

# VPort 06-2 Series

EN 50155, 1080P video image, compact IP cameras



## Features and Benefits

- 1/3" progressive scan camera with maximum 1920 x 1080 resolution at up to 30 fps
- High quality video imaging with DNR and WDR
- Up to 4 simultaneous H.264 or MJPEG independent video streams
- DynaStream™ for optimized network efficiency
- CBR Pro™ for high image quality in limited bandwidth transmissions
- Supports SDXC (up to 2 TB SD card) for local storage
- 1 built-in audio input or microphone
- ONVIF conformity for standardization and interoperability

## Certifications



## Introduction

The VPort 06-2 cameras are compact, 1080P (1920 x 1080), H.264/MJPEG dome IP cameras designed for mobile video surveillance applications. The cameras are compliant with EN 62262 IK8, mandatory sections of EN 50155,<sup>1</sup> and support a -25 to 55°C or -40 to 70°C operating temperature range. With a rugged M12 Ethernet port, SDXC slot for SD cards up to 2 TB, ONVIF Profile S standardization, built-in audio line port or microphone, PoE or 24 VDC power inputs, IP66-rated, and the option of changing the lens, the VPort 06-2 cameras will perform reliably in a variety of extreme environmental conditions, making them suitable for a wide variety of mobile video surveillance applications.

## Specifications

### Memory

microSD Slot	SDXC
--------------	------

### Input/Output Interface

Digital Input Channels	1
Digital Inputs	+13 to +30 V for state 1 -30 to +1 V for state 0 Max. input current: 8 mA
Connector	VPort P06-2 Series: 5-pin male M12 connector with 20 cm cable VPort 06-2 Series: DB9 male

### Ethernet Interface

PoE Ports (10/100BaseT(X), M12 D-coded 4-pin female connector)	VPort P06-2 Series: 1
10/100BaseT(X) Ports (M12 D-coded 4-pin female connector)	VPort 06-2 Series: 1

### Ethernet Software Features

Protocols	TCP/IP, IPv4/IPv6, UDP, HTTP, RTP/RTSP, ARP, UPnP, FTP, TFTP, SMTP, NTP Client, DNS, DDNS, QoS, IGMP v3, ICMP, SNMPv1/v2c/v3, DHCP Opt66/67, HTTPS, SIP
-----------	---

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](http://www.moxa.com/doc/specs/EN_50155_Compliance.pdf)

## Security Functions

Password	User-level password protection
Filter	IP address
Encryption	HTTPS

## Power Parameters

No. of Power Inputs	1
Source of Input Power	VPort P06-2 Series: PoE (IEEE 802.3af)
Input Voltage	VPort 06-2 Series: 12/24 VDC
Input Current	VPort 06-2 Series: 0.86 A @ 12 VDC; 0.38 A @ 24 VDC VPort P06-2 Series: 0.17 A @ 48 VDC
Power Connector	VPort 06-2 Series: DB9 connector

## Camera Characteristics

Sensor	1/3-in 1080P progressive scan CMOS
Lens	VPort 06/P06-2x25M Series: f=2.5 mm, F1.6, Diagonal 120°, Horizontal 101°, Vertical 57° VPort 06/P06-2x36M Series: f=3.6 mm, F1.6, Diagonal 99°, Horizontal 70°, Vertical 39° VPort 06/P06-2x42M Series: f=4.2 mm, F1.6, Diagonal 82°, Horizontal 62°, Vertical 34° VPort 06/P06-2x60M Series: f=6.0 mm, F1.8, Diagonal 62°, Horizontal 43°, Vertical 24° VPort 06/P06-2x80M Series: f=8.0 mm, F1.6, Diagonal 42°, Horizontal 33°, Vertical 17°
Minimum Illumination	Color: 0.2 lux, at F1.2 (Gain High, 50 IRE, 1/30 sec)
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)	100 dB
AGC (auto gain control)	2X, 4X, 8X, 16X
Flickerless Control	Automatic, 50 Hz, 60 Hz modes
Image Rotation	Flip, Mirror, 90°, 180°, 270° rotation
Image Setting	Manual tuning with saturation, sharpness, and contrast
Camera Angle	Pan: ±15°, Tilt: 0° to 90° (controlled manually) Note: Tilt of 2.5 mm lens model is 30° to 60°

## Video Interface

Video Compression	H.264 (ISO/IEC 14496-10) or MJPEG
Video Output	via Ethernet
Video Streams	4 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
	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
Full HD	1920 x 1080	30	1920 x 1080	25	
Video Viewing	DynaStream™ support for changing the video frame rate automatically CBR Pro™ for good image quality in limited bandwidth transmissions 3 privacy mask areas provided Adjustable image size and quality Timestamp and text overlay OSD (On Screen Display) position adjustable Maximum of 5 simultaneous unicast connections, 50 multicast clients				
<b>Audio Interface</b>					
Audio Format	Mono, PCM (G.711) AAC				
Audio Inputs	VPort 06/P06-2MxxM Series: 1 x built-in microphone VPort 06-2LxxM Series: 1 x line-in, with DB9 connector VPort P06-2LxxM Series: 1 x line-in, with M12 connector				
<b>Camera Software Development</b>					
Video Standards	ONVIF Profile S				
<b>Camera Alarm Software Features</b>					
Intelligent Video	Camera tampering detection				
Video Motion Detection	3 independently configurable areas				
Shock Detection	Built-in G sensor				
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	50 MB video buffer for JPEG snapshot images				
Video Recording	Event recordings stored on the SD card				
<b>Software Requirements</b>					
Memory Size	2 GB				
Operating System	Windows 7 or above				

Browser	Internet Explorer 9.x or above
Multimedia	DirectX 9.0C or above
<b>Physical Characteristics</b>	
Housing	IP66 rain and dust protection Metal housing, PC dome cover IK8 vandal resistant protection
Dimensions	110 x 115.5 x 61.8 mm (4.33 x 4.53 x 2.43 in)
Weight	620 g (1.37 lb)
Installation	Panel mounting
Protection	-CT models: PCB conformal coating
<b>Environmental Limits</b>	
Operating Temperature	Standard Models: -25 to 55°C (-13 to 131°F) 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
Vandal Resistance	EN 62262, IK8
Altitude	2000 m Note: Please contact Moxa if you require products guaranteed to function properly at higher altitudes.
<b>Standards and Certifications</b>	
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V 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), GB/T 24338.4-2009
<b>MTBF</b>	
Time	VPort 06-2LXXM Series: 1,063,089 hrs VPort 06-2MXXM Series: 1,039,008 hrs VPort P06-2LXXM Series: 1,075,216 hrs VPort P06-2MXXM Series: 1,050,590 hrs
Standards	Telcordia SR332

## Warranty

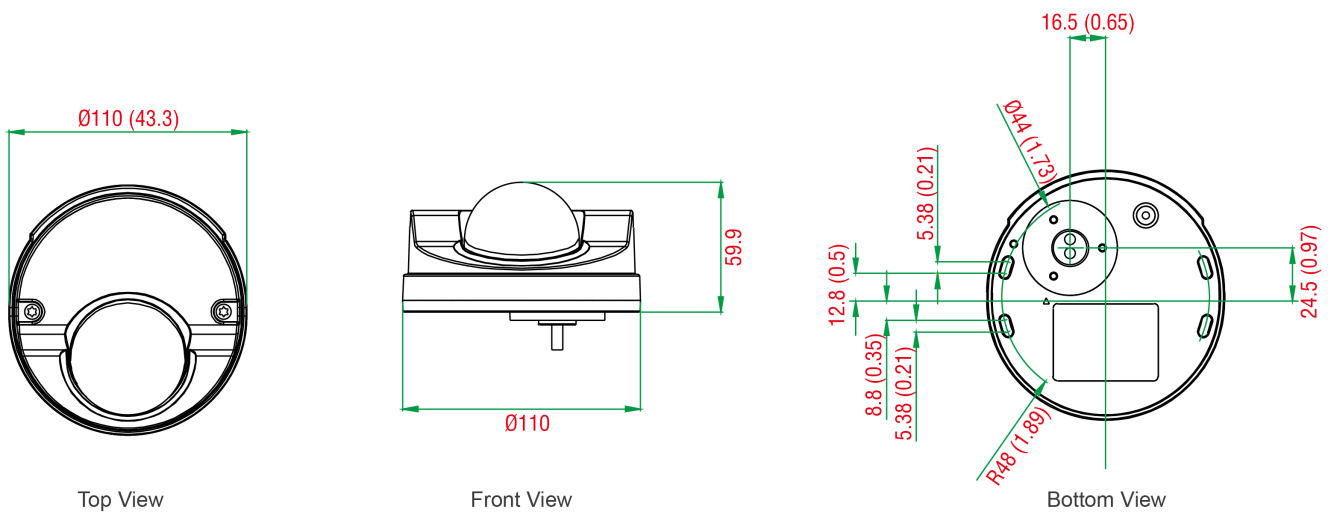
Warranty Period	5 years
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>

