

e Congratulations

Congratulations on the purchase of your new advanced Bullard Eclipse® LDX Thermal Imager. **Your Thermal Imager has been pre-registered and is ready for use.** The Bullard Eclipse LDX combines advanced thermal imaging technology with our expertise in high heat, impact resistant engineered polymers to bring you the most durable thermal imager on the market. The Eclipse LDX's innovative, compact design and logical, easy-to-use interface presents a truly personalized thermal imaging tool to today's firefighters.

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 Eclipse LDX 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 investigating

⚠ 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 Eclipse LDX Thermal Imager. This is especially important for users who may use the Eclipse LDX Thermal Imager in hazardous or IDLH (immediately dangerous to life and health) environments.

Failure to follow this information could result in death or serious injury.

Use and Operation

⚠ WARNING

Thermal Imaging is not a technology designed to replace current firefighting tactics. Rather, it is a tool that allows the firefighter to be more effective and to make better decisions.

Power

To turn on your Bullard Eclipse LDX Thermal Imager, depress the black power button located on top of the unit (**Figure 1**). Upon depressing the power button, the thermal imager will display the Bullard logo. A thermal image will appear within a few seconds. This image consists of black, white and gray elements indicating heat signatures of objects and scene dynamics. Warmer elements appear as lighter shades, while cooler elements appear as darker shades. To turn off power, depress and hold the power button until the red "power" icon on the top left of the display activates and changes from red to green. When the green power icon is shown, release the button and the unit will power off.

ⓘ NOTE

You will periodically observe a momentary freeze in the image. This is normal and is a function of the self-calibration shutter. The shutter will activate every 5 seconds to five minutes, depending on the environment.

Battery Status Indicator

A battery status indicator, located at the bottom center of the display, indicates the remaining battery charge for the Eclipse LDX. A full charge is indicated by a full green bar in the battery indicator. During operation, the bar will deplete from left to right, changing to yellow when it reaches 50% charge, and then to red when it reaches 20% charge.

ⓘ NOTE

The battery status indicator readings can be affected by environmental conditions. When the unit is used for extended periods in temperature extremes, the indicator may drop to red much more quickly even though overall operating time is not significantly affected.

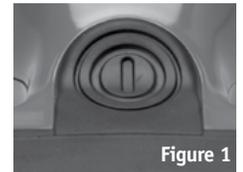


Figure 1

Temperature Measurement

Your Eclipse LDX is equipped with temperature measurement capability. The right side of the display will show a bar graph or Relative Heat Indicator (RHI). The RHI will indicate the approximate temperature of the object viewed within the temperature measurement zone icon, the green square in the middle of the display. Additionally, a numeric temperature indicator below the RHI bar will display the approximate temperature in a numeric value. The accuracy of the indicators is dependent on numerous factors including the distance from the object being viewed and its emissivity, which is the object's ability to radiate heat. Units are calibrated with a preset emissivity corresponding with normal construction materials. Objects with emissivities that vary greatly from this, such as metals and shiny objects, will reduce the accuracy of the temperature indication. Additionally, temperature measurement accuracy decreases as the distance from the object in the temperature measurement zone icon increases.

ⓘ NOTE

The RHI and numeric temperature indicators provide a quick reference to compare objects of similar emissivities to serve as a guide to pinpoint 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.

ⓘ NOTE

You can customize how temperature measurement is displayed on your Eclipse LDX. With myBullard, you can select either the RHI or numeric indicators or both to display on the Eclipse LDX and choose either Fahrenheit or Celsius scales.

To change the default setting, go to myBullard and locate the Temperature Measurement settings within the Eclipse module.

Super Red Hot

Your Eclipse LDX is equipped with Super Red Hot high heat colorization. With the Super Red Hot feature, heat levels are identified by various color hues. Starting at approximately 500 °F (260°C), heated objects are tinted yellow and gradually transition to orange and then solid red at approximately 1000°F (538°C). The Super Red Hot feature identifies specific heat layers alerting firefighters to areas of intense heat. This feature provides an enhanced visual awareness of the hottest objects in a scene.

Electronic Thermal Throttle®

Your Eclipse LDX may be equipped with Electronic Thermal Throttle (ETT), a highly useful and unique feature available on Bullard firefighting Thermal Imagers. The ETT is ideal for pinpointing hot spots during overhaul, searching for overheated electrical equipment, or clarifying objects in ambient temperature situations. To activate the ETT option, locate the rubber cover on the top of the Eclipse LDX.

Press the left side of the cover, which is the left button on the throttle, to activate the ETT (**Figure 2**). The ETT will automatically sense the hottest area in the scene and color it blue. Additional presses of the left button will further engage ETT and will color more of the scene blue, eventually coloring even the coolest objects blue.

