



EOS-ZS20 Multi-Sensor Thermal Camera with Gyroscopic Image and Video Stabilization, Ship-Mounted

The EOS-ZS20GIS lightweight multi-band photoelectric platform is the result of independent research and development by HP. It is a long-range photoelectric detection system specially designed for use on ships and vehicles. It features high wind resistance and outstanding performance. Multispectral detection modules such as high-definition visible light cameras, cooled infrared thermal imaging cameras and laser rangefinder modules can be integrated, and laser illumination modules can be swapped as needed, enabling target detection, positioning, tracking, identification and traceability in all weather conditions, at any time and across all dimensions.

The ZS20 embedded multi-sensor camera combines an HD visible light camera, an uncooled thermal imaging camera, a laser rangefinder, automatic target tracking, gyro stabilization, intelligent analysis and precise electronic control. It is designed for embedded video acquisition, marine surface surveillance, key target alerting, radar networking and other long-range detection applications. The system enables target discovery, positioning, tracking, identification and tracking under all weather conditions, at any time and across all dimensions. The minimum detection range for small vessels and islands can reach up to 8 km.

The military-grade housing is manufactured from high-strength aluminum alloy. The spherical, low-wind-resistance design provides high wind resistance with minimal vibration. Thanks to the double-layer internal and external "triple protection" technology and nitrogen-filled vacuum sealing technology, the overall protection rating of the unit reaches IP66. A dedicated salt-fog protection design further achieves a C5-M protection level, effectively ensuring the stable and long-lasting operation of the equipment under the harsh conditions of the marine environment.

Features

Wide detection spectrum

Blind-spot-free detection and full-dimension coverage

High control precision

Excellent tracking performance

High stability through integrated gyroscope

High degree of intelligence

Strong environmental adaptability



EOS-ZS20 Long-Range Marine PTZ Thermal Imaging Camera

Models	EOS-ZS20GIS
Distance	The recognition distance to the boat is 8000m, to the car is 6000m, to the person is 3000m
Thermal imaging	<ol style="list-style-type: none"> 1.Detectors: refrigerated focal plane array MCT detectors/uncooled vanadium oxide focal plane detectors 2.Resolution: 640 × 512 3.The wavelength is 3.7 μm ~ 4.8 μm/8 μm ~ 14 μm 4.NETD: 20mK 5.Lens: 30-300mm/25mm-75mm 6.Lens control: Electric Zoom; Manual/Automatic Focus, 3A adaptive active focus algorithm, support a variety of trigger mode, accurate high-speed; 3CAM mode and AS + DOE opto-mechanical structure, high infrared transmittance, no empty focus and small axis in the zoom process 7.Image Enhancement: SDE Digital Image Enhancement Technology, enhance image details, support 255 levels of thermal image enhancement adjustment 8.Pseudo-color polarity: 16 pseudo-colour images, hot black/white two polarity 9.Image parameters: AGC automatic gain control, brightness, contrast 10.Electronic doubling: 1.0-8.0 × continuous doubling (step size 0.1), support optical electron relay doubling, support global hawk-eye map 11.Range ruler: Support Range Ruler 12.Bad Spot Correction: support bad spot correction function 13.Image Correction: support manual correction, background correction, automatic correction interval 14.Strong Light Protection: supports protection against Sun Damage
Visible Light	<ol style="list-style-type: none"> 1.Sensor type: back-lit ultra-low-illumination star-level CMOS 2.Minimum illumination: colour: 0.0005 lux; black and white: 0.0001 lux; 0lux (IRON) 3.Lens: 7-330mm HD Electric Zoom; Manual/Automatic Focus, 3A adaptive active focus algorithm, support a variety of trigger modes, high-speed precision 4.Image Processing: support white balance, electronic shutter, frame accumulation, backlight compensation, strong light suppression, 2D/3D