## Package Contents

Device	1 x VPort 06-2 Series camera
Installation Kit	1 x sticker 1 x L-type Torx screwdriver 4 x indented hexagonal head tapping screws, nuts, gaskets, and spring washers
Documentation	1 x document and software CD 1 x quick installation guide 1 x warranty card

## Dimensions

Unit: mm (inch)



## Ordering Information

Model Name	Lens	Audio Interface	Local Storage	Power Input	Operating Temp.	Conformal Coating
VPort P06-2L25M	2.5 mm	Line-in	microSD slot, SDXC interface	PoE	-25 to 55°C	-
VPort P06-2L25M-T	2.5 mm	Line-in	microSD slot, SDXC interface	PoE	-40 to 70°C	-
VPort P06-2M25M	2.5 mm	Microphone	microSD slot, SDXC interface	PoE	-25 to 55°C	-
VPort P06-2M25M-T	2.5 mm	Microphone	microSD slot, SDXC interface	PoE	-40 to 70°C	-
VPort P06-2L25M-CT	2.5 mm	Line-in	microSD slot, SDXC interface	PoE	-25 to 55°C	✓
VPort P06-2L25M-CT-T	2.5 mm	Line-in	microSD slot, SDXC interface	PoE	-40 to 70°C	✓
VPort P06-2M25M-CT	2.5 mm	Microphone	microSD slot, SDXC interface	PoE	-25 to 55°C	✓
VPort P06-2M25M-CT-T	2.5 mm	Microphone	microSD slot, SDXC interface	PoE	-40 to 70°C	✓
VPort 06-2L25M	2.5 mm	Line-in	microSD slot, SDXC interface	12/24 VDC	-25 to 55°C	-

Model Name	Lens	Audio Interface	Local Storage	Power Input	Operating Temp.	Conformal Coating
VPort 06-2L25M-T	2.5 mm	Line-in	microSD slot, SDXC interface	12/24 VDC	-40 to 70°C	-
VPort 06-2M25M	2.5 mm	Microphone	microSD slot, SDXC interface	12/24 VDC	-25 to 55°C	-
VPort 06-2M25M-T	2.5 mm	Microphone	microSD slot, SDXC interface	12/24 VDC	-40 to 70°C	-
VPort 06-2L25M-CT	2.5 mm	Line-in	microSD slot, SDXC interface	12/24 VDC	-25 to 55°C	✓
VPort 06-2L25M-CT-T	2.5 mm	Line-in	microSD slot, SDXC interface	12/24 VDC	-40 to 70°C	✓
VPort 06-2M25M-CT	2.5 mm	Microphone	microSD slot, SDXC interface	12/24 VDC	-25 to 55°C	✓
VPort 06-2M25M-CT-T	2.5 mm	Microphone	microSD slot, SDXC interface	12/24 VDC	-40 to 70°C	✓
VPort P06-2L36M	3.6 mm	Line-in	microSD slot, SDXC interface	PoE	-25 to 55°C	-
VPort P06-2L36M-T	3.6 mm	Line-in	microSD slot, SDXC interface	PoE	-40 to 70°C	-
VPort P06-2M36M	3.6 mm	Microphone	microSD slot, SDXC interface	PoE	-25 to 55°C	-
VPort P06-2M36M-T	3.6 mm	Microphone	microSD slot, SDXC interface	PoE	-40 to 70°C	-
VPort P06-2L36M-CT	3.6 mm	Line-in	microSD slot, SDXC interface	PoE	-25 to 55°C	✓
VPort P06-2L36M-CT-T	3.6 mm	Line-in	microSD slot, SDXC interface	PoE	-40 to 70°C	✓
VPort P06-2M36M-CT	3.6 mm	Microphone	microSD slot, SDXC interface	PoE	-25 to 55°C	✓
VPort P06-2M36M-CT-T	3.6 mm	Microphone	microSD slot, SDXC interface	PoE	-40 to 70°C	✓
VPort 06-2L36M	3.6 mm	Line-in	microSD slot, SDXC interface	12/24 VDC	-25 to 55°C	-
VPort 06-2L36M-T	3.6 mm	Line-in	microSD slot, SDXC interface	12/24 VDC	-40 to 70°C	-
VPort 06-2M36M	3.6 mm	Microphone	microSD slot, SDXC interface	12/24 VDC	-25 to 55°C	-
VPort 06-2M36M-T	3.6 mm	Microphone	microSD slot, SDXC interface	12/24 VDC	-40 to 70°C	-
VPort 06-2L36M-CT	3.6 mm	Line-in	microSD slot, SDXC interface	12/24 VDC	-25 to 55°C	✓
VPort 06-2L36M-CT-T	3.6 mm	Line-in	microSD slot, SDXC interface	12/24 VDC	-40 to 70°C	✓
VPort 06-2M36M-CT	3.6 mm	Microphone	microSD slot, SDXC interface	12/24 VDC	-25 to 55°C	✓
VPort 06-2M36M-CT-T	3.6 mm	Microphone	microSD slot, SDXC interface	12/24 VDC	-40 to 70°C	✓
VPort P06-2L42M	4.2 mm	Line-in	microSD slot, SDXC interface	PoE	-25 to 55°C	-
VPort P06-2L42M-T	4.2 mm	Line-in	microSD slot, SDXC interface	PoE	-40 to 70°C	-
VPort P06-2M42M	4.2 mm	Microphone	microSD slot, SDXC interface	PoE	-25 to 55°C	-

