                                    | USB Mode           | > Режим на заснемане     |
|                                                                                   | Snap Mode          | > Автоматично изключване |
|                                                                                  | Auto Power Off     | > Език                   |
|                                                                                  | Language           | > Форматиране на         |
|                                                                                  | Format Disk        |                          |

|                                                                                   |               |      |
|-----------------------------------------------------------------------------------|---------------|------|
|  | Factory Reset | >    |
|  | Dev Info      | TRIO |

Фабрични

настройки

Информация за  
устройството

## Инструкции за настройка

- Натиснете бутона SET, за да влезете в менюто за настройки.
- Използвайте бутона ▲▼ (нагоре/надолу), за да превъртите до желаната опция, и натиснете отново бутона SET, за да въведете настройките.
- ▲▼ Използвайте бутона, за да редактирате стойности или да изберете подварианти.
- Потвърдете и запазете промените, като натиснете бутона SET
- За да се върнете към главното меню с настройки, натиснете за кратко 

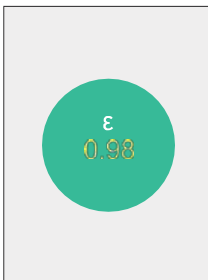
## Емисионна способност

Правилният избор на коефициента на излъчване е от съществено значение за точното измерване на температурата, тъй като той оказва значително влияние върху данните за температурата на повърхността. За да зададете стойността на емисионността, натиснете бутона SET и преминете към интерфейса за настройка.

Задайте стойността, ▲▼

Когато настройките са завършени, натиснете за кратко  за да се върнете към

към главното меню с настройки.





Забележка: Емисионността може да се задава в диапазон от стойности от 0,01 до 0,99. Стойности на емисионната способност

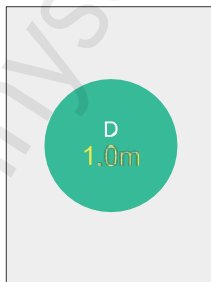
обичайните материали са изброени в таблицата по-долу.

## Емисионна способност на обикновени обекти

| Материали          | Емисионна способност | Материали          | Емисионна способност |
|--------------------|----------------------|--------------------|----------------------|
| Дърво              | 0.85                 | Хартия за тетрадки | 0.86                 |
| Вода               | 0.96                 | Поликарбонат       | 0.8                  |
| Тухли              | 0.75                 | Бетон              | 0.97                 |
| Неръждаема стомана | 0.14                 | Меден оксид        | 0.78                 |
| Залепваща лента    | 0.96                 | Чугун              | 0.81                 |
| Алуминиева плоча   | 0.09                 | Изрежете           | 0.8                  |
| Меден лист         | 0.96                 | Гипс               | 0.75                 |
| Черен алуминий     | 0.75                 | Цвят               | 0.9                  |
| Човешка кожа       | 0.98                 | Каучук             | 0.95                 |
| Асфалт             | 0.96                 | Почва              | 0.93                 |
| PVC пластмаса      | 0.93                 |                    |                      |

## Задаване на разстоянието

За да увеличите точността на откриване на температурата, задайте информацията за разстоянието преди измерването. За да зададете разстоянието, изберете опцията за разстоянието и натиснете бутона SET, за да влезете в интерфейса за задаване на стойността. Използвайте бутоните ▲▼, за да зададете стойността на разстоянието между 0,3 и 3 метра. Когато настройката е завършена, натиснете бутона

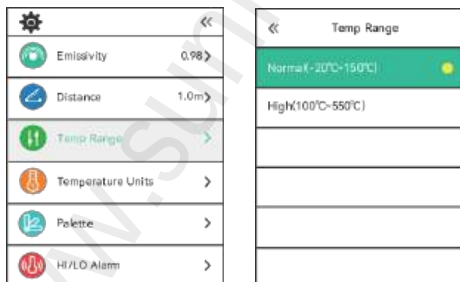


## Температурен диапазон

За да зададете температурния диапазон, изберете Temp range (Температурен диапазон) и натиснете SET, за да въведете настройките. ▲▼ Използвайте , за да превключвате между нормален и висок температурен диапазон. Натиснете SET, за да потвърдите избора. За да се върнете към главното меню с настройки, натиснете (⏮)

Нормалният температурен диапазон е от -20°C до 150°C, а високият температурен диапазон е от 100°C до 550°C.

Забележка: Превключването между температурните диапазони отнема приблизително 10 . Изчакайте инструментът да завърши превключването, преди да продължите с по-нататъшни операции или измервания на температурата.



## Единица

За да зададете единицата, изберете Unit и натиснете бутона SET, за да влезете в настройките. ▲▼ Натиснете бутона , за да превключите между °C и °F. Натиснете бутона SET , за да потвърдите избора си. ▲▼ Натиснете бутоните, за да преминете към настройката за температура на околната среда, която увеличава точността на измерванията за материали с ниска емисионна способност, като метал или стъкло. След това натиснете бутона SET, за да въведете настройката. Натиснете бутоните ▲▼, за да зададете температурата на околната среда.

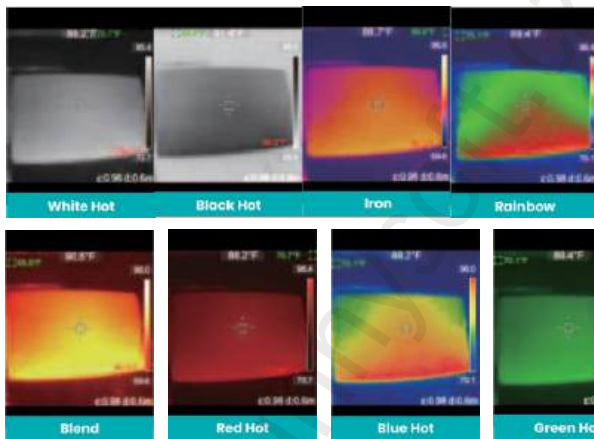
За да се върнете към основното меню с настройки, натиснете бутона



## Палитра

За да зададете цветовата палитра, изберете Палитра и натиснете SET, за да влезете в настройките. ▲▼ Използвайте бутоните, за да превключвате между 8-те цветови палитри (White Hot (Бяло горещо), Black Hot (Черно горещо), Iron (Желязо), Rainbow (Дъга), Blend (Смес), Red Hot (Червено горещо), Blue Hot (Синьо горещо), Green Hot (Зелено горещо)). Натиснете бутона SET, за да потвърдите избора си. За да се върнете в главното меню с настройки, натиснете бутона

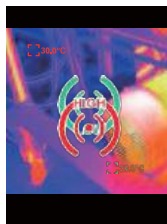
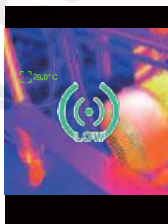




▲ ▼ Забележки: можете бързо да преминете към (нагоре/надолу), като натиснете бутона за кратко  
най-разнообразни цветови палитри.

## HI/LO аларма (аларма за висока и ниска температура)

За да регулирате настройките на алармата за висока/ниска температура, изберете Висока/ниска температура и натиснете SET, за да влезете в интерфейса за задаване на стойности. ▲▼ Натиснете отново, за да активирате или деактивирате алармата за висока/ниска температура, и потвърдете с натискане на бутона SET. Използвайте бутона ▲▼, за да зададете стойността на температурата и натиснете бутона SET, за да потвърдите настройката. Когато приключите, натиснете бутона  за да се върнете в главното меню за настройки.



Аларма за възникнала температура

Аларма за висока температура

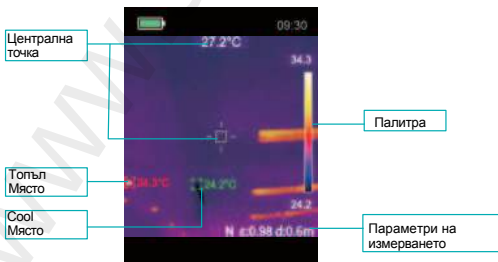
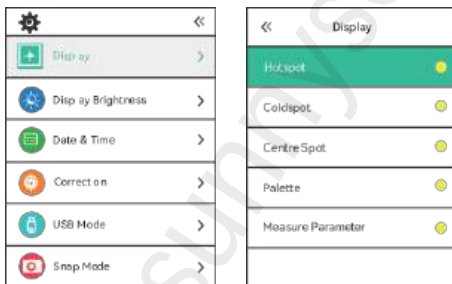
Аларма за ниска температура

и аларма за ниска температура

Забележки: настройката по подразбиране на прага на алармата за висока температура е винаги по-висока настройката на алармата за ниска температура.

## Опции за показване

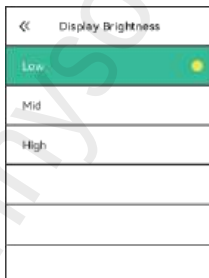
Изберете Display Options и натиснете бутона SET, за да влезете в интерфейса за настройка. Натиснете бутона ▲▼, за да превъртите до различните елементи на дисплея, и натиснете бутона SET, за да включите или изключите елементите на дисплея (High/Low Temp Dot (Висока/ниска температурна точка), Center Dot (Централна точка), Palette (цветова лента), Parameter (настройка на излъчването и разстоянието)). Когато приключите, натиснете бутона  за да се върнете в главното меню за настройка.





## Яркост

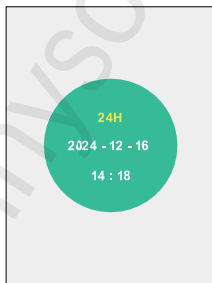
За да регулирате яркостта на екрана, изберете Brightness (Яркост) и натиснете SET, за да влезете в настройките. Използвайте бутона ▲▼, за да изберете между Ниска, Средна и Висока яркост. Потвърдете настройките, като натиснете бутона SET, след което натиснете бутона , за да се върнете в главното меню. 



## Дата и час

За да зададете датата и часа, изберете Дата и час и натиснете бутона SET, за да влезете в настройките. ▲▼◀ / ▶ Използвайте бутона, за да превключвате между форматите 12H и 24H. Използвайте бутона, за да преминете към желаното поле за настройка. Задайте стойността с помощта на бутона ▲▼

Когато приключите, натиснете бутона  Връщане към  
към главното меню с настройки.



## Корекция

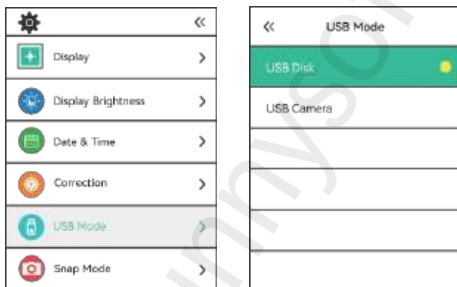
След определен период на употреба яснотата на изображението може да се влоши поради шума, генериран от термосензора. Изберете Correction (Корекция) и натиснете бутона SET (Настрой), за да извършите корекция за отстраняване на шума и осигуряване на оптимална яснота на термоизображението.



## Режим USB

Изберете USB режим и натиснете бутона SET, за да влезете в интерфейса. ▲▼ Натиснете бутоните, за да превключите между USB диск и USB камера, потвърдете избора с натискане на бутона SET.

Когато завършите настройките и се върнете в главното меню, (1)



1. Настройте режима USB на USB Disk (USB диск), за да преглеждате изображения на компютъра, който свързвате с компютъра с USB кабела.

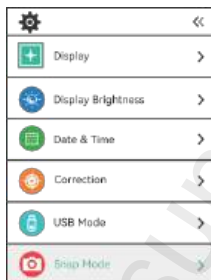


**Забележка:** За да активирате режима U-Disk, рестартирайте термовизионната камера и след това свържете USB кабела. Не преименувайте папката Image (Изображение) или файловете с изображения, за да избегнете грешки при четене.

## Режим Snap - заснемане на моментна снимка

Изберете Snap Mode и натиснете бутона SET, за да влезете в интерфейса за настройка. Натиснете отново бутона SET, за да активирате/деактивирате опцията Alarm Triggered (снимка се прави, когато температурата надвиши зададения ) и опцията Time Triggered (снимка се прави на всеки N зададени секунди) и натиснете бутона

▲▼ да зададете времето. Когато приключите, натиснете бутона  за връщане към главното меню с настройки.



## Автоматично изключване

За да настроите времето за автоматично изключване на захранването, изберете Auto Power off (Автоматично изключване на захранването) и натиснете бутона SET, за да влезете в настройките.

▲ ▼ Използвайте бутоните, за да превъртите опциите за време (5Min/10Min/30Min/off). Натиснете бутона SET, за да потвърдите избора си, след което натиснете бутона за връщане в менюто с настройки.



## Език

За да зададете езика, изберете Language и натиснете SET, за да влезете в настройките. ▲▼ Използвайте бутоните, за да превключвате езиците. Натиснете бутона SET, за да потвърдите избора. За да в главното меню с настройки, натиснете бутона 



## Форматиране на диска

За да форматираме диска, изберете Format disc и натиснете SET, за да въведете настройките. ▲▼◀▶ Използвайте , за да превключвате между "Да/Не". Потвърдете избора си, като натиснете бутона SET, след което натиснете бутона  за връщане главно меню с настройки.



**Забележка:** Внимавайте, когато използвате функцията Format Disk (Форматиране на диск). Потвърждаването на това действие ще изтрие окончателно всички данни на диска.



## Фабрични настройки

За да активирате нулирането на фабричните настройки, изберете Factory reset (Нулиране на фабрични настройки) и натиснете бутона SET, за да влезете в настройките.▲▼◀▶Използвайте , за да превключвате между опциите "Да/Не". потвърдете избора си, като натиснете SET , след което натиснете бутона , за да се върнете в главното меню с настройки.



**Забележка:** Внимавайте, когато използвате функцията за възстановяване на фабричните настройки. Бъдете предпазливи, когато потвърждавате това действие, което ще изтрие окончателно всички данни на диска.

## Информация за устройството - Dev Info

За да отворите тази опция, натиснете бутона SET и проверете общата информация за развитието на устройството.



## Преглеждане на изображения

Щракнете върху бутон 5, за да направите термоизображения с изчерпателни термични данни, които автоматично се записват на диска.

Натиснете кратко бутона , за да влезете във фотоалбума и натиснете бутона

SET въведете фотоалбума. Натиснете ▲ ▼

превъртете различните изображения и натиснете бутона SET, за да отворите конкретен образ. Изображенията са подредени хронологично.

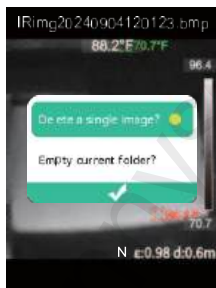


| ◀ Album                                                                                    | 1/1 |
|--------------------------------------------------------------------------------------------|-----|
|  202409  |     |
|  202408 |     |
|                                                                                            |     |
|                                                                                            |     |
|                                                                                            |     |
|                                                                                            |     |

| ◀ Photo                                                                                               | 1/1 |
|-------------------------------------------------------------------------------------------------------|-----|
|  Rmg20240904120123  |     |
|  Rmg20240904120121 |     |
|                                                                                                       |     |
|                                                                                                       |     |
|                                                                                                       |     |
|                                                                                                       |     |

## Изтриване на **изображението**

След като отворите определено изображение, можете да натиснете за кратко бутона SET изберете да изтриете отделно изображение или текущия фотоалбум.



## Доставчик/дистрибутор

Sunnysoft s.r.o.  
Kovanecká 2390/1a  
190 00 Прага 9  
Чешка република  
[www.sunnysoft.cz](http://www.sunnysoft.cz)

## Спецификации

|                                        |                                                                                            |
|----------------------------------------|--------------------------------------------------------------------------------------------|
| Модел                                  | TR10                                                                                       |
| NETD                                   | < 50mK                                                                                     |
| Суперрезолюция                         | 192X192                                                                                    |
| Минимално разстояние за гледане        | 0.3m                                                                                       |
| HFOV                                   | 50°×50°                                                                                    |
| IFOV                                   | 8.89 mrad                                                                                  |
| Честота на кадрите                     | 25 Hz                                                                                      |
| Фокусно разстояние                     | 135mm                                                                                      |
| Брутен капацитет за съхранение         | 8GB                                                                                        |
| Използваем капацитет за съхранение     | 6GB                                                                                        |
| Изходен порт                           | Тип C                                                                                      |
| Батерии                                | 3,7 V, 3000 mAh<br>Акумулаторна литиева                                                    |
| Обхват на измерване на температурата   | -20 °C до 550 °C                                                                           |
| Точност                                | +2°C/+2%                                                                                   |
| Капацитет за съхранение на изображения | 30 000                                                                                     |
| Формат на изображението                | JPEG                                                                                       |
| Екранна снимка на                      | 2,8-инчов LCD дисплей                                                                      |
| Максимален размер на изображението     | 240 X 240                                                                                  |
| Цветови палитри                        | Бяло горещо, черно горещо, желязо, дъга, смес, червено горещо, синьо горещо, зелено горещо |
| Размери                                | ××224 76 91 mm                                                                             |
| Нетно тегло                            | 345 g                                                                                      |

# MILESEEY<sup>®</sup> TOOLS



## TR10

Handheld Infrared Thermal Imager

User Manual



## Product Overview

Thank you for your purchase of the Mileseeey TR10 handheld infrared thermal camera. To ensure optimal use and understanding of this device, please carefully read the user guide provided. The TR10 model boasts a suite of features designed for efficiency in maintenance and inspection tasks, making temperature detection more accurate and user-friendly.

## Key Features of The TR10

- **2.8-Inch Color LCD Display:** Offers an expansive viewing area to easily identify and analyze fault zones.
- **Adjustable Emissivity:** Allows for personalized settings to refine detection accuracy based on different materials.
- **Image Capture and Storage:** Equipped with the capability to take pictures and save them within a built-in 8GB memory, accommodating up to 30,000 images with temperature data for comprehensive analysis.
- **Convenient Data Transfer:** Features a USB connection for quick and easy export of images to PC terminals.
- **Integrated Lithium Battery:** Comes with a built-in battery and a TYPE-C charging interface, simplifying the charging process and data transfer.
- **Automatic Hot and Cold Spot Tracking:** Automatically identifies and locks onto the highest and lowest temperature points within a scene, enhancing diagnostic capabilities.
- **Cross-hair display** for easy targeting of measuring spot.
- **Customizable Temperature Alarms:** Enables setting of individual high and low temperature alarms, facilitating immediate attention to critical areas.
- **Extensive Temperature Range Measurement:** Capable of accurately measuring temperatures up to 550°C, suitable for a variety of industrial applications.

● Portable and User-Friendly Design: Ideal for professionals in maintenance and inspection, offering a practical solution for effective temperature monitoring and detection.

## Safety Instructions



- To ensure the accuracy of your measurements and your safety, please use this product strictly according to the guidelines provided in the user manual. Please be aware that failing to adhere to these instructions may lead to damages that are not covered under our free warranty service.



- To clean the exterior of this device, gently wipe it with a damp cloth or a mild soap solution. Avoid using abrasive cleaners, isopropyl alcohol, or any solvents on the instrument's casing, lens, and windows, as these substances can cause damage.



- Avoid operating this product in environments that are flammable, explosive, high in steam or humidity, or contain corrosive substances. Using the device under these conditions could impair its performance and pose safety risks.



- Cease using the product immediately if it becomes damaged, has been dropped, or has been modified in any way. Continuing to use the product under these conditions may lead to inaccurate measurements and could compromise safety.



- Please adjust to the correct emissivity of the target material to obtain an accurate temperature readouts.





- During charging, the product's internal temperature increases, potentially affecting measurement accuracy. Therefore, it is advised not to perform measurements while the device is charging or immediately after charging.



- Due to power consumption potentially raising the product's internal temperature, to maintain measurement accuracy, please allow the device to warm up for 2 minutes before use if it has not been used for a long time.

## Appearance



**1. USB-C Charging Port**

**2. LCD Screen**

**3. Picture Memory Record**

**4. Up/Down/Left/Right**

Short Press to Navigate

**5. Power on/off/Return**

Long Press to Power on Or off

Short Press to Return

**6. Settings**

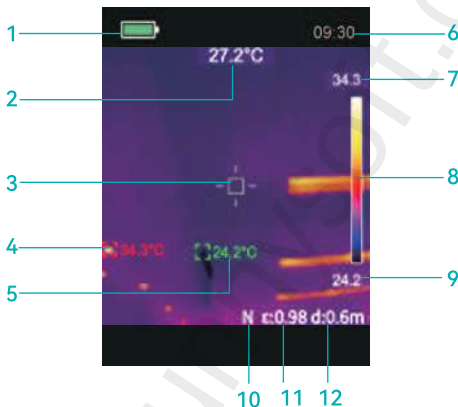
Short Press to Enter Setting Options

**7. Thermal Camera**

**8. Picture Capturing**

Short Press to Captures Pictures And Save

## Display Icon



1. Battery Status
2. Center Temperature
3. Center Point/Cross-Hairs
4. Max Temperature And Position
5. Min Temperature And Position
6. Time
7. Max Temperature On The Bar
8. Temperature Bar
9. Min Temperature On The Bar
10. N: Normal  
(Note: N will be shifted to H when High Temp Range is selected)
11. Emissivity
12. Detection Distance

## Setting Interface

|                                                                                     |                    |        |
|-------------------------------------------------------------------------------------|--------------------|--------|
|    |                    | <<     |
|    | Emissivity         | 0.98 > |
|    | Distance           | 0.6m > |
|    | Temp Range         | >      |
|    | Temperature Units  | >      |
|    | Palette            | >      |
|    | HI/LO Alarm        | >      |
|    | Display            | >      |
|    | Display Brightness | >      |
|    | Date & Time        | >      |
|    | Correction         | >      |
|    | USB Mode           | >      |
|   | Snap Mode          | >      |
|  | Auto Power Off     | >      |
|  | Language           | >      |
|  | Format Disk        | >      |

|                                                                                   |               |      |
|-----------------------------------------------------------------------------------|---------------|------|
|  | Factory Reset | >    |
|  | Dev Info      | TR10 |

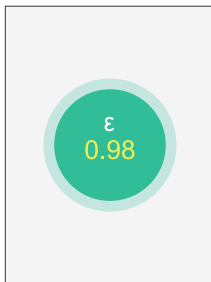
## Setting Instructions

- Press Button **SET** to enter the settings menu.
- Navigate to your desired option using Button ▲ / ▼ (up/down), and press Button **SET** again to access the setting.
- Adjust values or select sub-options using Button ▲ / ▼.
- Confirm and save your changes by pressing Button **SET**.
- To return to the main settings menu, briefly press Button .

