

Middle Range Multi Sensor Thermal Camera System

The DM21 series camera is designed for day and night monitoring, intelligent analysis, and active defense. Based on the latest sixth-generation uncooled infrared thermal technology, it is composed of thermal imaging module, high-definition visible light module, intelligent analysis module, laser night vision system, PTZ precision transmission device and control mechanism. The camera built-in intelligent algorithms and AI learning system, it can take countermeasures in real time with sound and light alert, integrating detection, analysis, and so on. Completely overturning the traditional human and technical defense model.



The infrared thermal imaging camera module adopts the high sensitivity 640*512/384*288 resolution uncooled vox sensor and mini-infrared lens, with advanced digital circuits and image processing algorithms, can detect the distance of 8.6km in day and night; The laser night vision system adopts a full HD color and B/W dual mode low illumination CMOS sensor, smart HD day/ night lens and a high-efficiency miniaturized laser illuminator, work for 24 hours surveillance ; The whole camera system adopts an integrated quasi-spherical design, horizontal 360° continuous rotation, tilt $\pm 90^\circ$ rotation. The product is embedded with AI intelligent video analysis block module, and adopts advanced intelligent image processing algorithms, which can distinguish the behavior of monitored objects in different environments; the built-in advanced intelligent tracking module which can continuously track moving or stationary objects, and automatically adapt to various complex detection environment.

The camera's shell is made of super aluminum alloy, IP67 protection grade; spherical design, strong wind resistance; surface treatment uses PTA three-proof coating, strong corrosion resistance; able to operate stably for a long time in harsh outdoor environments such as sand, dust, high winds, and salt fog.

Feature



1. All-weather 24 hours work: using multi-mode detection methods: intelligent thermal image, high-definition visible light, laser night vision system, to achieve all-time, all-weather large-range target rapid search and details observation.
2. Highly intelligent: support hotspots, smoke and fire alarms, temperature detection; support area intrusion detection; support vehicle, boat and human detection, classification and identification; support target tracking, screening and filtering; support AR intelligent information fusion linkage.
3. Active defence: support for loud speaker + flashing lights to deter or deny criminals.

4. Pitch: $\pm 90^\circ$, horizontal 360° continuous rotation, full coverage of 720° three-dimensional space.
5. Horizontal: 0.01° /s to 100° /s; pitch: 0.01° /s to 80° /s, high speed start/stop, focal speed adaptive, accurate target positioning.
6. Self-diagnosis and self-recovery: supports full life management, fault self-test, front-end storage, network disconnection renewal, power failure memory, remote restart/upgrade, significantly improving

the use experience and reducing the use cost.

7.Light weight design: weight $\leq 10\text{kg}$, easy to install and maintain.

8.The whole machine is made of super strong aluminium alloy and quasi-spherical turntable technology, resistant to strong winds, IP67 protection, rainproof and dustproof, which can adapt to various harsh environments.



Auto Track



Intrusion Detection



High Resolution



Ranging Scale

Technical specification

Model	EMSDM21-7411-418LFZ
Detection	vehicles:6.5km; human: 2.5km;
Identification	vehicles:1.8km; human: 800m
Thermal imaging Camera system	1.Detector: The 6 th generation uncooled Vox detector
	2. Wavelength: 8~14 μm
	3. NETD: 40mK (@25 $^{\circ}\text{C}$ F1.0)
	4. Image enhancement: SDE digital image enhancement technology, enhance the details of the image, support 255 thermal image enhancement adjustment
	5.Pseudo-color polarity: 16 kinds of pseudo-color images, hot black/hot white
	6.Image parameters: AGC automatic gain control, brightness, contrast
	7.Electronic zoom: 1.0~8.0 \times continuous zoom, support global eagle eye diagram
	8. Ranging ruler: support for range finding ruler
	9.Dead pixel correction: support the function of dead pixel correction
	10.Image correction: support manual correction, background correction, automatic correction time interval, adjustable Gamma correction parameters
	11.Strong light protection: support anti-sun damage
	12.Non-uniformity correction: automatic/hand
	25~75mm zoom lens
	640*512 resolution
	8X digital zoom, 3X continuous zoom
Visible Camera	1.Sensor type: ultra-low illumination starlight CMOS
	2.Minimum illumination: color: 0.0005Lux @ black and white: 0.0001Lux @ 0Lux (IRON)
	3.Lens: 7mm~330mm, 47X optical zoom,16 times digital zoom.
	4.Image processing: white balance, electronic shutter, frame accumulation, backlight compensation, glare suppression, 2D/3D digital noise reduction, electronic anti-shake, wide dynamic.
	5.Day and night light: 0.4-0.75 μm visible light wide spectral window and 0.8-0.95 μm near-infrared spectral window day and night independent double light window, improve the signal-to-noise ratio of imaging light and stray light
	6.Support electronic fog penetration and optical fog penetration
Laser Night Vision	1.Laser Homogenization: new infrared GHT-III HD flood light source, no scattered particles
	2.Laser angle: 3 $^{\circ}$ ~65 $^{\circ}$ switchable
	3.Laser distance: 300m

