



# HIKMICRO

## HM-TD8168-230ZN2FL/G0/T2

Thermal & Optical Bi-spectrum Network Stable PTZ Camera



HIKMICRO Anti-corrosion Thermal Optical Bi-spectrum Network Stable Positioning System is applied to perimeter protection and fire-prevention purposes in scenes such as port, dock, island, aquafarm. The coating technology can meet the use requirements in anti-corrosion environment.

### ▪ Features

- 640 × 512 resolution 12  $\mu$ m, NETD < 25 mK (25 °C, F# = 1.0)
- Perimeter protection function, based on intelligent algorithm: line crossing, intrusion, region entrance and exit
- Temperature exception alarm for fire prevention
- Fire detection and smoke detection algorithm
- Added one fixed lens overlaid on optical PTZ channel for wide-angle monitoring
- High quality detector with 10 years guarantee
- NEMA-4X Standard, Anti-corrosion coating

## • Specification

| Thermal Module         |                                                                                                                                 |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Image Sensor           | VOx Uncooled Focal Plane Arrays                                                                                                 |
| Resolution             | 640 × 512                                                                                                                       |
| Pixel Interval         | 12 μm                                                                                                                           |
| Response Waveband      | 8 μm to 14 μm                                                                                                                   |
| NETD                   | Less than 25 mK (@25°C,F#=1.0)                                                                                                  |
| Focal Length           | 15-230 mm                                                                                                                       |
| Focus Mode             | Semi-auto & Manual                                                                                                              |
| IFOV                   | 0.71-0.052 mrad                                                                                                                 |
| Aperture               | F0.9-1.5                                                                                                                        |
| Field of View          | 25.9°(H)*20.7°(V)-1.9°(H) *1.5°(V)                                                                                              |
| Min. Focusing Distance | 3m                                                                                                                              |
| Digital Zoom           | x2, x4, x8                                                                                                                      |
| Optical Module         |                                                                                                                                 |
| Image Sensor           | 1/1.8" Progressive Scan CMOS                                                                                                    |
| Resolution             | 1920 × 1080, 2 MP                                                                                                               |
| Min. Illumination      | Fixed Lens: Color: 0.0005 Lux @ (F1.0, AGC ON)<br>PTZ Lens: Color: 0.002 Lux @(F3.05, AGC ON), B/W: 0.0002 Lux@ (F3.05, AGC ON) |
| Field of View          | Fixed Lens: 89.46°(H) 47.92°(V)<br>PTZ Lens: 29.89°(H) 17.3°(V)-0.35°(H)0.2°(V)                                                 |
| Focal Length           | Fixed Lens: 4mm<br>PTZ Lens: 10-1200mm                                                                                          |
| Aperture (Range)       | Fixed Lens: F1.0<br>PTZ Lens: F3.05-8.7                                                                                         |
| Shutter Speed          | 1/25 s to 1/30,000 s                                                                                                            |
| WDR                    | 120 dB                                                                                                                          |
| Digital Zoom           | x2, x4, x8, x16                                                                                                                 |
| Optical Defog          | PTZ lens support                                                                                                                |
| Focus Mode             | PTZ lens: semi-auto/manual                                                                                                      |
| Image Effect           |                                                                                                                                 |
| Picture in Picture     | Display partial image of one channel on the full screen of the other channel                                                    |
| Target Coloration      | Yes. Supported in white hot and black hot mode.                                                                                 |
| Image Stabilization    | Thermal channel supports EIS.<br>Optical PTZ lens supports OIS.                                                                 |
| PTZ                    |                                                                                                                                 |
| Movement Range         | Pan: 360° Continuous Rotate; Tilt: From -45° to + 45° (auto flip)                                                               |

