Optera™ IMM Series with SureVision™ 2.0
180°, 270°, 360° PANORAMIC, 12 MPX IP CAMERAS

Product Features

SureVision™ 2.0
A Pelco™ by Schneider Electric™ technology

- Constant, seamless situational awareness
- Zoom in for detail live or retrospectively with client-side dewarping
- Multiple immersive PTZ views at video management system (VMS)
- Up to 12 Megapixel (4 x 3 MPx) resolution for better detail at a distance
- Up to 30 frames per second (fps)
- Outstanding WDR and low-light performance at the same time
- Pelco H.264 Smart Compression Technology
- Eight Pelco video analytic behaviors
- Local storage (Micro SD)
- Pelco Camera Link
- ONVIF Profile S, Profile G, and Profile Q conformant
- Compatible with Pelco VideoXpert™, VideoXpert™ Professional, Digital Sentry®, Endura™ (In Tiled Mode), and third-party VMS partners

OPTERA IMM SERIES 180-DEGREE CAMERA

- Power over Ethernet Plus (PoE+)
- 3-year warranty

Optera™ IMM Series Multi-Imager Solution

The Optera™ IMM Series camera with SureVision™ 2.0 provides a panomersive experience with seamless situational awareness which provides stitched and blended panoramic views. The IMM Series also enables you to zoom in for detail within multiple intuitive immersive views from a video management system (VMS). Other multi-imager solutions can be disjointed with separate streams out of order. The IMM Series transparently integrates video across all sensors in the camera, presenting a seamless user experience from setup to viewing.

Camera

IMM Series camera options include 180-, 270-, or 360-degree models. All models include a camera in a compact in-ceiling mount, surface mount, or pendant enclosure that is ready to install. All models feature a robust metal tamper-resistant design and carry an IK10 impact rating for vandal resistance. The Environmental Vandal model features worry-free use in a wide range of challenging operating conditions. In-ceiling models have a back box that is plenum rated per 2008 NEC article 300.22(C)(2).

Video with SureVision 2.0

The IMM Series offers the panomersive experience with outstanding and industry leading image quality with SureVision 2.0 technology. SureVision 2.0 delivers excellent low-light performance and true wide dynamic range (WDR), consistently and simultaneously. With superior WDR, anti-bloom technologies, 3D noise filtering and advanced tone mapping, SureVision 2.0 makes the IMM Series capable of delivering outstanding image quality in very challenging lighting conditions.

Window Blanking

Window blanking is used to conceal user-defined privacy areas. The IMM Series camera supports up to 32 blanked windows. A blanked area appears on the screen as a solid gray window.

Video

The IMM Series provides near real-time capture with a frame rate of up to 12.5 frames per second (fps) at full resolution or 30 fps at a reduced resolution. This video is presented from the camera in multiple streams that can be encoded in H.264 level 5.1 high profile and constrained variable bit recording (CVBR) for efficient encoding to conserve video storage and bandwidth.

Open and Integrated

Optera IMM Series cameras seamlessly connect to Pelco VideoXpert, VideoXpert Professional, Endura (in Tiled Mode), and Digital Sentry VMSs. The IMM Series integrates with major partner video management systems through the Pelco API, Panomersive SDK and through the ONVIF standard.

Built-In Analytics

The IMM Series features a full suite of eight Pelco video analytics applied across a wide field of view. Pelco behaviors include Abandoned Object, Adaptive Motion Detection, Camera Sabotage, Directional Motion, Loitering Detection, Object Counting, Object Removal, and Stopped Vehicle. These behaviors enable operators to focus quickly on events and areas of interest.

Convenient Power

The IMM Series is designed with Power over Ethernet Plus (PoE+) to simplify planning, wiring, and installation. PoE+ works with PoE+ enabled network switches or power injectors. PoE+ eliminates separate power supplies, cabling, and increases camera availability through an uninterruptable power supply (UPS).

PELCO

by Schneider Electric

ONVIF | S G

International Standards
Organization Registered Firm;
ISO 9001 Quality System

ISO 9001 CERTIFIED

C4015 / Revised 6-12-18

PELCO ANALYTICS BEHAVIORS

Optera IMM Series includes eight user-configurable behaviors.* The camera is capable of running up to three behaviors simultaneously; although, the number of behaviors is limited to the available processing power of the camera and the type of analytic being used.