## Emissivity

Choosing the correct emissivity is crucial for accurate temperature measurements since it greatly influences the surface temperature readings. To set the emissivity value, press Button **SET** and navigate to the setting interface. Adjust the value using Button ▲ / ▼. Once the adjustment is complete, a short press of Button  will return you to the main settings menu.

|                                                                                     |                     |
|-------------------------------------------------------------------------------------|---------------------|
|    | <<                  |
|    | Emissivity 0.98 >   |
|   | Distance 1.0m >     |
|  | Temp Range >        |
|  | Temperature Units > |
|  | Palette >           |
|  | HI/LO Alarm >       |



**Note:** Emissivity settings range from 0.01 to 0.99. For emissivity values of common materials, consult the table provided in the appendix.

### Emissivity Of Common Objects

| Materials       | Emissivity | Materials     | Emissivity |
|-----------------|------------|---------------|------------|
| Wood            | 0.85       | Black Paper   | 0.86       |
| Water           | 0.96       | Polycarbonate | 0.8        |
| Brick           | 0.75       | Concrete      | 0.97       |
| Stainless Steel | 0.14       | Copper Oxide  | 0.78       |
| Adhesive Tape   | 0.96       | Cast Iron     | 0.81       |
| Aluminium Plate | 0.09       | Rust          | 0.8        |
| Copper Plate    | 0.96       | Gypsum        | 0.75       |
| Black Aluminum  | 0.75       | Paint         | 0.9        |
| Human Skin      | 0.98       | Rubber        | 0.95       |
| Asphalt         | 0.96       | Soil          | 0.93       |
| PVC Plastic     | 0.93       |               |            |

## Distance Setting

For enhanced accuracy in temperature detection, set the distance information prior to measurement. To adjust the distance, select the distance option and press Button **SET** to access the value setting interface. Use Button ▲ / ▼ to adjust the distance value within the range of 0.3 to 3 meters. Once the adjustment is complete, press Button ① to return to the main settings menu.

|                                                                                   |                   |        |
|-----------------------------------------------------------------------------------|-------------------|--------|
|  |                   | <<     |
|  | Emissivity        | 0.98 > |
|  | Distance          | 1.0m > |
|  | Temp Range        | >      |
|  | Temperature Units | >      |
|  | Palette           | >      |
|  | HI/LO Alarm       | >      |



## Temp Range

To set the temperature range, select the Temp range option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to toggle between Normal and High Temperature range options. Press Button **SET** to confirm your selection. To return to the main settings menu, press Button ①. The Normal Temperature range is from -20°C to 150°C, and the High Temperature range is from 100°C to 550°C.

**Note:** Switching between temperature ranges takes around 10 seconds. Please wait for the device to complete the switch before proceeding with other operations or temperature measurements.

|                                                                                                     |        |
|-----------------------------------------------------------------------------------------------------|--------|
|                    | <<     |
|  Emissivity        | 0.98 > |
|  Distance          | 1.0m > |
|  Temp Range        | >      |
|  Temperature Units | >      |
|  Palette           | >      |
|  HI/LO Alarm       | >      |

|                     |                                                                                   |
|---------------------|-----------------------------------------------------------------------------------|
| <<                  | Temp Range                                                                        |
| Normal(-20°C~150°C) |  |
| High(100°C~550°C)   |                                                                                   |
|                     |                                                                                   |
|                     |                                                                                   |
|                     |                                                                                   |
|                     |                                                                                   |



## Unit

To set the unit, select the Unit option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to toggle between °C and °F. Press Button **SET** to confirm your selection. Press ▲ / ▼ to navigate to the ambient temperature setting, which enhances measurement accuracy for low emissivity materials, like metal or glass. Then Press Set button to enter the setting. Press ▲ / ▼ to input the ambient temperature value. To return to the main settings menu, press Button .

|                                                                                                     |        |
|-----------------------------------------------------------------------------------------------------|--------|
|                    | <<     |
|  Emissivity        | 0.98 > |
|  Distance          | 1.0m > |
|  Temp Range        | >      |
|  Temperature Units | >      |
|  Palette           | >      |
|  HI/LO Alarm       | >      |

|              |                                                                                   |
|--------------|-----------------------------------------------------------------------------------|
| <<           | Temperature Units                                                                 |
| °C           |  |
| °F           |                                                                                   |
| Ambient Temp | 24.0°C                                                                            |
|              |                                                                                   |
|              |                                                                                   |
|              |                                                                                   |

## Palette

To set the color palette, select the Palette option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to toggle 8 color palettes (White Hot, Black Hot, Iron, Rainbow, Blend, Red Hot, Blue Hot, Green Hot) . Press Button **SET** to confirm your selection. To return to the main settings menu, press Button (⏮) .

|                                                                                   |                   |        |
|-----------------------------------------------------------------------------------|-------------------|--------|
|  |                   | ⏮      |
|  | Emissivity        | 0.98 > |
|  | Distance          | 1.0m > |
|  | Temp Range        | >      |
|  | Temperature Units | >      |
|  | Palette           | >      |
|  | HI/LO Alarm       | >      |

|           |                                                                                   |
|-----------|-----------------------------------------------------------------------------------|
| ⏮         | Palette                                                                           |
| White Hot |  |
| Black Hot |                                                                                   |
| Iron      |                                                                                   |
| Rainbow   |                                                                                   |
| Blend     |                                                                                   |
| Red Hot   |                                                                                   |

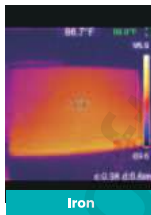
|           |         |
|-----------|---------|
| ⏮         | Palette |
| Blue Hot  |         |
| Green Hot |         |
|           |         |
|           |         |
|           |         |



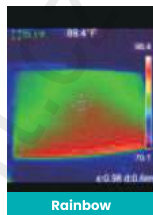
White Hot



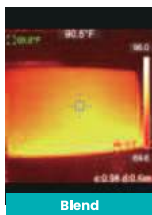
Black Hot



Iron



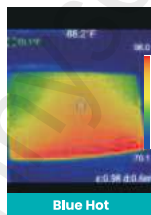
Rainbow



Blend



Red Hot



Blue Hot

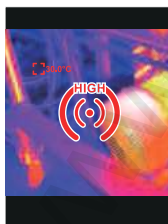
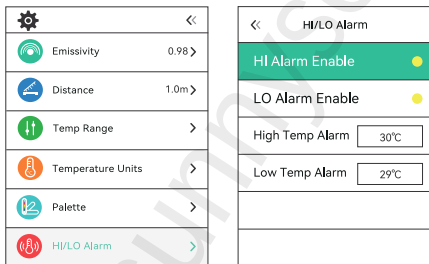


Green Hot

**Notes:** Short press Button ▲ / ▼ (up/down) can quick access the change of different color palettes.

## HI/LO Alarm

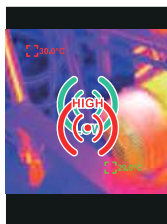
To adjust the High/Low temperature alarm settings, select the High/LO temperature option and press Button **SET** to enter the value setting interface. Press Button **▲** / **▼** again to toggle the High/Low temperature alarm on or off, and press button **SET** to confirm. Use Button **▲** / **▼** to adjust the temperature value, and press Button **SET** to confirm your setting. Once complete, press Button **⏮** to return to the main settings menu.



High Temp Alarm



Low Temp Alarm

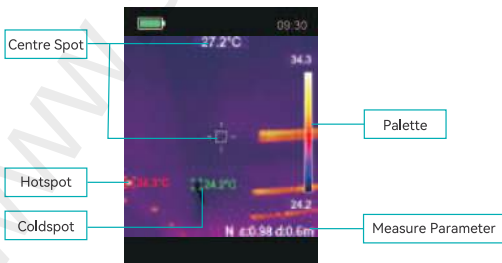
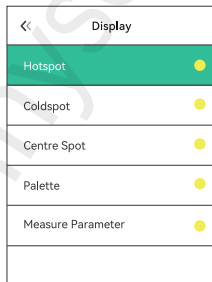
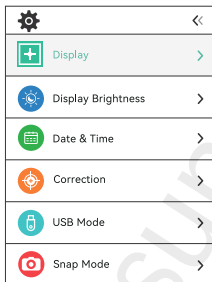

High Temp Alarm And  
Low Temp Alarm

**Notes:** The default setting value for the high temperature alarm threshold is always higher than that of the low temperature alarm.

## Display Options

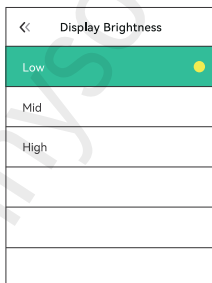
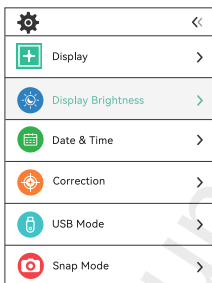
Select the Display Options and press Button **SET** to enter the setting interface. Press Button **▲** / **▼** scroll the different display elements and press Button **SET** to toggle the display elements on or off(High/Low Temp Dot, Center Dot, Palette(color bar), parameter(the set emissivity and distance)).

Once complete, press Button **Ⓢ** to return to the main settings menu.



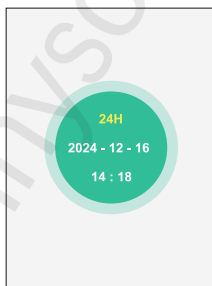
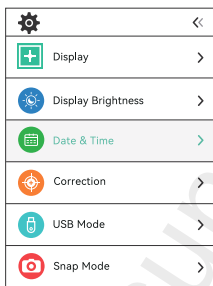
## Brightness

To adjust the screen brightness, select the Brightness option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to cycle through the low, middle, and high brightness options. Confirm your selection by pressing Button **SET** , then press Button (⏮) to return to the main settings menu.



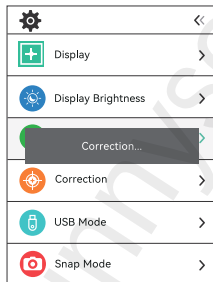
## Date & Time

To set the date and time, select the date & time option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to toggle between the 12H and 24H formats. Navigate to the desired setting field using Button ◀ / ▶ (left/right) . Adjust the value with Button ▲ / ▼ (up/down) . Once complete, press Button (ⓘ) to return to the main settings menu.



## Correction

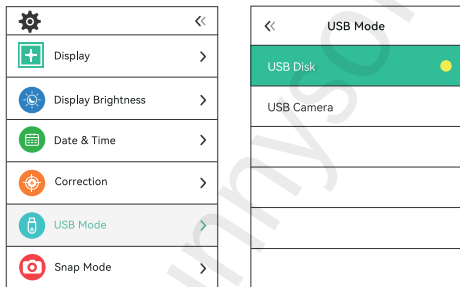
The image clarity may compromise due to the noises produced on thermal sensor after a period of use. Select the Correction option and press Button **SET** to process the correction to eliminate the noises, ensuring the optimal clarity of thermal image.





## USB Mode

Select the USB Mode option and press Button **SET** to enter the setting interface. Press Button ▲ / ▼ again to toggle the USB Disk and USB Camera, and press Button **SET** to confirm your setting. Once complete, press Button (⏮) to return to the main settings menu.



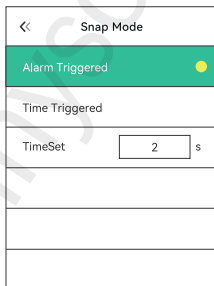
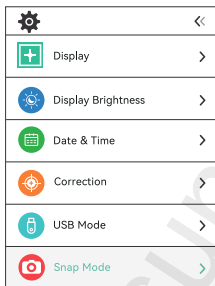
●1. Set the USB mode to USB Disk to browse pictures on the PC connecting the device to a computer with the USB cable.



**Note:** To activate U-Disk mode, restart the thermal imager and then connect the USB cable. Do not rename the Image folder or image files to prevent reading errors.

## Snap Mode

Select the Snap Mode option and press Button **SET** to enter the setting interface. Press Button **SET** again to toggle on/off the Alarm triggered option (picture captured when temperature exceeds the set threshold) and Time Triggered Option (picture captured every N seconds set), and press Button ▲ / ▼ to set the timing. Once complete, press Button (⏏) to return to the main settings menu.



## Auto Power Off

To adjust the auto power off timing, select the Auto Power off option and press Button **SET** to access the settings. Use Button ▲ / ▼ to cycle through the time options (5Min/10Min/30Min/off). Confirm your selection by pressing Button **SET**, and press Button ① again to return to the settings menu.

|                  |        |
|------------------|--------|
| ⚙️               | <<     |
| ① Auto Power Off | >      |
| Ⓐ Language       | >      |
| 📁 Format Disk    | >      |
| 🔄 Factory Reset  | >      |
| ℹ️ Dev Info      | TR10 > |
|                  |        |

|        |                |
|--------|----------------|
| <<     | Auto Power Off |
| 5 Min  | ●              |
| 10 Min |                |
| 30 Min |                |
| Off    |                |
|        |                |

## Language

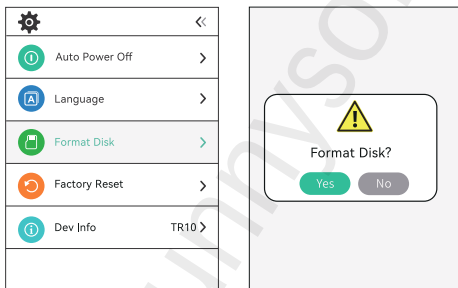
To set the language, select the Language option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to toggle different languages. Press Button **SET** to confirm your selection. To return to the main settings menu, press Button .

|                                                                                                  |        |
|--------------------------------------------------------------------------------------------------|--------|
|                 | <<     |
|  Auto Power Off | >      |
|  Language       | >      |
|  Format Disk    | >      |
|  Factory Reset  | >      |
|  Dev Info       | TR10 > |

|          |                                                                                   |
|----------|-----------------------------------------------------------------------------------|
| <<       | Language                                                                          |
| English  |  |
| Deutsch  |                                                                                   |
| Français |                                                                                   |
| Italiano |                                                                                   |
| Español  |                                                                                   |
| 中文       |                                                                                   |

## Format Disk

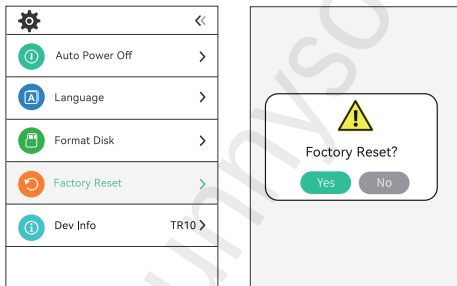
To format the disk, select the Format Disk option and press Button **SET** to enter the settings. Use Button ▲ / ▼ / ◀ / ▶ to toggle between the "Yes/No" options. Confirm your choice by pressing Button **SET** , then press Button (⏮) to return to the main settings menu.



**Note:** Exercise caution when using the Format Disk function. Confirming this action will erase all data on the disk permanently.

## Factory Reset

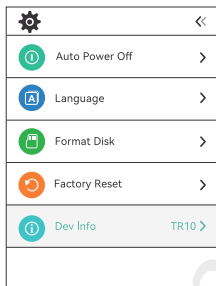
To enable factory reset, select the Factory Reset option and press Button **SET** to enter the settings. Use Button ▲ / ▼ / ◀ / ▶ to toggle between the "Yes/No" options. Confirm your choice by pressing Button **SET** , then press Button (ⓘ) to return to the main settings menu.



**Note:** Exercise caution when using the Factory Reset function. Confirming this action will erase all data on the disk permanently.

## Dev Info

Access this option by pressing button **SET** to check the general developing information of the device.



## Browse Image

Click button 5 to capture thermal images with comprehensive thermal data, which will be automatically saved to the disk. Short press button  to enter the photo album, and press button **SET** to enter the photo album interface. Press button **▲** / **▼** to cycle through different pictures and press button **SET** to open specific picture. The pictures are listed in a chronological order.



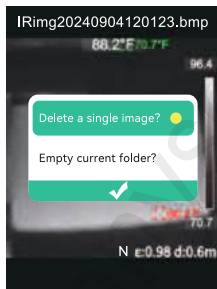
| << Album 1/1                                                                       |        |
|------------------------------------------------------------------------------------|--------|
|   | 202409 |
|  | 202408 |
|                                                                                    |        |
|                                                                                    |        |
|                                                                                    |        |

| << Photo 1/1                                                                       |                     |
|------------------------------------------------------------------------------------|---------------------|
|   | IRimg20240904120123 |
|  | IRimg20240904120121 |
|                                                                                    |                     |
|                                                                                    |                     |
|                                                                                    |                     |



## Image Deletion

Once opening a specific picture, short press button **SET** to choose to delete a single picture or current photo album.



## Specification:

|                             |                                                                                |
|-----------------------------|--------------------------------------------------------------------------------|
| Model                       | TR10                                                                           |
| NETD                        | < 50mK                                                                         |
| Super-Resolution            | 192X192                                                                        |
| Minimum Imaging Distance    | 0.3m                                                                           |
| HFOV                        | 50°×50°                                                                        |
| IIFOV                       | 8.89 mrad                                                                      |
| Frame Rate                  | 25 Hz                                                                          |
| Focal Length                | 1.35mm                                                                         |
| Gross Storage Capacity      | 8GB                                                                            |
| Usable Storabe Capacity     | 6GB                                                                            |
| Output Port                 | Type-C                                                                         |
| Battery                     | 3.7V, 3000mAh<br>Rechargeable Lithium                                          |
| Temperature Measuring Range | -20°C to 550°C                                                                 |
| Accuracy                    | ±2°C/+2%                                                                       |
| Picture Storage Capacity    | 30,000                                                                         |
| Picture Format              | JPEG                                                                           |
| Screen                      | 2.8" LCD Display                                                               |
| Max Picture Size            | 240 x 240                                                                      |
| Color Palettes              | White Hot, Black Hot, Iron,<br>Rainbow, Blend, Red Hot,<br>Blue Hot, Green Hot |
| Dimensions                  | 224*76*91mm                                                                    |
| Net Weight                  | 345g                                                                           |

## Warranty Terms

### Warranty Period:

◆ This product has one year guarantee in the precondition of non-artificial damage.

### Within the warranty period, certain maintenance costs will be charged under following cases:

- ◆ Damages caused by improper usage or maintenance of the machine;
- ◆ The machine had been disassembled or mended by non-authorized third party;
- ◆ Without the warranty card or purchase invoice;
- ◆ The serial number on the warranty card is different with the one on product;
- ◆ The serial number has been altered or abraded;
- ◆ Damaged by any force majeure factors,
- ◆ Replacement of worn out accessories;
- ◆ Damages caused by abnormal factors such as the temperature/humidity in usage;
- ◆ Damages caused by improper operation.

**Please send machine with warranty card & purchase invoice to local dealer if maintenance needed. The warranty card will not be reissued if lost; please keep it carefully for maintenance.**

## Contact Information

**Shenzhen Mileseey Technology Co., Ltd.**

Add: No.3601 Block A, Tanglang Town Plaza West, Fuguang Community, Taoyuan Street, Nanshan District, Shenzhen, China

Website: [www.mileseey.net](http://www.mileseey.net)

Store: [www.mileseeytools.com](http://www.mileseeytools.com)

E-mail: [service@mileseey.com](mailto:service@mileseey.com)

Made in China

## Mileseey Technology (US) Inc.

Office Add: 17800 CASTLETON ST STE 665 CITY OF INDUSTRY, CA 91748

Manufacturer: Shenzhen Mileseey Technology Co., Ltd.

Add: No.3601 Block A, Tanglang Town Plaza West, Fuguang Community, Taoyuan Street, Nanshan District, Shenzhen, China

Store: [www.mileseeytools.com](http://www.mileseeytools.com)

E-mail: [service@mileseey.com](mailto:service@mileseey.com)

Made in China



FR

Cet appareil  
et ses piles  
se recyclent



Points de collecte sur [www.quefairedermidechets.fr](http://www.quefairedermidechets.fr)  
Privilégiez la réparation ou le don de votre appareil !



FR

Vous êtes responsable de remettre  
tous les appareils électriques et  
électroniques usagés à des points de  
collecte correspondants.

