

Optera Enhanced PTZ Camera

360° Awareness with Automated Identification

Optera Enhanced PTZ gives city, transport, campus and critical infrastructure teams 360° scene awareness plus automatic close-up identification. Analytics and directional audio cue the camera to events, helping operators verify incidents faster and keep people and assets safer.



Features

360° PANORAMIC CONTEXT

Get full-scene awareness with stitched 360° hemispheric coverage, built to eliminate blind spots and extend the view above the horizon. Watch streets, plazas, and terminals with this 2-in-1 panoramic plus PTZ camera system.

AI ANALYTICS & METADATA

Gain richer insight with AI analytics that classify people and vehicles, track behaviors like loitering or wrong-way travel and generate metadata for search, counting and reporting.

RUGGED, SERVICEABLE DESIGN

Reduce downtime with outdoor-ready construction, rain- and dust-resistant optics and field-replaceable panoramic and PTZ windows so teams keep coverage online with fewer service visits.

AUTOMATED CLOSE-UP CAPTURE

Use analytics and directional audio to cue the PTZ automatically so presets, dwell time and prioritization capture critical people, vehicles and incidents with clear identification detail.

EASY SETUP AND OPERATION

Speed deployment with factory-configured pano-PTZ calibration and simple field tuning, then use click to aim, window to aim and zoom, and click to track from the panoramic view.

OPEN, SECURE INTEGRATION

Simplify system design with ONVIF conformance for easy integration with leading VMS platforms, while cybersecurity features and NDAA/TAA¹ compliant models support regulated deployments.

¹NDAA/TAA compliance is based on the date of publication and is subject to change.

Specifications

Image Performance		Panoramic Camera	2.0 PTZ	4.0 PTZ
Image Sensor		1/2.8" Progressive Scan CMOS	1/1.8" Progressive Scan CMOS	
Active Pixels (H × V)		8064 × 2240	1920 × 1080	2688 × 1512
Aspect Ratio		3.60:1	16:9	
Dynamic Range	WDR On	120 dB	Up to 122 dB (dual exposure, 30 fps)	
	WDR Off	72 dB		
Minimum Illumination		0.006 lux in monochrome mode; 0.040 lux in color mode	With IR: 0 lux in monochrome mode Without IR: 0.06 lux in monochrome mode; 0.1 lux in color mode	
IR Illumination		N/A	250 m	
LED Wavelength		N/A	850 nm	
Camera Operating Mode		Full Feature / High Frame Rate		
Max Frame Rate		(50 Hz/60 Hz): 20 fps in High Frame Rate Mode ¹ , otherwise 10 fps	(50 Hz/60 Hz): 50 fps/60 fps in High Frame Rate Model ¹ , otherwise 25 fps/30 fps	(50 Hz/60 Hz): 25 fps/30 fps
Streaming Resolutions	Primary	8064 × 2240	1920 × 1080	2560 × 1440
	Secondary	4032 × 1120	1280 × 720; 768 × 432; 640 × 360; 512 × 288	1920 × 1080; 1280 × 720; 768 × 432; 640 × 360; 512 × 288
	Tertiary	2016 × 560	1280 × 720; 768 × 432; 640 × 360; 512 × 288	1920 × 1080; 1280 × 720; 768 × 432; 640 × 360; 512 × 288
	Quaternary	N/A	640 × 360; 512 × 288	640 × 360; 512 × 288
Bandwidth Management		SmartCodec technology; Idle scene mode		
¹ Analytics are disabled in High Frame Rate mode.				
Lens		Panoramic Camera	2.0 PTZ	4.0 PTZ
Focal Length & Aperture		2.53 mm, F/1.6	6.5 mm - 162.5 mm, F/1.6 - F/4.8	
Angle of View (HFOV × VFOV)	Wide	360 ° × 100 °	58.1 ° × 34.8 °	
	Tele	N/A	2.3 ° × 1.4 °	
Zoom		N/A	30× Enhanced Optical	
Lens Control		N/A	Remote Zoom and Focus, Autofocus, IR Cut Filter, Auto Iris	
Image Control		Panoramic Camera	2.0 PTZ	4.0 PTZ
Image Compression Method		H.264 and H.265 Pelco Smart Compression, Motion JPEG		
Streaming		Multi-stream H.264, Multi-stream H.265, Motion JPEG		
Electronic Shutter Control		Automatic, Manual (1 ~ 1/10,000 sec)		
Day/Night Control		Automatic, Manual		
Flicker Control		50 Hz, 60 Hz		
Iris Control		N/A	Automatic, Manual	
White Balance		Automatic, Manual	Automatic, Manual	
Backlight Compensation		Adjustable	ON/OFF	
Privacy Zones		Up to 64 zones	Up to 64 zones	
Digital Zoom		8×	12×	
Electronic Image Stabilization		N/A	Yes	
Digital Defog		N/A	Yes	
Pan/Tilt Presets		N/A	300 configurable	
Pan/Tilt Tours		N/A	100 configurable	
3D Noise Reduction Filter		Yes		

