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

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SL-200TNR</td>
<td>Twin Beam, Single channel frequency</td>
</tr>
<tr>
<td>AX-200TFR</td>
<td>Quad Beam, Ready for wireless, battery-powered</td>
</tr>
<tr>
<td>SL-200QDP</td>
<td>Quad Beam, Single channel frequency</td>
</tr>
<tr>
<td>SL-350QFRi</td>
<td>Quad Beam, Series wireless, battery-powered</td>
</tr>
<tr>
<td>SL-650QDM</td>
<td>Slimline design, Dual modulation</td>
</tr>
</tbody>
</table>

(Effective for wireless, battery-powered (Batteries included, except most manufacturers’ wireless transmitters)

Inovonics EN1941 transmitter & batteries included)
Quick Features 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 distances is troublesome.”
Solution: Sniper Viewfinder & 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.

For All SL Models

“I want to stack my photobeams for added protection.”
Solution: 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-650QDM, SL-350QDM, SL-650QDM

“Getting power to perimeter is too expensive.”
Solution: Battery-Operated Models

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, & heavy rain can be an issue at my job site.”
Solution 1: 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-350QDM, SL-650QDM

Solution 2: 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

PROFESSIONAL MODEL
SL-200QDM / 350QDM / 650QDM

- 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

<table>
<thead>
<tr>
<th>Model</th>
<th>SL-200QDM</th>
<th>SL-350QDM</th>
<th>SL-650QDM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detection range</td>
<td>65m/200r, 100m/300r, 200m/500r</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beam frequency</td>
<td>6ch selectable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current consumption</td>
<td>Normal 20mA / Max. 40mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-30°F to 140°F (-35°C to +60°C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water protection</td>
<td>IP5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>17.6 x 3.1 x 3.8 in (448 x 79 x 96 mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>88.2 oz (2500g)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ADVANCED LEVEL
SL-200QDP / 350QDP / 650QDP

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

<table>
<thead>
<tr>
<th>Model</th>
<th>SL-200QDP</th>
<th>SL-350QDP</th>
<th>SL-650QDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detection range</td>
<td>65m/200r, 100m/300r, 200m/500r</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beam frequency</td>
<td>6ch selectable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current consumption</td>
<td>Normal 17mA / Max. 24mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-30°F to 140°F (-35°C to +60°C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water protection</td>
<td>IP5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>17.6 x 3.1 x 3.8 in (448 x 79 x 96 mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>84.6 oz (2400g)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

STANDARD MODEL
SL-200QN / 350QN / 650QN

- High power quad beam
- Smart design — slim body & vivid interior color

<table>
<thead>
<tr>
<th>Model</th>
<th>SL-200QN</th>
<th>SL-350QN</th>
<th>SL-650QN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detection range</td>
<td>65m/200r, 100m/300r, 200m/500r</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beam frequency</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current consumption</td>
<td>39mA / 39mA / 49mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-19°F to 140°F (-8°C to +60°C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water protection</td>
<td>IP5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>448 x 78 x 10.1 x 96 (3.2) mm (96)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>46 oz (1300g)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PROFESSIONAL MODEL & ADVANCED MODEL
SL-350QFRI & SL-350QFR

(4 batteries included)

- Long distance 350ft (100m)
- Long battery life — 4 to 8 years
- Spacious back box for wireless transmitter
- Inovonics EN1941 included on SL-350QFR model

*Transmitters shown not included
*2 batteries per side included
*2 additional batteries per side can be added
SL SERIES FEATURES

High Immunity Against False Positives & 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.

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, and signal saturation.

Sunshine Protection Technology (SL-QDM & QDP only)

The sunshine protection technology has a triple layer construction to give better performance against external light sources, such as from the sun, fluorescent lighting, and mercury-vapor lamps.
The TW-Series beam enclosures are suited for all OPTEX AX & 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 & 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.