Pour en savoir plus:  
[www.quefairedermidechets.fr](http://www.quefairedermidechets.fr)

# MILESEEY<sup>®</sup> TOOLS



## TR10

Handheld Infrared Thermal Imager

Instrucțiuni de utilizare



## Despre produs

**Vă mulțumim pentru achiziționarea aparatului portabil de termoviziune în infraroșu Mileseeey TR10. Vă rugăm să citiți cu atenție manualul de utilizare pentru a asigura utilizarea optimă și înțelegerea funcționării dispozitivului. TR10 se mândrește cu o suită de caracteristici concepute pentru eficiență în sarcinile de întreținere și inspecție, făcând detectarea temperaturii mai precisă și mai ușor de utilizat.**

## Principalele caracteristici ale TR10

- Afișaj LCD color G2.8": oferă o zonă mare de afișare pentru identificarea și analiza ușoară a zonelor de defecțiune.
- Emisivitate reglabilă: permite setări personalizate pentru a crește acuratețea detectării în funcție de diferite materiale.
- Captarea și stocarea imaginilor: Echipat cu capacitatea de a captura imagini și de a le stoca în memoria încorporată de 8 GB, care poate stoca până la 30.000 de imagini cu date de temperatură pentru analize comparative.
- Transfer de date convenabil: dispozitivul este echipat cu o conexiune USB pentru exportul rapid și ușor al imaginilor către un PC.
- Baterie cu litiu integrată: Dispune de o baterie integrată și de o interfață de încărcare Type-C pentru a simplifica procesul de încărcare și transfer de date.
- Urmărirea automată a calde și reci: identificați și vizați automat punctele cu cea mai ridicată și cea mai scăzută temperatură din scena observată, îmbunătățind capacitățile de diagnosticare.
- Traiectorii încrucișate pe afișaj pentru direcționarea ușoară a locației de măsurare.
- Alarmer de temperatură personalizabile: vă permite să setați alarme individuale de temperatură ridicată și scăzută, facilitând concentrarea atenției imediate asupra zonelor critice.
- Interval larg de măsurare a temperaturii: adecvat pentru diverse aplicații industriale aplicații: măsoară cu acuratețe temperaturi de până la 550 °C.

Design portabil și ușor de utilizat: Potrivit pentru profesioniștii din întreținere și inspecție, acesta oferă o soluție practică pentru monitorizarea și detectarea eficientă a temperaturii.

## Instrucțiuni de siguranță



Pentru a asigura precizia măsurătorilor și siguranța dumneavoastră, utilizați acest produs exact conform instrucțiunilor din manualul de . Vă rugăm să rețineți că nerespectarea acestor instrucțiuni poate duce deteriorări care nu sunt acoperite de serviciul de garanție.



Pentru a curăța exteriorul acestui dispozitiv, ștergeți-l ușor cu o cârpă umedă sau cu o soluție de săpun ușor. Nu utilizați detergenți abrazivi, alcool izopropilic sau orice solvenți pe capacul, lentilele sau ferestrele aparatului, substanțe pot provoca deteriorări.



Nu utilizați acest produs într-un mediu care este inflamabil, exploziv, cu conținut ridicat de abur sau umiditate sau care conține substanțe corozive. Utilizarea produsului în aceste condiții poate afecta performanța acestuia și poate reprezenta un pericol pentru siguranță.



Dacă produsul este deteriorat, căzut sau deteriorat în alt mod, opriți imediat utilizarea acestuia. În continuare a produsului în aceste condiții poate duce la măsurători inexacte și poate compromite siguranța.



Pentru a obține date exacte privind temperatura, setați emisivitatea corectă a materialului țintă.





Deoarece dispozitivul se încălzește în timpul pornirii, acest lucru poate afecta precizia măsurătorii. Prin urmare, se recomandă să nu utilizați dispozitivul în timpul sau imediat după încărcare.



Economisirea energiei poate crește temperatura produsului, pentru a crește precizia măsurării temperaturii, urmați recomandarea de a porni dispozitivul cu 2 minute înainte de utilizare dacă dispozitivul nu a fost utilizat pentru o perioadă lungă de timp.

## Aspectul dispozitivului



**1. Port de încărcare USB-C**

**2. Ecran LCD**

**3. Înregistrarea în memoria de imagini**

**4. Sus/jos/stânga/dreapta**

Apăsați scurt pentru a naviga

**5. Pornire/oprire/retur**

Apăsați lung pentru a porni sau opri

Apăsați scurt pentru a reveni

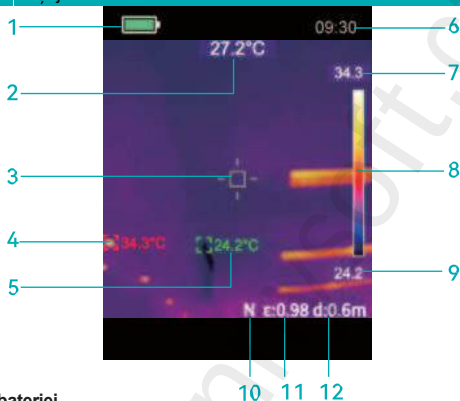
**6. Setări**

Apăsați scurt pentru a intra în opțiunile de setare

**7. Cameră de termoviziune**

**8. Captarea imaginii**

Apăsare scurtă pentru a captura imagini și a le salva



1. Starea bateriei

2. Temperatura centrală

3. Punct central / păr încrucișat

4. Temperatura maximă și poziția

5. Temperatura minimă și poziția

6. Timp

7. Temperatura maximă pe coloană

8. Coloană de temperatură

9. Temperatura minimă pe coloană

10. N: Normal ( temperatură normală)

(Notă: La selectarea intervalului de temperatură ridicată, N este deplasat la H)

11. Emisii

12. Distanța de detecție

|                                                                                     |                    |                                                                                   |                    |
|-------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------|--------------------|
|    |                    |  |                    |
|    | Emissivity         | 0.98 >                                                                            | Emisivitate        |
|    | Distance           | 0.6m >                                                                            | Distanță Interval  |
|    | Temp Range         | >                                                                                 | de temperatură     |
|    | Temperature Units  | >                                                                                 | Unități de         |
|    | Palette            | >                                                                                 | temperatură        |
|    | HI/LO Alarm        | >                                                                                 | Palet              |
|    | Display            | >                                                                                 | Alarma             |
|    | Display Brightness | >                                                                                 | HI/LO Afișaj       |
|    | Date & Time        | >                                                                                 | Luminozitatea      |
|    | Correction         | >                                                                                 | afișajului Data    |
|    | USB Mode           | >                                                                                 | și ora             |
|   | Snap Mode          | >                                                                                 | Corectare Mod      |
|  | Auto Power Off     | >                                                                                 | USB Mod            |
|  | Language           | >                                                                                 | captură            |
|  | Format Disk        | >                                                                                 | Închidere automată |
|                                                                                     |                    |                                                                                   | Limbă              |
|                                                                                     |                    |                                                                                   | Formatare          |

|                                                                                   |               |      |
|-----------------------------------------------------------------------------------|---------------|------|
|  | Factory Reset | >    |
|  | Dev Info      | TRIO |

Setări din fabrică

Info dispozitiv

## Instrucțiuni de configurare

- Apăsați butonul SET pentru a intra în meniul de configurare.
- Utilizați butonul ▲▼ (sus/jos) pentru a defila la opțiunea dorită și apăsați din nou butonul SET pentru a intra în setări.
- ▲▼ Utilizați butonul pentru a edita valorile sau pentru a selecta subopțiunile.
- Confirmați și salvați modificările prin apăsarea butonului SET
- Pentru a reveni la meniul principal de setări, apăsați scurt



## Emisivitate

Alegerea corectă a emisivității este esențială pentru măsurarea exactă a temperaturii, deoarece afectează semnificativ datele privind temperatura de suprafață. Pentru a seta valoarea emisivității, apăsați butonul SET și mergeți la interfața de configurare.

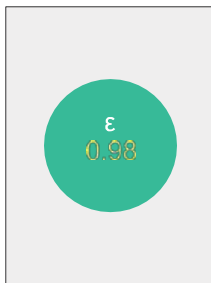
Setați valoarea ▲▼

Când setările sunt finalizate, apăsați scurt butonul



pentru a reveni la

la meniul principal de setări.



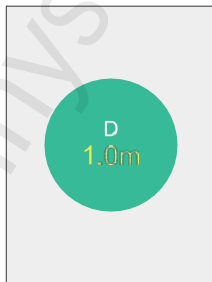
Notă: Emisivitatea poate fi setată într-un interval de valori de la 0,01 la 0,99. Valorile emisivității materialele comune sunt enumerate în tabelul de mai jos.

## Emisivitatea obiectelor comune

| Materiale         | Emisivitate | Materiale              | Emisivitate |
|-------------------|-------------|------------------------|-------------|
| Lemn              | 0.85        | Hârtie pentru notebook | 0.86        |
| Apă               | 0.96        | Polycarbonat           | 0.8         |
| Cărămizi          | 0.75        | Beton                  | 0.97        |
| Oțel inoxidabil   | 0.14        | Oxid de cupru          | 0.78        |
| Bandă adezivă     | 0.96        | Fontă                  | 0.81        |
| Placă de aluminiu | 0.09        | Tăiași                 | 0.8         |
| Tablă de cupru    | 0.96        | Gips                   | 0.75        |
| Aluminiu negru    | 0.75        | Culoare                | 0.9         |
| Piele umană       | 0.98        | Cauciuc                | 0.95        |
| Asfalt            | 0.96        | Solul                  | 0.93        |
| plastic PVC       | 0.93        |                        |             |

## Setarea distanței

Pentru a crește precizia detectării temperaturii, setați informațiile privind distanța înainte de măsurare. Pentru a seta distanța, selectați opțiunea de distanță și apăsați butonul SET pentru a merge la interfața de setare a valorii. Utilizați butoanele ▲ ▼ pentru a seta valoarea distanței între 0,3 și 3 metri. Când setarea este finalizată, apăsați butonul  pentru a reveni la meniul principal de setări.



## Intervalul de temperatură

Pentru a seta intervalul de temperatură, selectați Interval de temperatură și apăsați SET pentru a intra în setări. ▲▼ Utilizați pentru a comuta între temperatura normală și ridicată. Apăsați SET pentru a confirma selecția. Pentru a reveni la meniul principal de setări, apăsați (O)

Intervalul de temperatură normală este de la -20°C la 150°C, iar intervalul de temperatură ridicată este de la 100°C la 550°C.

**Notă:** Comutarea între intervalele de temperatură durează aproximativ 10 . Așteptați ca instrumentul să finalizeze comutarea înainte de a continua cu alte operațiuni sau măsurători de temperatură.





## Unitate

Pentru a seta unitatea, selectați Unitate și apăsați butonul SET pentru a intra în setări. ▲▼Apăsați butonul pentru a comuta între °C și °F. Apăsați butonul SET pentru a confirma selecția. ▲▼Apăsați butoanele pentru a comuta la setarea temperaturii ambientale, care crește precizia măsurătorilor pentru materialele cu emisivitate scăzută, cum ar fi metalul sau sticla. Apoi apăsați butonul SET pentru a introduce setarea. Apăsați butoanele ▲▼ pentru a seta temperatura ambientală.

Pentru a reveni la meniul principal de setări, apăsați butonul 



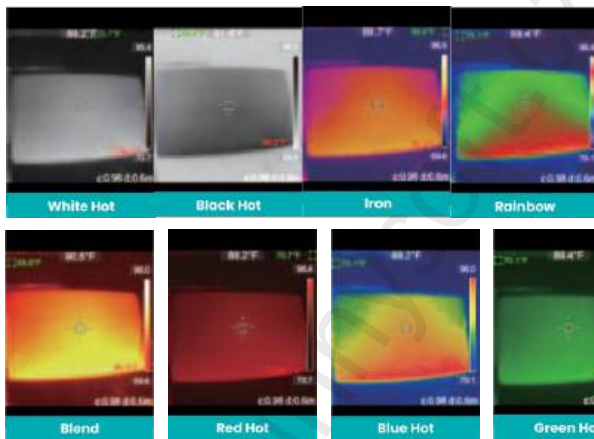
## Paletă

Pentru a seta paleta de culori, selectați Paletă și apăsați SET pentru a intra în setări. ▲▼ Utilizați butoanele pentru a comuta între cele 8 palete de culori (Alb fierbinte, Negru fierbinte, Fier, Curcubeu, Amestec, Roșu fierbinte, Albastru fierbinte, Verde fierbinte). Apăsați butonul SET pentru a confirma selecția. Pentru a reveni la meniul principal de setări, apăsați butonul .

|                                                                                                     |        |
|-----------------------------------------------------------------------------------------------------|--------|
|                    | «      |
|  Emissivity        | 0.98 > |
|  Distance          | 1.0m > |
|  Temp Range        | >      |
|  Temperature Units | >      |
|  Palette           | >      |
|  HI/LO Alarm       | >      |

|           |                                                                                   |
|-----------|-----------------------------------------------------------------------------------|
| «         | Palette                                                                           |
| White Hot |  |
| Black Hot |                                                                                   |
| Iron      |                                                                                   |
| Rainbow   |                                                                                   |
| Blend     |                                                                                   |
| Red Hot   |                                                                                   |

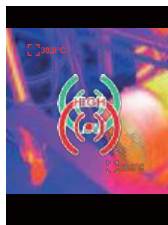
|           |         |
|-----------|---------|
| «         | Palette |
| Blue Hot  |         |
| Green Hot |         |
|           |         |
|           |         |
|           |         |



▲ ▼ Note: puteți trece rapid la (sus/jos) prin apăsarea scurtă a butonului cele mai variate palete de culori.

## Alarmă HI/LO (alarmă de temperatură ridicată și scăzută)

Pentru a regla setările alarmei de temperatură ridicată/scăzută, selectați Temperatura ridicată/scăzută și apăsați SET pentru a intra în interfața de setare a valorilor. ▲▼ Apăsați din nou pentru a activa sau dezactiva alarma de temperatură înaltă/joasă și confirmați prin apăsarea butonului SET. Utilizați butonul pentru a seta valoarea temperaturii și apăsați butonul SET pentru a confirma setarea. Când ați terminat, apăsați butonul  pentru a reveni la meniul principal de setare.

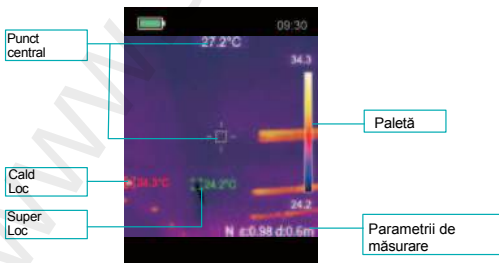
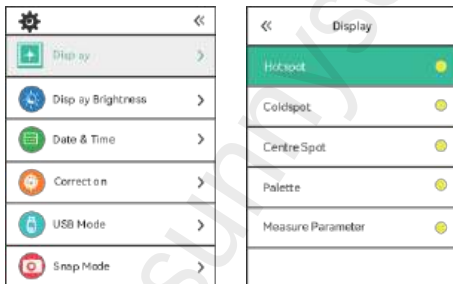


Alarmă de temperatură apărută Alarmă de temperatură scăzută Alarmă de temperatură ridicată și alarmă de temperatură scăzută

**Observații:** setarea implicită a pragului de alarmă de temperatură ridicată este întotdeauna mai mare decât setarea de alarmă de temperatură scăzută.

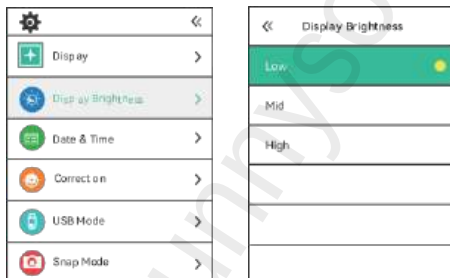
## Opțiuni de afișare

Selectați Display Options (Opțiuni afișare) și apăsați butonul SET pentru a intra în interfața de configurare. Apăsați butonul ▲▼ pentru a defila la diferitele elemente de afișare și apăsați butonul SET pentru a activa sau dezactiva elementele de afișare (High/Low Temp Dot, Center Dot, Palette (bara de culori), Parameter (emisivitatea și setarea distanței)). Când ați terminat, apăsați butonul  pentru a reveni la meniul principal de configurare.



## Luminozitate

Pentru a regla luminozitatea ecranului, selectați Luminozitate și apăsați SET pentru a intra în setări. Utilizați butonul ▲▼ pentru a selecta între Luminozitate scăzută, medie și ridicată. Confirmați setările prin apăsarea butonului SET, apoi apăsați butonul pentru a reveni la meniul principal. 



## Data și ora

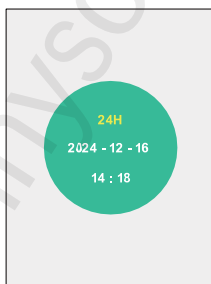
Pentru a seta data și ora, selectați Data și ora și apăsați butonul SET pentru a intra în setări. ▲▼◀▶ / ►Utilizați butonul pentru a comuta între formatele 12H și 24H.

Utilizați butonul pentru a naviga la câmpul de setare dorit. Setati valoarea utilizând butonul ▲▼

Când ați terminat, apăsați butonul



Înapoi la



## Corecție

După o perioadă de utilizare, claritatea imaginii se poate deteriora din cauza zgomotului generat pe senzorul termic. Selectați Corecție și apăsați butonul SET pentru a efectua corecția pentru a elimina zgomotul și a asigura claritatea optimă a imaginii termice.

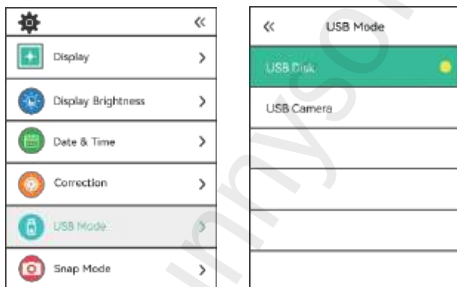




## Modul USB

Selectați Modul USB și apăsați butonul SET pentru a intra în interfață. ▲▼Apăsați butoanele pentru a comuta între USB Disk și USB Camera, confirmați selecția prin apăsarea butonului SET.

După ce ați finalizat setările și ați revenit la meniul principal, (1)



1. Setati modul USB pe Disc USB pentru a răsfoi imagini pe computerul pe care îl conectați la computer cu cablul USB.

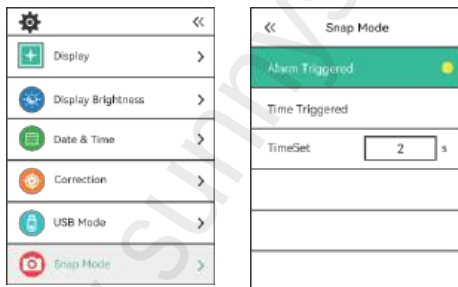


**Notă:** Pentru a activa modul U-Disk, reporniți camera cu termoviziune și apoi conectați cablul USB. Nu redenumiți folderul Image sau fișierele de imagine pentru a evita erorile de citire.

## Modul Snap - realizarea unui instantaneu

Selectați Snap Mode și apăsați butonul SET pentru a intra în interfața de configurare. Apăsați din nou butonul SET pentru a activa/dezactiva opțiunea Alarm Triggered (declanșare alarmă) (instantanee realizată atunci când temperatura depășește un setat) și opțiunea Time Triggered (declanșare timp) (instantanee realizată la fiecare N secunde setate) și apăsați butonul

▲ ▼ setați cronometrarea. Când ați terminat, apăsați butonul  pentru a reveni la meniul principal de setări.



## Oprire automată

Pentru a regla timpul de oprire automată, selectați Oprire automată și apăsați butonul SET pentru a intra în setări.

▲ ▼ Utilizați butoanele pentru a parcurge opțiunile de timp (5Min/10Min/30Min/off). Apăsați butonul SET pentru a vă confirma selecția, apoi apăsați butonul  pentru a reveni la meniul de setări.



## Limba

Pentru a seta limba, selectați Limbă și apăsați SET pentru a intra în setări. ▲▼  
Utilizați butoanele pentru a schimba limba.

Apăsați butonul SET pentru a confirma selecția. Pentru a la meniul principal de setări, apăsați butonul 



## Formatarea discului

Pentru a formata discul, selectați Format disc și apăsați SET pentru a intra în setări. ▲▼◀Utilizați pentru a comuta între "Da/Nu". Confirmați alegerea ► prin apăsarea butonului SET, apoi apăsați butonul (i) pentru a reveni la meniul principal de setări.



**Notă:** Aveți grijă atunci când utilizați funcția Formatare disc. Confirmarea acestei acțiuni va șterge permanent toate datele de pe disc.

## Setări din fabrică

Pentru a activa resetarea din fabrică, selectați Resetare din fabrică și apăsați butonul SET pentru a intra în setări. ▲▼▶ Utilizați pentru a comuta între opțiunile "Da/Nu". Confirmați alegerea prin apăsarea SET, apoi apăsați butonul pentru a reveni la  meniul principal de setări.



**Notă:** Aveți grijă când utilizați funcția de resetare din fabrică. Fiți prudent atunci când confirmați această acțiune, care va șterge permanent toate datele de pe disc.

## Informații despre dispozitiv - Dev Info

Pentru a deschide această opțiune, apăsați butonul SET și verificați informațiile generale despre dezvoltarea dispozitivului.



## Răsfoirea imaginilor

Faceți clic pe butonul 5 pentru a realiza imagini termice cu date termice complete care sunt salvate automat pe disc. (📷) Apăsăți scurt butonul pentru a intra în albumul foto și apăsați butonul SET intrați în albumul foto. Apăsăți ▲ ▼ defilați prin diferitele imagini și apăsați butonul SET pentru a deschide imagine specifică. Imaginile sunt aranjate cronologic.