PRELIMINARY SPECIFICATIONS - SUBJECT TO CHANGE
PELCO CONFIDENTIAL

Mechanical		Panoramic Camera	2.0 PTZ	4.0 PTZ
Dimensions (L x W x H)		370.8 mm x 370.8 mm x 380.7 mm; 14.6" x 14.6" x 15.0"		
Weight		13 kg (28.7 lbs)		
Window		Polycarbonate	Glass	
Body		Aluminum	Polycarbonate and Aluminum	
Finish		Plastic Inj Mold close to RAL9002 and Black; Powdercoat Gray, AKZO Nobel JP301H Sand Grain Texture w/ Satin Sheen and Powdercoat Black w/ high-gloss		
Pan Range		N/A	360 ° continuous	
Tilt Range		N/A	-90 ° to +20 °	
Pan Speed		N/A	0.05 ° to 800 ° per second	
Tilt Speed		N/A	0.05 ° to 330 ° per second	
Preset Accuracy		N/A	0.1 °	
Electrical		Panoramic Camera	2.0 PTZ	4.0 PTZ
Power	PoE	71.3 W		
Consumption	Aux	80 W		
Power Source	PoE	IEEE802.3bt Type 4, Class 8 compliant ¹		
	Aux	48 VDC +/- 10%		
RTC Backup Battery		3V manganese lithium		
Auxiliary Power Connector		Flying leads connected to a 2-pin plug		
Memory		8GB RAM, 4GB Flash	4GB RAM, 4GB Flash	
Redundant Power		Seamless failover between PoE and Aux and back without interrupt in camera operation		
In-box Configuration ²		Aux, 48VDC: General Settings, Network Settings, User Management, FW updates IEEE 802.3bt Type 4 Class 8: General Settings, Network Settings, User Management, FW updates IEEE 802.3bt Type 3 Class 6: General Settings, Network Settings, User Management, FW updates IEEE 802.3at Type 2 Class 4: General Settings, Network Settings, User Management IEEE 802.3af Type 1 Class 3: General Settings, Network Settings, and User Management		
¹ Using anything less than a Type 4, Class 8 PSE will result in reduced Environmental Specifications.				
² The duration of In-box configuration should not exceed 6 hours.				
Environmental				
Operating Temperature		-10 °C to +60 °C (14 °F to 140 °F), w/ IEEE 802.3bt Type 3, Class 6 -40 °C to +60 °C (-40°F to 140 °F), w/ IEEE 802.3bt Type 4, Class 8		
Start-up Temperature ¹		-10 °C to +60 °C (14 °F to 140 °F), w/ IEEE 802.3bt Type 3, Class 6 -40 °C to +60 °C (-40 °F to 140 °F), w/ IEEE 802.3bt Type 4, Class 8		
Absolute Maximum Temperature		74 °C (165 °F) per NEMA TS2 (Temp.) para 2.2.7.2 - 2.2.7.7		
IR Illumination Behavior		The illuminator will operate at 50% power when temperatures are above 50 °C (122 °F). If powered by IEEE 802.3bt Type 4, the illuminator will operate at 50% power when temperatures are below -25 °C (-13 °F).		
Storage Temperature		-10 °C to +70 °C (14 °F to 158 °F)		
Humidity		10 - 100% non-condensing		
¹ Discovery/Streaming expected within 30 minutes, Full Operation expected within 90 minutes.				

PRELIMINARY SPECIFICATIONS - SUBJECT TO CHANGE
PELCO CONFIDENTIAL

Network

Network	100BASE-TX, 1000BASE-TX with Auto MDI/MDI-X speed
Cabling Type	CAT5e
Connector	RJ-45
ONVIF	ONVIF® compliance Profile S, Profile T, Profile G, and Profile M (www.onvif.org)
Security	Password protection, HTTPS encryption, digest authentication, WS authentication, user access log, 802.1x port based authentication, onboard FIPS 140-3 L3 certified TPM
Protocols	IPv6, IPv4, HTTP, HTTPS, SOAP, DNS, NTP, RTSP, RTCP, RTP, TCP, UDP, IGMP, ICMP, DHCP, Zeroconf, ARP, HSTS, MQTT
Streaming Protocols	RTP/UDP, RTP/UDP multicast, RTP/RTSP/TCP, RTP/RTSP/HTTP/TCP, RTP/RTSP/HTTPS/TCP, HTTP
Device Management Protocols	SNMP v2c, SNMP v3
Secure Boot	Yes
Platform Compatibility	Genetec, Milestone, Avigilon Unity Video, 3rd party VMS

