Marine One Thermal
Dual Vision, Day/Night and Thermal, PTZ camera for Onshore/Offshore, marine and industrial areas
Analog & IP Versions. Extremely low maintenance!

This model features real-time dual vision, integrating a Day/Night color module and a thermal imaging camera, for security applications in most corrosive industrial and offshore/onshore marine environments and even in total darkness, through fog, rain, heavy smoke or for long-distance surveillance.

Marine One Thermal requires minimum maintenance and is completely resistant to rust and corrosion, thanks to the maximum precision of the manufacturing processes and quality of the stainless steel AISI316L micro-shot peened in silicon and electropolished.

All models are available in Analogue or IP version. The flexible operator control of pan/tilt/zoom functions allows the video transmission over the local area network (LAN) or over the Internet with H.264/AVC compression, compatible with ONVIF Profile S.

An equally noteworthy point is that the IP66/IP67/IP68 ratings guarantee the complete protection against harsh weather and immersion in up to 1 meter of water for 2 hours. Moreover the IP69 rating allows the device to be cleaned with high pressure and high temperature water jets.

The Marine One Thermal is always supplied with integrated wiper; wide choice of tanks with washer pump available with different capacities and delivery heights.

The Marine One Thermal series products are Lloyd’s Register Type Approval System Test Specification Number 1 certified and therefore can be used in Marine and Offshore applications for environmental categories ENV1, ENV2, ENV3 and ENV5 (eg. passenger ships, open-air decks, closed spaces and technical areas that may be subject to heat generated by other equipment, docking procedures).

CERTIFICATIONS

MAIN FEATURES

In stainless steel AISI 316L, micro-shot peened in silicon and electro-polished
Dual independent video output
Thermal camera:
• Sensor: Uncooled microbolometer (VOx)
• Lenses: 9mm, 13mm, 19mm, 25mm, 35mm, 50mm
• Resolution 336x256 or 640x512
Day/Night camera:
• True Progressive Scan
• High resolution: up to 550 TV Lines
• Advanced image stabiliser (Stable Zoom Mode)
• Day/Night (Auto ICR: automatic removal of IR filter)
Up to 2 simultaneous video streams for each camera (IP-based version)
Variable speed: from 0.1"/s up to 100"/s Pan and Tilt
Position accuracy: 0.02°
Pre-wired multipolar cable (3m (9.8ft))
Integrated wiper
Total control of the auxiliary functions through the Videotec PTZ ASSISTANT (IP-based version)
Operating temperature: from -40°C (-40°F) up to +60°C (140°F)
Protection degree: IP66, IP67, IP68, IP69
Marine Certification: Lloyd’s Register Marine Type Approval
Options:
• IP-based control, H.264/AVC and JPEG, 25fps, Full D1 (compatible with ONVIF protocol, Profile S)
### Technical Data

#### GENERAL
- Dynamic positioning control system
- 16-character string for zone and preset tilting
- Maximum number of presets: 250
- Functions: Autopan, Preset, Patrol, Tour (maximum 3), AutoFlip

#### MECHANICAL
- AISI 316L stainless steel construction
- External surfaces micro-shot peened in silicon and electro-polished
- Pre-wired multipolar cable (3m (9.8ft))
- Horizontal rotation: 360°, continuous rotation
- Vertical rotation: from -90° up to +90°
- Horizontal speed (variable): from 0.1° to 100°/s
- Tilt speed (variable): from 0.1° to 100°/s
- Accuracy of preset positions: 0.02°
- Integrated wiper
- Unit weight: 24kg (53lb)

#### HOUSING'S WINDOW
- Glass window extra clear
  - Thick: 6mm (0.24in)
- Germanium window
  - Thick: 1.5mm (0.06in)
  - External treatment: antiscratch (Hard Carbon Coating - DLC), antireflection
  - Internal treatment: antireflection
  - Spectral range: from 7.5um to 14um
  - Medium transmittance (from 7.5um to 11.5um): 91.2%
  - Medium transmittance (from 11.5um to 14um): 80.9%