Model Name	Lens	Audio Interface	Local Storage	Power Input	Operating Temp.	Conformal Coating
VPort P06-2M42M-T	4.2 mm	Microphone	microSD slot, SDXC interface	PoE	-40 to 70°C	-
VPort P06-2L42M-CT	4.2 mm	Line-in	microSD slot, SDXC interface	PoE	-25 to 55°C	✓
VPort P06-2L42M-CT-T	4.2 mm	Line-in	microSD slot, SDXC interface	PoE	-40 to 70°C	✓
VPort P06-2M42M-CT	4.2 mm	Microphone	microSD slot, SDXC interface	PoE	-25 to 55°C	✓
VPort P06-2M42M-CT-T	4.2 mm	Microphone	microSD slot, SDXC interface	PoE	-40 to 70°C	✓
VPort 06-2L42M	4.2 mm	Line-in	microSD slot, SDXC interface	12/24 VDC	-25 to 55°C	-
VPort 06-2L42M-T	4.2 mm	Line-in	microSD slot, SDXC interface	12/24 VDC	-40 to 70°C	-
VPort 06-2M42M	4.2 mm	Microphone	microSD slot, SDXC interface	12/24 VDC	-25 to 55°C	-
VPort 06-2M42M-T	4.2 mm	Microphone	microSD slot, SDXC interface	12/24 VDC	-40 to 70°C	-
VPort 06-2L42M-CT	4.2 mm	Line-in	microSD slot, SDXC interface	12/24 VDC	-25 to 55°C	✓
VPort 06-2L42M-CT-T	4.2 mm	Line-in	microSD slot, SDXC interface	12/24 VDC	-40 to 70°C	✓
VPort 06-2M42M-CT	4.2 mm	Microphone	microSD slot, SDXC interface	12/24 VDC	-25 to 55°C	✓
VPort 06-2M42M-CT-T	4.2 mm	Microphone	microSD slot, SDXC interface	12/24 VDC	-40 to 70°C	✓
VPort P06-2L60M	6.0 mm	Line-in	microSD slot, SDXC interface	PoE	-25 to 55°C	-
VPort P06-2L60M-T	6.0 mm	Line-in	microSD slot, SDXC interface	PoE	-40 to 70°C	-
VPort P06-2M60M	6.0 mm	Microphone	microSD slot, SDXC interface	PoE	-25 to 55°C	-
VPort P06-2M60M-T	6.0 mm	Microphone	microSD slot, SDXC interface	PoE	-40 to 70°C	-
VPort P06-2L60M-CT	6.0 mm	Line-in	microSD slot, SDXC interface	PoE	-25 to 55°C	✓
VPort P06-2L60M-CT-T	6.0 mm	Line-in	microSD slot, SDXC interface	PoE	-40 to 70°C	✓
VPort P06-2M60M-CT	6.0 mm	Microphone	microSD slot, SDXC interface	PoE	-25 to 55°C	✓
VPort P06-2M60M-CT-T	6.0 mm	Microphone	microSD slot, SDXC interface	PoE	-40 to 70°C	✓
VPort 06-2L60M	6.0 mm	Line-in	microSD slot, SDXC interface	12/24 VDC	-25 to 55°C	-
VPort 06-2L60M-T	6.0 mm	Line-in	microSD slot, SDXC interface	12/24 VDC	-40 to 70°C	-
VPort 06-2M60M	6.0 mm	Microphone	microSD slot, SDXC interface	12/24 VDC	-25 to 55°C	-
VPort 06-2M60M-T	6.0 mm	Microphone	microSD slot, SDXC interface	12/24 VDC	-40 to 70°C	-
VPort 06-2L60M-CT	6.0 mm	Line-in	microSD slot, SDXC interface	12/24 VDC	-25 to 55°C	✓

Model Name	Lens	Audio Interface	Local Storage	Power Input	Operating Temp.	Conformal Coating
VPort 06-2L60M-CT-T	6.0 mm	Line-in	microSD slot, SDXC interface	12/24 VDC	-40 to 70°C	✓
VPort 06-2M60M-CT	6.0 mm	Microphone	microSD slot, SDXC interface	12/24 VDC	-25 to 55°C	✓
VPort 06-2M60M-CT-T	6.0 mm	Microphone	microSD slot, SDXC interface	12/24 VDC	-40 to 70°C	✓
VPort P06-2L80M	8.0 mm	Line-in	microSD slot, SDXC interface	PoE	-25 to 55°C	-
VPort P06-2L80M-T	8.0 mm	Line-in	microSD slot, SDXC interface	PoE	-40 to 70°C	-
VPort P06-2M80M	8.0 mm	Microphone	microSD slot, SDXC interface	PoE	-25 to 55°C	-
VPort P06-2M80M-T	8.0 mm	Microphone	microSD slot, SDXC interface	PoE	-40 to 70°C	-
VPort P06-2L80M-CT	8.0 mm	Line-in	microSD slot, SDXC interface	PoE	-25 to 55°C	✓
VPort P06-2L80M-CT-T	8.0 mm	Line-in	microSD slot, SDXC interface	PoE	-40 to 70°C	✓
VPort P06-2M80M-CT	8.0 mm	Microphone	microSD slot, SDXC interface	PoE	-25 to 55°C	✓
VPort P06-2M80M-CT-T	8.0 mm	Microphone	microSD slot, SDXC interface	PoE	-40 to 70°C	✓
VPort 06-2L80M	8.0 mm	Line-in	microSD slot, SDXC interface	12/24 VDC	-25 to 55°C	-
VPort 06-2L80M-T	8.0 mm	Line-in	microSD slot, SDXC interface	12/24 VDC	-40 to 70°C	-
VPort 06-2M80M	8.0 mm	Microphone	microSD slot, SDXC interface	12/24 VDC	-25 to 55°C	-
VPort 06-2M80M-T	8.0 mm	Microphone	microSD slot, SDXC interface	12/24 VDC	-40 to 70°C	-
VPort 06-2L80M-CT	8.0 mm	Line-in	microSD slot, SDXC interface	12/24 VDC	-25 to 55°C	✓
VPort 06-2L80M-CT-T	8.0 mm	Line-in	microSD slot, SDXC interface	12/24 VDC	-40 to 70°C	✓
VPort 06-2M80M-CT	8.0 mm	Microphone	microSD slot, SDXC interface	12/24 VDC	-25 to 55°C	✓
VPort 06-2M80M-CT-T	8.0 mm	Microphone	microSD slot, SDXC interface	12/24 VDC	-40 to 70°C	✓

## Accessories (sold separately)

### Camera Mounting Kits

VP-SCO2	Side-cable-out adaptor for mounting the VPort 06
VP-FP2	Fixed plate for mounting the VPort 06
VP-06TC2C	Top cover for the VPort 06-2L, coating dome cover  Applicable Models: VPort 06-2L25M VPort 06-2L25M-T VPort 06-2L25M-CT VPort 06-2L25M-CT-T VPort 06-2L36M VPort 06-2L36M-T VPort 06-2L36M-CT VPort 06-2L36M-CT-T



	<p> VPor 06-2L42M  VPor 06-2L42M-T  VPor 06-2L42M-CT  VPor 06-2L42M-CT-T  VPor 06-2L60M  VPor 06-2L60M-T  VPor 06-2L60M-CT  VPor P06-2L25M  VPor P06-2L25M-T  VPor P06-2L25M-CT  VPor P06-2L25M-CT-T  VPor P06-2L36M  VPor P06-2L36M-T  VPor P06-2L36M-CT  VPor P06-2L36M-CT-T  VPor P06-2L42M  VPor P06-2L42M-T  VPor P06-2L42M-CT  VPor P06-2L42M-CT-T  VPor P06-2L60M  VPor P06-2L60M-T  VPor P06-2L60M-CT  VPor P06-2L60M-CT-T  VPor P06-2L80M  VPor P06-2L80M-T  VPor P06-2L80M-CT  VPor P06-2L80M-CT-T </p>
VP-06MTC2C	<p>Top cover for the VPort 06-2M, coating dome cover</p> <p>Applicable Models:</p> <p> VPor 06-2M25M  VPor 06-2M25M-T  VPor 06-2M25M-CT  VPor 06-2M25M-CT-T  VPor 06-2M36M  VPor 06-2M36M-T  VPor 06-2M36M-CT  VPor 06-2M36M-CT-T  VPor 06-2M42M  VPor 06-2M42M-T  VPor 06-2M42M-CT  VPor 06-2M42M-CT-T  VPor 06-2M60M  VPor 06-2M60M-T  VPor 06-2M60M-CT  VPor 06-2M60M-CT-T  VPor 06-2M80M  VPor 06-2M80M-T  VPor 06-2M80M-CT  VPor 06-2M80M-CT-T  VPor P06-2M25M  VPor P06-2M25M-T  VPor P06-2M25M-CT  VPor P06-2M25M-CT-T  VPor P06-2M36M  VPor P06-2M36M-T  VPor P06-2M36M-CT  VPor P06-2M36M-CT-T  VPor P06-2M42M  VPor P06-2M42M-T  VPor P06-2M42M-CT  VPor P06-2M42M-CT-T  VPor P06-2M60M  VPor P06-2M60M-T  VPor P06-2M60M-CT  VPor P06-2M60M-CT-T  VPor P06-2M80M  VPor P06-2M80M-T  VPor P06-2M80M-CT  VPor P06-2M80M-CT-T </p>
VP-DP01	0.6 g x 2 dry pack with sticker

© Moxa Inc. All rights reserved. Updated Dec 31, 2019.

