



## OPTEX PHOTOELECTRIC BEAM AND TOWER GUIDE

# SECURITY STARTS HERE.



SOLAR FIELDS



BORDERS



SUBSTATIONS



CCTV



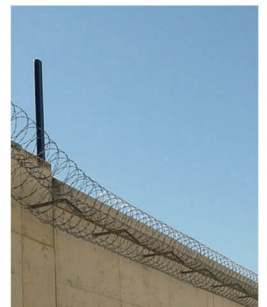
LIGHTING



RESIDENTIAL



INDUSTRIAL



PRISONS

# SECURE YOUR PERIMETER WITH PHOTOELECTRIC BEAMS AND TOWERS FROM OPTEX



## PART NUMBER GUIDE (Examples)



Quad Beam  
**SL-350QFRi**  
 Detection Range in Feet  
 iSeries (Inovonics EN1941 Transmitter and Batteries Included)

Twin Beam  
**AX-200TFR**  
 Ready for Wireless  
 (Accepts most manufacturers Wireless Transmitters)

**AX-650TF**  
 Frequencies  
 (Four Selectable Frequencies for Stacking / Long Distance Applications)

**AX-130TN**  
 Normal (Form A Relay)  
 (No Selectable switch, No Form C Relay)

## HARDWIRED BEAM CONSIDERATIONS

These items are important to consider when planning a hardwired perimeter system using OPTEX photoelectric detectors. Keeping these 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.

## 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.

### '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 in an AX-TN200 Beam Tower.

**AX-100TF, AX-200TF, AX-350TF, AX-650TF, AX-100TFR, AX-200TFR, AX-100TFRi, AX-200TFRi, SL-350QFR, SL-350QFRi**

### '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-350TF, AX-650TF, AX-100TFR, AX-200TFR, AX-100TFRi, AX-200TFRi, SL-350QFR, SL-350QFRi**

### 'We occasionally have lightning storms in the area'

**Feature: Lightning Induced Surge Protection**  
 Our AX series can withstand a lightning surge up to 14kV without damage resulting in faulty operation (IEC801-5 lightning surge noise is the maximum level of our test).

**All Optex AX and SL Series Models**

### 'I'm worried about the constant changing weather conditions causing false alarms.'

**Feature: A.G.C. Circuit (Automatic Gain Control)**  
 The A.G.C. Circuit continually monitors for gradual changes in the signal's strength caused by changing weather conditions. It adjusts the sensitivity accordingly to maintain the proper signal level for the current environmental conditions.

**All Optex AX and SL Series Models**

## WIRELESS, BATTERY-POWERED

### NO WIRES. NO TRENCHING. NO HASSLES.

From rooftop HVAC protection to electrical substations, the Wireless-Ready and iSeries line of detectors from OPTEX give you a battery-powered, wireless solution for all your security needs.

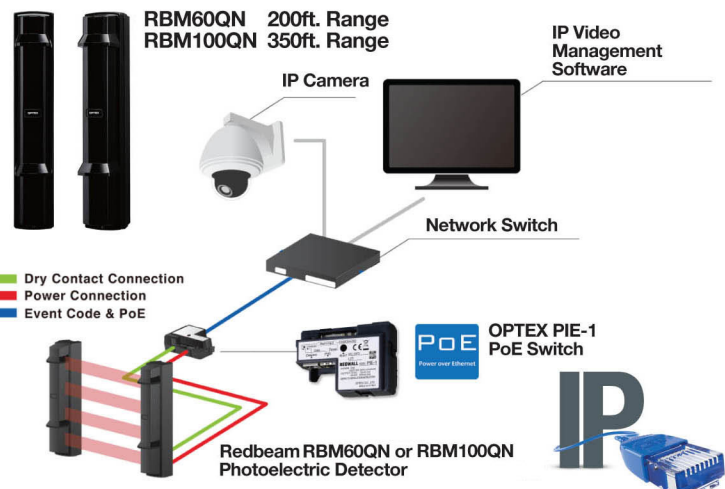


- Greatly reduce install time and labor cost
- No Trenching or Running Wires
- Wireless-Ready versions work with most manufacturers wireless systems
- iSeries version includes an Inovonics EN1941 wireless transmitter pre-installed
- Batteries Included, average lifespan of 3 - 8 years depending on detector / battery combination and frequency of use

## IP POWERED PERIMETER PROTECTION

### SENSING SOLUTIONS FOR IP CCTV SYSTEMS

Redbeam IP detectors can offer a complete detection solution for various external perimeter security systems integrated with IP CCTV products. Redbeam IP detectors can be connected by Power-Over-Ethernet and exchange alarm signal information via IP protocol.





