

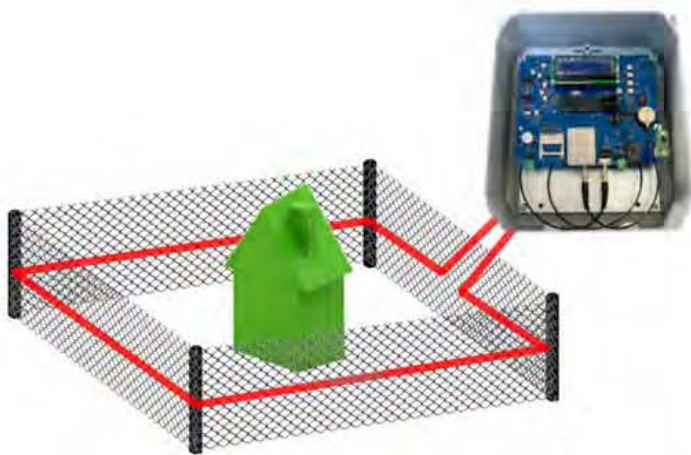


LiteFence

The perimeter protection for everyone!

Great protection and affordable price?
It's easy... with LiteWire!

www.luceat.it



- 50% the price of a microphonic cable
- Quick and easy to install and operate
- Visible deterrent
- 100% immune to EMI and vibrations
- 100% free of false alarms
- Suitable for large and short perimeters

Applications

- Perimeter fence protection
- Photovoltaic plants
- Your home protection



LiteFence

The perimeter protection for everyone!

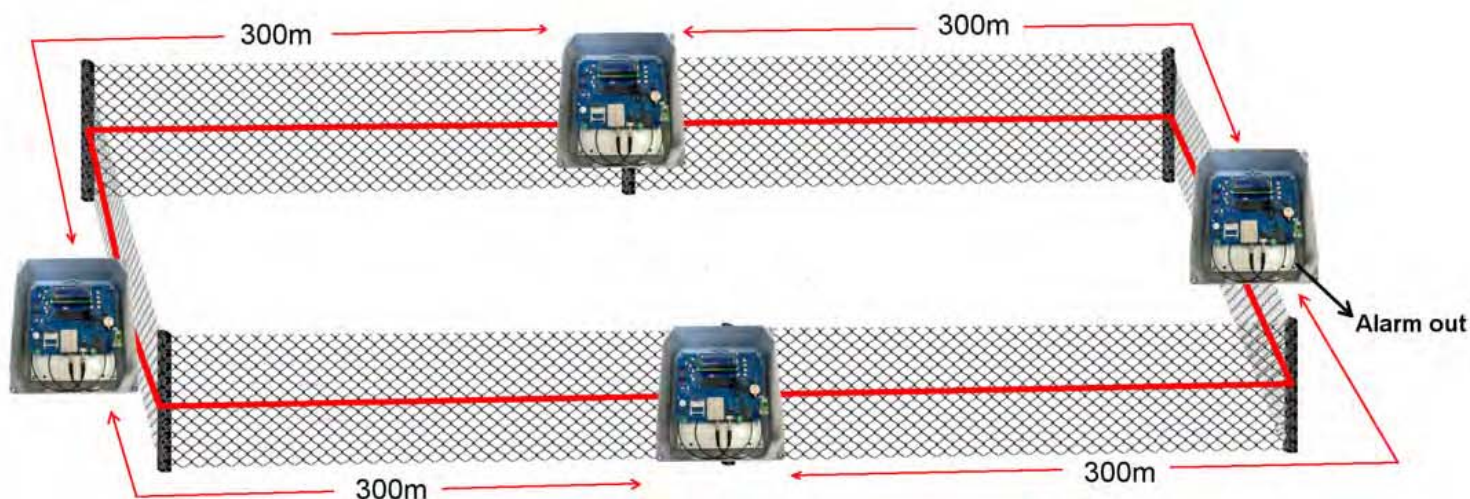


Technical specifications



| | |
|------------------------|--|
| Maximum distance | 300m (between two devices) Up to 6km with repeaters |
| Type of signal | Optical, encoded 525nm |
| Type of fiber | Plastic fiber LiteWire with attenuation < 100dB |
| Sensitivity Level | Adjustable (4 levels) |
| Outputs | Alarm relay (max. 1A/240VAC) |
| Signals | Alarm Power |
| Memorizing function | Real time clock Alarms and events (1 year) |
| Power | 12-24VDC±10% |
| Consumption (mA) | 3W max |
| Protection rate | IP66 |
| Anti-tamper protection | Optical sensor |
| Operating temperature | from -40 to +85 °C |

Connection Scheme



LiteFENCE

Anti-climb for fences
FORGET FALSE ALARMS



CHOOSE LITEFENCE BECAUSE:

Designed, tested and made in Italy

by the same technicians that will support you

Price/Performance ratio

The best price/performance ratio in the market
50% less than a microphonic cable

Zero false alarms

Unaffected by wind, rain, vehicles, sounds or EMI noises
It detects only the fence oscillation/bending due to climbing

Easy installation

This system uses the plastic fiber, easy to handle and install
Fiber is attached to the fence "mechanically" with bolts and clips
No training or PC is required for calibration/learning

LiteFENCE



FLEXIBLE FENCES

The plastic fiber is "sewn" to the net (entering and exiting) and attached to it using common clips.

