



INDUSTRIAL TECHNOLOGIES

PUBLIC SAFETY

PVS (PERSONAL VISION SYSTEM)

BREACH® PTQ136

MULTIFUNCTIONAL THERMAL IMAGING MONOCULAR

FEBRUARY 2022

BREACH® PTQ136



THERMAL IMAGING MONOCULAR

FLIR BREACH® PTQ136

Built for the rigors of law enforcement, the FLIR Breach PTQ136 spots the heat of suspects and objects in total darkness. Featuring the new FLIR Boson core and a compact design, the FLIR Breach offers unmatched tactical awareness. Weighing only 7.4 ounces (210 grams), the FLIR Breach can be concealed in a pocket or mounted to a helmet with its mini-rail feature, while adding minimal weight to officers' heavy gear. Additional features include onboard recording and seven palettes for fast detection of suspects or evidence, day or night.

www.flir.com



EXCEPTIONAL VISION

The advanced image processing of the Breach PTQ136's internal FLIR Boson thermal core and a bright high definition display create excellent image clarity and provide better detection and classification, day or night.

Custom Viewing

- Multiple thermal image palettes create a fully customizable viewing experience

Digital Compass and Inclinator

- Great situational awareness with integrated object orientation



FLEXIBLE MOUNTING OPTIONS

For hands-free operation, Breach PTQ136 has multiple mini-rail mounting points designed to allow for a wide variety of head mounts, helmet mounts, and to install additional equipment.

Built-In Recording

- Internal storage of up to 2.5 hours of recording or up to 1,000 pictures

Iconic FLIR Warranty

- Enjoy FLIR's 10-year Detector warranty



SUPERIOR VALUE

The Breach PTQ136 is packed with features. Document operations with on-board video recording and image capture. Choose from multiple palettes to perfect viewing during varied situations. Enhance situational awareness with a digital compass/inclinometer.

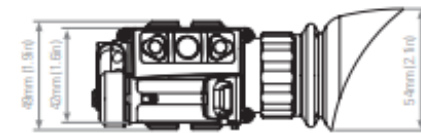
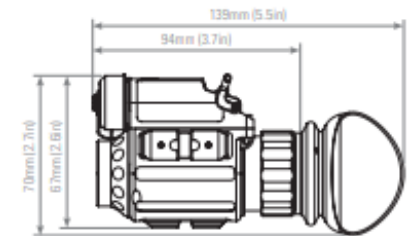
Made in the USA

- Have the peace of mind that comes from knowing your gear is made and supported in the USA

SPECIFICATIONS

General		FLIR Breach PTQ136
Detector Type		320 x 256 VOx Microbolometer
Refresh Rate		60 Hz
Start Up		<5 seconds
Image Processing		FLIR Proprietary Digital Detail Enhancement™
Lens System		9.1 mm, F/1.04
Optical Magnification		1x
Field of View (H x V)		34° x 19°
Digital e-Zoom		1x - 4x continuous
Dioptr Adjustment Range		-5 to +5 dpt
Focusing Range		0.25 m to infinity
Eye Relief		18 mm
Display		Qxga-VGA (1280 x 960) FLCDS
Video Output		Digital Video
Internal Memory		Up to 1,000 images and 2.5 hours of video on internal memory
Temperature Imaging Modes (Image Palettes)		White Hot, Black Hot, Rainbow HC, Ironbow, Sepia, Arctic, Outdoor Alert
User Interface		
Control Panel Buttons		Configures Operational Settings: <ul style="list-style-type: none"> Unit On/Off Display Brightness Control Digital Zoom Control Image Capture and Video Record Control On-Screen Menu Navigation NUC
Dioptr Adjustment Ring		Adjusts the Eyepiece Diopter
Interfacing		
USB-C Connector		Power In, Video out, Video and image files transfer
Power		
Battery Type		One CR123A 3V Lithium battery
Battery Life (Operating)		Up to 90 minutes at 20°C
USB Power		5 VDC