#### ELECTRICAL
- Supply voltage/Current consumption:
  - 230Vac, 0.5A max, 50/60Hz
  - 24Vac, 5A max, 50/60Hz
  - 120Vac, 1A max, 50/60Hz
- Power consumption:
  - 120W
  - 30W, P&T static, heating switched off

#### NETWORK
- Ethernet connection (only for the IP versions of the product): 10BASE-T/100BASE-T
- Connector: RJ45
- Cable length: 100m max

#### SERIAL COMMUNICATIONS
- Configuration through OSM
- 2 half-duplex serial RS-485 interfaces or full-duplex RS-422
- Firmware updating from console in remote mode (PELCO D, MACRO)
- Up to 999 units, addressable by means of dip-switches
- Serial communication protocol: AMERICAN DYNAMICS, ERNITEC, PANASONIC, PELCO D, MACRO

#### I/O INTERFACE
- I/O alarm board:
  - Alarm inputs: 5
  - Relay outputs: 2 (1A, 30Vac/60Vdc max)

#### VIDEO
- Analog version
  - 2 video outputs, 75 Ohm, 1Vpp (PAL/NTSC)
- IP version:
  - Video encoder
    - Communication protocol: ONVIF, Profile S
    - Device configuration: TCP/IPv4-IPv6, UDP/IPv4-IPv6, HTTP, NTP, DHCP, WS-DISCOVERY, QoS, IGMP (Multicast)
    - Streaming: RTSP, RTCP, RTP/IPv4
    - Video compression: H.264/AVC, MJPEG
    - Independent video streams: 2
    - Image resolution: from Full D1 (720x576 for PAL, 720x480 for NTSC) to 352x240
  - Web Server

#### ENVIRONMENT
- For installation indoors and outdoors
  - Operating temperature: from -40°C (-40°F) up to +60°C (140°F)
  - Surge immunity: up to 2kV line to line, up to 4kV line to earth (Class 4)

#### CERTIFICATIONS
- Electrical safety (CE): EN60950-1, IEC60950-1
- Electromagnetic compatibility (CE): EN61000-6-4, EN61000-3-2, EN61000-3-3, EN50130-4, EN55032 (Class A)
- Outdoor installation (CE): EN60950-22, IEC60950-22
- IP protection degree (EN60529): IP66, IP67, IP68, IP69
- EAC certification
- UL certification (UL60950-1, CAN/CSA C22.2 No. 60950-1-07): cULus Listed (only for 24Vac version)
- electromagnetic compatibility (North America): FCC part 15 (Class A), ICES-003 (Class A)
- Level of protection Type (UL506): 4X (only for 24Vac version)

#### CERTIFICATIONS - MARINE APPLICATIONS
- Lloyd's Register Marine Type Approval certification (install the product at a distance of at least 24m (78.7ft) from the WHF antennas the 24Vac and 120Vac versions require a filter accessory FM1010):
  - Test Specification Number 1 (ENV1, ENV2, ENV3, ENV5)
- Electromagnetic compatibility: EN609545
- Salty fog resistance: EN60068-2-52
- Tested at 70°C (158°F) for 16 hours in compliance with EN60068-2-2

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**DrillVision™**

**Offshore & Marine Video Systems**

**A Southern Electronics Company**

225.753.8884  www.drillvisionsystems.com
### TECHNICAL DATA

#### GENERAL
- **AISI 316L stainless steel construction**
- **Passivated and electropolished external surfaces**
- **Dynamic positioning control system**

#### MECHANICAL
- **1 3/4" NPT hole for cable glands**
- **Zero backlash**
- **Horizontal rotation:** 360°, continuous rotation
- **Vertical rotation:** from -90° up to +90°
- **Horizontal speed (variable):** from 0.1° to 100°/s
- **Tilt speed (variable):** from 0.1° to 100°/s
- **Accuracy of preset positions:** 0.02°
- **12mm (0.47in) thick tempered glass window**
- **Integrated wiper**
- **Unit weight:** 27kg (60lb)

