

Detector Unit

The Detector is the central element of the VESDA LaserPLUS product range. Using unique detection principles, the Detector provides a sensitivity range of 0.0015 to 6% obscuration/ft (0.005 to 20% obscuration/m). It detects fire at the earliest possible stage and reliably measures very low to extremely high concentrations of smoke.

Features

- Wide Sensitivity Range
- Laser-Based Light Source
- 4 Configurable Alarm Levels
- Purpose-Built Aspirator
- 4 In-Line Inlet Pipes
- Flow Sensor for Each Pipe Inlet
- Wide Range DC Power
- Low-Cost Maintenance
- Dual-Stage Filter
- Easy Access to Filter Cartridge
- 7 Software Configurable Relays
- Recessed Mounting
- Multiple Exhausts

Description

The Detector Unit consists of three main sections:

The *mounting box* includes:

- Four-Pipe Inlet Manifold
- Exhaust Manifold
- Air Flow Sensor Card
- Head Termination Card

The Termination Card supports seven relays that produce Alert, Action, Fire 1 and Fire 2 signals. It also supports Service, Urgent Fault and Isolate signals. The card provides connections for power and the VESDA^{net}™ cabling.

The *chassis* brings together:

- Laser Detection Chamber
- Head Processor Card
- Dual-stage Filter Cartridge
- Aspirator

The *cover* supports a flexible combination of insertable modules:

- Display
- Programmer
- Blank Plates

Compatibility

The VESDA LaserPLUS is Listed for use with Fike's Intella-Scan, Intella-Scan II, Rhino, SHP and Cheetah control panel.

Additionally, the Cheetah control panel can be configured to communicate directly with one or more LaserPLUS detectors. This configuration provides an integrated approach to system operation by providing each LaserPLUS detector the same functionality as a Cheetah photo, ion or heat detector. LaserPLUS conditions such as alert, action, fire 1 and fire 2 are reported directly to Cheetah for processing. In addition, pre-programmed % obscuration levels and measured values are displayed on the Cheetah LCD display.

How It Works

Air is continually drawn through a network of sampling pipes by the high efficiency Aspirator. It enters the Detector through one of four pipes. Each pipe inlet has a flow sensor which supervises for changes in the flow rate. Air is exhausted from the Detector in one of three places and may be back-vented to the protected zone to avoid pressure differentials.

Inside the Detector, a sample is passed to the detector chamber via a dual-stage filter. The first stage removes dust and dirt from the sample before entering the chamber.

The second ultrafine stage provides an additional clean air supply. This is used inside the detector chamber to form a clean air barrier which protects the sensitive optical surfaces from contamination.

The detection chamber uses a stable 3mW laser light source and carefully positioned sensors to achieve the optimum response to a vast range of smoke types.

The status of the Detector, and all alarm, service and fault events, are transmitted to displays and external systems via VESDA^{net}.



