

JAEGAR Ranger LR

A World Leading Medium to Long Range Surveillance Platform

The Jaegar 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 Jaegar platforms.

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 range of thermal zoom cameras and the 15.2-500mm HD video camera are available, all supplied in cable managed housings for protection in the harshest environments. With harmonic drive gears as standard the 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 11.97km for human detection and 18.8km for vehicle detection.
- Medium to long range thermal cameras (zoomable 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 0.0002° 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.
- Options include: Automatic Object Tracking, Image Stabilisation, Laser Range Finders, Mid to Long Range IR and White Illuminators, Laser Illuminators, UAV Effectors, Signal Light Guns, Long Range Acoustic Hailer, Protective Window Flap/Cover, GPS Compass, WiFi, 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 Ranger LR

Jaegar 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 Jaegar PT platform.



Lens

	25mm to 150mm	25mm to 225mm	40mm to 300mm
Focal Length	25mm to 150mm	25mm to 225mm	40mm to 300mm
Optical Zoom (Continuous)	6x, Motorised	9x, Motorised	7.5x, Motorised
F Number	F1.4	F1.5	F1.5
Horizontal Field of View	17.5° (W) to 3.0° (T)	17.5° (W) to 2.0° (T)	11.0° (W) to 1.5° (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*

	25mm to 150mm	25mm to 225mm	40mm to 300mm
Detection (Human / Vehicle)	7760m / 14170m	10070m / 16400m	11970m / 18850m
Recognition (Human / Vehicle)	1660m / 6180m	2320m / 8490m	3070m / 10980m
Identification (Human / Vehicle)	1020m / 4190m	1440m / 5870m	1910m / 7750m

* 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

JAEGAR Ranger LR

Jaegar 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 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.



HD

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) HD
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)

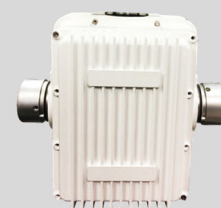
Electrical and Mechanical

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

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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

	High Powered
Repeatability	0.0002°
Speed Control	Zoom dependant speed control
Pan Rotation	360° Continuous
Pan Speed	0.002° up to 80.0° per second (selectable ultra slow speed down to 0.0002°)
Tilt Range	+90° To -90°
Tilt Speed	0.002° up 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	48vDC, 1.1A, 53W Nominal / 3.5A, 168W Peak (excluding camera payload)
Output Options	4x External Connectors Allowing for a selection of the following: Power Outputs - 12vDC, 6A / 24vDC, 15A / 48vDC, 10A Network Output – Cat5e, 10/100 Base T Antenna Connections – Cellular, GPS, WiFi, IP Radio, GPS Compass
Dimensions	434mm (H) x 343mm (W) x 343mm (D) (including mounting adaptor, excluding through shaft and payloads)
Weight	22kg / 48.5lb (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

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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

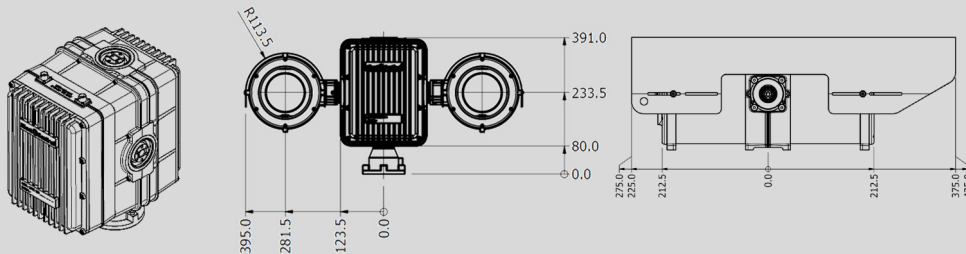
Options

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 Finders, Mid to Long Range IR and White Illuminators, Laser Illuminators, UAV Effectors, Signal Light Guns, Long Range Acoustic Hailer, Protective Window Flap/Cover, Radar, WiFi, GPS, GPS Compass, Cellular, IP Radio and more. Please contact us if you have a specific requirement that is not mentioned.

Part Numbers

JPT-H-RANGER-LR-150-W	Jaegar Ranger LR – High powered PT, with 640 x 480, 25-150mm thermal LR camera and a HD, 15.2mm to 500mm video camera
JPT-H-RANGER-LR-225-W	Jaegar Ranger LR – High powered PT, with 640 x 480, 25-225mm thermal LR camera and a HD, 15.2mm to 500mm video camera
JPT-H-RANGER-LR-300-W	Jaegar Ranger LR – High powered 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

Jaegar PT Platform with HT07 Housings



Jaegar PT Platform Mounting