- **Abandoned Object:** Detects objects placed within a defined zone and triggers an alarm if the object remains in the zone longer than the user-defined time allows. An airport terminal is a typical installation for this behavior. This behavior can also detect objects left behind at an ATM, signaling possible card skimming.

- **Adaptive Motion Detection:** Detects and tracks objects that enter a scene and then triggers an alarm when the objects enter a user-defined zone. This behavior is primarily used in outdoor environments with light traffic to reduce the number of false alarms caused by environmental changes.

- **Camera Sabotage:** Detects contrast changes in the field of view. An alarm is triggered if the lens is obstructed by spray paint, a cloth, or a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.

- **Directional Motion:** Generates an alarm in a high traffic area when a person or object moves in a specified direction. Typical installations for this behavior include an airport gate or tunnel where cameras can detect objects moving in the opposite direction of the normal flow of traffic or an individual entering through an exit door.

- **Loitering Detection:** Identifies when people or vehicles remain in a defined zone longer than the user-defined time allows. This behavior is effective in real-time notification of suspicious behavior around ATMs, stairwells, and school grounds.

- **Object Counting:** Counts the number of objects that enter a defined zone. This behavior can be used to count the number of people at a store entrance/exit or inside a store where the traffic is light. This behavior is based on tracking and does not count people in a crowded setting.

- **Object Removal:** Triggers an alarm if an object is removed from a user-defined zone. This behavior is ideal for customers who want to detect the removal of high value objects, such as painting from a wall or a statue from a pedestal.

- **Stopped Vehicle:** Detects vehicles stopped near a sensitive area longer than the user-defined time allows. This behavior is idea for airport curbside drop-offs, parking enforcement, suspicious parking, traffic lane breakdowns, and vehicles waiting at gates.

* **Simple Motion Detection** is also available, and must be configured from a VMS. When configured, the Web UI will display "internal_motion_detection" in the list of existing analytic profiles.

PELCO'S H.264 SMART COMPRESSION TECHNOLOGY

Pelco's H.264 Smart Compression Technology lowers bandwidth and storage requirements, typically between 30% and 70%, depending on the amount of motion in the scene.

Pelco's Smart Compression Technology dynamically analyzes motion occurring within live video in real-time, to intelligently compress the information you don't need, while retaining details with clear quality in the areas that are important in the scene. By enabling Dynamic GOP, an added feature of Smart Compression, the number of I-frames are automatically reduced in scenes with low motion. Based on the complexity of scenes and motion occurring, such as a store room that has limited entry and exit, up to 70% bandwidth savings can be achieved.

In addition, the camera has long term bit rate control. This can be used to track over time bit rate demand in operational use and recommend optimal settings that conserve storage while preserving image quality.

PELCO CAMERA LINK

Pelco Camera Link technology brings together the best of two flagship Pelco products: You get the seamless and continual situational awareness of Optera across a wide space along with the ability to automatically zoom in for great detail with nearby Spectra Enhanced and follow people and vehicles closely.

We have an analytic behavior associated with this feature that detects and tracks objects that enter a scene and passes this information through Pelco Camera Link to a Pelco PTZ camera.

TECHNICAL SPECIFICATIONS

COMPONENT FEATURES

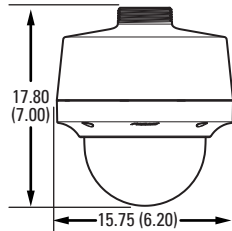✋ *VALUES IN PARENTHESES ARE INCHES; ALL OTHERS ARE CENTIMETERS.*
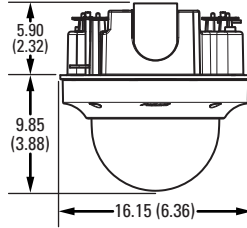
Indoor Vandal, In-Ceiling
- Single Back Box for Suspended or Hard Ceiling Applications
- Requires 8.26 cm (3.25 in.) Space Above Ceiling
- Minimum Ceiling Thickness 0.64 cm (0.25 in.); Maximum Ceiling Thickness 4.45 cm (1.75 in.)
- 3/4 in. NPT or 25 mm Conduit Attachments on Side and Top of Back Box
- Plenum Rated Back Box
- Alodine Aluminum Construction Meets IK10
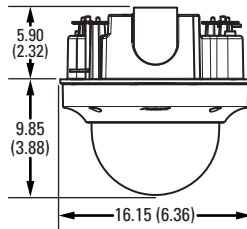- White or Black Finish