|                         |                                                                                                                                                                                                                                                             |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pan Speed               | Configurable, From 0.03°/s to 40°/s                                                                                                                                                                                                                         |
| Tilt Speed              | Configurable, From 0.02°/s to 15°/s                                                                                                                                                                                                                         |
| Proportional Zoom       | Yes                                                                                                                                                                                                                                                         |
| Presets                 | 300 in total                                                                                                                                                                                                                                                |
| Patrol Scan             | 8; Up to 32 Presets Per Patrol                                                                                                                                                                                                                              |
| Pattern Scan            | 4; More Than 10 Minutes Per Pattern                                                                                                                                                                                                                         |
| Power Off Memory        | Yes                                                                                                                                                                                                                                                         |
| Park                    | Preset/Pattern Scan/Patrol Scan/Auto Scan/Tilt Scan/Random Scan/Frame Scan/Panorama Scan                                                                                                                                                                    |
| PT Status               | Turn On/Turn Off                                                                                                                                                                                                                                            |
| Scheduled Task          | Preset/Pattern Scan/Patrol Scan/Auto Scan/Tilt Scan/Random Scan/Frame Scan/Panorama Scan/Doom Reboot/Doom Adjust/Aux Output                                                                                                                                 |
| <b>Illuminator</b>      |                                                                                                                                                                                                                                                             |
| Laser Distance          | Up to 3000m                                                                                                                                                                                                                                                 |
| <b>Smart Function</b>   |                                                                                                                                                                                                                                                             |
| VCA                     | VCA Support 4 VCA rule types (Line Crossing, Intrusion, Region Entrance, and Region Exiting), up to 50 scenes and 8 VCA rules for each scene                                                                                                                |
| Temperature Measurement | Support 3 temperature measurement rule types, 273 presets as scene, 21 rules of each scene (21 points, 21 areas, and 1 line)                                                                                                                                |
| Temperature Range       | -20 °C to 150 °C (-4 °F to 302 °F)                                                                                                                                                                                                                          |
| Temperature Accuracy    | ± 8 °C (±14.4 °F)                                                                                                                                                                                                                                           |
| Fire Detection          | Dynamic fire point detection, up to 10 fire points detectable.                                                                                                                                                                                              |
| Smoke Detection         | Up to 16km detection ability with 5m*5m smoke                                                                                                                                                                                                               |
| <b>Video and Audio</b>  |                                                                                                                                                                                                                                                             |
| Main Stream             | Optical channel<br>50 Hz: 25 fps (2688 × 1520, 1920 × 1080, 1280 × 960, 1280 × 720)<br>60 Hz: 30 fps (2688 × 1520, 1920 × 1080, 1280 × 960, 1280 × 720)<br>Thermal channel<br>50 fps (1920 × 1080, 1280 × 960, 1280 × 720, 704 × 576, 640 × 512, 384 × 288) |
| Sub-stream              | Optical channel<br>50 Hz: 25fps (704 × 576, 352 × 288)<br>60 Hz: 30 fps (704 × 576, 352 × 288)<br>Thermal channel<br>50 fps (704 × 576, 640 × 512, 384 × 288)                                                                                               |
| Video Compression       | Main stream: H.265/ H.264<br>Sub-stream: H.265/H.264/MJPEG                                                                                                                                                                                                  |
| Audio Compression       | G722.1/G.711ulaw/G.711alaw/MP2L2/G.726/AAC/PCM                                                                                                                                                                                                              |

## Video and Image

|                |                                                                                                                                                              |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Color Palettes | 15 palettes (White hot, Black hot, Fusion 1, Rainbow, Fusion 2, Ironbow 1, Ironbow 2, Sepia, Color 1, Color 2, Icefire, Rain, Red hot, Green hot, Dark blue) |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Network

|                        |                                                                                                                                |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Protocols              | IPv4/IPv6, HTTP, HTTPS, 802.1x, Qos, FTP, SMTP, UPnP, SNMP, DNS, DDNS, NTP, RTSP, RTCP, RTP, TCP, UDP, IGMP, ICMP, DHCP, PPPoE |
| Network Storage        | MicroSD/SDHC/SDXC card (up to 512 G) local storage, and NAS (NFS, SMB/CIFS), auto network replenishment (ANR)                  |
| API                    | ISAPI, HIKVISION SDK, third-party management platform, ONVIF (Profile S, Profile G, Profile T, Profile M)                      |
| Simultaneous Live View | Up to 20 channels                                                                                                              |
| User/Host level        | Up to 32 users, 3 levels: Administrator, Operator, User                                                                        |
| Security               | User authentication (ID and PW), MAC address binding, HTTPS encryption, IEEE 802.1x access control, IP address filtering       |
| Client                 | iVMS-4200, Hik-Connect                                                                                                         |
| Web Browser            | Live view (plug-in allowed) : Internet Explorer 11 Live view (plug-in free) : Chrome 91+, Firefox 88+, Safari 13+              |

## Interface

|                         |                                                                                                    |
|-------------------------|----------------------------------------------------------------------------------------------------|
| Alarm Input             | 7-ch inputs (0-5 VDC)                                                                              |
| Alarm Output            | 2-ch relay outputs, alarm response actions configurable                                            |
| Alarm Action            | Preset/Patrol Scan/Pattern Scan/SD Card Record/Relay Output/Smart capture/FTP upload/Email linkage |
| Audio Input             | LINE_IN Input/MIC Input; Peak: From 2 to 2.4V[p-p]; Output Impedance: 1KΩ±10%                      |
| Audio Output            | Linear Level; Impedance: 600 Ω                                                                     |
| Communication Interface | 1, RJ45 10 M/100 M Self-adaptive Ethernet interface.<br>1, RS-485 interface                        |
| Analog Video Output     | 1.0 V [p-p]/75 Ω, BNC for thermal channel                                                          |

