

# MICRO-RAY

100 m

NEW

SUPER NARROW  
K-BAND

FUZZY LOGIC  
INSIDE

IP-READY PoE

6 YEAR WARRANTY

COMPLIANT WITH  
EN50131-1 GRADE 4

100%  
MICROWAVE

THE FIRST BARRIER WITH MICROWAVE RAYS FOR  
PERIMETER PROTECTION



CIAS RESERVES THE RIGHT TO CHANGE THE SPECIFICATIONS DESCRIBED IN THIS BROCHURE AT ANY TIME WITHOUT PRIOR NOTICE.

EXTREME SECURITY

SINCE 1974





# MICRO-RAY

100 m

MICRO-RAY is a detection barrier with **linear microwave rays** developed by CIAS laboratories, based on a deep knowledge of microwave technology and signal analysis, coupled with long experience of real-world perimeter requirements. The idea was born from the need for an alternative to infrared rays, which are normally used to protect very narrow corridors, but which by their nature have many limits that can negatively affect performance. Infrared beams are especially vulnerable to climatic conditions such as temperature, glare, solar reflections, fog, and need frequent maintenance such as cleaning of the cover.



PERIMETER PROTECTION OF VILLA, WITH MICRO-RAY IN 3M TOWER CONFIGURATION

## EXTREME WEATHER CONDITIONS



SUN IMMUNE



FOG IMMUNE



HEADLIGHTS  
IMMUNE

## TOTAL IMMUNITY TO FOG AND SUN

MICRO-RAY is totally immune to the most extreme weather conditions. Its performances, due to the nature of microwave itself, are not influenced by solar glare nor fog. Similarly, car headlights are not affecting it at all, as they would with active infrared in specific circumstances.

## HIGHLIGHTS

Super-narrow ray: 1m corridor

High security: no disqualification

Beam interruption time:  
from 10ms to 1sec

Low power consumption: no heaters

Maintenance: no cleaning of  
the cover

Built-in anti-climbing lid

No dead-zone: overlap not required

Paintable cover\*



IP&PoE



BUS 485

BUS 485

BUS 485

BUS 485

Up to 4 rays for free setting up

Analysis: digital Fuzzy Logic

Totally immune to fog and sun

Embedded audio-visual alignment  
tool with final evaluation

Adaptable: 1 alarm output  
per single ray

Quality: 6 year warranty

It can be integrated on RS485  
and IP PoE

\*Do not use paints with  
metallic pigments.

ANTICLIMBING APPLICATION WITH 2 RAYS  
INTO 1M TOWER



## HOW DOES IT WORK?

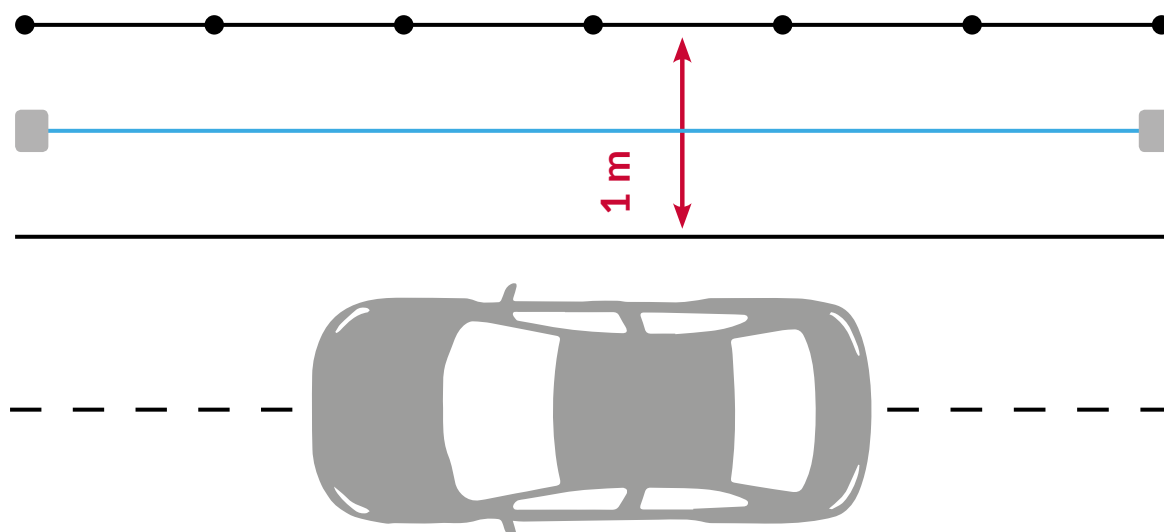
MICRO-RAY uses special 24Ghz antennas that allow an array of up to 4 independent modules in the same column without interference. These modules create very narrow beams of linear microwave energy, and the **alarm occurs due to their interruption** and NOT through the analysis of the disturbance generated by any movements within the volume, as in classic volumetric microwave barriers. Each module has an independent output with alarm, fault and tamper that **can be connected to any intrusion control panel**. For integrated systems it allows management via RS485 and IP, with a dedicated interface module, and also has the possibility of being fully powered with Power Over Ethernet. The Fuzzy digital logic applied to each ray makes it possible to manage independently the signal of each ray and obtain the best compromise between proper detection /false alarm.

