

Congratulations

Congratulations on the purchase of your new Bullard ECO Thermal Imager. The ECO represents a milestone in handheld firefighting thermal imaging, offering breakthroughs in portability, ease-of-use, and affordability to create the market's first truly personal-issue thermal imager. Designed with high-heat, impact-resistant engineered polymers and infused with the latest thermal imaging technology, the ECO is a powerful firefighting tool.

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 ECO 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 ECO Thermal Imager. This is especially important for users who may use the ECO 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.

Getting Started

NOTE

Your ECO Thermal Imager may be pre-registered to your organization. If you see the ECO logo appear upon startup, then you can skip the registration section of "Getting Started"

Registering Your ECO via myBullard™

Before using your ECO Thermal Imager for the first time, it is necessary for you to register the product with Bullard. Registration accomplishes several important tasks.

- Registration assures that you will always stay informed of the latest product updates, service and training information related to the ECO Thermal Imager.
- Registration will reduce the startup time of your imager from 30 seconds to less than four seconds.
- Upon registration via myBullard, you will be able to download optional features straight to your ECO Thermal Imager without returning the unit to Bullard.

NOTE

Do not connect your ECO Thermal Imager to your computer until after the myBullard software is installed. Failure to observe this practice may result in the installation of defective USB drivers.

Downloading and Installing myBullard Software

myBullard is a powerful tool for you to register, inventory, maintain, service, and enhance your thermal imaging products and accessories. This easy-to-use software enhancement will help you organize and optimize your thermal imaging operations.



If you turn on your ECO prior to registration, the ECO display will advise you of the need to register your thermal imager. This message will be displayed for 30 seconds, after which, the ECO will function normally. Upon registration; however, the advisory message will disappear and the ECO will power up to normal operation in less than four seconds.

Registration is accomplished by downloading and installing the myBullard software onto your computer, running myBullard, and then connecting your ECO Thermal Imager via the enclosed data cable. To download the myBullard software, insert the CD that came with your ECO. After the program loads, click myBullard under the ECO icon and follow the instructions to download and install the program.

Upon running the installation program, you will be prompted with language and license terms selections and then the following dialog box (Figure 1). Make sure to select applicable modules so that these will be available when you run myBullard. However, if you do not do this, you can still add modules within myBullard at any time.

After selecting the modules and clicking the Next button, the installation process for myBullard will begin. Follow the remaining prompts and instructions to complete installation.

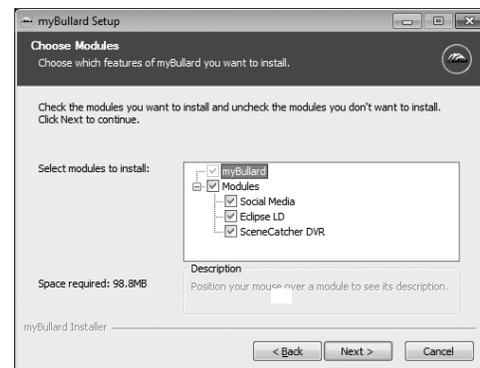


Figure 1

Using myBullard

Begin by launching myBullard from the icon on your desktop. Create a profile in the opening menu and complete the requested information. Upon completion, you will need to activate your account from your email (myBullard will send you an activation email). Once you activate your account, you will be able to use all features in myBullard.

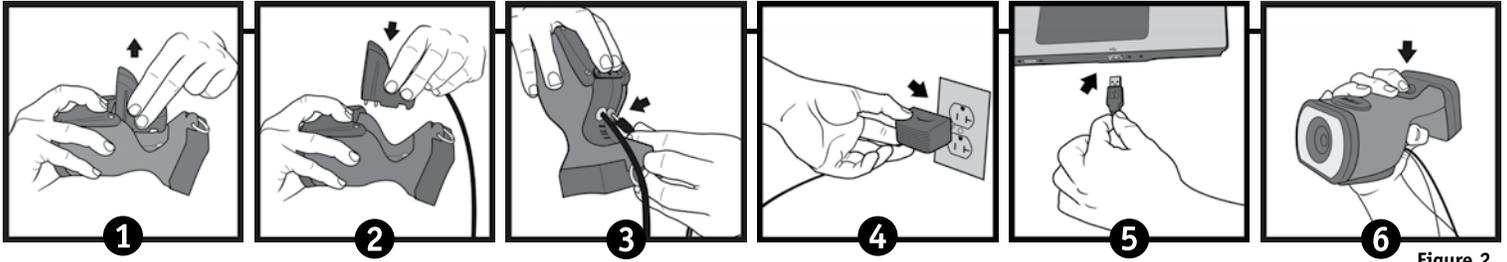


Figure 2

Connecting Your ECO

After installing the myBullard software, you will need to connect your ECO Thermal Imager to your computer. In order to connect your ECO to your computer, please follow these steps (Figure 2):

1. Press in firmly and pull back on battery release to release battery.
2. Press in firmly and pull back on battery release and insert the red data cable assembly.
3. Connect power adaptor to red data cable assembly.
4. Connect power adaptor to power outlet.
5. Connect USB to PC.
6. Turn on ECO by pressing power button.

Use and Operation

Power

To turn on your Bullard ECO Thermal Imager, depress the black power button located on top of the unit (Figure 3). Upon pressing the power button, you will hear an audible click, and 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.