#### ELECTRICAL
- **Supply voltage/Current consumption**
  - 230Vac, 0.5A, 50/60Hz
  - 24Vac, 5A, 50/60Hz
  - 120Vac, 1A, 50/60Hz
- **Power consumption:**
  - 120W max

#### NETWORK
- **Connector:**
  - RJ45, 10BASE-T/100BASE-T

#### VIDEO
- **Video encoder**
  - Communication protocol: ONVIF, Profile S
  - Device configuration:
    - TCP/IPv4-IPv6, UDP/IPv4-IPv6, HTTP, NTP, DHCP, WSDISCOVERY, QoS, IGMP (Multicast)
  - Streaming:
    - RTSP, RTCP, RTP/IPv4
  - Video compression:
    - H.264/AVC, MJPEG
    - 2 independent video streams Full HD or 4 independent video streams depending on the configuration
- **Image resolution:**
  - from FullHD to 352x240 in 18 steps
- **Selectable frame rate from 1 to 60 images per second (fps)**
- **Web Server**

#### I/O INTERFACE
- **I/O alarm board**
  - **Alarm inputs:** 1
  - **Relay outputs:** 1 (1A, 30Vac/60Vdc max)

#### CAMERAS
- **Day/Night Full HD 30x**
  - Resolution: Full HD 1080p (1920x1080)
  - Image Device: 1/2.8 type Exmor™ CMOS sensor
  - Effective Pixels: approx. 2.38 Megapixels
  - **Minimum Illumination, colour (ICR-OFF):**
    - 1.4lx, 1/30s, 50 IRE (Normal mode)
    - 0.35lx, 1/30s, 50 IRE (High sensitivity mode)
    - 0.19lx, 1/3s, 50 IRE (Normal mode)
    - 0.05lx, 1/3s, 50 IRE (High sensitivity mode)
  - **Minimum Illumination, B/W (ICR-ON):**
    - 0.05lx, 1/30s, 50 IRE (Normal mode)
    - 0.013lx, 1/30s, 50 IRE (High sensitivity mode)
    - 0.002lx, 1/3s, 30 IRE (High sensitivity mode)
  - **Lens:** f=4.3 mm (wide) ~ 129.0 mm (tele), from F1.6 to F4.7
  - **Zoom:** 30x (360x with digital zoom)
  - **Horizontal Viewing Angle:**
    - from 63.7° (wide end) up to 2.3° (tele end)
  - **Minimum object distance:** from 10mm (wide) up to 1200mm (tele)
  - **Shutter speed:** 1/1 to 1/10000 s
  - **White balance:** Auto, ATW, Indoor, Outdoor (Fix/Auto), Sodium Vapor Lamp (Fix/Auto), Manual
  - **Gain:** Auto, Manual, Gain Limit (from 3dB up to 43dB, steps: 3dB)
  - **Wide Dynamic Range:** On/Off/Visibility enhancer, Light level, Brightness Compensation selection, Compensation level
  - **Focus System:**
    - Auto (Sensitivity: Normal, Low), Trigger PTZ, Manual
    - “Smart” lens control:
      - Automatic Lens Reset
    - Interval AF, Zoom trigger AF
    - Picture Effects:
      - E-flip, Mirror image, Color enhancement
    - Exposure Control:
      - Auto, EV Compensation, Manual, Priority (Shutter priority, Iris priority), Brightness, Slow AE
      - S/N Ratio: more than 50dB
    - Wide-D (wide dynamic range): Yes (130dB)
    - De-fog: Yes (On/Off)
    - Backlight Compensation: Yes
    - Focusing system:
      - Auto (Sensitivity: Normal, Low), Trigger PTZ, Manual
    - “Smart” lens control:
      - Automatic Lens Reset
    - High Zoom and Wide Horizontal Field of View Capability: Yes
  - **Optical zoom:** 36x, f=3.4 (wide) to 122.4mm (tele) / f1.6 to F4.5
  - **Digital Zoom:** 12x (432x with optical zoom)
  - **Horizontal field of view:** 57.8 degrees (wide) to 1.7 degrees (tele)
  - **Minimum object distance:** 10mm (0.4in) (wide) to 1300mm (51.1in) (tele)
  - **Shutter speed:** 1/1 ÷ 1/10000s

