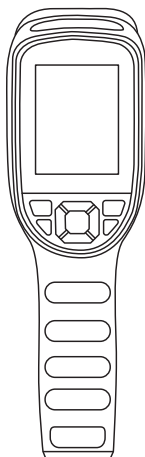# T-CAM 300 P-SERIES
USER MANUAL

PLEASE READ THIS MANUAL BEFORE SWITCHING THE UNIT ON.
IMPORTANT SAFETY INFORMATION INSIDE.

ICI cameras fall under US Federal Law and Export Control.

Printed in the United States of America.

2105 W. Cardinal Dr.
Beaumont, TX 77705
(866) 861-0788
www.infraredcameras.com

Revision: 6.2021-002

Contents

1. General Description

The T-Cam 300 is perfect for electrical, building, and mechanical applications. Thermal and visual images are displayed on the LCD and can be saved to a Micro SD Memory card. Additionally, the imager provides interval photography allowing inspectors to capture images for a programmed duration and frequency. Features threshold alarming functions.

2. User Notice

2-1 Calibration

Annual calibration to the thermal camera is recommended. Contact customer service to schedule maintenance.

2-2 Manual Update

Our user manual will be updated from time to time. Please contact us to get the latest version of the manual.

2-3 Scope of Application

This manual is applicable to the T-Cam 300, which means some content in this manual may not be applicable to other T-Cam models. This manual may contain technical inaccuracies or typographical errors.

3. Intended Use

The T-Cam 300 P-Series cameras are handheld devices designed for surface temperature assessment of energy emitted from the first 1/1000th of an inch of a subject.

Environment of use: industrial and petrochemical buildings, electrical plants, security rooms, science labs, animal reserves as well as environmental conservatories, and aerial integrations, among others.

4. Safety Information

- To prevent eye damage and personal injury, do not look into the light or laser. Do not point the light or laser directly at people or animals or indirectly off reflective surfaces.

- Do not disassemble or modify the thermal imager.

- Do not point the imager (with or without the lens cover) at intensive energy sources, e.g. devices that emit laser radiation, or the sun. This can affect the accuracy of the camera, and cause damage to the detector.

- Do not use the imager in an ambient temperature outside of the operation range. High/ low temperatures can cause damage to the device.

- Only use the correct equipment to discharge the device. Using the incorrect equipment can decrease the performance or the life cycle of the device. Using the incorrect equipment can cause the device to become hot or cause an explosion.

- The device contains safety and protection parts which, if they become damaged, can cause the device to become hot, or cause an explosion or an ignition. If there is a leak from the device and fluid gets into your eyes, do not rub your eyes. Flush well with water and immediately get medical care.

- Do not put holes in the device with objects.

- Do not hit the device with a hammer.

- Do not step on the device or apply strong impacts or shocks to it.

- Do not put the device in or near a fire.

- Always charge the battery in the special temperature range. The temperature range to charge the battery is 0 °C to 50 °C (32 °F to 122 °F). Charging the device at temperatures outside this range can cause the device to become hot or to explode. It can also decrease the performance or the life cycle of the device.

- Do not submerge the device in water or salt water or leave the device in intense weather environments.

- Avoid condensation. Taking the imager from cold to hot will cause condensation in thermal imager. To protect the imager, power on the device and wait until it becomes warm enough for the condensation to evaporate.

- Clean the case with a damp cloth and a weak soap solution. Do not use abrasives, isopropyl alcohol, or solvents to clean the case or lens/screen.

- Be careful when cleaning the infrared lens. Do not clean the infrared lens too vigorously. This can damage the anti-reflective coating.

- It is recommended to calibrate the device(s) annually.

- Storage: If you do not use the imager for a long period of time, put the device in a cool and dry environment. Device will discharge over time; therefore, you should charge the device occasionally to prevent damage to the device.

5. Technical Specifications

Pixel Resolution	256 x 192
Accuracy	± 2 °C (± 3.6 °F) or ± 2%
Temperature Range	-20 °C to 550 °C (-4 °F to 1022 °F)
Operation Range	-10 °C to 50 °C (14 °F to 122 °F)
Storage Range	-20 °C to 60 °C (-4 °F to 140 °F)
Detector Array	UFPA (VOx)
Pixel Pitch	12 µm
FOV	56° x 42°
IFOV	3.8 mrad
Focal Length	3.2 mm
Focus	Automatic
Measurement Distance	Settings dependent
Thermal Sensitivity (NETD)	< (50 mK) 0.05 °C at 30 °C (86°F)
Frame Rate	25 Hz
Humidity	10% to 95% non-condensing
Pixel Operability	> 99 %
Drop Rating	2 m (6.56')
Dimensions (without lens)	237 mm x 75 mm x 92 mm (L x W x D ± 0.5 mm) (9.33" x 2.95" x 3.62" (L x W x H ± 0.02"))
Power	5 V DC 2 A
Battery	Li-ion, built-in rechargeable
Operation Time	11 hours
Charging Time	4 hours