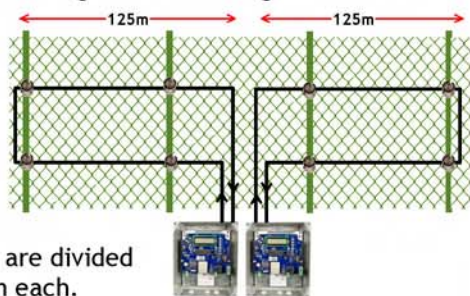
Then a special bolt is drilled into the poles (every 10m), keeping the fiber under a slight tension.



Bending of fence (and fiber), amplified by the bolt which constraints the fiber to the pole, introduces an attenuation in the cable: LiteFENCE detects it and triggers the alarm.

Recommended installation consists in two rows of fiber, attached at two different heights (0.5m and 1.5m) in a loop, so to detect both climbing over and lifting of the fence.

Each LiteFENCE covers up to 250m fiber and protects thus up to 125m fence.



Longer perimeters are divided in sections of 125m each.

For a budget solution or for a higher security level, it is possible to install 1 or 4 fibers.

Kit LiteFENCE - 100m

LiteFENCE, 200m simplex cable, 100 cable-ties, 1 coupler, 20 bolts, 10 F-SMA connectors

Kit LiteFENCE - 250m

2 LiteFENCE, 500m simplex cable, 250 cable-ties, 1 coupler, 50 bolts, 10 F-SMA connectors

Kit LiteFENCE - 500m

4 LiteFENCE, 1km simplex cable, 500 cable-ties, 2 couplers, 100 bolts, 20 F-SMA connectors

Kit LiteFENCE - 500m ANTI-CUT 4 fibers

10 LiteFENCE, 2km simplex cable, 1000 cable-ties, 4 couplers, 250 bolts, 40 F-SMA connectors

WATCH THE VIDEO



RIGID FENCES

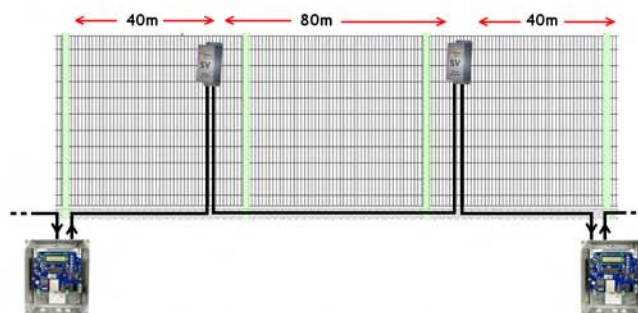
With the opto-mechanic sensor SV, LiteFENCE can also sense oscillation/vibration on rigid/palisade fences. In fact SV is a mechanical and totally passive sensor that converts fence oscillation in a variation of the optical power.

Moreover SV sensor has been designed to be a natural mechanical filter against false alarms and to damper, thanks to its inertia, the vibrations produced by environmental agents and moving vehicles.



Its working principle (patent pending), along with the Luceat LiteFENCE firmware, ignores false alarms due to environmental agents and triggers the alarm only if the thief is climbing or cutting the fence.

Each SV sensor is able to detect every small movement up to 40m each side (depending on the kind of fence), protecting up to 80m fence.



For long perimeters protection it's possible to realize cascade connections with a maximum of 2 sensors per section.

