

PERIMETER Security

INNOVATION BECOMES EASY:
NO PC, NO LEARNING PHASE,
NO FALSE ALARMS

ANTI-CLIMB PERIMETER SECURITY

This system is based on the principle that an attempt of climbing over produces waves, vibrations or bends. These mechanical stresses are magnified and transmitted over the plastic fiber attached to the fence with special fastening bolts, sensors or cable-ties.

The optical analyser **LiteFENCE** detects the variations in light transmission and triggers the alarm.

NO FALSE ALARMS: as the fence must be mechanically stressed for the analyser to detect a change in optical power, vehicles passing by or adverse weather conditions (like wind, rain, snow and falling leaves) DO NOT trigger false alarms..

Unaffected by wind gusts

Zero false alarms

Quick and easy installation

Maintenance-free

No particular learning required

Plastic fiber **LiteWIRE** has a special sun-light resistant jacket which makes it suitable for installation in a UV resistant jacket. It has a special anti-UV treatment suitable for exposure to sunlight.

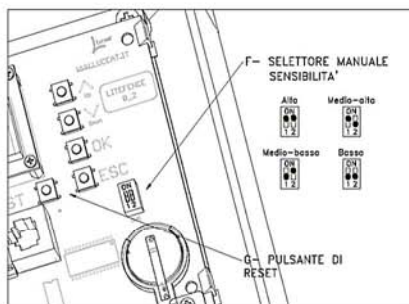
The plastic fiber is attached to the fence and connected to the analyser **LiteFENCE**.

In case of flexible fences, the fiber is tied to the mesh and fastened to the posts using special tensioning bolts.

In case of rigid fences and gratings, the fiber is also connected to the SV sensors and tied to the fence.



E' You can set the most suitable sensitivity for your installation by choosing one of the four sensitivity levels available (see picture), and/or, in case of rigid fences and gratings, placing the SV sensor higher or lower on the fence.



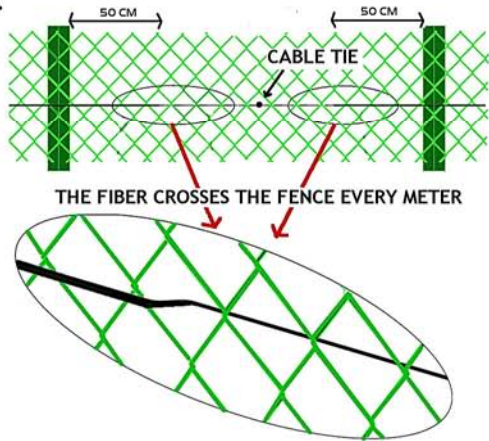
BASIC SPECS

LiteFENCE operating range: 250m of fiber installed on the fence
Pre-cabled: no
Type of fence: flexible, chain link fence

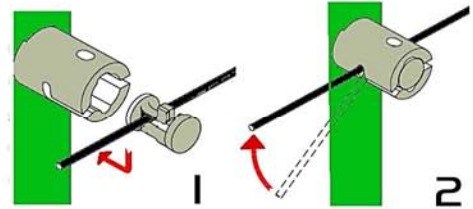
CHAIN LINK, FLEXIBLE FENCES

For any situation, also suitable for sloping and terraced grounds

The plastic fiber is "woven" along the fence with an enter and exit process, as shown below.



The fiber is then affixed to the posts with tensioning bolts (one every 10m), and to the fence with cable ties (one between the posts).

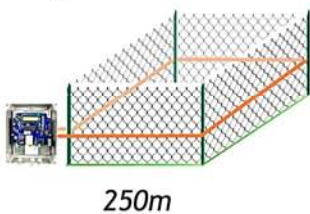


During an attempt to climb, the flexion of fiber due to climbing over, lifting or breaching is detected by LiteFENCE, which triggers an alarm either via a normally closed (NC) relay contact, which can be connected to any alarm control panel), or via an optical output which can be connected to a specific receiver.

