

## **e** Thank you and congratulations on your purchase of the Bullard QXT

The Bullard QXT offers numeric and bar temperature measurement as well as automatic tri-color Super Red Hot (SRH) high heat colorization. Depending on your unit's configuration, additional optional features are available, including Electronic Thermal Throttle (ETT) manual colorization and 2X / 4X digital zoom.

The benefits of using thermal imaging technology as a firefighting tool encompass nearly every aspect of a firefighter's job. Thermal imaging is not, however, a technology designed to replace current firefighting tactics. Rather, it is a tool that allows the firefighter to be more effective and make better decisions. Some of the many uses for your Bullard QXT Thermal Imager include:

- Search and rescue
- Scene assessment
- Locating the seat of the fire
- Determining the spread of the fire
- Locating hot spots
- Identifying potential flashover situations
- Determining ventilation points
- Determining entry and exit points
- Overhaul
- Hazmat
- Wildland firefighting
- Incident investigation
- Training

### **▲ WARNING**

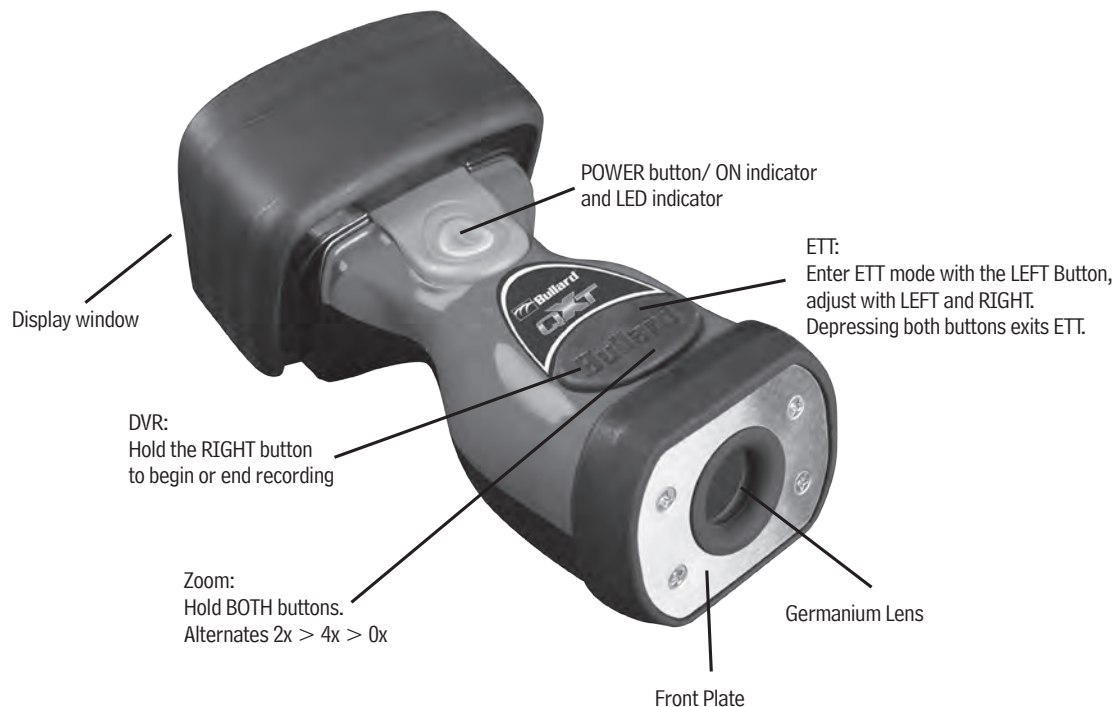
Read all instructions and warnings before using this product.

Your thermal imager is like any other tool. It must be used properly and safely. All users should be trained on the proper and safe use of thermal imaging prior to using the Bullard QXT Thermal Imager. This is especially important for users who may use this product in hazardous or IDLH (Immediately Dangerous to Life and Health) environments.

FAILURE TO FOLLOW THIS INFORMATION COULD RESULT IN DEATH OR SERIOUS INJURY.



## Overview of the Bullard QXT



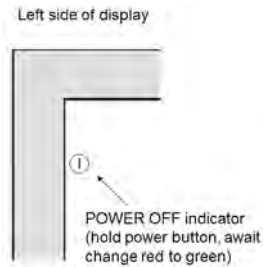
## General Operation

To **turn ON** your Bullard QXT, depress the grey power button located on top of the unit. The screen will display the Bullard QXT logo and the grey power button will illuminate. A thermal image will appear within a few seconds. This image consists of black, white, and grey elements which indicate heat signatures of objects and scene dynamics. Warmer elements appear as lighter shades, while cooler elements appear as darker shades.

