FLIR®

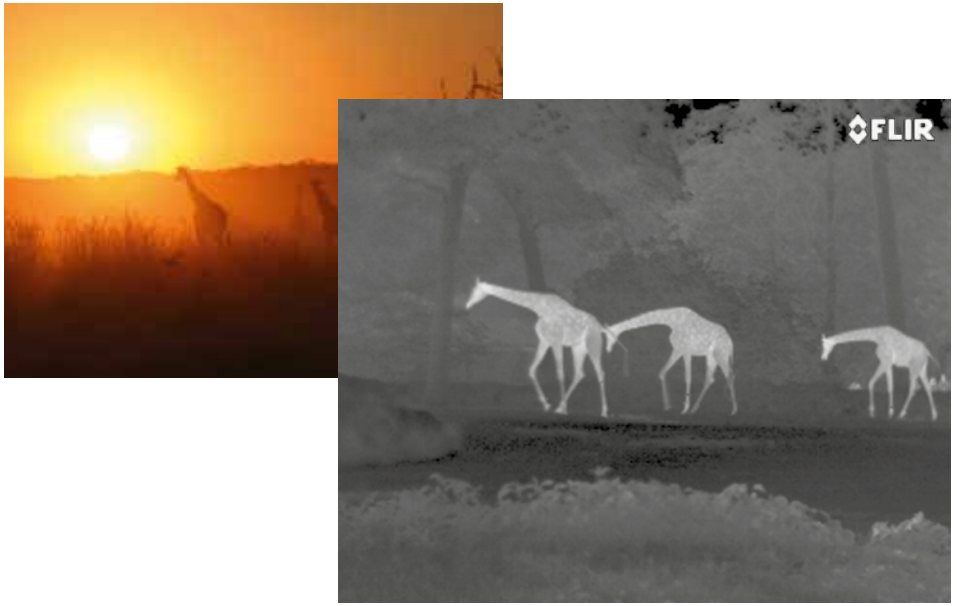
Handheld thermal imaging cameras for outdoor activities and wildlife observation

FLIR SCOUT-Series

Handheld thermal night vision cameras

Thermal imaging cameras make extremely small temperature differences visible. Based on these temperature differences they create a clear image. Furthermore, thermal contrast is extremely difficult to mask. This means that during nighttime you will clearly see animals that are hidden in trees or bushes. Their natural camouflage will not help them to hide anymore.

Thermal imaging cameras are widely used by professional documentary makers and hunters worldwide. The Scout Series are now bringing thermal imaging cameras within reach of nature for wildlife enthusiasts and hunters.



Spot downed game

Observe wildlife

Secure your camping grounds

Locate missing people

Find livestock

A large number of applications

Being able to see in the darkest of nights is an advantage for every nature explorer and outdoor enthusiast. Compact, lightweight FLIR thermal imaging cameras provide clear, crisp thermal imagery from dawn to dusk and through the dead of night. They fit easily and naturally into the palm of your hand and feature easy operation making them an ideal choice for sportsmen, hikers, ranchers, rangers, or backyard nature enthusiasts. If you can't bear to miss a thing while exploring the great outdoors, FLIR thermal imaging cameras satisfy your thirst for adventure.

You can traverse rough terrain to scope out the "perfect spot" at dusk, before dawn and even when it's pitch black outside. You can discover nocturnal animals, find wandering members of your party, locate lost livestock or spot downed game. You can use the FLIR thermal imaging cameras to help see through light fog, smoke or trail dust. In addition, during day time wildlife spotters can locate animals standing in tall grass or hiding partly behind bushes or trees.

Thermal imaging versus image intensification (I^2)

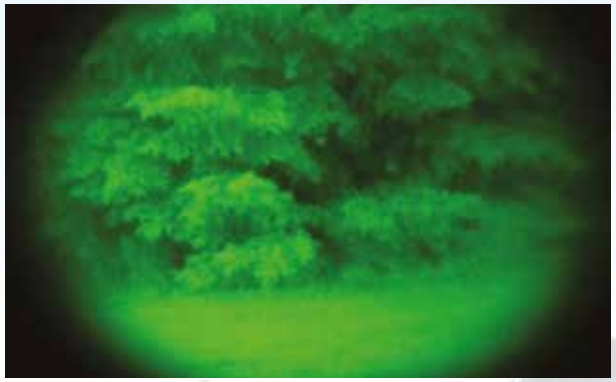


Image intensification: person hiding in bushes is practically invisible.