This document and any portion thereof may not be reproduced or used in any manner whatsoever without the express written permission of Moxa Inc. Product specifications subject to change without notice. Visit our website for the most up-to-date product information.

# VPort 06EC-2V Series

EN 50155, 1080p resolution, day & night outdoor IP cameras



## Features and Benefits

- IP67-rated
- Built-in front glass heater to remove snow and frost
- 1/3" progressive scan camera with maximum 1920 x 1080 resolution at up to 30 fps
- iCapTrue™ image enhancement technology
- DynaStream™ for optimized network efficiency
- CBR Pro™ for high image quality in limited bandwidth transmissions
- ONVIF Profile S support for standardization and interoperability
- Complies with all EN 50155 mandatory test items<sup>1</sup>

## Certifications



## Introduction

The VPort 06EC-2V outdoor IP cameras support 1080P (1920 x 1080) resolution video images at up to 30 frames per second. iCapTrue's new image enhancement technology uses an advanced AE and AWB algorithm to produce better image quality in a variety of environments. The chassis design is IP67-rated, and has been shown to provide ample dust and rain protection, and with a built-in front glass heater and a tough outer cover, the cameras have the versatility and ruggedness needed for outdoor mobile IP video surveillance applications. In addition, models capable of operating between -40 to 70°C are available.

## Specifications

### Memory

microSD Slot	SDXC
--------------	------

### Input/Output Interface

Digital Output Channels	1
Contact Current Rating	Resistive load: 1 A @ 24 VDC
Connector	5-pin A-coded male M12 connector with 20 cm cable

### Ethernet Interface

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

### Ethernet Software Features

Protocols	TCP/IP, IPv4/IPv6, UDP, HTTP, RTP/RTSP, ARP, UPnP, FTP, TFTP, SMTP, NTP Client, DNS, DDNS, QoS, IGMP v3, ICMP, SNMPv1/v2c/v3, DHCP Opt66/67, HTTPS
-----------	--

1. This product is suitable for rolling stock railway applications, as defined by the EN 50155 standard. For a more detailed statement, click here: [www.moxa.com/doc/specs/EN\\_50155\\_Compliance.pdf](http://www.moxa.com/doc/specs/EN_50155_Compliance.pdf)

## Security Functions

Password	User-level password protection
Filter	IP address
Encryption	HTTPS

## Power Parameters

No. of Power Inputs	2
Source of Input Power	PoE (IEEE 802.3af)
Input Voltage	24 VDC for front-window heater (for defrosting)
Input Current	0.167 A @ 48 VDC, 0.9 A @ 24 VDC
Power Connector	M12 connector
Note	PoE is for powering the camera; 24 VDC is for powering the heater

## Camera Characteristics

Sensor	1/3-in 1080P progressive scan CMOS
Lens	VPort 06EC-2V36M Series: f=3.6 mm, F1.6, Diagonal 99°, Horizontal 70°, Vertical 39° VPort 06EC-2V42M Series: f=4.2 mm, F1.6, Diagonal 82°, Horizontal 62°, Vertical 34° VPort 06EC-2V60M Series: f=6.0 mm, F1.8, Diagonal 62°, Horizontal 43°, Vertical 24° VPort 06EC-2V80M Series: f=8.0 mm, F1.6, Diagonal 42°, Horizontal 33°, Vertical 17°
Minimum Illumination	Color: 0.2 lux, at F1.6 (Gain High, 50 IRE, 1/30 sec) B/W: 0.05 lux, at F1.6 (Gain High, 50 IRE, 1/30 sec)
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)	100 dB
AGC (auto gain control)	2X, 4X, 8X, 16X
Flickerless Control	Automatic, 50 Hz, 60 Hz modes
Image Rotation	Flip, Mirror, 90°, 180°, 270° rotation
Image Setting	Manual tuning with saturation, sharpness, and contrast
Camera Angle	Pan: ±5°, Tilt: +10/-5° (controlled manually)

## Video Interface

Video Compression	H.264 (ISO/IEC 14496-10) or MJPEG
Video Output	via Ethernet
Video Streams	4 independent H.264 or MJPEG video streams
NTSC/PAL	Auto-sensing or manual

Video Resolution and FPS (frames per second)	NTSC		PAL		
	Size	Max. FPS	Size	Max. FPS	
	QCIF	176 x 112	30	176 x 144	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
Full HD	1920 x 1080	30	1920 x 1080	25	
Video Viewing	DynaStream™ support for changing the video frame rate automatically CBR Pro™ for good image quality in limited bandwidth transmissions 3 privacy mask areas provided Adjustable image size and quality Timestamp and text overlay OSD (On Screen Display) position adjustable Maximum of 5 simultaneous unicast connections, 50 multicast clients Digital PTZ				
<b>Camera Software Development</b>					
Video Standards	ONVIF Profile S				
<b>Camera Alarm Software Features</b>					
Intelligent Video	Camera tampering detection				
Video Motion Detection	3 independently configurable areas				
Shock Detection	Built-in G sensor				
Humidity	Detects camera's internal humidity				
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	50 MB video buffer for JPEG snapshot images				
Video Recording	Event recordings stored on the SD card				
<b>Software Requirements</b>					
Memory Size	2 GB				
Operating System	Windows 7 or above				
Browser	Internet Explorer 9.x or above				
Multimedia	DirectX 9.0C or above				

## Physical Characteristics

Housing	Metal IP67 Transparent Glass cover
Dimensions	83 x 168 x 233 mm (3.27 x 6.61 x 8.78 in)
Weight	1630 g (3.59 lb)
Installation	Wall mounting (standard)
Protection	-CT models: PCB conformal coating

## Environmental Limits

Operating Temperature	Standard Models: -25 to 55°C (-13 to 131°F) 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, IP67
Salt Spray Test	ASTM B368 (CASS), 125 hours
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 IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V 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	480,269 hrs
Standards	Telcordia SR332

## Warranty

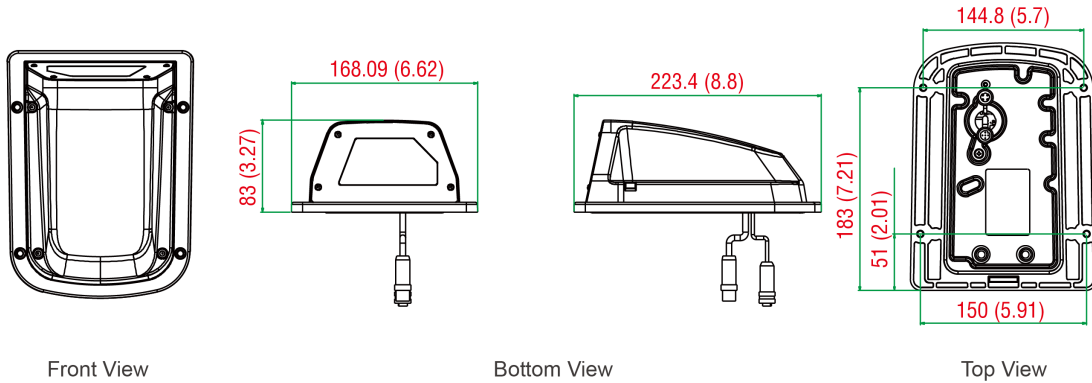
Warranty Period	5 years Note: Limited warranty on moving parts; see Moxa's online warranty policy for details.
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>

## Package Contents

Device	1 x VPort 06EC-2V Series camera
Installation Kit	1 x cap, male, metal, for M12 port 1 x 15 g dry pack (VP-DP02) 1 x sticker
Documentation	1 x document and software CD 1 x quick installation guide 1 x warranty card

## Dimensions

Unit: mm (inch)



