PHENOM 640-35 THERMAL MONOCULAR (BE46235)

Instruction manual

FEATURES

- Superior for hogs and predator control at medium- and long-range distances
- Picture-in-picture mode with doubled magnification of the observed image
- Automatic shutter based VOx thermal core
- High Definition 1280×960px LCOS display
- Precise Lens focusing mechanism
- Switchable image polarity: White Hot / Black Hot / Red Hot / Colored Hot
- Hot Spot Detection Mark
- Built-in Stadiametric Rangefinder
- Brightness adjustment
- 2X, 4X Digital Multiplication
- Rugged, compact and lightweight
- Easy to use controls
- Water-resistant, dustproof
- Nitrogen-purged
- Built-in rechargeable battery with up to 5-hour run time
- Quick battery recharge via computer or 5V DC adaptor
- Power save and standby modes
- Digital compass
- Low-Battery Indicator
- Analog Video Out
- 16GB capacity snapshot storage
- Wi-Fi capable
- Tripod mountable, built-in ¼" tripod socket

IN THE BOX

PHENOM 640-35 Thermal Monocular
Front lens protective cap
Soft carrying pouch
Rubber eyecup
Battery recharge cable with Mini USB port connector
Video cable
5V DC 2A battery charger
Instruction manual

PRODUCT OVERVIEW

The Bering Optics PHENOM 640-35 handheld thermal imager features premium, high sensitive Vanadium Oxide (VOx) 640×480pxl 12μm pixel pitch LWIR core with an automatic shutter, HD LCOS 1280×960pxl display and a 35mm Germanium Lens.
PHENOM 640-35 is capable detecting heat generated by a vehicle at a distance of up to 2 miles away in any terrain, twilight or night time conditions. The device exceptional and unmatched performance makes it suitable for many tasks by demanding users in any field including hunting, patrolling, law enforcement, navigation, rescue operations.

TECHNICAL SPECIFICATIONS

Product Modification	**PHENOM 640-35**	
Product SKU#	BE46235	
Optical Magnification, x	2.5x	
Digital Magnification, x	5.0x, 10.0x	
Objective lens system	35mm F/1.0	
Angular FOV at 2.0x, degree	13°×10°	
Eye relief, mm	14	
Focus range, ft / m	2.0 / .70 to infinity	
Diopter setting, dptr	-3 to +4	
Core detector resolution, pxl	640×480	
Pixel pitch, μm	12	
Image refresh rate, Hz	50	
Thermal Sensitivity (NETD), mK	< 40	
Display type and resolution, pxl	LCOS SXGA 1280x960	
Start-up time, max., sec.	5	
Object type and size, approx., ft² / m²	🐖 8 / 0.75	� 25.8 / 2.4
Detection, approx., yds/m	2200 / 2000	3300 / 3000
Recognition, approx., yds/m	550 / 500	875 / 800
Dimensions, in/ mm	7.32" × 2.6" × 2.6" / 186 × 65 × 65	
Weight, approx., oz/g	14.1 / 400	
Power supply standard	Li-on cell rechargeable battery	
External DC Input	5V DC/2A (Micro USB)	
Est. battery operation on single charge, hour	Up to 6	
Operating temperature, °F/°C	+4 to +122 / -15 to +50	
Water intrusion	IP67	
Humidity, %	up to 93%	

ATTENTION!

For the most optimal user experience, Please read this manual thoroughly before operating this device. And keep this manual in a safe place for future reference.

This device contains highly specialized and sensitive internal electronics. Handle with care. This device contains no operator serviceable components. Contact Bering Optics customer support if you cannot diagnose an issue. Opening the device housing WILL void the warranty.

WARNING Do not disassemble, puncture, recharge, or expose the battery to fire or high temperature. Doing so may result in an explosion and chemical burns. When the device is not in operation for a prolonged period, remove the battery from the device and keep it separately in a cool and dry place.

WARNING Do not operate in a potentially explosive environment, near gasoline fumes or other volatile materials. This is a high voltage electrical device.

WARNING Do not aim this deice at the high-intensity sources like the sun, flame, laser etc. This irreversibly may damage the product.

**WARNING** Avoid direct sun beams through the eyepiece. It can burn and damage the device detector.

WARNING It is not recommended to use the device in high temperature environment for a long time. If the temperature is too high, the device will enter into the high-temperature protection mode, and will automatically shut down.