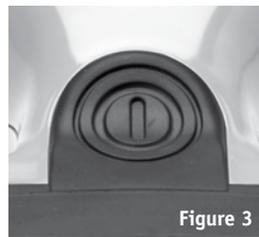


Figure 3

To turn off power, depress the power button.

Battery Status Indicator

A battery status indicator, located at the bottom center of the display, indicates the remaining battery charge for the ECO. 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 40% charge, and then to red when it reaches 20% charge. At 10% remaining charge, the red bar will flash.

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 30 seconds to three minutes, depending on the environment.

Temperature Measurement Features

Your ECO is equipped with temperature measurement features. The display on the ECO will show a bar graph style and/or numeric temperature gauge. The bar graph indicator shows the approximate temperature of the object viewed within the "crosshairs" shown in the middle of the display. The numeric temperature indicator functions in the same way but shows the temperature as 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 "crosshairs" 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.

High Heat Colorization Feature

Your ECO is equipped with High Heat Colorization, a feature which colorizes heat levels in various color hues. Starting at 250 degrees C, heated objects are tinted yellow and gradually transition to orange and then to solid red as heat levels rise. This feature identifies specific heat layers alerting firefighters to areas of intense heat providing an enhanced visual awareness of the hottest objects in a scene.

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.

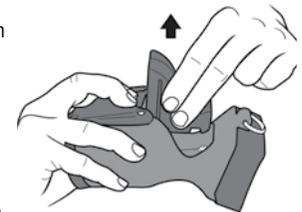


Figure 4

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).

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 follow reload using the instructions above. The battery latch mechanism prevents accidental battery release upon impact.

Charging and Maintaining Batteries

If you purchased an ECO Powerhouse with your ECO Thermal Imager, see the enclosed Powerhouse manual for charging instructions. If you purchased a PowerUp Charger/Conditioner/Analyzer with your ECO Thermal Imager, see the enclosed PowerUp manual for charging instructions. If you purchased an ECO Thermal Imager only, you received a charging base.

To charge a battery in the charger included with your ECO, 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

ECO Thermal Imager User Manual

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 ECO and spare battery charged in your vehicle in the ECO Powerhouse truck mount charger accessory (part number: ECLPOWERHOUSEE). If you are using a Powerhouse charger, follow the instructions contained in the accompanying manual.

NOTE

Ensure that the charging base is receiving power from a source via either the AC or DC power adapters. If you do not see the red LED illuminate when you place a battery into the charger, the battery is not charging.

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 ECO 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.

NOTE

New, fully charged NiMH batteries will provide a run time of more than three hours. To extend the potential lifespan of your batteries, fully drain and recharge each battery monthly. For best operational results, develop a clear formalized plan for maintaining, charging, and replacing your batteries.

WARNING

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

Retractable Strap

The ECO 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 ECO, so that it is always at the ready. The strap (part number: ECLRETRACTE), purchased separately, can be mounted to a D-ring on your turnout gear coat and connected to the D-ring on the ECO.

Care Instructions

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

- Clean 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 thermal imager in the optional truck mount or in the delivery case provided.
- All thermal imagers should be maintained using a proper program.

Cleaning the Lens

The Bullard ECO 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: ECLWINDOW). Do not over-tighten.



Figure 6

CAUTION

Do not use solvents or paint thinners to clean your Bullard ECO 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. Follow care instructions described above.

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

WARNING

Do not attempt to disassemble the Bullard ECO Thermal Imager. Disassembling the unit voids all warranties. For your convenience, TORX head screws have been used to mark all areas that are non user-serviceable.

The Bullard ECO is not certified as intrinsically safe. Failure to follow these instructions could result in death, serious injury and/or product damage.

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

Firefighters should not stop using basic fire safety tactics. All firefighters should receive proper training on the following topics: how thermal imagers work; the uses and limitations of thermal imagers; image interpretation; and the safety considerations for thermal imaging use.

Service

Contact your local Bullard distributor where you purchased the ECO. Describe the problem to the Bullard dealer as completely as possible and provide the reference number from your ECO Control Panel troubleshooting session. For your convenience, your local distributor will try to help you diagnose or correct the problem over the phone. Before returning your Bullard Thermal Imager, you should verify with your local distributor that the product should be returned to Bullard. Your local dealer and Bullard Customer Service will provide you with written permission and a return authorization number.

If the return is a non-warranty repair, 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 a local distributor authorizes your repair, they will issue you a return authorization number so that you can return the unit to the Bullard service station. Bullard will repair the unit and ship it from our service station within 48 business hours. If the cost of repairs exceeds the stated quote by more than 15% or by more than 100 Euro, a Bullard representative will re-estimate 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, the local distributor will invoice you for the actual repair amount.

NOTE

Prior to returning your Bullard Thermal Imager, decontaminate and clean the 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 the Bullard ECO 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 two (2) years from date of activation. 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:

- 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
- e) Warranty period for batteries is 1 year from manufacturing date indicated on battery.

Bullard provides a limited lifetime warranty on the ECO 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:

1. Article must not be altered from its original configuration.
2. Article must not have been misused, abused, or damaged in transport.
3. 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 two (2) years from the date of manufacture of this.

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