# VPort P16-1MP-M12 Series

*EN 50155, HD image, rugged IP cameras*

## Features and Benefits

- 1/2.7" progressive scan camera with maximum 1280 x 800 resolution at up to 30 fps
- Built-in light sensor for day & night images
- High quality video imaging with DNR and WDR
- Up to 3 H.264 or MJPEG independent video streams
- DynaStream™ for optimized network efficiency
- CBR Pro™ for high image quality in limited bandwidth transmissions
- Supports DHCP options 66 and 67 for auto-configuration
- ONVIF support for standardization and interoperability

## Certifications

EN 50155    c(UL)us LISTED    CE    FC

## Introduction

The rugged VPort P16-1MP-M12 cameras provide an HD (720P, 1280 x 720) video image, and feature 3 H.264/MJPEG video streams, giving them the versatility and ruggedness to excel in many different installations and environments for mobile IP video surveillance applications. In addition, the cameras are compliant with mandatory sections of EN 50155,[1] covering operating temperature, power input voltage, surge, ESD, and vibration, as well as conformal coating and power insulation, making them suitable for a variety of industrial applications, and feature vandal-proofing (EN 62262 IK10), a -25 to 55°C or -40 to 70°C (T models) operating temperature, a rugged M12 Ethernet port, PoE power inputs, IP66 rain and dust protection, and day & night image capability.

## Specifications

### Ethernet Interface

| | |
|---|---|
| PoE Ports (10/100BaseT(X), M12 D-coded 4-pin female connector) | 1 |

### Ethernet Software Features

| | |
|---|---|
| Protocols | TCP/IP, IPv4, UDP, HTTP, RTP/RTSP, ARP, UPnP, FTP, TFTP, SMTP, NTP Client, DNS, DDNS, QoS, IGMP v3, ICMP, SNMPv1/v2c/v3, DHCP Opt66/67, HTTPS |

### Security Functions

| | |
|---|---|
| Password | User-level password protection |
| Filter | IP address |
| Encryption | HTTPS |

### Power Parameters

| | |
|---|---|
| No. of Power Inputs | 1 |
| Source of Input Power | PoE (IEEE 802.3af) |
| Input Current | 0.35 A @ 48 VDC |

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1. This product is suitable for rolling stock railway applications, as defined by the EN 50155 standard. For a more detailed statement, refer to: www.moxa.com/doc/specs/EN_50155_Compliance.pdf

## Camera Characteristics

| | |
|---|---|
| Sensor | 1/2.7-in HD progressive scan CMOS |
| Lens | VPort P16-1MP-M12-CAM36 Series: f=3.6mm, F1.6, Diagonal 99°, Horizontal 94°, Vertical 47°<br>VPort P16-1MP-M12-CAM80 Series: f=8.0mm, F1.6, Diagonal 45°, Horizontal 40°, Vertical 22° |
| Minimum Illumination | Color: 0.2 lux, at F1.2 (Gain High, 50 IRE, 1/30 sec)<br>B/W: 0.05 lux, at F1.2 (Gain High, 50 IRE, 1/30 sec) |
| Camera Angle | Pan 350°, Tilt 65° (controlled manually) |
| Day & Night | Auto/Color/BW; ICR control |
| ICR Control | Auto |
| Synchronization | Internal |
| White Balance | ATW/AWB |
| Electronic Shutter | Auto, Fixed (1/30 to 1/25000 sec) |
| S/N Ratio | Maximum 50 dB (AGC off; DNR on) |
| DNR (digital noise reduction) | Built-in 2D/3D DNR |
| WDR (wide dynamic range) | 110 dB |
| Flickerless Control | Automatic, 50 Hz, 60 Hz modes |
| Image Rotation | Flip, Mirror, and 180° rotation |
| Image Setting | Manual tuning with saturation, sharpness, and contrast |
| AGC (auto gain control) | 2X, 4X, 8X, 16X, 32X, 64X |
| BLC (back light compensation) | High/Medium/Low |