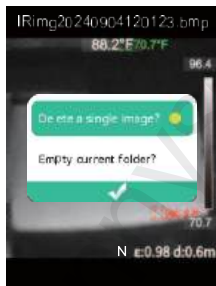
| ◀ Album                                                                                    | 1/1 |
|--------------------------------------------------------------------------------------------|-----|
|  202409   |     |
|  202408 |     |
|                                                                                            |     |
|                                                                                            |     |
|                                                                                            |     |
|                                                                                            |     |

| ◀ Photo                                                                                               | 1/1 |
|-------------------------------------------------------------------------------------------------------|-----|
|  Rmg20240904120123   |     |
|  Rmg20240904120121 |     |
|                                                                                                       |     |
|                                                                                                       |     |
|                                                                                                       |     |
|                                                                                                       |     |



## Ștergeți **imagea**

După deschiderea unei anumite imagini, puteți apăsa scurt butonul SET  
alegeți să ștergeți o singură imagine sau albumul foto curent.



## Furnizor/Distribuitor

Sunnysoft s.r.o.  
Kovanecká 2390/1a  
190 00 Praga 9  
Republica Cehă  
[www.sunnysoft.cz](http://www.sunnysoft.cz)

## Specificații

|                                       |                                                                                                              |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <b>Model</b>                          | TR10                                                                                                         |
| NETD                                  | < 50mK                                                                                                       |
| Superrezoluție                        | 192X192                                                                                                      |
| Distanța minimă de vizualizare        | 0.3m                                                                                                         |
| HFOV                                  | 50°x50°                                                                                                      |
| IFOV                                  | 8.89 mrad                                                                                                    |
| Rata cadrelor                         | 25 Hz                                                                                                        |
| Lungime focală                        | 1.35mm                                                                                                       |
| Capacitatea brută de stocare          | 8GB                                                                                                          |
| Capacitate de stocare utilizabilă     | 6GB                                                                                                          |
| Port de ieșire                        | Tip C                                                                                                        |
| Baterii                               | 3,7 V, 3000 mAh<br>Litiu reîncărcabil                                                                        |
| Intervalul de măsurare a temperaturii | -20 °C până la 550 °C                                                                                        |
| Acuratețe                             | +2°C/+2%                                                                                                     |
| Capacitatea de stocare a imaginilor   | 30 000                                                                                                       |
| Formatul imaginii                     | JPEG                                                                                                         |
| Captură de ecran a                    | Afișaj LCD de 2,8"                                                                                           |
| Dimensiunea maximă a imaginii         | 240 X 240                                                                                                    |
| Palete de culori                      | Alb fierbinte, negru fierbinte, fier, curcubeu, amestec, roșu fierbinte, albastru fierbinte, verde fierbinte |
| Dimensiuni                            | ××224 76 91 mm                                                                                               |
| Greutate netă                         | 345 g                                                                                                        |

# MILESEEY<sup>®</sup> TOOLS



## TR10

Handheld Infrared Thermal Imager

**User Manual**



## Product Overview

Thank you for your purchase of the Mileseeey TR10 handheld infrared thermal camera. To ensure optimal use and understanding of this device, please carefully read the user guide provided. The TR10 model boasts a suite of features designed for efficiency in maintenance and inspection tasks, making temperature detection more accurate and user-friendly.

## Key Features of The TR10

- **2.8-Inch Color LCD Display:** Offers an expansive viewing area to easily identify and analyze fault zones.
- **Adjustable Emissivity:** Allows for personalized settings to refine detection accuracy based on different materials.
- **Image Capture and Storage:** Equipped with the capability to take pictures and save them within a built-in 8GB memory, accommodating up to 30,000 images with temperature data for comprehensive analysis.
- **Convenient Data Transfer:** Features a USB connection for quick and easy export of images to PC terminals.
- **Integrated Lithium Battery:** Comes with a built-in battery and a TYPE-C charging interface, simplifying the charging process and data transfer.
- **Automatic Hot and Cold Spot Tracking:** Automatically identifies and locks onto the highest and lowest temperature points within a scene, enhancing diagnostic capabilities.
- **Cross-hair display** for easy targeting of measuring spot.
- **Customizable Temperature Alarms:** Enables setting of individual high and low temperature alarms, facilitating immediate attention to critical areas.
- **Extensive Temperature Range Measurement:** Capable of accurately measuring temperatures up to 550°C, suitable for a variety of industrial applications.

● **Portable and User-Friendly Design:** Ideal for professionals in maintenance and inspection, offering a practical solution for effective temperature monitoring and detection.

## Safety Instructions



- To ensure the accuracy of your measurements and your safety, please use this product strictly according to the guidelines provided in the user manual. Please be aware that failing to adhere to these instructions may lead to damages that are not covered under our free warranty service.



- To clean the exterior of this device, gently wipe it with a damp cloth or a mild soap solution. Avoid using abrasive cleaners, isopropyl alcohol, or any solvents on the instrument's casing, lens, and windows, as these substances can cause damage.



- Avoid operating this product in environments that are flammable, explosive, high in steam or humidity, or contain corrosive substances. Using the device under these conditions could impair its performance and pose safety risks.



- Cease using the product immediately if it becomes damaged, has been dropped, or has been modified in any way. Continuing to use the product under these conditions may lead to inaccurate measurements and could compromise safety.



- Please adjust to the correct emissivity of the target material to obtain an accurate temperature readouts.



- During charging, the product's internal temperature increases, potentially affecting measurement accuracy. Therefore, it is advised not to perform measurements while the device is charging or immediately after charging.



- Due to power consumption potentially raising the product's internal temperature, to maintain measurement accuracy, please allow the device to warm up for 2 minutes before use if it has not been used for a long time.

## Appearance



**1. USB-C Charging Port**

**2. LCD Screen**

**3. Picture Memory Record**

**4. Up/Down/Left/Right**

Short Press to Navigate

**5. Power on/off/Return**

Long Press to Power on Or off

Short Press to Return

**6. Settings**

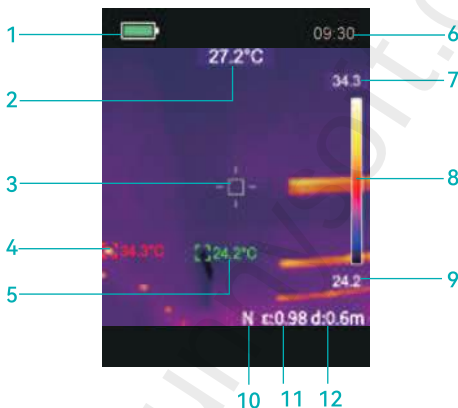
Short Press to Enter Setting Options

**7. Thermal Camera**

**8. Picture Capturing**

Short Press to Captures Pictures And Save

## Display Icon



1. Battery Status
2. Center Temperature
3. Center Point/Cross-Hairs
4. Max Temperature And Position
5. Min Temperature And Position
6. Time
7. Max Temperature On The Bar
8. Temperature Bar
9. Min Temperature On The Bar
10. N: Normal  
(Note: N will be shifted to H when High Temp Range is selected)
11. Emissivity
12. Detection Distance



## Setting Interface

|                                                                                     |                    |        |
|-------------------------------------------------------------------------------------|--------------------|--------|
|    |                    | <<     |
|    | Emissivity         | 0.98 > |
|    | Distance           | 0.6m > |
|    | Temp Range         | >      |
|    | Temperature Units  | >      |
|    | Palette            | >      |
|    | HI/LO Alarm        | >      |
|    | Display            | >      |
|    | Display Brightness | >      |
|    | Date & Time        | >      |
|    | Correction         | >      |
|    | USB Mode           | >      |
|   | Snap Mode          | >      |
|  | Auto Power Off     | >      |
|  | Language           | >      |
|  | Format Disk        | >      |

|                                                                                   |               |      |
|-----------------------------------------------------------------------------------|---------------|------|
|  | Factory Reset | >    |
|  | Dev Info      | TR10 |

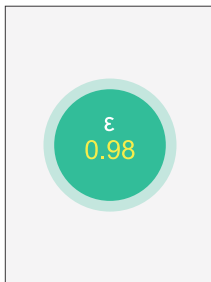
## Setting Instructions

- Press Button **SET** to enter the settings menu.
- Navigate to your desired option using Button ▲ / ▼ (up/down), and press Button **SET** again to access the setting.
- Adjust values or select sub-options using Button ▲ / ▼.
- Confirm and save your changes by pressing Button **SET**.
- To return to the main settings menu, briefly press Button .

## Emissivity

Choosing the correct emissivity is crucial for accurate temperature measurements since it greatly influences the surface temperature readings. To set the emissivity value, press Button **SET** and navigate to the setting interface. Adjust the value using Button ▲ / ▼. Once the adjustment is complete, a short press of Button  will return you to the main settings menu.

|                                                                                     |                     |
|-------------------------------------------------------------------------------------|---------------------|
|    | <<                  |
|    | Emissivity 0.98 >   |
|   | Distance 1.0m >     |
|  | Temp Range >        |
|  | Temperature Units > |
|  | Palette >           |
|  | HI/LO Alarm >       |



**Note:** Emissivity settings range from 0.01 to 0.99. For emissivity values of common materials, consult the table provided in the appendix.

## Emissivity Of Common Objects

| Materials       | Emissivity | Materials     | Emissivity |
|-----------------|------------|---------------|------------|
| Wood            | 0.85       | Black Paper   | 0.86       |
| Water           | 0.96       | Polycarbonate | 0.8        |
| Brick           | 0.75       | Concrete      | 0.97       |
| Stainless Steel | 0.14       | Copper Oxide  | 0.78       |
| Adhesive Tape   | 0.96       | Cast Iron     | 0.81       |
| Aluminium Plate | 0.09       | Rust          | 0.8        |
| Copper Plate    | 0.96       | Gypsum        | 0.75       |
| Black Aluminum  | 0.75       | Paint         | 0.9        |
| Human Skin      | 0.98       | Rubber        | 0.95       |
| Asphalt         | 0.96       | Soil          | 0.93       |
| PVC Plastic     | 0.93       |               |            |

## Distance Setting

For enhanced accuracy in temperature detection, set the distance information prior to measurement. To adjust the distance, select the distance option and press Button **SET** to access the value setting interface. Use Button ▲ / ▼ to adjust the distance value within the range of 0.3 to 3 meters. Once the adjustment is complete, press Button ① to return to the main settings menu.

|                                                                                   |                   |        |
|-----------------------------------------------------------------------------------|-------------------|--------|
|  |                   | <<     |
|  | Emissivity        | 0.98 > |
|  | Distance          | 1.0m > |
|  | Temp Range        | >      |
|  | Temperature Units | >      |
|  | Palette           | >      |
|  | HI/LO Alarm       | >      |



## Temp Range

To set the temperature range, select the Temp range option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to toggle between Normal and High Temperature range options. Press Button **SET** to confirm your selection. To return to the main settings menu, press Button ①. The Normal Temperature range is from -20°C to 150°C, and the High Temperature range is from 100°C to 550°C.

**Note:** Switching between temperature ranges takes around 10 seconds. Please wait for the device to complete the switch before proceeding with other operations or temperature measurements.

|                                                                                                     |        |
|-----------------------------------------------------------------------------------------------------|--------|
|                    | <<     |
|  Emissivity        | 0.98 > |
|  Distance          | 1.0m > |
|  Temp Range        | >      |
|  Temperature Units | >      |
|  Palette           | >      |
|  HI/LO Alarm       | >      |

|                     |                                                                                   |
|---------------------|-----------------------------------------------------------------------------------|
| <<                  | Temp Range                                                                        |
| Normal(-20°C~150°C) |  |
| High(100°C~550°C)   |                                                                                   |
|                     |                                                                                   |
|                     |                                                                                   |
|                     |                                                                                   |
|                     |                                                                                   |

## Unit

To set the unit, select the Unit option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to toggle between °C and °F. Press Button **SET** to confirm your selection. Press ▲ / ▼ to navigate to the ambient temperature setting, which enhances measurement accuracy for low emissivity materials, like metal or glass. Then Press Set button to enter the setting. Press ▲ / ▼ to input the ambient temperature value. To return to the main settings menu, press Button .

|                                                                                                     |        |
|-----------------------------------------------------------------------------------------------------|--------|
|                    | <<     |
|  Emissivity        | 0.98 > |
|  Distance          | 1.0m > |
|  Temp Range        | >      |
|  Temperature Units | >      |
|  Palette           | >      |
|  HI/LO Alarm       | >      |

|              |                                                                                   |
|--------------|-----------------------------------------------------------------------------------|
| <<           | Temperature Units                                                                 |
| °C           |  |
| °F           |                                                                                   |
| Ambient Temp | 24.0°C                                                                            |
|              |                                                                                   |
|              |                                                                                   |
|              |                                                                                   |

## Palette

To set the color palette, select the Palette option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to toggle 8 color palettes (White Hot, Black Hot, Iron, Rainbow, Blend, Red Hot, Blue Hot, Green Hot) . Press Button **SET** to confirm your selection. To return to the main settings menu, press Button (ⓘ) .

|                                                                                   |                   |        |
|-----------------------------------------------------------------------------------|-------------------|--------|
|  |                   | <<     |
|  | Emissivity        | 0.98 > |
|  | Distance          | 1.0m > |
|  | Temp Range        | >      |
|  | Temperature Units | >      |
|  | Palette           | >      |
|  | HI/LO Alarm       | >      |

|           |                                                                                   |
|-----------|-----------------------------------------------------------------------------------|
| <<        | Palette                                                                           |
| White Hot |  |
| Black Hot |                                                                                   |
| Iron      |                                                                                   |
| Rainbow   |                                                                                   |
| Blend     |                                                                                   |
| Red Hot   |                                                                                   |

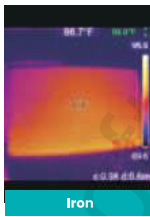
|           |         |
|-----------|---------|
| <<        | Palette |
| Blue Hot  |         |
| Green Hot |         |
|           |         |
|           |         |
|           |         |



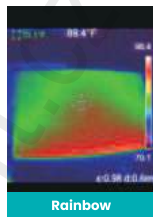
White Hot



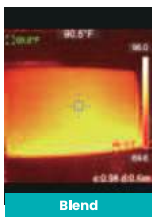
Black Hot



Iron



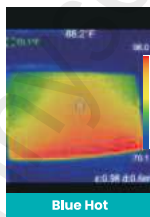
Rainbow



Blend



Red Hot



Blue Hot



Green Hot

**Notes:** Short press Button ▲ / ▼ (up/down) can quick access the change of different color palettes.



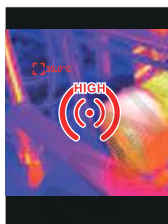
## HI/LO Alarm

To adjust the High/Low temperature alarm settings, select the High/LO temperature option and press Button **SET** to enter the value setting interface. Press Button **▲** / **▼** again to toggle the High/Low temperature alarm on or off, and press button **SET** to confirm. Use Button **▲** / **▼** to adjust the temperature value, and press Button **SET** to confirm your setting. Once complete, press Button **⏮** to return to the main settings menu.

|                      |        |
|----------------------|--------|
| ⚙️                   | <<     |
| 📶 Emissivity         | 0.98 > |
| 📏 Distance           | 1.0m > |
| 📶 Temp Range         | >      |
| 🌡️ Temperature Units | >      |
| 📶 Palette            | >      |
| 📶 HI/LO Alarm        | >      |

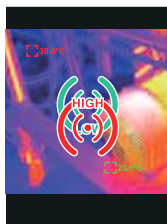
|                 |             |
|-----------------|-------------|
| <<              | HI/LO Alarm |
| HI Alarm Enable | 🟡           |
| LO Alarm Enable | 🟡           |
| High Temp Alarm | 30°C        |
| Low Temp Alarm  | 29°C        |
|                 |             |
|                 |             |



High Temp Alarm



Low Temp Alarm


High Temp Alarm And  
Low Temp Alarm

**Notes:** The default setting value for the high temperature alarm threshold is always higher than that of the low temperature alarm.

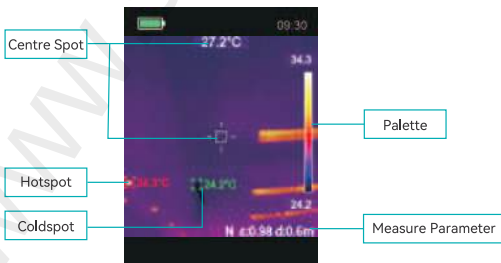
## Display Options

Select the Display Options and press Button **SET** to enter the setting interface. Press Button **▲** / **▼** scroll the different display elements and press Button **SET** to toggle the display elements on or off(High/Low Temp Dot, Center Dot, Palette(color bar), parameter(the set emissivity and distance)).

Once complete, press Button **Ⓢ** to return to the main settings menu.

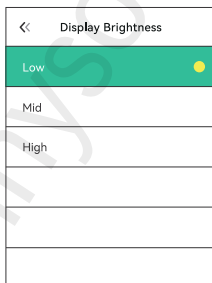
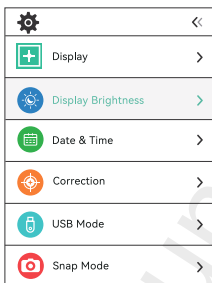
|                                                                                                      |    |
|------------------------------------------------------------------------------------------------------|----|
|                     | << |
|  Display            | >  |
|  Display Brightness | >  |
|  Date & Time        | >  |
|  Correction         | >  |
|  USB Mode           | >  |
|  Snap Mode          | >  |

|                   |                                                                                   |
|-------------------|-----------------------------------------------------------------------------------|
| <<                | Display                                                                           |
| Hotspot           |  |
| Coldspot          |  |
| Centre Spot       |  |
| Palette           |  |
| Measure Parameter |  |
|                   |                                                                                   |



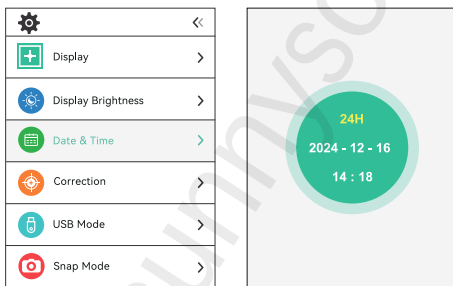
## Brightness

To adjust the screen brightness, select the Brightness option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to cycle through the low, middle, and high brightness options. Confirm your selection by pressing Button **SET** , then press Button (⏏) to return to the main settings menu.



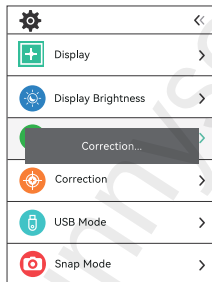
## Date & Time

To set the date and time, select the date & time option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to toggle between the 12H and 24H formats. Navigate to the desired setting field using Button ◀ / ▶ (left/right) . Adjust the value with Button ▲ / ▼ (up/down) . Once complete, press Button (ⓘ) to return to the main settings menu.



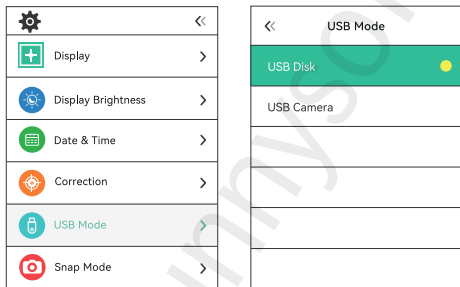
## Correction

The image clarity may compromise due to the noises produced on thermal sensor after a period of use. Select the Correction option and press Button **SET** to process the correction to eliminate the noises, ensuring the optimal clarity of thermal image.



## USB Mode

Select the USB Mode option and press Button **SET** to enter the setting interface. Press Button ▲ / ▼ again to toggle the USB Disk and USB Camera, and press Button **SET** to confirm your setting. Once complete, press Button (⏮) to return to the main settings menu.



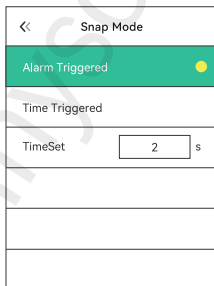
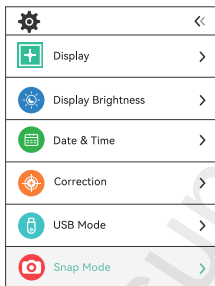
●1. Set the USB mode to USB Disk to browse pictures on the PC connecting the device to a computer with the USB cable.



**Note:** To activate U-Disk mode, restart the thermal imager and then connect the USB cable. Do not rename the Image folder or image files to prevent reading errors.

## Snap Mode

Select the Snap Mode option and press Button **SET** to enter the setting interface. Press Button **SET** again to toggle on/off the Alarm triggered option (picture captured when temperature exceeds the set threshold) and Time Triggered Option (picture captured every N seconds set), and press Button ▲ / ▼ to set the timing. Once complete, press Button (⏏) to return to the main settings menu.