## PHOTOELECTRIC BEAM TOWERS

**AX-TW200** 6' 6" Double Sided, Free Standing Tower (Includes Thermostat, Tamper & Pair of TWSAX)

**AX-TW200M** 6' 6" Single Sided, Wall Mount Tower (Includes Thermostat, Tamper & Pair of TWSAX)

**AX-TW100** 3' 3" Double Sided, Free Standing Tower (Includes Thermostat, Tamper & TWSAX)

**AX-TW100M** 3' 3" Single Sided, Wall Mount Tower (Includes Thermostat, Tamper & TWSAX)

**AX-TW50** 1' 6" Double Sided, Free Standing Tower (Includes Thermostat, Tamper & TWSAX)

## MOUNTING OPTIONS

When selecting your photobeam's mounting options, be sure to take into account the different options that OPTEX offers. All OPTEX beams (with the exception of the BX-100Plus) can either be wall, pole, or tower mounted. Site and environmental conditions, as well as level of security should all be considered when deciding on how to mount your beams.



### Good

**Pole Mount, One Beam Set**  
Advantages: Less expensive



### Better

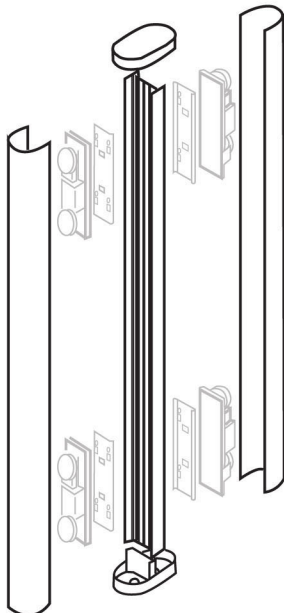
**Tower Mount, One Beam Set**  
Advantages: Aesthetically Pleasing, Conceals beam height, Beam protection against environmental elements and vandalism



### Best

**Tower Mount, Two Beam Set**  
Advantages: Beams double stacked for added protection, Aesthetically Pleasing, Conceals beam height, Beam protection against environmental elements and vandalism

## TOWER ASSEMBLY AT NO CHARGE



### AX-ASM

When a site plan is provided, OPTEX will custom build your towers and pre-install our photoelectric beams and accessories in them according to site specifications, FREE of charge. We'll even ship them directly to your job site, labeled for position and ready to be installed.

