THERMAL CAMERA
TSD200-BD

INSTRUCTION MANUAL

CONTENT

PRODUCT DESCRIPTION

A. Product Overview:

TSD200-BD Thermal Camera is a body temperature thermometer with the thermal imaging, which have two types of measurement modes: Human body temperature measurement, and object surface temperature measurement.

Object surface temperature measurement mode: It can effectively detect the temperature changes and perform accurate temperature measurement on the target surface.

Human body temperature measurement mode: It can measure the human body temperature from a longer distance with the effective range, and has a tracking mode to chase for the highest temperature, fever alarm, and taking photo for fever alarm functions.

The handheld body thermal camera is designed based on ergonomics. It is most suitable for handheld for a long period of time. And, it can also be fixed on the tripod for continuous monitor function.

It is suitable for operating in a variety of working environments, such as electricity, mechanical, pipelines, and data center equipment.

The human body temperature measurement function can be used at home, office, shopping mall, school, etc.

B. Product Outlook :

TVT280H Thermal Camera is a combination of thermal array sensor, visual camera, display and 7 buttons.

Charging LED	**RED** LED ON : Battery charging is in processing. **GREEN** LED ON : Battery is fully charged .
Menu button	Short-press to enter Menu mode or go back to the previous display.
Power button	Short-press to turn on/off the display. Long-press to turn on/off the unit.
Up/Down button	Menu mode : To select the items in the setting. Measure mode : To switch between Thermal Image, Visual Image and Overlay Image.
Left button	To switch between Temporal Filter, Wide Gaussian Filter and No Filter.
Right button	To switch the modes between temperature measurement with fixed distance and tracking the highest body temperature.

Measure button	Menu mode : Short-press to confirm.
	           : Long-press to turn on/off function (such as Fever alarm).
	Measure mode : Short-press to take photo.
	           : Long-press to take video.

USB connector	For charging battery and transferring data to PC.
SD card socket	Support micro SD card.

C. Measurement specification：

Ci. Thermal Array

Resolution of thermal image :   32 x 32（1024）pixels

Resolution of visual image :   0.2 Mega pixels

Field angle/shortest focal distance :   33°x33°/ 0.1m

Image capturing frequency :   6Hz

Range of wavelength :   8-11.5μ

Focal distance :   fixed

Continuous operation time ：   Up to 6 hours

Cii. Body Temperature Measurement

Temperature measurement range: 32°C 至 42°C

Temperature accuracy :   ±0.4°C（±0.8°F）

Suggested measurement distance :   20cm to 50cm

Ciii. Object Surface Temperature Measurement

Temperature measurement range :　　　　　　　-30°C...+ 1000°C

Temperature accuracy :　　　　　　　　　±2％ / ±2°C（±2％ / ±4°F）

Adjustable emissivity :　　　　　　　　　0.1 至 1.0

D. Product Specification :

Power :　　　　　　　　3.7V li-ion rechargeable battery，2500mAh，size18650

Display :　　　　　　　　2.8 inch color LCD display

Touch screen :　　　　　　Resistive type

Sensors ：　　　　　　　32x32 thermal array，CMOS sensor

Internal memory :　　　　　1GB

External memory :　　　　　Maximum 64G（micro SD socket）

USB connection :　　　　　Transfer photo/video files to PC and USB charging battery

Image/Video format :　　　　BMP / JPG / MP4

Operation temperature ：　　-10°C...+ 50°C

Storage temperature :　　　-20°C...+ 60°C

Basic Operation

1.   Power On :

Press & Hold Power button for 2 secs.

Opening Screen

(wait for initialization)

Measurement Screen

2.   Power Off :

Press & Hold Power button for 2 secs.

A pop-up menu appears for

Power Off or Reboot selection

press Up / Down button

to select

and press Measure button
to confirm

3.   Display Off :

A.) Press Power button once to turn off display .

B.) Press Power button again to turn on it .

Remark ：

The Measurement screen is the default screen when turn on the display.

4.　Menu Screen ：

Press the Menu button to enter Menu mode.

5.　The default selection is the first icon (i.e. Display brightness) :

- Use Up/Down/Left/Right button to select the icon. Then, press Measure button
  to open the selected item.
- Press Menu button to back to Measurement Screen.

The summary of Menu icons:

	Display Brightness	To set the brightness of display.
	Date and Time	To set time and date.
	Auto-off Timer	To set the auto-off timer for the display.
	Fever Alarm	To set the Fever temperature alarm.
	Auto-monitor Alarm	To capture the thermal image when over the Temperature Alarm in a period of time.
°C/°F	**Temperature Unit**	To set temperature unit degree C / degree F .
	Emissivity	To adjust the emissivity from 0.1 to 1.0.
	View Image	To view the captured thermal image/video.
BMP JPG	**Image Format**	To set the image output format (Bitmap or JPEG).
RESET	**Reset Factory Default**	To reset factory setting.
	Colour Palette	To select the thermal image colour palette.
	Trash	To delete image/video permanently.
	Body Temperature Filter	To enable the body temperature mode.

