

# OPTEX Photoelectric Specification and Selection Guide

Sensing Innovation

ENCLOSURES	BATTERY-POWERED, WIRE-FREE OPTIONS			SL-2000N	SL-3500N	SL-6500N	SL-2000DP	SL-3500DP	SL-6500DP	SL-2000DM	SL-3500DM	SL-6500DM			
	Professional Models	Advanced Models	Standard Models												
<b>9.9" TOWERS</b> AX-TW300 AX-TW300S AX-TW300M 6.6" TOWERS AX-TW200 AX-TW200S AX-TW200M 3.3" TOWERS AX-TW100 AX-TW100S AX-TW100M 20" TOWERS AX-TW50 AX-TW50S AX-TW50M	SL-3500FR Includes batteries	SL-3500FRI Includes Intronics EN1941 transmitter and batteries	AX-100TFR Includes batteries	AX-100TFRI Includes Intronics EN1941 transmitter and batteries	AX-200TFR Includes batteries	AX-200TFRI Includes Intronics EN1941 transmitter and batteries									
<b>Outdoor detection range</b> Indoor detection range Beam blocking ratio 4ch. Selectable freq. Alignment angle LED indicator Monitor jack for align. Beam alignment method Automatic gain control Lightning protection Environment DQ Power supply Current Draw (Peak) Alarm output Tamper Alarm memory Anti-frost design Optional heating unit International protection Operation temperature Environmental humidity Dimensions (HxWxD in)	+/- 90° Horiz., +/- 5° Vert 350ft 700ft 99% +/- 90° Horiz., +/- 5° Vert 4step LED indicator ✓ Sniper viewfinder™ No Yes, Wirefree operation ✓ 3.6V /13.0Ah LSH20 lithium batteries (4 included) 745µA FormC ✓ - HU-3, Requires local power IP65 -4° to 140°F (-20 to 60°C) 95% max. 17.9 x 3.3 x 5.4	+/- 90° Horiz., +/- 5° Vert 100ft 200ft 99% +/- 90° Horiz., +/- 5° Vert 4step LED indicator ✓ Viewfinder No Yes, Wirefree operation ✓ 3.6V /13.0Ah LSH20 lithium batteries (4 included) 620µA FormC ✓ - HU-3, Requires local power IP65 -4° to 140°F (-20 to 60°C) 95% max. 8.5 x 3.5 x 6.4	+/- 90° Horiz., +/- 5° Vert 200ft 400ft 99% +/- 90° Horiz., +/- 5° Vert 4step LED indicator ✓ Viewfinder No Yes, Wirefree operation ✓ 3.6V /13.0Ah LSH20 lithium batteries (4 included) 810µA FormC ✓ - HU-3, Requires local power IP65 -4° to 140°F (-20 to 60°C) 95% max. 8.5 x 3.5 x 6.4	+/- 90° Horiz., +/- 10° Vert 4step LED indicator ✓ Sniper viewfinder (Included) / BAU-4 Beam Alignment Unit (Optional) No ✓ over 14kV No ✓ over 14kV HU-3 IP65 -31° to 140°F (-35 to 60°C) 95% max. 17.6 x 3.1 x 3.8	+/- 90° Horiz., +/- 10° Vert 400ft 700ft 99% Quad 200ft 350ft 650ft 400ft 700ft 1300ft Quad 200ft 350ft 650ft 400ft 700ft 1300ft Quad	+/- 90° Horiz., +/- 10° Vert 5 Step with sound assist ✓ Sniper viewfinder (Included) / BAU-4 Beam Alignment Unit (Optional) No ✓ over 14kV No ✓ over 14kV HU-3 IP65 -31° to 140°F (-35 to 60°C) 95% max. 17.6 x 3.1 x 3.8	+/- 90° Horiz., +/- 10° Vert 5 Step with sound assist ✓ Sniper viewfinder (Included) / BAU-4 Beam Alignment Unit (Optional) No ✓ over 14kV No ✓ over 14kV HU-3 IP65 -31° to 140°F (-35 to 60°C) 95% max. 17.6 x 3.1 x 3.8	+/- 90° Horiz., +/- 10° Vert 5 Step with sound assist ✓ Sniper viewfinder (Included) / BAU-4 Beam Alignment Unit (Optional) No ✓ over 14kV No ✓ over 14kV HU-3 IP65 -31° to 140°F (-35 to 60°C) 95% max. 17.6 x 3.1 x 3.8	+/- 90° Horiz., +/- 10° Vert 5 Step with sound assist ✓ Sniper viewfinder (Included) / BAU-4 Beam Alignment Unit (Optional) No ✓ over 14kV No ✓ over 14kV HU-3 IP65 -31° to 140°F (-35 to 60°C) 95% max. 17.6 x 3.1 x 3.8	+/- 90° Horiz., +/- 10° Vert 5 Step with sound assist ✓ Sniper viewfinder (Included) / BAU-4 Beam Alignment Unit (Optional) No ✓ over 14kV No ✓ over 14kV HU-3 IP65 -31° to 140°F (-35 to 60°C) 95% max. 17.6 x 3.1 x 3.8	+/- 90° Horiz., +/- 10° Vert 5 Step with sound assist ✓ Sniper viewfinder (Included) / BAU-4 Beam Alignment Unit (Optional) No ✓ over 14kV No ✓ over 14kV HU-3 IP65 -31° to 140°F (-35 to 60°C) 95% max. 17.6 x 3.1 x 3.8	+/- 90° Horiz., +/- 10° Vert 5 Step with sound assist ✓ Sniper viewfinder (Included) / BAU-4 Beam Alignment Unit (Optional) No ✓ over 14kV No ✓ over 14kV HU-3 IP65 -31° to 140°F (-35 to 60°C) 95% max. 17.6 x 3.1 x 3.8			

