

# FIRERAY® 50R/100R

## Reflective Optical Beam Smoke Detector

The **FIRERAY®** 50R/100R series conventional infrared optical beam smoke detectors provide economical and effective protection of large, open plan spaces with high ceilings, particularly if access to 'point type' smoke detectors presents practical difficulties.

Optical beam smoke detectors are ideally suited for protecting warehouses, factories, atria, shopping malls, leisure centres, churches, museums, power stations and industrial plants.

The **FIRERAY®** 50R/100R optical beam smoke detectors can be connected to a zone of a conventional fire alarm control panel, or interfaced to an analogue addressable system via an addressable interface input module or a zone monitor module.

### Features

- Combined transmitter and receiver unit in one discrete unit
- Range 5-50 Metres (**FIRERAY®** 50R), 50-100 Metres (**FIRERAY®** 100R)
- Low current consumption
- Automatic self check drift compensation
- Selectable sensitivity/threshold levels
- Selectable latching / non latching fire alarm
- LED indicators to aid the alignment process
- Optional Low Level Test Unit for UL models only

### Approvals

World-wide approvals include EN54:12 and UL268. Visit [www.ffeuk.com](http://www.ffeuk.com) for up to date approvals information.

### FIRERAY® 50R/100R

#### Accessories



### Operation

The **FIRERAY®** 50R/100R has three selectable 'Alarm Thresholds' settings of 25%, 35% and 50% which can be selected to suit the environment. If the received infrared signal reduces to below the selected threshold for approximately 10 seconds, the fire relay is activated. There are two modes of operation for the fire relay. 'Auto Reset Mode' will reset the fire relay approximately 5 seconds after the received infrared signal has recovered to a level above the alarm threshold. 'Latching Mode' holds the fire relay active indefinitely after an alarm condition has occurred.

If the infrared beam is obscured rapidly to a level of 90% or greater for 10 seconds the fault relay is activated. This condition can be achieved in a number of ways, for example, an object being placed in the beam path, transmitter failure, loss of the prism, or sudden misalignment of the detector. The fault relay will reset within 5 seconds of the condition being rectified.

The **FIRERAY®** 50R/100R optical beam smoke detectors monitor long term degradation of beam signal strength caused by the build up of dirt on its optical surfaces; this operates by comparing the received infrared signal against a reference voltage every 15 minutes.

For UL models only, an optional 'Low Level Test Unit' is available, to test the correct function of the beam detectors at ground level. Operation of a key switch will produce a periodic flash of the green LED on the Low Level Test Unit confirming the beam detector on test is "live"; after a set period the red LED on the Low Level Test Unit and the red LED on the beam detector illuminate simultaneously.

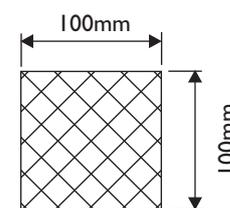
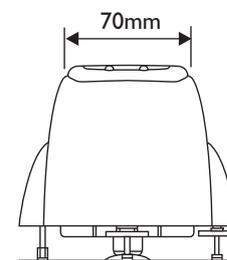
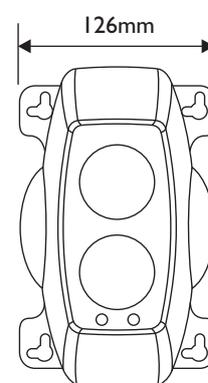
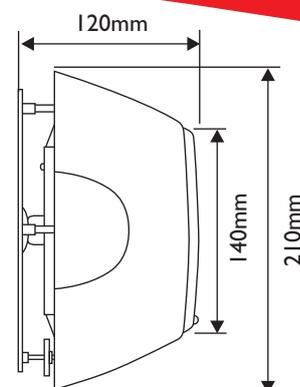


# FIRERAY® 50R/100R

## Technical Specification

Operating Range F50RV / RU:	5 to 50 Metres
Operating Range F100RV / RU:	50 to 100 Metres
Operating Voltage Range:	10.2V DC to 30Vdc
Quiescent Current:	<4mA @ 24Vdc
Alarm Current:	<15mA
Power Down Reset Time:	5 seconds
Fire Relay Contacts:	Normally Open, VFCO 2A @ 30Volts DC, resistive
Fault Relay Contacts:	Normally Closed, VFCO 2A @ 30Volts DC, resistive
Operating Temperature:	-20°C to +55°C (non-condensing)
Fire Alarm Thresholds:	1.25dB (25%), 1.87dB (35%), 3.00dB (50%)
Optical Wavelength:	880nm
Detector Dimensions:	Width 126mm, Height 210mm, Depth 120mm
Prism Dimensions:	Width 100mm, Height 100mm, Depth 9.5mm
Weight:	0.67 kg
LED Indications:	<b>Red LED:</b> Indicates FIRE <b>Continuous Amber LED:</b> Indicates FAULT <b>Flashing Amber LED:</b> Once every 10 seconds indicates normal operating mode (RV Models only) <b>Flashing Amber LED:</b> Once every 2 seconds indicates the compensation function has reached its limit
Conditions:	<b>Alarm Condition:</b> Indicated by fire relay closing <b>Fault Condition:</b> Indicated by fault relay opening Alarm may be latching or non-latching (default)
IP Rating:	IP50
Relative Humidity:	RH 0% to 93%, (non-condensing)
Approvals/Certification:	Designed, manufactured and certified to EN54-12: 2002, Use 25% and 35% (default) thresholds. The 50% threshold is recommended for hostile and extreme environments.
CPD Reference:	0786-CPD-20045
UL File:	S3417
Parts List:	1 x Detector Head Assembly, 1 x prism (50R) or 4 x prisms (100R), 1 x Test Filter, 1 x Cable Interface
Housing Construction:	Flame Retardant ABS, Finish: Grey / Black

All figures are quoted for 25 deg C



## Installation Recommendations

The installation of the **FIRERAY®** infrared optical beam smoke detector should be undertaken in accordance with recognized national or international standards and codes of practice. Please refer to our installation guide. We also recommend that simulated fire tests are conducted to ensure the desired response time is met for a given installation.

Specifications and wiring information are provided for information only and are believed to be accurate. Fire Fighting Enterprises assumes no responsibility for their use. Data and design are subject to change without notice. Installation and wiring instructions are shipped with the products and should always be used for actual installation. For more information, contact your Sales Representative.

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