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DrillVision™
Offshore & Marine Video Systems
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# Technical Data

## THERMAL CAMERAS (RESOLUTION 336X256)

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<thead>
<tr>
<th>Lens</th>
<th>PAL</th>
<th>NTSC</th>
<th>PAL</th>
<th>NTSC</th>
<th>PAL</th>
<th>NTSC</th>
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<tr>
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<td></td>
<td>13mm</td>
<td></td>
<td>19mm</td>
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<tr>
<td>Image sensor</td>
<td>Uncooled VOx microbolometer</td>
<td>Uncooled VOx microbolometer</td>
<td>Uncooled VOx microbolometer</td>
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<tr>
<td>Interpolated resolution</td>
<td>640x512</td>
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<td>640x512</td>
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<td>640x512</td>
<td>640x480</td>
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<tr>
<td>Pixel dimensions</td>
<td>17µm</td>
<td>17µm</td>
<td>17µm</td>
<td>17µm</td>
<td>17µm</td>
<td>17µm</td>
</tr>
<tr>
<td>Spectral response - long wave infrared (LWIR)</td>
<td>from 7.5µm to 13.5µm</td>
<td>from 7.5µm to 13.5µm</td>
<td>from 7.5µm to 13.5µm</td>
<td></td>
<td></td>
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<tr>
<td>Internal shutter (only for sensor compensation)</td>
<td>Video stop &lt; 1sec.</td>
<td>Video stop &lt; 1sec.</td>
<td>Video stop &lt; 1sec.</td>
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<tr>
<td>Digital Detail Enhancement (DDE)</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Digital Zoom</td>
<td>2x, 4x</td>
<td>2x, 4x</td>
<td>2x, 4x</td>
<td>2x, 4x</td>
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<td>25fps</td>
<td>30fps</td>
<td>25fps</td>
<td>30fps</td>
</tr>
<tr>
<td>Scene range (High Gain)</td>
<td>-40°C + 160°C (40°F + 320°F)</td>
<td>-40°C + 160°C (40°F + 320°F)</td>
<td>-40°C + 160°C (40°F + 320°F)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Scene range (Low Gain)</td>
<td>-40°C + 550°C (40°F + 1022°F)</td>
<td>-40°C + 550°C (40°F + 1022°F)</td>
<td>-40°C + 550°C (40°F + 1022°F)</td>
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<td>Horizontal field of view</td>
<td>35°</td>
<td>20°</td>
<td>18°</td>
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<tr>
<td>Vertical field of view</td>
<td>27°</td>
<td>15°</td>
<td>13°</td>
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<td>F/1.25</td>
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<tr>
<td>Thermal sensitivity (NEdT)</td>
<td>&lt; 50mK to f/1.0</td>
<td>&lt; 50mK to f/1.0</td>
<td>&lt; 50mK to f/1.0</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Person (detection / recognition / identification)</td>
<td>285m / 220m / 36m (935ft / 233ft / 118ft)</td>
<td>440m / 112m / 56m (1443ft / 368ft / 183ft)</td>
<td>440m / 160m / 80m (1443ft / 524ft / 262ft)</td>
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<tr>
<td>Auto (detection / recognition / identification)</td>
<td>880m / 220m / 36m (2987ft / 722ft / 354ft)</td>
<td>1340m / 340m / 170m (4396ft / 1111ft / 557ft)</td>
<td>1950m / 500m / 250m (6397ft / 1640ft / 820ft)</td>
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</table>

