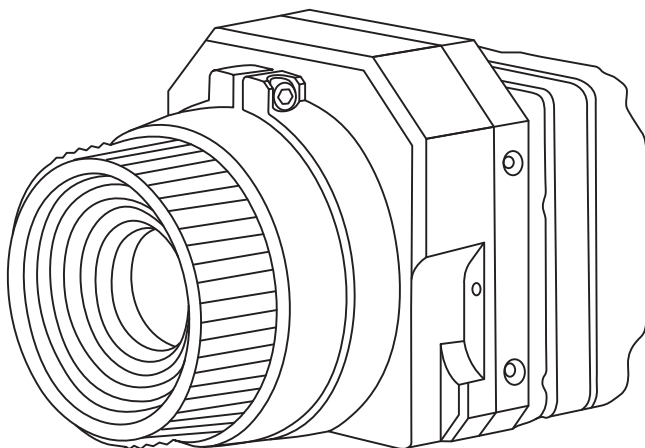


8000 SERIES USER MANUAL

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



ICI cameras fall under US Federal Law and Export Control.

2105 W. Cardinal Dr. Beaumont, TX 77705

For more information, contact us: (409) 861-0788 | sales@infraredcameras.com | www.infraredcameras.com

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1. General Description

8000 Series devices are designed for surface temperature measurement. These compact devices are a winning combination of pixel resolution and accuracy. The unbeatable design is capable of meeting the non-contact thermography needs of inspectors in a wide array of fields.

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 multiple 8000 series devices, which means that some content in this manual may not be applicable to a specific model. This manual may contain technical inaccuracies or typographical errors.

3. Intended Use

8000 Series are used 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

- This device must be installed by qualified service personnel or system installation personnel.
- Do take precautions to prevent the lens from being worn, scratched or broken. Avoid touching the lens to prevent it from being damaged or getting dirty.
- Given that the uncooled thermal infrared image camera uses a very sensitive thermal sensor, under no circumstances (powered on or off) should the lens be pointed directly at a strong radiation source (such as sun, direct or reflected laser beam, etc.), otherwise permanent damage will be caused to the uncooled thermal imager.
- Do not use the imager in an ambient temperature outside of the operation range. High/low temperatures can cause damage to the device.
- This product is a precise electronic device that must be handled with care during use, storage, and transportation to prevent dangerous actions such as the device being hit by external force, or falling from heights.
- During transportation and storage the original packaging box must be used.
- Prior to start of the device, make sure that the power supply is properly connected. If the power supply is connected incorrectly, the device may be damaged.
- Do not place any objects on any attached power cords, and do not place the device where the power cord can be easily touched.
- Do not submerge the device in water or salt water or leave the device in intense weather environments.
- 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.
- Do not drop or throw the device.
- Do not disassemble or modify the thermal imager.
- 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.
- If the device operates abnormally, please contact the supplier and do not dismantle the device on your own.
- Storage: If you do not use the imager for a long period of time, put the device in a cool and dry environment.

5. Technical Specifications

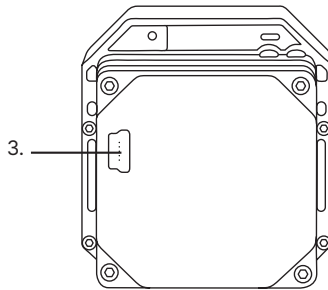
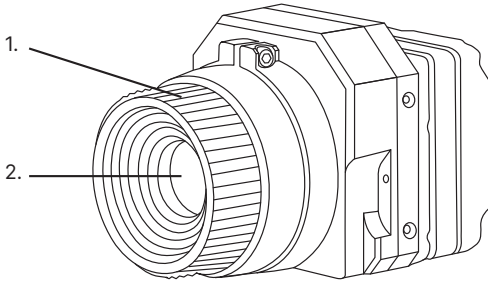
	8320 P	8640 P
Detector Array	UFPA (VOx)	
Pixel Pitch	17 μ m	
FOV	Lens dependent	
Measurement Distance	Lens dependent	
Pixel Resolution	336 x 256	640 x 512
Spectral Band	7 μ m to 14 μ m	
Thermal Sensitivity (NETD)	< (30 mK) 0.03 °C at 30 °C (86°F)	
Frame Rate	60 Hz	30 Hz
Dynamic Range	14-bit	
Temperature Range	Standard: -20 °C to 120 °C (-4 °F to 248 °F) Hi-Temp (optional): 0 °C to 500 °C (32 °F to 932 °F)	
Operation Range	-40 °C to 80 °C (-40 °F to 176 °F)	
Storage Range	-40 °C to 80 °C (-40 °F to 176 °F)	
Humidity	5% to 95% non-condensing	
Accuracy	Standard: \pm 1°C (\pm 1.8 °F) or \pm 1% Hi-Temp: \pm 5°C (\pm 9 °F) or \pm 5%	
Pixel Operability	> 99 %	
Shock/Vibration	75 G/4.3 G	
Dimensions (without lens)	44.5 mm x 44.5 mm x 46.5 mm (L x W x D \pm 0.5 mm) (1.75" x 1.75" x 1.83" (L x W x H \pm 0.02"))	
Power	5 V DC 500 mA, < 1 W	5 V DC 500 mA, < 1.2 W
Weight (without lens)	< 72 g (2.5 oz)	
Interface	USB Mini-B/USB 2.0	
Video	Raw	
Emissivity Correction	0.01 to 1.0	
IP Rating	IP 54	
Shutter	Built-in shutter	