## Ordering Information

Model Name	Lens	Local Storage	Operating Temp.	Conformal Coating
VPort 06EC-2V36M	3.6 mm	microSD slot, SDXC interface	-25 to 55°C	-
VPort 06EC-2V42M	4.2 mm	microSD slot, SDXC interface	-25 to 55°C	-
VPort 06EC-2V60M	6.0 mm	microSD slot, SDXC interface	-25 to 55°C	-
VPort 06EC-2V80M	8.0 mm	microSD slot, SDXC interface	-25 to 55°C	-
VPort 06EC-2V36M-T	3.6 mm	microSD slot, SDXC interface	-40 to 70°C	-
VPort 06EC-2V42M-T	4.2 mm	microSD slot, SDXC interface	-40 to 70°C	-
VPort 06EC-2V60M-T	6.0 mm	microSD slot, SDXC interface	-40 to 70°C	-
VPort 06EC-2V80M-T	8.0 mm	microSD slot, SDXC interface	-40 to 70°C	-
VPort 06EC-2V36M-CT	3.6 mm	microSD slot, SDXC interface	-25 to 55°C	✓
VPort 06EC-2V42M-CT	4.2 mm	microSD slot, SDXC interface	-25 to 55°C	✓
VPort 06EC-2V60M-CT	6.0 mm	microSD slot, SDXC interface	-25 to 55°C	✓
VPort 06EC-2V80M-CT	8.0 mm	microSD slot, SDXC interface	-25 to 55°C	✓
VPort 06EC-2V36M-CT-T	3.6 mm	microSD slot, SDXC interface	-40 to 70°C	✓

Model Name	Lens	Local Storage	Operating Temp.	Conformal Coating
VPort 06EC-2V42M-CT-T	4.2 mm	microSD slot, SDXC interface	-40 to 70°C	✓
VPort 06EC-2V60M-CT-T	6.0 mm	microSD slot, SDXC interface	-40 to 70°C	✓
VPort 06EC-2V80M-CT-T	8.0 mm	microSD slot, SDXC interface	-40 to 70°C	✓

## Accessories (sold separately)

### Camera Mounting Kits

VP-DP02	15 g dry pack with hook-and-loop fastener
---------	---

© Moxa Inc. All rights reserved. Updated Dec 30, 2019.

This document and any portion thereof may not be reproduced or used in any manner whatsoever without the express written permission of Moxa Inc. Product specifications subject to change without notice. Visit our website for the most up-to-date product information.



# VPort P06-1MP-M12 Series

EN 50155, HD video image, compact IP cameras



## Features and Benefits

- 1/2.7" progressive scan camera with maximum 1280 x 800 resolution at up to 30 fps
- 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
- 1 built-in audio input or microphone
- ONVIF support for standardization and interoperability

## Certifications



## Introduction

The compact VPort P06-1MP-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,<sup>1</sup> 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. The cameras feature vandal-proofing (EN 62262 IK10), a -25 to 55°C or -40 to 70°C (T models) operating temperature range, a rugged M12 Ethernet port, 1 audio input, PoE power inputs, IP66 rain and dust protection, a dehumidifying membrane, and a selectable lens.

## 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	0.12 A @ 48 VDC
---------------	-----------------

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](http://www.moxa.com/doc/specs/EN_50155_Compliance.pdf)

## Camera Characteristics

Sensor	1/2.7-in HD progressive scan CMOS
Lens	VPort P06-1MP-M12-CAM25 Series: f=2.5mm, F2.8, Diagonal 126°, Horizontal 123°, Vertical 70° VPort P06-1MP-M12-CAM36 Series: f=3.6mm, F1.6, Diagonal 99°, Horizontal 94°, Vertical 47° VPort P06-1MP-M12-CAM42 Series: f=4.2mm, F1.8, Diagonal 87°, Horizontal 80°, Vertical 43° VPort P06-1MP-M12-CAM60 Series: f=6.0mm, F1.6, Diagonal 60°, Horizontal 55°, Vertical 29° VPort P06-1MP-M12-CAM80 Series: f=8.0mm, F1.6, Diagonal 45°, Horizontal 40°, Vertical 22°
Camera Angle	Pan: ±30°, Tilt: 0° to 90° (controlled manually) Note: Tilt is only 30° to 60° for 2.5 mm lens models
Minimum Illumination	Color: 0.2 lux, at F1.2 (Gain High, 50 IRE, 1/30 sec)
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
<b>Video Interface</b>	
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
Note: Multiple streams may not support up to 30 FPS.				

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

<b>Audio Interface</b>	
Audio Inputs	<p>VPort P06-1MP-M12-MIC Series: 1 x built-in microphone</p> <p>VPort P06-1MP-M12 Series: 1 x Line-in, with RCA connector</p>
Audio Format	Mono, PCM (G.711)

<b>Camera Software Development</b>	
VPort SDK PLUS	Includes CGI commands, ActiveX Control, and API library for customized applications or system integration for third-party developers. (The latest version of SDK is available for download from Moxa's website)
Video Standards	ONVIF Profile S

<b>Camera Alarm Software Features</b>	
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

<b>Software Requirements</b>	
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	Plastic top cover, metal bottom plate IP66 rain and dust protection IK10 vandal resistant protection Transparent PC cover
Dimensions	110 x 47 mm (4.33 x 1.85 in)
Weight	310 g (0.68 lb)
Installation	Panel mounting
Protection	-CT models: PCB conformal coating

## Environmental Limits

Operating Temperature	Standard Models: -25 to 55°C (-13 to 131°F) 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
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 IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V 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	1,944,687 hrs
Standards	Telcordia SR332

## Warranty

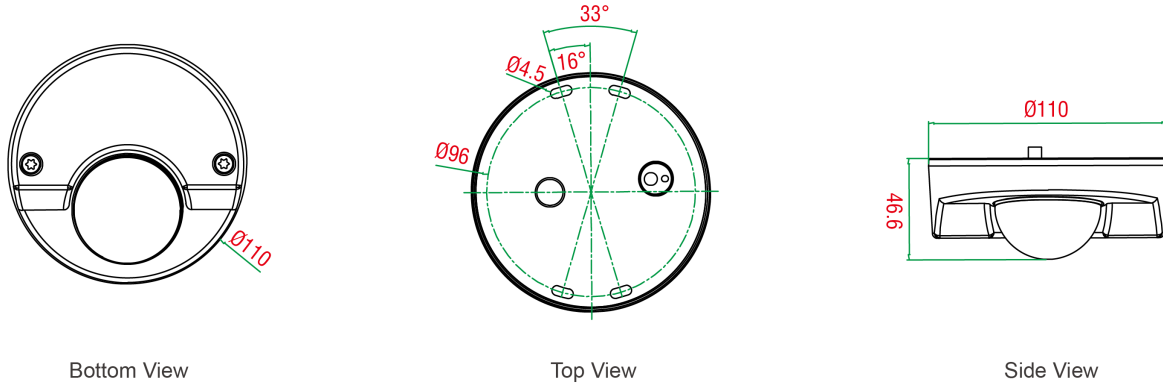
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>
Warranty Period	5 years

## Package Contents

Device	1 x VPort P06-1MP-M12 Series camera
Installation Kit	1 x sticker 1 x L-type Torx screwdriver 4 x indented hexagonal head tapping screws, nuts, gaskets, and spring washers
Documentation	1 x document and software CD 1 x quick installation guide 1 x warranty card

## Dimensions

Unit: mm (inch)