Kit LiteFENCE SV Lite 150m - Grilled/panel welded fences

Minimum height 145cm: LiteFENCE Lite, 2 SV Lite Sensors, with 40m plastic fiber, 10 F-SMA, 1 coupler, 100 cable-ties

Kit LiteFENCE SV 100m - Palisade fences

Minimum height 110cm: Litefence, 2 SV Sensors, 100m simplex cable, 10 F-SMA, 100 cable-ties

Kit LiteFENCE SV power 100m - Palisade fences

Minimum height 110cm: Litefence, 2 SV Sensors, 100m hybrid cable, 10 F-SMA, 100 cable-ties

WATCH THE VIDEO





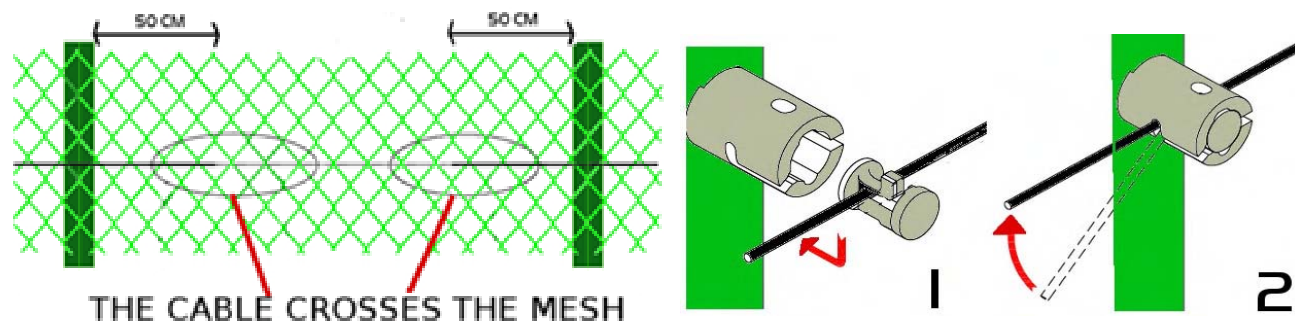
Anti-climbing perimeter security in plastic fiber

Chain-link fencing



Chain-link fencing

The plastic optical fiber is first "sewn" along the fence, going in and out as shown in the figure. It is then fixed to the poles with tension bolts (one every 10m) and on the fence with cable ties (1 every two meters or between the two poles).



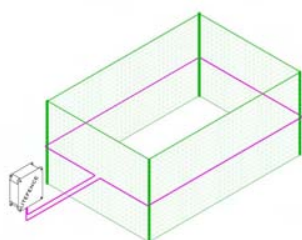
During an attempt to climb, the fence and cable bend due to the weight of the thief. This variation is read by the analyzer that triggers the alarm via a NC relay contact which can be connected to any alarm control panel.

Wind and vibrations caused by weather conditions and moving vehicles do not cause the fence to bend and so it does not trigger any alarm. For this reason, the installation of the perimeter protection system is simple and does not require the learning of any software program, ensuring a 'stop to false alarms'.

Depending on the required level of security, you can install on the fence:

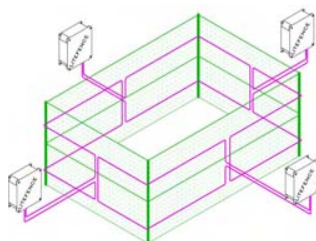
- 1 fiber to the centre (to detect climbing and breaking);
- 2 fibers (0.5m and 1.5m from the ground up) to detect climbing and lifting;
- 4 fibers (0.25m, 0.5m, 0.8m, 1.5m from the ground up) to create an impenetrable barrier even in the event the fence is cut

200m perimeter



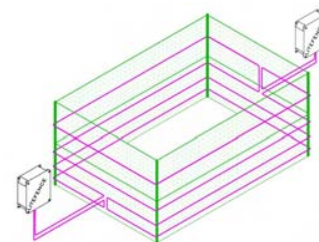
1 fiber in the center
Anti-climbing
250m of fiber = 250m of fence

400m perimeter



2 fibers (0.50/1.50m on a 2m fence)
Anti-climbing and lifting
250m of fiber = 125m of fence

100m perimeter



4 fibre (25/50/80/150cm on a 2m fence)
AGAINST FENCE CUTTING
250m of fiber = 60m of fence

In general, for the protection of a chain-link fence, the following components are required:

- 1 LiteFENCE analyzer every 200/250m of plastic fiber cable
- LiteWIRE plastic fiber cable with UV protection
- 2 FSMA metal connectors every LiteFENCE analyzer or coupler
- 1 tension bolt every 10m of fiber
- 1 cable tie every 2m of fiber

Kits available

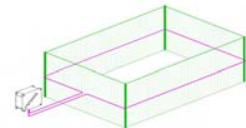
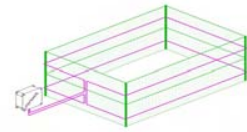
FENCE KIT “Chain-link” - 100m (Item FKIT100M002K)

Consisting of:

- 1 LiteFENCE analyzer
- 200m LiteWIRE fiber
- 20 tension bolts
- 1 pack of FSMA connectors
- 1 coupler
- 100 cable ties

To protect

- 100 m fence**
Double fiber passage for the detection of attempts to climb over and lift.
- 200 m fence**
Single fiber passage for the detection of attempts to climb over and breakthrough.