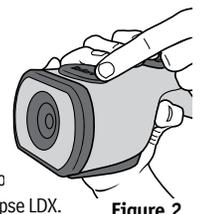


Figure 2

As the throttle engages more of the scene, the blue will become lighter in hue to help differentiate objects in the scene. As you cycle through the scene, you'll see the symbol "TT" and a corresponding number in the upper left hand corner of the display. The "TT" indicates "Thermal Throttle" mode. The number (00-99) is a point of reference to indicate the level of Thermal Throttle engagement; by itself it has no specific meaning.

NOTE

If ETT is engaged during the first minute of startup, you will see a yellow "CAL" indicator on the bottom right corner of the screen. During this startup period, ETT is calibrating and you may see variance in the blue color overlay.

Most of the benefits of the ETT are accomplished with the first few presses of the button. To deactivate the ETT or lessen the amount of blue in the scene, press the right side of the cover, which is the right button on the throttle. Alternatively, you can quickly deactivate the ETT, by pressing both buttons simultaneously for one-half second or turning off the Eclipse LDX and turning it back on. At startup, the ETT function will not be available for approximately 10 seconds, to allow temperature calibration.

SceneCatcher Digital Video Recorder (DVR)

Your Eclipse LDX may be equipped with Bullard's SceneCatcher digital video recording accessory. For the Eclipse LDX, the SceneCatcher is installed inside the thermal imager so there are no external attachments. To activate the SceneCatcher, locate the rubber cover on the top of the Eclipse LDX. Press and hold the right side of the cover until the red dot appears and begins to flash in the upper left hand corner of the Eclipse LDX display. While the red dot is flashing, the SceneCatcher is being initialized. When the red dot is visible and solid on the display, you are recording video to the unit's internal memory. If the red dot appears with an "X" through it, the SceneCatcher is unavailable for use or did not activate. To deactivate the SceneCatcher, press and hold the right side of the cover until the red dot disappears.

In the SceneCatcher module, you can

- Manage recorded videos on your Eclipse LDX or on your PC
- Play back, move, and delete video clips you have recorded with SceneCatcher
- Capture a screen shot
- View, move, and delete captured screen shots
- Synchronize Eclipse LDX internal clock with PC
- Review operating manuals

NOTE

At startup, the SceneCatcher will not be available for one to eight seconds as the unit initializes. During this time, the red dot with an "X" through it will be displayed.

Using Batteries

Locking/Unlocking the battery:

This Eclipse LDX Thermal Imager is equipped with a mechanism that enables secure locking of the battery (Figure 3). This locking mechanism is not needed for battery retention but does prevent removal of the battery while locked. The unit ships in the unlocked position. To lock the battery, use a flathead screwdriver and turn the screw 90° clockwise (Figure 3A). To unlock, turn the screw 90° counter-clockwise to its original position (Figure 3B).



Figure 3

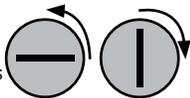


Figure 3A Figure 3B

Loading/Unloading a Battery

To load a battery (Figure 4), depress and then slide the battery release switch in the direction of the arrow indicated on the button. With the battery release switch engaged, slide the battery into the groove in the cavity located at the bottom of the unit. You will hear an audible "click" when the battery is properly seated. To unload a battery, depress and then slide the battery release switch in the direction of the arrow indicated on the switch. With the battery release switch engaged, grip the battery by its exposed bottom section and pull it away from the unit (Figure 4).

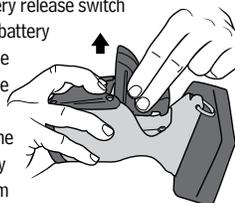


Figure 4

NOTE

If the battery is inserted without first retracting the battery release switch, the battery will not fully seat. If this occurs, remove the battery and reload using the instructions above.

The battery latch mechanism prevents accidental battery release upon impact.

Using the Battery Charger

If you purchased an Eclipse LDX Powerhouse with your Eclipse LDX Thermal Imager, see the enclosed Powerhouse manual for charging instructions. If you purchased an Eclipse LDX Thermal Imager only, you received a charging base. To charge a battery in the charger included with your Eclipse LDX, place it in the charging base (Figure 5). A steady red light will indicate that the battery is charging, while a steady green light will indicate a full charge. The system will detect the full charge and will not overcharge the battery. A completely drained battery takes up to three hours to fully recharge.



Figure 5

NOTE

If you do not see the red LED illuminate when you place a battery into the charger, the battery is not charging.

As with all batteries, your Bullard rechargeable battery will experience a slow drain of its charge during storage. The amount of drain varies widely based on storage conditions. To ensure adequate battery life, charge each of your batteries every two weeks or, for best performance, keep your Eclipse LDX and spare battery charged in your vehicle in the Eclipse LDX Powerhouse truck mount charger accessory (part number: ECLPOWERHOUSE). If you are using a Powerhouse charger, follow the instructions contained in the accompanying manual.

NOTE

New, fully charged NiMH batteries will provide a run time of more than two hours. This run time will be less in extreme heat or extreme cold conditions and/or if the SceneCatcher DVR is in use. To extend the potential lifespan of your batteries, fully drain and recharge each battery monthly. To help extend the life of the rechargeable batteries and prevent unexpected instances of uncharged batteries, develop a clear formalized plan for maintaining, charging, and replacing your batteries.