WARNING Avoid exposure to water — Even though the device is water resistant, excessive exposure could damage the electronics. Make sure that the USB/MCX port cover on the bottom of the thermal imager is tightly plugged when using in excess moisture environment, such as rain.

CAUTION Presence of one or several segments (spots, stripes) of a brighter or darker gradation in the field of view is normal. The segments often appear in cases of large temperature difference between the observer's location and surrounding space (for example, viewing from a warm room through an open window).

NOTE *Failure to observe warnings, product use instructions and storage recommendations may void the warranty.*
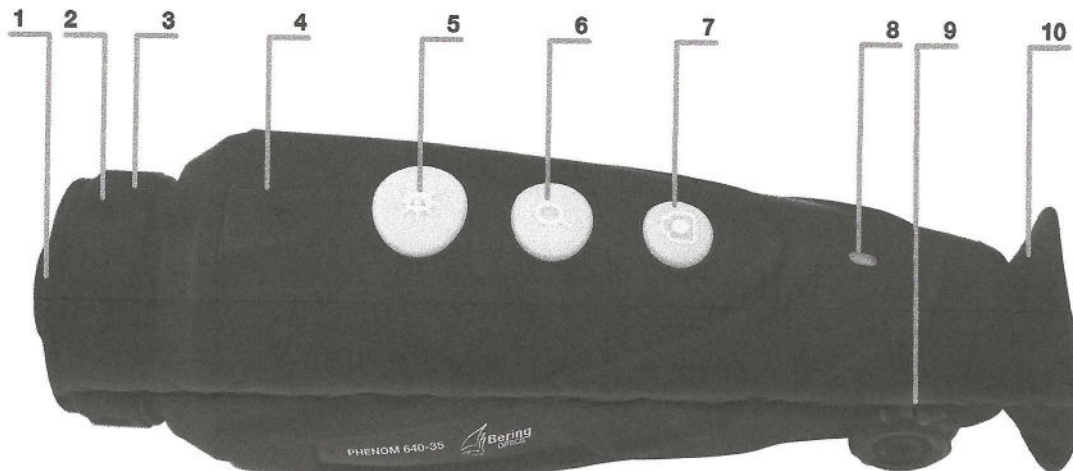
1. Objective Lens Protective Cover
2. Objective Lens
3. Objective Lens Focus Ring
4. Power ON / OFF button
5. Image Color Polarity / Scroll UP (menu mode) button
6. Digital Zoom / MENU button
7. Image Capture button / Scroll DOWN (menu mode) button

8. LED indicator
9. Diopter Adjustment Knob
10. Eye Piece with Rubber Eye Guard
11. 1/4" Tripod socket
12. Plug in interface cover
13. USB and MCX ports (covered in the photo)
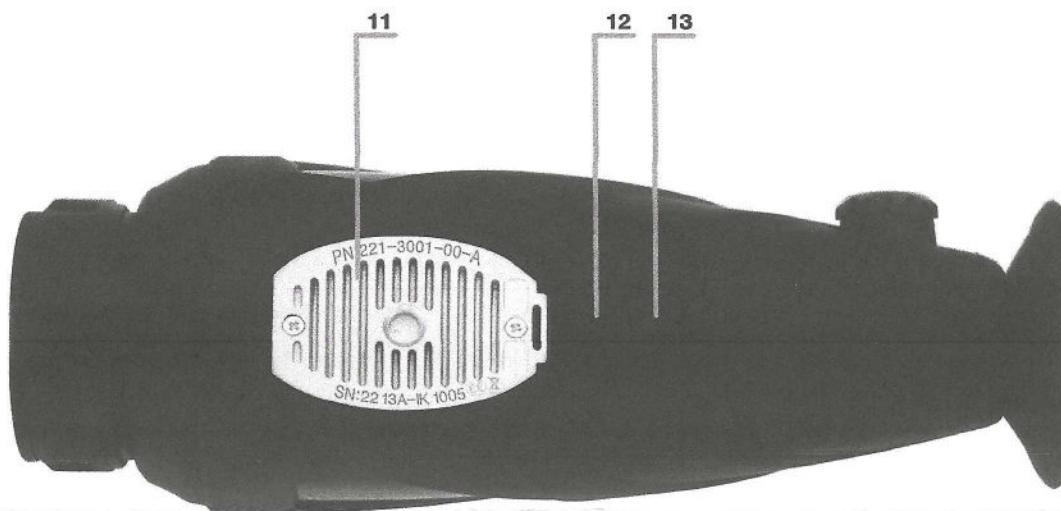
OPERATION