Environmental	
Operating Temperature Range	-20°C to +50°C (-4°F to +122°F)
Storage Temperature Range	-40°C to +60°C (-40°F to +140°F)
Physical	
Weight	210 g (0.46 lbs)
Size	138 x 70 x 48 mm (5.5 x 2.7 x 1.9 in)
Color (housing)	Black
Country of Origin	USA
Package Includes	
Thermal Monocular, CR123A Battery, Lens Cloth, Hard Case	
Optional Accessories	
ANH000002 - Swing Arm #37 - Mini Rail Adapter to Bayonet Mount	
ANH0000172 - Swing Arm #172 - Mini Rail to Dovetail Adapter	



DETECTION RANGE PERFORMANCE

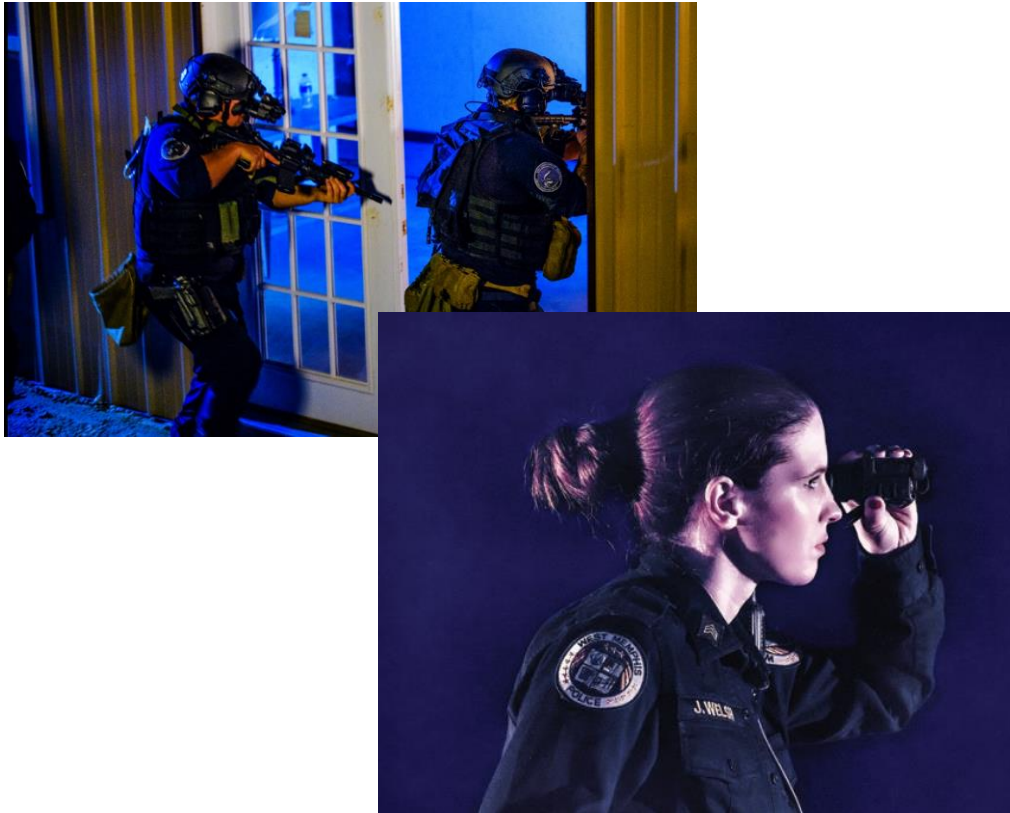
9.1 mm 336 m

Ranges calculated using Johnson criteria (1.8 m mas)

Specifications are subject to change without notice. For the most up-to-date specs, go to www.flir.com

MARKET SPLIT

- Primary User Group: Law Enforcement



- Secondary User Group: Airsoft Enthusiasts



BREACH® HIGHLIGHTS

TOP Features

- 12 μm Vox Microbolometer BOSON® detector, AI image processing upscales onto the display
- Only 210 grams in a very compact design
- 60Hz frame rate (higher compared to competition) for smooth image viewing, even when moving quickly
- **Unity magnification design for hands free navigation**
- FLIR proprietary Digital Detail Enhancement™
- 3 Mini-rail mounting points. Unique!
- When camera tilts 90 degrees, the display also tilts.
- Compatible with multiple helmet mounts (with optional bridges)

Additional features

- Up to 1,000 images and 2.5 hours of video can be stored in internal memory
- 1x - 4x continuous digital zoom
- Multiple color pallets
- Digital compass/inclinometer for enhanced situational awareness
- USB-C connector (power in / video out)
- Tough IP67 composite housing; IP67 even when USB-C port is open or being used

MINI-RAIL MOUNTING POINTS



- For hands-free operation, Breach® PTQ136 has multiple (3) mini-rail mounting points designed to allow for a wide variety of head mounts, helmet mounts, and to install additional equipment.