### NOTE:

You will periodically observe a momentary freeze in the imager. This is normal and is a function of the self-calibration shutter. The shutter will activate several times during the first 5 minutes, depending on the environment.

To **turn OFF** your Bullard QXT, depress and hold the power button until the "red" power icon located in the top left of the display illuminates and then **changes from red to green**. When the icon changes from red to green, **release and the unit will power off**.

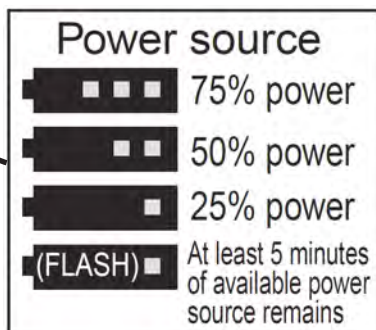
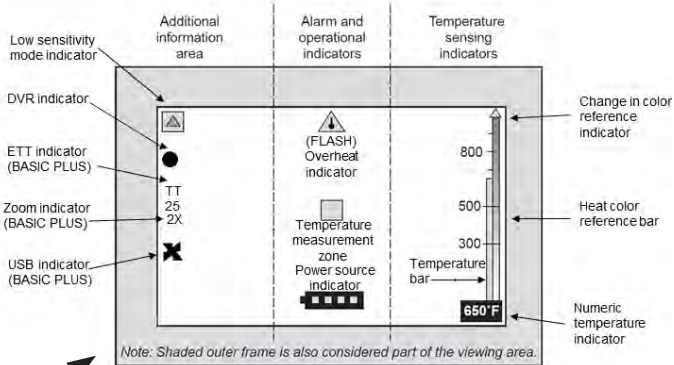


## System LED Indications

The power button LED will be illuminated when the imager is powered ON. In addition, the same LED changes colors to communicate other system conditions related to charging, as indicated below. Note that **ONLY** the green power indication functions when the TI is not connected to a charging system (i.e. standalone operation).

SOLID WHITE	Imager is powered ON (not charging)
SOLID GREEN	Imager is fully charged
PULSING GREEN	Imager is "thinking" (charge system processing)
PULSING RED	Imager battery is charging
FLASHING YELLOW	Error condition (problem with the TI or charging system)

## On-Screen Indications



Detail of Power Source Indicator

## Heat Color Reference Bar

Indicates scene temperature (see Super Red Hot Colorization).

## Sensitivity (Gain) Modes

The imager automatically switches between low and high sensitivity (gain) modes based on ambient scene temperatures in order to protect the thermal sensor from overload in high-temperature situations. The low sensitivity mode activates in high-heat situations, and deactivates as ambient heat decreases (i.e. lower temperatures). The low sensitivity mode indicator consists of a green triangle located in the upper left of the viewing area.






## Overheat Indicator

A visual warning flashes which indicates to the user that the thermal imager might cease to operate due to internal overheating. The imager's internal electronics remain functionally useful within the range of -20° C to 85° C.

## Power Source Indicator (Battery Status Indicator)

- (1) Four green segments displayed (76-100% charge)
- (2) Three green segments displayed (51-75% charge)
- (3) Two yellow segments displayed (26-50% charge)
- (4) One red segment displayed (0-25% charge)
- (5) One red segment flashing (at least 5 minutes of runtime remains)

Estimated operation time on fully charged power source in available mode.

	FULL power (green)	4.5 -> 6 hours
	75% power (green)	3.0 - 4.5 hours
	50% power (yellow)	1.5 - 3.0 hours
	25% power (red)	1.5 hours
	Will begin to flash when at least 5 minutes of available power source remains (red)	> 5 minutes

### NOTE:

- (1) During operation the bar will deplete from left to right.
- (2) **THE BULLARD QXT'S INTERNAL LITHIUM ION BATTERY PACK IS DESIGNED FOR MAXIMUM LIFE WHEN THE BATTERY IS KEPT FULLY CHARGED. BULLARD RECOMMENDS LEAVING THE QXT CONNECTED TO YOUR PREFERRED CHARGING SYSTEM WHEN THE UNIT IS NOT IN USE.**
- (3) Power off the imager during charging.