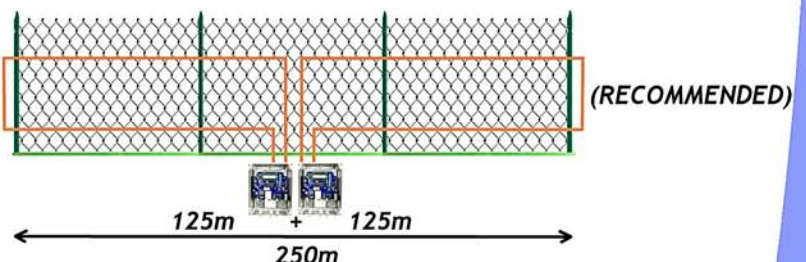
Wind and vibrations caused by weather conditions and moving vehicles do not cause the fence to bend and so it does not trigger any alarm. For this reason, the installation of the perimeter protection system is simple and does not require the learning of any software program, ensuring a 'stop to false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

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

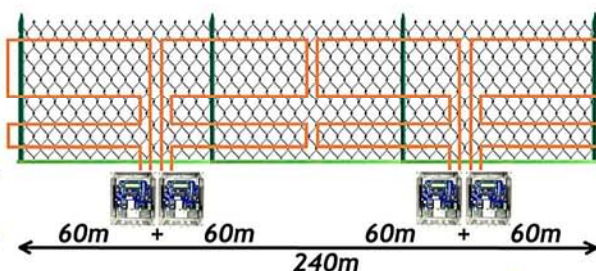
- 1 fiber to the centre to detect climbing and breaking;
- 2 fibers (30cm and 150cm from the ground up) to detect climbing and lifting;
- 4 fibers (30cm, 60cm, 110cm, 150cm from the ground up) to create an impenetrable barrier even in case of attempted breach



1 fiber in the center
Anti-climbing



2 fibers (30 and 150cm on a 2m fence)
Anti-climbing anti-lifting



4 fibers (30, 60, 110 and 150cm on a 2m fence)
ANTI-BREACH

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LiteFENCE SV Lite

BASIC SPECS

Height of fence: over 145cm
SV Lite sensor operating range: 40m (linear)
Pre-cabled: 20m+20m of fiber
Type of fence: Orsogril, Keller, Betafence, Pratika

SEMI-RIGID MODULAR FENCES (Orsogril, Keller, Betafence, Pratika)

This system detects climbing over or lifting of a module of grating fences (type Orsogril/Keller) and electrically welded panels (type Betafence/ Pratika) with a minimum height of 145cm.

The semi-rigid modular fences do not bend under the weight of the intruder, but, rather move back and forth along a single axis in response to the strain caused by the climbing over; such fluctuations are detectable by attaching the SV Lite sensor to the fence.

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 analyser, 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.

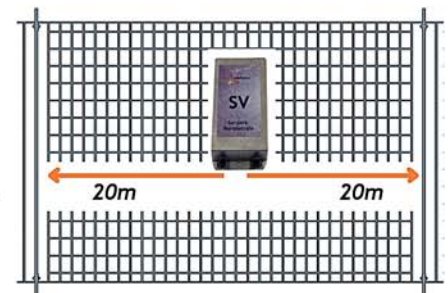
Each SV Lite sensor detects oscillations up to 20m per side (depending on the type of fence) and protects up to 40m of straight fence.

The sensor sensitivity to the climbing over can be adjusted by placing the sensor at a higher or lower position on the fence.

In addition to gates or interruptions along the fence, also corners decrease or block the propagation of oscillations, so the use of more sensors is required.

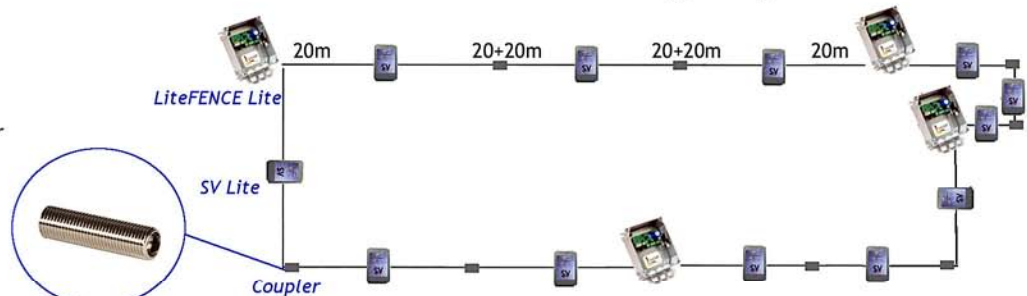


Type Betafence



Type Orsogril

Example of closed perimeter 380m



In case the perimeter has a "C" shape (i.e. open loop), an additional LiteFENCE Lite (in transmission modality) is placed at the starting point of the fence.