Auxiliary I/O

Audio Input/Output	Full Duplex Line level audio I/O
Audio Compression Method	G.711 PCM 8 kHz, Opus
External I/O Terminals	2× Alarm In, 2× Alarm Out, 1× 11~13 VDC out at 50 mA

Peripherals

Onboard Storage	Two microSD/microSDHC/microSDXC slots – video speed class card required. Class V30 or better recommended.
USB Port	USB 2.0-C
Microphone	Built-in microphone array for audio analytics with physical disable switch

Certifications

Certifications/Approvals	UL, cUL, CE, ROHS, RCM, UKCA, NOM, KC, BIS	
Safety Standards	UL 62368-1, CSA 62368-1, IEC/EN 62368-1	
Environmental Standards/Ratings	IEC 60529 IP66, IP67 rating IEC/EN 62262 Impact IK10 (Enclosure), IK09 (Bubble) IEC/EN 60068-2-6 Product Vibration	IEC/EN 60068-2-27 Product Shock Type 4X
Electromagnetic Emissions Standards	FCC Part 15 Subpart B (Class A) ICES-003 (Class A) EN 55032 (Class A)	EN IEC 61000-6-8 (Class A) EN 61000-3-2 EN 61000-3-3
Electromagnetic Immunity Standards	EN 55035 EN 61000-6-1 EN 61000-6-2	EN 50121-4 EN 50130-4
NEMA TS2	NEMA TS2 paragraph 2.2.7 - 2.2.9	
Warranty	Limited 5-Year Warranty	

Analytics Specifications

Supported Analytics Events		Auto-cueing	
		Object	Region
Objects in Area	The event is triggered when the selected object type moves into the region of interest. This event can be used to count objects.	✓	✓
Object Loitering	The event is triggered when the selected object type moves into the region of interest and then stays for an extended amount of time.	✓	✓
Objects Crossing Beam	The event is triggered when the specified number of objects have crossed the directional beam that is configured over the camera's field of view. The beam can be unidirectional or bidirectional.	✓	✓
Object Appears or Enters Area	The event is triggered by each object that enters the region of interest.	✓	✓
Object Not Present in Area	The event is triggered when no objects are present in the region of interest.	✓	✓
Objects Enter Area	The event is triggered when the specified number of objects have entered the region of interest.	✓	✓
Objects Leave Area	The event is triggered when the specified number of objects have left the region of interest.	✓	✓
Object Stops in Area	The event is triggered when an object moves into a region of interest and then stops moving for the specified threshold time.	✓	✓
Object Too Close	The event is triggered when two objects are too close together, based on the specified distance for the event.	✓	
Direction Violated	The event is triggered when an object moves in the prohibited direction of travel.	✓	✓
Smart Motion Rule	Events are sent for person (including crawling) and vehicle present, against default unchangeable parameters.		
Tamper Detection	The event is triggered when the scene unexpectedly changes.		
Crowd Size	This event is triggered when the number of people is exceeded over a configurable duration (via the Objects in Area event).	✓	
Unusual Crowd Growth	This event is triggered when a crowd size grows unexpectedly.		✓
Unusual Crowd Size	This event is triggered when an unusual crowd size is detected.		✓
Personal Protective Equipment	This event is triggered when a person without personal protective equipment enters the area (via the Object Appears or Enters Area event).	✓	

Pelco Smart Analytics powered by Motorola Solutions.

Auto-cueing Modifiers

Adaptive Presence Zooming	Groups multiple targets under the same PTZ FOV while maintaining a configurable level of detail and an adjustable zoom ratio (Available post-launch via firmware update).
Dwell Time	Sets the maximum tracking time per target when multiple targets are present before switching to the next target. Selectable range is 6 to 60 seconds (default 20s).
Zooming Ratio	A value from 1 to 10 that adjusts target zoom closeness. Lower values maintain a wider scene context, while higher values provide a tighter zoom for identification (default 5).

Supported Classified Object Types

Object Types in Outdoor Mode	Vehicle, sub-types: Car, Pickup Truck, Large Truck, Van, Bicycle, Motorcycle, Bus Person
Object Types in Indoor Mode	Person

Supported Audio Analytics Events¹

Gunshot ²	Up to 100 meters (300 ft)
Scream	Up to 15 meters (50 ft)
Glass Break	Up to 15 meters (50 ft)
Car Alarm	Up to 30 meters (100 ft)
Smoke Alarm	Up to 15 meters (50 ft)
Dog Bark	Up to 15 meters (50 ft)
Tire Screech ³	Up to 15 meters (50 ft)
Loud Noise	Up to 40 meters (130 ft)
Ultrasonic Panic Alarm ⁴	Up to 40 meters (130 ft)

¹Directional audio analytics will be available after launch via firmware update.

