

# OSIRIS Ranger

## *A World Leading Medium to Long Range Surveillance Platform*

The Osiris Ranger 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 zoom cameras.

The Osiris Pan and Tilt (PT) unit uses belt or harmonic drives which allow the cameras to rotate 360° continuously. When mounted on the Osiris PT platform, the cameras are able to scan the targets with pin point accuracy.

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.

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 4.9km for human detection and 15.2km for vehicle detection.
  - Medium to long range thermal cameras (up to 225mm).
  - Medium range 33: 1 (15.2 to 500mm) video / day HD camera.
  - Focal length dependent speed control (pan, tilt and zoom).
  - Anti fog, image stabilization and auto tracking options.
  - 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.
- 
- 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

**Tel: +44 (0) 1920 871 734**  
**[www.silentsentinel.com](http://www.silentsentinel.com)**



# OSIRIS Ranger

## Osiris Uncooled Medium to Long Range Thermal Zoom Cameras

The Silent Sentinel medium to long range uncooled thermal zoom cameras are designed to provide the perfect video surveillance solution when partnered with the Osiris PT platform.



### Lens

| Focal Length              | 26 mm to 105mm                              | 25mm to 150mm         | 25mm to 225mm         |
|---------------------------|---------------------------------------------|-----------------------|-----------------------|
| Optical Zoom (Continuous) | 4x, Motorised                               | 6x, Motorised         | 9x, Motorised         |
| F Number                  | F1.6                                        | F1.4                  | F1.5                  |
| Horizontal Field of View  | 25.3° (W) to 5.9° (T)                       | 25.3° (W) to 4.1° (T) | 22.3° (W) to 2.8° (T) |
| Focus                     | Manual motorised focus with Athermalization |                       |                       |

### Camera

|                      |                                                               |
|----------------------|---------------------------------------------------------------|
| Detector Type        | Uncooled VOx Microbolometer                                   |
| Resolution           | 640 x 480                                                     |
| Pixel Size           | 17 µm                                                         |
| Spectral Band        | 8 to 14 µm (LWIR)                                             |
| Sensitivity          | < 50 mK (NETd) f/1.0 @ room temperature                       |
| Frame Rate           | 25 Fps (9 fps, 30fps options)                                 |
| Frequency            | 25Hz (9Hz, 30Hz options)                                      |
| Digital Zoom and Pan | 4x Digital zoom, Region of Interest                           |
| Digital Video        | 14/8-bit LVCMOS/Camera Link®                                  |
| Image Stabilisation  | Yes (cost option)                                             |
| Image Enhancement    | Contrast enhancement                                          |
| Image Control        | Polarity: White Hot / Black Hot, Orientation: Invert / Revert |

### Detection, Recognition and Identification Ranges (Johnsons Criteria\*)

|                                  |               |                |                |
|----------------------------------|---------------|----------------|----------------|
| Detection (Human / Vehicle)      | 2300m / 7100m | 3290m / 10150m | 4930m / 15220m |
| Recognition (Human / Vehicle)    | 580m / 1780m  | 830m / 2540m   | 1235m / 3805m  |
| Identification (Human / Vehicle) | 360m / 1090m  | 510m / 1560m   | 760m / 2340m   |

\* Human at 1.8m x 0.5m, vehicle at 2.3m<sup>2</sup>, Detection at 2 pixels, Recognition at 8 pixels and Identification at 13 pixels. 50% probability subject to environmental conditions.

### 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           | HT06                                                                                      | HT07                    |  |
| Weight                  | Typically 4Kg / 8.8lb                                                                     | Typically 14Kg / 30.9lb |  |
| Dimensions (mm)         | L460 x W184 x H156                                                                        | L700 x W254 x H226      |  |

# OSIRIS Ranger

## 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)<br>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<br>(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 Ranger

## 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)<br>(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<br>Streaming: RTSP, RTP, HTTP, Web Sockets<br>Management: HTTP, HTTPS, Bonjour, ONVIF, PSIA, ION API, SNMP, SMTP<br>Security: Basic / Digest Authentication, SSL |
| Latency           | Can reach less than 100ms latency                                                                                                                                                                                        |

# OSIRIS Ranger

## 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<br>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                                                                            |

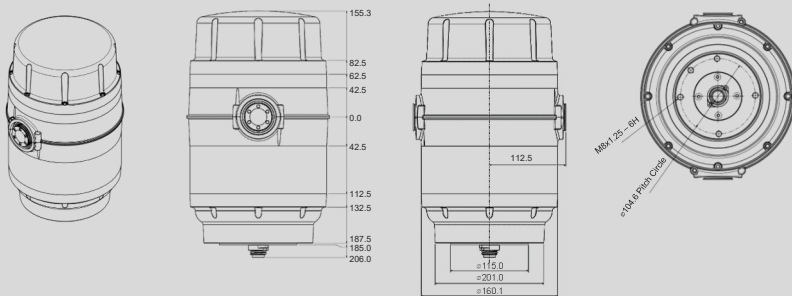
## Options

|                             |                                                                                                                                                                                                                                                              |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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<br>Please contact us if you have a specific requirement that is not mentioned. |

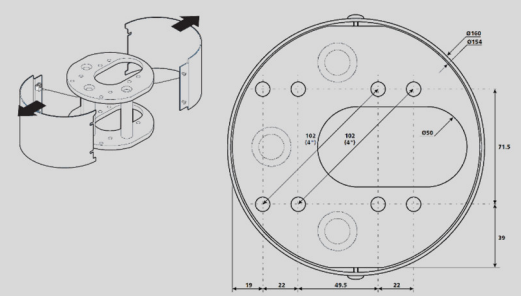
## Part Numbers

|                    |                                                                                                                    |
|--------------------|--------------------------------------------------------------------------------------------------------------------|
| OPT-H-Ranger-105-W | Osiris Ranger – Harmonic driven PT, with 640 x 480, 26-105mm thermal camera and a HD, 15.2mm to 500mm video camera |
| OPT-H-Ranger-150-W | Osiris Ranger – Harmonic driven PT, with 640 x 480, 25-150mm thermal camera and a HD, 15.2mm to 500mm video camera |
| OPT-H-Ranger-225-W | Osiris Ranger – Harmonic driven PT, with 640 x 480, 25-225mm thermal camera and a HD, 15.2mm to 500mm video camera |
| Options            | All cable, ancillary and optional part numbers are available upon request                                          |

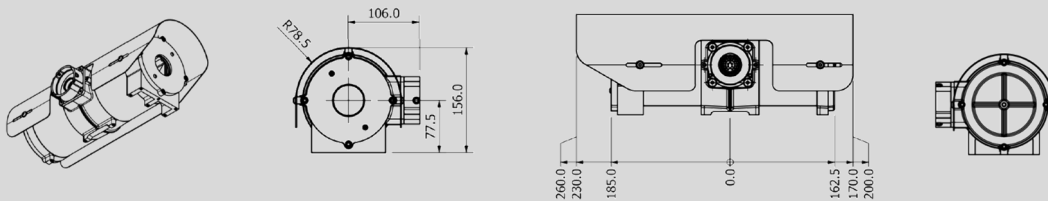
### Osiris Harmonic Drive PT Platform



### Optional Osiris PT Tower Mount Adaptor Detail



### HT06 Camera Housing



### HT07 Camera Housing