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Visible Light	<p>digital noise reduction, electronic anti-shake, wide dynamic, heat wave drift suppression</p> <p>5.Diurnal light: 0.4-0.75 um visible spectrum window and 0.8-0.95 um near-infrared spectrum window day and night independent double light window, improve the signal-to-noise ratio of imaging light and Stray Light</p> <p>6.Support electronic fog transmission, optical fog transmission</p>
Laser Ranging (optional)	<p>1.Range: 50-6000 meters</p> <p>2.Ranging accuracy: ± 3 meters</p> <p>3.Range frequency: 0.2 Hz</p> <p>4.Laser wavelength: 1570nm</p>
Laser lighting (optional)	<p>1.Laser type: new infrared GHT-III high-definition flood uniform light source, no speckle particles</p> <p>2.Wavelength: 810nm Military Grade Infrared Laser</p> <p>3.Illumination Angle: $2^{\circ} \sim 40^{\circ}$, DSS digital step illumination Angle Control Technology</p> <p>4.Homogenization: the patented technology of super-homogenization for GHT-II high-definition lens group, the luminance equilibria of the full-focus segment are all $> 92\%$</p> <p>5.Laser Security: ZQB laser beam security processing patent technology, in line with the international IEC 60825 safety standards</p>
Audio and video	<p>1.Thermal image resolution: 1920×1080; 1280×1024; 1280×960; 1024×768; 1280×720; 704×576; 640×512; 640×480; 400×300; 384×288; 352×288; 352×240</p> <p>2.Visible light resolution: 2592×1520; 2560×1440; 1920×1080; 1280×1024; 1280×960; 1024×768; 1280×720; 704×576; 640×512; 640×480; 400×300; 384×288; 352×288; 352×240</p> <p>3.Video Coding: H. 265/h. 264/MJPEG, supports multiple streams</p> <p>4.Video rate: 32kbps \sim 16Mbps</p> <p>5.Audio Coding: G. 711A/G. 711U/G726</p> <p>6.Image Flip: left/right/up/down/diagonal</p> <p>7.OSD settings: Support Channel name, time, cloud position, field of view angle, focal length of OSD display settings, support preset bit name settings</p>



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Intelligent function	<ol style="list-style-type: none">1.Intelligent Analysis: support for intrusion detection, cross-border detection, entry/exit zone detection, movement detection, loitering detection, people gathering, rapid movement, target tracking, item legacy, item retrieval; Human/vehicle target detection, face detection; support for 16 regions; support for intrusion detection, vehicle filtering function; support for target temperature filtering function2. Automatic tracking: support single scene tracking/support multi-scene tracking/support panoramic tracking/support alarm linkage tracking3.Intelligent Information Fusion: support for 512 AR intelligent information fusion, Fire Point, intelligent analysis video identification information fusion, support azimuth angle, field of view, focus, multiple information fusion4.Image Fusion: support 18 dual-light fusion mode, support picture-in-picture function5.Alarm management: Support Alarm capture upload
Enhancements	<ol style="list-style-type: none">1.Ranging function: support passive ranging2.Strong light protection: support, anti-sunburn function3.Temperature Correction: non-thermal design, imaging clarity is not affected by temperature4.Scene mode: support multi-configuration scene, adapt to different environment application5.Auto-focus tuning: support remote auto-focus precision parameter adjustment, adapt to different scenarios6.Day and Night Cruise: Day and night group cruise different preset group, day cruise 1-40 preset position, night cruise 41-80 preset position, according to the light-sensitive state automatically switch day and night, adapt to different space-time scene7.Lens servo: support lens preset position, focal length return, focal length positioning function8.Power-off memory: support can restore the position before power-off, pre-position state, cruise state, line scan state9.Off-line continuous transmission: support10.Camera diagnosis function: support network alarm, support IP conflict alarm, support illegal access alarm (illegal access times, lock time can be set) , support SD card abnormal alarm (SD space is insufficient, SD card error, no SD card) , video occlusion alarm, anti-sun damage (support threshold, occlusion time can be set)



