

JAEGAR RANGER

HIGH PERFORMANCE PAN AND TILT UNIT
 HD LOW LIGHT VISIBLE ZOOM LENS SENSORS
 SD LWIR UNCOOLED THERMAL ZOOM LENS SENSORS



Powered by
NexOS

The JAEGAR RANGER EVO2 is a high performance, multi sensor platform which utilises long range uncooled LWIR thermal sensors with a range of zoom lens options up to 20-300mm, alongside the latest low light HD visible sensors with zoom lens options up to 20-2400mm.

The **NexOS** EVO2 range employs the latest 12µm thermal sensor technology and has **NexOS** intelligent capabilities as standard.

Combining advanced motor control technology along with harmonic drive gears, all Jaegar camera platforms are able to position our longest-range sensors accurately and quickly. This is complimented with advanced **NexOS** features* such as video tracking, target classification, dynamic bore-sighting and gyro.

The Jaegar benefits from a fixed through shaft, which can enable payloads such as a RADAR to be mounted directly above the Jaegar PTU director.

KEY FEATURES

- Thermal camera detection ranges up to 9.31km (human) **
- 640x512 12µm thermal sensors with zoom lens options up to 300mm
- HD visible sensors with zoom lens options up to 2400mm
- NexOS** intelligence allows advanced image processing and motor control
- NexOS** Advanced Macros and Pelco Query Builder allow complex configurations
- Push, continuous and ROI autofocus, electronic image stabilisation and digital zoom (20x) as standard
- 360° Continuous rotation with pan and tilt speeds between 0.001° and 200° per second
- High level of camera positioning accuracy: 0.0001° / 0.0017 mRad
- Unique cable managed, rapid release mechanism with precise bore sighting allowing a quicker installation in the field
- Through shaft enabling fixed payloads to be mounted above the Jaegar PTU director
- System configuration and sensors can be chosen to suit the specific requirements
- Ideally suited for single mast deployments such as mobile, border and maritime applications



Above: Typical Jaegar Ranger, wiper optional (models will vary)

* Requires the NexOS performance pack and the gyro options

** Johnsons Criteria, (Human at 1.8m x 0.5m, Detection at 2 pixels, Recognition at 8 pixels and Identification at 13 pixels. 50% probability subject to environmental conditions). Based on the JPTX-EVO2-300-W.



RUGGEDISED
 Suitable for marine and extremely challenging environments



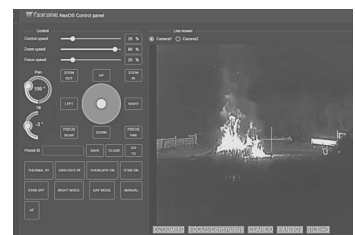
HIGH ACCURACY
 Designed for long range surveillance applications



THROUGH SHAFT
 Enables fixed payloads to be mounted above the Jaegar PTU



RAPID RELEASE MECHANISM
 Allows quick changing and bore-sighting of payloads



NEXT GENERATION
 Unrivalled intelligence and hardware control from NexOS

TECHNICAL SPECIFICATION

THERMAL SENSORS	JPTX-EVO2-100-W	JPTX-EVO2-105-W	JPTX-EVO2-150-W	JPTX-EVO2-180-W	JPTX-EVO2-225-W	JPTX-EVO2-300-W
Focal Length	20mm to 100mm	26mm to 105mm	30mm to 150mm	30mm to 180mm	25mm to 225mm	20mm to 300mm
Horizontal FOV	22° (W) to 4.4° (T)	16.9° (W) to 4.2° (T)	14.7° (W) to 2.9° (T)	14.7° (W) to 2.4° (T)	17.6° (W) to 2.0° (T)	22.0° (W) to 1.5° (T)
F Number	F1.1	F1.6	F1.2	F1.2	F1.5	F1.5
Optical Zoom (Continuous)	5x, Motorised	4x, Motorised	5x, Motorised	6x, Motorised	9x, Motorised	15x, Motorised
Digital Zoom	20x					
Focus	Push autofocus, continuous autofocus, continuous autofocus with automatic ROI, manual					
Detector Type	Uncooled VOx microbolometer, $\leq 50\text{mK}$ (at 25°C, F1.0), 50Hz, 12µm, 640 x 512					
Spectral Band	7.5 to 14µm (LWIR / 8 to 14µm)					
Image Processing	Correction (NUC), noise filtering, polarity control, Digital Detail Enhancement (DDE), polarity: white hot / black hot, 18x colour palettes					
Housing Weight (Typical)	18.3kg / 40.3lb				25kg / 55.1lb	
Housing Size (Typical)	L740 x W298 x H249mm				L1000 x W319x H292mm	