## Temperature Bar

The Temperature Bar is a bar-graph style temperature gauge in the right portion of the display. The bar/numeric indicator displayed represents the approximate temperature of the object viewed within the Temperature Measurement Zone in the center of the display. Accuracy of indication is dependent on numerous factors including the distance from the object being viewed (accuracy decreases as distance increases) and its emissivity (heat radiation properties). Your Bullard QXT is factory-calibrated to emissivity corresponding with normal construction materials. Objects with emissivity varying greatly from this (particularly reflective objects such as metals and shiny materials) reduces accuracy of the temperature indication.

## Numeric Temperature Indicator

Displays next to the Temperature Bar and indicates the measured temperature of an object in the Temperature Measurement Zone (center of the display).

### NOTE:

The indicators provide a quick reference to compare objects of similar emissivity in order to assist with identification of intense heat sources. Due to the inherent issues with accuracy, use these features with caution and verify indicated heat levels through traditional means whenever possible.

## Super Red Hot (SRH) Colorization

The Bullard QXT utilizes easy-to-use Super Red Hot (SRH) colorization which displays heat levels in yellow, orange, and red hues. This feature identifies specific heat layers, thus alerting firefighters to areas of intense heat through visual awareness of the hottest objects in a scene. The SRH feature automatically adds colorization at temperatures above 500° F.

SRH colorization engages automatically at temperatures 500° F or greater. Temperatures below 500° F (260° C) remain grayscale (white hot polarity). Objects between 500° F (260° C) and 799° F (426° C) appear yellow; objects 800° F (427° C) to 999° F (537° C) appear orange; objects 1000° F (538° C) or hotter appear red. The SRH overlay uses remains semi-transparent allowing the scene detail such as thermal flows to remain visible under the SRH colorization.

SRH has a Heat Color Reference Bar adjacent to the Temperature Bar. The temperature is illustrated by the filled height of the Temperature Bar and by the Numeric Temperature Indicator below the bar. The color reference bar is a visual indicator to quickly allow the user to determine the meaning of the color displayed on the screen. For example, if the Temperature Measurement Zone is pointed to an object at 1000° F (538° C) the bar fills to the mark located above the 900° F (482° C).

## Electronic Thermal Throttle (ETT)

As an optional feature, your Bullard QXT may be equipped with the Electronic Thermal Throttle (ETT), which is a hot-spot indicator ideal for locating hot spots during overhaul and size-up, searching for overheated electrical equipment, finding victims, and clarifying objects in low ambient temperature (non-fire) situations. When engaged, ETT senses the hottest area in the scene and colors it blue. If ETT is engaged while viewing an object /scene and most of the area is the same temperature, a greater amount of the scene is colored blue.

To engage ETT, depress the left button.

"TT\*\*" will appear on the screen. To adjust the tuning of the algorithm, use the LEFT and RIGHT buttons. As ETT engages more of the scene, the blue will become lighter in hue to help differentiate objects in the scene. Cycling through the scene and sensitivity adjustment displays the "TT" symbol and a corresponding number in the upper left hand corner of the display. The "TT" indicates "Thermal Throttle" mode. The number (0-99) is a reference point indicating the relative level of ETT engagement; by itself it has no specific meaning. Most of the benefits of the ETT are accomplished with the first few presses of the button. To exit the ETT mode, depress both the LEFT and RIGHT buttons briefly.

## Digital Zoom

As an optional feature, your Bullard QXT may be equipped with 2X and 4X digital zoom capability. If present in your unit's configuration, to enable this functionality, depress both buttons approximately three (3) seconds to engage the zoom function. A second long-press of both buttons will change from 2X to 4X zoom, and a third long-press of both buttons reverts to the Imager's standard view with no zoom.

## SceneCatcher Digital Video Recorder (DVR)

As an optional feature, your Bullard QXT may be equipped with a SceneCatcher DVR.

To activate the DVR, press and hold the right button for approximately three (3) seconds, until a red circle appears on the left side of the display. This indicates recording to the unit's internal memory. To deactivate the DVR, press and hold the right button until the red circle disappears. To download recorded video, connect

the imager to a computer via the Micro USB port on the bottom of the imager. When connected in this manner and powered ON, the internal Secure Digital (SD) card will behave as any other USB mass storage device (i.e. flash key, hard drive, etc).