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<p>Enhancements</p>	<p>11.Life Cycle Management: Health Index record function, support working time, shutter times, working temperature, limit temperature, zoom lens and the cumulative working time of each motor, etc.</p> <p>12.Remote Maintenance: with fault query, self-check, remote restart function; online upgrade, remote upgrade</p> <p>13.Keyframe settings: support for 100-level keyframe interval adjustable</p> <p>14.Configuration File: Support Configuration File Import, export function</p> <p>15.Web Access: support WEB full-featured configuration, remote online upgrades</p>
<p>Security control</p>	<p>1.Support illegal access alarm: illegal access times, lock time can be set</p> <p>2.Support three levels of user rights management, administrators, operators, ordinary users</p> <p>3.Security mode: authorized user name and password, support IP whitelist and blacklist, Mac whitelist and Blacklist</p> <p>4.User error logon lock</p>
<p>Servo turntable</p>	<p>1.Structure: spherical, multi-dimensional free-form surface shape, small wind resistance, strong anti-shake, can withstand 12 levels of strong wind</p> <p>2.Windows: double/triple windows, 2/3 band sensors can be carried at the same time</p> <p>3.Horizontal range: $N \times 360^\circ$ continuous rotation</p> <p>4.Pitch Range: $-45^\circ \sim +90^\circ$, with soft limit function, program can be set</p> <p>5.Rotation Speed: horizontal $0.01^\circ \sim 80^\circ/s$, pitch $0.01^\circ \sim 60^\circ/s$</p> <p>6.Acceleration: level $120^\circ/s^2$, pitch $120^\circ/s^2$</p> <p>7.Speed self-adapting: it has the function of intelligent induction and speed changing, and supports the function of lens focal length speed self-adapting</p> <p>8.Driving mode: High Torque Rare Earth permanent magnet synchronous motor direct drive, high speed start-stop</p> <p>9.Positioning accuracy: better than 0.02°</p> <p>10.Positioning time: less than 4s</p> <p>11.Zero setting: support level and pitch zero setting</p> <p>12.Preset position cruising: 3000, support 16 cruising routes, each can support 256 preset position</p> <p>13.PATH scan: Support Preset Point Cruise, day and night cruise, line scan, frame scan, apple peel scan, scan speed can be set</p>



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Servo turntable	<p>14.Watch: preset position/pattern scan/cruise scan/vertical scan/frame scan/panoramic scan/apple peel scan/horizontal fan scan</p> <p>15.Motor Protection: turntable block protection, high reliability</p> <p>16.Gyro stabilization: Two-axis gyro stabilization, pitch $\leq \pm 10^\circ$, period > 6 seconds, stabilization accuracy $\leq 2\text{mrad}$ (RMS)</p>
Electrical interface	<p>1.Network interface: 1-way RJ45,10/100base-t adaptive</p> <p>2.Network protocols: support HTTP, HTTPS, FTP, SMTP, DNS, NTP, RTSP, RTCP, RTP, TCP, UDP, ICMP, DHCP network protocols; support ONVIF and GB28181 protocols</p> <p>3.Secondary development: provide free SDK, easy to use or convenient secondary development</p> <p>4.Physical interface: alloy waterproof aviation plug</p> <p>5.Optical network: (optional built-in fibber module, single-mode fibber output, improve anti-interference)</p>
Power consumption	<p>1.Power supply: DC24V, with ultra-wide input power adapter, AC90V-305V to DC24V</p> <p>2.Power consumption: peak power consumption $\leq 250\text{W}$, stable power consumption $\leq 60\text{W}$</p>
Environmental indicators	<p>1.Working Temperature: $-40^\circ\text{C} \sim +60^\circ\text{C}$</p> <p>2.Storage Temperature: $-45^\circ\text{C} \sim +70^\circ\text{C}$</p> <p>3.Humidity: < 90%</p> <p>4.Lightning protection: built-in surge protection for interface circuit, 6000V</p> <p>5.Anti-salt spray: at PH 6.5-7.2, continuous spray 96 hours, no change in the surface</p> <p>6.Protection Level: IP67</p>
Size and weight	<p>1.Size: 280mm × H430MM</p> <p>2.Total weight: $\leq 18\text{kg}$</p>



EOS-ZS20 Features in pictures

The HP-ZS20GIS multi-band photoelectric turntable, designed for light-duty use, has been entirely designed and developed by HP. It is a long-range photoelectric detection system specifically designed for use on ships and vehicles. It offers good wind resistance and high performance.





EOS-ZS20 Features in pictures

Various colours are available.

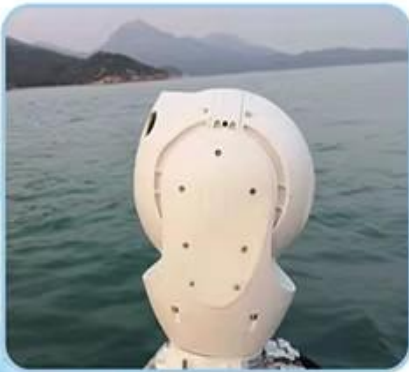




EOS-ZS20 Features in pictures

Features:

Wide detection spectrum: integrated high-definition visible light, cooled infrared thermal imaging, laser telemetry and multi-band detection complement one another; the combination of active and passive detection, along with the aggregation and fusion processing of data from multiple sources, enables surveillance requirements to be met day and night and in all weather conditions.