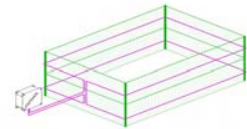
FENCE KIT “Chain-link” - 250m (Item FKIT250M002K)

Consisting of:

- 2 LiteFENCE analyzers
- 500m LiteWIRE fiber
- 50 tension bolts
- 1 pack of FSMA connectors
- 1 coupler
- 250 cable ties

To protect:

- 250 m fence**
Double fiber passage for the detection of attempts to climb over and lift.
- 500 m fence**
Single fiber passage for the detection of attempts to climb over and breakthrough.



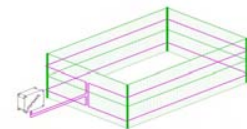
FENCE KIT “Chain-link” - 500m (Item FKIT500M002K)

Consisting of:

- 4 analyzers LiteFENCE
- 1000m LiteWIRE fiber
- 100 tension bolts
- 2 packs of FSMA connectors
- 2 couplers
- 500 cable ties

To protect:

- 500 m fence**
Double fiber passage for the detection of attempts to climb over and lift.
- 1000 m fence**
Single fiber passage for the detection of attempts to climb over and breakthrough.



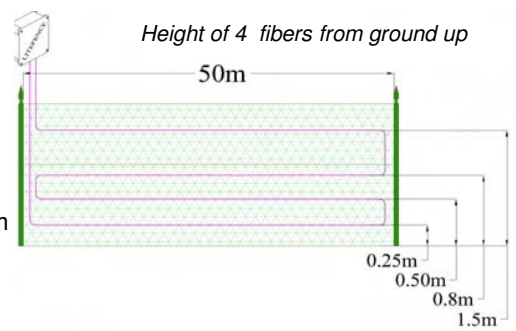
FENCE KIT “Chain-link – Against fence cutting” – 500m (Item FKIT500M004K)

Consisting of:

- 10 LiteFENCE analyzers
- 2000m LiteWIRE fiber
- 250 tension bolts
- 4 packs of FSMA connectors
- 4 couplers
- 1000 cable ties

To protect 500m fence
Against fence cutting:

- 500 m fence**
4 fiber passages provide an impenetrable barrier and maximum security even after attempts to cut the fence





Anti-climbing perimeter security in plastic fiber

Chain-link fencing

Perimeter walls with barbed wire

Modular fencing

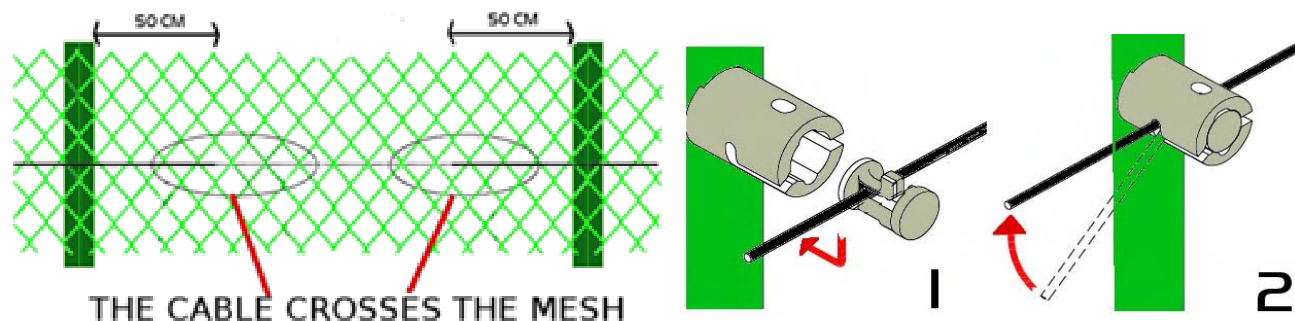
(type Orsogril/ Keller/ Betafence/ Pratika)

Rigid fences



Chain-link fencing

The plastic optical fiber is first "sewn" along the fence, going in and out as shown in the figure. It is then fixed to the poles with tension bolts (one every 10m) and on the fence with cable ties (1 every two meters or between the two poles).



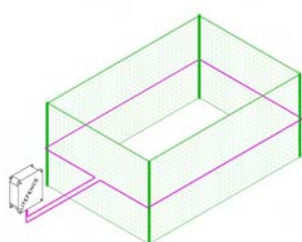
During an attempt to climb, the fence and cable bend due to the weight of the thief. This variation is read by the analyzer that triggers the alarm via a NC relay contact which can be connected to any alarm control panel.

Wind and vibrations caused by weather conditions and moving vehicles do not cause the fence to bend and so it does not trigger any alarm. For this reason, the installation of the perimeter protection system is simple and does not require the learning of any software program, ensuring a 'stop to false alarms'.