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Power Management	Adjustable (automatic shutdown, 5 minutes, 10 minutes, 20 minutes)
Weight (without lens)	< 520 g (1.15 lbs)
Interface	USB Type-C, MicroSD
Image Format	JPG (with data)
Image Polarity	White hot, black hot, iron, lava, rainbow, high-contrast rainbow, black red
Image Modes	IR, fusion (ICI Dual Vision), visible, picture-in-picture
Memory	MicroSD (up to 64 GB)
Screen	2.8" color LCD, 240 × 320
Emissivity Correction	0.01 to 1.0
Measurement Units	°C, °F, °K
IP Rating	IP 54
Light	LED
Central spot, hot spot, cold spot	
Automatic alarming	
Internal non-uniformity correction (NUC)	
1/4"-20 tripod support	

6. Structure

6-1 Appearance and Definitions of Housing Interface
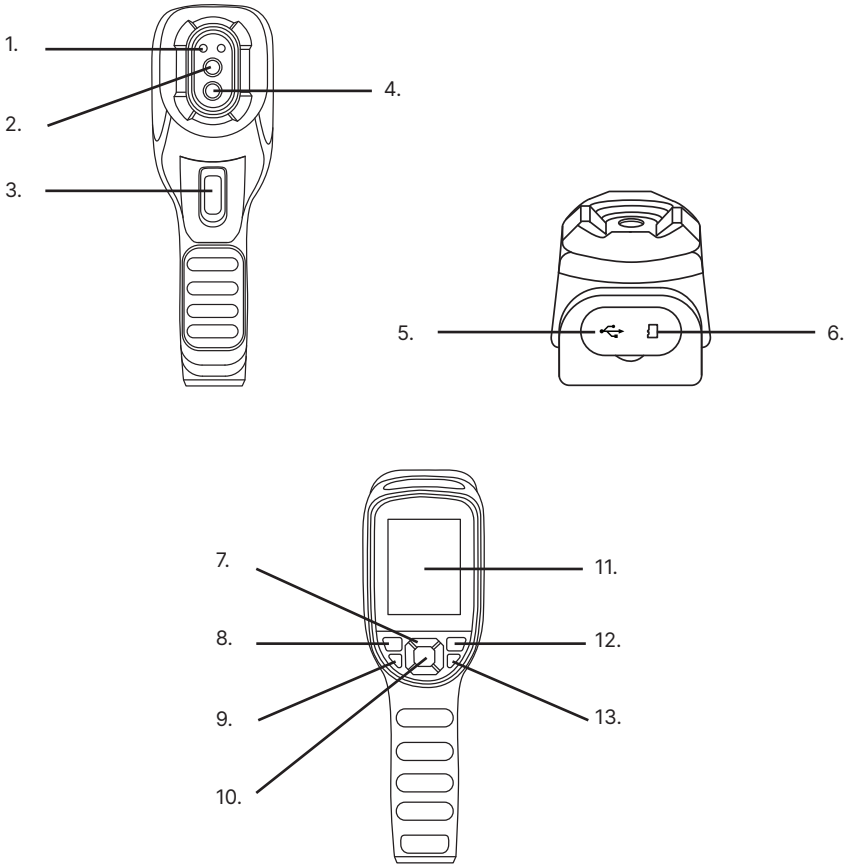
1. LED Flashlight
2. Germanium Lens
3. Shutter Trigger
4. Digital Camera
5. USB Slot
6. SD Card Slot
7. Navigation (up, down, left, right)
8. Review
9. Power
10. Confirm/Menu (center)
11. Screen
12. Previous/Cancel
13. LED Power

7. Package Contents

T-Cam device
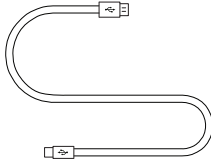
USB to Type-C Cable

MicroSD Card

ENSURE ALL SYSTEM EQUIPMENT AND COMPONENT ITEMS ARE PRESENT BEFORE BEGINNING INSTALLATION

8. Quick Start Instructions
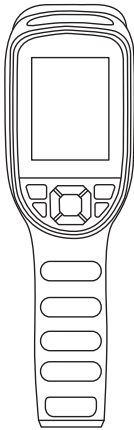
8-1 Tripod Setup

A.
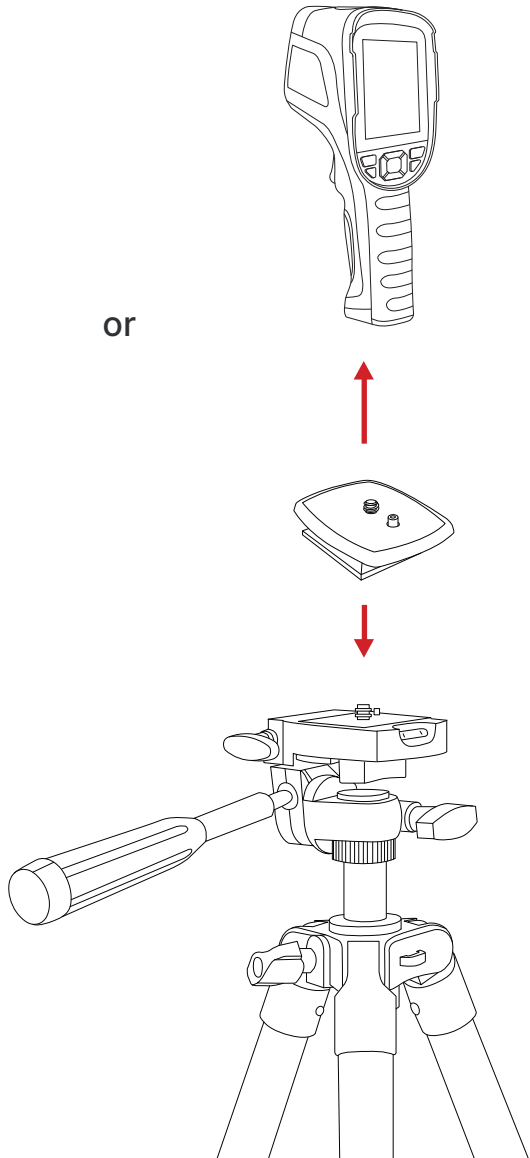
Mount the fully charged T-Cam to a tripod using the ¼-20 mount located on the bottom of the device handle.