Thermal imaging: person hiding in bushes is clearly visible since thermal contrast is practically impossible to mask.

Image intensification, also referred to as I^2 technology, amplifies small amounts of visible light thousands of times so that objects can be seen at night. Image intensification does require a certain level of ambient light, but even starlight can produce an image on a cloudless night. Because the system requires at least a minimum level of ambient light, conditions such as heavy overcast can limit its effectiveness. Similarly, too much light may overwhelm the system and reduce its effectiveness. Thermal imaging cameras offer substantial benefits over image intensification. They work by detecting the heat energy being radiated and need no light at all to produce a clear image in the darkest environments. Thermal imaging cameras are not affected by the amount of light so that you will not be blinded when looking at a light source.

All FLIR Scout thermal imaging cameras have the following features:

Easy-to-operate

Ergonomic and easy-to-use, Scout thermal imaging cameras are fully controlled with the buttons on top of the unit. Conveniently placed the buttons are all right underneath your fingertips.

Extremely portable and rugged

The FLIR Scout-Series are extremely compact and extremely light systems. They are ideal for go-anywhere operations, in all circumstances. They are IP67 rated.

InstAlert™

The unique InstAlert feature colors the hottest parts of the scene red. This makes it extremely easy to spot animals in the thermal image.

FLIR PS-Series

Ultra-compact handheld thermal night vision cameras

The new FLIR PS-Series thermal imaging camera gives every outdoor enthousiast the power to see clearly in total darkness. It can be used for many applications. Whether you are hiking, observing animals or camping, you will be able to see in total darkness.

After sunset, a lot of animals are active. With the help of a thermal imaging camera like the PS-Series you will be able to monitor their activities. The PS-Series will not only help you to find animals in total darkness but during daylight as well.

Extremely affordable
The FLIR PS-Series are extremely affordable units. From now on, everyone can afford thermal night vision. Price is no longer an issue. There is no longer a need to use a less effective night vision technology.

Crisp thermal images
The FLIR PS-Series are equipped with an uncooled, maintenance free, microbolometer detector. It delivers crisp thermal images in any day or night situation.

The FLIR PS-32 produces thermal images of 320 x 240 pixels. Users that do not need this high resolution can choose for the PS-24 which produces images of 240 x 180 pixels. All cameras are equipped with advanced internal camera software that delivers a crisp image without the need for user adjustments.

LED tasklight
The FLIR PS-Series comes with a LED tasklight on the front of the unit. It can be used to illuminate a small area.

Long battery life
The FLIR PS-Series comes with long-life rechargeable Li-Ion batteries. The FLIR PS-Series has a typical operating time of 5 to 7 hours on a single load.

Good range performance
The FLIR PS-32 can detect a human at a distance of 450 meters away. The PS-32 also comes with a 2x digital zoom so that you can have a closer look at the situation when necessary.

Different versions available

	PS-24	PS-32
See without being seen	✓	✓
See in total darkness, through smog, smoke and light precipitation	✓	✓
Freeze Frame	✓	No
Image quality	240 x 180 pixels	320 x 240 pixels
Digital zoom	No	2x

The right palette for any environment:
- White hot
- Black hot
- InstAlert™

Choose from 5 levels of brightness to optimize your display.

LED tasklight helps guide your way when viewer is powered off.

Freeze Frame (PS-24 only)
2x Digital Zoom (PS-32 only)

USB connectivity recharges a Li-Ion battery.

Standard Tripod Mount

FLIR TS-Series

the power of thermal imaging in the palm of your hand

The TS-Series are portable shock-resistant thermal imaging cameras. They produce a crisp image in the darkest of nights.

Being a monocular the TS-Series are extremely compact and lightweight. They can easily be stored in a pouch or hung on a belt. Another advantage of a monocular is that you always have one hand free.

Crisp thermal images
The TS-Series produce thermal images of 320 x 240 pixels on which the smallest of details can be seen. Users that do not need this high image quality can choose for a 240 x 180 pixels version.

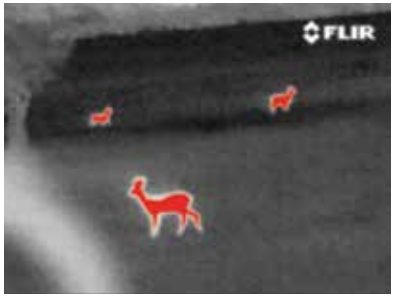
Advanced internal camera software delivers a crisp image without the need for user adjustments.