WARNING

Do not allow the metal contacts on the battery to come in contact with a conductive surface, such as a metal table or another battery. While the Eclipse LDX battery is equipped with protective circuitry to prevent product damage, contact with conductive surfaces can complete the battery circuit and cause the battery to overheat or melt. Failure to observe this warning may result in permanent battery damage, property damage and/or serious injury.

Retractable Strap

The Eclipse LDX Thermal Imager fits easily into a turnout gear pocket for convenient storage while crawling or working. Additionally, Bullard offers a retractable strap that can be used with the Eclipse LDX, so that it is always at the ready. The strap, purchased separately, can be mounted to a D-ring on your turnout gear coat and connected to the D-ring on the Eclipse LDX.

Care Instructions

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

- Clean the outside of the unit with mild soap or detergent.
- Remove battery and thoroughly clean and dry battery compartment
- Wipe the lens with a soft cloth.
- Clean the display with a soft cloth.
- Check screw tightness on cover display.
- Store your thermal imager in the optional truck mount or in the delivery case provided.
- Maintain your thermal imagers using a proper program

Cleaning the Lens

The Bullard Eclipse LDX lens is recessed in an impact resistant bezel. The lens can be cleaned with a soft cloth and soapy water as required.

Replacing the Video Display Cover Window

The display cover (Figure 6) has a scratch-resistant hard coating to minimize marring. However, if heavy scratching or gouging does occur, the cover window can be replaced. To do this, remove the four Phillips head screws along the sides of the window. Remove the plastic display cover window and replace with a new one (part number: ECLLDWINDOW). Do not over-tighten.



Figure 6

CAUTION

The Eclipse LDX Thermal Imager is extremely sensitive to intense, radiant heat sources. Never point the unit at the sun or any other source of extreme radiant heat, as this could severely damage the thermal imager.

Do not use solvents or paint thinners to clean your Bullard Eclipse LDX Thermal Imager, as they could permanently mar the surface or degrade the protective properties of the casing.

Do not intentionally submerge the unit underwater or subject the unit to high-pressure water.

Do not attempt to disassemble the Bullard Eclipse LDX Thermal Imager. Disassembling the unit voids all warranties.

Failure to observe these instructions may result in product damage. Any damage caused by improper care is not covered under warranty.

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Thermal imaging is not a technology designed to replace current firefighting tactics. Rather, it is a tool that allows firefighters to be more effective and to make better decisions.

Service

If your Bullard Thermal Imager is not performing properly, please contact Bullard Customer Service at 877-BULLARD (285-5273). Outside the US & Canada, call 1-859-234-6611. Describe the problem to the Bullard representative as completely as possible. For your convenience, your representative will try to help you diagnose or correct the problem over the phone. Before returning your Bullard thermal imager, 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 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 receives authorization from your local distributor, we will issue you a return authorization number so that you can return 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 by more than 15% or by more than \$100, a Bullard representative will reestimate your repair and your local distributor will contact you for authorization to complete repairs. After repairs are completed and the goods have been returned to you, your distributor will invoice you for the actual repair amount.

NOTE

Do not attempt to disassemble the sealed case of your Bullard Thermal Imager. If the unit is not functioning properly, return it to Bullard (as described in the Service section) for evaluation. Disassembling the unit voids all warranties.

Decontaminate and clean your Thermal Imager to remove any hazardous or contaminated materials that 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.

Warranty

Bullard warrants to the original purchaser that this new Bullard Eclipse LDX Thermal Imager and all features/accessories installed in the unit are free of defects in materials and workmanship under intended use and service for a period of five (5) years from date of activation. This warranty applies to new Bullard Thermal Imagers only. Units sold as refurbished, upgraded, or otherwise not newly manufactured by Bullard are excluded from this warranty. Bullard's obligation under this warranty is limited to repairing or replacing, at Bullard's option, articles that are returned within the warranty period and that, after examination, are shown to Bullard's satisfaction to be defective, subject to the following limitations:

- Article must be returned to Bullard with shipping charges prepaid.
- Article must not be altered from its original configuration.
- Article must not have been misused, abused, or damaged in transport.
- 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:
 - Batteries
 - Straps
 - Display covers
 - AC/DC adapters

Bullard provides a limited lifetime warranty on the Eclipse LDX 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:

- Article must not be altered from its original configuration.
- Article must not have been misused, abused, or damaged in transport.
- 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 or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, 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.

CareFree® Warranty

The optional CareFree warranty covers all battery replacements for five years from the original factory shipment date. The CareFree warranty can be purchased up to one year from the original thermal imager shipment date.



For accessories, upgrades and replacement parts, visit www.bullard.com,
call 877-BULLARD or, + 1-859-234-6611 or contact your local Bullard distributor.

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