The T-Cam can be used as a handheld device.

or

TURN ON THE CAMERA BY PRESSING AND HOLDING THE POWER BUTTON FOR AT LEAST TWO SECONDS.

B.

Power on device.

PRESS AND HOLD THE POWER BUTTON FOR MORE THAN 5 SECONDS TO SHUT DOWN THE CAMERA.

THE THERMAL IMAGER NEEDS SUFFICIENT WARM-UP TIME FOR THE MOST ACCURATE TEMPERATURE MEASUREMENTS AND BEST IMAGE QUALITY. THIS TIME CAN OFTEN VARY BY ENVIRONMENTAL CONDITIONS. IT IS BEST TO WAIT A MINIMUM OF 10 MINUTES FOR THE DEVICE TO COMPLETELY WARM-UP.

8-2 Turning On/OFF the LED Flashlight

A.

To turn on/off the Flashlight
press and hold the LED Flashlight
button for two seconds.
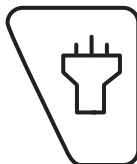
8-3 Memory Card Installation

A.

Insert the Micro-SD Card into the
top of the T-Cam device until a
clicking sound is heard.
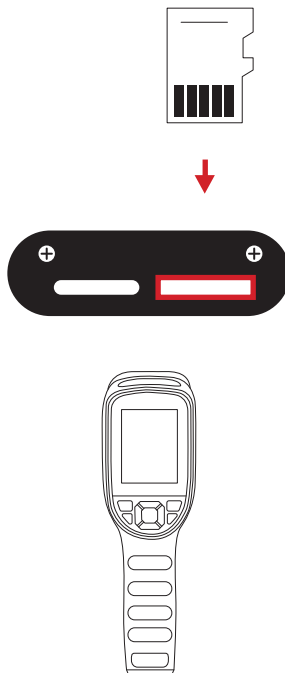
DO NOT FORCE MICRO-SD CARD INTO THE SLOT. THE SIDE OF THE CARD WITH CONTACT PINS MUST BE INSERTED FIRST. IF THERE IS RESISTANCE FLIP THE CARD AROUND AND TRY AGAIN. TO EJECT THE MEMORY CARD PRESS UNTIL A CLICK IS HEARD AND THEN RELEASE. MEMORY CARD WILL BE EJECTED.

8-4 Charging Instructions

A.

Plug the USB Type-C end of the USB cable into the top of the T-Cam device.

B.

Plug the other end of the USB cable into an available USB port on a computer.
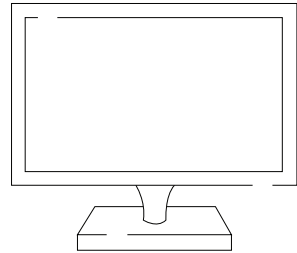
WHEN USING A COMPUTER FOR CHARGING THE COMPUTER SHOULD BE POWERED ON. CHARGE THE BATTERY FOR A MINIMUM OF 4 HOURS BEFORE USING.

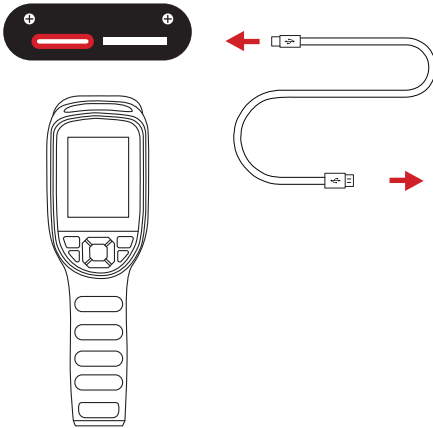**ICI DOES NOT RECOMMEND CHARGING THE DEVICE WHILE IT IS ON A TRIPOD. LAY DEVICE FACE DOWN ON A FLAT AND STABLE DESK OR TABLE WHILE CHARGING.**

ENSURE THE IMAGER IS NEAR ROOM TEMPERATURE BEFORE CHARGING THE DEVICE. DO NOT CHARGE IN EXTREMELY HOT OR COLD AREAS. THE BATTERY CAPACITY MAY BE DECREASED IF CHARGED IN AN EXTREME TEMPERATURE ENVIRONMENT.

