



**GeoSat**  
**Microwave**

- Navigation;
- Fishery and aquaculture monitoring;
- Seaport & airport security and safety monitoring;
- Lake, river & water system monitoring;
- Mariculture monitoring.



## Long Range HD Infrared Laser Imaging Camera

Model: GSM3202M

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<b>Detection</b>	
Day: 2 km;	
Night: 1 km	
<b>Laser</b>	
Laser Light Source	<ol style="list-style-type: none"> <li>1. Consumption: 10W;</li> <li>2. Wavelength: 810nm;</li> <li>3. Laser angle: 1°~20°;</li> <li>4. Encapsulation: the illuminator is sealed with inert gas to prevent oxidation;</li> <li>5. Using distributed laser design, laser emitter and high-temperature components are directly affixed to the shell's cooling fins, that have stronger heat dissipation capability if compared with the modular laser.</li> </ol>
Laser Len	<ol style="list-style-type: none"> <li>1. Lens form: 25X f0.8 - 20mm ultra-short focal zoom patented technology, laser 400 micron cross-section imaging lens;</li> <li>2. Transmittance: multi-layer NIR Anti-reflective coating, high efficiency laser coupling;</li> <li>3. Homogenization: GHT-II super homogenization HD illumination patented technology, full focus spot brightness equilibrium is &gt; 92%;</li> <li>4. Laser Safety: Using ZQB safety laser beam processing patented technology, which complying with International IEC60825 Safety Standard;</li> <li>5. Focus Angle Positioning: Precision digital drive positioning.</li> </ol> <p><i>Spot form: (Optional: elliptical spot illuminator - the spot always keeps elliptic in the process of change, better matching with 16:9 HD camera picture, where the laser utilization rate increased by 30%)</i></p>

Angle and distance matching	<ol style="list-style-type: none"> <li>1. Matching method: Automatic tracking or manually fine-tuning intelligent matching method;</li> <li>2. Synchronization control: DSS digital stepping illumination angle control technology, 0.1 degree precise servo control;</li> <li>3. Response time: Z-super laser angle and imaging ratio matching algorithm, tracking response time less than 500 ms;</li> <li>4. Synchronization effect: Laser synchronization effect adjusts the modes of cut-in, cut-out and full-screen coverage, which can be set arbitrarily according to the scene remotely.</li> <li>5. Optical axis alignment: SLM double optical axis self-locking alignment device, the accuracy can reach 0.01 degrees, reserve external alignment window, without cover removal maintenance</li> </ol>
Laser Switch	<ol style="list-style-type: none"> <li>1. Control mode: Mandatory opening, mandatory closing and photosensitive automatic control, can be set remotely.</li> <li>2. Photosensitive synchronous control: independent photosensitive control circuit, precise synchronous switching of laser switch and camera into day-night mode.</li> <li>3. Data Processing: Built-in Intelligent Anti-Strong Light Jamming Algorithms, Shielding the False Switches Caused by Strong Light at Night</li> </ol>

### Visible Camera

#### Video camera:

- ✓ Sensor type: 1 / 2.8 "progressive scan CMOS
- ✓ Scanning system: Progressive scanning
- ✓ Signal system: PAL / NSTC
- ✓ Video output: Network coding output
- ✓ Resolution:
  - 50Hz: 25FPS (1920x1080); 60Hz: 30fps (1920x1080)
  - 50HZ:25fps(1280x720) 60HZ:30fps(1280x720)
- ✓ Minimum illumination color: 0.05Lux @ (f1.6, AGC on)
- ✓ Black and white: 0.01LUX @ (f1.6, AGC on)
- ✓ SNR: >52dB

#### Camera lens:

- ✓ Focal length: 8 ~ 320mm, 40X optical zoom
- ✓ Aperture value: F1.6-6.1
- ✓ Horizontal field of view angle: 35.5° ~ 2.0° (wide angle telescope)
- ✓ Close range: 10 mm ~1500 mm (wide angle - far sight)
- ✓ Zoom speed: About 5.3 seconds (optical, wide-angle telescope)
- ✓ Day night conversion mode: ICR filter

**Parameter setting:**

- ✓ Focus mode: Auto / manual / primary focus
- ✓ Exposure mode: Auto exposure / aperture priority / shutter priority / manual exposure
- ✓ Day and night mode: Auto / color / black and white
- ✓ Electronic shutter: 1/1s to 1/30000s
- ✓ White Balance: Auto 1 / Auto 2 / indoor / outdoor / manual / sodium lamp / fluorescent lamp
- ✓ Backlight compensation: Off / On
- ✓ Exposure compensation: Level 10 adjustable
- ✓ Gain: 16 level adjustable
- ✓ Bad point compensation: Support
- ✓ Wide dynamic: Close / Open, adjustable in 15 levels
- ✓ Digital noise reduction: 3D
- ✓ Lens initialization: Built-in
- ✓ Image quality adjustment: Brightness, contrast, sharpness and saturation can be adjusted
- ✓ Digital zoom: 12
- ✓ Fog Penetration: Support
- ✓ Watch: Support
- ✓ Power down memory: Support
- ✓ Pattern scanning: Support

