

## A World Leading Medium to Long Range Surveillance Platform

The Osiris Ranger LR is a highly modular ready to go Single Mast Surveillance solution, ideal for medium to long range surveillance applications using HD zoom video cameras and uncooled thermal LR zoom cameras.

The smart uncooled LR thermal cameras offer a real alternative to cooled thermal camera technology. With Image Stabilisation and Autofocus as standard, the LR thermal camera is designed to provide the perfect thermal surveillance solution especially when partnered with the Osiris platforms.

A range of thermal zoom cameras and the 15-500mm HD video camera are available, all supplied in cable managed housings for protection in the harshest environments. With harmonic drive gears as standard the Osiris has virtually zero backlash ensuring the capture of stable images even at very long distances over land or water. The Osiris allows the cameras to rotate 360° continuously and scan the targets with pin point accuracy.

All Silent Sentinel Pan and Tilt systems are designed with absolute positing feedback as standard. So when twinned with radar or any automated control program it can be driven automatically to any threat detected and remain on target as the threat moves. As with all Silent Sentinel products the Osiris can easily be deployed as a standalone system or a combined solution to increase the performance.

The Osiris platform can be configured and optimised for a broad range of applications and operational theatres with the ability to detect, identify, track and react to the surveillance requirement.



**HD**

### Key Features

- Supporting ranges up to 10km for human detection and 16.4km for vehicle detection.
  - Medium to long range thermal cameras (up to 300mm).
  - Medium range 33:1 (15.2 to 500mm) video / day HD camera.
  - Focal length dependent speed control (pan, tilt and zoom).
  - Anti fog, anti haze, image stabilisation, autofocus and auto tracking capabilities.
  - Absolute positioning feedback for radar control.
  - 360° continuous rotation.
  - Ultra slow pan / tilt speeds down to 0.02° per second (and up to 45° per second).
  - Virtually zero backlash with automatic self position correction.
  - Optical encoders for preset accuracy (0.002° repeatability).
  - Unique rapid release mechanism allows cameras to be quickly changed in the field.
  - Unique boresight positioning for fast alignment.
  - ONVIF Profile S compliant.
  - Highly ruggedised for extreme and marine environments.
  - Wiper option available on the video camera.
  - IP67, REACH, ROHS & CE Compliant.
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- Options include: Automatic Object Tracking, Image Stabilisation, Laser Range Finders, Mid to Long Range IR Illuminators, Laser Illuminators, UAV Effectors, Signal Light Guns, Protective Window Flap/Cover, Heater and more.



Boresight Adjustment



Rapid Release Mechanism

### The Silent Sentinel Range

Silent Sentinel offer an extensive range of camera and lens configurations to meet your exact surveillance requirements

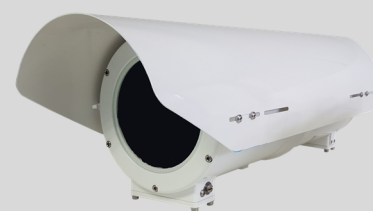
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**[www.silentsentinel.com](http://www.silentsentinel.com)**



## Osiris Uncooled Medium to Long Range Thermal LR Zoom Cameras

The Silent Sentinel medium to long range uncooled thermal LR zoom lens cameras Are is designed to provide a real alternative to cooled thermal camera technology.

Creating the perfect value added video surveillance solution when partner with the Osiris PT platform.



### Lens

Focal Length	<b>25mm to 150mm</b>	<b>25mm to 225mm</b>
Optical Zoom (Continuous)	6x, Motorised	9x, Motorised
F Number	F1.4	F1.5
Horizontal Field of View	17.5° (W) to 3.0° (T)	17.5° (W) to 2.0° (T)
Focus	Manual motorised focus with push autofocus and Athermalization	

### Camera

Detector Type	Uncooled VOx Microbolometer
Resolution	640 x 480
Pixel Size	12 µm
Spectral Band	7.5 to 13 µm (LWIR)
Sensitivity	< 30 mK (NETd) f/1.0 @ room temperature*
Frame Rate	25 Fps
Frequency	25Hz
Digital Zoom and Pan	4x Digital zoom, Region of Interest
Image Stabilisation	Yes
Image Enhancement	CLAHE / LAP Alpha blending
Image Control	Polarity: White hot / black hot, various user palettes. Orientation: Invert / revert. Shutter and scene based NUC. Spatial / temporal de-noise. Automatic gain control.