IF YOU DO NOT USE THE IMAGER FOR A LONG PERIOD OF TIME, PUT THE DEVICE IN A COOL AND DRY ENVIRONMENT. THE BATTERY WILL DISCHARGE OVER TIME; THEREFORE, THE IMAGER SHOULD BE CHARGED OCCASIONALLY TO PREVENT DAMAGE TO THE BATTERY OR THE DEVICE.

9. Operation Instructions

9-1 How to Charge the Battery

Before using the imager for the first time, charge the battery for a minimum of 4 hours. The battery status is shown by the indicator in the upper-right corner of the screen.

9-1-1 Charging via Type-C Cable

1. Plug the Type-C end of the cable into the T-Cam Device.

2. Plug the USB end of the Type-C cable into a computer.

3. Turn computer on to start charging.

9-1-2 Charging via Power Adapter (not included)

1. Select a charger with 5V 1A or 5V 2A output.

2. Plug the Type-C cable into the T-Cam Device.

3. Plug the USB end of the Type-C cable into the power adapter.

4. Plug the power adapter into a 110v/120V electrical outlet.

ENSURE THE IMAGER IS NEAR ROOM TEMPERATURE BEFORE CHARGING THE DEVICE. DO NOT CHARGE IN EXTREMELY HOT OR COLD AREAS. THE BATTERY CAPACITY MAY BE DECREASED IF CHARGED IN AN EXTREME TEMPERATURE ENVIRONMENT.

9-2 Power On/Off the Device

To turn the camera on, push and hold the Power button for two seconds. Repeat and hold for more than 5 seconds to turn the device off.

**THE THERMAL IMAGER NEEDS SUFFICIENT WARM-UP TIME FOR THE MOST ACCURATE TEMPERATURE MEASUREMENTS AND BEST IMAGE QUALITY. THIS TIME CAN OFTEN VARY BY ENVIRONMENTAL CONDITIONS. IT IS BEST TO WAIT A MINIMUM OF 10 MINUTES FOR THE DEVICE TO COMPLETELY WARM-UP.**

9-3 Power On/Off the LED Flashlight

To turn the flashlight on, push and hold the LED Flashlight button for two seconds. Repeat and hold to turn the flashlight off.

9-4 User Interface

The device interface appearance:
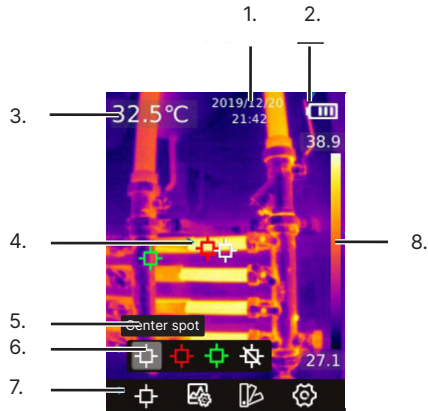
1. Date and Time
2. Battery Life
3. Center Point Temperature
4. Temperature Measurement Points*

5. Feature Name
6. Sub-menu
7. Main Menu
8. Temperature Range

> ***** **CENTER POINT, HIGH TEMPERATURE POINT, AND LOW TEMPERATURE POINT ARE ACTIVATED IN THE PRESENTED IMAGE ABOVE.**

9-5 Capture an Image

Save images as follows:

1. Find and aim the thermal device at the target.
2. Pull the Shutter Trigger button to take a photo.
3. Press the Confirm button to save the image.⁺

> **+** **IN AUTO SAVE MODE, PULLING THE SHUTTER TRIGGER SAVES IMAGES AUTOMATICALLY. IN THE MANUAL SAVE MODE, THE USER MUST CONFIRM OR CANCEL SAVES MANUALLY. AUTO AND MANUAL MODES CAN BE SWITCHED ON OR OFF IN THE SETTINGS.**

9-6 Review Images

When an image is captured it will be stored to the MicroSD card. Images can be viewed at any time as follows:

1. Click the Review button to enter the library.

2. Use the Navigation buttons to select the image to review.

3. Press the Confirm button to view the image in full screen.

4. Press the Previous button continuously to exit the menu and return to the thermal image interface.

9-7 Delete Images

1. Click the Review button to enter the library.

2. Use the Navigation buttons to select the image to review.

3. Press the Confirm button to view the image in full screen.

4. Press Up on the Navigation pad to show the toolbar.

5. Select Delete icon.

6. Press the Confirm button.

7. Press the Confirm button again to confirm deletion.

8. Press the Previous button continuously to exit the menu and return to the thermal image interface.

DELETED IMAGES CANNOT BE RECOVERED.

