

## RAY-RT REFLECTIVE PHOTO EYE HEAVY DUTY (HD)



### Reflective Photo Eye

RAY-RT is a versatile, reflective photo eye, the first one specifically designed to address the challenges of the door industry. Due to the use of minimum cabling and its small size, RAY-RT does not disturb the aesthetic design of the building or the door itself.

### Maximal Detection Reliability

Built-in polarizing filters as well as the arrangement of the transmitter and receiver components maximize the RAY-RT's detection reliability. It can reliably detect objects in the door opening even in very problematic situations, such as trucks with chrome-plated body parts. Red Light technology makes the sensor resilient to ambient light as well as other infrared sensors that can often be found around today's doors.

### Interface Options

RAY-RT is available in a Normally-Closed relay and 2-wire signal output version for the gate and door market.

### Easy Installation

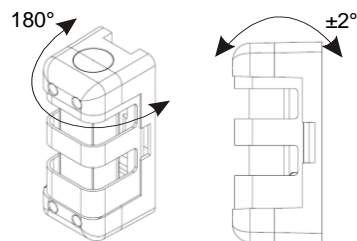
Several characteristics of RAY-RT make it one of the most easy to install protection sensors. It requires cabling only from one side of the door, since the reflector component needs no power supply. An LED indicates the alignment of the sensor and the visible red light technology of the photo eye indicates power and proper operation.

### Alignment and LED Pattern

LED Off	Aligned
LED On	Misaligned or interrupted
LED Blinking Fast	Not properly aligned, Sensor or reflector dirty
LED Blinking Slowly <sup>1)</sup>	Not 100% aligned

1) to assist alignment within 2 minutes after power-up

### Sensor Alignment



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### Technical Data

Range	1.6 – 12 m [5 - 40 ft]
Environmental Protection	IP65 [NEMA 4X]
Temperature Range	-30 – 60°C [-22 – 140°F]
Photo Eye Dimensions	43 x 100 x 45 mm [1.75 x 4 x 1.75 inch]
Reflector Dimensions	50 x 87 x 15 mm [2 x 3.5 x 0.5 inch]
Supply Voltage	6 – 40 V DC (RAY-RT 2001); 12-24 V AC/DC (RAY-RT 4704)
Power Consumption	40 mA max. (RAY-RT 2001); 50 mA max. (RAY-RT 4704)
Response time	30 ms
Wake Up Delay	500 ms
Connection	2m [6.5 ft] cable; fine stranded, wire size 0.25 mm <sup>2</sup>

### Compliance/ Certification

Europe	Declaration of EC-Conformity
	D-Solution, acc. to EN12453

### Sensor Versions

Art. Number	Art. Name	Output Specification	Test Input
10019020	RAY-RT 2004 HD	2-Wire Signal Output, <i>UL 325-Recognized</i>	n.a.
10032807	RAY-RT 2001 HD	2-Wire Signal Output	n.a.
10019857	RAY-RT 4704 HD	Relay Output NCC, with test input	active low

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### RAY-RT 2xxx - 2-Wire Output

The RAY-RT 2xxx supplies the door operator with a dynamic 2-wire signal. The sensor is compatible with most operators on the market, offering a 2-wire input for entrapment protection devices. Electrically, a non-polarized connection means that the sensor can be connected to the 2-wire interface without paying attention to the supply voltages polarity.

Wire Color	Description
BN	2-Wire Signal <sup>2)</sup> Electrically Unpolarized Connection
BU	

2) Interface Description available upon request

### RAY-RT 4704 – NCC Relay Output with Self-Test

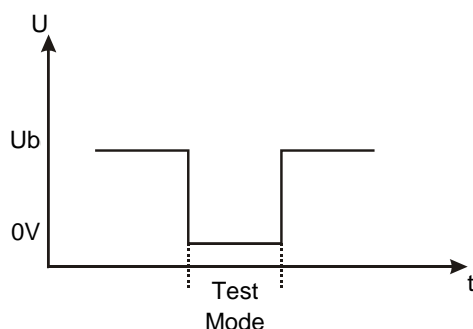
The RAY-RT 4704 provides a Normally Closed Contact (NCC) relay output with optional test input. The test function can be used for door operators with test output.

Wire Color	Description
BN	+U <sub>b</sub>
BU	0 V
BK	NCC Relay Output
WH	Relay Common
GY	Test Input (Test = active low)

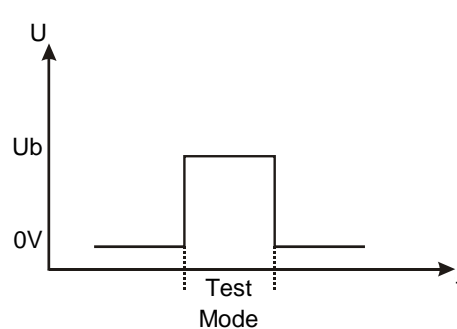
### Test Input

When using this function, the test wire of the sensor has to be connected to the door operator's test input, which provides a test signal. Active low tests that during normal operation the test wire has to be connected to the sensors power supply (+U<sub>b</sub>). A change of this voltage to 0 V/ Gnd causes the sensor to switch into self-test mode. Active high test mode works exactly opposite, requiring power supply voltage (+U<sub>b</sub>) for the sensor to switch to test mode.