²Optional add-on license required.

³The detection range is limited to up to 8 meters in loud environments.

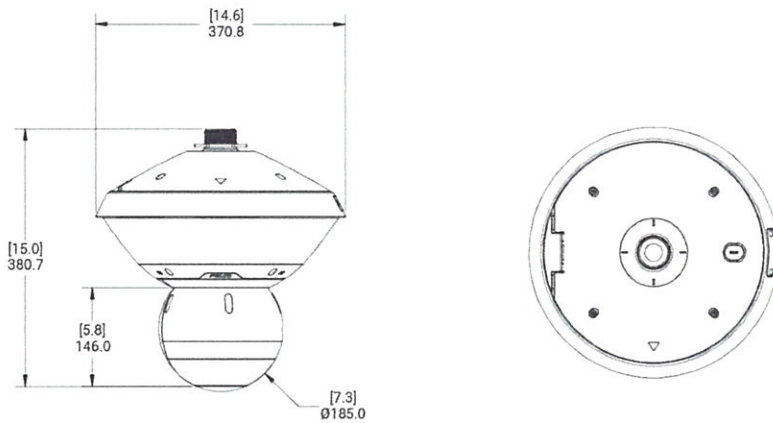
⁴The detection range is influenced by the quality and power of the device used to create the panic alarm.

Outline Dimensions

Optera Enhanced PTZ Camera

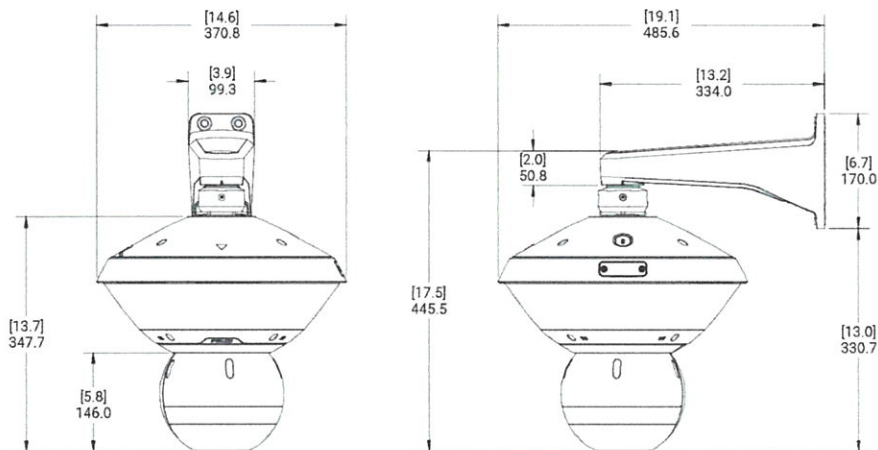
(OPTIPT1-30X2MP-IR-EP or OPTIPT1-30X4MP-IR-EP)

[X.X]	INCHES
X.X	MM



Optera Enhanced PTZ Camera with Wall Arm

(OPTIPT1-30X2MP-IR-EP or OPTIPT1-30X4MP-IR-EP, and WLMT-1031)



Ordering Information

Part Number	Resolution (MP)
OPTEPT1-30X2MP-IR-EP	20.0 Panoramic, 2.0 PTZ
OPTEPT1-30X4MP-IR-EP	20.0 Panoramic, 4.0 PTZ

Accessories

WLMT-1031	Wall arm adapter, 30 cm (11.8") long, 1.5" NPT
PLMT-1001	Pole mount adapter
CRNMT-1001	Corner mount adapter
PPMNT-2001	Parapet mount adapter, NPT, 38" x 42"
RFMNT-2001	Rooftop mount adapter, NPT, 38" x 42"
COV-PANO	Panoramic Camera Window Replacement Kit
COV-PTZ	IR PTZ Camera Window Replacement Kit
USB-AC56-NA-MSI	USB WiFi Adapter (North America)
USB-AC56-EU-MSI	USB WiFi Adapter (Europe)
POE90U-1BT	PoE injector 802.3bt 90W Single Port
PANO-PTZ-KIT	Pano PTZ accessory kit (includes cable assembly with I/O and external power cables, RJ45 grommet, and pendant coupler)

Support

Learn more and find additional documentation at pelco.com or email support@pelco.com for specific product support.

Rev 1, Jul 2026