

# VESDA LaserPLUS™



The LaserPLUS detector is the central element of the VESDA smoke detection product range. Using unique detection principles, the LaserPLUS has an alarm sensitivity range of 0.005%–20% obscuration/m (0.0015%–6.25% obscuration/ft). The LaserPLUS is classed as a “Very Early Warning Smoke Detector” which means that it detects fire at the earliest possible stage and reliably measures very low to extremely high concentrations of smoke.

## How It Works

Air is drawn into the LaserPLUS through a network of air sampling pipes by a high efficiency aspirator. Each inlet pipe has an airflow sensor that monitors airflow changes in the pipes. Air is exhausted from the LaserPLUS and may be vented back into the protected zone.

Inside the LaserPLUS, a sample of air is passed into the laser detection chamber via a dual-stage air filter. The first filtration stage removes dust and dirt from the air sample before entering the laser detection chamber for analysis. The second stage provides ultra fine air filtration to provide very clean air that is used to protect the optical surfaces inside the detector from contamination.

The detection chamber uses a stable Class 1 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 VESDAnet.

## VESDAnet™

VESDA detectors and devices communicate across VESDAnet, Vision Systems' fault-tolerant communications protocol. The VESDAnet loop provides a robust bi-directional communication network between devices, even allowing continued operation during single point wiring failures. It also allows for system programming from a single location and forms the basis of the modular nature of the VESDA system.

## AutoLearn™

The LaserPLUS technology employs unique software tools to ensure optimum operation in many differing environments. AutoLearn monitors the ambient environment and sets the most appropriate alarm thresholds (Alert, Action, Fire1, Fire2) during the commissioning process to allow the earliest possible warning of a potential fire situation with no nuisance alarms.

## Referencing

Environments that employ air handling systems may be affected by pollution external to the controlled environment when “fresh air make up” is added. Referencing by VESDA ensures that external pollution does not interfere with the true smoke level being detected in the protected environment. The system can safely compensate for this transient state and allow continued operation free from nuisance alarms.

## Features

- Wide sensitivity range
- Laser based smoke detection
- 4 configurable alarm levels
- High efficiency aspirator
- Four inlet pipes
- Airflow supervisor per sampling pipe
- Dual stage air filter
- Easy to replace air filter
- 7 programmable relays
- VESDAnet™
- AutoLearn™
- Referencing
- Event log
- Modular design
- Recessed mounting option

## Listings/Approvals

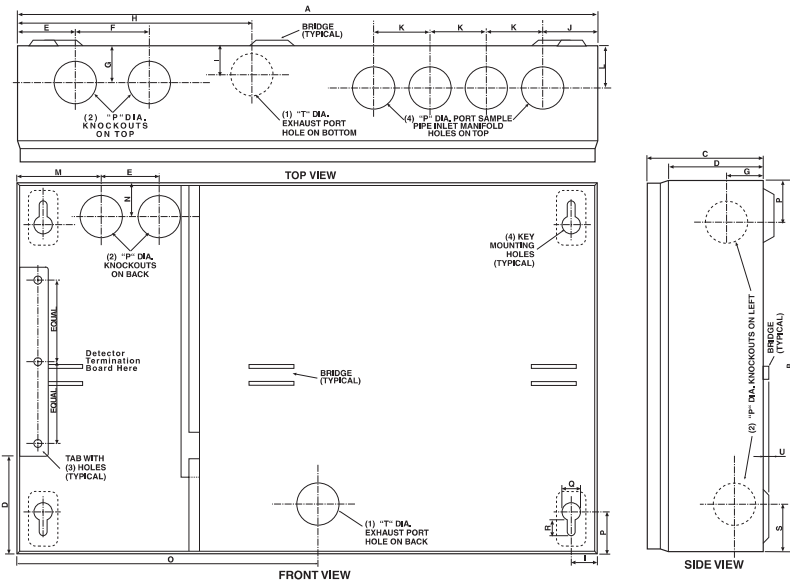
- UL
- ULC
- FM
- LPC
- VdS
- CCCf
- ActivFire
- AFNOR



