



Report of Materials and Equipment Acceptance Division

NYC Department of Buildings
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Pursuant to Administrative Code Section 27-131, the following equipment or material has been found acceptable for use subject to the terms and conditions contained herein.

MEA 22-08-E

Manufacturer: Fire Fighting Enterprises
9 Hunting Gate
Hitchin, Hertfordshire SG4 0TJ
ENGLAND

Trade Name(s): Fire Fighting Enterprises

Product: Reflective beam smoke detector
MEA Index #280 – Fire Alarm Equipment

Pertinent Code Section(s): Subchapter 17 and Reference Standard RS 17

Prescribed Test(s): UL 268

Laboratory: Underwriters Laboratories, Inc.

Test Report(s): File S3417, Project 06CA35949, dated November 2, 2007.

Description: The product, Fireray 5000, is a reflective linear smoke detector which is comprised of a Controller, Reflector/Prism and a Detector Head containing a combination Transmitter/Receiver contained within one enclosure.

The detector is installed to the building fabric between one and two feet from the ceiling. The transmitter emits an invisible infrared light beam that is reflected via a reflector/prism mounted directly opposite. The reflected infrared light is detected by the receiver and analyzed. The detector will operate up to a range of 328 feet with lateral spacing of 60 foot centers.

Smoke in the beam path will reduce the received infrared light proportionally to the density of the smoke. The detector analyzes this attenuation or obscuration of light and acts accordingly. Alarm thresholds of 10% - 60% can be selected to suit the environment, where 10% is the most sensitive. If the received infrared signal reduces to below the selected threshold and is present for approximately 10 seconds, the fire relay is activated.

There are two modes of operation of the fire relay. The Auto Reset Mode will reset the fire relay 5 seconds after the received infrared signal has recovered to a level above the alarm threshold, and the Latching Mode holds the fire relay active indefinitely after an alarm condition has occurred. To clear the latching mode, power must be removed from the detector for a minimum of 5 seconds (Resettable Power).

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

The detector monitors for long-term degradation of signal strength caused by component aging or build-up of dirt on the optical surfaces. This operates by comparing the received infrared signal against a standard every 15 minutes; differences of more than 0.7 db/hr are corrected automatically. Once the beam reaches the limits of the AGC, the detector will automatically realign itself from the strongest signal through the AutoOptimise feature ensuring the detector will be auto-aligned to the strongest signal possible.

It is important that the Fireray 500 System be positioned correctly to minimize the detection time. Experiments have shown that smoke from a fire does not rise directly upwards, but fans out or mushrooms due to air currents and heat-stratification layering effects. The time to signal a fire condition depends on the location of the detector with the premises, the volume of smoke produced, and construction of the roof and ventilation arrangements.

Pursuant to "Promulgation of the Rules relating to Material and Equipment Application Procedures" dated November 5, 1992, the Bureau of Fire Prevention has no objections (letter dated February 12, 2008, F.P. Index #0802005).

Terms and Conditions: The above-described fire alarm equipment is accepted under the following conditions:

1. All uses, configurations, arrangements and functions, application and installations shall comply with the provisions of the New York City Building Code, specifically Subchapter 17 and Reference Standards RS 17-3 & 17-5. Further, the installation of these detectors shall be in accordance with the manufacturer's recommendation and UL Standard 268.
2. The detectors shall be used only with approved/accepted control panels with which compatibility has been determined by the Engineer of Record or a UL test report.
3. Periodic maintenance and sensitivity tests shall be conducted in accordance with the regulations of the Fire Department and manufacturer's recommendations.

4. Underwriters Laboratories, Inc.'s listing requirements and limitations shall be complied with.
5. The transmitter/receiver unit and the reflector prism shall be mounted on stable surfaces to prevent false or erratic operations due to movement.
6. The distance between transmitter/receiver unit and reflector shall be from 26.2 to 328 ft. (8 to 100mm).
7. The beam path must be kept clear of opaque obstruction at all times.
8. All shipments and deliveries of such equipment shall be provided with a metal tag, suitably placed, certifying that the equipment shipped or delivered is equivalent to that tested and accepted for use, as provided in Section 27-131 of the New York City Building Code.

Final Acceptance February 27, 2008.

Examined By Donald [Signature]