TO TURN ON/OFF
• Open the Objective Lens Protective Cover (1).
• To turn on, press and hold the Power button (4) for 2–3 seconds. There will be a start up logo image displaying on the screen. The shutter will click a few times before showing the thermal image. The LED indicator (8) turns green when the device turns on.
• To turn off, press and hold the POWER button (1) until the countdown timer runs through 3-2-1 and device shuts off. The LED Indicator (8) will turn off.

STANDBY MODE
• To engage a standby mode, quick press the Power ON/OFF button (4). The screen will turn off but there will audible shutter clicks and the LED indicator will be blinking green.
• To exit the standby mode, quick press Power ON/OFF button (4).

FOCUSING
• To adjust the eye piece focus, rotate the Diopter Adjustment Knob (9) until the pictograms, such as battery indicator, displayed on the screen are sharp and clear.
• To adjust the optical focus, rotate the Objective Lens Focus Ring (3) until the observed image is sharp and clear.
• To focus at the object at a different distance, it is sufficient to only adjust the Objective Lens Focus Ring (3).

POWER CHARGING
• When the battery indicator, displayed on the screen, gets a red mark, it indicates that the battery is drained and needs to be charged.
• Lift the plug-in interface cover (12). Insert the mini USB connector of the battery charge cable into the USB port. Plug the opposite end into the computer USB port or into the USB connector compatible adapter with 5V AC-DC output.
• The LED indicator (8) will turn bright red. Once finished charging, the LED Indicator will turn green.

**CAUTION** Do not charge in the environment where the temperature is above 40°C / 104°F.

NOTE *When the device is not in use for a long time, it should be charged at least every 2 months during storage and stored in a dry and ventilated environment.*
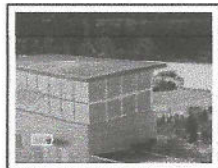
IMAGE COLOR POLARITY button (5)
• The button is identified with the Sun with a letter "P" in the center pictogram.
• Adjust image color polarity by momentarily pressing the Image Color Polarity button (5). Image polarity selection will cycle between WHITE-HOT, BLACK-HOT, RED-HOT, COLOR, viewed object HIGHLIGHT mode with the respective on-the-screen symbols displaying on the screen.
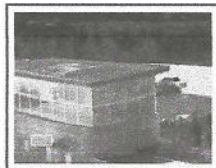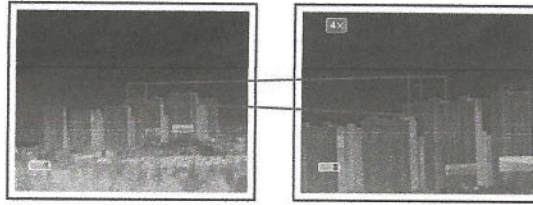

White hot
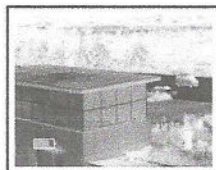
Black hot

Red hot

Pseudo color

DIGITAL ZOOM button (6)
• The button is identified with the magnifier glass pictogram
• Adjust digital zoom by pressing the button momentarily. The available settings are 2.0x and 4.0x with the respective setting displaying on the screen in the upper left corner.

HOT SPOT TRACKING OPTION
• To turn the Hot Spot Tracking ON, press and hold simultaneously the Image Color Polarity button (5) and the Image Capture Button (7). A cursor in the shape of a square will appear on the screen. The cursor will point at the hottest object in the field of view.
• To turn OFF the feature, press and hold simultaneously the Image Color Polarity button (5) and the Image Capture Button (7). The cursor will disappear.

