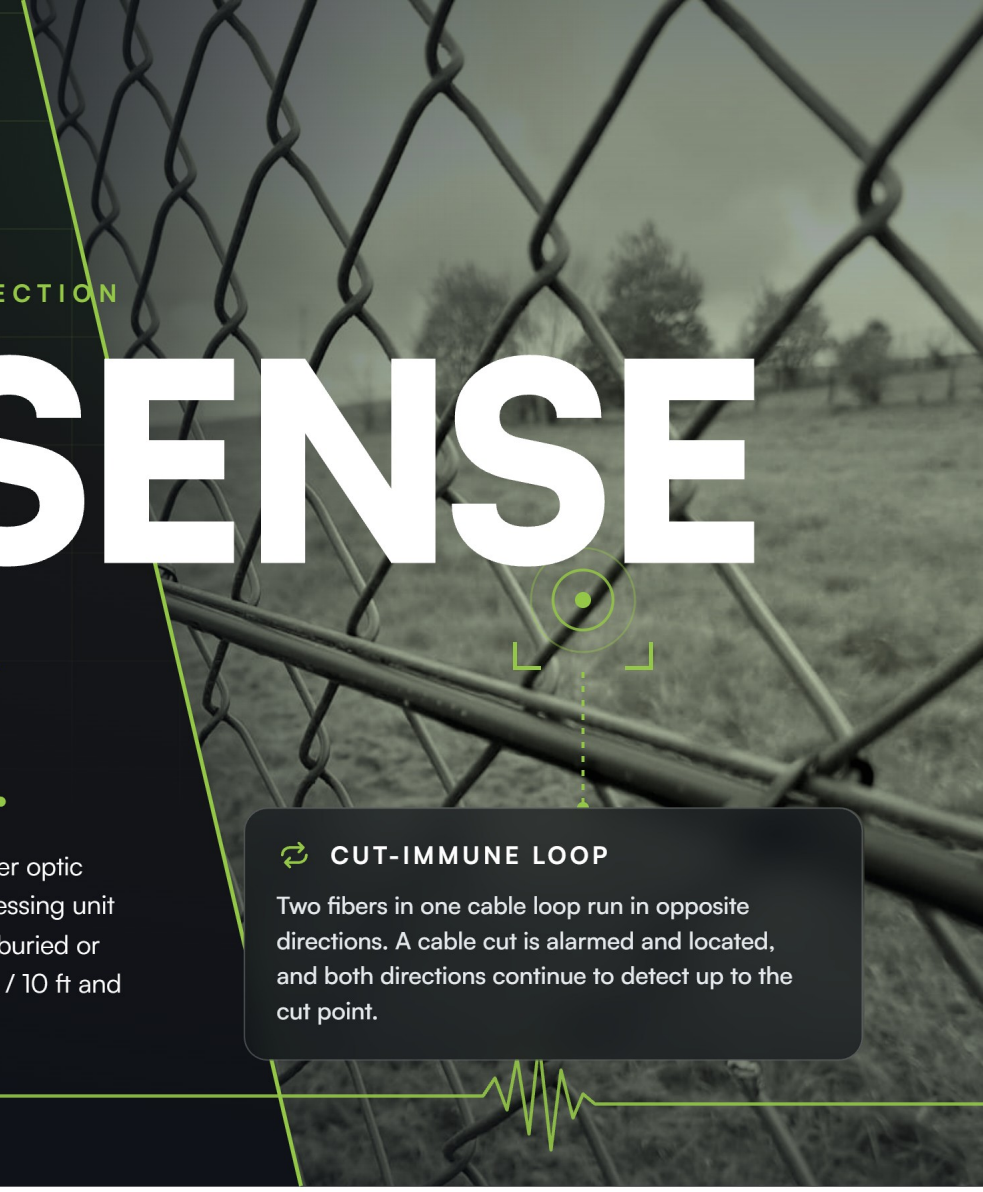
RBtec
Perimeter Security Systems

AI FIBER OPTIC INTRUSION DETECTION

RAYSENSE

Long-range perimeter detection, with no electronics in the field.

RaySense AI DAS turns a standard single-mode fiber optic cable into a continuous vibration sensor. One processing unit monitors up to 100 km / 62 mi of fence-mounted, buried or wall-mounted cable, locates each event within 3 m / 10 ft and classifies it with deep-learning AI.



CUT-IMMUNE LOOP

Two fibers in one cable loop run in opposite directions. A cable cut is alarmed and located, and both directions continue to detect up to the cut point.

No field power or electronics

The sensing cable is fully passive. Power is needed only at the processing unit, which reduces points of failure along the perimeter.

Deep-learning AI classification

Two AI levels filter environmental noise and classify events, trained on more than 150,000 signal samples. The AI runs locally, with no cloud.