## Auto Power Off

To adjust the auto power off timing, select the Auto Power off option and press Button **SET** to access the settings. Use Button ▲ / ▼ to cycle through the time options (5Min/10Min/30Min/off). Confirm your selection by pressing Button **SET**, and press Button (ⓘ) again to return to the settings menu.

|                                                                                                  |        |
|--------------------------------------------------------------------------------------------------|--------|
|                 | <<     |
|  Auto Power Off | >      |
|  Language       | >      |
|  Format Disk    | >      |
|  Factory Reset  | >      |
|  Dev Info       | TR10 > |
|                                                                                                  |        |

|        |                                                                                   |
|--------|-----------------------------------------------------------------------------------|
| <<     | Auto Power Off                                                                    |
| 5 Min  |  |
| 10 Min |                                                                                   |
| 30 Min |                                                                                   |
| Off    |                                                                                   |
|        |                                                                                   |



## Language

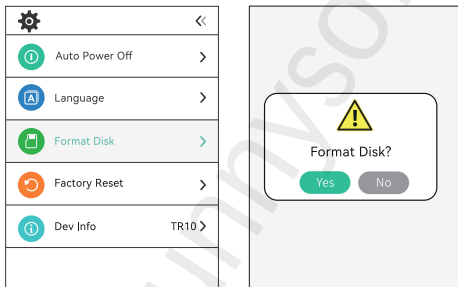
To set the language, select the Language option and press Button **SET** to enter the settings. Use Button ▲ / ▼ to toggle different languages. Press Button **SET** to confirm your selection. To return to the main settings menu, press Button .

|                                                                                                  |        |
|--------------------------------------------------------------------------------------------------|--------|
|                 | <<     |
|  Auto Power Off | >      |
|  Language       | >      |
|  Format Disk    | >      |
|  Factory Reset  | >      |
|  Dev Info       | TR10 > |

|          |                                                                                   |
|----------|-----------------------------------------------------------------------------------|
| <<       | Language                                                                          |
| English  |  |
| Deutsch  |                                                                                   |
| Français |                                                                                   |
| Italiano |                                                                                   |
| Español  |                                                                                   |
| 中文       |                                                                                   |

## Format Disk

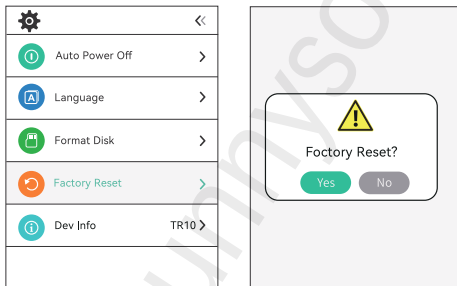
To format the disk, select the Format Disk option and press Button **SET** to enter the settings. Use Button ▲ / ▼ / ◀ / ▶ to toggle between the "Yes/No" options. Confirm your choice by pressing Button **SET** , then press Button (⏮) to return to the main settings menu.



**Note:** Exercise caution when using the Format Disk function. Confirming this action will erase all data on the disk permanently.

## Factory Reset

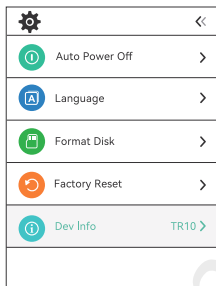
To enable factory reset, select the Factory Reset option and press Button **SET** to enter the settings. Use Button ▲ / ▼ / ◀ / ▶ to toggle between the "Yes/No" options. Confirm your choice by pressing Button **SET** , then press Button (ⓘ) to return to the main settings menu.



**Note:** Exercise caution when using the Factory Reset function. Confirming this action will erase all data on the disk permanently.

## Dev Info

Access this option by pressing button **SET** to check the general developing information of the device.



## Browse Image

Click button 5 to capture thermal images with comprehensive thermal data, which will be automatically saved to the disk. Short press button  to enter the photo album, and press button **SET** to enter the photo album interface. Press button **▲** / **▼** to cycle through different pictures and press button **SET** to open specific picture. The pictures are listed in a chronological order.

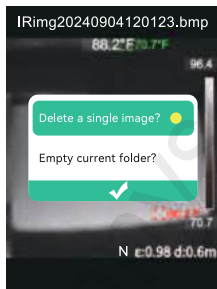


| << Album 1/1                                                                       |        |
|------------------------------------------------------------------------------------|--------|
|   | 202409 |
|  | 202408 |
|                                                                                    |        |
|                                                                                    |        |
|                                                                                    |        |

| << Photo 1/1                                                                       |                     |
|------------------------------------------------------------------------------------|---------------------|
|   | IRimg20240904120123 |
|  | IRimg20240904120121 |
|                                                                                    |                     |
|                                                                                    |                     |
|                                                                                    |                     |

## Image Deletion

Once opening a specific picture, short press button **SET** to choose to delete a single picture or current photo album.



**Specification:**

|                             |                                                                                |
|-----------------------------|--------------------------------------------------------------------------------|
| Model                       | TR10                                                                           |
| NETD                        | < 50mK                                                                         |
| Super-Resolution            | 192X192                                                                        |
| Minimum Imaging Distance    | 0.3m                                                                           |
| HFOV                        | 50°×50°                                                                        |
| IIFOV                       | 8.89 mrad                                                                      |
| Frame Rate                  | 25 Hz                                                                          |
| Focal Length                | 1.35mm                                                                         |
| Gross Storage Capacity      | 8GB                                                                            |
| Usable Storabe Capacity     | 6GB                                                                            |
| Output Port                 | Type-C                                                                         |
| Battery                     | 3.7V, 3000mAh<br>Rechargeable Lithium                                          |
| Temperature Measuring Range | -20°C to 550°C                                                                 |
| Accuracy                    | ±2°C/+2%                                                                       |
| Picture Storage Capacity    | 30,000                                                                         |
| Picture Format              | JPEG                                                                           |
| Screen                      | 2.8" LCD Display                                                               |
| Max Picture Size            | 240 x 240                                                                      |
| Color Palettes              | White Hot, Black Hot, Iron,<br>Rainbow, Blend, Red Hot,<br>Blue Hot, Green Hot |
| Dimensions                  | 224*76*91mm                                                                    |
| Net Weight                  | 345g                                                                           |

## Warranty Terms

### **Warranty Period:**

◆ This product has one year guarantee in the precondition of non-artificial damage.

### **Within the warranty period, certain maintenance costs will be charged under following cases:**

- ◆ Damages caused by improper usage or maintenance of the machine;
- ◆ The machine had been disassembled or mended by non-authorized third party;
- ◆ Without the warranty card or purchase invoice;
- ◆ The serial number on the warranty card is different with the one on product;
- ◆ The serial number has been altered or abraded;
- ◆ Damaged by any force majeure factors,
- ◆ Replacement of worn out accessories;
- ◆ Damages caused by abnormal factors such as the temperature/humidity in usage;
- ◆ Damages caused by improper operation.

**Please send machine with warranty card & purchase invoice to local dealer if maintenance needed. The warranty card will not be reissued if lost; please keep it carefully for maintenance.**



## Contact Information

**Shenzhen Mileseey Technology Co., Ltd.**

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Website: [www.mileseey.net](http://www.mileseey.net)

Store: [www.mileseeytools.com](http://www.mileseeytools.com)

E-mail: [service@mileseey.com](mailto:service@mileseey.com)

Made in China

## Mileseey Technology (US) Inc.

Office Add: 17800 CASTLETON ST STE 665 CITY OF INDUSTRY, CA 91748

Manufacturer: Shenzhen Mileseey Technology Co., Ltd.

Add: No.3601 Block A, Tanglang Town Plaza West, Fuguang Community, Taoyuan Street, Nanshan District, Shenzhen, China

Store: [www.mileseeytools.com](http://www.mileseeytools.com)

E-mail: [service@mileseey.com](mailto:service@mileseey.com)

Made in China



FR

Cet appareil  
et ses piles  
se recyclent



À DÉPOSER  
EN MAGASIN  
OU  
À DÉPOSER  
EN DÉCHÈTERIE



FR

Vous êtes responsable de remettre  
tous les appareils électriques et  
électroniques usagés à des points de  
collecte correspondants.

Pour en savoir plus:  
[www.quefairedermesdechets.fr](http://www.quefairedermesdechets.fr)

Points de collecte sur [www.quefairedermesdechets.fr](http://www.quefairedermesdechets.fr)  
Privilégiez la réparation ou le don de votre appareil !

# MLESEEY<sup>®</sup> TOOLS



## TR10

Handheld Infrared Thermal Imager

Instrukcja użytkowania



## O produkcie

Dziękujemy za zakup przenośnego termowizora na podczerwień Mileseey TRIO . Aby zapewnić optymalne użytkowanie i zrozumienie urządzenia , prosimy o dokładne zapoznanie się z instrukcją obsługi. Model TRIO oferuje zestaw funkcji zaprojektowanych z myślą o wydajności podczas prac konserwacyjnych i inspekcyjnych, dzięki czemu pomiar temperatury jest dokładniejszy i łatwiejszy w obsłudze.

## Główne funkcje urządzenia TR10

- Kolorowy wyświetlacz LCD G2,8": Oferuje duży obszar wyświetlania umożliwiając łatwą identyfikację i analizę stref uszkodzeń.
- Regulowana emisyjność: umożliwia spersonalizowane ustawienia zwiększające dokładność wykrywania w oparciu o różne materiały.
- Przechwytywanie i przechowywanie obrazów: Kamera posiada możliwość rejestrowania obrazów i przechowywania ich we wbudowanej pamięci 8 GB, która mieści do 30 000 obrazów wraz z danymi dotyczącymi temperatury w celu przeprowadzenia analizy porównawczej.
- Wygodny przesył danych: Urządzenie zostało wyposażone w złącze USB umożliwiające szybki i łatwy eksport obrazów do komputera.
- Zintegrowana bateria litowa: Urządzenie zostało wyposażone we wbudowaną baterię i interfejs ładowania typu C, co upraszcza proces ładowania i przesyłu danych.
- Automatyczne śledzenie punktów gorących i zimnych: automatyczne identyfikowanie i wyznaczanie punktów o najwyższej i najniższej temperaturze obserwowanego obszaru, co poprawia możliwości diagnostyczne.
- Krzyżyk na wyświetlaczu umożliwiając łatwe wskazanie miejsca pomiaru.
- Konfigurowalne alarmy temperatury: Umożliwiają ustawienie indywidualnych alarmów wysokiej i niskiej temperatury, dzięki czemu można łatwo i natychmiast skupić uwagę na obszarach krytycznych.
- Szeroki zakres pomiaru temperatury: Nadaje się do różnych zastosowań przemysłowych: dokładnie mierzy temperatury do 550°C.

Przenośna i przyjazna dla użytkownika konstrukcja: Odpowiednia dla profesjonalistów  
obszarach konserwacji i kontroli , oferuje praktyczne rozwiązanie umożliwiające efektywny  
monitoring i wykrywanie temperatury.

## Instrukcje bezpieczeństwa



Aby zapewnić dokładność pomiaru i bezpieczeństwo, należy używać ten produkt dokładnie tak, jak opisano w instrukcji obsługi. Należy pamiętać, że nieprzestrzeganie tych instrukcji może skutkować: do uszkodzeń nie objętych gwarancją.



Aby wyczyścić zewnętrzną część urządzenia, delikatnie przetrzyj ją miękką szmatką, wilgotną ściereczką lub łagodnym roztworem mydła. Na okładce, Nie należy używać środków czyszczących o właściwościach ściernych na soczewkach i okienkach urządzenia. detergentów, alkoholu izopropylowego ani żadnych rozpuszczalników, gdyż substancje te mogą spowodować uszkodzenia.



Nie należy używać tego produktu w środowisku łatwopalnym, wybuchowym, o dużej zawartości pary wodnej lub wilgoci, lub zawierające substancje żrące. Używanie urządzenia w takich warunkach może spowodować pogorszenie jego działania i stwarzać zagrożenie dla bezpieczeństwa.



Jeśli produkt jest uszkodzony, upuszczony lub uległ innemu uszkodzeniu, należy natychmiast zaprzestać jego używania. Dalsze używanie produktu w takich warunkach może skutkować niedokładnymi pomiarami i stanowić zagrożenie dla bezpieczeństwa.



Aby uzyskać dokładne odczyty temperatury, należy ustawić prawidłową emisyjność materiału docelowego.



Urządzenie nagrzewa się podczas włączania, co może mieć wpływ na dokładność pomiaru. W związku z tym zaleca się nie korzystać z urządzenia podczas ładowania lub bezpośrednio po nim.



Pobór mocy może zwiększyć temperaturę produktu. Aby zwiększyć dokładność pomiaru temperatury, należy postępować zgodnie z zaleceniem i włączyć urządzenie 2 minuty przed użyciem, jeśli nie było ono używane przez dłuższy czas.

## Wygląd urządzenia



1. Port ładowania USB-C 2.

Ekran LCD 3.

Nagrywanie pamięci obrazu 4. W  
górę/w dół/w lewo/w prawo Krótkie  
naciśnięcie w celu nawigacji 5.

Włączanie/wyłączanie/powrót

Długie naciśnięcie w celu włączenia lub wyłączenia

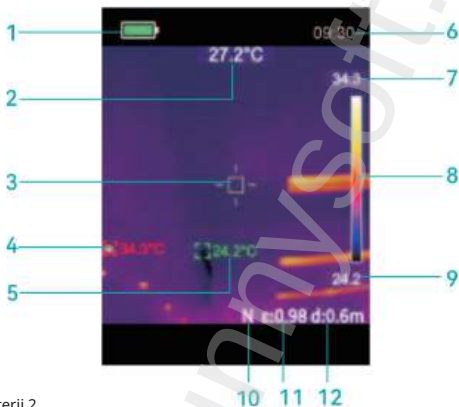
Krótkie naciśnięcie w celu  
powrotu 6.

Ustawienia Krótkie naciśnięcie w celu wejścia w opcje  
ustawień 7. Kamera

termowizyjna 8.

Przechwytywanie obrazu Krótkie naciśnięcie w celu przechwycenia i zapisania obrazu

## Ikony na wyświetlaczu



1. Stan baterii 2.

Temperatura środkowa

3. Punkt środkowy /krzyżyk 4.

Maksymalna temperatura i  
położenie 5. Minimalna

temperatura i położenie 6. Czas 7.

Maksymalna

temperatura na pasku 8. Pasek

temperatury 9. Minimalna temperatura na pasku 10. N: Normalny (normalny zakres temperatur)

(Uwaga: Po wybraniu zakresu wysokich temperatur, N zmieni się na H)

11. Emisja 12.

Odległość wykrywania



|                                                                                     |                    |        |                         |
|-------------------------------------------------------------------------------------|--------------------|--------|-------------------------|
|    |                    | «      |                         |
|    | Emissivity         | 0.98 > | Emisyjność              |
|    | Distance           | 0.6m > | Dystans                 |
|    | Temp Range         | >      | Zakres temperatur       |
|    | Temperature Units  | >      | Jednostki temperatury   |
|    | Palette            | >      | Paleta                  |
|    | HI/LO Alarm        | >      | Alarm HI/LO             |
|    | Display            | >      | Wyświetlacz             |
|    | Display Brightness | >      | Jasność wyświetlacza    |
|    | Date & Time        | >      | Data i godzina          |
|    | Correction         | >      | Korekta                 |
|   | USB Mode           | >      | Tryb USB                |
|  | Snap Mode          | >      | Reżim<br>schwytać       |
|  | Auto Power Off     | >      | Automatyczne wyłączenie |
|  | Language           | >      | Język                   |
|  | Format Disk        | >      | Formatowanie            |

|                                                                                   |               |      |
|-----------------------------------------------------------------------------------|---------------|------|
|  | Factory Reset | >    |
|  | Dev Info      | TRIO |

Ustawienia fabryczne

Informacje o urządzeniu

## Instrukcje konfiguracji

- Naciśnij przycisk SET, aby wejść do menu ustawień.
- Za pomocą przycisku pq (górną/dół) przejdź do żądanej opcji i naciśnij ponownie przycisk SET, aby wejść do ustawień.
- Użyj przycisku pq , aby dostosować wartości lub wybrać podopcję.
- Potwierdź i zapisz zmiany naciskając przycisk SET.
- Aby powrócić do głównego menu ustawień, naciśnij krótko .



## Emisyjność

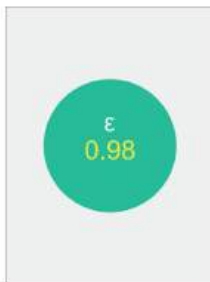
Prawidłowy wybór emisyjności jest niezbędny do dokładnego pomiaru temperatury, ponieważ znacząco wpływa na odczyty temperatury powierzchni. Aby ustawić wartość

Aby ustawić emisyjność, naciśnij przycisk SET, aby wejść do interfejsu ustawień.

Ustaw wartość za pomocą pq

Po zakończeniu ustawień krótkie naciśnięcie przycisku przeniesie Cię do  wrócisz głównego menu ustawień.

|                                                                                     |                     |
|-------------------------------------------------------------------------------------|---------------------|
|    | <<                  |
|   | Emissivity 0.98 >   |
|  | Distance 1.0m >     |
|  | Temp Range >        |
|  | Temperature Units > |
|  | Palette >           |
|  | H/L/O Alarm >       |



Uwaga: Emisyjność można ustawić w zakresie od 0,01 do 0,99. Wartości emisyjności popularnych materiałów podano w poniższej tabeli.

## Emisyjność zwykłych obiektów

| Przybory         | Emisyjność | Przybory       | Emisyjność |
|------------------|------------|----------------|------------|
| Drewno           | 0,85       | Papier blokowy | 0,86       |
| Woda             | 0,96       | Poliwęglan     | 0,8        |
| Cegły            | 0,75       | Beton          | 0,97       |
| Stal nierdzewna  | 0,14       | Tlenek miedzi  | 0,78       |
| Taśma klejąca    | 0,96       | Lame żelazo    | 0,81       |
| Płyta aluminiowa | 0,09       | Rdza           | 0,8        |
| Blacha miedziana | 0,96       | Gips           | 0,75       |
| Czarne aluminium | 0,75       | Kolor          | 0,9        |
| Skóra ludzka     | 0,98       | Guma           | 0,95       |
| Asfalt           | 0,96       | Gleba          | 0,93       |
| Plastik PCV      | 0,93       |                |            |

## Ustawienie odległości

Aby zwiększyć dokładność pomiaru temperatury, przed pomiarem należy ustawić informacje o odległości. Aby ustawić odległość, wybierz opcję odległości i naciśnij przycisk SET, aby przejść do interfejsu ustawiania wartości. Użyj przycisków pq, aby ustawić wartość odległości w zakresie od 0,3 do 3 metrów. Po zakończeniu ustawiania naciśnij przycisk SET, aby powrócić do głównego menu ustawień.



## Zakres temperatur

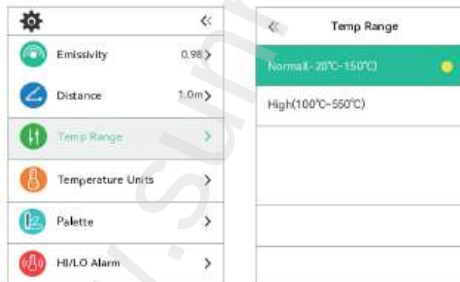
Aby ustawić zakres temperatur, wybierz Zakres temperatur i Naciśnij SET, aby wejść do ustawień. Użyj przycisku pq, aby przełączać między zakresem temperatury normalnej i wysokiej. Naciśnij SET, aby potwierdzić. Aby powrócić do menu głównego ustawienia, naciśnij przycisk 

Normalny zakres temperatur wynosi od -20°C do 150°C,  
Zakres najwyższych temperatur wynosi od 100°C do 550°C.

**Uwaga:** Przełączanie między zakresami temperatur zajmuje około 10 sekund. Zanim

Aby kontynuować inne operacje lub pomiary temperatury, należy poczekać, aż urządzenie

Przełączanie jest zakończone.



## Jednostka

Aby ustawić jednostkę, wybierz opcję Jednostka i naciśnij przycisk.

SET, aby wejść do ustawień. Naciśnij przycisk pq, aby przełączać się między °C i °F.

Naciśnij przycisk SET, aby potwierdzić wybór. Naciśnij przyciski pq, aby przejść.

do regulacji temperatury otoczenia, co zwiększa dokładność pomiarów dla materiałów z o niskiej emisyjności, takiej jak metal lub szkło. Następnie naciśnij przycisk SET, aby

Wprowadź ustawienia. Naciśnij przycisk p, aby wprowadzić temperaturę otoczenia.

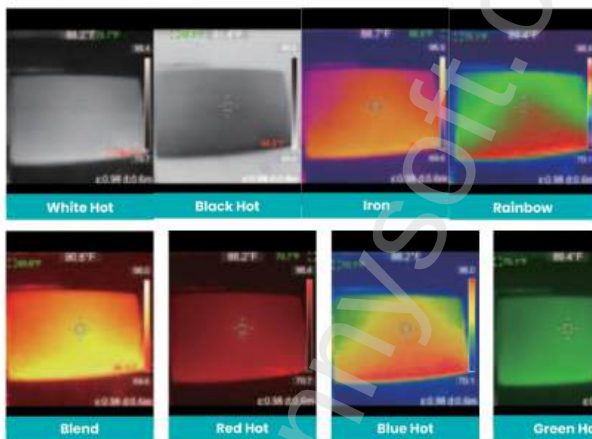
Aby powrócić do głównego menu ustawień, naciśnij przycisk .



## Paleta

Aby ustawić paletę kolorów, wybierz opcję Paleta i naciśnij przycisk SET, aby przejść do ustawień. Użyj przycisków pq, aby przełączać się między 8 palety kolorów (Biała Gorąca, Czarna Gorąca, Żelazna, Tęczowa, Mieszana, (Czerwony gorący, Niebieski gorący, Zielony gorący). Naciśnij przycisk SET Potwierdź swój wybór. Aby powrócić do głównego menu ustawień, naciśnij przycisk



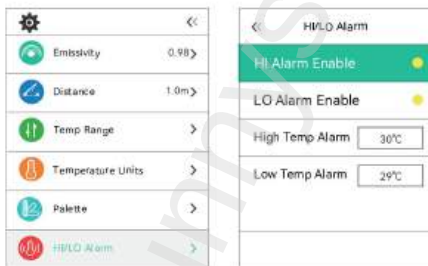


Uwagi: Naciśnij krótko przycisk pq (góra/dół), aby szybko przełączać się między różne palety kolorów.