RANGEFINDER MODE
The device is equipped with the built in Stadiametric Rangefinder that allows estimating distances to the objects of known size. The given reference targets are a human figure (1.7m /5.6 ft size target), a hog (0.9m / 2.9 ft size target) and a hare (0.2m / 0.65 ft size target).
• To engage the Rangefinder Mode, press and hold simultaneously the Image Color Polarity button (5) and Digital Zoom / MENU button (6).
• To adjust the distance between the markers, short press (moves incrementally) or long press (moves rapidly) the Image Color Polarity button (5) to widen and use the Image Capture Button (7) to shorten the distance.
• To turn off the rangefinding option, press and hold simultaneously the Image Color Polarity button (5) and Digital Zoom / MENU button (6).
NOTE *The image polarity adjustment and image capture functions are disabled while the rangefinder mode is active. It is still possible to use the zoom function.*

ADVANCED MENU MODE
• To enter the menu press and hold Digital Zoom / MENU button (6) for about 3 seconds or until the menu appears on the display.
• To scroll DOWN the menu options, quick press the Image Capture button (7) to get to the desired line. To scroll UP, quick press the Image Color Polarity button (5).
• To change the setting, quick press the MENU button (6).
• To exit the menu press and hold MENU button (6) for about 3 seconds or until the menu disappears from the display.

ADVANCED MENU OPTIONS CHART

👁 Ultra clear mode ON/OFF
Select ON to enhance the image contrast. The option is suitable for a cloudy, rainy or foggy conditions

📶 Wi-Fi
Select ON to turn Wi-Fi on

☀ Option to change the image brightness. There are 4 levels with 4 being the brightest.
To adjust value, quick press MENU button (6).

▯➔ Video Output ON/OFF
Select ON to transfer analog using the Type-C data cable

❋ Hue selection
Select "C" for cooler tones, select "W" for warmer tones. Option is not applicable in the color polarity mode

▭⁺ Image Calibration menu option. Image degradation can be improved by performing the manual calibration of the device. There are two modes available: B (background) and S (shutter), which can be switched through this menu option.
Once the mode is set, exit the menu. To perform the manual calibration, simultaneously press and hold the Digital Zoom / Menu button (6) and Image Capture button (7).
NOTE *When the B mode is selected, the procedure shall be performed with the Objective Lens cover (1) on.*

▭ Picture in picture (PIP) option
Select ON to engage PIP

Ⓐ Digital compass
Select ON to display the digital compass on the top of the screen

⋏ Inclinometer
Select ON to engage the Inclinometer

▪▫ Select to open Page 2 of the ADVANCED MENU SETTINGS
▪▪

Ⓦ Compass calibration option.
Select ON to calibrate the compass. Please refer to the COMPASS CALIBRATION section for additional instructions

ⓘ System info

↩ Factory Reset
The menu option to reset the device to the factory settings. To reset, quick press the MENU button (6), select "√" and short press the "M" button (6) to proceed with the reset. To scroll between "√" or "X" use Image Color Polarity button (5) or Capture button (7). To exit the menu option, select "X".

↰ Select to return to Page 1 of the MENU options

COMPASS CALIBRATION

• Long press the MENU button (6) to engage the MENU.
• Scroll to the compass calibration option and quick press the MENU button (6). Once the ADVACED MENU option appear on the screen, rotate the device in three axial directions in 30 seconds according to the shown direction to complete the calibration.

PHOTO AND VIDEO RECORDING

• Quick press the CAMERA button (7) to take a photo. The viewed image will freeze for a moment and a camera icon will pop in the center of the screen momentarily.
• Long press the CAMERA button (7) to start video recording. The video recording timer will appear in the upper right-hand corner of the screen. Long press the CAMERA button to stop the recording.
NOTE: Quick pressing the CAMERA button (7) while the video recording is running will take a quick snap photo.
• The recorded photos and videos are stored in the internal memory of the device. View and download the recorded media on a personal computer by connecting the device via a USB C-type cable. To view on the mobile device, connect the device using Wi-Fi to your mobile device (App required). Please refer to the WI-FI AND APP OPERATION section for additional instructions.