Depending on the required level of security, you can install on the fence:

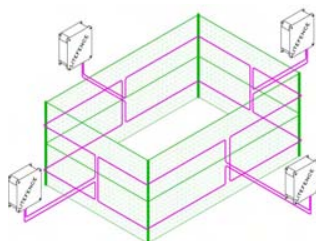
- 1 fiber to the centre (to detect climbing and breaking);
- 2 fibers (0.5m and 1.5m from the ground up) to detect climbing and lifting;
- 4 fibers (0.25m, 0.5m, 0.8m, 1.5m from the ground up) to create an impenetrable barrier even in the event the fence is cut

200m perimeter



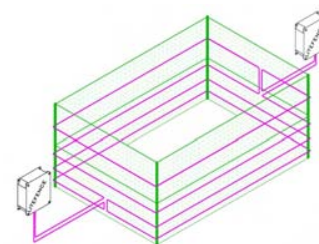
1 fiber in the center
Anti-climbing
250m of fiber = 250m of fence

400m perimeter



2 fibers (0.50/1.50m on a 2m fence)
Anti-climbing and lifting
250m of fiber = 125m of fence

100m perimeter



4 fibre (25/50/80/150cm on a 2m fence)
AGAINST FENCE CUTTING
250m of fiber = 60m of fence

In general, for the protection of a chain-link fence, the following components are required:

- 1 LiteFENCE analyzer every 200/250m of plastic fiber cable
- LiteWIRE plastic fiber cable with UV protection
- 2 FSMA metal connectors every LiteFENCE analyzer or coupler
- 1 tension bolt every 10m of fiber
- 1 cable tie every 2m of fiber

Kits available

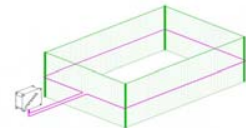
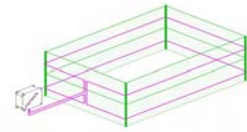
FENCE KIT “Chain-link” - 100m (Item FKIT100M002K)

Consisting of:

- 1 LiteFENCE analyzer
- 200m LiteWIRE fiber
- 20 tension bolts
- 1 pack of FSMA connectors
- 1 coupler
- 100 cable ties

To protect

- 100 m fence**
Double fiber passage for the detection of attempts to climb over and lift.
- 200 m fence**
Single fiber passage for the detection of attempts to climb over and breakthrough.



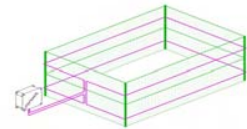
FENCE KIT “Chain-link” - 250m (Item FKIT250M002K)

Consisting of:

- 2 LiteFENCE analyzers
- 500m LiteWIRE fiber
- 50 tension bolts
- 1 pack of FSMA connectors
- 1 coupler
- 250 cable ties

To protect:

- 250 m fence**
Double fiber passage for the detection of attempts to climb over and lift.
- 500 m fence**
Single fiber passage for the detection of attempts to climb over and breakthrough.



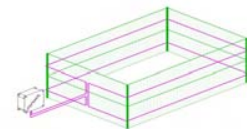
FENCE KIT “Chain-link” - 500m (Item FKIT500M002K)

Consisting of:

- 4 analyzers LiteFENCE
- 1000m LiteWIRE fiber
- 100 tension bolts
- 2 packs of FSMA connectors
- 2 couplers
- 500 cable ties

To protect:

- 500 m fence**
Double fiber passage for the detection of attempts to climb over and lift.
- 1000 m fence**
Single fiber passage for the detection of attempts to climb over and breakthrough.



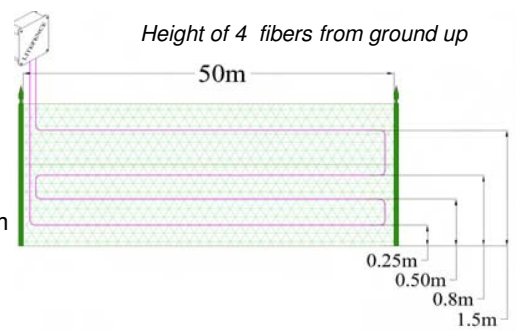
FENCE KIT “Chain-link – Against fence cutting” – 500m (Item FKIT500M004K)

Consisting of:

- 10 LiteFENCE analyzers
- 2000m LiteWIRE fiber
- 250 tension bolts
- 4 packs of FSMA connectors
- 4 couplers
- 1000 cable ties

To protect 500m fence
Against fence cutting:

- 500 m fence**
4 fiber passages provide an impenetrable barrier and maximum security even after attempts to cut the fence