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

	8320 S	8640 S
Detector Array	UFGA (VOx)	
Pixel Pitch	17 μm	
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Dynamic Range	14-bit	
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Pixel Operability	> 99 %	
Shock/Vibration	75 G/4.3 G	
Dimensions (without lens)	44.5 mm x 44.5 mm x 46.5 mm (L x W x D ± 0.5 mm) (1.75" x 1.75" x 1.83" (L x W x H ± 0.02 "))	
Power	5 V DC 500 mA, < 1 W	5 V DC 500 mA, < 1.2 W
Weight (without lens)	< 72 g (2.5 oz)	
Interface	USB Mini-B/USB 2.0	
Video	Raw	
Emissivity Correction	0.01 to 1.0	
IP Rating	IP 54	
Shutter	Built-in shutter	

6. Structure

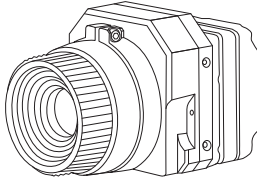
6-1 Appearance and Definitions of Housing Interface



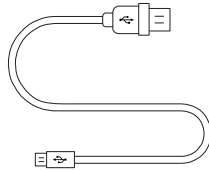
1. Focus Ring
2. Germanium Lens
3. Mini-USB interface

1/4"-20 TRIPOD SUPPORT LOCATED ON BOTTOM OF DEVICE.

7. Package Contents



8000 Series IR Camera



Mini-USB to USB Cable



Software USB Drive

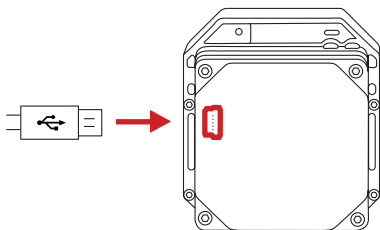
ENSURE ALL SYSTEM EQUIPMENT AND COMPONENT ITEMS ARE PRESENT BEFORE BEGINNING INSTALLATION

8. Installation Instructions

8-1 Setup

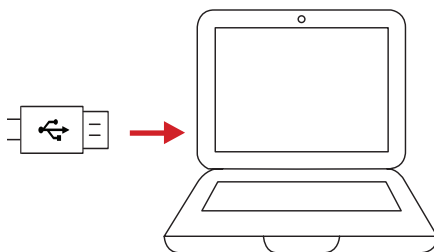
A.

Plug the Mini-USB end of the USB cable into the back of the 8000 Series Camera.



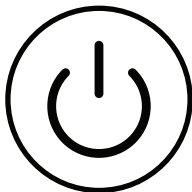
B.

Plug the other end of the USB cable into your computer.



3.

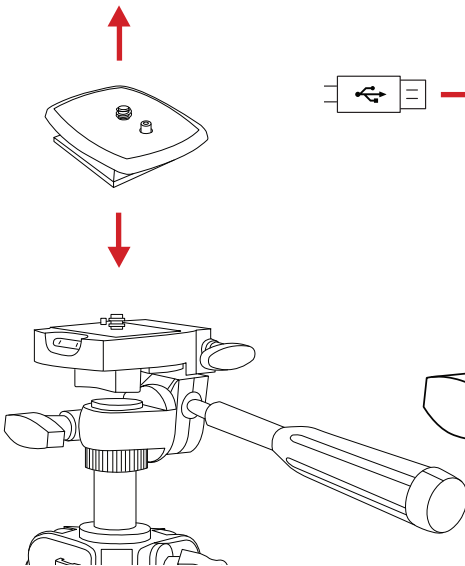
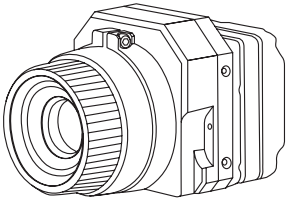
Power on computer.



8-2 Tripod Setup

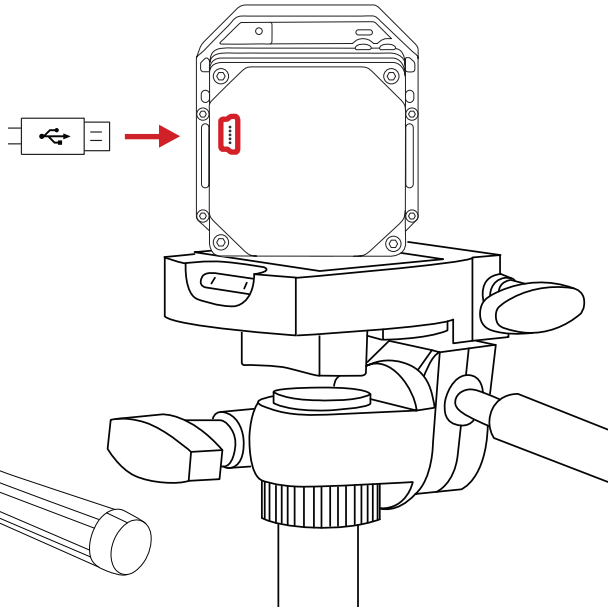
A.