## Common accessories

Specifications and design are subject to change without prior notice. NOTE: These units are designed to detect an intruder and activate an alarm control panel. Being only a part of a complete system, we cannot accept responsibility for any damages of other consequences resulting from an intrusion. These products conform to the EMC Directive 89/336 ECC.

<p><b>PIE-1</b> Pole IP Encoder</p> <p>Allows beams to connect / integrate with all leading VMS platforms to control IP cameras (should be ordered in pairs)</p>	<p><b>ABC-4</b> Anti-Bird Cap</p> <p>Prevents birds and small animals from sitting on detector. Also protects the front of detector from excessive rain and snow.</p>	<p><b>HU-3</b> Heating Unit</p> <p>Heating Unit for Hardwired SL Models and AX-TN, AX-TF Models.</p>	<p><b>BC-4</b> Back Cover</p> <p>Conceals the back side of a pole mounted SL Series detector.</p>	<p><b>PSC-4</b> Pole Side Cover</p> <p>Conceals the gap between two pole mounted back SL Series detectors.</p>	<p><b>CBR-4</b> Conduit Bracket</p> <p>Required to run conduit to the SL Series detectors.</p>
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# Active Infrared photoelectric beam detectors



## Features and Value



### First Line of Defense

Security starts at the perimeter, or the 'A Zone', and OPTEX has built its reputation on a proven first line of defense. Our point-to-point photoelectric detection solutions give you full protection, creating a virtual trip wire at the perimeter. With multiple options and features for all threat levels, including battery-powered beams that require no trenching or wiring and tower enclosures for stacking and hiding beam height and location, OPTEX provides you with flexibility and choice based on your perimeter security needs.

### Photobeam Part Number Guide (Example)

**Twin Beam**  
**AX-200TFR**  
 Ready for Wireless, Battery-Powered  
 (Batteries Included, accepts most manufacturers Wireless Transmitters)

**Detection Range in Feet**  
**SL-200QDP**

**Quad Beam**  
**SL-350QFRi**  
 iSeries Wireless, Batter-Powered  
 (Inovonics EN1941 Transmitter and Batteries Included)

**Detection Range in Feet**  
**SL-650QDM**  
 Slimline Design Dual Modulation



### Quick Feature Guide

Beam detection range shouldn't be the only feature you look at when selecting an Optex photobeam. Review the additional features below to find the right detector for your photobeam application.



#### 'Beam alignment over long distance is troublesome'

**Feature: Sniper viewfinder and BAU-4 Auto Alignment Unit**

The Sniper viewfinder includes x2 magnification over conventional photobeam models. This allows for high visibility during the alignment process, even over long distances.

The optional BAU-4 Auto Beam Alignment Unit automatically and accurately adjusts the optical access to peak performance, allowing one technician the ability to align long distances beams without additional help.

**All SL MODELS**

#### 'I want to stack my photobeams for added protection.'

**Feature: Four Channel Selectable Beam Frequencies**

Require extra protection at the perimeter? Choose a photobeam detector that has four channel selectable frequency and stack two of them on a pole or better yet, in an AX-TW200 Beam Enclosure.

**AX-100TF, AX-200TF, AX-100TFR, AX-200TFR, AX-100TFRI, AX-200TFRI, SL-350QFR, SL-350QFRI, SL-200QDP, SL-350QDP, SL-650QDP, SL-200QDM, SL-350QDM, SL-650QDM**

#### 'Getting power to the perimeter is too expensive'

**Feature: Battery Operated Versions**

To combat costly trenching and labor, or in situations where power is not available, choose one of Optex's wireless ready, battery operated models. Mount them in the AX-TW200 beam tower for a completely wireless and secure perimeter.