## Alarm HI/LO (alarm wysokiej i niskiej temperatury)

Aby dostosować ustawienia alarmu wysokiej/niskiej temperatury, wybierz Wybierz opcję wysokiej/niskiej temperatury i naciśnij SET, aby wejść do interfejsu ustawienia wartości. Naciśnij ponownie przycisk pq, aby włączyć lub wyłączyć alarm wysokiej/niskiej temperatury i potwierdź naciskając przycisk SET. Użyj przycisku pq, aby ustawić wartość temperatury i naciśnij przycisk SET, aby potwierdzić ustawienie. Po zakończeniu naciśnij przycisk, aby powrócić do głównego menu ustawień.



Alarm wysokiej temperatury



Alarm niskiej temperatury



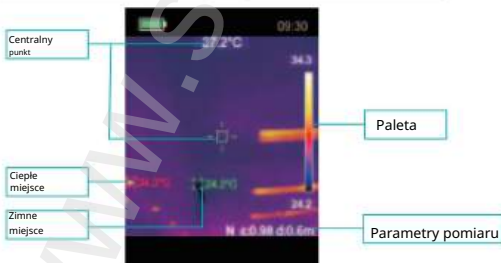
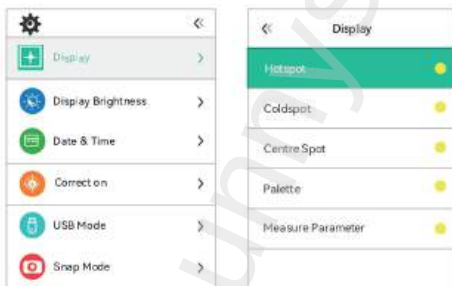
Alarm wysokiej temperatury  
i alarm niskiej temperatury

**Uwagi:** Domyślna wartość progu alarmu wysokiej temperatury jest zawsze wyższa niż wartość alarmu niskiej temperatury.

## Opcje wyświetlania

Wybierz Opcje wyświetlania i naciśnij

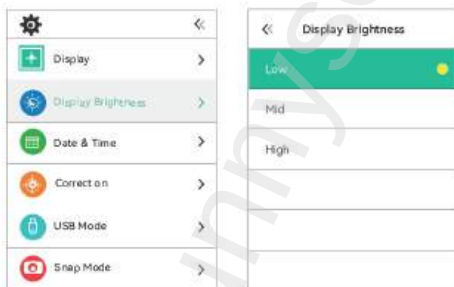
Naciśnij przycisk SET, aby przejść do interfejsu ustawień. Naciśnij przycisk pg przewiń do różnych elementów wyświetlacza i naciśnij przycisk SET, aby włączyć lub wyłączyć elementy wyświetlacza (punkt wysokiej/niskiej temperatury, punkt środkowy, Paleta (pasek kolorów), parametr (ustawianie emisyjności i odległości). Po zakończeniu naciśnij przycisk , aby powrócić do menu głównego. ustawienia.



Aby dostosować jasność ekranu, wybierz opcję Jasność i naciśnij przycisk SET, aby przejść do ustawienia. Użyj przycisku pq, aby

Wybierz pomiędzy niską, średnią i wysoką jasnością. Potwierdź ustawienie.

naciskając przycisk SET, a następnie naciśnij przycisk , aby powrócić do menu głównego



## Data i godzina

Aby ustawić datę i godzinę, wybierz opcję Data i godzina i

Naciśnij przycisk SET, aby wejść do ustawień. Naciśnij przycisk pq, aby przełączyć między formatami 12H i 24H. Użyj przycisku, aby przejść do danego pola ustawień. Ustaw wartość przyciskiem pq.

Po zakończeniu naciśnij przycisk



powrót

do głównego menu ustawień.



## Korekta

Po pewnym okresie użytkowania klarowność obrazu może ulec pogorszeniu, z powodu hałasu generowanego przez czujnik termiczny. Wybierz opcję Korekta i naciśnij przycisk SET, aby dokonać korekty, aby wyeliminować hałas i zapewnić optymalną czystość ciepłą obraz.

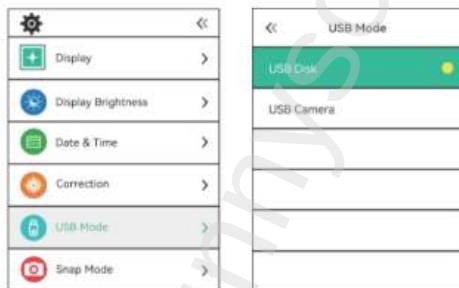


## Tryb USB

Wybierz tryb USB i naciśnij przycisk SET, aby wejść do interfejsu. Naciskaj przyciski, aby przełączać się między elementami USB pq.

Dysk i kamera USB, wybór należy potwierdzić przyciskiem SET.

Po zakończeniu ustawień i powrocie do menu głównego naciśnij



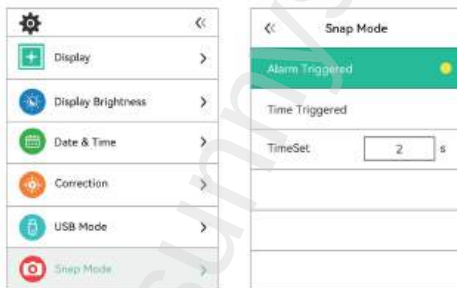
1. Aby przeglądać, ustaw tryb USB na Dysk USB  
obrazy na komputerze podłączonym do komputera za pomocą kabla USB.



**Uwaga:** Aby aktywować tryb U-Disk, należy ponownie uruchomić kamerę termowizyjną, a następnie podłączyć kabel USB. Nie należy zmieniać nazw folderu obrazu ani plików obrazu, aby uniknąć błędów odczytu.

## Tryb Snap – robienie zdjęcia

Wybierz tryb Snap i naciśnij SET, aby wejść do interfejsu ustawień. Naciśnij ponownie przycisk SET, aby włączyć/wyłączyć opcję wyzwolenia alarmu (zdjęcie wykonane, gdy temperatura przekracza ustawioną wartość graniczną) i opcja Wyzwalany czasowo (zdjęcie robione co N sekund) i naciśnięcie przycisku  Ustaw czas. Po zakończeniu naciśnij przycisk  Do powrót do głównego menu ustawień.



## Automatyczne wyłączenie

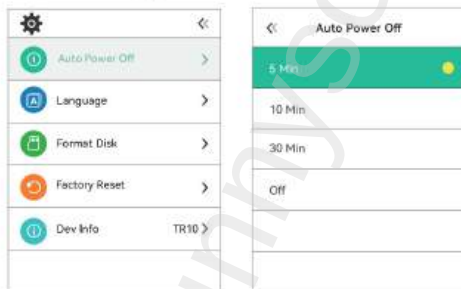
Aby dostosować czas automatycznego wyłączenia, wybierz

Wyłącz zasilanie automatycznie i naciśnij przycisk SET, aby wejść do ustawień.

Korzystanie z przycisków pq przewijaj opcje czasu

(5 min/10 min/30 min/wył.). Naciśnij przycisk SET, aby potwierdzić wybór .

a następnie naciśnij przycisk  aby powrócić do menu ustawień.



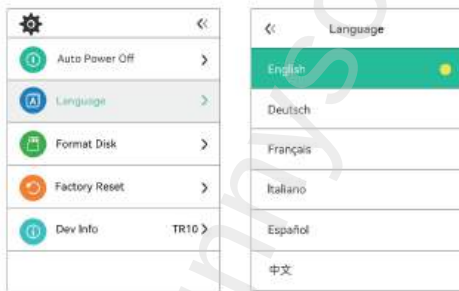


## Język

Aby ustawić język, wybierz opcję Język i naciśnij przycisk SET.

Wejdź w ustawienia. Użyj przycisków pq, aby zmienić język.

Naciśnij przycisk SET, aby potwierdzić wybór. Aby powrócić do głównego menu ustawień, naciśnij przycisk SET.



## Formatowanie dysku

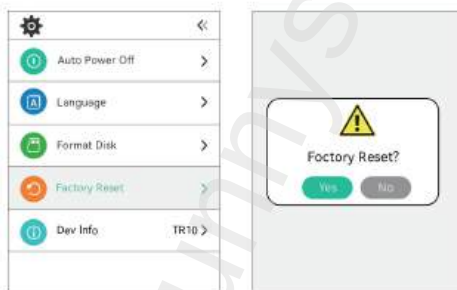
Aby sformatować dysk, wybierz opcję Formatuj dysk i Naciśnij SET, aby wejść do ustawień. Użyj przycisków ▲ ▼ ◀ ▶ Przełączaj się między opcjami „Tak/Nie”. Potwierdź swój wybór, naciskając przycisk SET, a następnie naciśnij przycisk , aby powrócić do głównego menu ustawień.



**Uwaga:** Zachowaj ostrożność podczas korzystania z funkcji formatowania dysku . Potwierdzenie tego Ta czynność spowoduje trwałe usunięcie wszystkich danych z dysku.

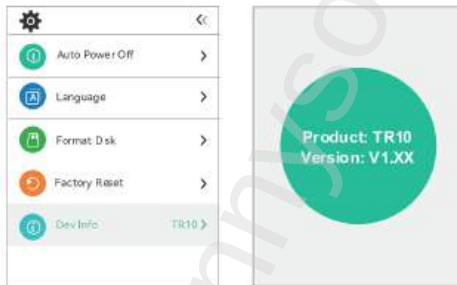
## Ustawienia fabryczne

Aby włączyć przywracanie ustawień fabrycznych, wybierz Przywróć ustawienia fabryczne i naciśnij SET, aby wejść Ustawienia. Użyj przycisków, aby przesuwać się między opcjami „Tak/Nie”. Potwierdź wybór, naciskając przycisk SET, a następnie naciśnij przycisk powrót do głównego menu ustawień.



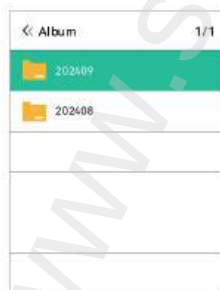
**Uwaga:** Należy zachować ostrożność podczas korzystania z funkcji przywracania ustawień fabrycznych . Potwierdzenie tej czynności spowoduje trwałe usunięcie wszystkich danych na dysku.

Naciśnij przycisk SET , aby otworzyć tę opcję i sprawdzić ogólne informacje o rozwoju urządzenia.



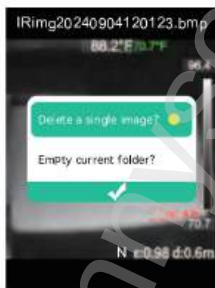
## Przeglądanie obrazów

Kliknij przycisk 5, aby wykonać zdjęcia termiczne o złożonym kształcie. Dane termiczne, które zostaną automatycznie zapisane na dysku. Naciśnij krótko przycisk, aby wejść do albumu ze zdjęciami i naciśnij przycisk, aby... SET, aby wejść do albumu ze zdjęciami. Naciśnij przycisk, ▲▼ aby przeglądać różne zdjęcia, a następnie naciśnij przycisk SET, aby je otworzyć. konkretny obraz. Obrazy są sortowane chronologicznie.



## Usuwanie obrazu

Po otwarciu konkretnego zdjęcia możesz wybrać usunięcie pojedynczego zdjęcia lub całego albumu zdjęć, naciskając krótko przycisk SET .



## Specyfikacje

|                                     |                                                                                                                   |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Model                               | TR10                                                                                                              |
| NETD                                | < 50mK                                                                                                            |
| Super rozdzielczość                 | 192X192                                                                                                           |
| Minimalna odległość oglądania       | 0.3m                                                                                                              |
| HFOV                                | 50°×50°                                                                                                           |
| IFOV                                | 8.89 mrad                                                                                                         |
| Szybkość klatek                     | 25 Hz                                                                                                             |
| Ogniskowa                           | 1.35mm                                                                                                            |
| Pojemność magazynowa brutto         | 8GB                                                                                                               |
| Użyteczna pojemność pamięci masowej | 6GB                                                                                                               |
| Port wyjściowy                      | Typ C                                                                                                             |
| Bateria                             | 3,7 V, 3000 mAh<br>Akumulator litowy                                                                              |
| Zakres pomiaru temperatury          | -20°C do 550°C                                                                                                    |
| Dokładność                          | +2°C/+2%                                                                                                          |
| Pojemność pamięci obrazu            | 30 000                                                                                                            |
| Format obrazu                       | JPEG                                                                                                              |
| Ekran                               | 2,8-calowy wyświetlacz LCD                                                                                        |
| Maksymalny rozmiar obrazu           | 240X240                                                                                                           |
| Palety kolorów                      | Biało-gorące, czarno-gorące,<br>żelazo, tęcza, mieszanka,<br>czerwony gorący, niebieski<br>gorący, zielony gorący |
| Wymiary                             | 224 × 76 × 91 mm                                                                                                  |
| Waga netto                          | 345 g                                                                                                             |

## Dane kontaktowe

Shenzhen Milesee Technology Co., Ltd.

Add: 3601 Block A, Tanglang Town Plaza West, Fuguang Community , Taoyuan Street, Nonshan District, Shenzhen, China

Strona internetowa:

Website: [www.mileseeey.net](http://www.mileseeey.net)

Store: [www.mileseeeytools.com](http://www.mileseeeytools.com)

E-mail: [service@mileseeey.com](mailto:service@mileseeey.com)

Dostawca/Dystrybutor

Sunnysoft sro

Kovanecka 2390/1a

190 00 Praga 9

Czechy

[www.sunnysoft.cz](http://www.sunnysoft.cz)



# MLESEEY<sup>®</sup> TOOLS



## TR10

Handheld Infrared Thermal Imager

Navodila za uporabo



## O izdelku

Zahvaljujemo se vam za nakup ročne infrardeče termovizijske kamere Milesee TRIO . Za optimalno uporabo in razumevanje naprave natančno preberite uporabniški priročnik. TRIO se ponaša z naborom funkcij, zasnovanih za učinkovitost pri vzdrževalnih in preglednih opravilih, zaradi česar je zaznavanje temperature natančnejše in uporabniku prijaznejše.

### Glavne funkcije naprave TR10

- 2,8-palčni barvni LCD-zaslon: Ponuja veliko površino prikaza za enostavno prepoznavanje in analizo območij napak.
- Nastavljiva emisivnost: Omogoča prilagojene nastavitve za povečanje natančnosti zaznavanja glede na različne materiale.
- Zajem in shranjevanje slik: Opremljen z možnostjo zajemanja slik in shranjevanja le-teh v vgrajenem 8 GB pomnilniku, ki lahko shrani do 30.000 slik s podatki o temperaturi za primerjalno analizo.
- Priročen prenos podatkov: Naprava je opremljena s priključkom USB za hiter in enostaven izvoz slik v računalnik. - Vgrajena litijeva baterija: Opremljena je z vgrajeno baterijo in polnilnim vmesnikom tipa C, kar poenostavi postopek polnjenja in prenosa podatkov.
- Samodejno sledenje vročim in hladnim točkam: Samodejno prepoznavanje in ciljanje na najvišje in najnižje temperaturne točke opazovanega prizora, kar izboljšuje diagnostične zmogljivosti.
- Križec na zaslonu za enostavno ciljanje na mesto merjenja.
- Prilagodljivi temperaturni alarmi: Omogočajo nastavitve individualnih alarmov za visoke in nizke temperature, kar omogoča enostavno takojšnjo usmerjanje pozornosti na kritična območja. - Širok razpon merjenja temperature: Primerno za različne industrijske aplikacije: natančno meri temperature do 550 °C.

Prenosna in uporabniku prijazna zasnova: Primerno za profesionalce v vzdrževalna in nadzorna območja ponuja praktično rešitev za učinkovito spremljanje in zaznavanje temperature.

## Varnostna navodila



Za zagotovitev natančnosti meritev in vaše varnosti uporabite ta izdelek natančno tako, kot je navedeno v uporabniškem priročniku. Upoštevajte, da lahko neupoštevanje teh navodil povzroči za škodo, ki je ne krije garancijski servis.



Za čiščenje zunanosti naprave jo nežno obrišite z vlažno krpo ali blago milnico. Na pokrovu, Na lečah in oknih naprave ne uporabljajte abrazivnih čistilnih sredstev. Detergenti, izopropilni alkohol ali kakršna koli topila, saj lahko te snovi povzročijo škodo.



Tega izdelka ne uporabljajte v vnetljivem, eksplozivnem okolju, visoka vsebnost pare ali vlage ali vsebuje korozivne snovi. Uporaba naprave v teh pogojih lahko poslabša njeno delovanje in predstavlja varnostno tveganje.



Če je izdelek poškodovan, padel ali kako drugače poškodovan, ga takoj prenehajte uporabljati. Nadaljnja uporaba izdelka v teh pogojih lahko povzroči netočne meritve in predstavlja varnostno tveganje.



Za natančne odčitke temperature nastavite pravilno emisivnost ciljnega materiala.



Naprava se med vklopom segreje, kar lahko vpliva na natančnost meritev. Zato je priporočljivo, da naprave ne uporabljate med polnjenjem ali takoj po njem.



Poraba energije lahko poveča temperaturo izdelka. Za povečanje natančnosti merjenja temperature upoštevajte priporočilo, da napravo vklopite 2 minuti pred uporabo, če je dlje časa niste uporabljali.

## Videz naprave

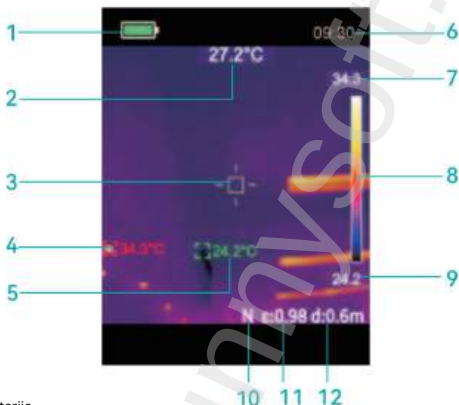


1. Polnilna vrata USB-C 2.  
LCD- zaslon 3.

Snemanje slik v pomnilnik 4. Gor/  
dol/levo/desno Kratek pritisk za  
navigacijo 5. Vkllop/izklop/vrnitev  
Dolg pritisk za vklop ali izklop  
Kratek pritisk za vrnitev 6. Nastavitve Kratek  
pritisk za vstop v možnosti  
nastavitve 7.

Termovizijska kamera 8. Zajem slike Kratek pritisk za  
zajem in shranjevanje  
slik

## Ikone na zaslonu



1. Stanje baterije

2. Sredinska temperatura

3. Sredinska točka/križec

4. Najvišja temperatura in položaj

5. Najnižja temperatura in položaj

6. Čas

7. Najvišja temperatura na stolpcu

8. Temperaturni stolpec

9. Najnižja temperatura na stolpcu

10. N: Normalno (normalno temperaturno območje)

(Opomba: Pri izbiri visokega temperaturnega območja se bo N premaknil v H)

11. Emisija

12. Razdalja zaznavanja

|                                                                                     |                    |        |                                  |
|-------------------------------------------------------------------------------------|--------------------|--------|----------------------------------|
|    |                    | «      |                                  |
|    | Emissivity         | 0.98 > | Emisivnost                       |
|    | Distance           | 0.6m > | Razdalja                         |
|    | Temp Range         | >      | Temperaturno območje             |
|    | Temperature Units  | >      | Temperaturne enote               |
|    | Palette            | >      | Paleta                           |
|    | HI/LO Alarm        | >      | Alarm za visokohitko temperaturo |
|    | Display            | >      | Prikaz                           |
|    | Display Brightness | >      | Svetlost zaslona                 |
|    | Date & Time        | >      | Datum in ura                     |
|    | Correction         | >      | Popravek                         |
|   | USB Mode           | >      | Način USB                        |
|  | Snap Mode          | >      | Režim zajemanje                  |
|  | Auto Power Off     | >      | Samodejni izklop                 |
|  | Language           | >      | Jezik                            |
|  | Format Disk        | >      | Oblikovanje                      |

|                                                                                   |               |      |
|-----------------------------------------------------------------------------------|---------------|------|
|  | Factory Reset | >    |
|  | Dev Info      | TRIO |

Tovarniške nastavitve

Informacije o napravi

## Navodila za nastavitvev

- Pritisnite gumb SET za vstop v meni z nastavitvami.
- Z gumboma pq (gor/dol) se premaknete na želeno možnost in ponovno pritisnite gumb SET, da vnesete nastavitve.
- Z gumbom pq prilagodite vrednosti ali izberite podmožnosti.
- Spremembe potrdite in shranite s pritiskom na gumb SET.
- Za vrnitev v glavni meni z nastavitvami na kratko pritisnite .



## Emisivnost

Pravilna izbira emisivnosti je bistvena za natančno merjenje temperature, ker bistveno vpliva na odčitke temperature površine. Za nastavitvev vrednosti emisivnost, pritisnite gumb SET za vstop v nastavitveni vmesnik.