Test Mode: Active Low



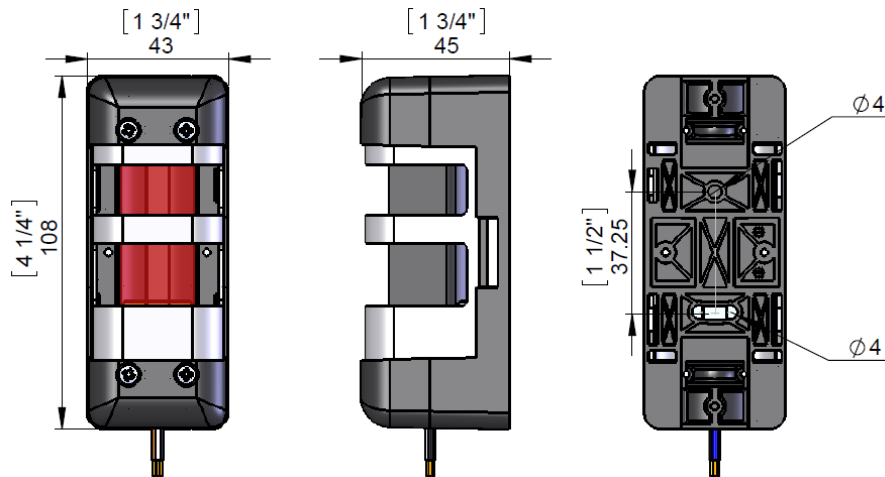
Test Mode: Active High



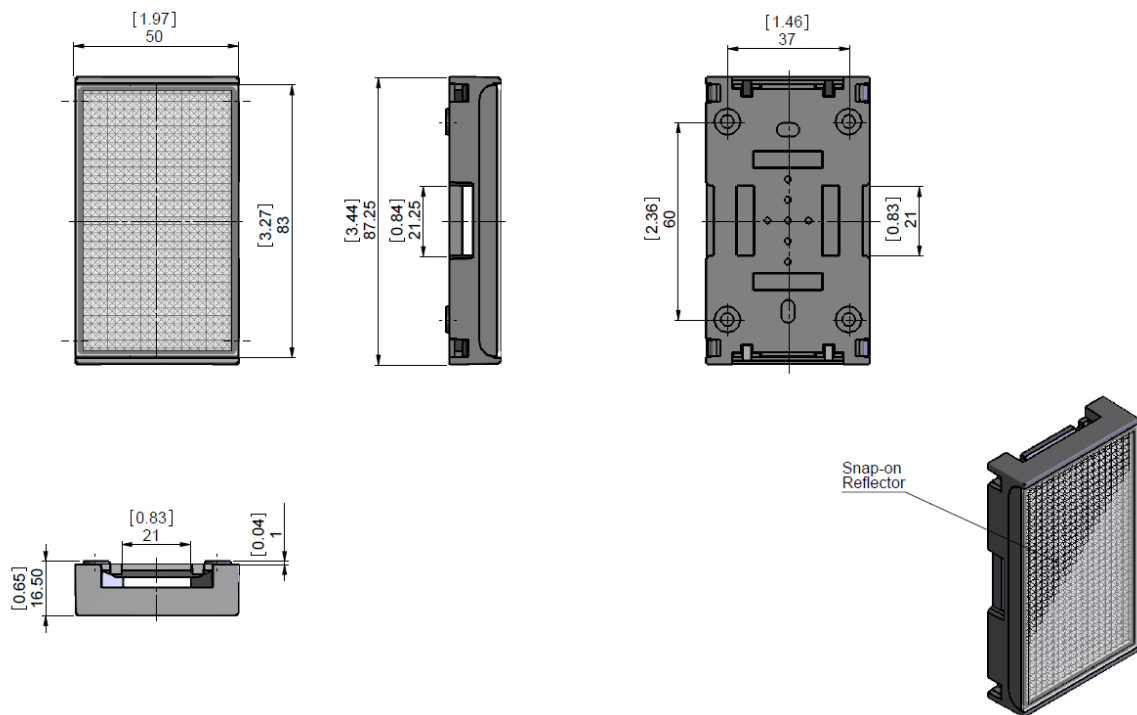
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### Technical Drawings

#### HD Sensor



#### Reflector: Long Range Version

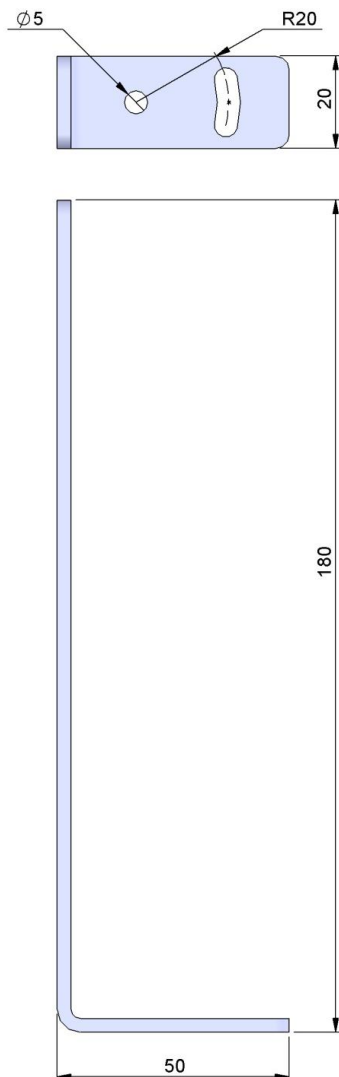


Dimensions in mm  
[Dimensions in inch]

## RAY-RT REFLECTIVE PHOTO EYE HEAVY DUTY (HD)

### Accessories

Art. Number	Art. Name	Description	Remark
10019009	Bracket, RAY-RT HD	Mounting Bracket for RAY-RT HD Series	Included with RAY-RT HD. May be used with Industrial Series.



Dimensions in mm  
[Dimensions in inch]

### Contact



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All dimension in [inch] mm. This drawing and the information contained is for general presentation purposes only. Please refer to the "Download" section for detailed technical drawings. © CEDES AG., All rights reserved. We do not assume responsibility for technical inaccuracies or omissions. Specifications are subject to change without notice.