\* As measured after image post-process techniques were applied

### Detection, Recognition and Identification Ranges\*

Detection (Human / Vehicle)	7760m / 14170m	10070m / 16400m
Recognition (Human / Vehicle)	1660m / 6180m	2320m / 8490m
Identification (Human / Vehicle)	1020m / 4190m	1440m / 5870m

\* Ranges are based upon 50% probability on a MODTRAN standard atmosphere. Detailed NVIPM calculation notes available upon request.

### Electrical and Mechanical

Boresight	Yes
Rapid Release Mechanism	Yes
Video Output	IP and Composite (PAL / NTSC)
IP rating	IP67
Temperature Range	-30°C (-22°F) Up to 65°C (149°F) (-40°C with optional heater)
Power	28-32vDC, 1.2A, 33W Peak (excludes heater at 65W)
Window	Germanium thermal optical quality glass, with a Low Reflection Hard Carbon (HCLR) coating
Fixing Material	Stainless steel with external fall protection
Housing Material	Iridited aluminium
Housing Finish	White powder marine grade paint finish (other colours are available upon request)
Housing Model	HT07
Weight	Typically 14Kg / 30.9lb
Dimensions (mm)	L700 x W254 x H226

## Osiris Medium Range HD Video Camera

The Silent Sentinel medium range HD video day / night camera is designed to provide the perfect video surveillance solution when partnered with the Osiris PT platform.

Featuring superb low light performance, dynamic noise reduction (saving bandwidth), intelligent auto exposure and autofocus to enable a crisp image at range.



### Lens

Focal Length	15.2mm to 500mm
Optical Zoom (Continuous)	33x, motorised
F Number	F3.0 to F32
Horizontal Field of View	23.42 (W) to 0.78° (T)
Extender	-
Format Size	1/2"
Focus	Push auto focus and motorised manual focus
Iris	Auto iris

### Camera

Sensor	1/1.9" CMOS Sensor (2.38 MP)
Sensor Mode	Full HD 1080p (1920 x 1080) <b>HD</b>
Video Performance (High Sensitivity Mode)	Colour 0.05 lux F1.2 gain of up to 60dB / 0.005 lux F1.2 / AGC @ 42dB (accumulation 25 times) Mono 0.002 lux F1.2 gain of up to 60dB / 0.0002 lux F1.2 / AGC @ 42dB (accumulation 25 times)
White Balance	Auto / manual
Automatic Level Control (ALC)	Auto / manual
Shutter	1/20 to 1/10,000 (variable)
Day/Night Mode	Auto, manual, colour, monochrome
Backlight Compensation	On / off
Noise Reduction	Yes
Digital Zoom	-
Defog	Yes
Image Stabilisation	Yes (cost option)

### Electrical and Mechanical

Boresight	Yes
Rapid Release Mechanism	Yes
Video Output	IP and Composite (PAL / NTSC)
IP rating	IP67
Temperature Range	-30°C (-22°F) Up to 65°C (149°F) (-40°C with optional heater)
Power	28-32VDC, 1.4A, 40W Peak (excludes heater at 65W)
Window	High Definition optical quality glass, with a low reflection and water resistant coating
Fixing Material	Stainless steel with external fall protection
Housing Material	Iridited aluminium
Housing Finish	White powder marine grade paint finish (other colours are available upon request)
Housing Model	HT07
Weight	Typically 14Kg / 30.9lb
Dimensions (mm)	L700 x W254 x H226

## Osiris Pan and Tilt (PT) Platform

The robust aluminium housing is rated to IP67, it is anodised and powder coated to withstand harsh environmental conditions. The PT employs belt and harmonic drives with virtually zero backlash and the optical encoder ensures the unit retains position and will even self correct.



### Pan and Tilt Unit

	Harmonic Drive
Repeatability	0.002°
Speed Control	Zoom dependant speed control
Pan Rotation	360° Continuous
Pan Speed	0.02° up to 45° per second
Tilt Range	+90° To -90°
Tilt Speed	0.02° up to 45° per second
Actuation	Pan and tilt stepper motors
Position encoders	Optical encoders on pan and tilt motors
Housing Material	Cast hard anodised aluminium
Housing Finish	Powder marine grade paint finish
Colour	White (other colours available upon request)
Fixing Material	Stainless steel with external fall protection
IP rating	IP67
Temperature Range	-30°C (-22°F) Up to 65°C (149°F) (-40°C with optional heater)
Power	28-32vDC, 1.2A, 33W Nominal / 1.8A, 50W Peak (excluding camera payload)
Dimensions	361.3mm (H) x 225mm (W) x 225mm (D) (excluding mounts and payloads)
Weight	15.2kg / 35.5lb (excluding camera payload, payload capacity 50kg)