### Optional Accessories

**AX-PT3104** Replacement lens for AX-TW200, AX-TW200M

**AX-TWAA** Anti-Climb Top Tamper for AX-TW200

**AX-TWEB** Bracket needed when pouring concrete footing or when installing on uneven ground

**AX-TWH** Heater 12VDC 250 mA Non-Polarity for the AX-TW200/M

**AX-TWSAX** Adjustable Beam Mounting Plate (Kit for 1Tx & 1Rx) TN/TFR, PLUS

**AX-TWSM** Wall Mount Bracket for AX-TW200 only


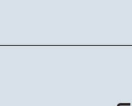













**MP-4** Bracket to mount TFR wireless beams to tower (Set)

**SMP-3** Power Supply and Transformer (12 - 24 VDC)





# PHOTOELECTRIC SPECIFICATION AND SELECTION GUIDE

TOWERS	BATTERY-POWERED, WIRELESS OPTIONS														
	SL-3500FR Includes batteries	SL-3500FRI Includes Inovonics EN1941 transmitter and batteries	AX-100TFR Includes batteries	AX-100TFRI Includes Inovonics EN1941 transmitter and batteries	AX-200TFR Includes batteries	AX-200TFRI Includes Inovonics EN1941 transmitter and batteries	AX-100TF Twin	AX-200TF Twin	AX-350TF Twin	AX-650TF Twin	AX-70TN Twin	AX-130TN Twin	AX-200TN Twin	AX-250PLUS Twin	AX-500PLUS Twin
6.6" TOWERS AX-TW200 Double Sided Free Standing AX-TW200M Single Sided Wall Mount 3.3" TOWERS AX-TW100 Double Sided Free Standing AX-TW100M Single Sided Wall Mount AX-ASM Free Tower Assembly with provided site plan															
Outdoor detection range	350ft	350ft	100ft	100ft	200ft	200ft	100ft	200ft	350ft	650ft	70ft	130ft	200ft	250ft	500ft
Beam	Quad	Quad	Twin	Twin	Twin	Twin	Twin	Twin	Twin	Twin	Twin	Twin	Twin	Twin	Twin
Beam characteristics	Pulsed infrared	Pulsed infrared	Pulsed infrared	Pulsed infrared	Pulsed infrared	Pulsed infrared	Pulsed infrared	Pulsed infrared	Pulsed infrared	Pulsed infrared	Pulsed infrared	Pulsed infrared	Pulsed infrared	Pulsed infrared	Pulsed infrared
Beam blocking ratio	99%	99%	99%	99%	99%	99%	99.5%	99%	99%	99%	99%	99%	99%	99%	99%
4ch. Selectable freq.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Interruption period	50, 100, 250, and 500msec.	50, 100, 250, and 500msec.	50, 100, 250, and 500msec.	50, 100, 250, and 500msec.	50, 100, 250, and 500msec.	50, 100, 250, and 500msec.	50-500msec.	50-500msec.	50-500msec.	50-500msec.	50-500msec.	50-500msec.	50-500msec.	50-500msec.	50-500msec.
Mounting	Wall/Pole/Tower	Wall/Pole/Tower	Wall/Pole/Tower	Wall/Pole/Tower	Wall/Pole/Tower	Wall/Pole/Tower	Wall/Pole/Tower	Wall/Pole/Tower	Wall/Pole/Tower	Wall/Pole/Tower	Wall/Pole/Tower	Wall/Pole/Tower	Wall/Pole/Tower	Wall/Pole/Tower	Wall/Pole/Tower
Alignment angle	+/- 90° Horiz., +/- 5° Vert	+/- 90° Horiz., +/- 5° Vert	+/- 90° Horiz., +/- 5° Vert	+/- 90° Horiz., +/- 5° Vert	+/- 90° Horiz., +/- 5° Vert	+/- 90° Horiz., +/- 5° Vert	+/- 90° Horiz., +/- 5° Vert	+/- 90° Horiz., +/- 5° Vert	+/- 90° Horiz., +/- 5° Vert	+/- 90° Horiz., +/- 5° Vert	+/- 90° Horiz., +/- 5° Vert	+/- 90° Horiz., +/- 5° Vert	+/- 90° Horiz., +/- 5° Vert	+/- 90° Horiz., +/- 10° Vert	+/- 90° Horiz., +/- 10° Vert
LED indicator	4step LED indicator	4step LED indicator	4step LED indicator	4step LED indicator	4step LED indicator	4step LED indicator	4step LED indicator	4step LED indicator	4step LED indicator	16step LED indicator	4step LED indicator	4step LED indicator	4step LED indicator	4step LED indicator	4step LED indicator
Monitor jack for align.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Beam alignment method	Sniper viewfinder™	Sniper viewfinder™	View finder	View finder	View finder	View finder	View finder	View finder	View finder	View finder	View finder	View finder	View finder	View finder	View finder
Automatic gain control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Lighting protection	–	–	–	–	–	–	✓ over 14kV	✓ over 14kV	✓ over 14kV	✓ over 14kV	✓ over 14kV	✓ over 14kV	✓ over 14kV	✓ over 14kV	✓ over 14kV
Environment disqualification circuit	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Power supply	3.6V 13.0Ah LSH20 lithium batteries (4 included)	3.6V 13.0Ah LSH20 lithium batteries (4 included)	3.6V 13.0Ah LSH20 lithium batteries (4 included)	3.6V 13.0Ah LSH20 lithium batteries (4 included)	3.6V 13.0Ah LSH20 lithium batteries (4 included)	3.6V 13.0Ah LSH20 lithium batteries (4 included)	10.5 - 28V DC	10.5 - 28V DC	10.5 - 30V DC	10.5 - 30V DC	10.5 - 28V DC	10.5 - 28V DC	10.5 - 28V DC	10.5 - 30V DC	10.5 - 30V DC
Current consumption	745µA	620µA	620µA	810µA	810µA	810µA	44mA max.	48mA max.	60mA max.	62mA max.	38mA max.	41mA max.	45mA max.	50mA max.	50mA max.
Alarm output	FormC	FormC	FormC	FormC	FormC	FormC	N.C./N.O. 28V DC, 0.2A(max)	N.C./N.O. 28V DC, 0.2A(max)	FormC	FormC	FormC	N.C.	FormC	FormC	FormC
Alarm indication LED	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tamper	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Alarm memory	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Anti-frost design	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–
Optional heating unit	–	–	–	–	–	–	HU-3	HU-3	HU-1	HU-1	HU-3	HU-3	HU-3	HU-1	HU-1
International protection	IP65	IP65	IP55	IP55	IP55	IP55	IP65	IP65	IP65	IP65	IP65	IP65	IP65	IP65	IP65
Operation temperature	-4° to 140°F (-20 to 60°C)	-4° to 140°F (-20 to 60°C)	-4° to 140°F (-20 to 60°C)	-4° to 140°F (-20 to 60°C)	-4° to 140°F (-20 to 60°C)	-4° to 140°F (-20 to 60°C)	-31° to 140°F (-35 to 60°C)	-31° to 140°F (-35 to 60°C)	-31° to 140°F (-35 to 60°C)	-31° to 140°F (-35 to 60°C)	-31° to 140°F (-35 to 60°C)	-31° to 140°F (-35 to 60°C)	-31° to 140°F (-35 to 60°C)	-13° to 131°F (-25 to 55°C)	-13° to 131°F (-25 to 55°C)
Environmental humidity	95% max.	95% max.	95% max.	95% max.	95% max.	95% max.	95% max.	95% max.	95% max.	95% max.	95% max.	95% max.	95% max.	95% max.	95% max.
Dimensions (HxWxD in)	17.8 x 3.3 x 5.4	8.5 x 3.5 x 6.4	8.5 x 3.5 x 6.4	8.5 x 3.5 x 6.4	8.5 x 3.5 x 6.4	8.5 x 3.5 x 6.4	6.7 x 2.6 x 2.7	6.7 x 2.6 x 2.7	15.7 x 3.9 x 4.1	15.7 x 3.9 x 4.1	6.7 x 2.6 x 2.7	6.7 x 2.6 x 2.7	6.7 x 2.6 x 2.7	15.7 x 3.9 x 4.1	15.7 x 3.9 x 4.1

\*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.