

AERON 4K Ultra Low Light

A World Leading Compact Pan and Tilt Camera with Ultra Low Light 4K Video

The Aeron 4K IP camera platform is the perfect solution for long range surveillance applications, providing the best high resolution low light performance available within a marine grade rugged pan and tilt housing of this size.

The Aeron 4K Ultra Low Light employs the latest Sony ultra-low light 4k technologies which is offered with simultaneous HD 30:1 zoom video module for verification or fixed thermal cameras for confirmation at night time.

The Aeron 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 zoom thermal, cooled and uncooled thermal, HD and 4K video as well as IR and white light option, make the Aeron a versatile and cost effective solution.

The Aeron is fully housed within a hard anodised aluminium casing, fully rated to IP67 and ready to handle the harshest environments. The toughened, optically flat glass provides clear images, even at the highest zoom levels. Optical encoders for both the pan and tilt axes provide highly accurate positioning and repeatability, allied with self-correction.

The Aeron 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

- 12 Megapixel, 4K, 35mm Sony Exmor CMOS Sensor.
 - Ultra-high 4K sensitivity: Minimum illumination 0.0004lux @ 30 IRE.
 - Achieves extremely high sensitivity and low noise at the same time.
 - 4K or full HD 30fps smooth colour video in near pitch-black conditions.
 - 4K (3840 x 2160) H.264 with dynamic or static regions of interest coding for bandwidth and storage efficiencies
 - Secondary HD 30:1 zoom video (with wiper) and thermal cameras
 - Thermal cameras supporting ranges up to 1.1km for human detection and 3.3km for vehicle detection.
 - Infra Red (IR) or White Light Illumination options up to 500m.
 - Thermal camera contrast enhancement.
 - Absolute positioning feedback for radar control.
 - 360° continuous rotation.
 - High performing pan and tilt speeds up to 160° 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.
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- Options include: 2 Axis Gyro Stabilisation, Automatic Object Tracking, Heaters, Various Mounting Options, Light Bars (500m IR or WL illumination), Heaters, Custom Paint Colours, Bird Spikes, Sunshields and more.



HD 4K



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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AERON 4K Ultra Low Light

Aeron Short to Medium Range 4K Ultra Low Light & Low Light HD Video Cameras

The Silent Sentinel short to medium range Ultra Low Light 4K video and HD video cameras are designed to provide the perfect surveillance solution when combined and integrated into the compact Aeron PT platform.



Featuring superb 'Ultra Low Light' 4K performance and low light HD, dynamic noise reduction (saving bandwidth), intelligent auto exposure and auto focus to enable a crisp image at range.

HD 4K

Lens

Focal Length	35mm	4.3mm to 129mm
Optical Zoom (Continuous)	-	30x, Motorised
F Number	F1.4	F1.6 to F4.7
Horizontal Field of View	63°	63.7° (W) to 2.32° (T)
Format Size	No	1/2.8"
Focus	Auto focus and motorised manual focus	
Iris	Auto iris	

Camera

Sensor	35mm Full Frame Sony Exmor CMOS (12.2MP)	1/2.8" Sony Exmor CMOS (2.13MP)
Sensor Mode	4240 x 2832 4K	Full HD 1080p (1920 x 1080) HD
Wide Dynamic Range	Yes (100dB)	Yes (120 dB)
Video Performance (High Sensitivity Mode)	Colour 0.0006 lux at F1.2/50 IRE Colour 0.0004 lux at F1.2/30 IRE	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	Up to 1/10,000 (variable)
Day/Night Mode	Auto, colour, monochrome	Day only
Backlight Compensation	On / off	
Noise Reduction	Yes, XDNR® Technology	Yes
Digital Zoom	2x	12x (360x combined)
Video Output (PAL / NTSC)	IP	IP (HD-SDI option)
Window	High Definition optical quality glass, with a low reflection and water resistant coating	
Defog	Yes	
Image Stabilisation	No	Yes
Part Numbers	Please refer to the last page of this document for the standard Aeron product combinations	

Illumination Options*

WL Light Bar	LED, up to 500m range
* Ranges subject to camera lux sensitivity	

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Aeron 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 Aeron PT platform.