- 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.
- 3’3” / 6’6” height options available.
- Durable construction with extruded and anodized aluminum 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 & SL (Smart Line) models. (Consult with us for the list of accessories needed)
- Enclosure assembly included at no charge when site plan is provided.
BUILD & CUSTOMIZE

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
Choosing Beam Mounting Enclosure
OPTEX offers 2 enclosure options for mounting beams: 1) Double-sided, for multiple beginning/ending points or long distances, and 2) Single-sided, for point-to-point applications. Once you’ve decided on the teams, select the option that best fits your application.

STEP 3
Select Enclosure Height
OPTEX offers 2 enclosure options for mounting beams: 1) Double-sided, for multiple beginning/ending points or long distances, and 2) Single-sided, for point-to-point applications. Once you’ve decided on the teams, select the option that best fits your application.

STEP 4
Choose Accessories
Depending on the environmental conditions, applications and security level, OPTEX offers accessories to enhance your perimeter system. Mounting brackets set in concrete/asphalt, heaters, and anti-climb tampers 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 photoelectric beams and tower enclosures to match your customers’ specifications. As long as a site plan is provided, this service will not be charged.
Battery-Powered, Wireless Solution

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 & residents can operate as usual during install.
- Allows for a flexible solution in changing site environments, such as construction sites.
- Can easily be added on to support existing video or access systems.

Save Time & Money

From rooftop HVAC protection to electrical substations, the wireless-ready, iSeries photobeams, and enclosures from OPTEX can offer 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 manufacturer’s 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.

Sensing Solutions For IP Systems

When PIE-1 IP encoders are combined with OPTEX beams & enclosures, a complete IP powered detection solution is achieved. You can now connect to all leading VMS platforms to control IP cameras, and PIE-1 is compatible with Power over Ethernet (PoE), making it possible to supply power using a PoE hub or switch. With the PoE connection, alarm signal information can be exchanged via IP protocol. In addition, only one LAN cable is needed to connect PIE-1 to a PoE hub or switch, reducing installation time & cost.
When using a free-standing tower, the AX-TWEB allows for secure concrete mounting, even in uneven soil and the harshest of environments.

**Beam Enclosure Part Numbers**

**Ground Mounting, 360°**
- AX-TW100: 3’3” 360° Beam Tower Floor
- AX-TW200: 6’6” 360° Beam Tower Floor (standard height)

**Ground Mounting, 180°**
- AX-TW100S: 3’3” 180° Beam Tower Floor
- AX-TW200S: 6’6” 180° Beam Tower Floor

**Wall Mounting, 180°**
- AX-TW100M: 3’3” 180° Wall Mount Beam Tower
- AX-TW200M: 6’6” 180° Wall Mount Beam Tower

**Common Accessories**

### AX-TWLBWE
Tower head extension for lighting (12V light bulb not included)

### AX-TWEB
Concrete support bracket for free-standing enclosures on pads

### AX-TWH24V
12V or 24V, 250mA, non-polarity heater & thermostat

### AX-TWSSL
Bracket for SL & AX-TFR series (set)

### AX-TWCAM
CCTV extension head for enclosure (Camera not included)

### AX-TWAA
Anti-climb top tamper

### AX-TWEB-A
Asphalt support bracket for free-standing enclosures on pads

### AX-TWCAB
Guy wires for photobeam enclosures in extreme wind conditions

### AX-TWSM
Pole/wall mount L bracket for AX-TW50, 100, 200, & 300

### BAU-4
Automatic beam-alignment tool (only compatible with SL series)

---

**Exterior Installation Mounting for Enclosures**

When using a free-standing tower, the AX-TWEB allows for secure concrete mounting, even in uneven soil and the harshest of environments.

Dig an 18” x 18” x 18” (minimum) hole. Add rebar or support if needed and pour concrete (for TWEB bracket) or asphalt (for TWEB-A bracket). Insert bracket and cable access conduit while concrete/asphalt is still wet.