Example of open perimeter 240m



All LiteFENCE Lite analysers and the SV Lite sensors are connected in a bus, and the plastic fiber is "woven" along the fence with an enter and exit process to prevent an entry attempt via the dismantling of a panel. We recommend to cross the fence once every meter.

- Every LiteFENCE Lite manages up to 3 SV Lite sensors
- SV Lite sensors are pre-cabled with 2 x 20m of plastic fiber

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BASIC SPECS

Height of fence: over 110cm
SV Sensor operating range: up to 50m (straight)
Pre-cabled: 3m+3m of armoured fiber
Type of fence: rigid fences and gratings

LiteFENCE SV

RIGID FENCES AND GRATINGS

This system detects the attempt to climb over a rigid/semi-rigid/ modular fence of minimum height of 110cm.

Rigid fences, as a result of an attempt to climb over, do not oscillate but vibrate: these vibrations are detected by SV sensor and LiteFENCE analyser.

LiteFENCE is able to detect the partial misalignment of the fiber caused by a slight vibration and therefore detects vibrations:

- up to 10/15m per side, for fences with a height between 110 and 145 cm
- up to 15/25m per side, for fences with a height over 145cm

One SV sensor protects up to 30/50m of a straight fence.

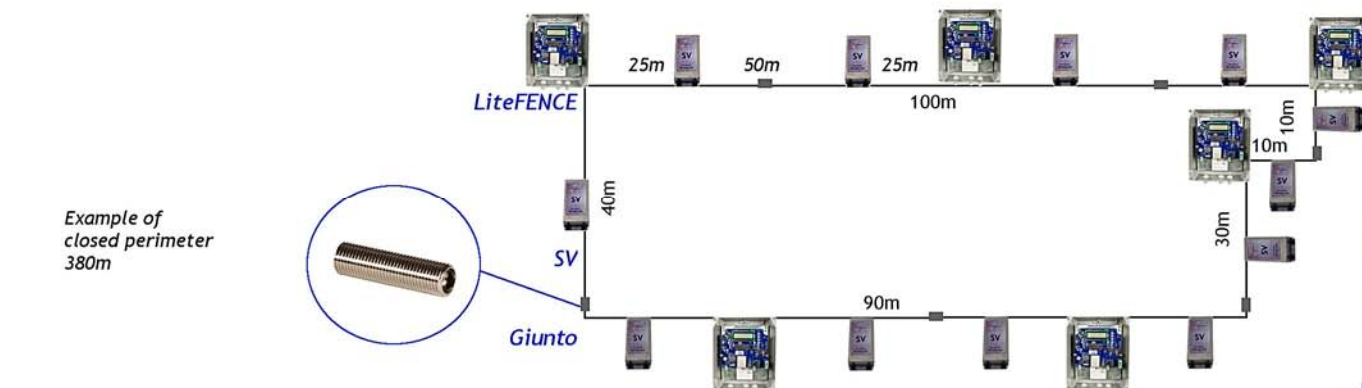
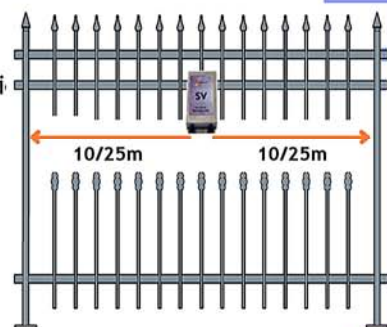
Curves and corners along the fence sensibly decrease the oscillations, so the use of more sensors is required.

