

JAEGAR Ultra LRC

A World Leading Ultra Long Range Surveillance Platform

The Jaegar Ultra Long Range Camera (LRC) is a highly modular ready to go Single Mast Surveillance solution, ideal for ultra long range surveillance applications using HD zoom video and HD zoom thermal cameras.

The fixed through shaft, running through the Jaegar Pan and Tilt (PT) allows the cameras to rotate 360° continuously while keeping a payload on top fixed in position, perfect to twin with radar and other detection technologies.

A HD cooled thermal and HD video camera are available, all supplied in cable managed housings for protection in the harshest environments. With harmonic drive gears as standard the Jaegar 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 Jaegar can easily be deployed as a standalone system or a combined solution to increase the performance.

The Jaegar 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 31km for human detection and 50km for vehicle detection.
 - Long range thermal cameras (up to 960mm) including HD thermal.
 - Long range video / day cameras (up to 2000mm) including HD.
 - Focal length dependent speed control (zoom).
 - Anti fog and image stabilization capabilities.
 - Absolute positioning feedback for radar control.
 - 360° continuous rotation.
 - Ultra slow pan / tilt speeds down to 0.0002° per second (and up to 80° per second).
 - Virtually zero backlash with automatic self position correction
 - Optical encoders for preset accuracy (0.0002° 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 (Video Only), Radar 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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Jaegar Cooled Long Range HD Thermal Zoom Camera

The Silent Sentinel long range cooled HD thermal zoom camera is designed to provide the perfect high definition thermal images at distanced... Creating the best of breed surveillance solution when partnered with the Jaegar PT platform.



Lens

Focal Length	80mm to 960mm
Optical Zoom (Continuous)	12x, Motorised
F Number	F4.0
Horizontal Field of View	11.0° (W) to 0.9° (T)
I FOV (µrad)	12.5
Focus	Motorized zoom and focus with athermalization and autofocus

Camera

Detector Type	CMT (HgCdTe – Cadmium Mercury Telluride)
Resolution	1280 x 720 HD
Pixel Size	12 µm
Spectral Band	3.7 to 4.95 µm (MWIR)
Sensitivity	27.5 mK (NETD) Typical
Frame Rate / Frequency	60Hz
Cooler Type	Long life linear (50,000hrs)
Cool Down Time	3 to 4 Minutes typical
Image Enhancement	Linear, lace, edge enhancement
Digital Zoom	8x
Turbulence Mitigation	Yes
Image Stabilisation	Yes
Image Control	Polarity: White-hot / black-hot

Detection, Recognition and Identification Ranges*

Detection (Human / Vehicle)	30300m / 50000m
Recognition (Human / Vehicle)	8000m / 20600m
Identification (Human / Vehicle)	6300m / 16900m

* Ranges are based upon the NVThermIP model and associated DRI criteria of 2.7, 14.5 and 18.8 cycles at 50% probability on a MODTRAN standard atmosphere.

Electrical and Mechanical

Boresight	No
Rapid Release Mechanism	No
Video Output	IP and Composite (PAL / NTSC)
IP rating	IP67
Temperature Range	-32°C (-25°F) Up to 55°C (131°F)
Power	28vDC, 0.9A, 25W Peak
Window	Silicon Window Enhanced Diamond Like Carbon (EDLC) coating
Fixing Material	Black anodised aluminium alloy
Housing Material	Fire retardant chopped strand glass fibre in a polyester resin with a polyester gelcoat
Housing Finish	Gloss White, with polyurethane finish
Housing Model	HT07 Custom
Weight	Typically 23Kg / 50.7lb
Dimensions (mm)	L597 x W299 x H299

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Jaegar Long Range HD Video Cameras

The Silent Sentinel long range HD video day / night camera is designed to provide the perfect video surveillance solution when partnered with the Jaegar 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	16.7mm to 1000mm
Optical Zoom (Continuous)	60x, motorised
F Number	F3.5 to F16
Horizontal Field of View	23.1° (W) to 0.41° (T)
Extender	2x Extender available (doubles figures above)
Format Size	1/1.8"
Focus	Auto focus and motorised manual focus
Iris	Auto iris