Digital zoom
A 2x digital zoom allows you to have an even closer look at the situation when necessary.

Hot shoe
The TS-Series comes standard with a "hot shoe" which can easily be mounted on the camera. The "hot shoe" has a power-in and video-out connection. This means that the TS-Series can be fully operational on a tripod while charging the batteries.

Long battery life
The TS-Series have an operating time up-to 5 hours on a single charge. They work on 4 rechargeable AA NiMH batteries. The TS-Series can also run on standard commercial off the shelf non-rechargeable Alkaline or Lithium Ion AA-batteries.

Extender lens
The TS24 and TS32 versions of the TS-Series can be equipped with a 2X extender optional lens. It offers a 12° field of view for longer range performance. For longer range performance you can choose the TS32r.



320 x 240 pixels

	TS32	TS32 with 2x extender	TS32r
Lens	19 mm	19 mm	65 mm
Field of view	24°	12°	7°
Detect man-sized target at:	450 m	780 m	1.45 km

240 x 180 pixels

	TS24	TS24 with 2x extender
Lens	19 mm	19 mm
Field of view	24°	12°
Detect man-sized target at:	315 m	553 m

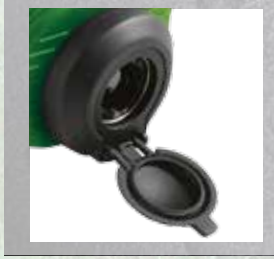
Different versions available

	Standard	Pro
See without being seen	✓	✓
See in total darkness, through smog, smoke and light precipitation.	✓	✓
Image storage	No	JPEG on SD card
Video storage	No	AVI on SD card
USB2 connection	For updates only	Transfer images to PC
SD-card	No	Included
Soft carrying bag	No	Included

SD-card slot

Shuttered eye-piece

The TS-Series have a bellows eye cup. It prevents light from coming out of the viewfinder, helping the operator to stay covert.



Lens protection

A lens cap, able to open 180°, assures that the lens is protected when the TS-Series are out in the field but not in use. It does not hinder the operator when the TS-Series are in operation.

FLIR BTS-Series

see without beeing seen

BTS-Series are shock-resistant thermal imaging cameras. They produce a crisp image in the darkest of nights. The BTS-Series will dramatically increase your situational awareness.

The BTS-Series are bi-oculars. This means that it is less tiring to use for the eyes than a monocular. By using a bi-ocular the ability to detect faint objects is enhanced. This means that you have more chance to detect small objects against the background. It is also easier to hold bi-oculars steady when looking at an object. An advantage if you are looking at small things which are far away.

Extended Range Options
The BTS-X Pro is equipped with an uncooled vanadium oxide detector. This provides excellent long range viewing with sharp 320 × 240 native resolution in the viewfinder and a 2× digital e-zoom step to 160 × 120 resolution.
Powered by FLIR's 640 × 480 core, the BTS-XR Pro delivers greater range performance with crisp, clear 320 × 240 native resolution in the viewfinder AND while in the 2x digital e-zoom mode, plus an additional 4× digital e-zoom step to 160 × 120 resolution. Full 640 × 480 resolution imagery from the BTS-XR Pro Series is also accessible via the "aux video" jack in the hot shoe.

Digital zoom
The BTS-X Pro comes with a 2x digital zoom. The BTS-XR Pro has both a 2x and a 4x digital zoom. This allows you to have a closer look at the situation when necessary.

One touch video recording
Just press a button and start recording thermal video on a removable SD card.

Image storage
Both versions of the BTS-Series allow to store thermal images in JPEG format on a removable SD card. Images can be used as evidence.

Choice of lenses
The BTS-Series can be ordered with different lenses. Longer lenses have a narrower field of view and allow you to see ojects farther away. Lenses are interchangeable. The specific lens(es) you require for your application need to be specified at time of order.

The following lenses are available:

	BTS-X Pro: 320 x 240 pixels		
LENS OPTIONS	35 mm	65 mm	100 mm
FOV	13° x 10°	7° x 5°	5° x 3°
Detect man-sized target at:	780 m	1.45 km	2.1 km

	BTS-XR Pro: 640 x 480 pixels		
LENS OPTIONS	35 mm	65 mm	100 mm
FOV	18° x 13°	10° x 8°	6° x 4°
Detect man-sized target at:	960 m	1.9 km	2.45 km

Different versions available

	BTS-X Pro	BTS-XR Pro
See without being seen	✓	✓
See in total darkness, through smog, smoke and light precipitation	✓	✓
Image and video storage	✓	✓
Image quality	320 x 240 pixels	640 x 480 pixels
Digital zoom	2x	2x, 4x

Long battery life

The battery compartment holds 4 rechargeable AA NiMH batteries. Good for 4 hours continuous operation. The BTS-Series can also run on standard commercial off the shelf non-rechargeable Alkaline or Lithium Ion AA-batteries.