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.

I parametri di LiteFENCE sono pre-impostati in fabbrica in base al tipo di rete da proteggere (selezionabile dal menù); per meglio adattarsi a esigenze specifiche l'operatore può comunque intervenire sulla taratura di:

- sensitivity level (high or low) from the 4 levels available;
- activation/deactivation of filter to high frequencies;
- pre-alarm time (i.e. how long should an oscillation/vibration last before triggering the real alarm).

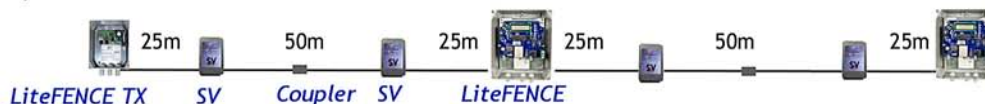
The plastic fiber is "woven" along the fence with an enter and exit process to prevent an entry attempt via the dismantling of a panel, in case of modular fence.



Example of closed perimeter 380m

In case the perimeter has a "C" shape (i.e. open perimeter), a LiteFENCE TX is placed at the starting point of the fence.

Example of open perimeter 200m



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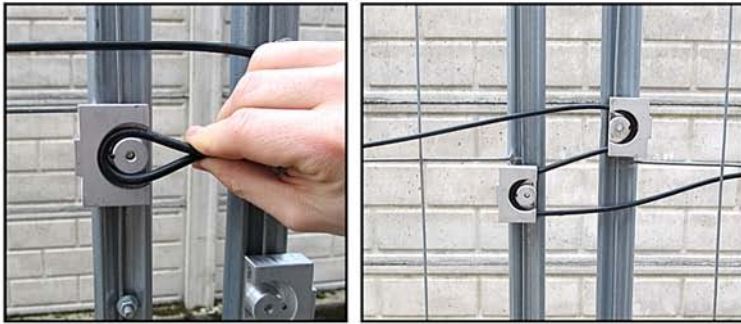
Coupler

TEMPORARY FENCES

This system detects the climbing, lifting or moving of a panel on a temporary fence for building sites.

This kind of enclosure cannot be protected by any traditional solutions because they oscillate too much while vehicles pass by or when there are gusts of wind. Besides, most alarm systems are not suitable for short-term building sites, which require a flexible solution which can be easily and quickly activated/deactivated by site workers.

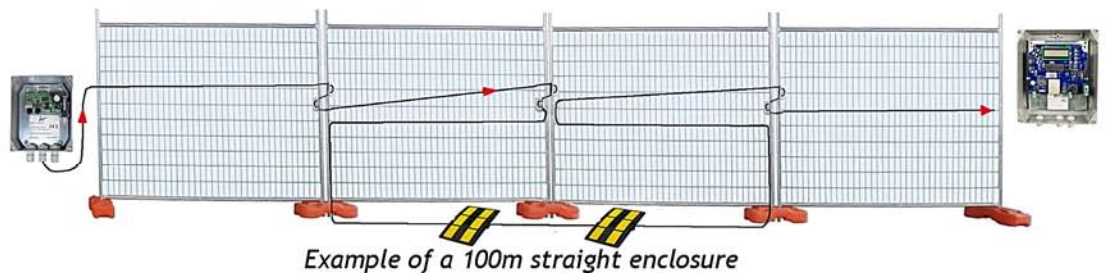
It is possible to protect a 100m enclosure in just a few hours, access the building site as easily as opening a padlock and it provides an ANTI-THEFT SYSTEM WITHOUT FALSE ALARMS.