NOTE *The video will not be saved if the scope was abruptly powered off and the video recording was not stopped using the CAMERA button.*

CONNECTING TO WI-FI

Super Hogster is equipped with Wi-Fi. The Wi-Fi Application enables live streaming the view through the device, take photos and record videos. Download the Bering Optics Super Hogster App from Google Play Store to your mobile device to use this function.
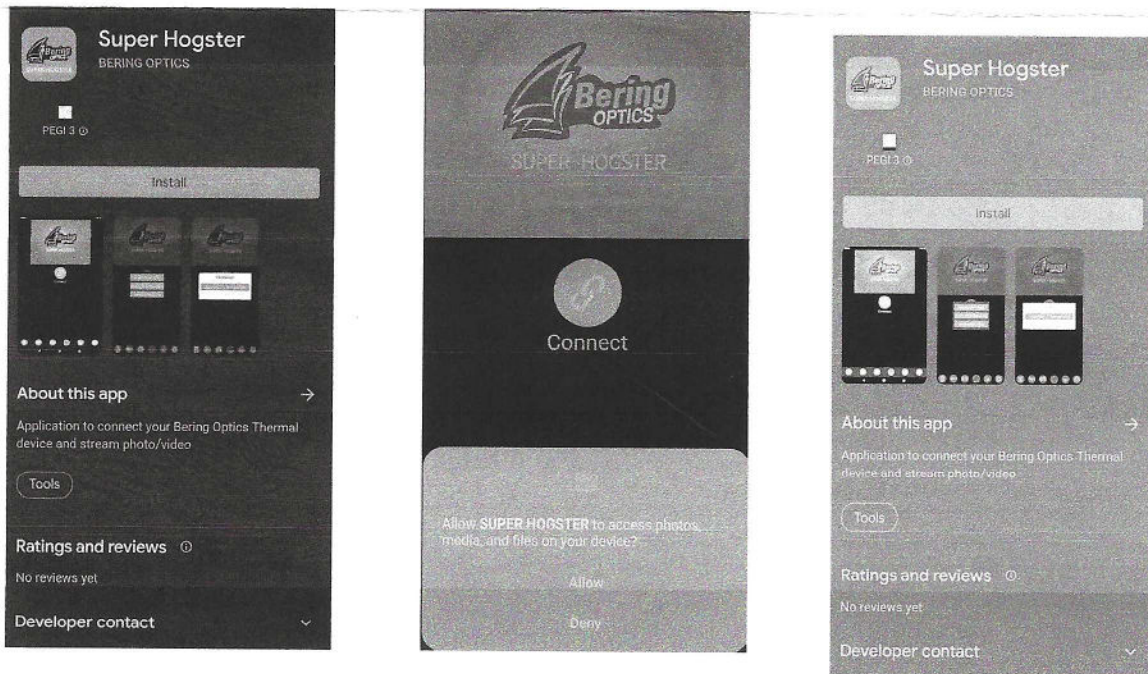

• Long press the MENU button (6) to engage the ADVANCED MENU.
• Scroll to the Wi-Fi menu option and quick press the MENU button (6) to turn the Wi-Fi ON. Phenom shall now be visible for other devices equipped with Wi-Fi.
• Open the Super Hogster App on your mobile device.
• Press Connect button. The paired thermal device will appear in the next "Device Connect " screen. Select "WIFI_XXXXXX" device. There will be a password required when connecting for the first time. Enter 12345678.
The device shall now display as "Connected" on the Wi-Fi "Device Connect " screen of the mobile device.
NOTE *If there is no device appears in the "Device Connect" screen, Phenom is not connected to your mobile device. Repeat the above outlined steps.*
• Open again the Super Hogster App; the live stream shall be on now. The consequent connections will not require a password unless the "Forget" option is selected for the given device.
• To change the "Device Connect" password, go to Settings menu option in the Super Hogster App, which is the last icon with the wheel pictogram, and select "Modify Wi-Fi Password".

NAVIGATING THE SUPER HOGSTER APP

• Quickly tap on the screen to view the menu options.
• To take photos, press an icon with a camera pictogram.
• To record videos, press an icon with a video camcorder pictogram. In the video recording mode, the video timer in red will appear. There is an icon with a pause sign to pause the recording.
• To view the recorded images and videos, press an icon with the folder pictogram, which is positioned second from the left in the menu option strip.

IMPORTANT: The media recorded using the Super Hogster App will be stored in the location designated "Local File", which is the mobile device, used for the recording using the App.

• Media stored in the Phenom internal memory can be viewed and managed on the mobile device by selecting the "Remote File" location. The files will appear organized in folders.

