

# FiberPatrol® FP4100-X

## Mixed Application Intrusion Detection System

### Description

The FiberPatrol FP4100-X is the first and only intrusion detection system with the flexibility to address several dissimilar perimeter security applications in a single sensor deployment. An FP4100-X sensor cable can be attached to a perimeter fence, mounted along a wall top, and buried in ground for covert detection - all within a single installed system with one alarm processor. Mixed-application capability can be utilized in multi-layer security installations or to provide continuous coverage for non-uniform site perimeters.

In a traditional perimeter security system, distinct sensor types are deployed to address different intrusion detection applications. Such specialized sensors are often based on incompatible technologies and sourced from different manufacturers. They require individual power and communication infrastructure, which drives installation cost up and needlessly complicates system integration and monitoring.

The FP4100-X system replaces such disparate sensors with a single solution. It does so by leveraging the innate ability of the FiberPatrol X technology to interrogate each location along a fiber-optic cable independently. With the FP4100-X, fiber-optic sensor cables protecting different perimeter environments are joined together to form a continuous optical path. Combined sensor length may total up to 10 miles per head end, without any field repeaters, processors, or other powered field components.

When virtual detection zones are defined during system commissioning, the zones that belong to distinct perimeter types are accordingly designated. This assignment instructs the FP4100-X system to select and apply one of several application-specific signal processing algorithms. As many as 50 virtual detection zones can be defined for each mile of a site perimeter, with each zone linked to camera presets for quick video verification.

### Features

#### Mixed-Application Deployment

- > Fence, wall top and in-ground sensing
- > Wide detection sensitivity range
- > Flexible software-based configuration
- > Layered security options in one system

#### Long Range Fiber-Optic Sensor

- > No electrical power required in the field
- > EMI / RFI and lightning immunity
- > Available fiber-optic video and data links
- > Multiple I/O options for system integration
- > Economy-of-scale pricing

#### Location Sensing

- > Accurate location of intrusion attempts
- > Detection of multiple simultaneous events
- > GPS mapping of site perimeter
- > Reconfigurable virtual detection zones
- > Intrinsic rejection of non-localized events

#### Cut Immunity

- > Remains operational after a cable cut
- > Supports self-healing ring architecture
- > Supports redundant sensor configurations
- > Option to postpone repairs

# Specifications

## Intrusion Detection

|                          |   |
|--------------------------|---|
| Max Sensor Length:       | 10 miles (16 km)  |
| Sensor Layout:           | Closed loop or <b>dead end</b>                                  |
| Alarm Location Accuracy: | Better than 75' (23 m) maximum<br>Better than 25' (8 m) typical |
| Min Virtual Zone Length: | 100' (30 m) recommended   |
| Max Virtual Zone Count:  | 52 per mile (33 per km)<br>recommended                          |

## Sensor Cable: Fence and Wall

|                     |  |
|---------------------|--|
| Cable Type:         | Gel-filled loose tubes, single jacket,<br><b>unarmored</b> |
| Rating:             | Outdoor aerial and duct                                    |
| Fiber Count:        | 2 sensing, up to 70 spare                                  |
| Sensing Fiber Type: | Corning SMF-28e+ or equivalent                             |
| Optical Loss:       | <0.4 dB/mi (0.25 dB/km)<br>@ 1550 nm                       |
| Outer Diameter:     | 0.44" (1.1 cm)   |
| Weight:             | 55 lbs/kft (82 kg/km)                                      |

## Sensor Cable: In-Ground

|                     |  |
|---------------------|--|
| Cable Type:         | <b>Tight buffer</b> , single jacket, unarmored |
| Rating:             | Indoor/outdoor <b>riser</b>                    |
| Fiber Count:        | 2 sensing, 10 <b>spare</b>                     |
| Sensing Fiber Type: | Corning SMF-28e+ or equivalent                 |
| Optical Loss:       | < 0.48 dB/mi (0.30 dB/km) @ 1550 nm            |
| Outer Diameter:     | 0.28 in. (0.7 cm)                              |
| Weight:             | 30 lbs/kft (45 kg/km)                          |
| Max Pull Strength:  | 300 lbf (1335 N)                               |

## Installation

|            |                         |
|------------|-------------------------|
| Fence:     | Direct attachment       |
| Wall Top:  | <b>Edge cable clips</b> |
| In-Ground: | <b>Utility conduit</b>  |

## Sensor Controller / Optical

|                       |         |
|-----------------------|---------|
| Laser Classification: | Class 1 |
| Laser Wavelength:     | 1550 nm |
| Connector Type:       | FC/APC  |

## Alarm Processor / Software

|                            |  |
|----------------------------|--|
| CPU*:                      | 1.86 GHz Intel Nehalem                     |
| RAM*:                      | 6 GB DDR3                                  |
| HDD*:                      | 2x500 Gb RAID array                        |
| Networking*:               | Dual Gigabit NIC                           |
| Operating System*:         | Windows 7 Pro 64bit                        |
| Default Alarm Interface:   | XML over TCP/IP                            |
| Optional Alarm Interfaces: | RS232, relay contacts, analog current loop |

\* Similar or better configuration may be substituted

## Electrical Power

|                                 |                            |
|---------------------------------|----------------------------|
| Consumption / Field:            | None                       |
| Consumption / <b>Head End</b> : | 400 Watts maximum          |
| Humidity / Field:               | 100..240 Volts, 50 / 60 Hz |

## Head End Mechanical

|                         |                                      |
|-------------------------|--------------------------------------|
| Combined Dimensions:    | 19" x 19" x 16" (48 x 48 x 41 cm)    |
| Combined Rack Space:    | 19" (48 cm), 9 RU                    |
| Rack <b>Clearance</b> : | 2" (5 cm) [front], 6" (15 cm) [back] |
| Combined Weight:        | 125 lbs (56.7 kg)                    |

## Environmental

|                      |                              |
|----------------------|------------------------------|
| Op. Temp / Head End: | +50°F..+95°F (+10°C..+35°C)  |
| Op. Temp / Field:    | -40°F..+158°F (-40°C..+70°C) |
| Humidity / Head End: | 20%..80%, non-condensing     |
| Humidity / Field:    | No restriction               |

## Certifications and Compliance

|                                |   |
|--------------------------------|---|
| Electromagnetic Compatibility: | FCC Part 15 Class A<br>EC EMC Directive 2004/108/EC |
| Safety:                        | EC Low Voltage Directive<br>2006/95/EC              |

CDMX. (55) 9001-1978 9001-5018  
Cd. Juárez, Chih. (656) 616-8770  
Chihuahua, Chih. (614) 414-5531 414-6922  
Monterrey N.L. 01-800 017-4272  
Torreón, Coah. (871) 722-5850 722-0228  
Tijuana, B.C. (664) 380-6181 250-0788  
Mérida, Yuc. (999) 981-0444

f Sistemas Perseo SA de CV [www.sistemasperseo.com](http://www.sistemasperseo.com)



## Optellios, Inc

11 Penns Trail, Suite 300  
Newtown, PA 18940

Phone: (267) 364-5298  
Fax: (267) 364-5357

[www.optellios.com](http://www.optellios.com)