## General

|                           |                                                                                                  |
|---------------------------|--------------------------------------------------------------------------------------------------|
| Power Supply              | 48 VDC ± 20%, two-core terminal block                                                            |
| Power Consumption         | Basic: < 190W; Max: < 270W (Heater on)                                                           |
| Work Temperature/Humidity | From -40°C to 70°C (-40°F to 158°F); Humidity: 95% or Less                                       |
| Wiper                     | Yes                                                                                              |
| Protection Level          | IP67 Standard<br>TVS 6000 V lightning protection, surge protection, voltage transient protection |
| Dimension                 | 674 mm × 543 mm × 665 mm (26.5 " × 21.4 " × 26.2 ")                                              |
| Weight                    | Approx. 60kg (132.3 lb)                                                                          |

## Detection Range Table

|                        |       |
|------------------------|-------|
| VCA Range for Humans   | 2990m |
| VCA Range for Vehicles | 6900m |

| Approval    |                                                                                                                                                             |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EMC         | CE-EMC (EN 55032: 2015, EN 61000-3-2:2019, EN 61000-3-3: 2013+A1:2019, EN50130-4: 2011+A1: 2014);<br>RCM (AS/NZS CISPR 32: 2015);<br>IC (ICES-003: Issue 7) |
| Safety      | CB: IEC 62368-1: 2014+A11;<br>CE-LVD: EN 62368-1: 2014/A11: 2017;                                                                                           |
| Environment | CE-RoHS: 2011/65/EU,<br>WEEE: 2012/19/EU,<br>Reach: Regulation(EC) No 1907/2006                                                                             |
| Protection  | IP67: IEC 60529-2013                                                                                                                                        |
| Other       | NEMA 4X (NEMA 250-2018)<br>C5-ISO 12944-6:1998 C5 Medium & ISO 7253:1996 & ISO 6270-2:2017                                                                  |

## ▪ Range Table

The table is only for reference and the performance may vary according to different environment.

| VCA Range<br>(Vehicles: 1.4 × 4.0 m) | VCA Range<br>(Humans: 1.8 × 0.5 m) | VCA Range<br>(Vessels: 10 × 5 m) | Temperature<br>Measurement<br>(Object: 0.2 × 0.2 m) | Fire Detection<br>(Object: 1 × 1 m) | Smoke<br>Detection<br>(Object: 5 × 5 m) |
|--------------------------------------|------------------------------------|----------------------------------|-----------------------------------------------------|-------------------------------------|-----------------------------------------|
| 6900m                                | 2990m                              | 9200m                            | 766.7 m                                             | 9583 m                              | 16000m                                  |

## ▪ DORI

*\*The table is only for reference and the performance may vary according to different environment.*

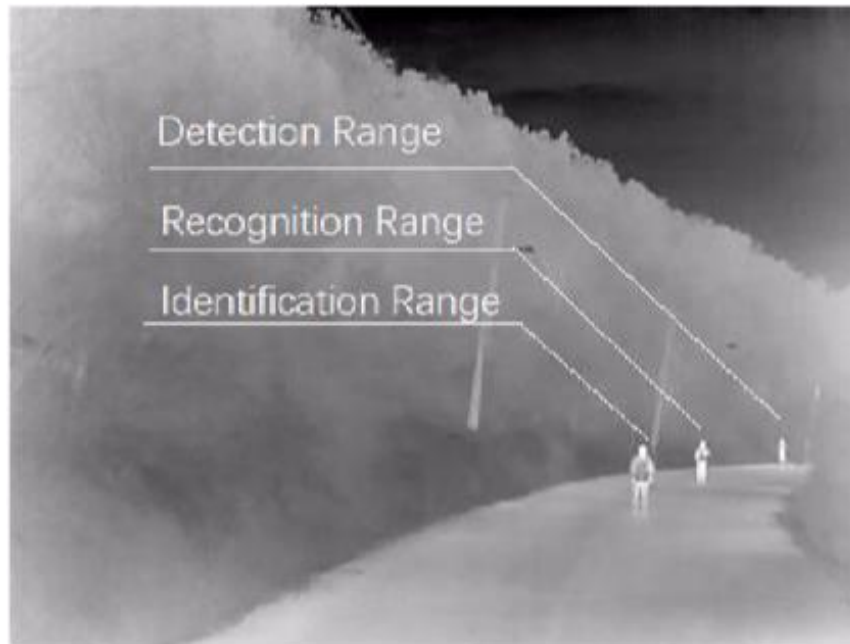
*\*The optimal human detection, recognition, and identification distances are calculated according to Johnson' s Criteria.*

Detection Range: In order to distinguish an object from the background, the object must be covered by 1.5 or more pixels.