**AX-100TFR, AX-200TFR, AX-100TFRI, AX-200TFRI, SL-350QFR, SL-350QFRI**

#### 'Fog, snow and heavy rain can be issue at my job site'

**Feature: D.Q. Output (Environmental Disqualification)**

D.Q. output will send a trouble signal when the beam strength is below acceptable levels, for more than 20-40 seconds, due to fog, snow or heavy rain.

**AX-100TF, AX-200TF, AX-100TFR, AX-200TFR, AX-100TFRI, AX-200TFRI, SL-350QFR, SL-350QFRI, SL-350QDP, SL-650QDP, SL-350QDM, SL-650QDM**

**Feature: A.T.C.P. (Automatic Transmit Power Control)**

The A.T.C.P. feature automatically controls, adjusts and optimizes the power of the beam and maintains optimal performance. It decreases false and missed alarms caused by fog, frost, cross talk and signal saturation.

**SL-350QDM**

### Hardwired Beam Considerations

Keeping these tips in mind will greatly reduce false and missed alarms caused by improper installation.

#### Distance

The longer the distance, the bigger the voltage drop. Drops in voltage can lead to missed and false alarms. For longer runs, use thicker gauge wire. (Max 18 gauge)

#### Power Supply

When selecting your photobeam's power supply, make sure to choose one with the correct Amps to cover the beam's current consumption.

#### Wiring

Choose the correct wiring conductor based on the outputs you want monitored. (Tamper, Alarm, D.Q. Circuit, Power; varies by model)

#### Zoning

Although photobeams can be installed in series, home runs are always recommended. This allows for easier troubleshooting and zones to be identified when an alarm occurs.

### Battery-Powered Value

#### Cost

In the majority of cases, applications such as utility substations and large parking lots can be too expensive or labor intensive to trench.



#### Power

Battery-Powered beams can be installed in areas where power is not readily available, such as roof tops or remote locations.

#### Installation Downtime

Because of the significant drop in installation time and the fact that no trenching is required, end-users are less inconvenienced. Businesses and residents can operate as usual during the install.

#### Flexible

In environments where storage conditions may change, such as construction sites and storage facilities, battery-powered beam options allow the detection area to move accordingly with minimal effort.



#### Upgrade

Battery-powered beam options can easily be added on to existing security, video or access systems.





# Active Infrared photoelectric beam detectors

## SL Series Features



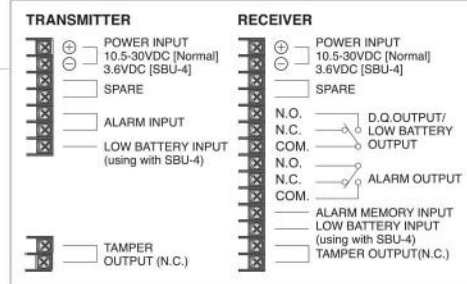
PROFESSIONAL MODEL

### SL-200QDM/350QDM/650QDM

#### FEATURES

- High power quad beam
- Double modulation
- Beam power control selector
- Automatic transmit power control
- Integrated alignment status comm
- Upper/lower beam selection button
- Beam power control selector

Model	SL-200QDM	SL-350QDM	SL-650QDM
Detection range	60m/200ft.	100m/350ft.	200m/650ft.
Beam frequencies	4ch selectable		
Current consumption	Normal 26mA / Max. 40mA		30mA / 43mA
Operating temperature	-13°F to 140°F (-25°C to +60°C) -30°F(-35°C) w/ HU-3 Heater		
Water protection	IP65		
Dimensions H x W x D	17.6 x 3.1 x 3.8 in (448 x 79 x 96 mm)		
Weight	88.2oz (2500g)		



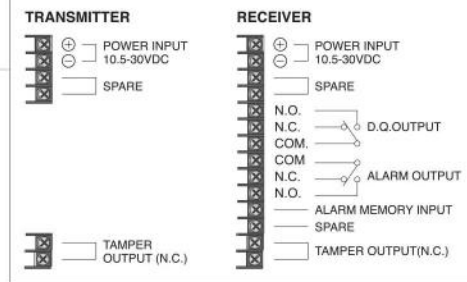
ADVANCED MODEL

### SL-200QDP/350QDP/650QDP

#### FEATURES

- High power quad beam
- Double modulation
- Upper/lower beam selection button
- Beam power control selector

