OCULUS Scout

A World Leading Short to Medium Range Compact Surveillance Unit

The Oculus Scout is a highly modular, ready to go, compact surveillance solution using video and fixed lens thermal cameras which is ideal for short to medium range surveillance applications.

The Oculus is a compact, rugged, continuous rotation PTZ camera that has been specifically designed for marine, harsh and challenging environments. With a range of features such as the fixed lens uncooled thermal cameras and low light HD 30:1 zoom day/night video camera make the Oculus Scout a versatile and cost effective solution.

A wide range of thermal and video cameras are available for the Oculus, all supplied in cable managed housings for protection in the harshest environments. With belt driven gears as standard the Oculus 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 Oculus can easily be deployed as a standalone system or a combined solution to increase the performance.

The Oculus 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.

Key Features

- Supporting ranges up to 1.1km for human detection and 3.4km for vehicle detection.
- Short to medium range fixed lens thermal cameras (up to 50mm).
- Starvis HD Colour camera.
- Thermal camera contrast enhancements.
- Focal length dependent speed control (zoom).
- Anti fog, anti haze and image stabilisation capabilities.
- Absolute positioning feedback for radar control.
- 360° continuous rotation.
- High performing pan and tilt speeds up to 180° per second.
- Virtually zero backlash with automatic self position correction.
- Optical encoders for preset accuracy (0.05° repeatability).
- Compact housings with wipers as standard*.
- ONVIF Profile S compliant.
- Highly ruggedised for extreme and marine environments.
- IP67, REACH, ROHS & CE Compliant.

- Options include: Image Fusion, 2 Axis Gyro Stabilisation, Image Stabilisation, Automatic Object Tracking, Heaters, Various Mounting Options, Stainless Steel Finish, Custom Paint Colours, Bird Spikes, Sunshields and more.

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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Oculus Uncooled Short to Medium Range Thermal Fixed Lens Camera Modules

The Silent Sentinel short to medium range uncooled thermal fixed lens camera modules are designed to provide the perfect value added video surveillance solution when integrated into the compact Oculus PT platform.

Lens

Focal Length	14mm	35mm	50mm
Optical Zoom (Continuous)	-	-	-
F Number	F1.4	F1.2	F1.2
Horizontal Field of View	44°	17.6°	12.4°
Focus	Fixed, preset 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®
Video Output	IP and Composite (PAL / NTSC)
Window	Germanium thermal optical quality glass, with a low reflection coating
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)	305m / 950m	770m / 2370m	1100m / 3390m
Recognition (Human / Vehicle)	75m / 240m	190m / 580m	275m / 850m
Identification (Human / Vehicle)	50m / 150m	120m / 360m	170m / 520m

* Human at 1.8m x 0.5m, vehicle at 2.3m², Detection at 2 pixels , Recognition at 8 pixels and Identification at 13 pixels. 50% probability subject to environmental conditions.

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Oculus Short to Medium Range HD Video Camera Module

The Silent Sentinel short to medium range HD video camera module is designed to provide the perfect surveillance solution when integrated into the compact Oculus PT platform.

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

Lens

Focal Length	**4.3mm to 129mm**
Optical Zoom (Continuous)	30x, Motorised
F Number	F1.6 to F4.7
Horizontal Field of View	63.7° (W) to 2.32° (T)
Format Size	1/2.8"
Focus	Auto focus and motorised manual focus
Iris	Auto iris

Camera

Sensor	1/2.8" CMOS Exmor (2.13MP)
Sensor Mode	Full HD 1080p (1920 x 1080) HD
Wide Dynamic Range	Yes (120 dB)
Video Performance (High Sensitivity Mode)	Colour 0.01 lux Mono 0.0008lux
White Balance	Auto, push and manual
Automatic Level Control (ALC)	Auto / manual
Shutter	1/1 s to 1/10,000
Day/Night Mode	Auto, colour, monochrome
Backlight Compensation	On / off
Noise Reduction	Yes
Digital Zoom	12x (360x combined)
Video Output (PAL / NTSC)	IP (HD-SDI option)
Window	High Definition optical quality glass, with a low reflection and water resistant coating
Defog	Yes
Image Stabilisation	Yes

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Oculus Compact Pan and Tilt Unit

The Oculus's compact, robust aluminium housing is rated to IP67, it is hard anodised and has a white marine grade paint to withstand harsh environmental and marine conditions.

The Oculus employs belt drives with virtually zero backlash and the optical encoder ensures the unit retains position and will even self correct.