## Video Interface

| | |
|---|---|
| Video Compression | H.264 (ISO/IEC 14496-10) or MJPEG |
| Video Output | via Ethernet |
| Video Streams | 3 independent H.264 or MJPEG video streams |

| Video Resolution and FPS (frames per second) | | NTSC | | PAL | |
| --- | --- | --- | --- | --- | --- |
| | | Size | Max. FPS | Size | Max. FPS |
| | QCIF | 176 x 112 | 30 | 176 x 144 | 25 |
| | QVGA | 320 x 240 | 30 | 320 x 240 | 25 |
| | CIF | 352 x 240 | 30 | 352 x 288 | 25 |
| | VGA | 640 x 480 | 30 | 640 x 480 | 25 |
| | 4CIF | 704 x 480 | 30 | 704 x 576 | 25 |
| | Full D1 | 720 x 480 | 30 | 720 x 576 | 25 |
| | SVGA | 800 x 600 | 30 | 800 x 600 | 25 |
| | HD | 1280 x 720 | 30 | 1280 x 720 | 25 |
| | WXGA | 1280 x 800 | 30 | 1280 x 800 | 25 |

| Video Viewing | DynaStream™ support for changing the video frame rate automatically<br>CBR Pro™ for good image quality in limited bandwidth transmissions<br>3 privacy mask areas provided<br>Adjustable image size and quality<br>Timestamp and text overlay<br>OSD (On Screen Display) position adjustable<br>Maximum of 5 simultaneous unicast connections, 50 multicast clients |
| --- | --- |

## Camera Software Development

| VPort SDK PLUS | Includes CGI commands, ActiveX Control, and API library for customized applications or system integration for third-party developers |
| --- | --- |
| Video Standards | ONVIF Profile S |

## Camera Alarm Software Features

| Intelligent Video | Camera tampering detection |
| --- | --- |
| Video Motion Detection | 3 independently configurable areas |
| Scheduling | Daily repeat timing schedule |
| Imaging | JPEG snapshots for pre/trigger/post alarm images |
| Custom Alarms | HTTP event servers for setting customized alarm actions |
| Email/FTP Messaging | Automatic transfer of stored images via email or FTP as event-triggered actions |
| Pre-Alarm Buffer | 12 MB video buffer for JPEG snapshot images |

## Software Requirements

| Memory Size | 1 GB |
| --- | --- |
| Operating System | Windows 7 or above |
| Browser | Internet Explorer 9.x or above |
| Multimedia | DirectX 9.0C or above |

## Physical Characteristics

| Housing | IP66 rain and dust protection<br>Metal housing, PC dome cover<br>IK10 vandal resistant protection |
| --- | --- |
| Dimensions | 125 x 125 x 120.7 mm (4.92 x 4.92 x 4.8 in) |

| Weight | 810 g (1.79 lb) |
|---|---|
| Installation | Panel mounting |
| Protection | -CT models: PCB conformal coating |

## Environmental Limits

| Operating Temperature | Standard Models: -25 to 55°C (-13 to 131°F)<br>Wide Temp. Models: -40 to 70°C (-40 to 158°F) |
|---|---|
| Storage Temperature (package included) | -40 to 85°C (-40 to 185°F) |
| Ambient Relative Humidity | 5 to 95% (non-condensing) |
| Ingress Protection | IEC 60529, IP66 |
| Salt Spray Test | ASTM-B117 |
| Vandal Resistance | EN 62262, IK10 |
| Altitude | 2000 m |

## Standards and Certifications

| EMI | CISPR 32, FCC Part 15B Class A |
|---|---|
| EMS | IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m<br>IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 10 V<br>IEC 61000-4-8 PFMF |
| Freefall | IEC 60068-2-31 |
| Railway Fire Protection | EN 45545-2 |
| Safety | UL 60950-1 |
| Shock | IEC 60068-2-27, IEC 61373, EN 50155 |
| Vibration | IEC 60068-2-64, IEC 61373, EN 50155 |
| Railway | EN 50155 (complies with a portion of EN 50155 specifications) |