Model	SL-200QDP	SL-350QDP	SL-650QDP
Detection range	60m/200ft.	100m/350ft.	200m/650ft.
Beam frequencies	4ch selectable		
Current consumption	Normal 17mA / Max. 24mA	22mA / 33mA	
Operating temperature	-13°F to 140°F (-25°C to +60°C) -30°F(-35°C) w/ HU-3 Heater		
Water protection	IP65		
Dimensions H x W x D	17.6 x 3.1 x 3.8 in (448 x 79 x 96 mm)		
Weight	84.6oz (2400g)		



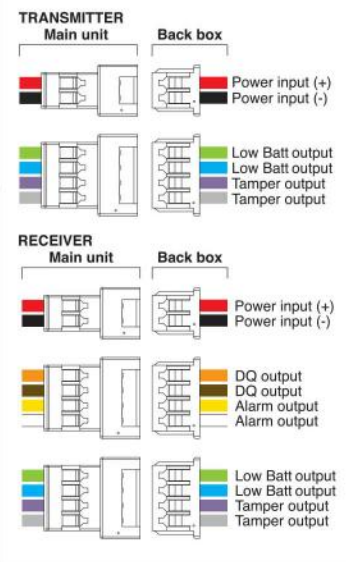
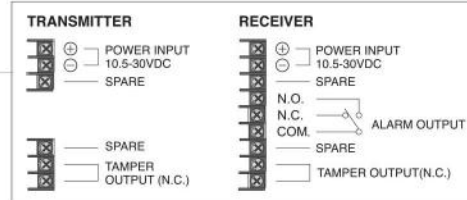
STANDARD MODEL

### SL-200QN/350QN/650QN

#### FEATURES

- High power quad beam
- Smart design - Slim body - Vivid interior color

Model	SL-200QN	SL-350QN	SL-650QN
Detection range	60m/200ft.	100m/350ft.	200m/650ft.
Beam frequencies	-		
Current consumption	38mA	39mA	40mA
Operating temperature	-13°F to 140°F (-25°C to +60°C) -30°F(-35°C) w/ HU-3 Heater		
Water protection	IP65		
Dimensions H x W x D	448 (17.6) x 79 (3.1) x 96 (3.8) mm(inch)		
Weight	84.6oz (2400g)		



PROFESSIONAL MODEL

### SL-350QFRI

powered by INOVONICS

#### FEATURES

- Long distance 100m / 350ft.
- Long battery life - 4 to 8 years
- Spacious back box for wireless transmitter
- Inovonics EN1941 Included on SL-350QFRI

Model	SL-350QFRI	SL-350QFR
Detection range	100m/350ft.	100m/350ft.
Beam frequencies	4ch selectable	
Power source	3.6 V, 13.0Ah LSH20 lithium batteries manufactured by SAFT Operating range: 3.2 V - 4.0 V lithium batteries Transmitter: 2 or 4 units Receiver: 2 or 4 units (A total of 4 batteries are included)	
Wireless Transmitter	Inovonics EN1941 Included	Not Included
Current consumption	745µA	
Operating temperature	-4°F to 140°F (-20°C to +60°C)	
Water protection	IP65	
Dimensions H x W x D	17.9 x 3.3 x 5.4 in (452 x 83 x 138 mm)	
Weight	116.4oz (3300g)	



