

## Engineering Specification for FIRERAY 3000 Exd Optical Beam Smoke Detector

The End-to-End projected Optical Beam Smoke Detector system shall consist of up to two transmitters with two receivers connected to a single low level control unit mounted outside of the hazardous area with LCD display for set-up, reporting and testing. The control unit shall be password protected. The detector heads shall include a wall mount alignment bracket for each TX and RX. The temperature range of the beam shall be  $-4^{\circ}\text{F}$  to  $+131^{\circ}\text{F}$  ( $-10^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$ ).

The beam system shall operate between the ranges of 16.5ft to 330ft (5m to 100m). The lateral spacing shall be a maximum of 60 feet (18.3m) per NFPA 72. The receiver shall have an integral laser pointer to assist in optimum alignment. The range is set by dip switch panel on the transmitter.

The beam system shall feature automatic gain control (AGC), which will compensate for gradual signal deterioration from dirt accumulation on the lenses. The beam system shall be capable of sending separate fault and fire signals for each set of detector heads, shall be capable of programming alarm thresholds of 25% to 60% in 1% increments and shall be capable of programming 'delay to fault' and 'delay to alarm' from 2 seconds to 30 seconds, in 1 second increments.

The detector shall supervise power through the trouble relay. The projected beam type smoke detector shall be a 4-wire 24 Vdc device to be used with a nationally recognized testing laboratory's listed and separately supplied 4-wire control panel.

Test and acceptance of the system shall be carried out by using the internal electronic obscuration fire test program per UL-268.

The beam detector shall feature automatic gain control which will compensate for gradual signal deterioration from dirt accumulation on the lens.

The beam detector housing shall be ATEX Certified and comply with EN54:12 and meet Exd IIC T5 temperature range requirements.

The beam shall have a method to measure and compensate for ambient light and direct sunlight. This shall include signalling a trouble when the IR signal from the light or direct sunlight is too great.

The projected beam smoke detector shall be a FFE Ltd Fireray 3000 Exd.