5.90 (2.32)
9.85 (3.88)
16.15 (6.36)
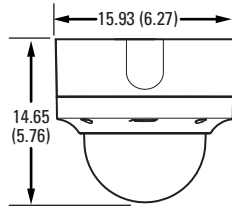
Indoor Vandal, Surface Mount
- Attaches to:
  - Standard 4 in. Square Outlet Box and 2-Gang Electrical Box
  - 3/4 in. NPT or 25 mm Conduit Attachments on Side Back Box
  - Wire Entry through Grommet on Top of Back Box
- Alodine Aluminum Construction Meets IK10
- White or Black Finish

15.93 (6.27)
14.65 (5.76)

Indoor Vandal, Pendant
- 1-1/2 in. NPT Conduit/Pipe Attachment
- Alodine Aluminum Construction Meets IK10
- White or Black Finish

17.80 (7.00)
15.75 (6.20)

Environmental Vandal, In-Ceiling
- Single Back Box for Suspended or Hard Ceiling Applications
- Requires 8.26 cm (3.25 in.) Space Above Ceiling
- Minimum Ceiling Thickness 0.97 cm (0.38 in.); Maximum Ceiling Thickness 4.45 cm (1.75 in.)
- 3/4 in. NPT or 25 mm Conduit Attachments on Side and Top of Back Box
- Meets IP66 and NEMA Type 4X
- Plenum Rated Back Box
- Alodine Aluminum Construction Meets IK10
- Light Gray Finish

5.90 (2.32)
9.85 (3.88)
16.15 (6.36)
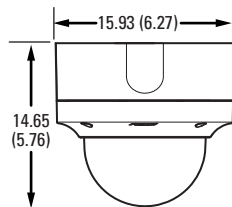
Environmental Vandal, Surface Mount
- Attaches to:
  - Standard 4 in. Square Outlet Box and Standard 2-Gang Electrical Box
  - 3/4 in. NPT or 25 mm Conduit Attachments on Side of Back Box.
  - Wire Entry through Grommet on Top of Back Box
- Meets IP66 and NEMA Type 4X
- Alodine Aluminum Construction Meets IK10
- Light Gray Finish

15.93 (6.27)
14.65 (5.76)
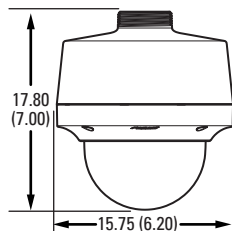
Environmental Vandal, Pendant
- 1-1/2 in. NPT Thread for Use with Pelco Wall Mounts
- Meets IP66 and NEMA Type 4X
- Alodine Aluminum Construction Meets IK10
- Light Gray Finish

17.80 (7.00)
15.75 (6.20)

CAMERA

Imaging Device	1/3.2-in.		
Imager Type	CMOS		
Imager Readout	Progressive scan		
Maximum Resolution			
12 MP (4x)	2048 x 1536 x 4		
Signal-to-Noise Ratio	>50 dB		

Sensitivity

Camera	F-Stop	Color (33 ms)	Mono (33 ms)
180°	f/2.0	0.2 lux	0.14 lux
270°	f/2.5	0.3 lux	0.2 lux
360°	f/2.5	0.3 lux	0.2 lux

Day/Night Capabilities	Yes
Mechanical IR Cut Filter	Yes, (ON/OFF/AUTO selectable) with different set points
Wide Dynamic Range:	>120 dB

LENS

Length

Camera	F-Stop	Length
180°	f/2.0	4.8 mm
270°	f/2.5	2.7 mm
360°	f/2.5	2.7 mm

Field of View

Camera	Horizontal FoV	Vertical FoV
180°	180°	41°
270°	270°	73°
360°	360°	73°

AUDIO

Streaming	Bidirectional: full or half duplex
Input/Output	600 ohm differential, 1Vp-p max. signal level
Compression	G.711 PCM 8 bit, 8 kHz mono at 64 kbit/s

MECHANICAL

Dome Attenuation	
Clear	f/0.0 light loss
Smoked	f/1.0 light loss
Pan Adjustable (All Models)	370°
Tilt Adjustable (180 Model)	0° - 180°

PHYSICAL

Weight	Unit	Shipping
In-Ceiling	1.5 kg (3.3 lb)	2.0 kg (4.3 lb)
Surface Mount	1.7 kg (3.9 lb)	2.0 kg (4.3 lb)
Pendant Mount	1.7 kg (3.9 lb)	2.0 kg (4.3 lb)

ENVIRONMENTAL

Operating Temperature	
Indoor Vandal	−10° to 50°C (14° to 122°F)†
Environmental Vandal	−40° to 50°C (−40° to 122°F)†

†Thermostatically controlled active heating and cooling.