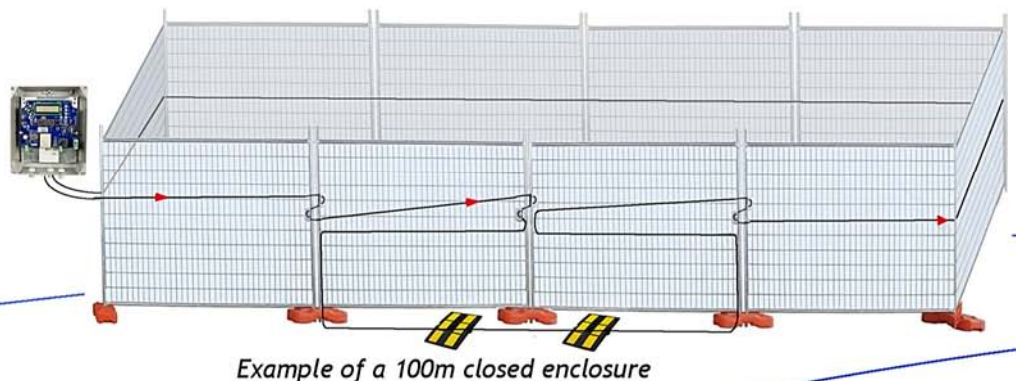
Oscillations of the fence, even strong ones, do not cause any flexing of the fence, but lifting a module or trying to climb over it will wrest the fiber triggering the alarm.

As it is easy and quick to install, it is ideal for building sites, also if it remains on site for a short period of time, and you can access by just unlocking the bolt with one hand.

Easy to lock/unlock
Suitable both for straight and closed enclosures



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BASIC SPECS

LiteFENCE operating distance: 250m of fiber installed on barbed wire;
160m of fiber installed on a \varnothing 4mm metal rope
Precabled: no
Type of fence: barbed wire, metal rope

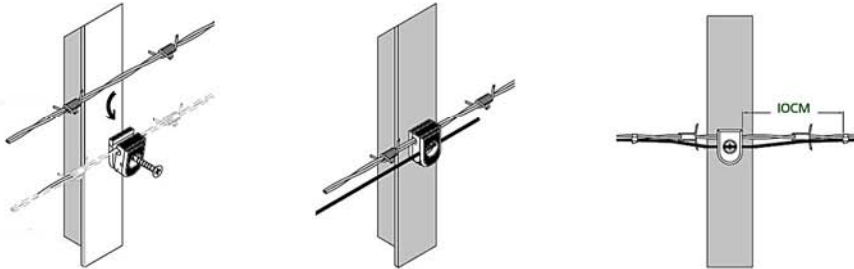
LiteFENCE

BARBED WIRE/METAL ROPE

Perimeter walls and barbed wires can be protected with LiteFENCE analyser and LiteWIRE plastic fiber cable. Where barbed wire is not allowed or cannot be used for esthetic constraints, a metal rope with a diameter of 4mm can be used as an alternative.

Any attempt to cut or flexion of the barbed wire (or metal rope) due to an attempt of climb over, is detected by LiteFENCE analyser, which triggers an alarm via the NC alarm output relay (connectable to any alarm control panel).

The plastic fiber LiteWIRE is fastened to the barbed wire (or metal rope) with cable ties and secured to the brackets with special tensioning bolts. Additionally, the fiber is secured to every bracket using special clips which keep the barbed wire (or metal rope) and the fiber together.



The same connection schemes use for chain link fences can be used for barbed wire/metal rope too, using two passages of fiber.

In addition to the clips, the fiber is fastened to the brackets using one tensioning bolt every 10m, when the barbed wire is used, and one every 4m when the metal rope is used. Using a more tensioning bolts with the metal wire, the operating range of LiteFENCE is reduced.

To increase the level of security, we recommend using two passages of fiber, fastening it to the upper and lower barbed wire.

Overhang brackets and L-shaped brackets can be supplied by Luceat on request.



Example of overhang bracket with barbed wire

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Example of L-shaped bracket with metal rope (diameter: 4mm)



LiteFENCE (LFEN300F011S)

- Operating range: 0m - 250m(*)
- Selection switch for 4 levels of sensitivity
- SD card to record sensor activity (1 year)
- Protection rating: IP55, metal box
- Power supply +12V/24Vdc (+-10%)
- Devices are connectable in a series or ring configuration
- Operating temperature: -20°C - +70°C
- Consumption: 250mA max at 12V(3W max)
- Weight: 1900g; casing dimensions 220x255x90mm
- System status information display
- **Built-in power meter**
- Optical anti-tampering sensor