With included red head bolts, secure enclosure base to bracket bold heads (Bolts can also be added to existing concrete/asphalt).
TOTAL SECURITY SOLUTIONS

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.

![RLS-3060SH Diagram]

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.

![Detection Areas Diagram]
From residential to critical infrastructure, OPTEX has the right solution for any application & 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 its founding over 30 years ago, OPTEX has established a worldwide reputation for quality, innovation, and technical excellence. Our products will always represent an investment in performance, and long term satisfaction.
| AX-TF Models | AX-TN Models | AX-100TFR | AX-100TFRi | AX-200TW | AX-350QF | AX-350QFi | AX-650QF | AX-650QFi | AX-TW100M | AX-TW200S | AX-TW300S | AX-TW400S | AX-TW500S | AX-TW600S | AX-TW700S | AX-TW800S | AX-TW900S | AX-TW1000S | AX-TW1100S | AX-TW1200S |
|--------------|--------------|-----------|------------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|

**Dimensions (HxWxD in)**
- **SL-100TNR**: 5.7 x 2.7 x 4.6
- **SL-100TNRi**: 5.7 x 2.7 x 4.6
- **SL-200QNS**: 8.5 x 3.5 x 6.4
- **SL-350QNS**: 11.6 x 2.7 x 4.6
- **SL-650QNS**: 17.6 x 3.1 x 3.8

**Environmental humidity**
- **SL-100TNR**: 95% max.
- **SL-100TNRi**: 95% max.
- **SL-200QNS**: 95% max.
- **SL-350QNS**: 95% max.
- **SL-650QNS**: 95% max.

**International protection**
- **SL-100TNR**: IP65
- **SL-100TNRi**: IP65
- **SL-200QNS**: IP55
- **SL-350QNS**: IP55
- **SL-650QNS**: IP65

**Power supply**
- **SL-100TNR**: 120V AC, 60 Hz
- **SL-100TNRi**: 120V AC, 60 Hz
- **SL-200QNS**: 10.5 - 30V DC
- **SL-350QNS**: 10.5 - 30V DC
- **SL-650QNS**: 10.5 - 28V DC

**Power to both sides is available when used with...**
- **SL-100TNR**: Hybrid, Battery-Powered, & Wireless Options
- **SL-100TNRi**: Hybrid, Battery-Powered, & Wireless Options

**Beam alignment method**
- **SL-100TNR**: Sniper viewfinder (Included) / BAU-4 Beam Alignment Unit (Optional)
- **SL-100TNRi**: Sniper viewfinder (Included) / BAU-4 Beam Alignment Unit (Optional)
- **SL-200QNS**: BAU-4 Beam Alignment Unit
- **SL-350QNS**: BAU-4 Beam Alignment Unit
- **SL-650QNS**: BAU-4 Beam Alignment Unit

**Alignment angle**
- **SL-100TNR**: +/- 90˚ Horiz., +/- 10˚ Vert
- **SL-100TNRi**: +/- 90˚ Horiz., +/- 10˚ Vert
- **SL-200QNS**: +/- 90˚ Horiz., +/- 5˚ Vert
- **SL-350QNS**: +/- 90˚ Horiz., +/- 5˚ Vert
- **SL-650QNS**: +/- 90˚ Horiz., +/- 5˚ Vert

**Beam**
- **SL-100TNR**: Twin
- **SL-100TNRi**: Twin
- **SL-200QNS**: Twin
- **SL-350QNS**: Twin
- **SL-650QNS**: Twin

**Indoor detection range**
- **SL-100TNR**: 350ft
- **SL-100TNRi**: 350ft
- **SL-200QNS**: 200ft
- **SL-350QNS**: 400ft
- **SL-650QNS**: 700ft

**Outdoor detection range**
- **SL-100TNR**: 1000ft
- **SL-100TNRi**: 1000ft
- **SL-200QNS**: 650ft
- **SL-350QNS**: 700ft
- **SL-650QNS**: 350ft