### NOTE:

Upon initial imager startup, the SceneCatcher DVR will not be available for 8 seconds while it initializes. During this time, the red dot will be displayed with an "X" crossing it.

The SceneCatcher DVR has 8 GB of solid state memory, which will store more than 5.5 hours of video. When storage is full, the unit automatically overwrites the oldest file available. Video files are recorded for a maximum of 3 minutes each. That is, if a video being recorded is longer than 3 minutes, it will be stored in 3-minute segment files. To make it easier to manage multiple videos from different Thermal Imagers, the video file names have the following format: AANNNNNNN.avi, where AA is an alphabetic combination and NNNNNN is a numeric pattern.

## Charging the Battery

Your Bullard QXT's battery can be charged with one of three charging systems: the included Wireless Desktop Charger, the included USB Wall Charger, or the optional Wireless Truck Mount Charger. To charge a battery in the Desktop or Truck Mount chargers, place the imager on the charger. When seated correctly, a BLUE LED on the right side of the charger indicates a connection with the imager. When the connection has been verified and the battery is charging, the Bullard QXT's power button LED will pulse RED. When fully charged, the same LED will change to steady GREEN.

### NOTE:

More detailed information is available in the user's manual for these charging devices.

To charge with the USB Wall Charger, open the USB cover located on the rubber boot at the bottom of the display side of the imager. Plug the USB power cord into a dedicated wall outlet using the included AC adapter. When the connection has been verified and the battery is charging, the Bullard QXT's power button LED will pulse RED. When fully charged, the same LED will change to steady GREEN.

With any charging system, if the Bullard QXT's internal control software determines that internal temperatures are too high or too low for battery charging, then the power button will flash YELLOW until the imager's internal temperature stabilizes to a range appropriate for charging. This is normal operation as the battery pack must be at moderate temperatures to support charging. Upon and while charging, the imager's power button pulses RED, and when fully charged, the LED displays solid GREEN.

### NOTE:

If your Bullard QXT has been stored in extremely cold temperatures for an extended period of time, especially with a depleted battery, it may take approximately one minute to start up. To avoid this behavior, Bullard recommends leaving the unit attached to a charging system when not in use.

### NOTES ON BATTERY CHARGING:

- (1) Connection to a computer via USB is intended for the purpose of downloading video and/or communicating with the imager. Use of the USB computer connection is not recommended for battery charging due to extremely slow charge speed with this method.
- (2) The battery's charging temperature range is 32° F (0° C) to +113° F (45° C).
- (3) THE BULLARD QXT'S INTERNAL LITHIUM ION BATTERY PACK IS DESIGNED FOR MAXIMUM LIFE WHEN THE BATTERY IS KEPT FULLY CHARGED. BULLARD RECOMMENDS LEAVING THE QXT CONNECTED TO YOUR PREFERRED CHARGING SYSTEM WHEN THE UNIT IS NOT IN USE.
- (4) Power off the imager during charging.

## Hardware Reset Functions

Like most portable electronic devices with internal batteries, the Bullard QXT is equipped with a function which permits a full hardware reset. If the imager appears unresponsive, it may require a hardware reset. To accomplish this, depress and hold the Power button for 30 seconds.

The Bullard QXT is also equipped with a safety feature in the battery system which provides automatic shutoff to protect the electronics if they experience prolonged excessive temperatures. To reset the battery's safety circuit, plug the imager into the included Bullard USB Power Supply.

## Care and Storage Instructions

The Bullard QXT Thermal Imager requires little maintenance. For best results, after each use:

- Clean and disinfect the outside of the unit with mild soap or detergent.
- Wipe the lens with a soft cloth.
- Clean the display with a soft cloth.
- Check screw tightness on cover display.
- Store your Bullard QXT on the included Desktop Charger, the optional Truck Mount Charger, or in the delivery case provided. Bullard recommends leaving the unit to charge when not in use for best performance.
- Maintain thermal imagers using a programmed system.

### NOTE:

You may place department and/or company information on your Bullard QXT. When adding stickers or other markings, ensure that you do not cover the information label, the thermal imager lens, cover window, or the display. Do not engrave in the plastic material as this can damage the unit and jeopardize sealing.

### NOTE:

As an option, the Bullard QXT may be ordered with a Truck Mount Charger for installation into a vehicle. This charger is designed to be mounted in a vehicle and securely charge and store the imager in accordance with NFPA 1901-14.1.11.2. The Truck Mount Charger is designed for permanent vehicle installation. Consult the Bullard XT Series Truck Mount instruction manual for detailed instructions of installing in a vehicle.