## Ordering Information

Model Name	Lens	Audio Interface	Operating Temp.	Conformal Coating
VPort P06-1MP-M12-CAM25	2.5 mm	Line-in	-25 to 55°C	-
VPort P06-1MP-M12-CAM36	3.6 mm	Line-in	-25 to 55°C	-
VPort P06-1MP-M12-CAM42	4.2 mm	Line-in	-25 to 55°C	-
VPort P06-1MP-M12-CAM60	6.0 mm	Line-in	-25 to 55°C	-
VPort P06-1MP-M12-CAM80	8.0 mm	Line-in	-25 to 55°C	-
VPort P06-1MP-M12-CAM25-T	2.5 mm	Line-in	-40 to 70°C	-
VPort P06-1MP-M12-CAM36-T	3.6 mm	Line-in	-40 to 70°C	-
VPort P06-1MP-M12-CAM42-T	4.2 mm	Line-in	-40 to 70°C	-
VPort P06-1MP-M12-CAM60-T	6.0 mm	Line-in	-40 to 70°C	-
VPort P06-1MP-M12-CAM80-T	8.0 mm	Line-in	-40 to 70°C	-
VPort P06-1MP-M12-MIC-CAM25	2.5 mm	Microphone	-25 to 55°C	-
VPort P06-1MP-M12-MIC-CAM36	3.6 mm	Microphone	-25 to 55°C	-
VPort P06-1MP-M12-MIC-CAM42	4.2 mm	Microphone	-25 to 55°C	-
VPort P06-1MP-M12-MIC-CAM60	6.0 mm	Microphone	-25 to 55°C	-
VPort P06-1MP-M12-MIC-CAM80	8.0 mm	Microphone	-25 to 55°C	-
VPort P06-1MP-M12-MIC-CAM25-T	2.5 mm	Microphone	-40 to 70°C	-
VPort P06-1MP-M12-MIC-CAM36-T	3.6 mm	Microphone	-40 to 70°C	-
VPort P06-1MP-M12-MIC-CAM42-T	4.2 mm	Microphone	-40 to 70°C	-

Model Name	Lens	Audio Interface	Operating Temp.	Conformal Coating
VPort P06-1MP-M12-MIC-CAM60-T	6.0 mm	Microphone	-40 to 70°C	-
VPort P06-1MP-M12-MIC-CAM80-T	8.0 mm	Microphone	-40 to 70°C	-
VPort P06-1MP-M12-CAM25-CT	2.5 mm	Line-in	-25 to 55°C	✓
VPort P06-1MP-M12-CAM36-CT	3.6 mm	Line-in	-25 to 55°C	✓
VPort P06-1MP-M12-CAM42-CT	4.2 mm	Line-in	-25 to 55°C	✓
VPort P06-1MP-M12-CAM60-CT	6.0 mm	Line-in	-25 to 55°C	✓
VPort P06-1MP-M12-CAM80-CT	8.0 mm	Line-in	-25 to 55°C	✓
VPort P06-1MP-M12-CAM25-CT-T	2.5 mm	Line-in	-40 to 70°C	✓
VPort P06-1MP-M12-CAM36-CT-T	3.6 mm	Line-in	-40 to 70°C	✓
VPort P06-1MP-M12-CAM42-CT-T	4.2 mm	Line-in	-40 to 70°C	✓
VPort P06-1MP-M12-CAM60-CT-T	6.0 mm	Line-in	-40 to 70°C	✓
VPort P06-1MP-M12-CAM80-CT-T	8.0 mm	Line-in	-40 to 70°C	✓
VPort P06-1MP-M12-MIC-CAM25-CT	2.5 mm	Microphone	-25 to 55°C	✓
VPort P06-1MP-M12-MIC-CAM36-CT	3.6 mm	Microphone	-25 to 55°C	✓
VPort P06-1MP-M12-MIC-CAM42-CT	4.2 mm	Microphone	-25 to 55°C	✓
VPort P06-1MP-M12-MIC-CAM60-CT	6.0 mm	Microphone	-25 to 55°C	✓
VPort P06-1MP-M12-MIC-CAM80-CT	8.0 mm	Microphone	-25 to 55°C	✓
VPort P06-1MP-M12-MIC-CAM25-CT-T	2.5 mm	Microphone	-40 to 70°C	✓
VPort P06-1MP-M12-MIC-CAM36-CT-T	3.6 mm	Microphone	-40 to 70°C	✓
VPort P06-1MP-M12-MIC-CAM42-CT-T	4.2 mm	Microphone	-40 to 70°C	✓
VPort P06-1MP-M12-MIC-CAM60-CT-T	6.0 mm	Microphone	-40 to 70°C	✓
VPort P06-1MP-M12-MIC-CAM80-CT-T	8.0 mm	Microphone	-40 to 70°C	✓

## Accessories (sold separately)

### Camera Mounting Kits

VP-SScrew	VPort P06-1MP Series security screw (1000 pieces)
VP-SCO1	Side-cable-out adaptor for mounting the VPort P06-1MP-M12
VP-FP1	Fixed plate for mounting the VPort P06-1MP-M12
VP-06TC1	Top cover for the VPort 06-1MP-M12

© Moxa Inc. All rights reserved. Updated Nov 12, 2018.

This document and any portion thereof may not be reproduced or used in any manner whatsoever without the express written permission of Moxa Inc. Product specifications subject to change without notice. Visit our website for the most up-to-date product information.

# VPort P16-1MP-M12-IR Series

EN 50155, HD image, infrared IP cameras



## Features and Benefits

- 1/2.7" progressive scan camera with maximum 1280 x 800 resolution at up to 30 fps
- Built-in IR illuminator and ICR (Infrared Cut Filter Removal) 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
- 1 built-in microphone for audio input, and 1 digital input for external sensor
- ONVIF support for standardization and interoperability

## Certifications



## Introduction

The rugged VPort P16-1MP-M12-IR cameras produce HD (720P, 1280 x 720) video images and feature 3 H.264/MJPEG video streams, giving them the versatility and ruggedness needed for mobile IP video surveillance applications in a variety of different installations and environments. In addition, the cameras 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 input, a built-in microphone, a digital input, IP66 rain and dust protection, an IR illuminator for day & night image capabilities, and are compliant with the mandatory sections of EN 50155.<sup>1</sup>

## Specifications

### Input/Output Interface

Digital Input Channels	1
Digital Inputs	+13 to +30 V for state 1 -30 to +1 V for state 0 Max. input current: 8 mA
Connector	5-pin A-coded male M12 connector with 20 cm cable

### Ethernet Interface

PoE Ports (10/100BaseT(X), M12 D-coded 4-pin female connector)	1
Standards	IEEE 802.3af for PoE

### 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
-----------	---

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](http://www.moxa.com/doc/specs/EN_50155_Compliance.pdf)



## 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	0.19 A @ 48 VDC

## Camera Characteristics

Sensor	1/2.7-in HD progressive scan CMOS
Lens	VPort P16-1MP-M12-IR-CAM36 Series: f=3.6mm, F1.6, Diagonal 99°, Horizontal 94°, Vertical 47° VPort P16-1MP-M12-IR-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) B/W: 0.05 lux, at F1.2 (Gain High, 50 IRE, 1/30 sec) Note: 0 lux if IR illuminator is on
Camera Angle	Pan 350°, Tilt 65° (controlled manually)
Day & Night	Auto/Color/BW; ICR control
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)
ICR Control	Auto (light sensor control) or DI control
IR Illumination	IR LED illuminators, 5-meter (max.) effective distance; On/Off controlled manually (night mode) or by the light sensor
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 CBR Pro™ for good image quality in limited bandwidth transmissions 3 privacy mask areas provided Adjustable image size and quality Timestamp and text overlay OSD (On Screen Display) position adjustable Maximum of 5 simultaneous unicast connections, 50 multicast clients				
<b>Audio Interface</b>					
Audio Format	Mono, PCM (G.711)				
Audio Inputs	1 x built-in microphone				
<b>Camera Software Development</b>					
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				
<b>Camera Alarm Software Features</b>					
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				
<b>Software Requirements</b>					
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 Metal housing, PC dome cover IK10 vandal resistant protection
Dimensions	125 x 125 x 120.7 mm (4.92 x 4.92 x 4.8 in)
Weight	870 g (1.92 lb)
Installation	Panel mounting
Protection	-CT models: PCB conformal coating

## Environmental Limits

Operating Temperature	Standard Models: -25 to 55°C (-13 to 131°F) 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 IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V 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	1,052,184 hrs
Standards	Telcordia SR332