**Network function:**

- ✓ Video compression H.265/H.264
- ✓ The storage function: Supports micro SD storage
- ✓ Image setting movement function: Can be adjusted through client or IE browser
- ✓ Intelligent alarm: Mobile detection, occlusion alarm, memory full, memory error /, audio abnormality, face detection, cross boundary detection, area intrusion detection.
- ✓ Support protocols: TCP / IP, HTTP, DHCP, DNS, DDNS, RTP, RTSP, PPPoE, SMTP, NTP, UPnP, SNMP, FTP, 802.1x, QoS, HTTPS, IPv6 (SIP, SRTP optional), GB28181, EHOME
- ✓ Interface protocols: ONVIF, PSIA, CGI, ISAPI, SDK
- ✓ Double code stream: 960P + D1
- ✓ Heartbeat function: Support
- ✓ Security: Mechanism password protection, multi-user access control

- ✓ External interface: 36pin FFC (including network interface, RS485, RS232, CVBS, SDHC, alarm in / out, line in / out, power supply)
- ✓ External communication: RS232 interface, RS485 interface, PELCO protocol
- ✓ Audio coding: G.722.1, G.711-A law, G.711-U law, MP2I2, G.726, AAC

**General specifications:**

- ✓ Power supply: DC12V ± 10%
- ✓ Operating temperature and humidity: -10°C ~ 60°C, less than 90% RH
- ✓ Power consumption: Static 2.5W, dynamic 4.5W
- ✓ Dimension: 147 × 56 × 60mm
- ✓ Weight: 495g

Fog Penetration (Optional)	Optical filtering and AFR optoelectronic enhanced image processing technology, color penetrate fog
LPR (Optional)	Avoid strong light, license plate recognition

**Housing**

1. Material: Integral aluminum alloy housing, sealed and waterproof;
2. Structure: integration double window design;
3. Window glass: 4mm microcrystalline infrared high-efficiency transparent HLIN optical glass, transmittance > 98%;
4. Surface spraying: PTA three-resistance coating, anti corrosion (optional);
5. Temperature control: The whole system adopts thermal balance design + wide temperature electronic and optoelectronic devices, with built-in heating and heat dissipation components, which can work in low temperature and high temperature environment.
6. Weather proof: IP66, water-proof, dust-proof;
7. Connector : Aviation Water-Proof Connector.

**PT**

1. Load duty : 30kg CNC Pan-Tilt;
2. Pan: 0 - 360° continuously, Tilt: -70°~+30°
3. Rotation speed : Pan: 0.01~60°/S, Tilt: 0.01~30°/S, support with lens focus speed adaptive function;
4. Preset: 255 preset, support lens zooming and focus preset;
5. Accuracy: ±0.1°;
6. Cruise Line-Scan: support 6 cruise line, 1 apple-skin scan, 1 line scan;

7. Watching: Pre-positioning/Automatic Cruise Route/Automatic Scanning Route
8. Power-off memory: support (restoring pre-power-off position, preset point status, cruise status, line-scanning status)
9. Azimuth Information: Support angle query, return and positioning;
10. Zero correction: support for north-to-zero remote correction function.
11. Power consumption: about 80W
12. Weight: 15kg

### Enhancements (Optional)

1. Auto-focus tuning: support remote auto-focus precision parameter adjustment, adapt to different scenarios;
2. Day and night cruise: D/N cruise with different preset groups, day cruise 1 - 40 preset, night cruise 41 - 80 preset, according to the photosensitive status will automatically D/N switching, adapt to different space-time scenarios;
3. Temperature Compensation: TCS automatic rear focus compensation function, adapts to a wide range of high and low temperature changed environment, the rear focus remained clear always;
4. Remote Maintenance: Support the remote upgrade of embedded programs, convenient for after-sales maintenance;
5. *Wipers: (Optional: built-in wipers);*
6. *Window cleaning: (Optional: external small sprinkler, self-storage water, freezing without damage, won't affect the camera's function);*
7. *Lens Servo: (Optional: Lens Focus Field of View Return/Location Function);*
8. *Extension module: (Optional: extended functions such as GPS, laser ranging, etc.);*
9. *Extended interface: (RS422/485 and analog video can be reserved, azimuth data can be returned for radar, GIS linkage positioning, or third-party intelligent analysis);*
10. *Optical network: (Optional: built-in fiber module, single mode fiber output, improve anti-jamming)*