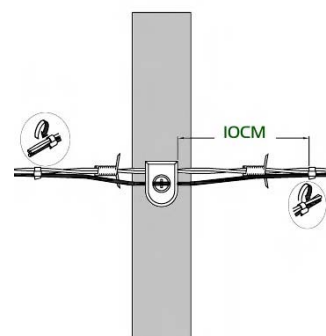
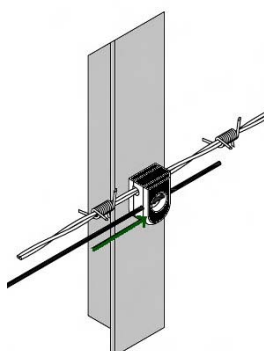
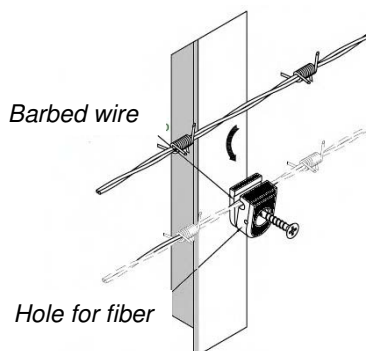
Perimeter walls with barbed wire

On each barbed wire arm (usually one every 2m), a clip is attached using a self- drilling screw. The clip fastens the barbed wire and the plastic fiber together.

The plastic fiber is passed through the front of the screw, preventing it from unscrewing, and is attached to the barbed wire with two cable ties near the barb arms (to approx. 10 cm from the clip) and with a third cable tie between the two barb arms.

Any attempt to cut or bend the barbed wire (such as deformation due to the weight of the thief) is detected by the sensor which triggers the signal via the NC alarm output relay (connectable to any alarm control panel).

We recommend the use of two rows of fiber attached to the lower barbed wire and to the upper barbed wire.



In general, for the protection of a perimeter wall with barbed wire, the following components are required:

- 1 LiteFENCE analyzer every 200/250m of plastic fiber cable
- LiteWIRE plastic fiber cable with UV protection
- 2 FSMA metal connectors every LiteFENCE analyzer or coupler
- 1 tension bolt every 10m of fiber
- 1 clip every barb arm
- 2 cable ties every barb arm and 1 cable tie every 2 barb arms

Kits available

| <u>FENCE KIT "Barbed wire" - 100m</u> (Item - <i>FKIT100M002B</i>) | <u>FENCE KIT "Barbed wire" - 250m</u> (Item - <i>FKIT250M002B</i>) | <u>FENCE KIT "Barbed wire" - 500m</u> (Item - <i>FKIT500M002B</i>) |
|--|--|--|
| <ul style="list-style-type: none"> - 1 LiteFENCE analyzer - 200m LiteWIRE fiber - 20 tension bolts - 1 pack of FSMA connectors - 1 coupler - 300 cable ties - 100 clips for barbed wire | <ul style="list-style-type: none"> - 2 LiteFENCE analyzers - 500m LiteWIRE fiber - 50 tension bolts - 1 packs of FSMA connectors - 1 coupler - 750 cable ties - 250 clips for barbed wire | <ul style="list-style-type: none"> - 4 LiteFENCE analyzers - 1000m LiteWIRE fiber - 100 tension bolts - 2 packs of FSMA connectors - 2 couplers - 1500 cable ties - 500 clips for barbed wire |

Modular fencing (type Orsogrill/Keller/Betafence/Pratika)



Our SECURITY SYSTEM "SV" is patent pending

For semi-rigid grating fencing panels (type Orsogrill / Keller) and electrically welded (type Betafence / Pratika) with a minimum height of 145cm.



The semi-rigid modular nets do not bend under the weight of the thief, but rather move back and forth along a single axis in response to strain caused by climbing over. Such fluctuations are detectable by attaching the SV Lite sensor to the fence (patent pending).