## Warranty

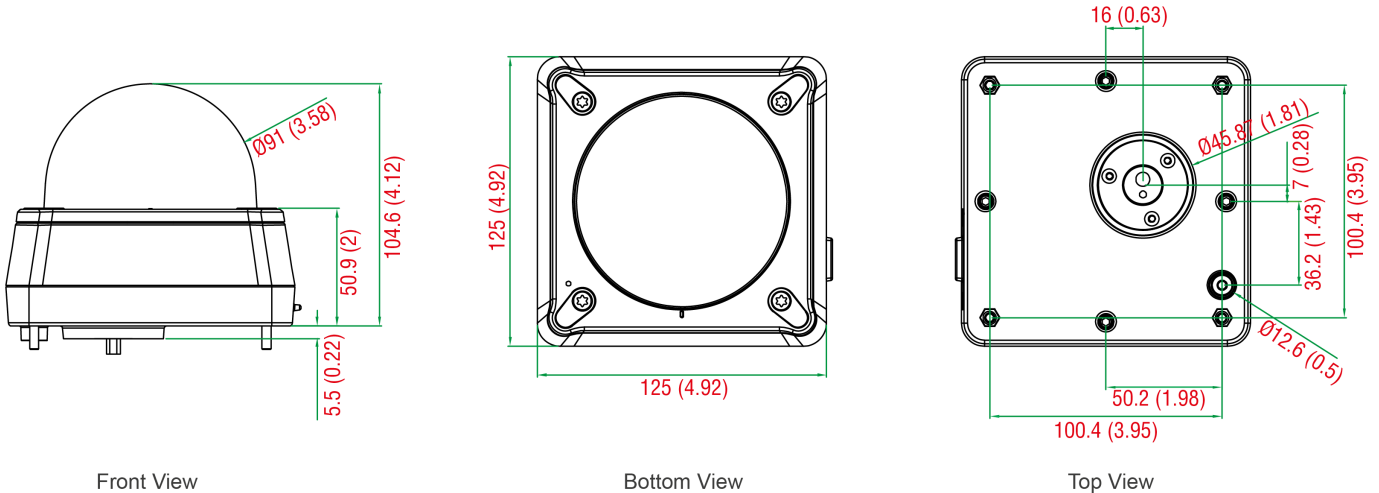
Warranty Period	5 years Note: Limited warranty on moving parts; see Moxa's online warranty policy for details.
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>

## Package Contents

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

## Dimensions

Unit: mm (inch)



## Ordering Information

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

© Moxa Inc. All rights reserved. Updated Nov 12, 2018.

This document and any portion thereof may not be reproduced or used in any manner whatsoever without the express written permission of Moxa Inc. Product specifications subject to change without notice. Visit our website for the most up-to-date product information.

# 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



## 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,<sup>1</sup> 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
---------------	-----------------

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](http://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° 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) 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
<b>Video Interface</b>	
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 CBR Pro™ for good image quality in limited bandwidth transmissions 3 privacy mask areas provided Adjustable image size and quality Timestamp and text overlay OSD (On Screen Display) position adjustable Maximum of 5 simultaneous unicast connections, 50 multicast clients				
<b>Camera Software Development</b>					
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				
<b>Camera Alarm Software Features</b>					
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				
<b>Software Requirements</b>					
Memory Size	1 GB				
Operating System	Windows 7 or above				
Browser	Internet Explorer 9.x or above				
Multimedia	DirectX 9.0C or above				
<b>Physical Characteristics</b>					
Housing	IP66 rain and dust protection Metal housing, PC dome cover 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) 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 IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V 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 Note: Limited warranty on moving parts; see Moxa's online warranty policy for details.
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>

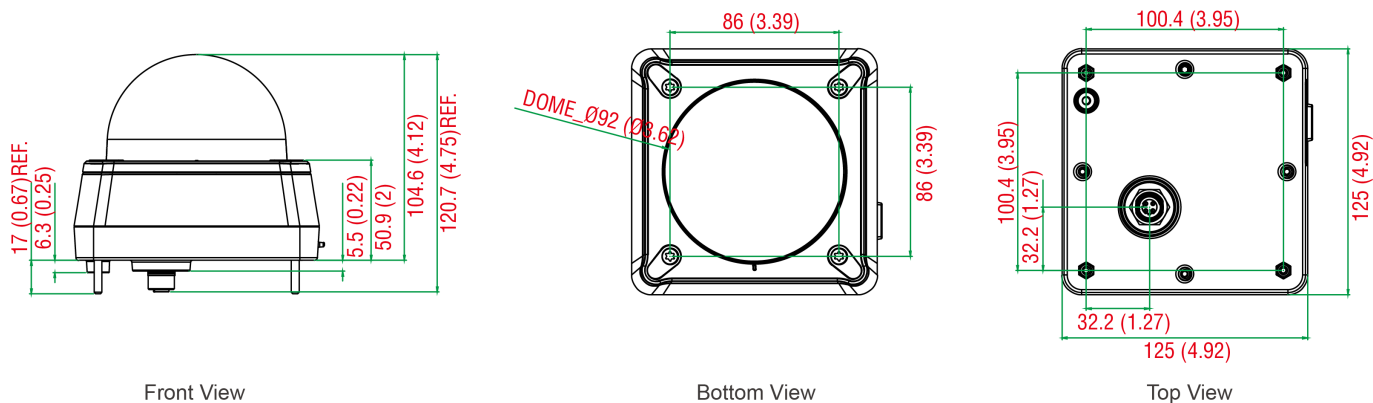
#### Package Contents

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



## Dimensions

Unit: mm (inch)



## 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
---------	--------------------------------------

© Moxa Inc. All rights reserved. Updated Nov 12, 2018.

This document and any portion thereof may not be reproduced or used in any manner whatsoever without the express written permission of Moxa Inc. Product specifications subject to change without notice. Visit our website for the most up-to-date product information.

# VPort P16-2MR Series

EN 50155, 1080P image, infrared IP cameras



## Features and Benefits

- 1/3" progressive scan camera with maximum 1920 x 1080 resolution at up to 30 fps
- Built-in IR illuminator and ICR (Infrared Cut Filter Removal) for day & night images
- High quality video imaging with DNR and WDR
- Up to 4 H.264 or MJPEG independent simultaneous video streams
- DynaStream™ for optimized network efficiency
- CBR Pro™ for high image quality in limited bandwidth transmissions
- Supports SDXC (up to 2 TB SD card) for local storage
- 1 built-in microphone for audio input, and 1 digital input for external sensor
- ONVIF support for standardization and interoperability

## Certifications



## Introduction

The rugged VPort P16-2MR cameras produce Full HD (1920 x 1080) video images and feature 4 H.264/MJPEG video streams, giving them the versatility and ruggedness needed for mobile IP video surveillance applications in a variety of different installations and environments. In addition, the cameras feature vandal-proofing (EN 62262 IK8), a -25 to 55°C or -40 to 70°C (T models) operating temperature, a rugged M12 Ethernet port, PoE power input, a built-in microphone, a digital input, IP66 rain and dust protection, an IR illuminator for day and night image capabilities, and are compliant with the mandatory sections of EN 50155.<sup>1</sup>

## Specifications

### Memory

microSD Slot	SDXC
--------------	------

### Input/Output Interface

Digital Input Channels	1
Digital Inputs	+13 to +30 V for state 1 -30 to +1 V for state 0 Max. input current: 8 mA
Connector	5-pin A-coded male M12 connector with 20 cm cable

### Ethernet Interface

PoE Ports (10/100BaseT(X), M12 D-coded 4-pin female connector)	1
Standards	IEEE 802.3af for PoE

### Ethernet Software Features

Protocols	TCP/IP, IPv4/IPv6, UDP, HTTP, RTP/RTSP, ARP, UPnP, FTP, TFTP, SMTP, NTP Client, DNS, DDNS, QoS, IGMP v3, ICMP, SNMPv1/v2c/v3, DHCP Opt66/67, HTTPS
-----------	--

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](http://www.moxa.com/doc/specs/EN_50155_Compliance.pdf)