DIGITAL DETAIL ENHANCEMENT™ (DDE)

A filter designed to enhance the high spatial frequencies (edges etc.). It a powerful algorithm that helps the user overcome the problem of finding low contrast targets in high dynamic range scenes.

In practice, using DDE, the camera will produce near perfect images/video under every condition and the user can concentrate on the image and not the controls.

PRESETS

A group of default settings for various environmental conditions that are optimized toward best camera performance is available: Default, Sky/Sea, Indoors and Outdoors.

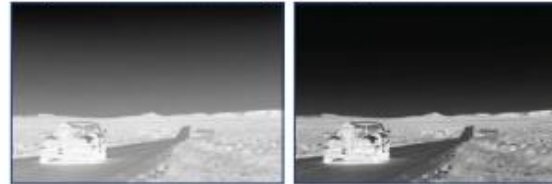
For example, turning the "Sky/Sea" preset will improve contrast, but at the possible loss of some scene content. This is especially helpful in scenes with great expanses of visible sky or water.

The following table is provided: all presets and their settings.

ITEM	RANGE	DEFAULT	SKY/SEA	INDOORS	OUTDOORS
Contrast	50 to 250	100	100	100	100
Sharpness	0 to 800	90	100	75	110
Smart Scene	0 to 100	20	30	10	80
Gain	25 to 800	138	120	110	138
AGC Speed	0 to 100	85	85	85	99

CONTRAST

Active Contrast Enhancement (ACE) – a digital contrast correction that allows for a smart scene optimization based on dynamic adjustments, where a variety of contrast levels occur. See presets table for adjustment range and default value. Lower values will cause hotter objects to have greater contrast, and higher values will cause colder objects to have greater contrast.



Contrast 50

Contrast 250

CONTRAST

SHARPNESS

Second Generation Digital Detail Enhancement (DDE) – a sharpness correction that digitally enhances the picture, significantly improving edge sharpening and further reducing image noise. See presets table for adjustment range and default value. Lower values will create an image with softer edges. Higher values will make objects sharper, enhance details, and increase the signal-to-noise ratio.



Sharpness 0

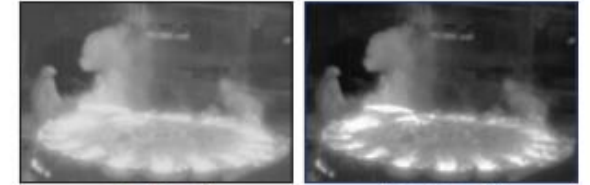
Sharpness 800

SHARPNESS

SMART SCENE

Smart Scene Optimization (SSO) – a fine-tuning computational correction that significantly improves overall visual acuity for targets with thermal signatures similar to the surrounding background.

Higher values provide a more linear automatic gain control, and objects with similar, but not identical temperatures can be differentiated with greater accuracy. See presets table for adjustment range and default value.



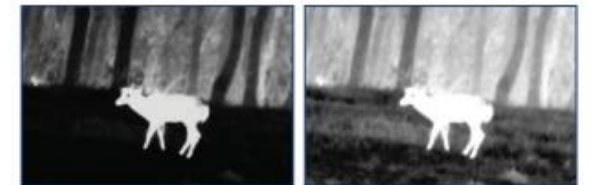
Smart Scene 0

Smart Scene 100

SMART SCENE OPTIMIZATION

GAIN

Automatic Gain Control (AGC) – a correction that used to automatically adjust the gain to an appropriate range, the weaker the image signal, the stronger the gain. See presets table for adjustment range and default value.



Gain 25

Gain 800

GAIN CORRECTION

AGC SPEED

AGC Speed - parameter that allows the user to control the refresh rate of Automatic Gain Control (AGC). See presets table for adjustment range and default value.

BREACH COLOR PALETTE

WHITE HOT

Most commonly used palette. Hot objects appear white. Good for scenes with either high or low contrast.