Operating Humidity	
Indoor Vandal	15 to 85%, RH noncondensing
Environmental Vandal	10 to 95%, RH condensing
Impact Resistance	IK10 (20J)
Shock and Vibration	EN50155 Category 1, Class B; IEC 60068:2-6 and 2-27; ISTA-2A, Sequence 5, MIL810G
Storage Temperature	−40° C to 60° C (−40° F to 140° F)
Storage Humidity	15% to 85%, noncondensing

ELECTRICAL

Network Port	RJ-45 connector for 1000Base-T
	1 Gigabit/sec Auto MDI/MDI-X PoE+; Class 4
Cable Type	Category 5 or better
Input Power	PoE+ (IEEE 802.3at, Class 4)
Power Consumption	
Without Heater	17 Watts
With Heater	23 Watts
	Notice: Total camera power consumption attached to a multi-port PoE+ switch must not exceed the total PoE+ power provided by the switch.
Local Storage	Micro SD, SDHC
Alarm	
Unsupervised	Detects open or closed alarm state
Supervised	Detects open and short alarm state with external 1-kohm resistor to detect alarm tampering
Input	3.5 VDC maximum, 3.5 mA maximum
Relay Output	±32 VDC maximum, 150 mA maximum

NETWORK

Users	
Unicast	Up to 20 simultaneous users depending on the resolution settings, and frame rate
Multicast	Unlimited users H.264
Security Access	Password protected
Software Interface	Web browser view and setup
Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, IPv6, SNMP v2c/v3, QoS, HTTP, HTTPS, SSH, SSL, SMTP, FTP, ARP, ICMP, and 802.1x (EAP)

Note: IPv6 supports mixed IPv4 and IPv6 installations, but not IPv6-only deployments.

VIDEO

Video Streams	Set of streams to deliver full resolution views; secondary stream that comprises a lower resolution mosaic of above streams
Frame Rate(s)	User selectable up to 30 fps
Video Encoding	H.264 High, Main, or Base profiles; MJPEG (mosaic stream only)
Bit Rate	Default maximum for Constrained Variable Bit Rate (CVBR) at maximum resolution and frame rate

	Maximum Bit Rate	Typical Bit Rate at Recommended Settings
180° Model	28 Mbps	16 Mbps
270° Model	25 Mbps	16 Mbps
360° Model	25 Mbps	15 Mbps

RANGE GUIDANCE*

	Requirement	180°	270° / 360°
Detection	20 Pix/m (7 Pix/ft)	112 m (319 ft)	60 m (172 ft)
Classification	40 Pix/m (13 Pix/ft)	56 m (172 ft)	30 m (93 ft)
Recognition	60 Pix/m (20 Pix/ft)	37 m (112 ft)	20 m (60 ft)
Identification	150 Pix/m (49 Pix/ft)	15 m (46 ft)	8 m (25 ft)

*Range performance varies based on camera setup, lighting conditions and display characteristics.

TECHNICAL SPECIFICATIONS

WEB CLIENT MINIMUM SYSTEM REQUIREMENTS

Processor	Intel® Core™ i3 processor, 2.4 GHz
Operating System	Microsoft Windows® 10, Windows® 7 (32- and 64-bit), or Window Vista®; or Mac® OS X 10.9 (or later)
Memory	4 GB RAM
Network Interface	100 Mbps (or greater)
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser	Internet Explorer® 8.0 (or later) or Mozilla® Firefox® 35 (or later), Google® Chrome 40 (or later)
	WebGL 2.0 (or later)

VMS MINIMUM SYSTEM REQUIREMENTS

Operating System	Windows® 7 64-bit (or later)
Video Memory	2 GB
System Memory	8 GB
Processor	Intel® Core™ i7 2.0 GHz (or better)

ANALYTICS

Open API	The Pelco API can transmit behavior alarm data to third-party applications. Go to *pdn.pelco.com*

INTEGRATION

Pelco System Integration	Pelco VideoXpert, VideoXpert Professional, Digital Sentry, Endura (in Tiled Mode)
Open API	Pelco API, Panomersive SDK, ONVIF Profile S, G, and Q

