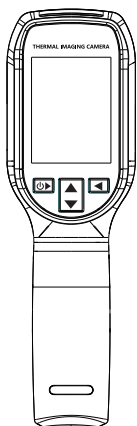


## Thermal Imaging Camera



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### 1. Preface

Dear user:  
Hello! Thank you for purchasing the thermal imaging camera. In order to use this product correctly, please read the full text of this manual carefully before using, especially the section on "Safety precautions". If you have read this manual in full, it is recommended that you keep it in a safe place with thermal imaging or in a place where you can refer to it at any time for future use.

### 2. Limited Warranty and Limited Tenure

guarantees that this product will be free from any defects in material and workmanship for one year from the date of purchase. This warranty does not apply to for damage caused by accident, negligence, misuse, alteration, contamination or improper operation or handling. The Distributor shall not be entitled to give any other guarantee in the name of . If you need warranty service during the warranty period, please contact your nearest authorized service center to obtain product return authorization information; Then send the product to the service center with a description of the product problem. This guarantee is the only compensation you can receive. In addition, does not provide any express or implied warranties, such as the implied warranties for a particular purpose. In addition, shall not be liable for any special, indirect, incidental or consequential damage or loss of any kind arising out of any cause or presumption, and because some states or countries do not allow limitations on implied warranties and incidental or consequential damage, the above limitations and provisions of liability may not apply to you.

### 3. Performance Indicators

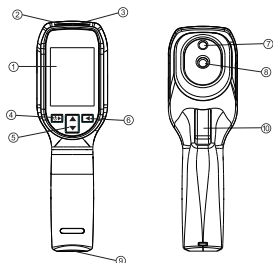
Sensor type	Vanadium oxide (VOx) microalorimeter
Response Band	8~14µm
Thermal image resolution	240x240 Pixels
Noise equivalent temperature difference (NETD)	≤60 mK@25 °C,F#1.0
Angle of view (FOV)	50.0°(H)×50°(V)/72.1°(D)
Spatial resolution (IFOV)	8.89 mrad
Frame rate	25Hz
The focal length of the imaging lens	1.35 mm
Temperature measuring focal length	0.3m~3m Adjustable
Temperature range	-20°C~550°C
Accuracy of temperature measurement	± 2 °C or ± 2% of the reading (take the larger value of the reading)
Unit of temperature measurement	Celsius, Fahrenheit, Kelvin
Temperature resolution	0.1°C
Emissivity	0.01~1.00 Adjustable
Temperature measurement shows	Center point temperature measurement, high and low temperature tracking
Swatches	White Hot, Black hot, Fusion 1, Rainbow, Fusion 2, Iron Red 1, Iron Red 2, Bark brown, Color 1, Color 2, Ice fire, Rain, Green hot, Red Hot, Dark blue
Display screen	2.4 inches TFT LCD
Display resolution	320 × 240
Key	Power Key, up key, Down Key, Return key, Trigger key
Laser Pointer	Yes
Temperature Alarm	Screen font color alarm
Image storage	Built-in memory card

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Number of image files	30000
Image format	BMP
Shock/vibration	GB/T 2423.5-2019;GB/T2423.10-2008
Electromagnetic compatibility (EMC)	GB/T17799.2,GB17799.3-2012
Protection level	IP54
Installation mode	Tripod mount UNC-20
Focus mode	Auto focusing
Hardware interface	Type-C USB
Battery type	Rechargeable lithium battery (3.7V/2500mAh)
The working hours of the battery	>7h@25°C
Charging time	<3h@25°C
Charging voltage/current	5V/2A
Boot speed	~8 seconds
Automatic shutdown	Disable (default) (optional 10 Min, 20 Min, 30 Min, 40 Min, 50 Min, 60 Min, Disable)
Operating temperature	-10°C~50°C
Storage temperature	-40°C~70°C
Working humidity	≤85%RH (Non-condensing)
Drop	1.5m
Product dimensions	193.4*59.4*77.4 mm
Product weight	278g

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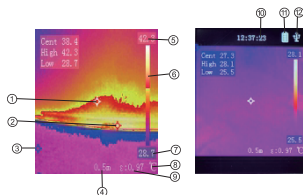
### 4. Appearance Description



Number	Description
1	Display screen
2	Charging indicator
3	USB Type-C Interface
4	Up and down button
5	Power/Menu/Confirm button
6	Back button
7	Laser
8	Thermal imaging sensor
9	Fixing screw hole of bracket
10	Photo/Trigger button

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### 5. Display and Description



Number	Description
1	Center temperature
2	Current automatic tracking of maximum temperature point
3	Current automatic tracking of minimum temperature point
4	Maximum temperature
5	Measure distance
6	Colorize
7	Minimum temperature
8	Temperature unit
9	Emissivity
10	Time
11	Battery level
12	USB connection symbol

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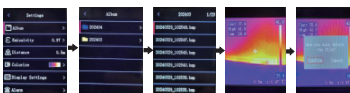
### 6. Operating Instructions

**1. Power on and off**  
When the meter is power off, long press the power button 3 seconds to power on; when the meter is power on long press the power button 3 seconds to power off.

**2. Menu**  
Short press the menu button to enter the main menu interface for content settings. Short press the return button to return to the previous menu. Short press the trigger button to directly return to the thermal imaging interface at any interface.



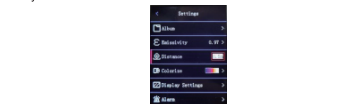
**3. Album**  
Select the album from the main menu and press the confirm button to browse the pictures in the album. In this option, press up or down to select a picture. After entering the picture, press the confirm button to delete the picture. Press the up or down button to delete or to delete the picture. Press the confirm button to confirm the selection.