Video audio	<p>1.Thermal camera resolution: support 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 camera 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 encoding: H.265/H.264/MJPEG, multi-stream support</p> <p>4.Video code rate:32Kbps~16Mbps</p> <p>5.Audio encoding: G.711A/ G.711U/G726</p> <p>6.Image flip: left and right / up and down / diagonal</p> <p>7.OSD settings: Support OSD display settings for channel name, time, gimbal orientation, field of view, focal length, and preset bit name settings</p>
Intelligent functions	<p>1. Fire detection alarm: threshold 255 levels, target size, number of targets 1-16 can be set, automatically select the most prominent target display, hot spot tracking</p> <p>2. Intelligent analysis: support intrusion detection, boundary crossing detection, entering/leaving area detection, motion detection, wandering detection, people gathering, fast moving, target tracking, items left behind, items taken; people/vehicle target detection, face detection; and support 16 area settings; support intrusion detection people, vehicle filtering filtering function; support target temperature filtering filtering function</p> <p>3. Automatic tracking: support single scene tracking/support multi-scene tracking/support panoramic tracking/support alarm linkage tracking</p> <p>4. Intelligent information fusion: support 512 AR intelligent information fusion, support fire point, intelligent analysis of the recording logo information fusion, support orientation angle, field of view angle, focal length, multiplier information fusion</p> <p>5.Image fusion: support 18 kinds of double light fusion mode, support picture-in-picture function</p> <p>6.Alarm management: support for alarm capture and upload</p>
Enhanced Features	<p>1. Distance measurement: support passive distance measurement; support optional laser distance measurement.</p> <p>2. Support sound and light alarm: internal integrated tweeter + flashing light, support alarm sound customization.</p> <p>3. Support alarm linkage fire fighting device.</p> <p>4. Camera diagnostic functions: support disconnection 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 masking alarm, anti-sun damage (support threshold, masking time can be set).</p> <p>5. Whole life management: health index record function, support working time, shutter count, working temperature, limit temperature, etc.; zoom lens and head each motor working cumulative time, etc.</p> <p>6. Support disconnection renewal.</p> <p>7. Power failure memory: support can restore the position before power failure, preset point state, cruise state, line sweep state.</p> <p>8. Remote maintenance: with fault query, self-test, remote restart function; online upgrade, remote upgrade.</p> <p>9. Key frame setting: support key frame interval 100 levels adjustable.</p> <p>10. Configuration file: support configuration file import and export function.</p> <p>11. Web access: support WEB full function configuration, remote online upgrade.</p>

PT	<ol style="list-style-type: none"> 1. Rotation speed: Horizontal: 0.01°/s~100°/s; Pitch: 0.01°/s~80°/s, support focal speed adaption. 2. Rotation angle: horizontal: 360° continuous rotation; pitch: -90°~+90° 3. Structure material: quasi-spherical design of micro-rotary, integrated 5-window multi-channel, fine cast high strength aluminium alloy material. 4. Window glass: infrared/visible high efficiency optical glass, clean film coating. 5. Surface coating: PTA triple anti-corrosion coating, anti-corrosion. 6. Wiper: support intelligent automatic wiper 7. Defrost: visible window defrost 8. Preset position cruise: 3000 preset positions, support 16 cruise routes, each can support 256 preset positions 9. Watch function: preset bit / pattern scan / cruise scan / vertical scan / frame scan / panorama scan / apple skin scan / horizontal fan sweep line scan 10. Support 3D frame selection zoom 11. Orientation information: support angle query/real-time return and positioning; support lens field of view return and positioning 12. Zero point correction: support northward zero point remote correction function
Electrical interface	<ol style="list-style-type: none"> 1. Communication and control: 1 *RJ45 Ethernet port; 2* alarm inputs, 1 *alarm output; 1 *audio input input, 1 *RS485 interface. 2. Protocol: Support HTTP, HTTPS, FTP, SMTP, DNS, NTP, RTSP, RTCP, RTP, TCP, UDP, ICMP, DHCP network protocols; support ONVIF and GB28181 protocols. 3. Development interface: Support HP-SDK secondary development
Enhanced Function	<ol style="list-style-type: none"> 1. Glare protection: support, anti-sun burn function 2. Temperature correction: no thermal image design, imaging resolution is not affected by temperature 3. Scene mode: support multiple configuration scenarios, adapt to no environment application 4. Auto focus tuning: support remote auto focus precision parameter adjustment, adapt to different scenes 5. Day and night cruise: day and night group cruise different preset groups, day cruise 1-40 preset position, night cruise 41-80 preset position, automatically switch day and night according to the photosensitive state, adapt to different time and space scenes 6. Lens servo: support lens preset position, focal length return, focus positioning function 7. Parameter setting: OSD menu remote call operation 8. Remote maintenance: support embedded program remote upgrade for easy after-sales maintenance
Safety control	<ol style="list-style-type: none"> 1. Support illegal access alarm: the number of illegal access, lock time can be set. 2. Support three levels of user rights management, administrator, operator and normal user. 3. Security mode: authorized user name and password, support IP whitelist and blacklist, MAC whitelist and blacklist. User mis-login lockout
Power supply	<ol style="list-style-type: none"> 1. Working voltage: DC 9~36V, external AC220V or battery power adapter 2. Rated power consumption: ≤40W 3. Peak power consumption: ≤60W
Environmental adaptation	<ol style="list-style-type: none"> 1. Working temperature: -40℃~60℃ 2. Working humidity: ≤95% 3. Protection grade: IP67 4. Anti-salt spray: no change in surface after 96 hours of continuous spraying at pH 6.5~7.2 5. Electromagnetic compatibility: anti-surge 6KV, anti-static 8KV contact / 15KV air
Weight and Dimension	<ol style="list-style-type: none"> 1. Weight: ≤10kg;Size: 312mm×200mm×296mm (L×W×H) 2. Mounting: Front / side / wall / hanging / vehicle / tripod pro-rack