**Beam count**
- **SL-100TNR**: 2 beams
- **SL-100TNRi**: 2 beams
- **SL-200QNS**: 2 beams
- **SL-350QNS**: 2 beams
- **SL-650QNS**: 2 beams

**Tamper**
- **SL-100TNR**: Yes
- **SL-100TNRi**: Yes
- **SL-200QNS**: Yes
- **SL-350QNS**: Yes
- **SL-650QNS**: Yes

**Voltage range**
- **SL-100TNR**: 120V AC, 60 Hz
- **SL-100TNRi**: 120V AC, 60 Hz
- **SL-200QNS**: 10.5 - 30V DC
- **SL-350QNS**: 10.5 - 30V DC
- **SL-650QNS**: 10.5 - 28V DC

**Current draw (Peak)**
- **SL-100TNR**: 810μA
- **SL-100TNRi**: 620μA
- **SL-200QNS**: 745μA
- **SL-350QNS**: 39mA max.
- **SL-650QNS**: 38mA max.

**Lightning protection**
- **SL-100TNR**: 14kV
- **SL-100TNRi**: 14kV
- **SL-200QNS**: 14kV
- **SL-350QNS**: 14kV
- **SL-650QNS**: 14kV

**Power to both sides is available when used with...**
- **SL-100TNR**: Hybrid, Battery-Powered, & Wireless Options
- **SL-100TNRi**: Hybrid, Battery-Powered, & Wireless Options

**Beam**
- **SL-100TNR**: Single Sided, Wall Mount (M) = DQ Circuit is needed
- **SL-100TNRi**: Single Sided, Free Standing (S) = Better false alarm immunity
- **SL-200QNS**: Single Sided, Free Standing (S) = A.T.P.C. feature is needed
- **SL-350QNS**: Single Sided, Free Standing (S) = Manual beam power adjust. needed
- **SL-650QNS**: Single Sided, Free Standing (S) = Multiple sets are not used

**Beam**
- **SL-100TNR**: Double Sided, Free Standing = Power is not available
- **SL-100TNRi**: Double Sided, Free Standing = Shorter distance is required
- **SL-200QNS**: Double Sided, Free Standing = Harsh environment at site
- **SL-350QNS**: Double Sided, Free Standing = Shorter distance is required
- **SL-650QNS**: Double Sided, Free Standing = Power is not available

**Beam**
- **SL-100TNR**: Double stacking = Power to both sides is available
- **SL-100TNRi**: Double stacking = Shorter distance is required
- **SL-200QNS**: Double stacking = Harsh environment at site
- **SL-350QNS**: Double stacking = Shorter distance is required
- **SL-650QNS**: Double stacking = Power to both sides is available

**Beam**
- **SL-100TNR**: Double stacking/long runs needed = Trenching is not an option
- **SL-100TNRi**: Double stacking/long runs needed = Trenching is too expensive
- **SL-200QNS**: Double stacking/long runs needed = Trenching is too expensive
- **SL-350QNS**: Double stacking/long runs needed = Trenching is too expensive
- **SL-650QNS**: Double stacking/long runs needed = Trenching is too expensive

**Beam**
- **SL-100TNR**: One beam unit is close to main power source
- **SL-100TNRi**: One beam unit is close to main power source
- **SL-200QNS**: One beam unit is close to main power source
- **SL-350QNS**: One beam unit is close to main power source
- **SL-650QNS**: One beam unit is close to main power source

**Beam**
- **SL-100TNR**: USE THIS BEAM IF
- **SL-100TNRi**: USE THIS BEAM IF
- **SL-200QNS**: USE THIS BEAM IF
- **SL-350QNS**: USE THIS BEAM IF
- **SL-650QNS**: USE THIS BEAM IF

For more information, visit www.optexamerica.com.