## Cleaning the Lens

The Bullard QXT Thermal Imager lens is recessed in an impact resistant bezel covered with a germanium lens. The lens can be cleaned with a soft cloth and soapy water as required.

## Replacing the Video Display Cover Window

The display cover has a scratch-resistant hard coating to minimize marring. However, if heavy scratching or gouging occurs, the cover window can be replaced. To accomplish this, remove the four Phillips screws along the sides of the window. Lift the USB cover (lower portion of the Rear Boot) and pull over the D-ring while pulling forward on the Rear Boot. The Rear Boot and Window will disengage from the imager. Pull the Display Cover Window from the slot and replace it with the new Display Cover Window. Stretch the Rear Boot/Window assembly over the screen and feed the D-ring through the hold in the boot. Press the USB cover into the lower housing. Take care NOT to overtighten the screws during reassembly. (Replacement part number: XTWINDOW, or XTWINDOWSCREWS as applicable).

## Shipment

As with all electronics with internal lithium-ion batteries, special considerations must be observed when shipping the Bullard QXT.

When shipping the Bullard QXT, by regulation the exterior case must have a red-bordered announcement with the following text: "CAUTION – LITHIUM ION BATTERY – DO NOT LOAD OR TRANSPORT PACKAGE IF DAMAGED". Additionally, further regulations stipulate that the imager must not have greater than two bars of battery charge if shipping by air. Air shipments must also be packed in a carton with a secondary over-pack carton.

## Service

If your Bullard QXT is not performing properly, contact Bullard Customer Service at 877-BULLARD (285-5273) or info@bullard.com. Outside the US and Canada, call +1-859-234-6611. Describe the problem to the Bullard representative as completely as possible. For your convenience, your representative will attempt to help you diagnose or correct the problem over the phone. Before returning your Bullard QXT, you should verify with your representative that the product should be returned to Bullard. Bullard Customer Service will provide you with written permission and a Return Authorization (RA) number.

If the return is a non-warranty repair, a Bullard Customer Service Representative or your local distributor will provide you with a repair invoice estimate. To authorize repair, you must provide a Purchase Order to your distributor for the amount of the estimate. Once Bullard or your distributor authorizes the repair, Bullard will issue a Return Authorization (RA) number for return of the unit to Bullard. Bullard will repair the unit and ship it from our factory within 48 business hours. If the cost of repairs exceeds the stated quote either 15% or greater than \$100, a Bullard representative will reestimate your repair and Bullard or your local distributor will contact you for authorization to complete repairs. After repairs are completed and the goods have been returned to you, Bullard or your distributor will invoice you for the actual repair amount.

Prior to returning your Bullard QXT, decontaminate and clean the thermal imager to remove any hazardous or contaminated materials which may have settled on the product during use. Laws and/or shipping regulations prohibit the shipment of hazardous or contaminated materials. Products suspected of contamination will be professionally decontaminated at the customer's expense.

Returned products will be inspected upon return to the Bullard facility. If the repair is under warranty, Bullard will repair the unit and ship it from our factory within 48 business hours.

## Product recycling, replacement, and retirement

Your Bullard QXT is designed to provide a long and useful life. When replacing or retiring your Bullard QXT please contact local recycling or waste management facilities to see if components can be recycled. When selling or transferring the Bullard QXT, ensure compliance with export control regulations. The infrared core in the Bullard QXT is export-controlled outside of the US and Canada. If you have questions about proper procedures for disposing of the unit, contact Bullard.

## Warranty

Bullard warrants to the original purchaser that the Bullard QXT and all features/accessories installed in the unit as well as battery charging units, are free of defects in materials and workmanship under intended use and service for a period of five (5) years from date of manufacture. Bullard's obligation under this warranty is limited to repairing or replacing, at Bullard's option, articles returned within the warranty period and which, after examination, are shown to Bullard's satisfaction to be defective, subject to the following limitations:

- a) Article must be returned to Bullard with shipping charges prepaid.
- b) Article must not be altered from its original configuration.
- c) Article must not have been misused, abused, or damaged in transport.
- d) Maintenance and field replaceable items, if defective, are covered under warranty for a ninety (90) day period from the date of purchase. These items include straps, display covers, AC/DC adapters.