BLACK HOT

Hot objects appear black. Scenes appear more lifelike than White-Hot, especially at night.



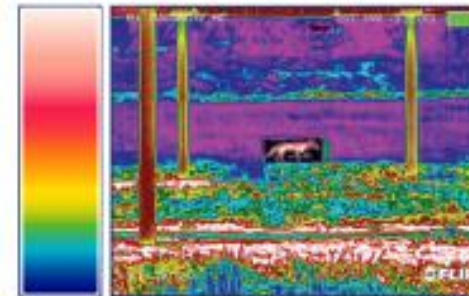
SEPIA

The Sepia thermal palette displays the heat intensity from black to yellow.



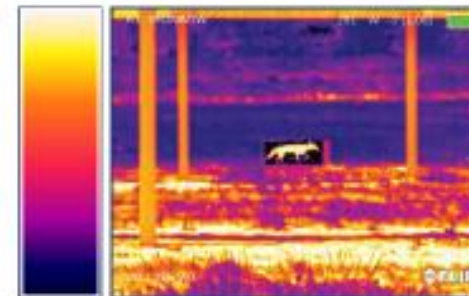
RAINBOW_HC

The Rainbow is a multi-color thermal palette that displays the temperature of objects in a wide color range.



IRONBOW

Ironbow color palette simulates the glow of objects that are heated to visible incandescence, similar to an iron in the fire.



ARCTIC

The Arctic is a thermal palette that sharply displays objects with higher temperature difference.



OUTDOOR ALERT

Outdoor Alert combines the life-like detail seen in Black Hot images with the easy to spot bright targets highlighted from dark red to bright yellow to help identify target features. It assumes that the target is hotter than its surroundings.



POWER OPTIONS

- Standard CR123 battery

Up to 90 minutes runtime with 1x CR123 battery.

- Rechargeable 3.7V CR123 battery

will not be charged while in the Breach® battery tube.

Note: Rechargeable batteries have a lower power capacity, therefore the total battery life for Breach® will be substantially lower.

- External powerbank

Any USB power bank will work with Breach® (1A minimal is necessary) using the included USB-C cable

Note: Breach® will work with external USB power with or without a battery installed in the tube. The system will use USB power as the primary source, even when a CR123 battery is installed.

USB-C cable external battery pack 5 Volts 5,000 mAh = Up to 4 hours of operating time

USB-C cable external battery pack 5 Volts 10,000 mAh = Up to 8 hours of operating time

SALES PITCH HIGHLIGHTS

- 60Hz framerate in the FLIR Boson thermal core - competition only goes to 50Hz
- FLIR proprietary Digital Detail Enhancement™
- 3 x Mini-rail mounting points - unique to Breach
- Most compact monocular available
 - Does not require helmet counterbalance weight
- F1.0 lens for maximum energy collection and sensitivity
 - Other product may advertise higher sensitivity, but with slower lens options do not get as much energy to the detector.
- The unit will power-off when flipped to an upright position and power-on when flipped down.



BREACH – COUNTER OBJECTIONS

- Short battery time - 90 minutes:

Using only one CR123 battery gives Breach compact format for undercover applications and easy to bring inside a pocket. An external power bank, typically used for mobile phones, can extend the use by several hours.

Even with no CR123 battery inside Breach, a connected power bank will still provide power to use the camera. The sleep function will reduce power consumption, by activating this function the camera will “wake up” when required.

- The buttons on top of the camera are hard to push:

The camera is designed to be used by special forces in tactical circumstances. It needs to withstand mud and water and therefore the camera settings should not be able to be changed by just a light touch or by mistake.

- Detection range - 360m:

This camera is designed for tactical use in close quarter situations, e.g. when entering an object in darkness or with limited visibility.

ACCESSORIES

NOTE: NOT AVAILABLE VIA TELEDYNE FLIR

- The MOD Armory battery extender for the FLIR Breach can purchased from the following site: <https://www.modarmory.com/product/battery-extender-for-flir-breach-ptq136-thermal-monocular/>



- Head/Helmet mounting options available here;
- <https://www.lionsgear.solutions/15-flir-breach-accessories>
- <https://ownthenight.com/mounts-accessories/nvg-helmet-mounts>



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