PERIMETER PROTECTION FOR PORTS AND LOGISTICS



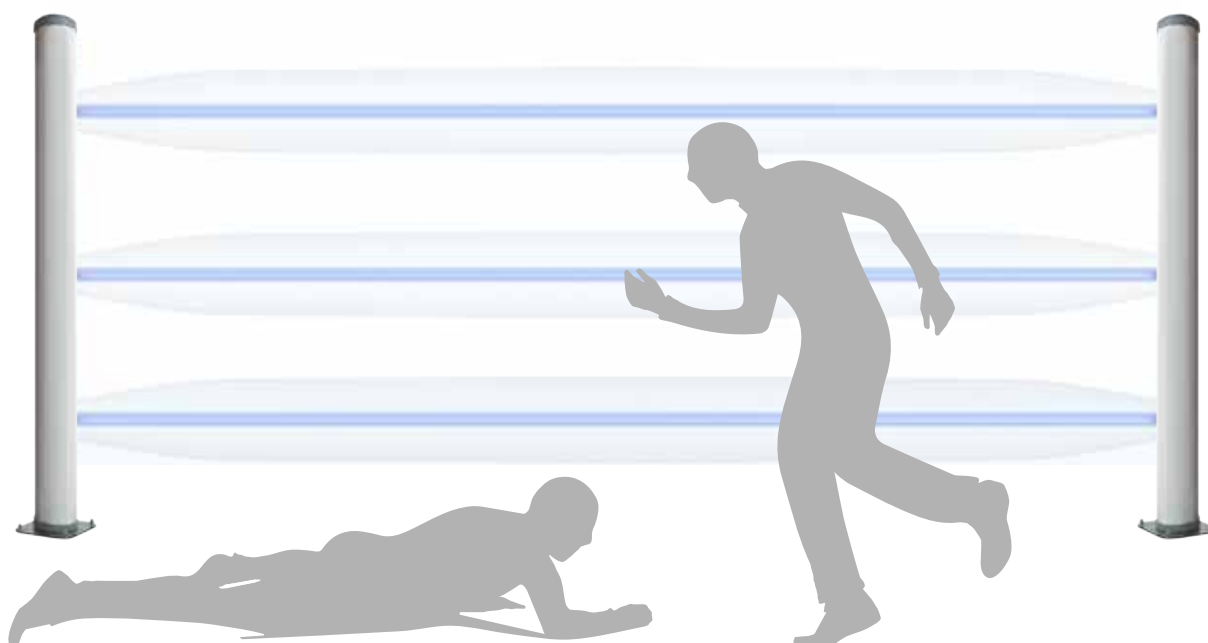


**MICRO-RAY provides a linear ray covering a very narrow area, exactly as infrared barriers but without the limits of the latter.** The flexibility of application of these revolutionary linear microwave beams, thanks to their detection reliability, total immunity to even extreme weather conditions and reduced power consumption, without the need for a heater, makes this product a unique solution of its kind. Each tower, can be equipped with 1 to 4 microwave rays, independent in alarm management. It can be used in very narrow corridors (minimum 1 m width).