9-8 Image Information

1. Click the Review button to enter the library.

2. Use the Navigation buttons to select the image to review.

3. Press the Confirm button to view the image in full screen.

4. Press Up on the Navigation pad to show the toolbar.

5. Select Information icon.

6. Press the Confirm button to view image information.

7. Press the Previous button continuously to exit the menu and return to the thermal image interface.

9-9 Center Point Temperature Measurement

The center point measurement is on by default and gives radiometric temperature information contained in the center of the scene. Measurement results will be displayed in the upper left corner of the screen. If disabled, enable center point temperature measurement as follows:

1. Press the Menu button to display Main Menu.

2. Select the measurement icon: ⊡

3. Press the Confirm button to open Sub-menu.

4. Select Center Point icon: ⊡

5. Press the Confirm button to enable center point measurement.

9-10 Hot Point Temperature Tracking

Users can turn on hot spot tracking to identify the highest temperature point in the scene. Measurement results will be displayed in the upper left corner of the screen. Enable hot spot tracking as follows:

1. Press the Menu button to display Main Menu.

2. Select the measurement icon: ⊡

3. Press the Confirm button to open Sub-menu.

4. Select High Temperature icon: ⊡

5. Press the Confirm button to enable hot spot tracking.

9-11 Cold Point Temperature Tracking

Users can turn on cold spot tracking to identify the lowest temperature point in the scene. Measurement results will be displayed in the upper left corner of the screen. Enable cold spot tracking as follows:

1. Press the Menu button to display Main Menu.

2. Select the measurement icon: ⊡

3. Press the Confirm button to open Sub-menu.

4. Select Low Temperature icon: ⊡

5. Press the Confirm button to enable cold spot tracking.

THE CENTER POINT MEASUREMENT IS LOCKED TO THE CENTER OF THE SCREEN AND CANNOT BE MOVED. THE HOT AND COLD POINT TRACKERS WILL MOVE FREELY AROUND THE SCREEN AS TEMPERATURES ARE MEASURED AND CANNOT BE LOCKED INTO A STATIONARY POSITION.

9-12 Turn On/Off Temperature Measurement

Disabling temperature measurements disables all measurement points including the center point which is on by default. This means temperature data will not be collected or displayed in the upper left corner.

Users can disable radiometric data as follows:

1. Press the Menu button to display Main Menu.

2. Select the measurement icon: ⊡

3. Press the Confirm button to open Sub-menu.

4. Select Close icon: ⊠

5. Press the Confirm button to disable temperature measurements.

To enable radiometric data, follow the directions listed for the desired temperature measurement point.

8-13 Image Modes

There are 5 image modes available:

1. ⬜ Thermal: infrared image

2. ▣ Fusion (ICI Dual Vision): infrared and visible image

3. ▣ PIP (Picture-in-Picture): thermal image overlay on the center of a visible image

4. ▣ Digital: visible image only

1.	2.	3.	4.

Change the image mode as follows:

1. Press the Menu button to display Main Menu.

2. Select the Image Mode icon: ▣

3. Press the Confirm button to open Sub-menu.

4. Select the image mode desired.

5. Press the Confirm button to enable mode.

IF THE PIP OR FUSION MODES ARE USED MAKE SURE YOUR ALIGNMENT DISTANCE IS SET CORRECTLY.

9-14 Image Alignment

When using PIP (picture-in-picture) and fusion modes it is important to ensure the alignment distance is set correctly to receive the best image. Align the images as follows:
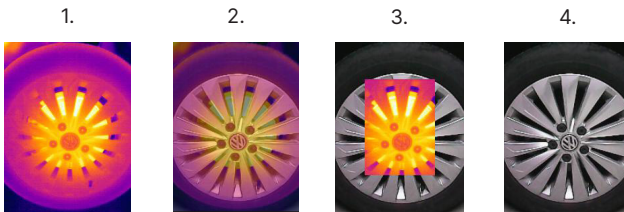
1. Press the Menu button to display Main Menu.

2. Select the Image Mode icon:

3. Press the Confirm button to open Sub-menu.

4. Select the alignment icon:

5. Press the Confirm button to access settings.

6. Adjust the alignment by using the Navigation buttons until images are aligned properly.

7. Press the Confirm button to lock in selection.

8. Press the Previous button continuously to exit the menu and return to the thermal image interface.

9-15 Polarity

Change the polarity (color palette) to enhance temperature differences on the thermal camera as follows:

1. Press the Menu button to display Main Menu.

2. Select the Color Palette icon:

3. Press the Confirm button to open Sub-menu.

4. Select a new palette: White Hot, Black Hot, Iron, Lava, Rainbow, High-contrast Rainbow, Black Red

5. Press the Confirm button to switch to the new palette.

9-16 Emissivity

The correct emissivity value is important in order to receive the most accurate temperature measurement. Emissivity of a surface can have a large effect temperatures the imager observes.

To more accurately measure materials with a low emissivity, an emissivity correction is necessary. Adjusting the emissivity setting will allow the imager to calculate a more accurate estimate of the actual temperature.

Emissivity is set directly in the imager. The emissivity displays on the LCD screen as E=x.xx

Users can change the emissivity as follows:

1.   Press the Menu button to display Main Menu.

2.   Select the Settings icon: ⚙

3.   Press the Confirm button to open Sub-menu.

4.   Select Measure parameter.

5.   Press the Confirm button to open the Sub-menu's menu.

6.   Select Emissivity.

7.   Press the Confirm button.

8.   Adjust number using Navigation buttons.

9.   Press the Confirm button to set Emissivity.

10. Press the Previous button continuously to exit the menu and return to the thermal image interface.

<div align="center">**SEE CHART ON NEXT PAGE FOR COMMON MATERIAL VALUES.**</div>

All objects radiate infrared energy. The amount of energy radiated varies based on the actual surface temperature and the surface emissivity of the object. The Thermal imager senses the infrared energy from the surface of the object and uses this data to calculate an estimated temperature value.

