

# EF-CBD50, EF-CBD50U, EF-BDLRK

## Conventional reflective beam detectors



EF-CBD50 is an advanced beam detector for use with the Eaton range of conventional fire systems. It prioritises ease of installation, whilst incorporating substantial performance improvements over previous models. This detector has been re-designed, to remove the need for specialist tools or knowledge for installation and operation. One person can install the product, and then initiate the auto-alignment procedure for hassle free commissioning.

There are two versions of the detector, differentiated by either EN54 or UL certification. Each baseline model has a range of up to 50 metres. This can be extended to 120 metres with the additional long range kit.

This product is designed to replace individual point detectors in large open areas, such as warehouses, and requires a separate power supply unit. Fire and fault conditions are signalled to the panel using standard zone wiring, so no additional interconnections are required.

### Features and benefits

- Integrated user interface controls:
  - Buttons are conveniently placed on the front surface of the detector. This means setup, and adjustments can be carried out intuitively, without the need to remove the product from the installation point.
  - LEDs indicate alignment status as well as general status indication.
- Integrated visible laser and auto-alignment:
  - Use the front-facing buttons to steer the laser onto the reflector, then initiate auto-alignment with the press of a button.
- Adapts to installation environment:
  - Compensates for sunlight and other artificial light sources to prevent nuisance false alarms.
  - Compensates for any mis-alignment caused by building movement or flex due to temperature variations.
  - Compensates for gradual build-up for dust on optics.
  - Dynamic beam phasing prevents interference between detectors that face each other, or in irregular configurations.
- Up to 120 metre range:
  - 20% improvement over previous models means that the product can be deployed in larger areas.

## Technical specification:

### Detection performance

Detection range	0 to 50m 0 to 120m with Reflective Long Range Kit
Alignment method	Laser assisted, Auto-Alignment™. Manual alignment – optional setting
Auto-Alignment™ protocol	Background check, Box search, Adjust and Centre
Building Movement Tracking™	Compensates for natural shifts in alignment from building movement*
Contamination Compensation	Compensates for gradual build-up of contamination on the optical surfaces
Light Cancellation Technology™	Compensates for high levels of sunlight and artificial lighting
Optical wavelength – smoke detection	850nm near infrared (invisible)
Integrated laser – laser alignment	650nm visible. Class IIIa <5mW
Dynamic Beam Phasing	Allows beam detectors to be mounted facing each other with the reflectors in the middle. Eliminates false alarms caused by crosstalk between beams
Signal output	Individual Alarm and Fault relays (VFCO) 2A @ 30 VDC

### Programmable user settings

Integrated user interface	Alignment mode switch, alignment directional buttons and configuration switches for alarm response threshold
Alignment status indication	2 Green LEDs and 1 Yellow LED
System status indication	Normal operation – Green LED flashing every 10 seconds Alarm condition – Red LED flashing every 10 seconds Fault condition – Yellow LED flashing every 10 seconds for obscuration or every 5 seconds for contamination
Cleaning	Flat front face with enclosed optics. Cleaning the optics does not affect alignment

### Design parameters

Separation distance between Detector and Reflector	5 to 50m 50 to 120m with Reflective Long Range Kit
Beam path clearance	1m in diameter from centre line between Detector and Reflector
Detector dimensions	Width 130mm x Height 181mm x Depth 134mm (see diagram)
Reflector dimensions	Up to 50m separation distance – Single reflector 100mm x 100mm x 9mm Up to 120m separation distance – Four reflectors arranged in a square pattern 200mm x 200mm x 9mm
Product weight	Detector – 0.7kg; Reflector – 0.1kg
Multi-detector arrangement	Dynamic Beam Phasing allows for Detectors to face each other with the reflectors in the middle
Housing colour	White RAL9016, UV stable

### Design parameters

Operating voltage	14 to 36 VDC
Operating current (constant) all operational modes	All operational modes – 5mA; Fast alignment mode – 33mA

### Field wiring

Cable gauge and type	2 core, dedicated, 0.5 to 1.6mm (24 to 14 AWG) System compatible with fireproof and non-fireproof cable meeting local installation standards
Cable entry	3 knock-out locations capable of accepting M20, ½" or ¾" glands 4 drill-out locations capable of accepting glands up to 21mm diameter

### Test and maintenance

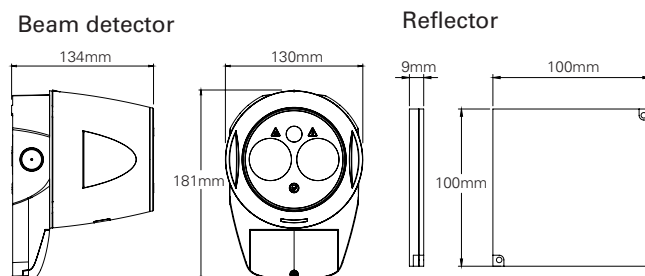
Alarm test	Optical alarm test using Commissioning and Maintenance Kit accessory
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### Environmental specifications

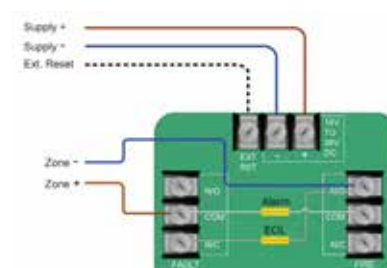
Operating temperature: -20 to +55°C	Fault level / Rapid obscuration ( $\Delta \leq 2$ seconds): $\geq 85\%$
Storage temperature: -40 to +85°C	Maximum angular alignment of Reflective Detector: $\pm 4.5^\circ$ ( $\pm 70^\circ$ with adjustment bracket accessory)
Relative humidity (non-condensing or icing): 0 to 93%	Maximum angular misalignment of Reflective Detector: $\pm 0.5^\circ$
IP rating: IP55	Maximum angular misalignment of Reflector: $\pm 5^\circ$
Housing flammability rating: UL94 V0 polycarbonate	

All figures are quoted for 25°C

## Catalogue numbers



## Standard connections



## Catalogue numbers

Product description	Order code
Conventional reflective beam detector 5-50m (EN 54)	EF-CBD50
Conventional reflective beam detector 5-50m (UL)	EF-CBD50U
Reflective beam detector long range extension kit 120m	EF-BDLRK

## Further information

Please refer to the EF-CBD50 manual for further details.

**Note:** All information correct at the time of writing. Eaton reserve the right to make changes to this information. Please contact Eaton if you have any queries.