- **Optical and electrical NC relay output**

LiteFENCE Lite (LFEN300F011L)

Only with SV Lite sensor

- Power: 9-12 VDC
- Consumption: 110mA a 12VDC
- Operating temperature: -20°C - +60°C
- Minimum height of fence: 145cm
- Peso: 520g
- NC relay output
- Mechanical anti-tamper
- Protection rating: IP55



LiteFENCE TX (LFEN300F011T) transmitter only

- Operating range 0m - 250m(*)
- Power: 9-12 VDC
- Protection rating: IP55
- Consumo: 110mA a 12VDC
- Weight: 520g
- Mechanical anti-tampering sensor

RX for NC (LCUT300S011S) Optical relay receiver for normally closed contacts (NC)

- It transforms the optical NC output of LiteFENCE into an electrical one
- Operating range of optical NC: 0m - 300m(*)
- It can be used as a signal amplifier
- Power: 9-12V - 110mA
- Protection rating: IP55



Tensioning bolt (BULF0D210110)

- It fastens the plastic fiber to the post of the fence or to the bracket of the barbed wire and holds it at the proper tension
- Anti-tampering: the alarm is triggered in case of removal attempt
- It is installed every 10m in order to achieve proper tension of the fiber and proper sensitivity of the system
- Attenuation: about 0.2dB (equal to about 2m* of fiber)



Fast bolt for armoured cable (GOLF580G060Z)

It is used in pairs on temporary fences

- It is secured in pairs and between two poles of a temporary fence
- It increases the attenuation by 0.5dB (equal to 5m* of fiber)
- When the fence is opened, the fiber bends, triggering the alarm
- With M6 threading to be fastened to the pole



Mounting clip for bracket (10pcs) (CLIP001S000P)

- It keeps ermette di fissare la fibra plastica al filo spinato o al cavo in acciaio in tensione
- Anti-tampering: the fiber prevents the screw from unscrewing
- It is installed on every bracket (i.e. every about 2 meters)



SV sensor (VBRS025S000)

Per rigid fences/gratings

- Totally passive (no power)
- Minimum height of fence: 110cm
- Operating distance: up to 15/25m per side, depending on the type of fence
- Protection rating: IP68
- Attenuation: 9dB (equal to about 90m* of fiber)
- Pre-cabled with 3m+3m of armoured fiber



Sensore SV Lite (VBRS025S000L)

For semi-rigid modular fences

- Totally passive (no power)
- Minimum height of fence: 145cm
- Pre-cabled with 20m+20m of fiber
- Protection rating: IP68
- Type of fence: only modular fences (grating, like Orsogril, Betafence, etc.)
- Attenuation of sensor, incl. 40m of fiber: 10dB (equal to 100m* of fiber)



Overhang bracket (STAF000V004S)

For barbed wire/metal rope, drilled for clips and tensioning bolts, for two passages of fiber.
Height: 38cm; distance between the fibers: 20cm.

Overhang bracket + Mounted clips and tensioning bolts (STAF000V004C)

For barbed wire/metal rope, drilled for clips and tensioning bolts, for 2 passages of fiber + mounted clips and tensioning bolts
Height: 38cm; distance between the fibers: 20cm



L-shaped bracket (STAF000L004S)

For barbed wire/metal rope, drilled for clips and tensioning bolts, for two passages of fiber.
Height: 40cm; distance between the fibers: 20cm

L-shaped bracket + Mounted clips and tensioning bolts (STAF000L004C)

For barbed wire/metal rope, drilled for clips and tensioning bolts, for 2 passages of fiber + mounted clips and tensioning bolts
Height: 40cm; distance between the fibers: 20cm



(*) this distance is reachable with a correct installation, with fiber attenuation <0.1 dB/m at 525nm.
(Sharp curves, cable ties or mechanical stress while placing the fiber can sensibly reduce the distance)





PRE-ASSEMBLED KITS

Pre-assembled kits for the protection of chain link flexible fences

> **Kit FENCE 125** (double passage of fiber) - (FKIT125M002K)