HD VISIBLE SENSORS		
Focal Length	4.3mm to 129mm	15.2mm to 500mm
Horizontal FOV	63.7° (W) to 2.32° (T)	23.42° (W) to 0.78° (T)
F Number	F1.6 to F4.7	F3.0 to F32
Optical Zoom (Continuous)	30x, Motorised	33x, Motorised
Digital Zoom	20x	
Focus	Push autofocus, continuous autofocus, continuous autofocus with automatic ROI, manual	
Image Sensor	1/2.8" CMOS Exmor (2.13MP), full HD 1080p (1920 x 1080)	1/1.9" CMOS Sensor (2.38 MP), full HD 1080p (1920 x 1080)
Min. Sensitivity	Colour 0.01 lux Mono 0.0008 lux (high sensitivity mode)	Colour 0.05 lux F1.2 gain of up to 60dB / 0.005 lux F1.2 / AGC @ 42dB Mono 0.002 lux F1.2 gain of up to 60dB / 0.0002 lux F1.2 / AGC @ 42dB (accumulation 25 times)
Image Processing	Digital noise reduction	
Housing Weight (Typical)	17kg / 37.5lb	19kg / 41.9lb
Housing Size (Typical)	L740 x W298 x H249mm	L900 x W290 x H246mm

NexOS*	
NexOS Core (Standard)	NexOS Core includes: Push autofocus, continuous autofocus, continuous autofocus with automatic ROI, digital zoom, image contrast enhancements, CLAHE, de-fog, electronic image stabilisation (2D), static overlays, remote upgrades, remote diagnostics
NexOS Performance Pack (Cost Option)	In addition to NexOS Core, includes: Electronic image stabilisation (3D), target tracking, target classification, event detection, dynamic overlays, dynamic boresight, dynamic absolute positioning, edge recording
NexOS Gyro Pack (Cost Option)	In addition to the NexOS Performance Pack, includes: Jaegar NexOS Gyro Pack
NexOS GPS Positioning Pack (Cost Option)	In addition to the NexOS Performance Pack, includes: Jaegar NexOS GPS Positioning Pack

JAEGAR PAN AND TILT UNIT (PTU)*	ELECTRICAL AND MECHANICAL		
Pan Range / Velocity	360° Continuous; 0.001° - 200° per second**	Video Output	RTSP, ONVIF from PTU (H.264, H.265 and MJPEG)
Tilt Range / Velocity	-90° to +90°; 0.001° - 200° per second**	Ethernet	Command and control of all functions including streaming of H.264, H.265 and MJPEG video
Accuracy	0.0001° / 0.0017 mRad	RS485	Pelco D command and control with custom procedural extensions
Repeatability	0.0001° / 0.0017 mRad	Boresight with Rapid Release Mechanism	Anodised aluminium, quick release bracket with micro adjustment boresight mechanism
Actuation	Custom stepper motors	Input Voltage	48VDC
Speed Control	Zoom dependent speed control (subject to payload)	Housing Material and Finish	Anodised aluminum, thermal and visible sensors (only) are nitrogen purged, hydrophobic coating on visible sensor window, white powder marine grade paint finish (other colours are available upon request)
Presets Types	Procedural, Positional	IP Rating	IP67
Number of Presets	255	Temperature Range	-32°C (-25°F) up to 65°C (149°F) (-40°C/°F with optional Cold Weather Pack)
Protocols	Pelco D, ONVIF Profile-S (custom available on request)		
Interface	RS485, ONVIF Profile-S, Serial \rightarrow IP		
Positioning	Absolute positioning feedback		
Through Shaft	Yes		
PTU Weight (Typical)	26.4kg / 58.2lb (excluding mounts, brackets, through shaft and payloads)		
PTU Size (Typical)	H434 x W275 x D336mm (excluding mounts, brackets, through shaft and payloads)		

OPTIONALLY AVAILABLE

HD Low Light Visible Sensor	16.7mm to 2000mm (21.2° W to 0.23° T) (with x2 extender on) 1/1.9" CMOS Sensor (2.38MP), full HD (1920 x 1080), colour 0.005 lux at F1.2 / 42dB mono 0.0002 lux at F1.2 / 42dB
HD Ultra Low Light Visible Sensor	15.2mm to 500mm (32.39° W to 1.0° T) or 20mm to 2400mm (24.87° W to 0.23° T) (with x2 extender on) 2/3" CMOS Sensor (2.2MP), full HD (1920 x 1080), colour 0.005 lux at F1.4 / 50IRE, mono 0.00000001 lux at F1.4 / 50IRE
4K Visible Sensor	4.4mm to 88.4mm (70.2° W to 4.1° T) 1/2.5" CMOS Sensor (8.51MP), 4K/QFHD (3840 x 2160), colour 0.4 lux (colour 0.06 lux with slow shutter on)
Technologies	Long range white light (up to 3.5km) or infra-red illuminators (up to 2.5km), laser illuminators, long range acoustic hailer (up to 2km), digital magnetic compass, SWIR sensors, LRF (laser range finders) up to 20km, wiper for visible sensor
Jaegar PTU Aux Payload Connectors	QTY 2x External connectors allowing for a selection of the following: Power outputs -12VDC, 6A / 24VDC, 15A / 48VDC, 10A Network output - Cat5e, 10/100 Base T
Top Mount	Top mount extension / plate (for RADAR or top mount payload)

* Subject to payload types.

** Maximum pan and tilts speeds may be restricted depending on the payload types.