ADVANCED MODEL

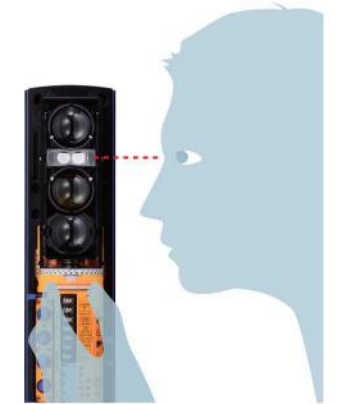
### SL-350QFR

## Added Technology to Reduce False Positives and Missed Alarms

### Sniper Viewfinder™

#### X2 MAGNIFICATION LENS

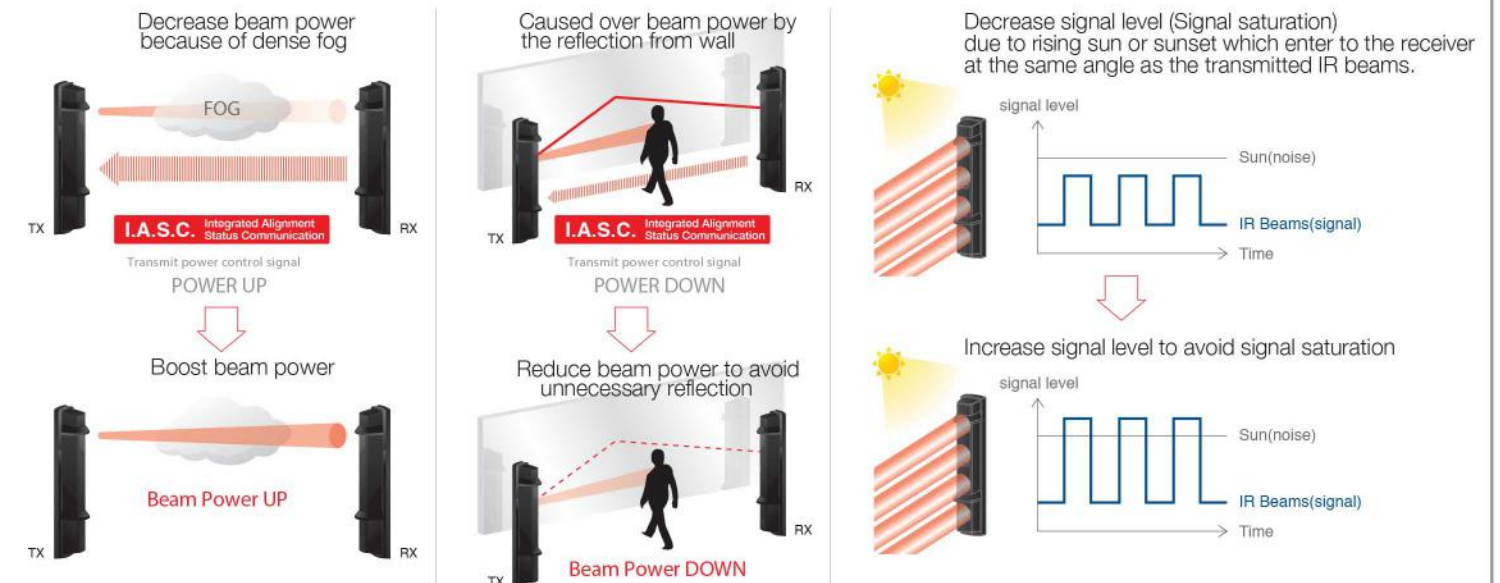
The new telescope lens has a high level of visibility for optical alignment work. Even over long distances, a perfect installation and stable performance can be achieved in a short period.



Patent pending

### A.T.P.C.-Automatic Transmit Power Control (SL-QDM only)

Automatically controls, adjusts and optimizes the power of the beam and maintains optimal performance. It decreases false and missed alarms caused by fog, frost, cross talk, signal saturation.



### Sunshine Protection Technology (SL-QDM/SL-QDP only)





# Double-Sided and Single-Sided beam enclosures

## Build and Customize



The TW-Series beam enclosures are suited for all OPTEX® AX and SL Series wired, IP and wireless battery-powered infrared beams models

### Concealing active infrared beams in enclosures increases the security and flexibility of perimeter protection systems.

OPTEX Dual and Quad IR beams can be mounted directly on walls or poles, however by installing them in enclosures, it makes them less obvious. The number and height of the fitted beams becomes unknown to the potential intruders, enhancing the security level.

Additionally, the options to mount lighting or a fixed camera in a special housing on top of the towers allows a complete security system to blend nicely into its environment.

- Free standing AX-TW models provide 360° unobstructed view for the beams, enabling back to back installation to cover a whole perimeter.
- Free-standing AX-TWS models provide 180° view enabling side detection for sites where wall mount is not a possible or practical option.
- Wall mounted AX-TWM models feature 180° view and flush mount.
- 20" / 3'3" / 6'6" / 9'9" available heights.
- Durable construction with extruded and anodized aluminium frame and acrylic materials.
- Beams can be mounted at any height and direction in the tower.
- Additional housing and fixings for lighting or fixed cameras available as options.
- Anti-tamper and beam mounting plates included.
- Suitable for all wired, IP and wireless OPTEX AX and Smart Line (SL) models. (Consult us for the list of accessories needed)
- Enclosure assembly included at no charge when site plan is provided.



**STEP 1 Select Your Beams**

Select beams by distance and features. All OPTEX beams can be mounted in the AX-TW enclosures. Beam models are based on detection distance for outdoor ratings (indoors can be doubled). Do you need adjustable frequencies? Double stacked or single?

**STEP 2 Choose Your Beam Mounting Enclosure**

OPTEX offers two enclosure options for mounting beams: A.) Double-Sided, for multiple beginning / ending points or long distances and B.) Single-Sided, for point-to-point applications. Once you've decided on beams, select the option that best fits your application.