1 LiteFENCE, 250m LiteWIRE simplex anti-UV cable, 200 cable ties, 1 coupler, 25 tension bolts, 10 F-SMA connectors

> **Kit FENCE 250** (double passage of fiber) - (FKIT250M002K)

2 LiteFENCE, 500m LiteWIRE simplex anti-UV cable, 300 cable ties, 1 coupler, 50 tension bolts, 10 F-SMA connectors

> **Kit FENCE 500** (double passage of fiber) - (FKIT500M002K)

4 LiteFENCE, 1000m LiteWIRE simplex anti-UV cable, 500 cable ties, 2 couplers, 100 tension bolts, 20 F-SMA connectors

> **Kit FENCE 500 ANTI-BREACH** (4 passages of fiber) - (FKIT500M004K)

10 LiteFENCE, 2000m LiteWIRE simplex anti-UV cable, 1,000 cable ties, 4 couplers, 250 tension bolts, 40 F-SMA connectors



Pre-assembled kits for the protection of rigid fences and gratings

In case the perimeter is not a closed loop, add 1 LiteFENCE Lite to emit the signal.

> **Kit FENCE SV Lite 100** (FKIT100M05VL)

Min. height of fence: 145cm: 1 LiteFENCE Lite, 3 SVLite pre-cabled 20+20m sensors, 10 F-SMA connectors, 1 coupler, 100 cable ties

In case the perimeter is not a closed loop, add 1 LiteFENCE transmitter to emit the signal .

> **Kit FENCE SV 100** (FKIT060M00SV)

Min. height of fence: 110cm: 1 LiteFENCE, 2 SV sensors, 10 F-SMA connectors, 100 cable ties, 100m LiteWIRE simplex anti-UV cable

Pre-assembled kits for the protection of temporary fences **NEW**

> **Kit FENCE MOBILE 50** (FKIT050M001T)

1 LiteFENCE, 30 fast bolts for armoured cable, 50m LiteWIRE Simplex armoured cable, 10 F-SMA connectors, 1 coupler, 100 cable ties.

> **Kit FENCE MOBILE 100** (FKIT100M001T)

1 LiteFENCE, 60 fast bolts for armoured cable, 2x50m LiteWIRE Simplex armoured cable, 10 F-SMA connectors, 1 coupler, 200 cable ties

Pre-assembled kits for the protection of barbed wire

> **Kit FENCE 125 BW** (double passage of fiber) - (FKIT125M002B)

1 LiteFENCE, 250m LiteWIRE simplex anti-UV cable, 300 cable ties, 1 coupler, 20 tension bolts, 10 F-SMA connectors, 120 clips

> **Kit FENCE 250 BW** (double passage of fiber) - (FKIT250M002B)

2 LiteFENCE, 500m LiteWIRE simplex anti-UV cable, 800 cable ties, 1 coupler, 50 tension bolts, 10 F-SMA connectors, 250 clips

> **Kit FENCE 500 BW** (double passage of fiber) - (FKIT500M002B)

4 LiteFENCE, 1,000m LiteWIRE simplex anti-UV cable, 1,500 cable ties, 2 Couplers, 100 tension bolts, 20 F-SMA connectors, 500 clips

Brackets can be supplied on request, also with bolts and clips already mounted

> Pre-assembled kits for the protection of metal rope **NEW**

> **Kit FENCE 80 MR** (double passage of fiber) - (FKIT080M002F)

1 LiteFENCE, 200m LiteWIRE simplex anti-UV cable, 300 cable ties, 1 coupler, 40 tension bolts, 10 F-SMA connectors, 80 clips

> **Kit FENCE 160 MR** (doppio passaggio di fibra) - (FKIT160M002B)

2 LiteFENCE, 2x200m LiteWIRE simplex anti-UV cable, 600 cable ties, 1 coupler, 80 tension bolts, 10 F-SMA connectors, 160 clips

Brackets can be supplied on request, also with bolts and clips already mounted

(*)this distance is reachable with a correct installation, with fiber attenuation <0.1 dB/m at 525nm.
(Sharp curves, cable ties or mechanical stress while placing the fiber can sensibly reduce the distance)