Many common objects and materials such as painted metal, wood, water, skin, and cloth are particularly good at radiating energy and it is easy to get relatively accurate measurements. For surfaces that are good at radiating energy (high emissivity), the emissivity factor is >=0.90. This simplification does not work on shiny surfaces or unpainted metals as they have an emissivity of <0.6. These materials are not good at radiating energy and are classified as low emissivity.

The following table gives typical emissivity of important materials:

Material	Emissivity
Water	0.36
Stainless steel	0.14
Aluminum plate	0.09
Asphalt	0.96
Concrete	0.97
Cast iron	0.81
Rubber	0.95
Wood	0.85
Brick	0.75
Tape	0.96
Brass plate	0.06
Human skin	0.98
PVC plastic	0.93
Polycarbonate	0.80
Oxidized copper	0.78
Rust	0.80
Paint	0.90
Soil	0.93

SURFACES WITH AN EMISSIVITY OF < 0.60 MAKE RELIABLE AND CONSISTENT MEASUREMENTS PROBLEMATIC. THE LOWER THE EMISSIVITY, THE GREATER POTENTIAL FOR ERROR WITHIN THE DEVICE'S CALCULATIONS. ERRORS MAY STILL OCCUR EVEN WHEN ADJUSTMENTS ARE PERFORMED PROPERLY.

9-17 Ambient Temperature

The imager has temperature compensation to correct environmental sources of energy as this will affect the measurement results. Temperature readings are especially altered when the emissivity of the object is low or the difference between the object temperature and the ambient temperature is large. It is necessary to compensate the results to eliminate the influence of the environmental temperatures.

To get a more accurate temperature measurements set the ambient temperature as follows:

1. Press the Menu button to display Main Menu.

2. Select the Settings icon: ⚙

3. Press the Confirm button to open Sub-menu.

4. Select Measure parameter.

5. Press the Confirm button.

6. Select Ambient temp.

7. Press the Confirm button.

8. Adjust number using the Navigation buttons.

9. Press the Confirm button to set ambient temperature.

10. Press the Previous button continuously to exit the menu and return to the thermal image interface.

9-18 Distance

By default the imager is set to measure objects at 0.25 meters (~10 inches). Adjusting the distance can assist the user obtaining more accurate temperature measurements. Set the distance as follows:

1. Press the Menu button to display Main Menu.

2. Select the Settings icon: ⚙

3. Press the Confirm button to open Sub-menu.

4. Select Measure parameter.

5. Press the Confirm button.

6. Select Distance.

7. Press the Confirm button.

8. Adjust numbers using the Navigation buttons.

9. Press the Confirm button to set new distance.

10. Press the Previous button continuously to exit the menu and return to the thermal image interface.

9-19 Non-uniformity Correction (NUC)

Non-uniformity correction (NUC) is used to compensate for the non-uniformity of detector pixels or other optical interference. A common need for NUC correction is to reduce excess noise in an image caused by rapid changes in ambient temperature within an environment.

To perform a NUC operation, press the Previous button. The user will hear a click and the image may clear of some noise grain as the device makes its adjustment.

9-20 Temperature Units

By default the imager is set to measure temperatures in Celsius (°C). Change the temperature scale as follows:

1.   Press the Menu button to display Main Menu.

2.   Select the Settings icon: ⚙

3.   Press the Confirm button to open Sub-menu.

4.   Select Temperature Unit.

5.   Press the Confirm button.

6.   Select desired temperature unit.

7.   Press the Confirm button.

8.   Press the Previous button continuously to exit the menu and return to the thermal image interface.

9-21 Alarm Settings

9-21-1 Enable Alarms

By default the imager alarm thresholds are turned off. Turn them on as follows:

1.   Press the Menu button to display Main Menu.

2.   Select the Settings icon: ⚙

3.   Press the Confirm button to open Sub-menu.

4.   Select HI/LO Alert.

5.   Press the Confirm button.

6.   Select desired On/Off setting.

7.   Press the Confirm button.

8.   Press the Previous button continuously to exit the menu and return to the thermal image interface.

THE USER WILL NEED TO CHANGE THE SETTING FOR EACH THRESHOLD INDIVIDUALLY.

9-21-2 Temperature Threshold Adjustment

By default the imager alarm thresholds are set to HI = 130 °C and LO = 20 °C. Change the thresholds as follows:

1. Press the Menu button to display Main Menu.

2. Select the Settings icon: ⚙

3. Press the Confirm button to open Sub-menu.

4. Select HI/LO Alert.

5. Press the Confirm button.

6. To enable a threshold, select On for desired option. Select Off to disable the option.

7. Press the Confirm button.

8. Adjust the temperature threshold by using the Navigation buttons until the desired temperature is reached.

9. Press the Confirm button.

10. Press the Previous button continuously to exit the menu and return to the thermal image interface.

> **THE USER WILL NEED TO ADJUST THE THRESHOLD FOR EACH SETTING INDIVIDUALLY.**

9-21-3 LED Alarm

The LED flashlight can be made to pulse when the threshold is exceeded. Turn the option On/Off as follows:

1. Press the Menu button to display Main Menu.

2. Select the Settings icon: ⚙

3. Press the Confirm button to open Sub-menu.

4. Select HI/LO Alert.

5. Press the Confirm button.

6. Select LED Alert.

7. Press the Confirm button. Slider will turn to the On position. To disable the LED flash press the Confirm button again and the slider will turn to the Off position.