Recognition Range: In order to classify the object (animal, human, vehicle, etc.), the object must be covered by 6 or more pixels.

Identification Range: In order to identify the object and describe it in details, the object must be covered by 12 or more pixels.

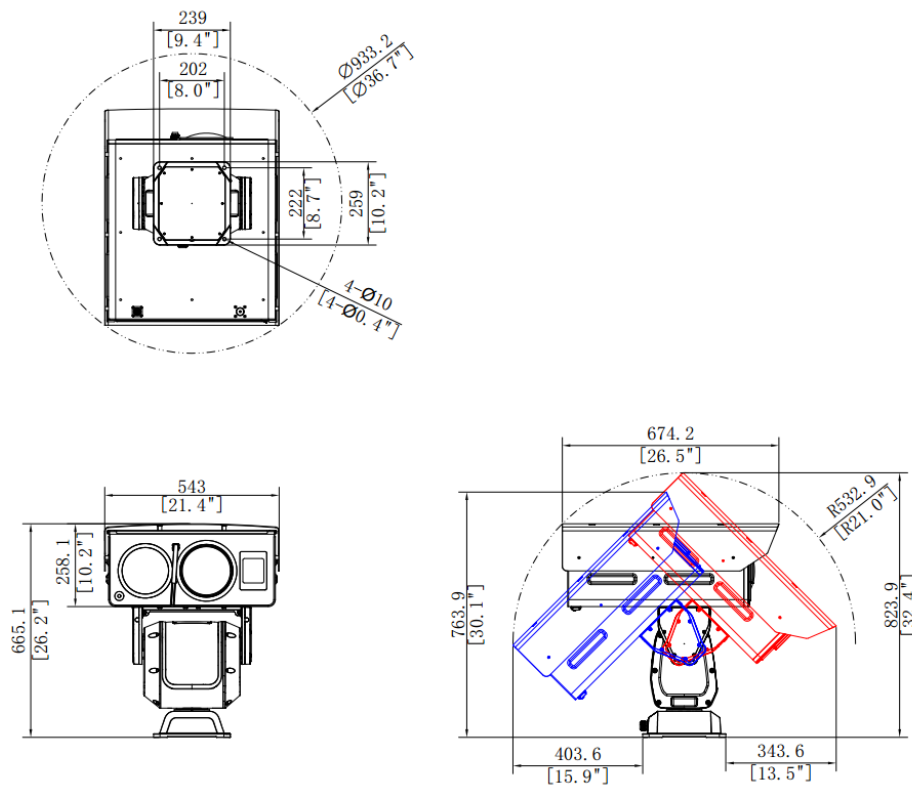
| Detection Range<br>(Vehicles: 1.4 × 4.0 m) | Detection Range<br>(Humans: 1.8 × 0.5 m) | Recognition<br>Range (Vehicles:<br>1.4 × 4.0 m) | Recognition<br>Range (Humans:<br>1.8 × 0.5 m) | Identification<br>Range (Vehicles:<br>1.4 × 4.0 m) | Identification<br>Range (Humans:<br>1.8 × 0.5 m) |
|--------------------------------------------|------------------------------------------|-------------------------------------------------|-----------------------------------------------|----------------------------------------------------|--------------------------------------------------|
| 29389m                                     | 9583m                                    | 7347m                                           | 2396m                                         | 3674m                                              | 1198m                                            |



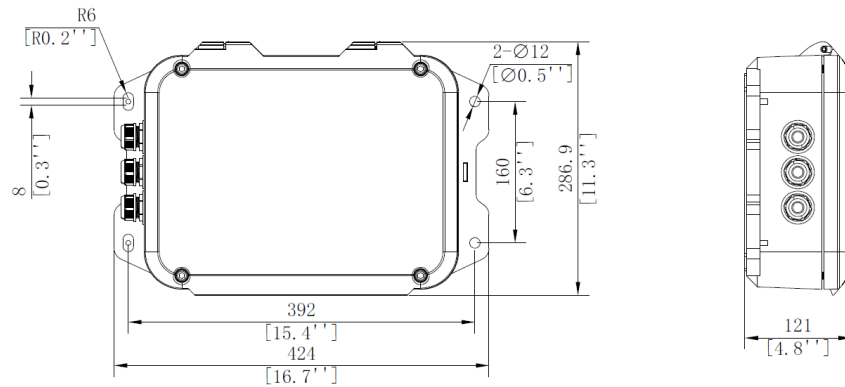
## ▪ Available Model

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## ▪ Dimension



Unit:mm[Inch]



Unit:mm[Inch]

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