3 m / 10 ft location resolution

Each alarm is reported by zone, distance along the fiber and GPS coordinates, and is shown on the VIDALERT site map.

Fence, buried and wall mounting

The same cable and processing unit serve fence, underground and wall applications. Buried cable also detects digging up to 20 m / 66 ft.

Software-defined detection zones

Unlimited detection zones are set in software and managed over IP, each with its own sensitivity, schedule and mute settings.

Open VMS integration

Alarms integrate with Milestone, Genetec, Avigilon, Dahua DSS and HikCentral, with ONVIF event exchange and PTZ camera call-up.

APPLICATIONS

- Airports and seaports
- Power plants and electrical substations
- Military and government sites
- National borders
- Oil, gas and petrochemical plants
- Large solar farms

INSTALLATION



Fence-mounted, buried or wall-mounted.

CE compliant | ISO 9001 design and manufacturing | Warranty: 2 years, extendable

RAYSENSE: Technical specifications

SENSING TECHNOLOGY
DAS by coherent optical time domain reflectometry (COTDR) on standard single-mode fiber.

DETECTION CHANNELS
One or two independent fiber channels per unit, with simultaneous real-time intrusion detection.

DETECTION RANGE
Up to 100 km / 62 mi per processing unit; up to 50 km / 31 mi in straight-line or loop configuration.

LOCATION RESOLUTION
3 m / 10 ft between detection points; 40 m / 130 ft minimum separation between simultaneous disturbances.

CUT RESILIENCE
A cut is alarmed and located. In a redundant loop, detection continues on both sides of the cut, within 50 m / 164 ft.

AI CLASSIFICATION
Two-level deep-learning AI, trained on more than 150,000 samples. Separate fence, buried and wall algorithms.

INTERFACES
Ethernet 10/100/1000 Mbps (TCP/IP), web interface, HDMI, USB, 2 APC single-mode optical ports. Relay outputs through the optional relay board.

POWER
100–240 VAC, 50/60 Hz; 85 W typical, 125 W maximum.

DIMENSIONS AND WEIGHT
19 in rack mount, 2U; 49 × 50 × 8.9 cm; 8 kg / 17.5 lb.

OPERATING TEMPERATURE
Processing unit: 0 to +40 °C / +32 to +104 °F, in an air-conditioned room. Sensing cable: −40 to +70 °C / −40 to +158 °F.

COMPLIANCE
CE: EMC 2014/30/EU and LVD 2014/35/EU (IEC/EN 62368-1); RoHS; laser safety IEC/EN 60825-1 and 21 CFR 1040.10.

WARRANTY
2 years, with optional yearly extension.

Processing units and software

Part number	Description	Range / capacity
RB-RSDAS-Km/1CH	Single-channel processing unit, 2U rack mount, software installed	1 to 60 km / 0.6 to 37 mi
RB-RSDAS-Km/2CH	Dual-channel unit for cut-immune loop or split layout, 2U	Up to 2 × 50 km / 2 × 31 mi
RB-HW/DBG	Dedicated rack server with VIDALERT software installed	Required above 10 km / 6.2 mi
RB-SW/GUC-S/RS	VIDALERT graphic site map and database license	One site, up to 30 km / 19 mi
RB-SW/GUC-L/RS	VIDALERT graphic site map and database license	One site, 30 to 60 km / 19 to 37 mi
RB-SW/PACK/RS	VIDALERT operation and control software pack, server version	Up to 3 client licenses

In the part number, Km is the licensed sensing length per channel, in 1 km steps; for example, RB-RSDAS-10/2CH is 2 × 10 km / 2 × 6.2 mi.

> An accessories kit is included: two patch cords, power cable, Ethernet cable and fiber cleaning pen kit.

Parts, accessories and services

Part number	Description
RSPET	Passive end termination for the far end of each sensing channel
RSFOPP-24	12-port SC/APC optical patch panel, 1U rack mount
RS-FCA/SCA	Simplex patch cord, FC/APC to SC/APC, 3 m / 9.8 ft
RB-FO/RSF	Armored loose-tube single-mode fiber cable for sensing and lead-in; locally supplied cable must be approved by RBtec
RB-RBTIES610	Stainless steel cable ties with installation tool; one bag per 150 m / 500 ft of fence-mounted cable
RB-PClamp	P-clamps for wall-mounted cable, installed every 30 cm / 12 in
RB-RSFS	IP68 waterproof fiber splice and termination enclosure
RB-RMB	Relay management board with 32 relay outputs and Ethernet connection
RB-Tech	Remote commissioning, detection calibration and training, per day
RB-HOURE	Remote technical support, per hour
RB-SE1	Yearly remote maintenance agreement, with one system update per year
RB-SE2	Yearly remote service and maintenance agreement, with remote system inspection and system update