## MTBF

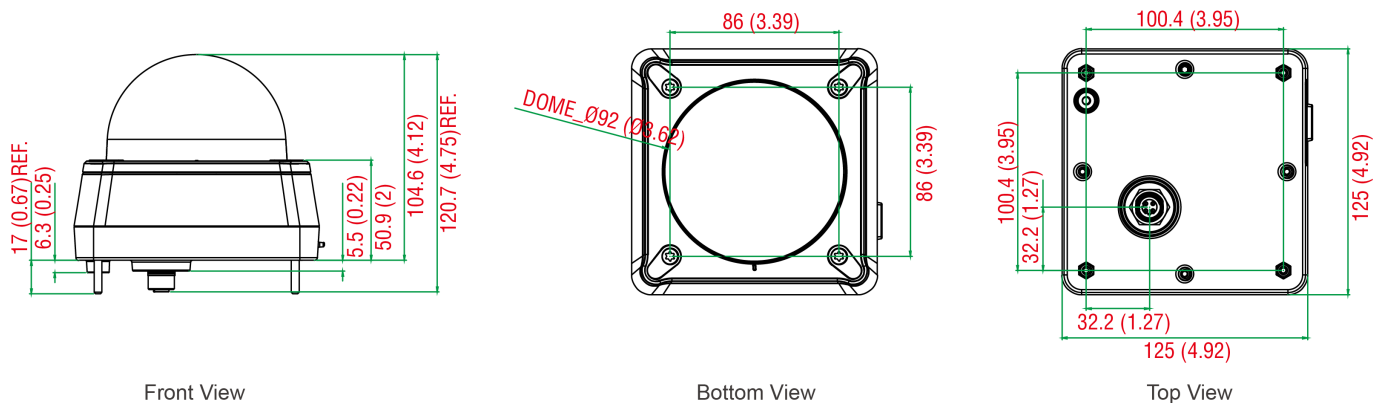| Time | 1,598,728 hrs |
|---|---|
| Standards | Telcordia SR332 |

## Warranty

| Warranty Period | 5 years<br>Note: Limited warranty on moving parts; see Moxa's online warranty policy for details. |
|---|---|
| Details | See www.moxa.com/warranty |

## Package Contents

| Device | 1 x VPort P16-1MP-M12 Series camera |
|---|---|
| Installation Kit | 1 x sticker<br>1 x L-type Torx screwdriver<br>4 x indented hexagonal head tapping screws, nuts, gaskets, and spring washers |
| Documentation | 1 x document and software CD<br>1 x quick installation guide<br>1 x warranty card |

# Dimensions

Unit: mm (inch)



Front View



Bottom View



Top View

# Ordering Information

| Model Name | Lens | Operating Temp. | Conformal Coating |
|---|---|---|---|
| VPort P16-1MP-M12-CAM36 | 3.6 mm | -25 to 55°C | – |
| VPort P16-1MP-M12-CAM80 | 8.0 mm | -25 to 55°C | – |
| VPort P16-1MP-M12-CAM36-T | 3.6 mm | -40 to 70°C | – |
| VPort P16-1MP-M12-CAM80-T | 8.0 mm | -40 to 70°C | – |
| VPort P16-1MP-M12-CAM36-CT | 3.6 mm | -25 to 55°C | ✓ |
| VPort P16-1MP-M12-CAM80-CT | 8.0 mm | -25 to 55°C | ✓ |
| VPort P16-1MP-M12-CAM36-CT-T | 3.6 mm | -40 to 70°C | ✓ |
| VPort P16-1MP-M12-CAM80-CT-T | 8.0 mm | -40 to 70°C | ✓ |

# Accessories (sold separately)

### Camera Mounting Kits

| VP-FMK1 | Flush-mounting kit for the VPort P16 |
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