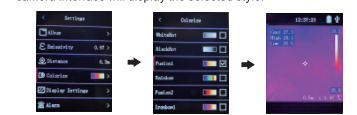
**4. Emissivity**  
In the main menu, press up or down to select emissivity, press confirm button to enter the emission style selection menu, press up or down to select emissivity, or press up or down to select custom emissivity. You can edit the emissivity value by yourself.

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**4. Distance**  
In the main menu, press the up/down button to select the distance, press the confirm button to adjust the distance, press the up/down key to adjust the value (0.3m~3m), press the back key to return.



**5. Colorize**  
In the main menu, press the up or down button to select the colorize, and press the Power button to enter the colorize style selection menu. In this menu, you can press up or down to select WhiteHot, BlackHot, Fusion 1, Rainbow, Fusion 2, Ironbow1, Ironbow2, Sepia, color 1, color 2, IceFire, Rain, GreenHot, RedHot, DeepBlue multiple samples, press the confirm button confirm the selected style, and press the trigger key to exit the main menu directly, at this time, you can see that the thermal camera interface will display the selected style.



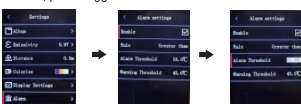
**6. Display Settings**  
Press Up or down in the main menu to select Display Settings, press the confirm button to enter the setting menu, and press up or down to select to display the Highest Temp Point, Lowest Temp Point, Center Temp Point, Parameter, and

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**Watermark.** Press the confirm button to select the option and press the trigger button to exit.



**7. Alarm**  
In the main menu, press Up/Down to select Alarm, press up/down to select , press confirm to adjust the rule - greater than/less than, press confirm to select alarm threshold/ warning threshold, press up/down to adjust the value you need to set, press trigger button to exit.



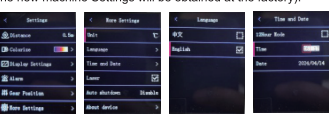
**8. Gear Position**  
Press the up/down key to select the gear on the main menu, press the Confirm button to enter the gear option, press the up/down key to select -20°C ~150 °C, 100 °C ~550 °C, Auto switch three gears, press the confirm button to confirm the selection, press the trigger key to exit.



**9. More settings**  
In the main menu, press the up/down button to select more Settings, press the Confirm button to enter Settings, and press the up/down key to select the options you want to set.

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**Unit:** Press the confirm button to switch °C, °F, and K units.  
**Language:** Press the up/down button to select the language setting option, press the Confirm button to switch between Chinese and English, press the up/down button to select, and press the Confirm button to confirm the selection.  
**Time and date:** Press the up/down button to select the time and date setting options, press the Confirm button to enter the time and date adjustment, you can select the 12/24 hour system option, press the confirm button to confirm the selection, press the up/down button to adjust the time and date.  
**Laser:** Press the up/down button to select the laser option, and press the Confirm key to turn the laser on or off.  
**Automatic Shutdown:** Press the up/down button to select the automatic shutdown option, and press the Confirm button to adjust the automatic shutdown Settings (optional 10 minutes, 20 minutes, 30 minutes, 40 minutes, 50 minutes, 60 minutes, off).  
**About the device:** Press the up or down button to select About the device, and press the Confirm key to view the device information.  
**Format storage:** Press the up/down button to select format storage options, and press the Confirm button to select whether to format the storage card (note: Formatting storage card will empty the memory).  
**Restore factory settings:** Press the up or down button to select the factory Settings restoration option, and press the Confirm key to select whether to restore factory Settings (Note: After restoring factory Settings, all Settings will be cleared, and the new machine Settings will be obtained at the factory).



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### 7. Common Emissivity

Material	Emissivity	Material	Emissivity
Wood	0.85	Black paper	0.86
Water	0.96	Polycarbonate	0.8
Bricks	0.75	Concrete	0.97
Stainless steel	0.14	Copper oxide	0.78
Tape	0.96	Cast iron	0.81
Aluminium Sheet	0.09	Rust	0.8
Acoin	0.06	Plaster	0.75
Black aluminium	0.95	Paint	0.9
Human Skin	0.98	Rubber	0.95
Asphalt	0.96	Soil	0.93
PVC Plastic	0.93		

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### 8. Usage Considerations

- Be sure to check the instruction manual before use, and be familiar with the use method and performance parameters of the instrument.
- Temperature: 0~40°C (32~104°F); Humidity: 20%~90%RH; It works at room temperature without strong magnetic field.
- Use with care to avoid collisions, falls or other injuries.
- During use, if there is any abnormal phenomenon or fault, stop using and contact maintenance personnel for repair.
- Avoid use in hot, humid or disturbed environments.
- After use, the instrument should be placed in a dry place, away from direct sun or rain.

### 9. Maintenance and Repair

- User notes:**  
Users should avoid collision, heavy dust, high temperature, humidity, strong magnetic field and other excessive harsh conditions to use the instrument. Store the battery in a dry, non-corrosive gas environment. Do not place the battery near a heat source or fire source, and avoid direct sunlight. Otherwise, the instrument will be damaged. If the measurement deviation in the use of the instrument is large, please first check whether the battery is insufficient, try to restart, if you can not eliminate the fault, please contact the store where you purchased the equipment or the nearest service center, do not disassemble or modify the equipment in any way, otherwise the warranty service will be affected. (Silverado does not assume any responsibility for problems caused by unauthorized modifications or repairs).  
\* Clean the instrument housing regularly with a damp cloth and a small amount of detergent, do not use abrasive or chemical solvents.

- Charge the battery**  
If it appears on the screen " " symbol, it should be used after charging, otherwise it will affect the measurement accuracy. Take off the battery cover and use the USB cable to charge. During the charging process, the red indicator lights up and the green indicator lights up after being filled.

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