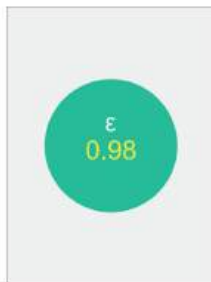
Vrednost nastavite z uporabo pq

Po končanih nastavitvah vas kratek pritisk gumba popelje v glavni meni z nastavitvami.



vrnil se boš

|                                                                                     |                     |
|-------------------------------------------------------------------------------------|---------------------|
|    | <<                  |
|   | Emissivity 0.98 >   |
|  | Distance 1.0m >     |
|  | Temp Range >        |
|  | Temperature Units > |
|  | Palette >           |
|  | H/L/O Alarm >       |





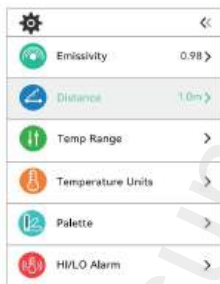
Opomba: Emisivnost je mogoče nastaviti od 0,01 do 0,99. Vrednosti emisivnosti običajnih materialov so navedene v spodnji tabeli.

## Emisivnost običajnih predmetov

| Materiali           | Emisivnost | Materiali      | Emisivnost |
|---------------------|------------|----------------|------------|
| Les                 | 0,85       | Blokovni papir | 0,86       |
| Voda                | 0,96       | Polikarbonat   | 0,8        |
| Opeke               | 0,75       | Beton          | 0,97       |
| Nerjaveče jeklo     | 0,14       | Bakrov oksid   | 0,78       |
| Lepilni trak        | 0,96       | Lito železo    | 0,81       |
| Aluminijasta plošča | 0,09       | Rja            | 0,8        |
| Bakrena pločevina   | 0,96       | Mavec          | 0,75       |
| Črni aluminij       | 0,75       | Barva          | 0,9        |
| Človeška koža       | 0,98       | Žvečilni gumi  | 0,95       |
| Asfalt              | 0,96       | Tla            | 0,93       |
| PVC plastika        | 0,93       |                |            |

## Nastavitev razdalje

Za povečanje natančnosti zaznavanja temperature pred merjenjem nastavite podatke o razdalji. Za nastavitev razdalje izberite možnost razdalje in pritisnite gumb SET, da vstopite v vmesnik za nastavitev vrednosti. Z gumboma  $\leftarrow$  in  $\rightarrow$  nastavite vrednost razdalje v območju od 0,3 do 3 metrov. Ko je nastavitev končana, pritisnite  $\odot$  za vrnitev v glavni meni z nastavitvami.



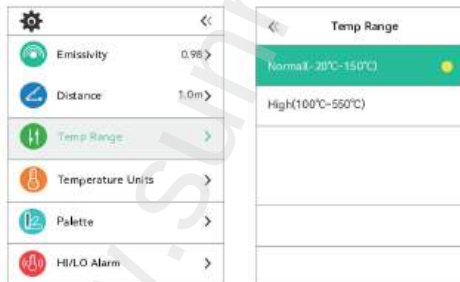
## Temperaturno območje

Za nastavev temperaturnega območja izberite Temp. območje in Pritisnite SET za vstop v nastavev. Za preklapljanje uporabite gumb pq. med normalnim in visokim temperaturnim območjem. Za potrditev pritisnite SET. Za vrnitev v glavni meni nastavitve, pritisnite gumb 

Normalno temperaturno območje je od -20 °C do 150 °C,  
Visokotemperaturno območje je od 100 °C do 550 °C.

Opomba: Preklapljanje med temperaturnimi območji traja približno 10 sekund. Preden

Če želite nadaljevati z drugimi operacijami ali meritvami temperature, počakajte, da se naprava preklap je končan.



## Enota

Za nastavitve enote izberite Enota in pritisnite gumb.

SET za vstop v nastavitve. Pritisnite gumb pq za preklapljanje med °C in °F.

Pritisnite gumb SET, da potrdite svojo izbiro. Pritisnite gumba pq za premikanje

za prilagoditev temperature okolice, kar poveča natančnost meritev materialov z nizko emisivnostjo, kot sta kovina ali steklo. Nato pritisnite gumb SET, da

Vnesite nastavitve. Pritisnite gumba p, da vnesete temperaturo okolice.

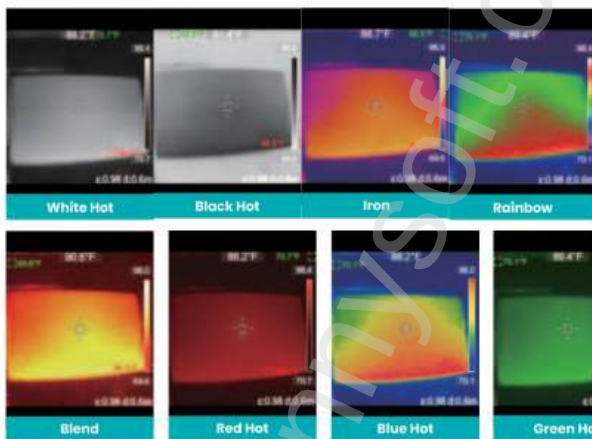
Za vrnitev v glavni meni z nastavitvami pritisnite gumb.



## Paleta

Za nastavev barvne palete izberite Paleta in pritisnite SET za vstop v nastavitve. Z gumboma pq preklapljanje med 8 barvne palete (bela vroča, črna vroča, železo, mavrica, mešanica, Rdeča vroča, modra vroča, zelena vroča). Pritisnite gumb SET. potrdite svojo izbiro. Če se želite vrniti v glavni meni z nastavitvami, pritisnite gumb

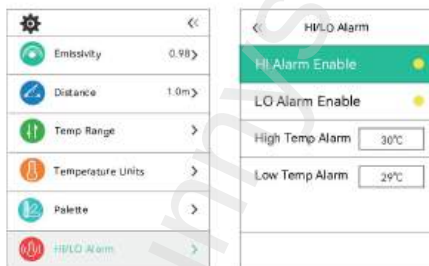




Opombe: Za hitro preklapljanje med na kratko pritisnite gumb pq (gor/dol) različne barvne palete.

## Alarm HI/LO (alarm za visoko in nizko temperaturo)

Za prilagoditev nastavitve alarma za visoko/nizko temperaturo izberite možnost visoke/nizke temperature in pritisnite SET za vstop v vmesnik za nastavitvenih vrednosti. Ponovno pritisnite gumb pq , da vklopite ali izklopite alarm za visoko/nizko temperaturo in potrdite s pritiskom na gumb SET. Z gumbom pq nastavite vrednost temperature in pritisnite gumb SET za potrditev nastavitve. Ko končate, pritisnite gumb za vrnitev v glavni meni z nastavitvami.



Alarm za visoko temperaturo



Alarm za nizko temperaturo



Alarm za visoko temperaturo  
in alarm za nizko temperaturo

Opombe: Privzeta nastavljen vrednost praga alarma za visoko temperaturo je vedno višja kot vrednost alarma za nizko temperaturo.

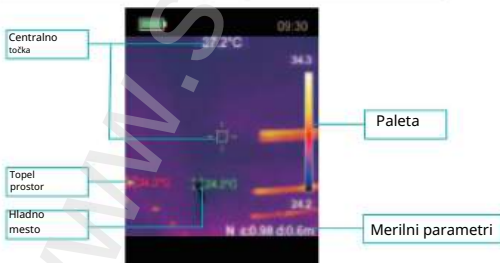
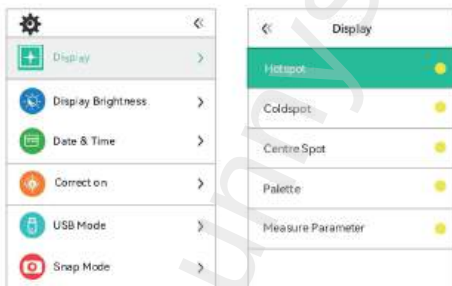
## Možnosti prikaza

Izberite Možnosti prikaza in pritisnite

Pritisnite gumb SET za vstop v nastavitveni vmesnik. Pritisnite gumb pq

Pomaknite se do različnih elementov zaslona in pritisnite gumb SET, da ga vklopite ali izklopite elemente zaslona (pika za visoko/nizko temperaturo, sredinska pika, Paleta (barvna lestvica), parameter (nastavitev emisivnosti in razdalje)).

Ko končate, pritisnite gumb za vrnitev v glavni meni.  nastavitve.

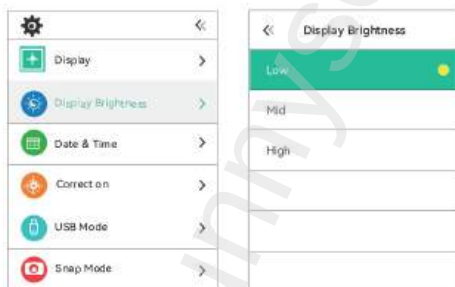




Za nastavitev svetlosti zaslona izberite Svetlost in pritisnite SET za vstop v nastavitev. Za to uporabite gumb pq.

Izberite med nizko, srednjo in visoko svetlostjo. Potrdite nastavitev.

s pritiskom na gumb SET, nato pa pritisnite gumb za vrnitev v glavni meni 



## Datum in ura

Če želite nastaviti datum in uro, izberite Datum in ura in Pritisnite gumb SET za vstop v nastavitve. Pritisnite gumb pq za preklap med 12-urnim in 24-urnim formatom. Z gumbom se premaknete na zeleno polje za nastavitve. Vrednost nastavite z gumbom pq.

Ko končate, pritisnite gumb



vrnitev

v glavni meni z nastavitvami.



## Popravek

Po določenem času uporabe se lahko jasnost slike poslabša zaradi šuma, ki ga ustvarja temperaturni senzor. Izberite možnost Popravek in pritisnite gumb SET, da izvedete popravek, za odpravo hrupa in zagotavljanje optimalne toplotne čistosti slika.

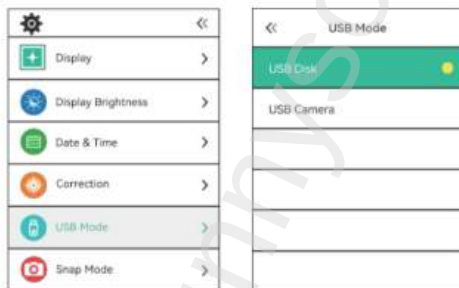


## Način USB

Izberite način USB in pritisnite gumb SET za vstop v vmesnik. Pritisnite gumba za preklapljanje med elementi USB pq.

Disk in USB kamera, izbiro potrdite s pritiskom na gumb SET.

Ko končate z nastavitvami in se vrnete v glavni meni, pritisnite



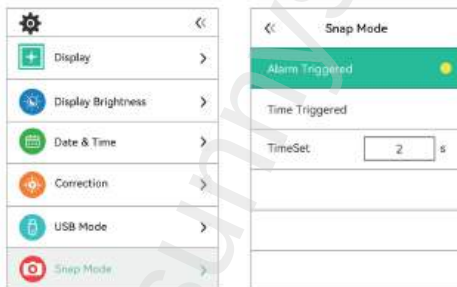
1. Za brskanje nastavite način USB na USB disk slike na računalniku, ki ga povežete z računalnikom s kablom USB.



**Opomba:** Za aktivacijo načina U-Disk ponovno zaženite termovizijsko kamero in nato priključite kabel USB. Ne preimenujte mape s slikami ali slikovnih datotek, da se izognete napakam pri branju.

## Način Snap - fotografiranje

Izberite način Snap in pritisnite SET za vstop. Vmesnik za nastavitve. Ponovno pritisnite gumb SET, da vklop/izklop možnosti sproženega alarma (slika je bila posneta, ko temperatura presega nastavljeno mejno vrednost) in možnost časovno sproženo (slika se posname vsakih N nastavljenih sekund) in pritisnete gumb  za nastavite čas. Ko končate, pritisnite gumb  za vrnite se v glavni meni z nastavitvami.



## Samodejni izklop

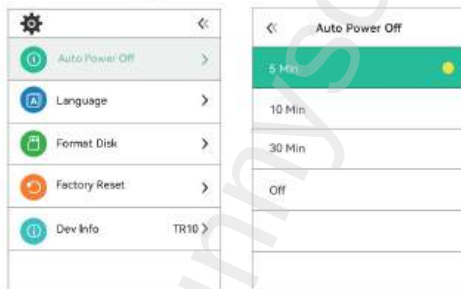
Če želite prilagoditi čas samodejnega izklopa, izberite

Samodejni izklop in pritisnite gumb SET za vstop v nastavitve.

Uporaba gumbov  pomikanje po možnostih časa

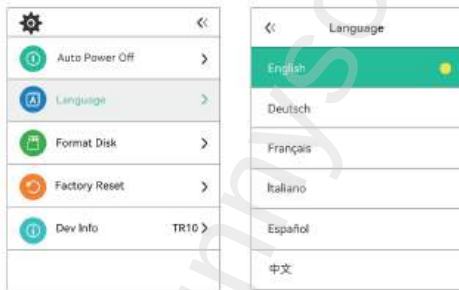
(5 min/10 min/30 min/izklop). Pritisnite gumb SET, da potrdite izbiro .

in nato pritisnite gumb  za vrnitev v meni z nastavitvami.



## Jezik

Za nastavitve jezika izberite Jezik in pritisnite SET.  
vnesite nastavitve. Za preklapljanje med jeziki uporabite gumba pq.  
Pritisnite gumb SET, da potrdite svojo izbiro. Za vrnitev v glavni meni z  
nastavitvami pritisnite



## Formatiranje diska

Za formatiranje diska izberite Formatiraj disk in

Pritisnite SET za vstop v nastavitve. Uporabite gumbе ▲ ▼ ◀ ▶ preklopljajte med možnostma »Da/Ne«. Potrdite svojo izbiro s pritiskom na gumb SET, nato pa pritisnite gumb , da se vrnete v glavni meni z nastavitvami.

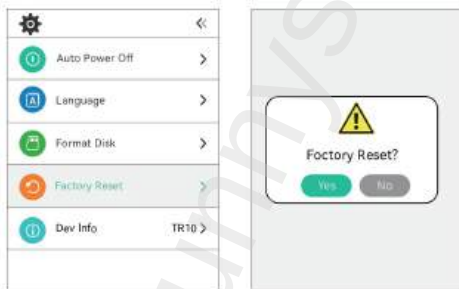


**Opomba:** Pri uporabi funkcije Format Disk bodite previdni . Potrditev tega To dejanje bo trajno izbrisalo vse podatke na disku.



## Tovarniške nastavitve

Če želite omogočiti ponastavitev na tovarniške nastavitve, izberite Ponastavite na tovarniške nastavitve in pritisnite SET za vstop nastavitve. Za preklapljanje med možnostmi uporabite gumb "Da/Ne". Izbiro potrdite s pritiskom na gumb SET, nato pritisnite gumb vrnite se v glavni meni z nastavitvami.



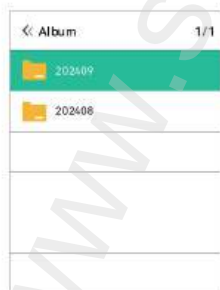
Opomba: Pri uporabi funkcije ponastavitve na tovarniške nastavitve bodite previdni . S potrditvijo tega dejanja boste trajno izbrisali vse podatke na disku.

Pritisnite gumb SET , da odprete to možnost in preverite splošne informacije o razvoju naprave.



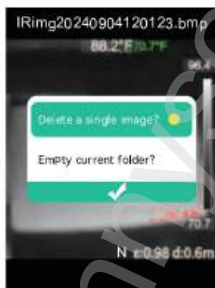
## Brskanje po slikah

Kliknite gumb 5 za zajemanje termičnih slik s kompleksnimi termični podatki, ki se bodo samodejno shranili na disk. Na kratko pritisnite gumb za vstop v foto album in pritisnite gumb za SET za vstop v foto album. Pritisnite gumb za ▲▼ brskanje po različnih slikah in pritisnite gumb SET za odpiranje določeno sliko. Slike so razvrščene kronološko.



## Brisanje slike

Ko odprete določeno sliko , lahko s kratkim pritiskom na gumb SET izbrišete posamezno sliko ali trenutni foto album .



## Specifikacije

|                                   |                                                                                                    |
|-----------------------------------|----------------------------------------------------------------------------------------------------|
| Model                             | TR10                                                                                               |
| NETD                              | < 50mK                                                                                             |
| Super ločljivost                  | 192X192                                                                                            |
| Najmanjša razdalja gledanja       | 0.3m                                                                                               |
|                                   | 50°×50°                                                                                            |
| IFOV                              | 8.89 mrad                                                                                          |
| Hitrost sličit                    | 25 Hz                                                                                              |
| Goriščna razdalja                 | 135mm                                                                                              |
| Bruto skladiščna zmogljivost      | 8GB                                                                                                |
| Uporabna shranjevalna zmogljivost | 6GB                                                                                                |
| Izhodna vrata                     | Tip C                                                                                              |
| Baterija                          | 3,7 V, 3000 mAh<br>Polnilna litijeva baterija                                                      |
| Območje merjenja temperature      | od -20 °C do 550 °C                                                                                |
| Natančnost                        | +2°C/+2%                                                                                           |
| Zmogljivost shranjevanja slik     | 30.000                                                                                             |
| Oblika slike                      | JPEG                                                                                               |
| Zaslon                            | 2,8-palčni LCD-zaslon                                                                              |
| Največja velikost slike           | 240X240                                                                                            |
| Barvne palete                     | Vroče belo, vroče črno,<br>železo, mavrica, mešanica,<br>vroče rdeče, vroče modro,<br>vroče zeleno |
| Dimenzije                         | 224 × 76 × 91 mm                                                                                   |
| Neto teža                         | 345 g                                                                                              |

## Kontaktní podatki

Shenzhen Milesee Technology Co., Ltd.

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ulica Taoyuan, okrožje Nonshan, Shenzhen, Kitajska

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# MLESEEY<sup>®</sup> TOOLS



## TR10

Handheld Infrared Thermal Imager

Upute za uporabu



## O proizvodu

Hvala vam što ste kupili ručnu infracrvenu termovizijsku kameru Milesee TRIO . Kako biste osigurali optimalnu upotrebu i razumijevanje uređaja , pažljivo pročitajte korisnički priručnik. TRIO se može pohvaliti skupom značajki dizajniranih za učinkovitost u zadacima održavanja i inspekcije, čineći detekciju temperature točnijom i jednostavnijom za korištenje.

## Glavne funkcije uređaja TR10

- G2,8" LCD zaslon u boji: Nudi veliko područje prikaza za jednostavnu identifikaciju i analizu zona kvara.
- Podesiva emisivnost: Omogućuje personalizirane postavke za povećanje točnosti detekcije na temelju različitih materijala.
- Snimanje i pohranjivanje slika: Opremljen mogućnošću snimanja slika i pohranjivanja u ugrađenu memoriju od 8 GB, koja može pohraniti do 30 000 slika s podacima o temperaturi za usporednu analizu.
- Praktičan prijenos podataka: Uređaj je opremljen USB priključkom za brz i jednostavan izvoz slika na računalo.
- Integrirana litijeva baterija: Opremljen je ugrađenom baterijom i Type-C sučeljem za punjenje, što pojednostavljuje proces punjenja i prijenosa podataka.
- Automatsko praćenje vrućih i hladnih točaka: Automatski identificira i cilja najvišu i najnižu temperaturnu točku promatrane scene, poboljšavajući dijagnostičke mogućnosti.
- Križić na zaslonu za jednostavno ciljanje mjesta mjerenja.
- Prilagodljivi temperaturni alarmi: Omogućuje vam postavljanje pojedinačnih alarma za visoku i nisku temperaturu, što olakšava trenutno usmjeravanje pažnje na kritična područja.
- Širok raspon mjerenja temperature: Pogodno za razne industrijske primjene: točno mjeri temperature do 550°C.



Prijenosan i jednostavan dizajn: Pogodno za profesionalce u područja održavanja i kontrole , nudi praktično rješenje za učinkovito praćenje i detekciju temperature.

## Sigurnosne upute



Kako biste osigurali točnost mjerenja i svoju sigurnost, koristite ovaj proizvod točno onako kako je navedeno u korisničkom priručniku. Imajte na umu da nepoštivanje ovih uputa može rezultirati na štetu koja nije pokrivena jamstvenim servisom.



Za čišćenje vanjske strane ovog uređaja, nježno ga obrišite krpom vlažnom krpom ili blagom otopinom sapuna. Na poklopcu, Ne koristite abrazivna sredstva za čišćenje na lećama i prozorima uređaja. deterdžente, izopropilni alkohol ili bilo koja otapala jer te tvari mogu uzrokovati oštećenja.



Ne koristite ovaj proizvod u zapaljivom, eksplozivnom okruženju, s visok sadržaj pare ili vlage ili sadrži korozivne tvari. Korištenje uređaja u tim uvjetima moglo bi smanjiti njegove performanse i predstavljati sigurnosni rizik.



Ako je proizvod oštećen, pao ili na drugi način oštećen, odmah ga prestanite koristiti. Daljnja upotreba proizvoda u tim uvjetima može rezultirati netočnim mjerenjima i predstavljati sigurnosnu opasnost.



Za dobivanje točnih očitavanja temperature, postavite ispravnu emisivnost ciljanog materijala.



Uređaj se zagrijava tijekom uključivanja, što može utjecati na točnost mjerenja. Stoga se preporučuje da ne koristite uređaj tijekom ili odmah nakon punjenja.



Potrošnja energije može povećati temperaturu proizvoda. Kako biste povećali točnost mjerenja temperature, slijedite preporuku da uključite uređaj 2 minute prije upotrebe ako uređaj nije korišten dulje vrijeme.