Electrical and Mechanical

Camera Construction	Die-cast hard anodised aluminium with A4 stainless fittings
Repeatability	0.05°
Optical Encoder Preset Accuracy	0.01°
Pan Rotation	360° Continuous
Pan Speed	Up to 180° per second (excluding ramping)
Tilt Range	+90° to -30° upright (-68° inclined), +30° to -90° inverted
Tilt Speed	Up to 180° per second (excluding ramping)
Speed Control	Zoom dependant speed control
Position Control	Capable of retraining position without drift. Automatic position recovery if forced away by a 'non-control' intervention
Motor Drive	Long life toothed polypropylene belt drive, Pulleys bonded to keypad shafts for minimum backlash
Rotational Contacts	Heavy duty slip rings for power, data, video and switching for washer
Pan / Tilt Bearings	Sealed for life – no maintenance required
Actuation	Pan and tilt stepper motors
Position Encoders	Optical encoders on pan and tilt motors
Mounting Profile	Upright or inverted
IP rating	IP67
Temperature Range	-20°C (-4°F) Up to 65°C (149°F) (-40°C with optional heater)
Power	14 to 36vDC or 14 to 26vAC, 45W peak (100W with optional heater) (20W typical in low power mode when idle without heater)
Fixing Material	Stainless steel with external fall protection
Housing Finish	White powder marine grade paint finish (other colours are available upon request)
Weight	7kg (15.43lb)
Turning Diameter	220mm / 8.66" Normal - 370mm / 14.57" Offset
Height	370mm / 14.57" Normal - 340mm / 13.86" Offset

Telemetry

Presets	127x Preset positions, 16x preset tours (maximum of 60 positions each), four 8 minute mimic tours
Protocols	Pelco-D, Pelco P, Pelco D Extended, CBC OCP485, Forward Vision Mic1 FV300, Philips, Vicon, SSP, ONVIF Profile-S
Parameter Programming	IP, RS485 (not IP)
Privacy Zones	Maximum of eight on-screen simultaneously
Positioning	Absolute positioning
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, in built real time clock and date

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

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Specifications may be subject to change without notice 151019, V3.2r1

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Image Processing

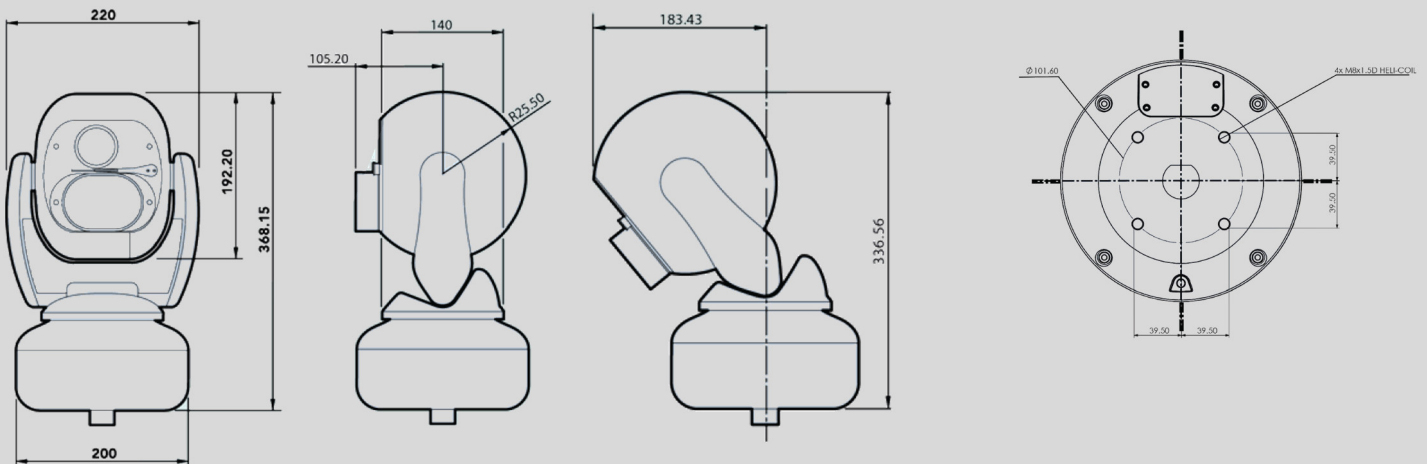|	
Video Compression	H.264/MPEG4 Part 2, M-JPEG (H.265 option available up on request)
H.264 Performance (Standard)	Total D1 at 390 fps or Full HD 1080p at 65 fps Examples: 2x 1080p at 30 fps (HD video/thermal) or 2x D1 at 30 fps (thermal / SD)
Image Processing	Image resizing and scaling ratio, noise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

Options

Brackets	Tower mount, pole mount, 1m pendant mount, wall mount, corner mount, swan neck mount, heritage mounts
Wiping	Wiper nozzle and wash tank (for the video camera only)
Gyro	2 Axis gyro stabiliser
Image Fusion	Thermal and video Image Fusion with stepped preset zoom
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	Bird Spike, Sunshield, Automatic Object Tracking, Image Stabilisation, Heater, Satin Stainless Steel Housing, Custom Paint Colours Please contact us if you have a specific requirement that is not mentioned or detailed in the part numbers

Part Numbers

RC3-SCOUT-14-W	Oculus Scout – with a 640x480, 14mm fixed lens thermal camera and a HD video camera with optical zoom of 30x, white colour
RC3-SCOUT-35-W	Oculus Scout – with a 640x480, 35mm fixed lens thermal camera and a HD video camera with optical zoom of 30x, white colour
RC3-SCOUT-50-W	Oculus Scout – with a 640x480, 50mm fixed lens thermal camera and a HD video camera with optical zoom of 30x, white colour
Options	All cable, ancillary and optional part numbers are available upon request

Typical Oculus Compact PTZ Camera

Oculus Fixing Points
(base of the Oculus with an industry standard 4" PCD mount)

* Dimensions (mm) and designs are indicative and subject to the final camera configuration/model.

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