SOFTWARE FEATURES

- Multilingual user interface: English, French, Italian, German, Spanish, Portuguese, Russian, Chinese, Turkish
- 32 window blanks, configurable in size
- Password protection
- Snapshot with JPEG capture
- Text overlay metadata for camera name, time, date

CERTIFICATIONS/RATINGS

- CE, Class A
- FCC Part 15, Class A
- ICES-003, Class A
- UL/cUL Listed
- C-Tick
- KC
- CB Scheme ITE
- NEMA Type 4X, and IP66 rating (Environmental Vandal)
- RoHS, Lead Free, REACH
- NTCIP 1205
- IEC 62676 image quality measurement

SYSTEM MODEL NUMBERS

Type	Trim Color	Field of View (FoV)	Model
In-ceiling, indoor vandal	white		IMM12018-1I
	black		IMM12018-B1I
In-ceiling, environmental vandal	gray		IMM12018-1EI
Surface, indoor vandal	white		IMM12018-1S
	black	180°	IMM12018-B1S
Surface, environmental vandal	gray		IMM12018-1ES
Pendant, indoor vandal	white		IMM12018-1P
	black		IMM12018-B1P
Pendant, environmental vandal	gray		IMM12018-1EP
In-ceiling, indoor vandal	white		IMM12027-1I
	black		IMM12027-B1I
In-ceiling, environmental vandal	gray		IMM12027-1EI
Surface, indoor vandal	white		IMM12027-1S
	black	270°	IMM12027-B1S
Surface, environmental vandal	gray		IMM12027-1ES
Pendant, indoor vandal	white		IMM12027-1P
	black		IMM12027-B1P
Pendant, environmental vandal	gray		IMM12027-1EP
In-ceiling, indoor vandal	white		IMM12036-1I
	black		IMM12036-B1I
In-ceiling, environmental vandal	gray		IMM12036-1EI
Surface, indoor vandal	white		IMM12036-1S
	black	360°	IMM12036-B1S
Surface, environmental vandal	gray		IMM12036-1ES
Pendant, indoor vandal	white		IMM12036-1P
	black		IMM12036-B1P
Pendant, environmental vandal	gray		IMM12036-1EP

COMPONENT MODEL NUMBERS

Back Box		Camera Base Module		Lower Dome	
IMMBB0-S	Surface, indoor vandal, white	IMM12018-BASE	Indoor vandal, 180°	IMMLD0-1	Indoor vandal, white trim, clear bubble
IMMBB0-BS	Surface, indoor vandal, black	IMM12018-E-BASE	Environmental vandal, 180°	IMMLD0-B1	Indoor vandal, black trim, clear bubble
IMMBB0-ES	Surface, environmental vandal, gray	IMM12027-BASE	Indoor vandal, 270°	IMMLD0-1E	Environmental vandal, gray trim, clear bubble
IMMBB0-P	Pendant, indoor vandal, white	IMM12027-E-BASE	Environmental vandal, 270°	IMMLD0-0	Indoor vandal, white trim, smoked bubble
IMMBB0-BP	Pendant, indoor vandal, black	IMM12036-BASE	Indoor vandal, 360°	IMMLD0-B0	Indoor vandal, black trim, smoked bubble
IMMBB0-EP	Pendant, environmental vandal, gray	IMM12036-E-BASE	Environmental vandal, 360°	IMMLD0-0E	Environmental vandal, gray trim, smoked bubble
IMMBB0-I	In-ceiling, indoor vandal, white				
IMMBB0-BI	In-ceiling, indoor vandal, black				
IMMBB0-EI	In-ceiling, environmental vandal, gray				

RECOMMENDED MOUNTS

IMM-PNL	2' x 2' drop ceiling panel; replaces 2' x 2' ceiling tile, white
IMM-CM	Corner mount (outer) for use with WMVE-SR wall mount
IMM-DF5	DF5 kit for existing indoor DF5 enclosures
WMVE-SR	Environmental vandal, pendant wall mount, gray
WMVE-WT/BK	Indoor vandal, pendant wall mount, white/black
PA101	Pole adapter for use with WMVE-SR wall mount

OPTIONAL ACCESSORIES

POE1AT, POE4ATN, POE8ATN, POE16ATN	1, 4, 8, and 16 Channel PoE midspan
EC-3000C/U Series	Ethernet over copper (EoC) extenders with true PoE+ to 30 W
EC-4BY1SWC/U Series	4-port, self managed, PoE+ switch with extended uplink