8. Press the Previous button continuously to exit the menu and return to the thermal image interface.

> **DO NOT POINT THE LED LIGHT OR LASER DIRECTLY AT PEOPLE OR ANIMALS OR INDIRECTLY OFF REFLECTIVE SURFACES.**

9-22 Auto Save

Auto saving for images is turned on by default. This setting can be changed as follows:

1. Press the Menu button to display Main Menu.

2. Select the Settings icon: ⚙️

3. Press the Confirm button to open Sub-menu.

4. Select Auto Save.

5. Press the Confirm button.

6. Select On or Off setting.

7. Press the Confirm button.

8. Press the Previous button continuously to exit the menu and return to the thermal image interface.

> **TURNING OFF AUTO SAVE WILL REQUIRE IMAGES TO BE CONFIRMED BEFORE THEY ARE SAVED TO THE MIRCOSD CARD.**

9-23 Temperature Scales

The default temperature scale of the device is -20 °C to 150 °C. A high temperature calibration is also available. Change the temperature scale as follows:

1. Press the Menu button to display Main Menu.

2. Select the Settings icon: ⚙️

3. Press the Confirm button to open Sub-menu.

4. Select Temperature scale.

5. Press the Confirm button.

6. Select a temperature scale.

7. Press the Confirm button.

8. Press the Previous button continuously to exit the menu and return to the thermal image interface.

> **THE DEVICE WILL PERFORM A NUC CORRECTION AFTER A NEW TEMPERATURE SCALE IS SELECTED.**

9-24 Date and Time Settings

Change the date and time settings as follows:

1.   Press the Menu button to display Main Menu.

2.   Select the Settings icon: ⚙

3.   Press the Confirm button to open Sub-menu.

4.   Select Date and time.

5.   Press the Confirm button.

6.   Select setting to change.

7.   Press the Confirm button.

8.   Adjust the setting by using the Navigation buttons until the desired setting is reached.

9.   Press the Confirm button.

10. Press the Previous button continuously to exit the menu and return to the thermal image interface.

9-25 Language Settings

Change the device language as follows:

1.   Press the Menu button to display Main Menu.

2.   Select the Settings icon: ⚙

3.   Press the Confirm button to open Sub-menu.

4.   Select Language.

5.   Press the Confirm button.

6.   Select Language.

7.   Press the Confirm button.

8.   Press the Previous button continuously to exit the menu and return to the thermal image interface.

PERFORM A FACTORY RESET TO RESTORE DEFAULT SETTINGS.

9-26 Display Brightness Settings

Users can change the brightness settings as follows:

1.   Press the Menu button to display Main Menu.

2.   Select the Settings icon: ⚙

3.   Press the Confirm button to open Sub-menu.

4.   Select Display brightness.

5.   Press the Confirm button.

6.   Select brightness level.

7.   Press the Confirm button.

8.   Press the Previous button continuously to exit the menu and return to the thermal image interface.

9-27 Power Management Settings

To save power users can change the auto shut off settings. The device can be set to turn off after 5 minutes, 10 minutes, or 20 minutes. Auto shut off can also be turned off.

Change power management settings as follows:

1.   Press the Menu button to display Main Menu.

2.   Select the Settings icon: ⚙

3.   Press the Confirm button to open Sub-menu.

4.   Select Auto power off.

5.   Press the Confirm button.

6.   Select desired time limit or highlight the Off option.

7.   Press the Confirm button.

8.   Press the Previous button continuously to exit the menu and return to the thermal image interface.

PERFORM A FACTORY RESET TO RESTORE DEFAULT SETTINGS.

9-28 Device Information

Access information about the device as follows:

1. Press the Menu button to display Main Menu.

2. Select the Settings icon: ⚙

3. Press the Confirm button to open Sub-menu.

4. Select Device Information.

5. Press the Confirm button. Device information is displayed on screen.

6. Press the Previous button continuously to exit the menu and return to the thermal image interface.

DEVICE INFORMATION CANNOT BE CHANGED.

9-29 Format the SD Card

Users can format the MircoSD card as follows:

1. Press the Menu button to display Main Menu.

2. Select the Settings icon: ⚙

3. Press the Confirm button to open Sub-menu.

4. Select Format SD Card.

5. Choose to format the SD card as FAT32.

6. Press the OK button. SD card will be formated.

7. Press the Previous button continuously to exit the menu and return to the thermal image interface.

FORMATTING THE SD CARD ERASES ALL IMAGES STORED ON THE MEMORY CARD AND CANNOT BE UNDONE.