**STEP 3 Select Enclosure Height**

OPTEX beam enclosures are available in four different sizes, from a 20in. wall top option to a 9ft. 9in double-sided version. The multiple options ensure that your needs are met, no matter what the security threat level.



**STEP 4 Choose Accessories**

Depending on the environmental conditions, application and security level, OPTEX offers accessories to enhance your perimeter system.

Mounting brackets to set in concrete, heaters and anti-climb tamper are all examples of accessories for your beam enclosure.

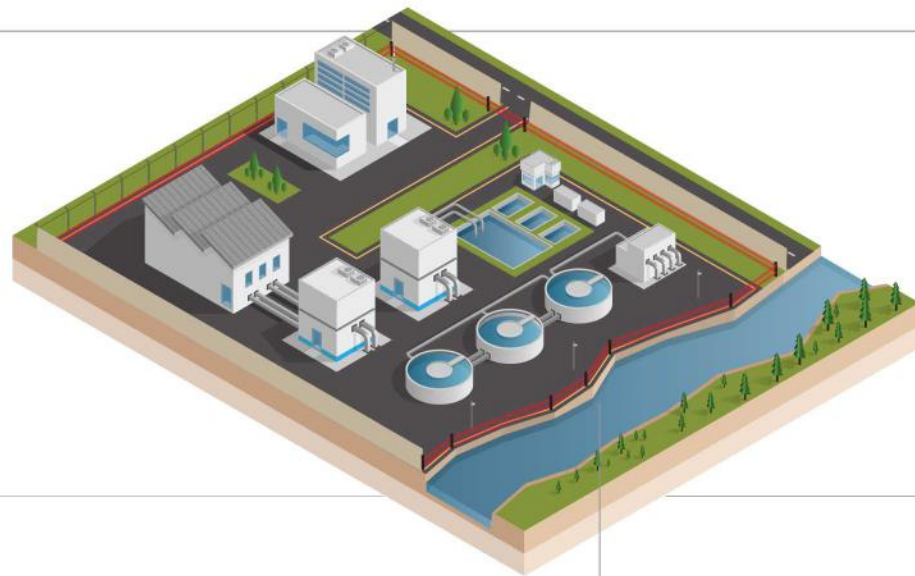
**STEP 5 Pre-Assembly**

When a site plan is provided, OPTEX technicians will pre-assemble our photo-electric beams and enclosures to match your customers specifications. As long as a site plan is provided, no charge is associated with this service.





# Battery-Powered, Wireless Solution

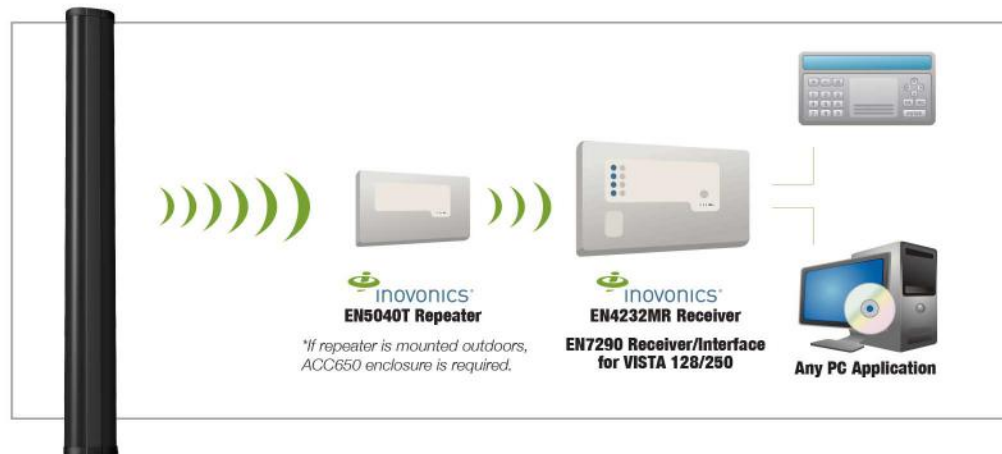


## Save Time and Money

From rooftop HVAC protection to electrical substations, the wireless-ready and iSeries Photobeams and enclosures from OPTEX give you a battery powered, wireless solution for all your security needs. While the wireless-ready versions are shipped with an empty backbox that will accept any manufacturers wireless transmitter, the iSeries come with Inovonics EN1941 wireless transmitters pre-installed, allowing even more time saved while on the job site. The EN1941 monitors the DQ circuit, tamper and primary alarm, while an included BCU-4 module monitors for low battery. A total of four lithium batteries are also included to power the beams.