### SCENARIOS AND SPECIAL CONFIGURATIONS

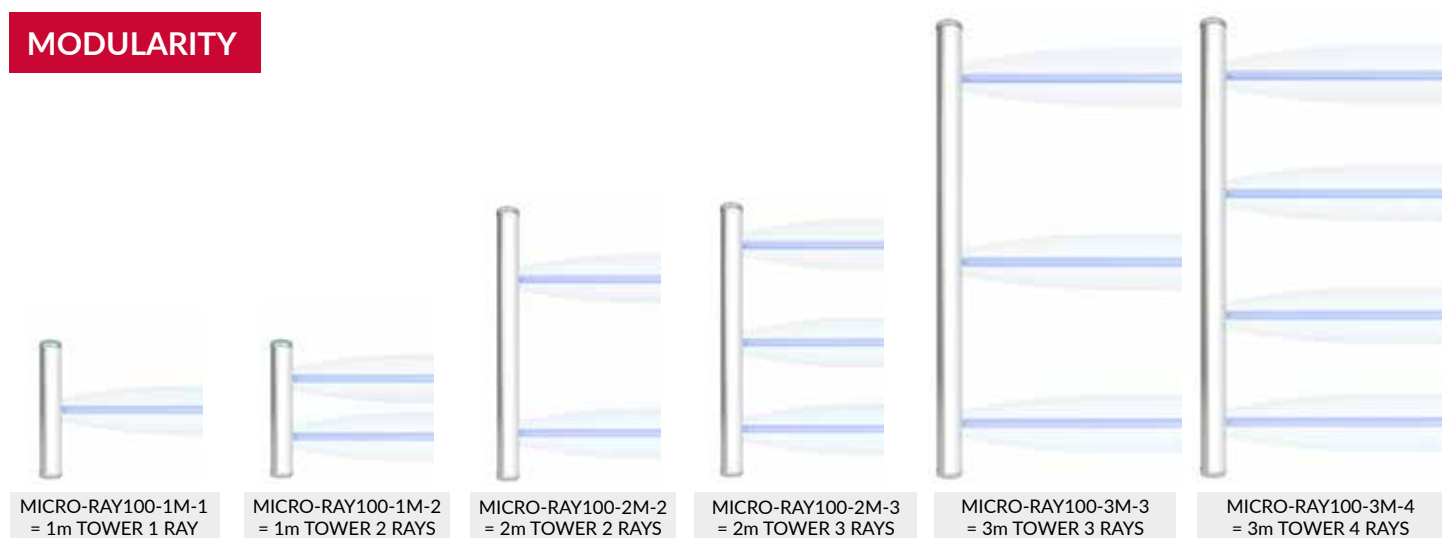
A special feature of MICRO-RAY is that each ray is fully independent and can be freely set up by choosing 1 out of the 5 available scenarios. Furthermore, BASIC or ADVANCED configuration can be selected according to beam interruption time. This technology is extremely accurate in detecting crawling attempts, discriminating false alarms.



## SPECIFICATIONS

SENSOR TYPE	24Ghz BISTATIC LINEAR MICROWAVE BARRIER
RANGE	100m
MINIMUM CLEARANCE SPACE REQUIRED	1m
PROBABILITY OF DETECTION	98%
COMPLIANT WITH	EN50131-1 GRADE 4
SIGNAL ANALYSIS	DIGITAL FUZZY LOGIC
DETECTION HEIGHT/RAYS NO.	SEE THE MODULARITY DIAGRAM BELOW
MAX. NUMBER OF RAYS	4 PER COLUMN (SEE INSIDE DIAGRAM)
POWER CONSUMPTION	120mA PER BEAM
MODULATION CHANNELS	16 CRYSTAL CONTROLLED
POWER SUPPLY	230Vac/13.8Vdc WITH POWER KIT OR PoE 802.3 AF WITH MICRO-RAY-IP-PoE MODULE (1 PER TOWER)
BEAM INTERRUPTION TIME	FROM 10ms TO 1sec
IP RATING	IP55
OPERATING TEMPERATURE	-35°C +65°C
CONFIGURATION	EMBEDDED ALIGNMENT TOOL
WARRANTY	6 years
SPECIAL OUTPUTS	RS485 OR IP THROUGH MICRO-RAY-IP-PoE (1 PER COLUMN)
RELAYS OUTPUTS	ALARM/FAULT/TAMPER PER EACH RAY
MTTR (MEAN TIME TO REPAIR)	25 MINUTES

### MODULARITY



SINCE1974



CIAS ELETTRONICA S.R.L. | Via Durando, 38 | 20158 Milano | Italy  
t +39 02 3767161 | [www.cias.it](http://www.cias.it) | [info@cias.it](mailto:info@cias.it)