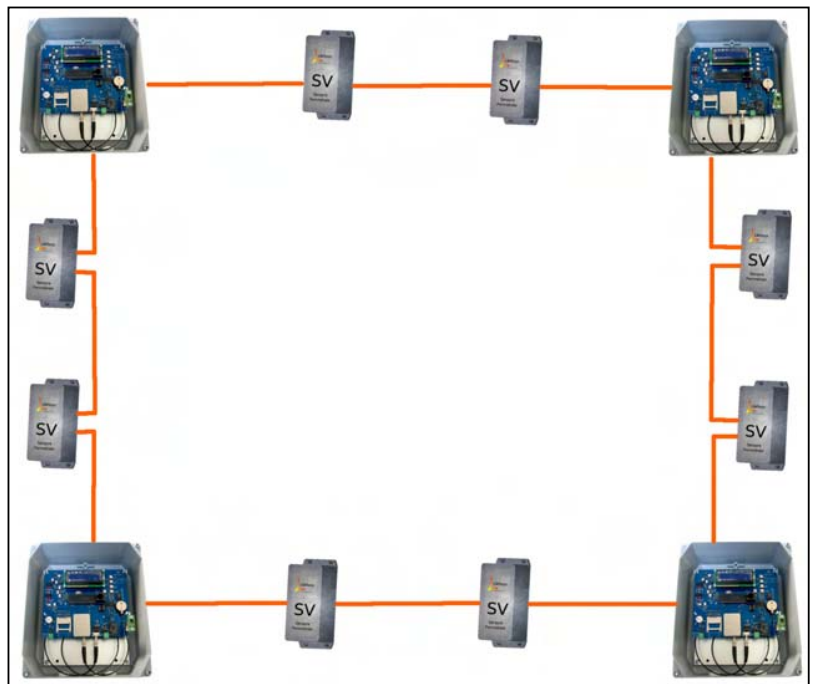
In fact, in the SV Lite sensor, light passes through two fibers facing each other and is constrained to move only on one axis, the same as that in which the fence sways. In the event of climbing over, swaying causes the misalignment of the fibers, the light beam completely stops and the LiteFENCE Lite analyzer, which analyses the light signal, recognizes this variation triggering the alarm.

Simple vibrations resulting from weather conditions or moving vehicles fail to create a swing capable of completely stopping the light beam. Therefore the system has an excellent resistance to false alarms and does not require adjusting, new learning phases or software.

Each SV Lite sensor detects oscillations up to 40m per side (depending on the type of fence) and protects up to 80m of straight fence. In the case of fence curves, these will decrease the oscillations, so the use of more sensors will be required

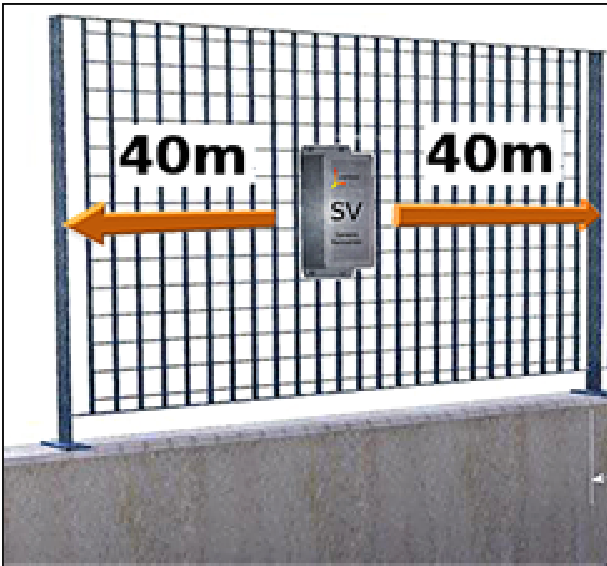
All LiteFENCE analyzers and SV sensors are connected as shown in the figure.

The plastic fiber is "sewn" along the fence with an enter and exit process to prevent an entry attempt via the dismantling of a panel.



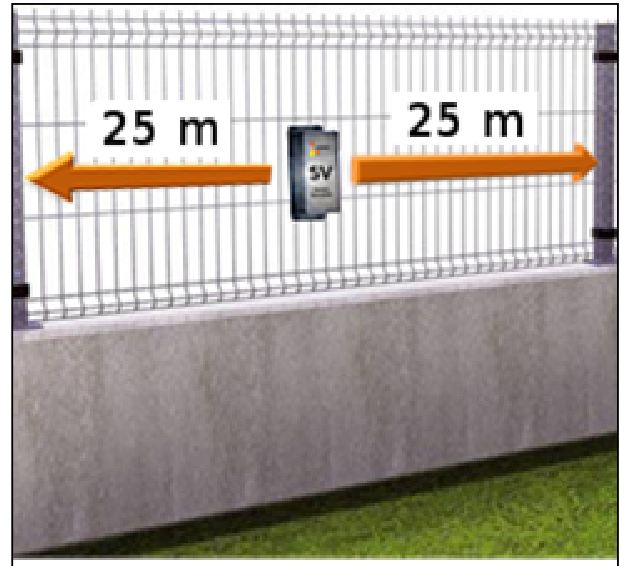
Grilled fence type Orsogril/Keller

Each SV Lite sensor detects oscillations caused by climbing over up to 40m away (straight) from both sides.



Electro-welded fence type Betafence/Pratika

Each SV Lite sensor detects oscillations caused by climbing over up to 25m away (straight) from both sides.