## THERMAL CAMERAS (RESOLUTION 336X256)

<table>
<thead>
<tr>
<th>Lens</th>
<th>PAL</th>
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<th>PAL</th>
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<td>50mm</td>
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<td>Image sensor</td>
<td>Uncooled VOx microbolometer</td>
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<tr>
<td>Interpolated resolution</td>
<td>640x512</td>
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<tr>
<td>Pixel dimensions</td>
<td>17µm</td>
<td>17µm</td>
<td>17µm</td>
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<td>17µm</td>
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<tr>
<td>Spectral response - long wave infrared (LWIR)</td>
<td>from 7.5µm to 13.5µm</td>
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<tr>
<td>Internal shutter (only for sensor compensation)</td>
<td>Video stop &lt; 1sec.</td>
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<tr>
<td>Digital Detail Enhancement (DDE)</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Digital Zoom</td>
<td>2x, 4x</td>
<td>2x, 4x</td>
<td>2x, 4x</td>
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<td>Image updating high frequency</td>
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<td>25fps</td>
<td>30fps</td>
<td>25fps</td>
<td>30fps</td>
</tr>
<tr>
<td>Scene range (High Gain)</td>
<td>-40°C + 160°C (40°F + 320°F)</td>
<td>-40°C + 160°C (40°F + 320°F)</td>
<td>-40°C + 160°C (40°F + 320°F)</td>
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<td>-40°C + 550°C (40°F + 1022°F)</td>
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<tr>
<td>Horizontal field of view</td>
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<td>9°</td>
<td>6.5°</td>
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<tr>
<td>Thermal sensitivity (NEdT)</td>
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<td>&lt; 50mK to f/1.0</td>
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<td></td>
</tr>
<tr>
<td>Person (detection / recognition / identification)</td>
<td>930m / 230m / 116m (3051ft / 754ft / 380ft)</td>
<td>1280m / 320m / 160m (4199ft / 1049ft / 525ft)</td>
<td>1700m / 430m / 215m (5577ft / 1410ft / 715ft)</td>
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<td></td>
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<tr>
<td>Auto (detection / recognition / identification)</td>
<td>2800m / 710m / 360m (9186ft / 2329ft / 1181ft)</td>
<td>3850m / 950m / 295m (12631ft / 3116ft / 967ft)</td>
<td>5100m / 1320m / 660m (16732ft / 4330ft / 2165ft)</td>
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</tbody>
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## Technical Data

### THERMAL CAMERAS (RESOLUTION 640x512)

<table>
<thead>
<tr>
<th></th>
<th>Lens 9mm</th>
<th>NTSC</th>
<th>Lens 13mm</th>
<th>NTSC</th>
<th>Lens 19mm</th>
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<tr>
<td><strong>Image sensor</strong></td>
<td>Uncooled VOx microbolometer</td>
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<td>640x512</td>
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<tr>
<td><strong>Pixel dimensions</strong></td>
<td>17µm</td>
<td>17µm</td>
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<td></td>
</tr>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Internal shutter (only for sensor compensation)</strong></td>
<td>Video stop &lt; 1sec.</td>
<td>Video stop &lt; 1sec.</td>
<td>Video stop &lt; 1sec.</td>
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<td></td>
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<tr>
<td><strong>Digital Detail Enhancement (DDE)</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td></td>
<td></td>
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<tr>
<td><strong>Digital Zoom</strong></td>
<td>2x, 4x, 8x</td>
<td>2x, 4x, 8x</td>
<td>2x, 4x, 8x</td>
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<td>8.3fps</td>
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<td><strong>Image updating high frequency</strong></td>
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<td>25fps</td>
<td>30fps</td>
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<td>30fps</td>
</tr>
<tr>
<td><strong>Scene range (High Gain)</strong></td>
<td>-40°C ÷ +160°C (-40°F ÷ +320°F)</td>
<td>-40°C ÷ +160°C (-40°F ÷ +320°F)</td>
<td>-40°C ÷ +160°C (-40°F ÷ +320°F)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Scene range (Low Gain)</strong></td>
<td>-40°C ÷ +550°C (-40°F ÷ +1022°F)</td>
<td>-40°C ÷ +550°C (-40°F ÷ +1022°F)</td>
<td>-40°C ÷ +550°C (-40°F ÷ +1022°F)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Horizontal field of view</strong></td>
<td>69°</td>
<td>45°</td>
<td>32°</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vertical field of view</strong></td>
<td>56°</td>
<td>37°</td>
<td>26°</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>F-number</strong></td>
<td>F/1.4</td>
<td>F/1.25</td>
<td>F/1.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Thermal sensitivity (NETD)</strong></td>
<td>&lt; 50mK to 0.1°</td>
<td>&lt; 50mK to 0.1°</td>
<td>&lt; 50mK to 0.1°</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Peson (detection / recognition / identification)</strong></td>
<td>250m / 63m / 31m (820ft / 207ft / 102ft)</td>
<td>390m / 95m / 47m (1280ft / 154ft / 154ft)</td>
<td>570m / 144m / 72m (1870 / 472 / 236ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Auto (detection / recognition / identification)</strong></td>
<td>720m / 175m / 88m (2362 / 574 / 289ft)</td>
<td>1080m / 275m / 140m (3543ft / 902ft / 459ft)</td>
<td>1550m / 400m / 200m (5085ft / 1312ft / 656ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### DrillVision™