Camera

Sensor	1/1.8" CMOS (Total sensor pixels 6.1MP)
Sensor Mode	Full HD 1080p (1920 x 1080) HD
Wide Dynamic Range	Yes (103 dB)
Video Performance (High Sensitivity Mode)	Colour 0.00825 lux Mono 0.00275 lux
White Balance	Auto, push and manual
Automatic Level Control (ALC)	Auto / manual
Shutter	1/25 [30] to 1/15,000
Day/Night Mode	Auto, colour, monochrome
Backlight Compensation	On / off
Noise Reduction	Yes
Digital Zoom	-
Defog	Yes
Image Stabilisation	Gyro image stabilisation (lens 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

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Jaegar 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 harmonic drive gearing with virtually zero backlash and the optical encoder ensures the unit retains position and will even self correct.



Pan and Tilt Unit

Version	High Powered
Repeatability	0.0002°
Speed Control	Zoom dependant speed control
Pan Rotation	360° Continuous
Pan Speed	0.002° to 80.0° per second (selectable ultra slow speed down to 0.0002°)
Tilt Range	+90° To -90°
Tilt Speed	0.002° to 80.0° per second (selectable ultra slow speed down to 0.0002°)
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, 1.8A, 50W Nominal / 3.5A, 99W Peak (excluding camera payload)
Dimensions	391mm (H) x 248mm (W) x 245mm (D) (including mounting adaptor, excluding through shaft and payloads)
Weight	20kg / 44.1lb (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, auto sensing, half/full duplex
Connectivity	ONVIF Profile S, auto MDIX, port forwarding
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.264 Performance (standard)	Total D1@390 fps or Full HD 1080p@65 fps Examples: 2x 1080p at 30 fps (HD video/thermal) or 2x D1 at 30 fps (thermal / SD)
H.264 Performance (6.1MP cameras)	3x 1080p at 30 fps or 3x 1080p at 25 fps (various resolutions from 768 x 432 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, 2x Dry Contacts

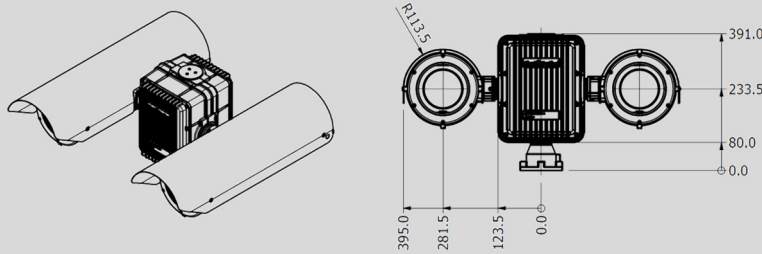
Options

Through Shaft and Brackets	'Thru-shaft' top mount 200mm & 130mm extensions, 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 Jaegar 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, radar, UAV effector, Window Flap/Cover (Video Only), Heater Please contact us if you have a specific requirement that is not mentioned

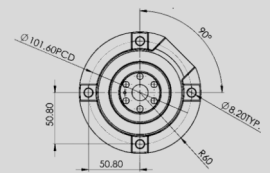
Part Numbers

JPT-H-ULTRALRC-960-W	Jaegar Ultra LRC - High powered PT, with a HD 1280 x 720, 80-960mm thermal camera and a HD, 16.7mm to 1000mm video camera
Options	All cable, ancillary and optional part numbers are available upon request

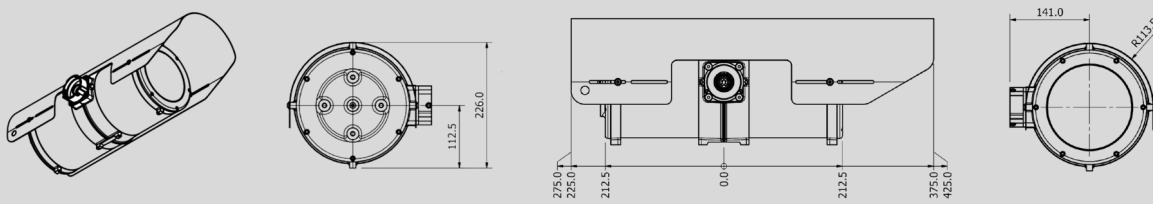
Jaegar PT Platform with HT07 Housings



Jaegar PT Platform Mounting



HT07 Camera Housing



HT07 Custom Camera Housing

