# TARGET TRACKING PTZ

**SightLogix SightTracker PTZ**

**DIVISION 28 – ELECTRONIC SAFETY AND SECURITY**

**28 20 00 ELECTRONIC SURVEILLANCE**

**28 23 00 Video Surveillance**

**28 23 29 Video Surveillance Remote Devices and Sensors**

*Note: The specifier may wish to incorporate these specifications under*

*Sections 28 16 00 Intrusion Detection*

*28 16 33 Intrusion Detection Interfaces*

*28 16 33.33 Intrusion Detection Interfaces to Video Surveillance*

**PART 1 – GENERAL**

The intent of this document is to specify the minimum criteria for the design, supply, installation, and commissioning of the SightLogix SightTracker PTZ, a 5 megapixel, 2560x1920, smart tracking Pan-Tilt-Zoom (PTZ) digital video camera with an integrated infrared (IR) illuminator, 33X zoom, auto-focusing, AI-based classification analytics, 360-degree pan for installation into a fully operational outdoor intrusion detection system.

* 1. SUMMARY

The SightTracker PTZ camera receives GPS target information from SightSensor intelligent detection cameras which geo-register an object that violates a site’s alarm policies. The SightSensor system provides this GPS information to the SightTracker PTZ which autonomously zooms onto the object’s detected location. The SightTracker PTZ camera employs Artificial Intelligence to classify the object and continuously track the object as it moves throughout the site, even if the object leaves the detection camera’s field of view.

* 1. SECTION INCLUDES
1. SightTracker PTZ Tracking System
2. SightSensor Target Sensor - Thermal (LWIR)
3. SightMonitor ll site management and target display software
	1. LABOR AND MATERIALS

Unless otherwise provided in the Drawings and Specifications, the Contractor shall provide and pay for all labor, materials, equipment, tools, utilities, construction equipment and machinery, transportation and other facilities and services necessary for the proper execution, operation and completion of the Work.

* 1. REFERENCES
1. Conformity for Europe (CE)
2. Consultative Committee for International Radio (CCIR)
3. Electronic Industry Association (EIA)
4. Federal Communications Commission (FCC)

PN 9-1000002-001

1. Institute of Electronic and Electrical Engineers (IEEE)
2. International Electrotechnical Commission (IEC)
3. International Organization for Standardization (ISO)
4. National Television System Committee (NTSC)
5. Phase Alternation by Line (PAL)
6. Underwriters Laboratories Inc. (UL)
7. Underwriters Laboratory Canada (ULC)
8. Factory Mutual (FM)
9. National Electrical Manufacturers Association (NEMA)
10. European Committee for Electro Technical Standardization ([CENELEC](http://www.cenelec.org/))
	1. DEFINITIONS
11. No Substitutes: The exact make and model number identified in this specification shall be provided without exception.
12. Or Equal: Any item may be substituted for the specified item provided that in every technical sense, the substituted item provides the same or better capability and functionality
13. Or Approved Equal: A substitute for the specified item may be offered for approval by the Owner. The proposed substitution must, in every technical sense, provide the same or better capability and functionality as the specified item. Such requests for approval shall be submitted in accordance with the provisions of PART 1.09 – SUBMITTALS, and must be obtained within the time frames outlined.
	1. DRAWINGS AND SPECIFICATIONS
		1. Contractor shall be provided three (3) sets of the Drawings and Specifications for his use. Additional sets, if requested by Contractor, shall be furnished to the Contractor for the actual cost of reproduction.
		2. Contractor shall carefully study the Drawings and Specifications, and shall at once report any error, unforeseen circumstances, inconsistency or omission he may discover.

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* 1. SUBMITTALS
1. General: Submittals shall be made in accordance with the Conditions of the Contract and Submittal Procedures Section.
2. Shop Drawings and Schematics: Shall depict the tracking system in final proposed “as built” configuration. The following must be provided:

Connection diagrams for interfacing equipment.

List of connected equipment.

Locations for all major equipment components to be installed under this specification.