EOS-ZS20 Features in pictures

High resistance to environmental conditions: high-strength aluminium alloy, 'triple-seal' technology with double internal and external walls, IP67 rating, rain and dustproof, resistant to corrosion and electromagnetic interference, suitable for long-term use in harsh maritime environments.

Optional gyroscopic stabilisation and shock absorbers.



Application scenarios:



EOS-ZS20 Features in pictures

It can be installed on various types of transport, police and combat vessels for maritime reconnaissance, target designation, search and rescue, anti-smuggling operations, evidence collection, environmental monitoring, auxiliary navigation and other missions, and can also be used for vehicle and tripod mounting.

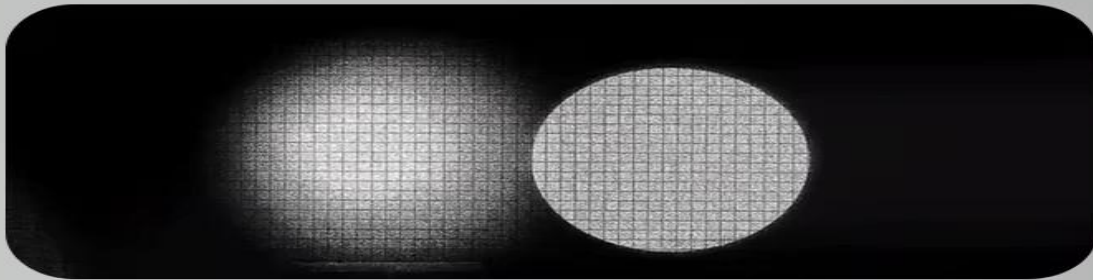


LASER CAMERA

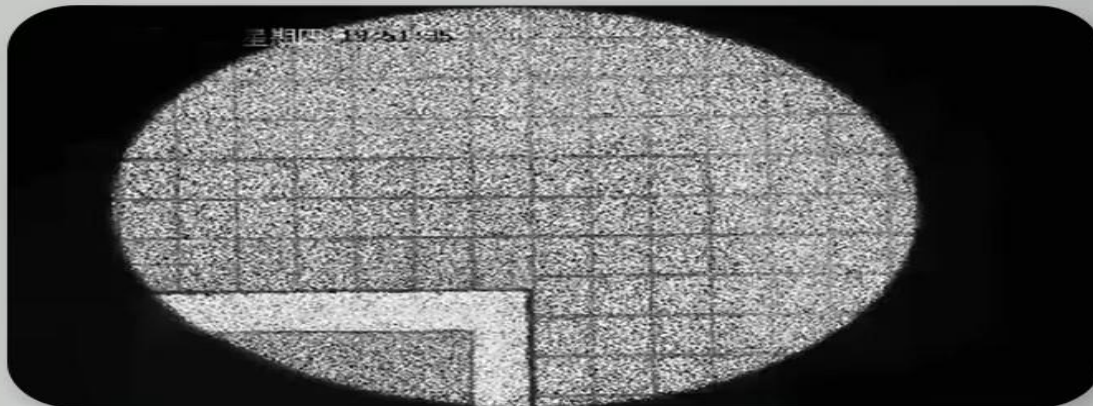
It is a high-end photoelectric equipment that uses laser active lighting and imaging technology to convert (enhance) invisible targets at night.

CORE TECHNOLOGY

1 Homogenization HD laser lighting technology



2 Patent technology of elliptical laser spot



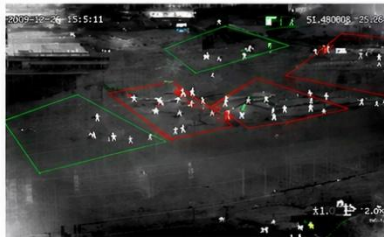
3 Daytime perspective car window technology



EOS-ZS20 Features in pictures



Continuous Zoom



Intrusion Zone – Mixing Lines – Human Detection – Vehicle Detection



Thermal image tracking to identify people/vehicles/drones/boats