Hot shoe

The BTS-Series come standard with a "hot shoe" which can easily be attached to the camera. It allows to charge the camera and connect the camera to an external video monitor while the camera is mounted on a tripod.

FLIR PS-Series

Model specific specifications

	PS-24	PS-32
Detector Type	240 x 180 VOx Microbolometer	320 x 240 VOx Microbolometer
Freeze Frame	Yes	No
Digital E-Zoom	No	2x

General specifications

SYSTEM	
Focal Length	19 mm
Field of View (H x W)	24° x 18°
Waveband	7.5 - 13.5 µm
Start-up from Stand-by	<5 seconds
Focus	Automatic
Diopter Adjustment	+2
USB Port	Software Updates/Upgrades/Battery charge
TaskLight	LED
IMAGE PRESENTATION	
Built-In Viewfinder Display	Color LCD Display
Polarity/Detection Palettes	White Hot; Black Hot; InstAlert™
Video Output	NTSC Composite Video; 9 Hz Refresh Rate
PHYSICAL	
Weight (with battery)	340 g
Size (L x W x H)	172 x 59 x 62 mm
Fixed Use	Standard Tripod Mount
Standard Warranty	2 Year
POWER	
Battery Type	Internal Camera Battery/Li-Ion
Battery Recharging	USB Cable for Internal Battery Charging; Charging Cradle (optional)
Battery Life (Operating)	5 to 7 Hours (nominal)
ENVIRONMENTAL	
Rating	IP-67
Operating Temperature	-20°C to 50°C
Camera Package Includes:	Handheld Thermal Night Vision Camera, Wrist Strap, USB Cable, Product CD

FLIR PS-Series

FLIR TS-Series

Model specific specifications

IMAGING PERFORMANCE	TS24	TS24 Pro	TS32	TS32 Pro	TS32r	TS32r Pro
Field of view	24° (H) x 18°(V) (12°(H) x 9° (V) with 2X extender)	24° (H) x 18°(V) / 12°(H) x 9° (V) with 2X extender	24° (H) x 18°(V) / 12°(H) x 9° (V) with 2X extender	24° (H) x 18°(V) / 12°(H) x 9° (V) with 2X extender	7° (H) x 5° (V)	7° (H) x 5° (V)
Image resolution	240 x 180 pixels	240 x 180 pixels	320 x 240 pixels	320 x 240 pixels	320 x 240 pixels	320 x 240 pixels
Focus	Fixed (with 2x extender: manual)	Fixed - with 2x extender: manual	Fixed - with 2x extender: manual	Fixed - with 2x extender: manual	Fixed	Fixed
Zoom	NA	2X	2X	2X	2X	2X
IMAGE STORAGE						
Freeze on capture	Yes	NA	Yes	NA	Yes	NA
Format	NA	Standard JPEG - 2 GB SD-Card	NA	Standard JPEG - 2 GB SD-Card	NA	Standard JPEG - 2 GB SD-Card
Storage functions	NA	Single Image	NA	Single Image	NA	Single Image
VIDEO STORAGE						
Format	NA	MPEG4 - 2 GB SD-card	NA	MPEG4 - 2 GB SD-card	NA	MPEG4 - 2 GB SD-card
Storage functions	NA	9 Hz, Full frame up to limit of SD-card, approx. 8 seconds / MB	NA	9 Hz, Full frame up to limit of SD-card, approx. 8 seconds / MB	NA	9 Hz, Full frame up to limit of SD-card, approx. 8 seconds / MB
INTERFACES						
SD Cards	1 slot	1 slot	1 slot	1 slot	1 slot	1 slot
USB2	–	Image transfer to PC	Image transfer to PC	Image transfer to PC	Image transfer to PC	Image transfer to PC
ENVIRONMENTAL SPECIFICATIONS						
Operating Temp.	0°C to +50°C	0°C to +50°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
Storage Temp.	-20°C to +70°C	-20°C to +70°C	-40°C to +75°C	-40°C to +75°C	-40°C to +75°C	-40°C to +75°C
PHYSICAL CHARACTERISTICS						
Weight (incl. lens)	653 g with batteries 1000 g with 2X extender	653 g with batteries 1000 g with 2X extender	653 g with batteries 1000 g with 2X extender	653 g with batteries 1000 g with 2X extender	1000 g with batteries	1000 g with batteries
Size (L x W x H)	240 x 85 x 60 mm without extender 265 x 85 x 75 mm with 2x extender	240 x 85 x 60 mm without extender 265 x 85 x 75 mm with 2x extender	240 x 85 x 60 mm without extender 265 x 85 x 75 mm with 2x extender	240 x 85 x 60 mm without extender 265 x 85 x 75 mm with 2x extender	260 x 84.5 x 66.5 mm	260 x 84.5 x 66.5 mm
Shipping size (camera + packaging)	450 x 280 x 180 mm	450 x 280 x 180 mm	450 x 280 x 180 mm	450 x 280 x 180 mm	450 x 280 x 180 mm	450 x 280 x 180 mm
Shipping weight (camera + packaging)	2.8 kg	2.8 kg	2.8 kg	2.8 kg	3.2 kg	3.2 kg
Shipping weight 2x extender (camera + packaging)	The optional 2x extender is being shipped in a separate box of approx. 1 kg	The optional 2x extender is being shipped in a separate box of approx. 1 kg	The optional 2x extender is being shipped in a separate box of approx. 1 kg	The optional 2x extender is being shipped in a separate box of approx. 1 kg	NA	NA
Extra for Pro Versions	Soft-carrying bag					