6.   Object Surface Temperature Measurement :

Image View Area

Time & Emissivity

Object Temperature mark

Palette guide bar included min/max object temperature

7.   Modes of Images :

Press Menu button to enter Menu mode.

Press Up/Down button to select mode of image ：

- Thermal Image

- Visual Image

- Overlay Image

8.   Filter Mode :

Press Left button to select the filter mode ：

- Temporal Filter
- Wide Gaussian
- No Filter

- Press Measure button to capture the image:

   The image saved in the internal memory, if the SD card is not present.

   If the SD card presented, it saved the image in the SD card.
- Press & Hold Measure button to take the video.

   The recording icon appear to indicate the video recording.

   The video is saved in mp4 format.

   When the Measure button release, it stopped the recording, and save in the memory.

9.   Touchable object temperature mark :

Touch the screen to move the object temperature mark, and show the temperature of that location：

10. Display Brightness :

- Press Left/Right button to increase/decrease the % of display brightness.

- Press Measure to confirm and back to the previous screen.

- Press Menu to back to the previous screen.

11. Date and Time :

- Press Up/Down button to increase/decrease the selected item.

- Press Left/Right button to select the item for adjustment.

- Press Measure to confirm and back to the previous screen.

- Press Menu to back to the previous screen.

12. Auto-Off Timer :

- Press Left / Right button to increase/decrease the selected item
- Press Up / Down button to select the Minute or Second.
- Press Measure to confirm and back to the previous screen
- Press Menu to back to the previous screen.

Remark:

a) The minimum Auto-off timer is 0min,30sec

b) The maximum Auto-off timer is 30min,0sec.

c) The timer is for Display OFF only.

13. Temperature Unit :

- Press Left/Right button to select degree C or degree F.
- Press Measure to confirm and back to the previous screen.
- Press Menu to back to the previous screen.

14. Emissivity :

- Press Up/Down button to adjust the emissivity.
- Press Measure to confirm and back to the previous screen
- Press Menu to back to the previous screen.

15. Image Format :

- Press Left/Right button to select BMP or JPG image format.
- Press Measure to confirm and back to the previous screen.
- Press Menu to back to the previous screen.

16. Reset to Factory Default :

- Press Left/Right button to select YES or NO.
- Press Measure to confirm.
- Press Menu to back to the previous screen.

17. Colour Palette :

- Press Up/Down button to select the color palette.
- Press Measure to confirm and back to the previous screen.
- Press Menu to back to the previous screen.

18. View Image :

- Press Up/Down/Left/Right button to select Image Icon
- Press Measure to open the image or video; Press and Hold Measure to delete the selected item.
- Press Menu to back to the previous screen.

19. Delete Image or Video :

- The pop-up menu appears for delete the selected image.
- Press Left/Right button to selected BACK or Trash icon.
- Press Measure to confirm.

Remark :

- The deleted items, are not yet deleted, which are moved to the Trash only.

20．Delete :

- Press Up/Down/Left/Right button to select Image Icon
- Press Measure to open the image or video; Press and Hold Measure to pop-up the recover or permanent delete menu.
- Press Menu to back to the previous screen.

BODY TEMPERATURE MEASUREMENT

21．Body Temperature Mode :

Turn ON the body temperature mode：

- Press Menu button to enter the Menu Mode.

- Select the Body temperature filter icon, and press Measure to enter.

- Press Left/Right to select ON or OFF of Body temperature filter.

- Press Measure to confirm and back to Menu mode.

22. Fever Alarm:

- Press Menu button to enter the Menu Mode.
- Select the Fever alarm icon, and press Measure to enter.

- Press Left or Right to adjust the Fever temperature alarm.
- Select ON / OFF, and press Measure to enter.

- Press Measure to confirm the Fever Alarm setting and back to Menu mode.

23.   Fever Image Capture :

- Press Left or Right to ON/OFF the Fever Image Capture.
- Press Measure to confirm and back to Menu mode.

24. Thermal Interface :

Body Temperature filter
ON

Fever Alarm enabled

25. Body Temperature Filters Selections:

Press the Right button to switch between the two filters:

- **Body Temperature Filter 1**

- A rectangle shown on the screen is indicating target measurement area which pointing to the forehead area is recommended.

- **Body Temperature Filter 2**

- Measurement will be taking place on the whole view. The max. body temperature will be chased and shown on the screen.

11:24 上午

34.7°C

MIN 19.1°C

MAX 33.4°C

12:09 下午

36.7°C

MIN 20.7°C

MAX 33.1°C