### Intelligence Function (Optional)

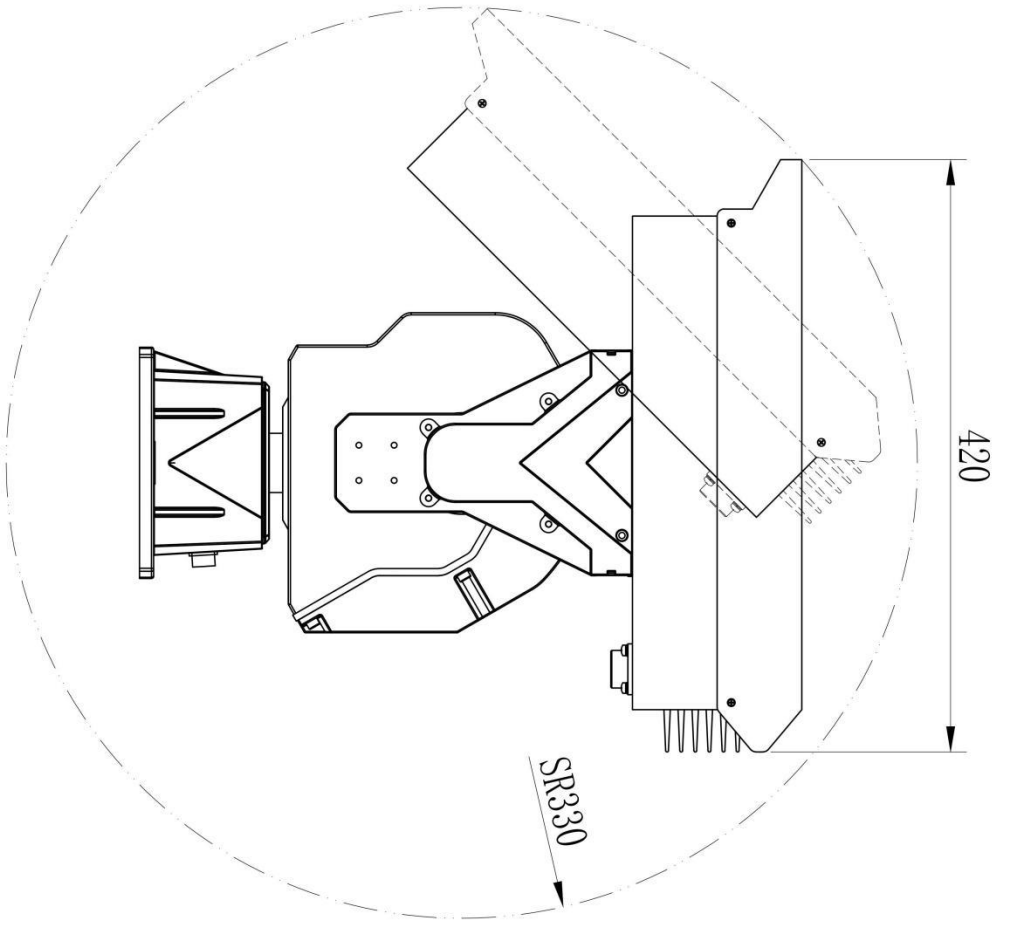
1. Regional intrusion detection support;
  2. Border-Crossing intrusion detection support;
  3. Panoramic stitching;
  4. Radar linkage;
  5. Auto-tracking support;
  6. Multi-scene group cruising support;
  7. 3D zooming/positioning selection;
- (The above functions need to be implemented in conjunction with general software and network modules)

### Other Specifications

Protocol	<ol style="list-style-type: none"> <li>1. Network interface: RJ45. 10/100 Base-T adaptive (integrated video output and RS485 control)</li> <li>2. Network protocol: TCP/IP, UDP, IPv4/v6; support HTTP, RTP, RTSP, NFS, DHCP, NTP, SMTP, SNMPv1/v2c/v3, UPNP, PPPoE, DNS, FTP; support PSIA, ONVIF2.0, GB28181</li> <li>3. Support Onvif 2.0 a</li> <li>4. Pelco-P、Pelco-D baud rate 2400、4800、9600、19200(optional)</li> <li>5. Power supply: AC/DC24V, Anti-reverse connection protection</li> </ol>
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	6.Interface : aviation waterproof connector.
Environmental index	<ol style="list-style-type: none"> <li>1. Working temperature: - 25 ~+60 (- 40 Optional);</li> <li>2. Storage Temperature: -45 ~+70;</li> <li>3. Humidity: &lt;90%;</li> <li>4. Seismic resistance: 0.2g (in accordance with GB/T15211-2013 5.4 harsh grade 2);</li> <li>5. Impact resistance: 15g (in accordance with GB/T15211-2013 5.3 harsh grade 3);</li> <li>6. Lightning protection: built-in surge protection interface circuit, 4000V power supply, 2000V signal;</li> <li>7. Salt spray prevention: continuous spray for 96 hours at pH 6.5 to 7.2, no change in surface.</li> <li>8. Protection Level: IP66</li> </ol>
Total Weight	≤25kg (PT included)
Total Consumption	120W





Unit: mm