PERFORMING A FACTORY RESET WILL NOT FORMAT THE MEMORY CARD HOWEVER USERS MAY WISH TO REMOVE THE MEMORY CARD BEFORE ATTEMPTING A FACTORY RESET OF THE DEVICE.

PERFORMING A FACTORY RESET ERASES CUSTOMIZED USER CONFIGURATIONS STORED ON THE DEVICE AND RESTORES THE ORIGINAL DEFAULT SETTINGS PROGRAMMED BY THE MANUFACTURER. THE PROCESS CANNOT BE UNDONE.

9-30 Factory Reset the Device

If measurements are skewed the user should try adjusting the emissivity and ambient temperature before attempting to restore factory setting. Restore default settings as follows:

1. Press the Menu button to display Main Menu.

2. Select the Settings icon:

3. Press the Confirm button to open Sub-menu.

4. Select Factory reset.

5. Press the Confirm button. Device Settings will reset to factory settings.

6. Press the Previous button continuously to exit the menu and return to the thermal image interface.

PERFORMING A FACTORY RESET WILL NOT FORMAT THE MEMORY CARD HOWEVER USERS MAY WISH TO REMOVE THE MEMORY CARD BEFORE ATTEMPTING A FACTORY RESET OF THE DEVICE.

10. Cleaning and Maintenance

10-1 Cleaning the Germanium Lens

Do not use corrosive chemicals on the optical glass components. The germanium window surface is coated with anti-reflection coating. Dust, grease, and fingerprints will produce harmful substances and lead to a decline in performance, or cause scratches. If dirt is found, please use the following methods:

1. Use a blown balloon or a soft brush to clean the lens surface to avoid dust particles scratching the anti-reflection film on lens surface during the wiping process.

2. Use a soft cotton or microfiber cloth or lens wiping paper and dip in distilled water. Gently wipe the lens surface from the middle to the edge, paying attention to not crack the lens, or use too much liquid. If the lens is still not clean, replace the cloth and repeat the wiping process.

10-2 Disinfecting the Camera Surface

Do not use corrosive cleaning solutions on the optical glass components. It is recommended to disinfect the camera surface regularly with a non-corrosive sanitizing product. Follow the directions provided by the manufacturer of the cleaning solution. Adhere to the sanitation protocols and cleaning schedule set forth by the employer.

10-3 Device Calibration

It is recommended to have the device(s) re-calibrated annually. Contact customer service to schedule maintenance.

10-4 Storage

When the equipment is not in use, the device should be placed in a dust-free and moisture-free environment with a stable temperature and humidity. The battery will discharge over time; therefore, The imager should be charged occasionally to prevent damage to the battery or the device.

DO NOT USE CORROSIVE CLEANING SOLUTIONS ON THE OPTICAL GLASS COMPONENTS. DISINFECT THE CAMERA SURFACE REGULARLY WITH A NON-CORROSIVE SANITIZING PRODUCT.

CALIBRATE YOUR DEVICES ANNUALLY. CONTACT CUSTOMER SERVICE TO SCHEDULE MAINTENANCE.

11. Troubleshooting

If the user encounters any problems while using the imager, refer to the following options. If the problem persists, disconnect the power and contact the customer support department.

11-1 Thermal imager does not power on

- Charge device

11-2 Thermal imager shuts off unexpectedly

- Adjust the power management controls

- Charge device

11-3 No thermal image

- Open the lens cap

11-4 Camera out of focus

- Move closer to object until it comes into focus

- Back away from object until it comes into focus

11-5 Temperature readings are incorrect

- Turn off the device; then, turn it back on

- Ensure the correct temperature range is selected

    ○ The default temperature range is -20 °C to 150 °C (-4 °F to 302 °F)

    ○ When measuring high temperature objects ensure the temperature range is set to the 100 °C to 550 °C (212 °F to 1022 °F) range

- Device is at proper distance

- Adjust emissivity

- Adjust for ambient temperature

- Perform a NUC operation

11-6 Memory card error

- Insert memory card

12. About ICI

Infrared Cameras, Inc.
2105 W. Cardinal Dr.
Beaumont, TX 77705

Phone: (409) 861-0788 │ Toll Free: (866) 861-0788 │ International: (409) 861-0788

General Inquiry: support@infraredcameras.com
Website: www.infraredcameras.com

You may reach a representative by phone or email Monday – Friday 8:00AM - 5:00PM CST.

ICI manufactures complete systems and software. We can provide complete engineering, software, and OEM solutions. Our Fortune 500 clients rely on us for infrared equipment and thermography training (which we offer through the Infrared Training Institute).

In addition to providing custom germanium, silica, and sapphire optics, we also build windows for enclosures, as well as custom pan and tilt units. We can even provide customizable explosion-proof systems.

Our knowledge and experience stems from years of using infrared imaging and temperature measurement instruments to provide solutions to: managers, engineers, scientists, inspectors and operators in space, power companies, medical, pulp and paper, food industry, research and development, and various process industries. You can see our products and services used in industrial, commercial, and government applications worldwide. Originally named Texas Infrared (still DBA), Infrared Cameras, Inc. has been in business since March, 1995.

Thank you for your dedicated and continued support.