Lens

	14mm	25mm	50mm
Focal Length	14mm	25mm	50mm
Optical Zoom (Continuous)	-	-	-
F Number	F1.4	F1.2	F1.2
Horizontal Field of View	44°	24.8°	12.4°
Focus	Fixed, preset with Athermalization		

Camera

Detector Type	Uncooled VOx Microbolometer
Resolution	640 x 480 (Lower resolution 320 x 240 versions are available upon request)
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 Hard Carbon (HCLR) coating
Image Stabilisation	Yes (cost option)
Image Enhancement	Contrast enhancement
Image Control	Polarity: White Hot / Black Hot, Orientation: Invert / Revert
Part Numbers	Please refer to the last page of this document for the standard Aeron product combinations

Detection, Recognition and Identification Ranges (Johnsons Criteria*)

	14mm	25mm	50mm
Detection (Human / Vehicle)	305m / 950m	550m / 1690m	1100m / 3390m
Recognition (Human / Vehicle)	75m / 240m	140m / 420m	275m / 850m
Identification (Human / Vehicle)	50m / 150m	85m / 260m	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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Aeron Compact Pan and Tilt Unit

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



Electrical and Mechanical

Repeatability	0.05°
Optical Encoder Preset Accuracy	0.01°
Pan Rotation	Up to 360° Continuous
Pan Speed	Up to 160° per second (excluding ramping)
Tilt Range	+90° to -30° upright (+30° to -90° inverted)
Tilt Speed	160° 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 Material	Die-cast hard anodised aluminium
Housing Finish	White powder marine grade paint finish (other colours are available upon request)
Weight	9.3kg (20.5lb)
Turning Diameter	340mm / 13.40"
Height	370mm / 14.57"

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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Image Processing

Video Compression	H.264/MPEG4 Part 2, M-JPEG (H.265 option available upon 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)
H.264 Performance (4k 12.2MP Camera)	30 fps at 3840 x 2160 (supports up to 20 clients/connections over 5 streams) (various resolutions from 320 x 180 available)
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

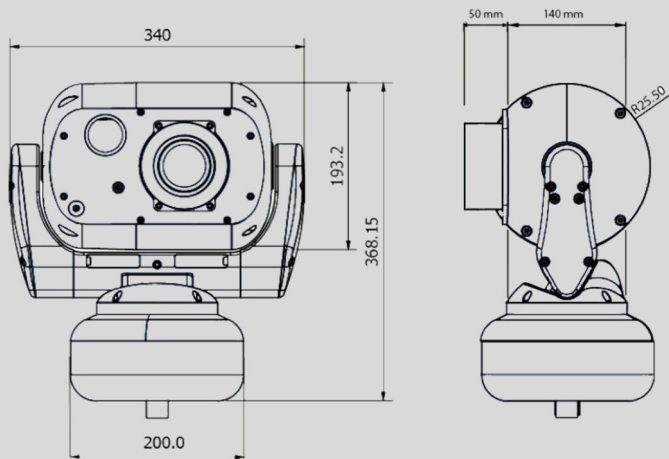
Brackets	Tower mount, pole mount, 1m pendant mount, wall mount, corner mount, swan neck mount
Wiping	Wiper nozzle and wash tank (for the video camera only)
Gyro	2 Axis gyro stabiliser
Storage	Up to 64GB in total via SD/MMC (32GB available per channel if using thermal and video / 2x cameras)
Additional Optional Modules	Bird Spike, Sunshield, Automatic Object Tracking, Image Stabilisation, White Light, Infra Red Illuminator, Hybrid White Light and Infra Red Illumination, Heater, Custom Paint Colours Please contact us if you have a specific requirement that is not mentioned or detailed in the part numbers

Standard Part Codes and Configurations*

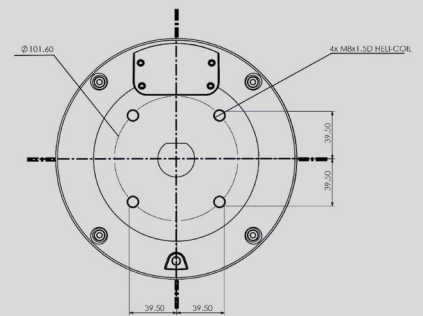
RC4-51IYM55W-DB44FW	Aeron, IP, 640x480 thermal camera with a 14mm, F1.4 thermal lens, and a 4k ultra low light video camera with a 35mm lens, white colour
RC4-51IYM55W-DB25FW	Aeron, IP, 640x480 thermal camera with a 25mm, F1.2 thermal lens, and a 4k ultra low light video camera with a 35mm lens, white colour
RC4-51IYM55W-DB12FW	Aeron, IP, 640x480 thermal camera with a 50mm, F1.2 thermal lens, and a 4k ultra low light video camera with a 35mm lens, white colour
RC4-50IYM55W-IYJ30XW	Aeron, IP, 4k ultra low light video camera with a 35mm lens, and a HD video camera with optical zoom of 30x, white colour

* Please contact us if you have a specific requirement that is not mentioned in the datasheet or detailed in the part numbers above.

Typical Aeron Compact PTZ Camera*



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



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