### Telemetry

Presets	127x Preset positions, 16x preset tours
Protocols	Pelco D, Pelco D Extended, SSP, ONVIF Profile-S
Parameter Programming	Via RS485 or RS422
Privacy Zones	4
Positioning	Absolute positioning feedback
Additional features	Programmable text within picture (camera ID), parameter control (RS232 or RS485) TCP/IP prepared, compass heading (cardinal point and/or degrees), focal length dependant pan and tilt control

### Network

Ethernet	10/100 Base-T
Connectivity	Cat5e via multicore cable tail/PSU (RJ45)
Configuration	Via web browser
Network Protocols	Networking: IPv4/v6, UDP, TCP, IGMP, ARP, DHCP, DNS, NT Streaming: RTSP, RTP, HTTP, Web Sockets Management: HTTP, HTTPS, Bonjour, ONVIF, PSIA, ION API, SNMP, SMTP Security: Basic / Digest Authentication, SSL
Latency	Can reach less than 100ms latency

## Image Processing

Video Compression	H.264/MPEG4 Part 2, M-JPEG (HD only), JPEG (4k Only) (H.265 option available up on request)
H.264 Performance (HD / IP cameras)	Total D1@390 fps or Full HD 1080p@65 fps Examples: 2x 1080p at 30 fps (HD video) or 2x D1 at 30 fps (SD)
Image Processing	Image resizing and scaling ratio, noise reduction, edge enhancement (sharpness), ROI based video compression
Software Update	Remote / IP accessible
Other Features	Email Notifications, Text Overlay

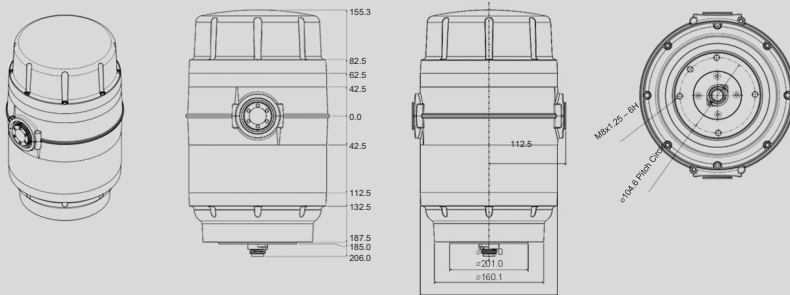
## Options

Brackets	Tower mount adaptor, top mount brackets and side mount L brackets
Wiper	Wiper, wiper nozzle and wash tank (for the video camera only)
Gyro	2 Axis gyro stabiliser on Osiris Unit
Analogue	Analogue composite camera alternatives are available upon request
Storage	Up to 64GB in total via SD/MMC (32GB available per channel if using thermal and video / 2x cameras)
Additional Optional Modules	Automatic object tracking, image stabilisation, laser range finder, laser illuminator, white light, IR illuminator, signal light gun, UAV effector, window flap/cover, heater Please contact us if you have a specific requirement that is not mentioned.

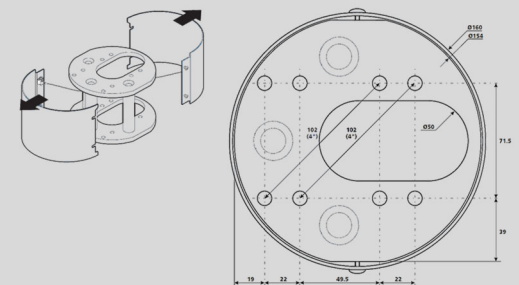
## Part Numbers

OPT-H-RANGER-LR-150-W	Osiris Ranger LR – Harmonic driven PT, with 640 x 480, 25-150mm thermal LR camera and a HD, 15.2mm to 500mm video camera
OPT-H-RANGER-LR-225-W	Osiris Ranger LR – Harmonic driven PT, with 640 x 480, 25-225mm thermal LR camera and a HD, 15.2mm to 500mm video camera
OPT-H-RANGER-LR-300-W	Osiris Ranger LR – Harmonic driven PT, with 640 x 480, 40-300mm thermal LR camera and a HD, 15.2mm to 500mm video camera
Options	All cable, ancillary and optional part numbers are available upon request

### Osiris Harmonic Drive PT Platform



### Optional Osiris PT Tower Mount Adaptor Detail



### HT07 Camera Housing