**Vision Systems**

# VESDA LaserPLUS™

## Detector Mounting Box



Dimensions	
	mm in
A	350 13.8
B	225 8.9
C	70 2.75
D	57 2.25
E	35 1.37
F	44.5 1.75
G	22.0 0.87
H	14.1 0.56
I	15.9 0.62
J	33.3 1.31
K	34 1.33
L	23.8 0.94
M	51 2
N	21 0.83
O	141 5.56
P	25.4 1
Q	11.1 0.44
R	9.5 0.37
S	28.5 1.12
T	30.2 1.19
U	3.2 0.125

## Specifications

**Supply Voltage:** 18–30 VDC

**Power Consumption @ 24 VDC:**

No Display or Programmer

	Aspirator @ 3000 rpm		Aspirator @ 4200 rpm	
	Quiescent	With Alarm	Quiescent	With Alarm
Power	5.8 W	6.96 W	8.16 W	9.36 W
Current	240 mA	290 mA	340 mA	390 mA

**Dimensions (WHD):**

350 mm x 225 mm x 125 mm (13.8 in x 8.9 in x 4.9 in)

**Weight:**

4.0 kg (9 lbs) including Display and Programmer modules

**IP Rating:** IP30

**Operating Conditions:**

Tested to: -10°C–55°C (14°–131°F)

Detector Ambient: 0°C–39°C (32°–103°F)

(Recommended)

Sampled Air: -20°–60°C (-4°–140°F)

Humidity: 10%–95% RH, non-condensing

*Please consult your Vision Systems office for operation outside these parameters or where sampled air is continually above 0.05% obs/m (0.015% obs/ft) under normal operating conditions.*

**Sampling Network:**

Aggregate pipe length: 200 m (650 ft)

Maximum Single Length: 100 m (325 ft)

Pipe Modelling Design Tool: ASPIRE2™

**Pipe Size:**

External Diameter 25 mm (1 in)

Internal Diameter 15–21 mm (9/16 in–7/8 in)

**Programmable Relays:**

7 Relays, Contacts rated 2 A @ 30 VDC NO/NC Contacts

**Cable Access:**

8 x 25 mm (1 in) knockouts in various positions

**Cable Termination:**

Screw terminals 0.2–2.5 sq mm (30–12 AWG)

**Alarm Sensitivity Range:**

0.005%–20% obs/m (0.0015%–6.25% obs/ft)

**Alarm Threshold Setting Range:**

Alert: 0.005%–1.990% obs/m (0.0015%–0.6218% obs/ft)

Action: 0.010%–1.995% obs/m (0.0031%–0.6234% obs/ft)

Fire 1: 0.015%–2.00% obs/m (0.0046%–0.625% obs/ft)

Fire 2: 0.020%–20.00% obs/m (0.0062%–6.25% obs/ft)\*

\*Limited to 12% obs/m (4% obs/ft) in UL mode

**Event Log:**

Up to 18,000 events stored on FIFO basis.

**AutoLearn:**

Minimum 15 minutes, maximum 15 days. Recommended

minimum period 1 day. During AutoLearn thresholds are

NOT changed from pre-set values.

**Software Features:**

Referencing: Compensation for external ambient

conditions Four Alarm Levels: Alert, Action, Fire 1 &

Fire 2

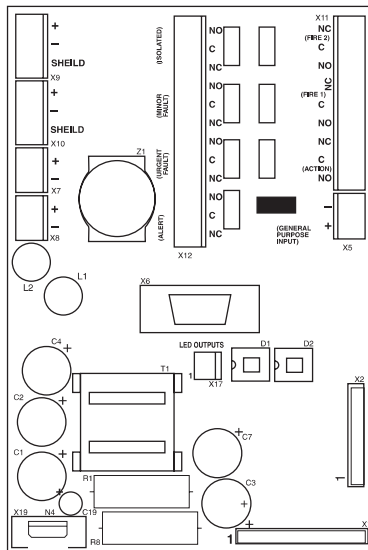
Two Fault Warning Levels: Maintenance and Major fault

Software Programmable Relays: 7

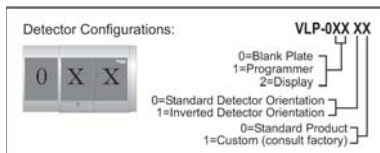
Maintenance Aids: Filter & Flow monitoring.

Event reporting via VESDAnet or Event Log.

## Detector Termination Card



## Ordering Information



Remote Programmer  
Recessed Mounting Kit (Optional)  
Hand-held Programmer  
19 in Sub Rack Configuration

VRT-100  
VSP-011  
VHH-1000  
contact Vision Systems

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