## 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	0.26 A @ 48 VDC

## Camera Characteristics

Sensor	1/3-in 1080P progressive scan CMOS
Lens	VPort P16-2MR36M Series: f=3.6mm, F1.6, Diagonal 99°, Horizontal 70°, Vertical 39° VPort P16-2MR42M Series: f=4.2mm, F1.6, Diagonal 82°, Horizontal 62°, Vertical 34° VPort P16-2MR60M Series: f=6.0mm, F1.8, Diagonal 62°, Horizontal 43°, Vertical 24° VPort P16-2MR80M Series: f=8.0mm, F1.6, Diagonal 42°, Horizontal 33°, Vertical 17°
Minimum Illumination	Color: 0.2 lux, at F1.2 (Gain High, 50 IRE, 1/30 sec) B/W: 0.05 lux, at F1.2 (Gain High, 50 IRE, 1/30 sec) Note: 0 lux if IR illuminator is on
Camera Angle	Pan 350°, Tilt 65° (controlled manually)
Day & Night	Auto/Color/BW; ICR control
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)
ICR Control	Auto (light sensor control) or DI control
IR Illumination	IR LED illuminators, 5-meter (max.) effective distance; On/Off controlled manually (night mode) or by the light sensor
DNR (digital noise reduction)	Built-in 2D/3D DNR
WDR (wide dynamic range)	100 dB
AGC (auto gain control)	2X, 4X, 8X, 16X
Flickerless Control	Automatic, 50 Hz, 60 Hz modes
Image Rotation	Flip, Mirror, 90°, 180°, 270° rotation
Image Setting	Manual tuning with saturation, sharpness, and contrast

## Video Interface

Video Compression	H.264 (ISO/IEC 14496-10) or MJPEG
Video Output	via Ethernet
Video Streams	4 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
	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
Full HD	1920 x 1080	30	1920 x 1080	25	
Video Viewing	DynaStream™ support for changing the video frame rate automatically CBR Pro™ for good image quality in limited bandwidth transmissions 3 privacy mask areas provided Adjustable image size and quality Timestamp and text overlay OSD (On Screen Display) position adjustable Maximum of 5 simultaneous unicast connections, 50 multicast clients				
<b>Audio Interface</b>					
Audio Format	Mono, PCM (G.711) AAC				
Audio Inputs	1 x built-in microphone				
<b>Camera Software Development</b>					
Video Standards	ONVIF Profile S				
<b>Camera Alarm Software Features</b>					
Intelligent Video	Camera tampering detection				
Video Motion Detection	3 independently configurable areas				
Shock Detection	Built-in G sensor				
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	50 MB video buffer for JPEG snapshot images				
Video Recording	Event recordings stored on the SD card				
<b>Software Requirements</b>					
Memory Size	2 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 Metal housing, PC dome cover IK8 vandal resistant protection
Dimensions	125 x 125 x 120.7 mm (4.92 x 4.92 x 4.8 in)
Weight	890 g (1.96 lb)
Installation	Panel mounting
Protection	-CT models: PCB conformal coating

## Environmental Limits

Operating Temperature	Standard Models: -25 to 55°C (-13 to 131°F) 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, IK8
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 IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V 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	997,474 hrs
Standards	Telcordia SR332

## Warranty

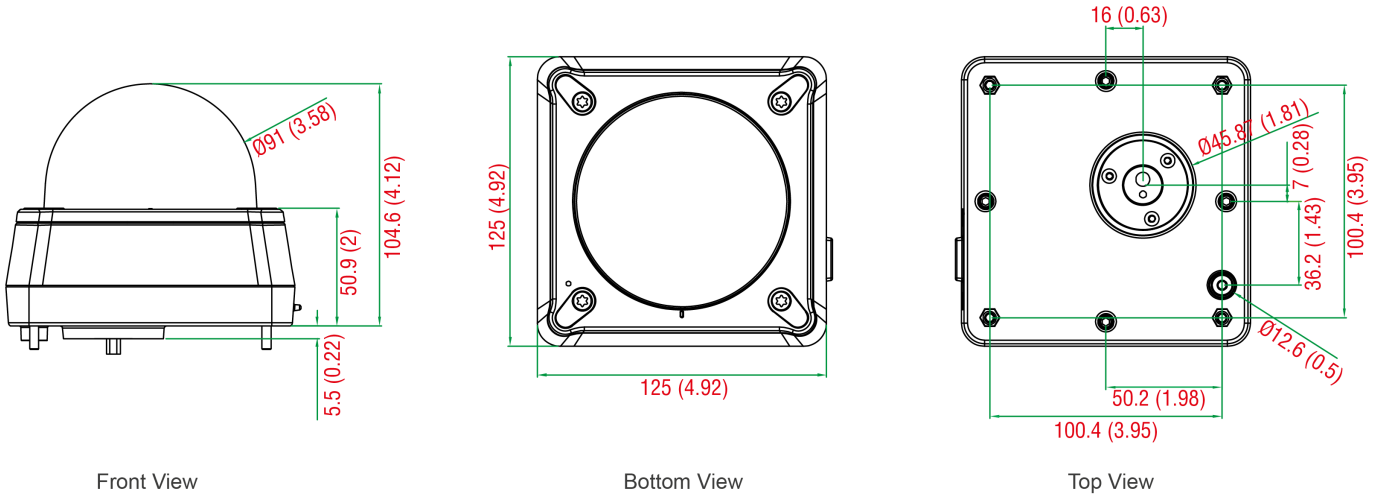
Warranty Period	5 years Note: Limited warranty on moving parts; see Moxa's online warranty policy for details.
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>

## Package Contents

Device	1 x VPort P16-2MR Series camera
Installation Kit	1 x sticker 1 x L-type Torx screwdriver 4 x indented hexagonal head tapping screws, nuts, gaskets, and spring washers
Documentation	1 x document and software CD 1 x quick installation guide 1 x warranty card

## Dimensions

Unit: mm (inch)



## Ordering Information

Model Name	Lens	Local Storage	Operating Temp.	Conformal Coating
VPort P16-2MR36M	3.6 mm	microSD slot, SDXC interface	-25 to 55°C	-
VPort P16-2MR42M	4.2 mm	microSD slot, SDXC interface	-25 to 55°C	-
VPort P16-2MR60M	6.0 mm	microSD slot, SDXC interface	-25 to 55°C	-
VPort P16-2MR80M	8.0 mm	microSD slot, SDXC interface	-25 to 55°C	-
VPort P16-2MR36M-T	3.6 mm	microSD slot, SDXC interface	-40 to 70°C	-
VPort P16-2MR42M-T	4.2 mm	microSD slot, SDXC interface	-40 to 70°C	-
VPort P16-2MR60M-T	6.0 mm	microSD slot, SDXC interface	-40 to 70°C	-
VPort P16-2MR80M-T	8.0 mm	microSD slot, SDXC interface	-40 to 70°C	-
VPort P16-2MR36M-CT	3.6 mm	microSD slot, SDXC interface	-25 to 55°C	✓
VPort P16-2MR42M-CT	4.2 mm	microSD slot, SDXC interface	-25 to 55°C	✓
VPort P16-2MR60M-CT	6.0 mm	microSD slot, SDXC interface	-25 to 55°C	✓
VPort P16-2MR80M-CT	8.0 mm	microSD slot, SDXC interface	-25 to 55°C	✓

Model Name	Lens	Local Storage	Operating Temp.	Conformal Coating
VPort P16-2MR36M-CT-T	3.6 mm	microSD slot, SDXC interface	-40 to 70°C	✓
VPort P16-2MR42M-CT-T	4.2 mm	microSD slot, SDXC interface	-40 to 70°C	✓
VPort P16-2MR60M-CT-T	6.0 mm	microSD slot, SDXC interface	-40 to 70°C	✓
VPort P16-2MR80M-CT-T	8.0 mm	microSD slot, SDXC interface	-40 to 70°C	✓

## Accessories (sold separately)

### Camera Mounting Kits

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

© Moxa Inc. All rights reserved. Updated Dec 30, 2019.

This document and any portion thereof may not be reproduced or used in any manner whatsoever without the express written permission of Moxa Inc. Product specifications subject to change without notice. Visit our website for the most up-to-date product information.