## Value of a wireless ready, battery powered system:

- Easy solution to sites where trenching is too expensive or labor intensive.
- Can be installed in areas where power is not readily available.
- No downtime to end-user. Businesses and residents can operate as usual during install.
- Allows for a flexible solution in changing site environments. (Construction sites)
- Can easily be added on to support existing video or access systems.



# Beam Enclosure Part Numbers



Enclosure cover	TW 360° free-standing beam enclosures	STW 180° free-standing beam enclosures	STWM 180° wall-mounting beam enclosures
<b>AX-TW(S)(M)</b>	<b>AX-TW</b> <b>AX-TW300</b>	<b>AX-TWS</b> <b>AX-TW300S</b>	<b>AX-TWM</b>
Replacement Lens	Ground mounting, 360°	Ground mounting, 180°	Wall mounting, 180° (Flush Mount)
<b>AX-PTX1</b> 3'3"	<b>AX-TW50</b> 20" 360° Floor Mount Enclosure	<b>AX-TW50S</b> 20" 180° Floor Mount Enclosure	<b>AX-TW50M</b> 20" 180° Wall Mount Enclosure
<b>AX-PT3104</b> 6'6"	<b>AX-TW100</b> 3'3" 360° Floor Mount Enclosure	<b>AX-TW100S</b> 3'3" 180° Floor Mount Enclosure	<b>AX-TW100M</b> 3'3" 180° Wall Mount Enclosure
	<b>AX-TW200</b> 6'6" 360° Floor Mount Enclosure	<b>AX-TW200S</b> 6'6" 180° Floor Mount Enclosure	<b>AX-TW200M</b> 6'6" 180° Wall Mount Enclosure
	<b>AX-TW300</b> 9'9" 360° Floor Mount Enclosure	<b>AX-TW300S</b> 9'9" 180° Floor Mount Enclosure	<b>AX-TW300M</b> 9'9" 180° Wall Mount Enclosure

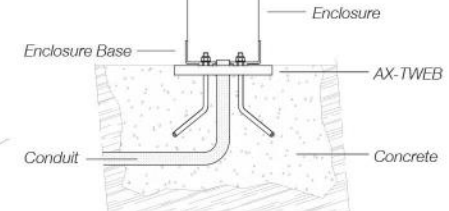
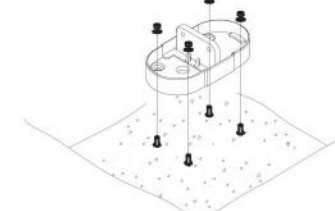
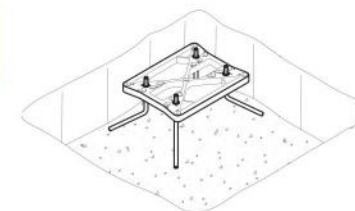
## Exterior installation mounting for enclosures

When using a floor mount enclosure, the AX-TWEB allows for secure concrete mounting, even in uneven soil and the harshest of environments.

Dig an 18"x18"x18" (minimum) hole. Add rebar or support if needed and pour concrete. Insert TWEB bracket and cable access conduit while concrete is still wet.

With included redhd bolts, secure enclosure base to TWEB bracket bolt heads. (Bolts can also be added to existing concrete)

Assemble enclosure body and covers to enclosure base.



## Common accessories

	<b>AX-TWLUXE</b> Enclosure head extension for lighting (lighting bulb not included)		<b>AX-TWEB</b> Concrete floor bracket for the free standing, floor mount enclosures		<b>AX-TWH24V</b> 12V or 24V, 250mA, non polarity heater and thermostat		<b>AX-TWFAN 12V/24V</b> 12V, 100mA fan (TW Fan 12V) 24V, 150mA fan (TW Fan 24V)		<b>AX-TWCAM</b> CCTV Extension Head for Enclosure. (Camera not included)
	<b>AX-TWAA</b> Anti-climb tamper		<b>AX-TWCAB</b> Guy Wires for Photobeam Enclosures in extreme wind conditions		<b>AX-TWSTB</b> Lateral Supports for Photobeam Enclosures		<b>AX-TWSM</b> Pole / Wall Mount L Bracket for AX-TW50, 100, 200,300		<b>BAU-4</b> Automatic Beam Alignment Tool (only compatible with SL series)