General specifications

IMAGING PERFORMANCE	
Detector type	Uncooled Focal plane array Vanadium Oxide (VOx) microbolometer
Spectral range	7.5 to 13.5 µm
Thermal sensitivity	<50 mK at f/1.0 at +25°C
Image frequency	8.3 Hz Pal
Image processing	Digital Detail Enhancement (DDE)
IMAGE PRESENTATION	
Viewfinder	LCD screen
Video output	PAL composite video; RCA jack
On-screen symbology	Standard
POWER	
Requirements	4 AA Batteries; rechargeable NiMH (included), non-rechargeable Li-Ion or Alkaline
Battery life	up to 5 hours on NiMH batteries - 120 hours in stand-by with NiMH batteries
ENVIRONMENTAL SPECIFICATIONS	
Humidity non condensing	5% to 95%
Encapsulation	IP67
Drop	Operational after 1 m drop onto concrete
STANDARD PACKAGE	
	Camera, Hot Shoe, 4 Rechargeable AA Batteries, AC Power Adapter/Charger, Neck Lanyard, Operator's Manual, USB Cable, Video Output Cable, SD Card.

FLIR TS-Series

FLIR BTS-Series

Model specific specifications

IMAGING PERFORMANCE	BTS-X Pro	BTS-XR Pro
Detector Size	320 x 240	640 x 480
E-Zoom	2x	2x, 4x
FILE STORAGE/DATA TRANSFER		
Still Image Format	JPEG; 320 x 240 resolution	JPEG; 640 x 480 resolution
Video Format	320 x 240 AVI	640 x 480 AVI

General specifications

IMAGING PERFORMANCE	
Detector Type	Uncooled Microbolometer
Spectral range	7.5 - 13.5 µm
Thermal Sensitivity	<50 mK @ f/1.0
Start up from stand-by	< 1.5 seconds
Image Processing	FLIR Proprietary Digital Detail Enhancement
SD Card Slot	Supports up to 16 Gb SDHC Card
Focus	Manual
IMAGE PRESENTATION	
Built-In Display	Color VGA LCD Display
Video Output	PAL composite video; RCA jack
FILE STORAGE/DATA TRANSFER	
Still Image Storage	SD or SDHC Card
Video Storage	AVI Format; Approx. 8 seconds/Mb on SD Card
Real-Time Clock	Yes
USB2 Port	Yes
POWER	
Battery Type	4 AA Batteries; NiMH, Li-Ion, or Alkaline
Battery Life (Operating)	4-6 Hours On NiMH batteries
Battery Life (Stand-By)	120 hours on NiMH batteries
ENVIRONMENTAL	
Rating	IP-66
Operating Temp.	(-20°C – 60°C)
Storage Temp.	(-40°C – 75°C)
Drop	1 m drop
PHYSICAL CHARACTERISTICS	
Weight (w/o lens)	998 gramms
Size (L x W x H)	280 mm x 165 mm x 67 mm
Camera Package Includes:	Handheld Thermal Camera (without lens - lens must be chosen/purchased separately for desired performance) with Hot Shoe Charging & Video Output Attachment, 4 Rechargeable AA NiMH Batteries, AC Power Adapter/Charger, Neck Lanyard, USB Cable, Video Output Cable, Hard Carrying Case, Product CD with Ops Manual, FLIR Video Player and End User Graphical User Interface (GUI)
Lens Package Includes:	Either the 35 mm, 65 mm or 100 mm Lens (as selected at purchase), Lens Cap, Lens Cover, Lens Cloth