Review the user manuals for Bullard accessories to obtain warranty information specific to those accessories. Since some accessories do not have user manuals, contact Bullard if you are unsure about the warranty for a particular product or accessory.

Bullard provides a limited lifetime warranty on the Bullard QXT's outer shell. This warrants that the outer shell is free of defects in materials and workmanship under intended use and service for the original purchaser. Bullard's obligation under this warranty is limited to repairing or replacing, at Bullard's option, articles that after examination are shown to Bullard's satisfaction to be defective, subject to the following limitations:

- a) Article must not be altered from its original configuration.
- b) Article must not have been misused, abused, or damaged in transport.
- c) When the outer shell is obsolete and Bullard no longer stocks the part, the limited lifetime warranty will be terminated.

In no event shall Bullard be responsible for damages, loss of use, or other indirect, incidental, consequential or special costs, expenses or damages incurred by the purchaser, notwithstanding that Bullard has been advised of the possibility of such damages.

Any implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to five (5) years from the date of manufacture. Some states do not allow the exclusion of limitation of incidental or consequential damages, or allow how long implied warranty last, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

### Safety Considerations and Limitations of Use

**▲ WARNING**

**EXPLOSION HAZARD.** DO NOT CONNECT OR DISCONNECT THE EQUIPMENT TO ANY CHARGER IN A HAZARDOUS LOCATION.

**▲ WARNING**

DO NOT CHARGE IN A HAZARDOUS LOCATION.

**▲ WARNING**

DO NOT SHORT CIRCUIT, CRUSH, INCINERATE, OR DISASSEMBLE.

**▲ WARNING**

RISK OF FIRE, EXPLOSION, OR BURNS.

**▲ WARNING**

ONLY CHARGE USING BULLARD DESKTOP, BULLARD TRUCK MOUNT, OR BULLARD PROVIDED USB PLUG.  
POWER SOURCE: 3.6v 6400 mAh Li-Ion 23.04 wH  
INTERNALLY HOUSED, NOT FIELD REPLACEABLE

**▲ WARNING**

DO NOT ATTEMPT TO DISASSEMBLE THE BULLARD QXT THERMAL IMAGER. IF THE UNIT IS NOT FUNCTIONING PROPERLY, RETURN IT TO THE BULLARD SERVICE CENTER FOR EVALUATION.

**▲ WARNING**

DO NOT ATTEMPT TO REPLACE THE INTERNAL BATTERY PACK. RETURN IMAGER TO BULLARD SERVICE CENTER. BATTERY PACK MUST BE RECYCLED OR DISPOSED OF PROPERLY.

**▲ WARNING**

DO NOT USE ANY CHARGER OTHER THAN THAT SPECIFICALLY PROVIDED BY BULLARD FOR USE WITH THE BULLARD QXT THERMAL IMAGER.

**▲ WARNING**

THERMAL IMAGING IS NOT A TECHNOLOGY DESIGNED TO REPLACE CURRENT FIREFIGHTING TACTICS. RATHER, IT IS A TOOL WHICH ALLOWS THE FIREFIGHTER TO BE MORE EFFECTIVE AND TO MAKE BETTER DECISIONS. FIREFIGHTERS CANNOT STOP USING BASIC FIREFIGHTING SAFETY TACTICS. ALL FIREFIGHTERS SHOULD RECEIVE PROPER TRAINING ON: HOW THERMAL IMAGERS WORK, THEIR USES AND LIMITATIONS, IMAGE INTERPRETATION, AND SAFETY CONSIDERATIONS FOR THERMAL IMAGING USE.

**▲ WARNING**

THE BULLARD QXT THERMAL IMAGER IS EXTREMELY SENSITIVE TO INTENSE, RADIANT HEAT SOURCES. NEVER POINT THE BULLARD QXT THERMAL IMAGER AT THE SUN OR ANY OTHER SOURCE OF EXTREME RADIANT HEAT, AS THIS COULD CAUSE SEVERE DAMAGE.

**▲ WARNING**

DO NOT USE SOLVENTS OR PAINT THINNERS TO CLEAN THE BULLARD QXT THERMAL IMAGER AS THEY COULD PERMANENTLY MAR THE SURFACE OR DEGRADE THE PROTECTIVE PROPERTIES OF THE CASING. DO NOT INTENTIONALLY SUBMERGE THE UNIT UNDER WATER OR SUBJECT THE UNIT TO HIGH PRESSURE WATER. FOLLOW CARE INSTRUCTIONS (SEE CARE INSTRUCTIONS).