## Izgled uređaja



1. USB-C priključak za punjenje

2. LCD zaslon 3.

Snimanje slike u memoriju 4. Gore/  
dolje/lijevo/desno Kratko pritisnite za

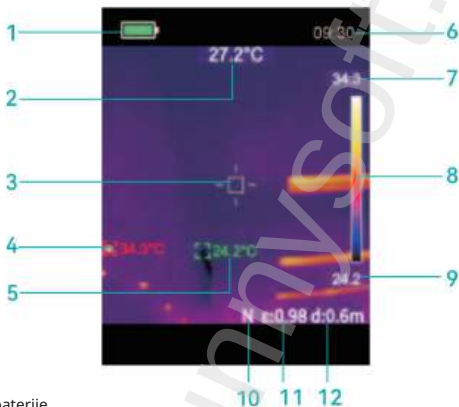
navigaciju 5. Uključivanje/  
isključivanje/povratak Dugo  
pritisnite za uključivanje ili isključivanje Kratko

pritisnite za povratak 6. Postavke  
Kratko pritisnite

za unos postavki 7. Termalna kamera 8. Snimanje slike  
Kratko pritisnite za

snimanje slika i spremanje

## Ikone na zaslonu



1. Status baterije

2. Središnja

temperatura 3. Središnja točka/

križić 4. Maksimalna temperatura

i položaj 5. Minimalna

temperatura i položaj 6. Vrijeme 7.

Maksimalna

temperatura na traci 8. Traka

temperature 9. Minimalna temperatura na traci 10. N: Normalno (normalni temperaturni raspon

(Napomena: Prilikom odabira visokog temperaturnog raspona, N će se promijeniti u H)

11. Emisija

12. Udaljenost detekcije

|                                                                                     |                    |        |                                                  |
|-------------------------------------------------------------------------------------|--------------------|--------|--------------------------------------------------|
|    |                    | «      |                                                  |
|    | Emissivity         | 0.98 > | Emisivnost                                       |
|    | Distance           | 0.6m > | Udaljenost                                       |
|    | Temp Range         | >      | Raspon temperature                               |
|    | Temperature Units  | >      | Jedinice za temperaturu                          |
|    | Palette            | >      | Paleta                                           |
|    | HI/LO Alarm        | >      | <small>Alarm za visokotlačnu temperaturu</small> |
|    | Display            | >      | Prikaz                                           |
|    | Display Brightness | >      | Svjetlina zaslona                                |
|    | Date & Time        | >      | Datum i vrijeme                                  |
|    | Correction         | >      | Ispravak                                         |
|   | USB Mode           | >      | USB način rada                                   |
|  | Snap Mode          | >      | Režim                                            |
|  | Auto Power Off     | >      | hvatanje                                         |
|  | Language           | >      | Automatsko isključivanje                         |
|  | Format Disk        | >      | Jezik                                            |
|                                                                                     |                    |        | Formatiranje                                     |

|                                                                                   |               |      |
|-----------------------------------------------------------------------------------|---------------|------|
|  | Factory Reset | >    |
|  | Dev Info      | TRIO |

Tvorničke postavke

Informacije o uređaju

## Upute za postavljanje

- Pritisnite tipku SET za ulazak u izbornik postavki.
- Pomoću tipke pq (gore/dolje) prijdite na željenu opciju i ponovno pritisnite tipku SET za unos postavki.
- Pomoću tipke pq prilagodite vrijednosti ili odaberite podopcije.
- Potvrdite i spremite promjene pritiskom na tipku SET.
- Za povratak u glavni izbornik postavki kratko pritisnite .



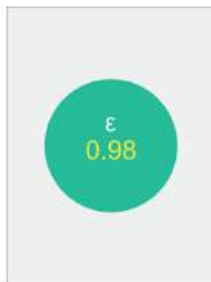
## Emisivnost

Ispravan izbor emisivnosti je ključan za točno mjerenje temperature jer značajno utječe na očitavanja temperature površine. Za postavljanje vrijednosti emisivnost, pritisnite tipku SET za ulazak u sučelje za postavke.

Postavite vrijednost pomoću pq

Nakon što ste unijeli postavke, kratkim pritiskom na gumb vratit  vratit će se se u glavni izbornik postavki.

|                                                                                     |                     |
|-------------------------------------------------------------------------------------|---------------------|
|    | <<                  |
|   | Emissivity 0.98 >   |
|  | Distance 1.0m >     |
|  | Temp Range >        |
|  | Temperature Units > |
|  | Palette >           |
|  | H/L/O Alarm >       |



Napomena: Emisivnost se može postaviti od 0,01 do 0,99. Vrijednosti emisivnosti uobičajenih materijala navedene su u donjoj tablici.

#### Emisivnost uobičajenih objekata

| Materijali        | Emisivnost | Materijali       | Emisivnost |
|-------------------|------------|------------------|------------|
| Drvo              | 0,85       | Blok papira      | 0,86       |
| Voda              | 0,96       | Polikarbonat     | 0,8        |
| Cigle             | 0,75       | Beton            | 0,97       |
| Nehrđajući čelik  | 0,14       | Bakrov oksid     | 0,78       |
| Ljepljiva traka   | 0,96       | Lijevano željezo | 0,81       |
| Aluminijska ploča | 0,09       | Hrđa             | 0,8        |
| Bakreni lim Crni  | 0,96       | Gips             | 0,75       |
| aluminij          | 0,75       | Boja             | 0,9        |
| Ljudska koža      | 0,98       | Guma             | 0,95       |
| Asfalt            | 0,96       | Tlo              | 0,93       |
| PVC plastika      | 0,93       |                  |            |

## Postavljanje udaljenosti

Za povećanje točnosti detekcije temperature, postavite podatke o udaljenosti prije mjerenja. Za postavljanje udaljenosti odaberite opciju udaljenosti i pritisnite tipku SET za ulazak u sučelje za postavljanje vrijednosti. Pomoću tipki pg postavite vrijednost udaljenosti u rasponu od 0,3 do 3 metra. Nakon što je postavljanje završeno, pritisnite za povratak u glavni izbornik postavki.



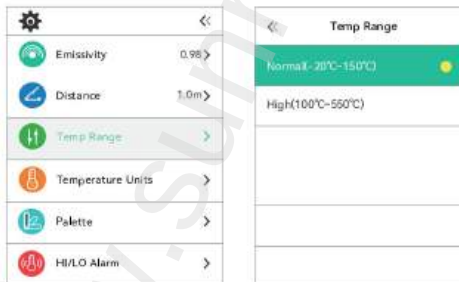


## Raspon temperature

Za postavljanje temperaturnog raspona odaberite Raspon temperature i Pritisnite SET za ulazak u postavku. Koristite tipku pq za prebacivanje između normalnog i visokog temperaturnog raspona. Pritisnite SET za potvrdu. Za povratak u glavni izbornik postavke, pritisnite gumb 

Normalni temperaturni raspon je od -20°C do 150°C,  
Raspon visokih temperatura je od 100°C do 550°C.

Napomena: Prebacivanje između temperaturnih raspona traje otprilike 10 sekundi. Prije nego što  
Za nastavak s drugim operacijama ili mjerenjima temperature, pričekajte dok se uređaj  
prebacivanje je završeno.



## Jedinica

Za postavljanje jedinice odaberite Jedinica i pritisnite gumb. SET za ulazak u postavke. Pritisnite tipku pq za prebacivanje između °C i °F. Pritisnite tipku SET za potvrdu odabira. Pritisnite tipke pq za pomicanje za podešavanje temperature okoline, što povećava točnost mjerenja za materijale s niske emisivnosti, poput metala ili stakla. Zatim pritisnite tipku SET za Unesite postavke. Pritisnite tipke p za unos temperature okoline. Za povratak u glavni izbornik postavki pritisnite gumb.



## Paleta

Za postavljanje palete boja odaberite Paleta i pritisnite SET za unos postavki. Pomoću tipki  $\leftarrow$  i  $\rightarrow$  prebacivanje između 8

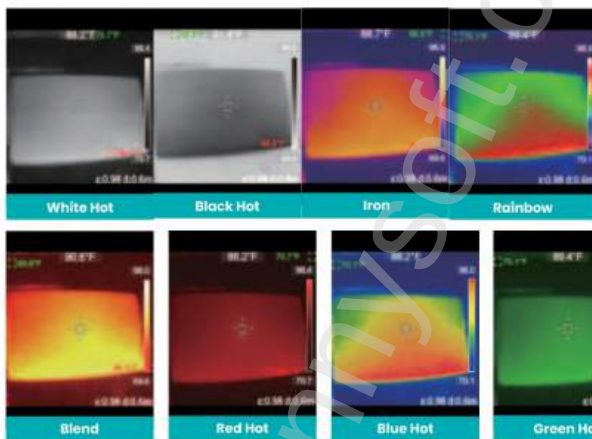
palete boja (bijela vruća, crna vruća, željezna, duga, mješavina, Crveno vruće, Plavo vruće, Zeleno vruće). Pritisnite gumb SET potvrdite svoj odabir. Za povratak u glavni izbornik postavki, pritisni gumb



|                   |        |
|-------------------|--------|
|                   | <<     |
| Emissivity        | 0.98 > |
| Distance          | 1.0m > |
| Temp Range        | >      |
| Temperature Units | >      |
| Palette           | >      |
| HI/LO Alarm       | >      |

|           |         |
|-----------|---------|
| <<        | Palette |
| White Hot |         |
| Black Hot |         |
| Iron      |         |
| Rainbow   |         |
| Blend     |         |
| Red Hot   |         |

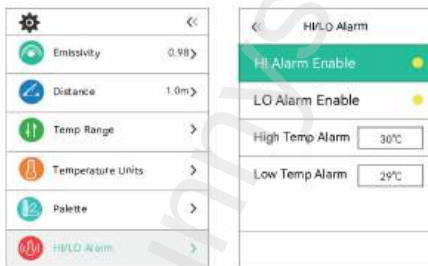
|           |         |
|-----------|---------|
| <<        | Palette |
| Blue Hot  |         |
| Green Hot |         |
|           |         |
|           |         |
|           |         |



Napomene: Kratko pritisnite tipku **pq** (gore/dolje) za brzo prebacivanje između različite palete boja.

## HI/LO alarm (alarm za visoku i nisku temperaturu)

Za podešavanje postavki alarma za visoku/nisku temperaturu odaberite Opciju visoke/niske temperature i pritisnite SET za ulazak u sučelje za vrijednosti podešavanja. Ponovno pritisnite gumb pq za uključivanje ili isključite alarm za visoku/nisku temperaturu i potvrdite pritiskom na tipku SET. Pomoću tipke pq postavite vrijednost temperature i pritisnite tipku SET za potvrdu postavke. Kada završite, pritisnite tipku za povratak u glavni izbornik postavki.



Alarm za visoku temperaturu



Alarm za nisku temperaturu



Alarm za visoku temperaturu  
i alarm za nisku temperaturu

**Napomene:** Zadana vrijednost praga alarma visoke temperature uvijek je viša od vrijednosti alarma niske temperature.

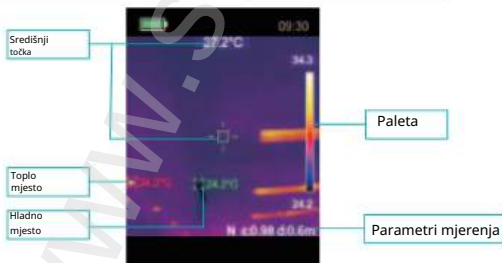
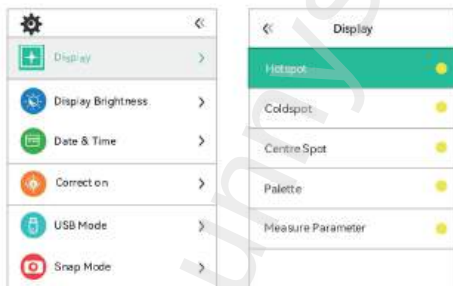
## Opcije prikaza

Odaberite Opcije prikaza i pritisnite

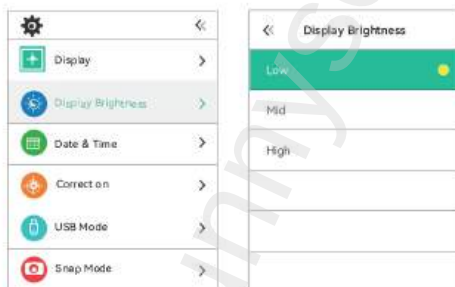
Pritisnite tipku SET za ulazak u sučelje za postavke. Pritisnite tipku pq

Pomaknite se do različitih elemenata zaslona i pritisnite tipku SET za uključivanje ili isključite elemente zaslona (točku visoke/niske temperature, središnju točku, Paleta (traka boja), parametar (postavi emisivnost i udaljenost)).

Kada završite, pritisnite gumb za povratak u glavni izbornik postavke.

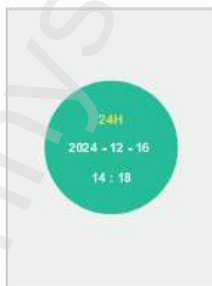


Za podešavanje svjetline zaslona odaberite Svjetlina i pritisnite SET za ulazak u postavku. Pomoću tipke pq odaberite između niske, srednje i visoke svjetline. Potvrdite postavku pritiskom na tipku SET, a zatim pritisnite tipku za povratak u glavni izbornik 



## Datum i vrijeme

Za postavljanje datuma i vremena odaberite Datum i vrijeme i Pritisnite tipku SET za unos postavki. Pritisnite tipku pq za prebacivanje između 12-satnog i 24-satnog formata. Pomoću gumba prijdite na željeno polje za postavke. Vrijednost postavite pomoću gumba pq. Kada završite, pritisnite gumb  povratak u glavni izbornik postavki.





## Ispravak

Nakon određenog razdoblja korištenja, jasnoća slike može se pogoršati u zbog šuma koji generira toplinski senzor. Odaberite opciju Ispravka i pritisnite tipku SET za izvršenje ispravke, kako bi se uklonila buka i osigurala optimalna toplinska čistoća slika.

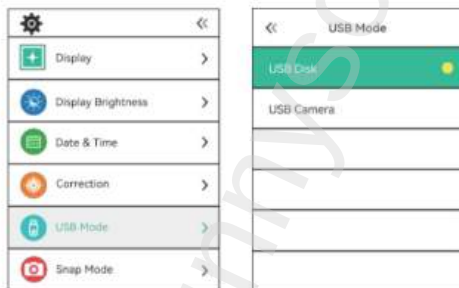


## USB način rada

Odaberite USB način rada i pritisnite tipku SET za ulazak u sučelje. Pritisnite tipke za prebacivanje između USB pq stavki

Disk i USB kamera, potvrdite odabir pritiskom na tipku SET.

Nakon što ste dovršili postavke i vratili se u glavni izbornik, pritisnite



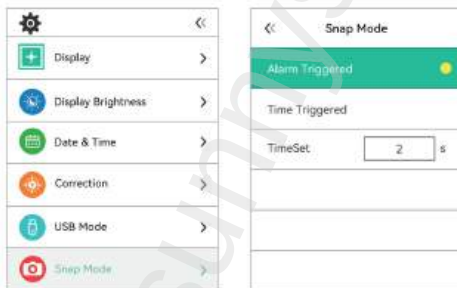
1. Postavite USB način rada na USB disk za pregledavanje slike na računalu koje je spojeno na računalu pomoću USB kabela.



**Napomena:** Za aktiviranje U-Disk načina rada, ponovno pokrenite termovizijsku kameru, a zatim spojite USB kabel. Nemojte preimenovati mapu sa slikama ili slikovne datoteke kako biste izbjegli pogreške pri čitanju.

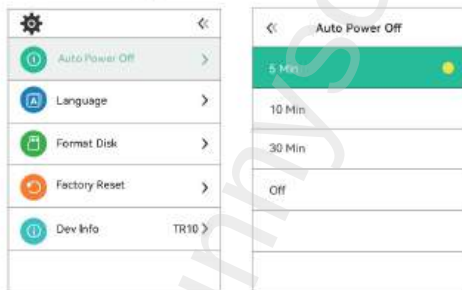
## Način snimanja - snimanje slike

Odaberite način rada Snap i pritisnite SET za ulazak. sučelje za postavke. Ponovno pritisnite gumb SET za uključiti/isključiti opciju aktiviranja alarma (slika snimljena kada temperatura prelazi postavljenu graničnu vrijednost) i opciju Vremenski aktivirano (slika se snima svakih N postavljenih sekundi) i pritiskom na gumb  postavite vrijeme. Kada završite, pritisnite gumb  za povratak na glavni izbornik postavki.



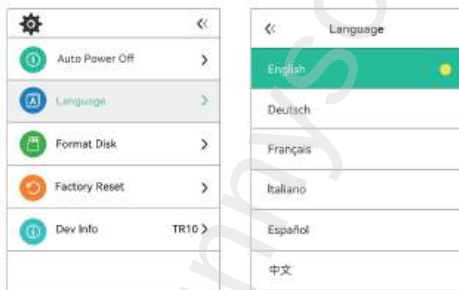
## Automatsko isključivanje

Za podešavanje vremena automatskog isključivanja odaberite Automatsko isključivanje i pritisnite tipku SET za unos postavki. Korištenje tipki pq pomicanje kroz vremenske opcije (5 min/10 min/30 min/isključeno). Pritisnite tipku SET za potvrdu odabira . a zatim pritisnite gumb  za povratak u izbornik postavki.



## Jezik

Za postavljanje jezika odaberite Jezik i pritisnite SET, unesite postavke. Koristite tipke pg za promjenu jezika. Pritisnite tipku SET za potvrdu odabira. Za povratak u glavni izbornik postavki pritisnite



## Formatiranje diska

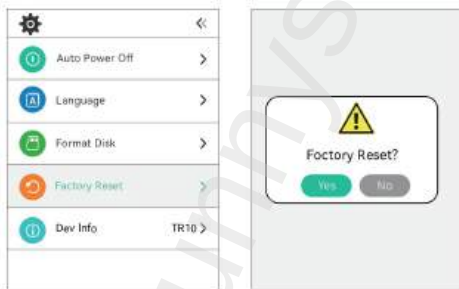
Za formatiranje diska odaberite Formatiranje diska i Pritisnite SET za unos postavki. Koristite gumbe ▲ ▼ ◀ ▶ prebacivanje između opcija "Da/Ne". Potvrdite svoj izbor pritiskom na tipku SET, a zatim pritisnite tipku za povratak u glavni izbornik postavki.



**Napomena:** Budite oprezni pri korištenju funkcije Formatiranje diska . Potvrđivanje ovoga Ova radnja će trajno izbrisati sve podatke na disku.

## Tvorničke postavke

Za omogućavanje vraćanja na tvorničke postavke odaberite Vratite tvorničke postavke i pritisnite SET za ulazak postavke. Pomoću gumba možete pomicati između opcija "Da/Ne". Potvrdite svoj izbor pritiskom na tipku SET, a zatim pritisnite tipku povratak na glavni izbornik postavki.



**Napomena:** Budite oprezni pri korištenju funkcije vraćanja na tvorničke postavke . Potvrđivanjem ove radnje trajno ćete izbrisati sve podatke na disku.

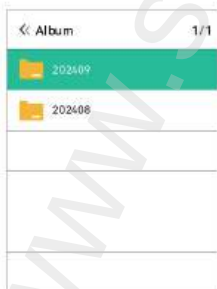
Pritisnite tipku SET za otvaranje ove opcije i provjeru općih informacije o razvoju uređaja.





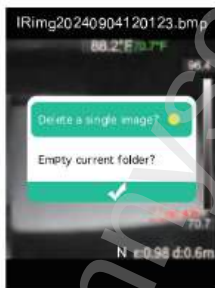
## Pregledavanje slika

Kliknite gumb 5 za snimanje termalnih slika sa složenim toplinske podatke, koji će se automatski spremiti na disk. Kratko pritisnite gumb za ulazak u foto album i pritisnite gumb za SET za ulazak u foto album. Pritisnite gumb ▲▼ za pregledavanje različitih slika i pritisnite gumb SET za otvaranje određena slika. Slike su sortirane kronološki.



## Brisanje slike

Nakon otvaranja određene slike , možete odabrati brisanje pojedinačne slike ili trenutnog fotoalbuma kratkim pritiskom na tipku SET .



|                               |                                                                                                   |
|-------------------------------|---------------------------------------------------------------------------------------------------|
| Model                         | TR10                                                                                              |
| NETD                          | < 50mK                                                                                            |
| Super rezolucija              | 192X192                                                                                           |
| Minimalna udaljenost gledanja | 0.3m                                                                                              |
|                               | 50°×50°                                                                                           |
| IFOV                          | 8.89 mrad                                                                                         |
| Broj slička u sekundi         | 25 Hz                                                                                             |
| Žarišna duljina               | 1.35mm                                                                                            |
| Bruto kapacitet skladištenja  | 8GB                                                                                               |
| Korisni kapacitet pohrane     | 6GB                                                                                               |
| Izlazni priključak            | Tip C                                                                                             |
| Baterija                      | 3,7 V, 3000 mAh<br>Punjiva litijeva baterija                                                      |
| Raspon mjerenja temperature   | -20°C do 550°C                                                                                    |
| Točnost                       | +2°C/+2%                                                                                          |
| Kapacitet pohrane slika       | 30.000                                                                                            |
| Format slike                  | JPEG                                                                                              |
| Zaslon                        | 2,8" LCD zaslon                                                                                   |
| Maksimalna veličina slike     | 240X240                                                                                           |
| Paleta boja                   | Bijelo vruće, crno vruće,<br>željezo, duga, mješavina, crveno<br>vruće, plavo vruće, zeleno vruće |
| Dimenzije                     | 224 × 76 × 91 mm                                                                                  |
| Neto težina                   | 345 g                                                                                             |

## Kontaktní podaci

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