Mount the 8000 Series Camera to a tripod using the 1/4-20 mount.



B.

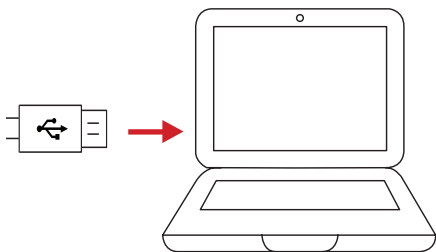
Plug the Mini-USB end of the USB cable into the back of the 8000 Series Camera.



MAKE SURE TRIPODS DO NOT BLOCK THE DIRECT PATH OF FOOT TRAFFIC TO ENSURE THE EQUIPMENT WILL NOT BE MOVED OR KNOCKED DOWN. USING A DIVIDING BARRIER WILL HELP KEEP TRIPODS SEPARATE FROM PATHS.

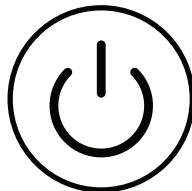
C.

Plug the other end of the USB cable into your computer.



D.

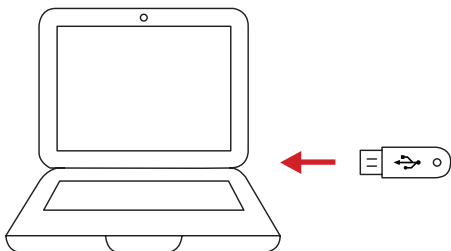
Power on computer.



8-3 Software

A.

Install IR Flash software using the software USB drive. Refer to the IR Flash User Manual for instructions.



B.

Once installed, launch IR Flash software by double-clicking the associated desktop icon.

9. Computer Setup

9-1 IR Flash Pro

Software arrives installed on computers and tablets purchased from ICI as complete systems and it will launch automatically on startup. A copy of the software is provided on the Software USB Drive. Documentation can be found online on the IR Flash Pro web page under the Downloads section or at this address:

<https://infraredcameras.com/ir-flash-pro-manual/>

- **Processor:** i5 or above (Quad Core or better)
- **RAM:** 4 GB or above
- **OS:** Windows 8/8.1/10
- **Hard Drive:** 256 GB or above
- **Resolution:** 1920 x 1080

9-2 Cybersecurity

Any computer supplied with a complete system is provided with the Windows Operating System. IR Flash Pro software is preinstalled and the system has been checked for viruses and malware prior to shipping. To further decrease the possibility of introducing malware, Infrared Cameras Inc. recommends you take steps to reduce the likelihood that the system be compromised, which include:

- Prior to connecting the system's computer to the Internet or your secure internal network be sure to have your IT department install your organization's anti-virus software, anti-malware and, if applicable, system access software and apply security updates as necessary.
- If connecting the system's computer to the Internet be sure to locate the computer behind a firewall.
- Install security updates to the computer's operating system in accordance with your organization's policies
- Do not use the system's computer for other uses.
- Install software updates via instructions provided by Infrared Cameras Inc. only. Do not install software from unknown entities.
- Don't connect unknown hardware devices, e.g. USB devices, external hard drives, etc. to the system computer.
- If you suspect that the system computer has been infected with malware, contact your organization's IT department or Infrared Cameras Inc. for further assistance.

If your device does not require usage of the e-mail alert function using the device off a network is preferred.

Windows 10™ Operating System updates are evaluated by Infrared Cameras Inc. as they are released by Microsoft. Please contact Infrared Cameras Inc. Technical Support for compatibility information.

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 device(s) re-calibrated annually. Contact customer service to schedule maintenance.

10-4 Storage

When the equipment is not in use, the device(s) should be placed in a dust-free and moisture-free environment with a stable temperature and humidity.

11. Troubleshooting

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

11-1 Camera(s) not showing, camera(s) lagging, or software crashing

- Ensure that camera has been powered on for a few minutes
- Verify that firewall is not blocking software
- Close and reopen software
- Verify that correct software is installed
- Uninstall & reinstall software, running as administrator
- Try IR Flash Pro software. If already using, try a newer version.
- Restart computer

11-2 Temperature readings are incorrect or is suboptimal

- Close and reopen software
- Camera is proper distance from subject
- Camera is at proper height
- Camera is off center from subject
- Reconnect the camera to the computer and restart the computer
- Camera powered on for several minutes
- Camera is away from direct sunlight or reflective light
- Try IR Flash Pro software. If already using, try a newer version.

11-3 No thermal image

- Take off the lens cover
- Ensure device is receiving power

11-4 Thermal imager shuts down or device will not start

- Charge the device
- Ensure device is within the safe operating temperature range

12. About ICI

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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.