**▲ WARNING**

BATTERY PACK CHARGING TEMPERATURE 0°C - 45°C

**▲ WARNING**

ALWAYS USE THE CORRECT CHARGER AND REFER TO THE MANUFACTURER'S INSTRUCTIONS FOR PROPER CHARGING INSTRUCTIONS. RETAIN THE ORIGINAL PRODUCT LITERATURE FOR FUTURE REFERENCE.

**California Proposition 65 ▲ WARNING**

Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**Propuesta de California 65 ▲ ADVERTENCIA**

Cáncer y Daño Reproductivo - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**Proposition de la Californie 65 ▲ AVERTISSEMENT**

Cancer et Troubles de l'appareil reproducteur - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Technical Specifications

### Physical

Configuration	Small Handheld Thermal Imager
Weight (w/ battery)	2.4 lbs. (1.09 kg)
Dimensions	H 5.4" (137 mm), W 4.6 (117 mm), L 8.2" (208 mm)
Housing Material	Ultem® Thermoplastic
Upper Housing Colors	Red (standard), Metallic Blue, Blue, Yellow, Lime-Yellow, Orange, White, Black
Lower Housing Color	Black

### Electrical

Power Source	Lithium-ion Rechargeable Battery
Battery Capacity	6400 mAh
Battery Cycles	> 800 @ 70% Capacity
Start-up Time	< 4 Seconds
Operating Time	>6 hours (with or without DVR operating); 7-8 hours in routine conditions
Recharge Time	5 hours from fully depleted

### Infrared Detector

Detector Type	Microbolometer
Detector Sensing Material	Vanadium Oxide
Detector Resolution	320 x 240 or 240 x 180
Spectral Response	7-14 $\mu$
Update Rate	60 Hz
NETD	< 30 mK
Dynamic Range	1100° F (593° C)
Pixel Pitch	17 $\mu$ m
Video Polarity	White-Hot

### Lens

Material	Germanium
Field of View	31° V x 40° H
Focus	1 m to $\infty$
Speed	f/1.3

### Display

Type	Digital, Liquid Crystal Display (LCD)
Size	3.5" (89 mm) Diagonal TFT Active Matrix
Pixel Format	RGB
Brightness	500 cd/m2 (minimum)
Contrast Ratio	350:1 (typical)
Viewing Angle (Typical)	Top = 60°, Bottom = 40°, Left / Right = 60°

### Standard Features and Accessories

Temperature Measurement	Numeric and Bar Style
Super Red Hot Colorization	Engages automatically above 500°F (260° C)

### Optional Features and Accessories (if so equipped)

Electronic Thermal Throttle	Blue Hot Spot Colorization (Manually activated)
Digital Zoom	2X/4X
SceneCatcher	Digital Video Recorder (DVR)
Video Format	NTSC
Video File Type	AVI
Video Image Size	720 x 480
Video Record Time	5.5 hours
Connection	Micro USB
Retract Strap	
Hard Case	

### Charging Systems

Wireless Desktop Charging System (standard)
Wireless Truck Mount Charger (optional)

### Performance

500° F (260° C) Heat Resistance	5 minutes with no damage to electronics
300° F (150 °C) Heat Resistance	15 minutes of continued operation with no damage
-4° F (-20° C) Cold Resistance	Continued operation
Water Resistance	IP67
Impact Resistance	2 meter drops on concrete with no damage
Hazardous Locations	Conforms to ISA STD 12.12.01 CLASS I DIV 2, GROUP A, B, C, D, T6 CLASS II DIV 2, GROUP F & G ANSI/ISA-12.12.01-2015 CSA-C22.2 No. 60079-0:15 IEC 60079-0:2011, MOD
Encapsulation	IP67 (ANSI/IEC 60529)
Radiated Emissions	FCC 47 CFR Part 15B EN 55022:2006
Electromagnetic Immunity	IEC 61000-6-1:2005 EN 55024:2010
Internal Battery	UN/DOT 38.3 IEC 62133 2nd edition

### Warranty

Five (5) years on both thermal imager and battery
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For accessories, upgrades and replacement parts, visit [www.bullard.com](http://www.bullard.com),  
call 877-BULLARD or, + 1-859-234-6611 or contact your local Bullard distributor.

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