• To view media, select the desired file location: "Local File" or "Remote File". To view a photo or play a video, simply quick press on the file icon.

Press to start/stop video recording

Settings
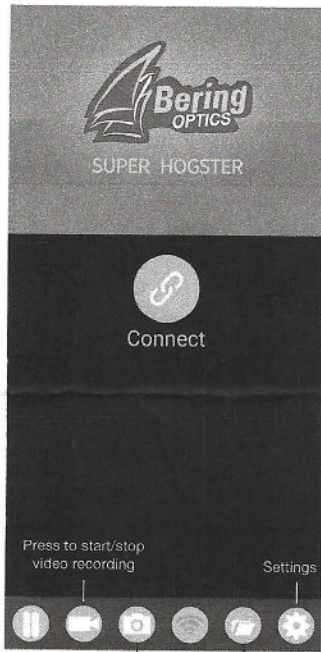
Press to take photos

Press to view recorded photos and videos

Press to pause the video recording

File Manager

Local File   Remote File

IMG_002743_079.jpg

Delete

Delete All

DownLoad

Download All

share

Cancel

• To open the folder or file sub-menu, press and hold the media file icon. The file managing options include "Delete", "Delete All", "Download", "Download All", "share", "Cancel". For files that are already stored on the mobile device, "Local File": location, "Download" and "Download All" options will be grayed out.

STORAGE AND MAINTENANCE

– Store and carry the device in the closed bag with the protective objective lens cap on.
– Avoid impacts, moisture and sharp changes of temperature. The optics should be protected against dust, snow, rain and direct sun rays.
– Store the device in dry conditioned premises without battery away from sources of heat, such as heating appliances or central heating.
– Do not store the device at temperatures lower than 10°C (50°F) or higher than 50°C (122°F).
– Remove batteries during extended periods of non-operation to avoid battery leakage.
– Clean optical surfaces with clean lens cloth.
– Wipe the device housing with lightly damped clean lint-free cloth.

NOTE *When the device is not in use for a long time, it should be charged at least every 2 months during storage and stored in a dry and ventilated environment.*

#	Interval	Location (Item to Check/Service)	Procedure	Not Fully Mission Capable if:
1.	Before/After	Optical Surfaces	Inspect lens for dirt, fingerprint residue, chips, or cracks. If necessary, clean and dry lens with water and lens tissue.	Scratches or chips hinder the vision when the device turned on, or if cracks are present.
2.	Before/After	External Surfaces	Inspect for cracks or damage. Scratches and gouges are OK if operation is not affected.	Cracked or damaged.
3.	Before/After	Battery Cap, Compartment	Check to make sure battery cap is present and in working condition. Remove battery and inspect for corrosion, moisture or cracks. Ensure o-ring is present and is not dry or cracked. Battery Cap retainer is present and clear of damage.	Cap is missing, corroded or damaged. O-ring is missing or cracked. Battery Cap retainer is missing or damaged.
4.	Before/After	Operating Buttons	Ensure the button functionality.	One or more buttons are non-operational. The button is missing or broken.
5.	Before/After	Viewed Image	Inspect display for operational defects.	Flashing or shading is observed.

TROUBLESHOOTING PROCEDURES

MULFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
Device fails to activate	a) Not holding the POWER ON button for sufficient time to start up the device. b) Dead or weak battery.	a) Press and hold POWER ON button for at least 5 seconds. b) Recharge battery.
No visible image	a) Objective lens cap has not been removed. b) Weak battery.	a) Remove cap. b) Recharge the device.
Device shuts down after being "ON"	Weak battery.	Recharge the device.
Device froze off- does not react to control buttons		Power off the device completely. Restart by turning on. If the problem persist, contact Bering Optics for service.
Image dimmer than usual	Weak battery.	Recharge the device.
Blurry image	Check focus.	Refocus.
Poor image quality	a) Check focus. b) Check for fogging or dirt on lenses. c) No image correction for a long time.	a) Refocus. b) If image quality is still poor, contact Bering Optics for service. c) Calibrate the device.
Dark Screen	Check screen BRIGHTNESS settings.	Adjust the screen Brightness if needed.
No analog video output	a). No video out. b) Damaged cable.	a) Make sure the analog video out option is turned "ON" in the ADVANCED MENU SETTINGS. b) Replace data cable.