In general, for the protection of modular fencing, the following components are required:

Grating fence type Orsogril/Keller

- 1 SV Lite sensor every 80m of straight fencing (pre-cabled with 40+40m each sensor)
- 1 LiteFENCE analyzer every 2 SV Lite sensors
- 2 FSMA metal connectors every analyzer LiteFENCE Lite or coupler
- 1 coupler every 2 SV Lite sensors
- 1 cable tie every 1.5m of fiber

Electro-welded fence type Betafence/Pratika

- 1 SV Lite sensor every 50m of straight fencing (pre-cabled with 40+40m each sensor)
- 1 LiteFENCE analyzer every 2 SV Lite sensors
- 2 FSMA metal connectors every analyzer LiteFENCE Lite or coupler
- 1 coupler every 2 SV Lite sensors
- 1 cable tie every 1m of fiber

In the case of fence curves, these will decrease the oscillations, so the use of more sensors will be required.

-

Kits available

FENCE KIT "Modular fencing" – 100m/150m*

(Item FKIT150M0SVL)

***Approx. 100m in the case of nets such as Betafence / Pratika**
Approx. 150m in the case of nets such as Orsogril / Keller

Consisting of:

- 1 LiteFENCE Lite analyzer
- 2 SV Lite sensors (pre-cabled with 40+40m each sensor)
- 1 pack of FSMA connectors
- 1 coupler
- 100 cable ties

To protect straight fencing panels 100/150m

In the case of numerous fence curves or a greater distance, it is possible to interconnect kits without any distance limits

Rigid fences

Our SECURITY SYSTEM "SV" is patent pending



For rigid fences taller than 115 cm.

The fiber, normal or in a hybrid version (to power LiteFENCE analyzers), is "sewn" along the fence with an in and out process.



In the SV sensor, light passes through two fibers facing each other. A vibration creates a misalignment of the fibers and a variation of the light intensity that the LiteFENCE analyzer detects, in turn generating an alarm.

LiteFENCE, compared to LiteFENCE Lite, is able to detect the partial misalignment of the fiber caused by a slight vibration and therefore detects vibrations up to 10/15m (for fences with a height between 110 and 145 cm) and up to 15/25m (for fences taller than 145cm per side), protecting up to 30/50m of a straight fence. **In the case of fence curves, these will decrease the oscillations, so the use of more sensors will be required.**

Excellent tolerance to false alarms is guaranteed by the high frequency of vibrations caused by weather conditions and moving vehicles on this type of fence, filtered by the inertia of the SV sensor and LiteFENCE firmware.

The rigid fences as a result of an attempt to climb over, do not oscillate but vibrate: these vibrations are detected by attaching SV sensor to the fence.

All LiteFENCE analyzers and SV sensors are connected as shown in the figure. The parameters of LiteFENCE are preset in the factory according to the type of fence enclosure to protect (selectable from the menu); to better adapt to the specific requirements however, the operator may intervene on the adjustment of:

- pre-alarm time (i.e. how long should an oscillation / vibration last before triggering the real alarm);
- sensitivity level (high or low);
- activation filter for high frequency vibrations



In general, for the protection of modular fencing, the following components are required:

| Height of fence: 115 cm to 145cm | Height of fence: over 145cm |
|--|--|
| <ul style="list-style-type: none">- 1 LiteFENCE analyzer every 60m of plastic fiber cable- 1 SV sensor every 30m of plastic fiber- LiteWIRE plastic fiber cable with UV protection- 2 metal connectors for each LiteFENCE analyzer or coupler- 1 cable tie every 1m of fiber | <ul style="list-style-type: none">- 1 LiteFENCE analyzer every 100m of plastic fiber cable- 1 SV sensor every 50m fiber- LiteWIRE plastic fiber cable with UV protection- 2 FSMA metal connectors every LiteFENCE analyzer or coupler- 1 cable tie every 2m of fiber |

In the case of fence curves, these will decrease the oscillations, so the use of more sensors will be required

Kits available

FENCE KIT "Rigid fences" – 60m/100m*

(Item - FKIT060M00SV)

*** Approx 60m for fences with a height between 110cm and 145cm
Approx 100m to for fences taller than 145cm**

Consisting of:

- 1 LiteFENCE analyzer
- 2 SV sensors
- 100 LiteWIRE fiber
- 1 pack of FSMA connectors
- 100 cable ties

To protect 60/100m of rigid fencing:

In the case of numerous fence curves or a greater distance, it is possible to interconnect kits without any distance limits

FENCE KIT "Rigid fences + power" – 60/100m

(Item - FKIT060H00SV)

Same composition as the previous one, but with a hybrid cable that in addition to the plastic fiber contains two copper wires. It is therefore possible, with a single cable, to transport both the optical signal and the power supply, simplifying installations and reducing wiring costs. The "Rigid fences + power" FENCE KIT is particularly suitable for large systems.