Offshore & Marine Video Systems
A Southern Electronics Company

225.753.8884  www.drillvisionsystems.com
Drawings & Accessories

TECHNICAL DRAWINGS

The indicated measurements are expressed in millimetres.

ACCESSORIES

<table>
<thead>
<tr>
<th>Accessory</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WASPT0V5L5M00</td>
<td>Water tank 5L (1.3gal), pump with delivery up to 5m (16ft), IN 230Vac-24Vac-120Vac</td>
</tr>
<tr>
<td>WASPT0V23L5M00</td>
<td>Water tank 23L (6gal), pump with delivery up to 5m (16ft), IN 230Vac-24Vac-120Vac</td>
</tr>
<tr>
<td>WASPT0V23L11M00</td>
<td>Water tank 23L (6gal), pump with delivery up to 11m (36ft) with water floating, IN 230Vac-24Vac-120Vac</td>
</tr>
<tr>
<td>WASPT1V23L30M00</td>
<td>Water tank 23L (6gal), pump with delivery up to 30m (98ft) with water floating, IN 230Vac</td>
</tr>
<tr>
<td>WASPT3V23L30M00</td>
<td>Water tank 23L (6gal), pump with delivery up to 30m (98ft) with water floating, IN 120Vac</td>
</tr>
<tr>
<td>WASNX1V10L20M00</td>
<td>Tank 10L (2.6gal) with integrated manual pump controlled by solenoid valve, delivery head up to 20m (66ft) max, IN 230Vac</td>
</tr>
<tr>
<td>WASNX2V10L20M00</td>
<td>Tank 10L (2.6gal) with integrated manual pump controlled by solenoid valve, delivery head up to 20m (66ft) max, IN 24Vac</td>
</tr>
<tr>
<td>WASNX3V10L20M00</td>
<td>Tank 10L (2.6gal) with integrated manual pump controlled by solenoid valve, delivery head up to 20m (66ft) max, IN 120Vac</td>
</tr>
</tbody>
</table>

BRACKETS AND ADAPTORS

- NPTZWB: AISI 316L stainless steel wall bracket
- NPTZTW: AISI 316L stainless steel parapet or ceiling mounting bracket
- NPTZCOL: AISI 316L stainless steel pole adapter module
- NPTZCW: AISI 316L stainless steel corner adapter module

FM1010: EMC filter for Marine certification

For further details about cable glands part numbers, please refer to the relevant table.

PACKAGE

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Weight</th>
<th>Dimensions (WxHxL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPXHD1FVW0Z00</td>
<td>30.4kg (67lb)</td>
<td>54x31x49cm (21x12x19in)</td>
</tr>
</tbody>
</table>

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