1. Product Data: The following shall be provided:
2. Technical data sheets.
3. A complete set of instruction manuals.
4. Quality Assurance Submittals: A final test report shall be submitted to indicate that every device was tested successfully in a system test.
	1. DELIVERY, STORAGE AND HANDLING
5. General: Delivery, storage, and handling of the target tracking system shall be in accordance with the manufacturer’s recommendations.
6. Ordering: The manufacturer’s ordering instructions and lead-time requirements must be followed to avoid installation delays.
7. Delivery: The target tracking system shall be delivered in the manufacturer’s original, unopened, undamaged container with identification labels intact.
8. Storage and Protection: The target tracking system shall be stored in a temperature environment of
-40° to +70°C (-40° to 158°F) and protected from mechanical and environmental conditions as designated by the manufacturer.
	1. PROJECT/SITE CONDITIONS
9. Temperature Requirements: Products shall operate in an environment with an ambient temperature range of -40° to +55°C (-40° to 131°F).
	1. WARRANTY

Manufacturer shall warrant the target tracking system to be free from defects in material or workmanship for a period of at least three years. Maintenance releases for embedded firmware shall be supported for a minimum of three years.PART 2 - PRODUCTS

1. **ACCEPTABLE MANUFACTURER**
2. SightLogix, Inc.

 745 Alexander Road

Princeton, NJ 08540

Phone +1 609.951.0008

Fax +1 609.951.0024

www.sightlogix.com

1. Substitutions: Not Permitted
2. All system elements shall be supplied from a single manufacturer
3. **GENERAL SYSTEM DESCRIPTION**
4. 5-megapixel (2560x1920) H.265/H.264/MJPEG, IP66-rated day/night IR PTZ digital video camera with integrated 33X zoom lens, AI classification analytics and autonomous target tracking capabilities.
5. The digital video camera shall include a mechanism that ensures precise positioning.
6. The digital video camera shall support H.265/H.264/MJPEG compression (up 2560x1920) through a digital network.
7. The camera shall incorporate a fully digital (5 megapixel) CMOS imaging system with IR illumination and day/night IR cut filter for infrared sensitivity.
8. The camera shall support infrared illumination up to 150 meters (492 feet).
9. The camera may be powered by 24VAC or PoE IEEE 802.3bt
10. **TARGET TRACKING SYSTEM**
11. The target tracking system consists of a unit which receives target information from SightSensor detection cameras which geo-register an object that violate a site’s alarm policies.
12. The system provides this GPS information to SightTracker PTZ which zooms to the object’s detected position for up-close inspection and continuous tracking.
13. Once the detected object’s coordinates have been received, the PTZ will employ AI analytics to classify the target as a person, and lock onto the target and autonomously pan, tilt and zoom as the target moves throughout the site.
14. The autonomous tracking system will not rely on the original detection camera’s positioning once it acquires the original target location and classifies the object as a person.
15. The system shall autonomously maintain position data even if the target leaves the detection camera’s field of view.
16. The system shall process the information at the edge of the network, without the need for a centralized server. Intruders shall be tracked solely by using the processing resources within the tracking system processor.
17. The PTZ camera can be represented as cones within a topology map that dynamically updates or is manually controlled by an operator.
18. The system shall generate real time reports of objects tracked, detection camera name, serial number, firmware version, GPS position, bearing, and vital operating information via the industry standard XML over HTTP/HTTPS interface. Tracked object parameters shall include current time, alarm state, creation time, GPS position, size, heading, speed, aspect ratio, and alarm zone.
19. The system shall be configurable for tracking priority, including first target acquired, newest target, closest target, fastest moving target, and largest target.
20. The system shall provide for dwell time adjustment, depending on target.
21. The system shall have an adjustable optical zoom setting to automatically enlarge or reduce the size of target within the field of view
22. The system shall interface with interface with certified VMS systems using ONVIF.
23. Data security: The system shall be capable of providing data security through AES 128-bit encryption. HTTPS/TLS protocol shall be used for trusted external communications to detection cameras and mapping software.
24. The system will provide a standard 100 Ethernet interface.
25. The system shall not require any supplemental cooling and shall be available with supplemental heating.
	1. **SYSTEM PERFORMANCE**
		1. Object Tracking: The system shall be able to reliably track 64 objects simultaneously.
		2. Temperature range: The system shall operate in an environment with an ambient temperature range of -40° to +55°C (-40° to 131°F).
	2. **SPECIFICATIONS**
26. Camera:
	1. Image Sensor: 1/2.8” Sony Starvis CMOS Sensor
	2. Sensor Resolution: 5MP 2592x1944@30fps
	3. Scanning Mode: Progressive
	4. Sensitivity: Color : 0.005 Lux , B / W: 0.001 Lux
	5. Day/Night Function: IR Cut Filter (ICR)
	6. Compression Format: H.264+ / H.264 / M-JPEG
	7. Zoom: 5MP Real Time 33x Optical
	8. Focal Length: F=4.5mm (WIDE) to 148.5 mm (TELE)
	9. Maximum Aperture: F1.4 ~ F4.2
	10. View Angle: 2.5°~ 57°(H), 1.9°~ 42.8°(V)
27. Mechanical:
28. Pan/Tilt: 360° Continuous Pan and 90° Tilt
29. Pan / Tilt Range: Pan: 360° / Tilt: 90°Auto Flip
30. Manual Control Speed: Pan: 0.1 ~ 80 °/s , Tilt: 0.1 ~ 40 °/s
31. Preset (Patrol) Speed: 100°/s
32. Preset Accuracy: <±0.15°
33. Home Position: Yes
34. IR Leds: 9 Units High Power
35. IR Distance: 150M
36. Network:

Ethernet Compliance:

Wired: IEEE 802.3, 802.3i, 802.3u

 Interfaces:

 Wired: RJ45

 Data Rate: 64 kbps to 8 Mbps

Operating Mode: Full-duplex

Network Protocols: Open Network Video Interface Forum (ONVIF),

 Internet Protocol (IP), User Datagram Protocol (UDP), Transmission Control Protocol (TCP), Dynamic Host Control Protocol (DHCP), Address Resolution Protocol (ARP), Interior Gateway Management Protocol (IGMP) 3.0, Domain Naming System (DNS), Hypertext Transfer Protocol (HTTP and HTTPS), Real-Time Transport Protocol (RTP), Real-Time Streaming Protocol (RTSP), Network Time Protocol (NTP), Secure Shell (SSH), Secure Socket Layer/Transport Layer Security (SSL/TLS),Service Location Protocol (SLP)

1. Management
	1. Configuration: Remote (via web interface or supported Video Management Software)
	2. Firmware Updates: Flash memory for upgrade of camera firmware over the network
2. Electrical

Voltage: 24VAC +/- 10% or PoE IEEE 802.3bt

Connector (power & data)

* + - * 1. Data (Ethernet) RJ45
				2. Power Screw down terminal block
				3. Control leads Screw down terminal block

Power: 45 watts nominal (with heater)

1. Mechanical

Weight: 5,300 g (11.68 lbs.)

Dimensions: 227.1mm (φ) X 346.2mm(H) (8.94 in (φ) X 13.62 in)

Enclosure: IP66 compliant

Mounting: Corner, pole, pendant, or wall

F. Environmental

 Operating Temperature: -40° to +55°C (-40° to 131°F)

 Storage Temperature -40° to +70°C (-40° to 158°F)

 Relative Humidity: 0 to 100%

Emissions: FCC Part 15, Class A, CE

* 1. **COMPATIBLE SYSTEM ELEMENTS**
1. SightSensor Video Detection System: The system shall be capable of communicating with a SightSensor detection camera, which provides target GPS coordinates to allow PTZ camera to zoom onto a detected intruder. Communication shall be via industry standard XML over HTTP/HTTPS interface and provide system characteristics including real time reports of objects tracked, camera name, serial number, firmware version, GPS position, bearing, and vital operating information.
2. SightMonitor II Site Management and Target Display System:
	1. Display system shall display topological position and field of view of all video detection system units, overlaid on a geo-positioned aerial image of the surveillance area. This aerial image can be in standard image formats (e.g. JPEG)
	2. Display system shall plot GPS locations of all security violations overlaid on a geo-located aerial image of the surveillance area with alarm condition and descriptive text indicating site, location, serial number, and timestamp.
	3. PTZ cameras shall be represented as cones within a topology map that dynamically updates or is manually controlled by an operator.
	4. Display system shall provide operational management and setup of all tracking system elements from one or more command points.

**PART 3 - EXECUTION**

1. **INSTALLATION**

Installation should be performed by qualified service personnel only in accordance with the National Electrical Code or applicable local codes.

##  **ACCEPTABLE INSTALLERS**

1. The system shall only be provided by Contractors who are factory authorized to install, service and maintain the system by the system manufacturer.
2. The Contractor’s installers and technicians shall also be factory trained and certified to perform such tasks.