FLIR BTS-Series

Lenses

BTS-X Pro: 320 x 240 pixels

LENS OPTIONS		35 MM	65 MM	100 MM
Size		Ht. - 65 mm, Dia - 79 mm Ø	Ht. - 84 mm, Dia - 79 mm Ø	Ht. - 117 mm, Dia - 79 mm Ø
FOV		13° x 10°	7° x 5°	5° x 3°
FOV with Digital e-Zoom:	2x	6.5° x 5°	3.5° x 2.5°	2.5° x 1.5°

BTS-XR Pro: 640 x 480 pixels

LENS OPTIONS		35 MM	65 MM	100 MM
Size		Ht. - 65 mm, Dia - 79 mm Ø	Ht. - 84 mm, Dia - 79 mm Ø	Ht. - 117 mm, Dia - 79 mm Ø
FOV		18° x 13°	10° x 8°	6° x 4°
FOV with Digital e-Zoom:	2x	9° x 6.5°	5° x 4°	3° x 2°
	4x	4.25° x 3.25°	2.5° x 2°	1.5° x 1°

Accessories

PS-series

	Part number	Description
	**4126884**	Camera Carrying Pouch, Black
	**4127499**	Camera Case, Rigid, Black
	**4126887**	Belt Holster, MOLLE-Compatible, Tan
	**4126886**	Belt Holster, MOLLE-Compatible, Hunter Green
	**4127305**	Floating Lanyard, Orange

TS-series

	Part number	Description
	**322-0152-00**	2x Extender
	**4115397**	Soft carrying bag
	**4119354**	Hard carrying case
	433-0000-00-50	Upgrade from Standard to Pro: adds Frame Storage, Video Capture

BTS-series

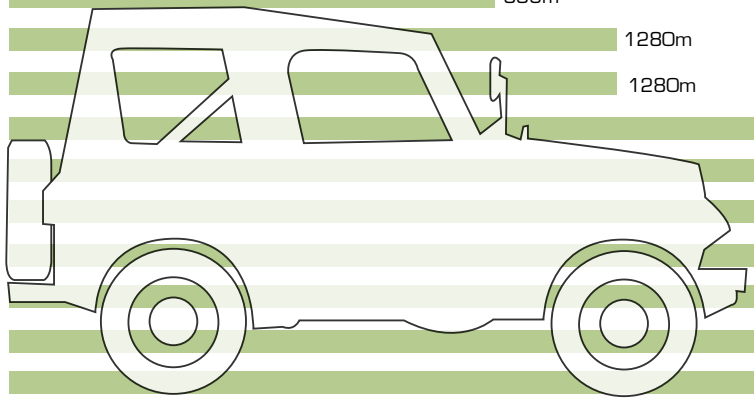
	Part number	Description
	**322-0181-12**	35mm Quick Disconnect Lens
	**322-0195-12**	65mm Quick Disconnect Lens
	**322-0196-12**	100mm Quick Disconnect Lens
	**4125401**	Soft carrying bag
	**4125400**	Hard carrying case

Range performances

Detect Man-Sized Target (1.8 m x 0.5 m)

PS24 / TS24	315m
PS32 / TS32	450m
TS32 Pro	450m
BTS-X Pro 35mm	780m
BTS-XR Pro 35mm	960m
TS32r / TS32r Pro	1450m
BTS-X Pro 65mm	1450m
BTS-XR Pro 65mm	1900m
BTS-X Pro 100mm	2100m
BTS-XR Pro 100mm	2450m

Detect small object (2.3 m x 2.3 m)



PS24 / TS24	896m
PS32 / TS32	1280m
TS32 Pro	1280m
BTS-X Pro 35mm	2150m
BTS-XR Pro 35mm	2550m
TS32r / TS32r Pro	3900m
BTS-X Pro 65mm	3900m
BTS-XR Pro 65mm	4800m
BTS-X Pro 100mm	5300m
BTS-XR Pro 100mm	6000m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