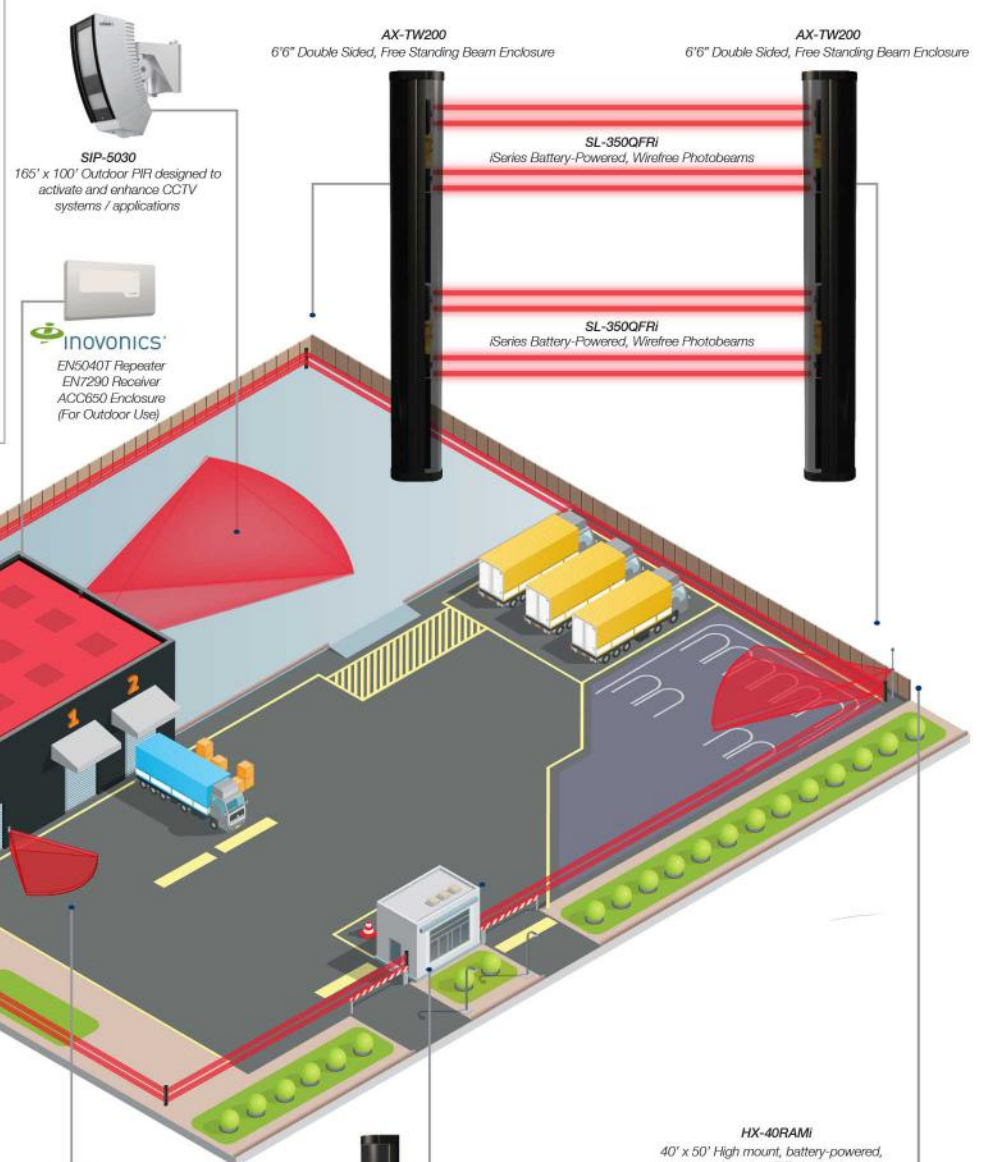




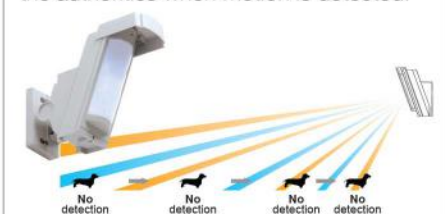
# Total security solutions

## Contact Us

**High Security Laser Detection**  
 Use laser technology from OPTEX to create a horizontal plane or vertical wall with four outputs for remote video applications and 8 independently adjustable detection areas. The REDSCAN RLS-3060SH is the ideal detector for controlling network cameras and can be integrated with leading VMS platforms, access control systems and analog control panels.



**Add Additional Spot Detection**  
 Build strategic outdoor detection areas inside the perimeter and throughout the property, without running wires for power or signal. In addition, OPTEX passive infrared and dual technology detectors can trigger cameras, lights or be used to notify the authorities when motion is detected.



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**From residential to critical infrastructure, OPTEX has the right motion detection solution for any application and environment.**  
 With indoor and outdoor detection options for every threat level, OPTEX provides you with flexibility and choice based on your perimeter security needs. Since it's founding over 30 years ago, OPTEX has established a worldwide reputation for quality, innovation, and technical excellence. Our products always represent an investment in performance and long-term satisfaction.