⚙ Simplex®

True*Alarm* Analog Sensing

UL, ULC, CSFM Listed;
FM Approved*

VLC-600 TrueAlarm LaserCOMPACT Smoke Sensor
with IDNet and MAPNET II Communications

Features

Model VLC-600 addressable, analog output air aspiration smoke sensor provides:

- VESDA LaserCOMPACT operation communicating with the established TrueAlarm analog sensing process for area coverage up to 8000 ft^2
- Compact 8 ⅞" (225 mm) square size
- Dual stage dust filter that is used on larger systems
- Obscuration measurements communicated to the fire alarm control panel for status determination
- Panel selected sensitivity from 0.016%/ft to 4.08%/ft
- Local computer port access for the VESDA Vconfig Pro software program as used on larger systems
- Single LED that indicates local status information
- Capability of driving a remote LED (ordered separately)

Trouble conditions are also communicated:

- Mechanical problems are received as sensor troubles
- Electrical problems are received as "no answer" troubles
- Additional details are indicated by the sensor LED and by accessing sensor diagnostics

Compatible with Simplex® 4007ES, 4010ES, 4100ES, 4100U, or legacy 4100/4120 fire alarm control panels:

- Communications via IDNet or MAPNET II addressable formats
- Connection is to the same SLC (signaling line circuit) with other devices such as addressable manual stations, TrueAlarm area smoke sensors, addressable control modules, etc.
- Communications are as a single device and connection is direct to the SLC without requiring a dedicated interface
- 4100/4120 requires revision 8.01 or higher software

Three threshold levels are programmable from the fire alarm control panel with typical selections as:
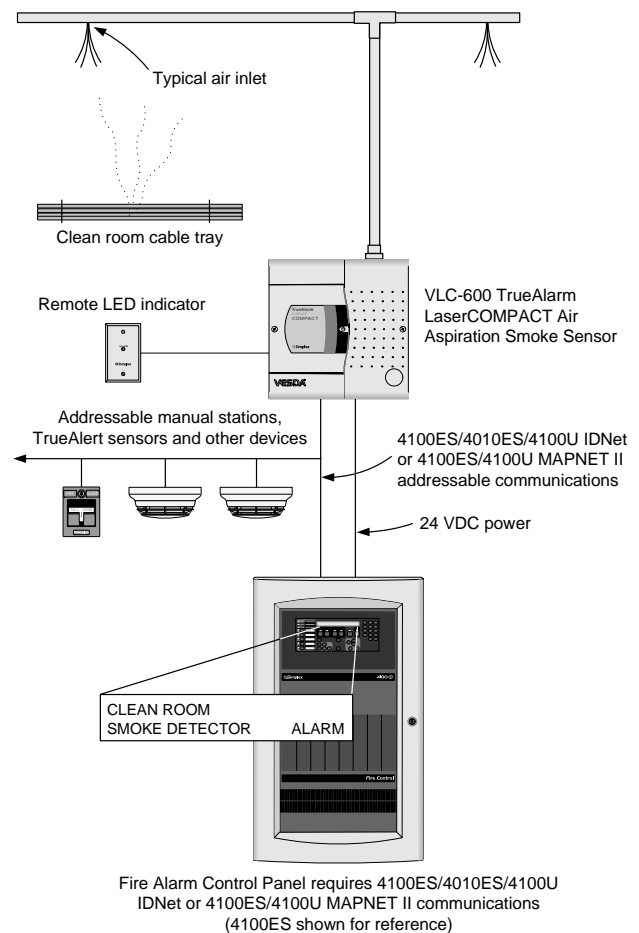
- Stage 1 – Alert at 0.016 to 0.6218% obscuration/ft
- Stage 2 – Pre-Alarm at 0.03 to 0.6234% obscuration/ft
- Stage 3 – Alarm at 0.05 to 4.08% obscuration/ft
- **NOTE:** UL listed evacuation alarm sensitivity is not to be less sensitive than 0.625%/ft

Sampling pipe network:

- Uses standard Vision Systems pipe and inlet in accordance with Vision Systems Aspire design tool

UL listed to Standard 268 (URXG)

Fire Alarm Control Panel requires 4100ES/4010ES/4100U IDNet or 4100ES/4100U MAPNET II communications (4100ES shown for reference)

TrueAlarm LaserCOMPACT System Connections

Description

Air aspiration technology smoke detection operates by actively drawing in air for sampling in a high intensity, stable detection chamber. The Model VLC-600 TrueAlarm LaserCOMPACT smoke detector uses the latest in VESDA sampling technology including a highly efficient laser light source and a dual stage dust filter.

TrueAlarm analog sensing occurs when the TrueAlarm LaserCOMPACT sensor communicates smoke chamber information to the connected fire alarm control panel. The panel evaluates the smoke sensor information against three programmed thresholds and declares an alarm or pre-alarm condition depending on smoke chamber activity.

Status communications. In addition to smoke chamber information, the TrueAlarm LaserCOMPACT also advises the fire alarm control panel of local trouble conditions. Troubles may include dirty filter, airflow restriction or failure, etc. Specific details are stored in memory at the sensor location.

Operation

Filtered air flow. A high efficiency aspirator continually draws air through a simple pipe network to a central detector. Air entering the sensor housing passes a flow sensor before the sample is passed through a dual-stage dust filter. The majority of air is exhausted from the detector and where required, back vented to the protected area. The first stage of the air filter removes dust and dirt from the air sample before it enters the smoke detection chamber. A second, ultra-fine filter stage provides a clean air supply to be used inside the detection chamber to form clean air barriers which protect the optical surfaces from contamination.

Laser detection chamber. The detection chamber uses a stable, highly efficient laser light source and unique sensor configuration to achieve optimum response to a wide range of smoke types. When smoke passes through the detection chamber, it creates light scattering which is detected by very sensitive sensor circuitry. The analog level of the sensor is then communicated to the fire alarm control panel for comparison to pre-selected alarm thresholds.

Operation *(Continued)*

Status logging. The sensor status history for all alarms, service, and fault events, is monitored and logged with time and date stamps within the electronics of the sensor, accessible via the local computer port. General trouble status indications are communicated to the panel as either sensor troubles or "no answer" troubles.

Additional Information

Refer to Installation Instructions 19772 shipped with the VLC-600 for additional information.

Product Selection

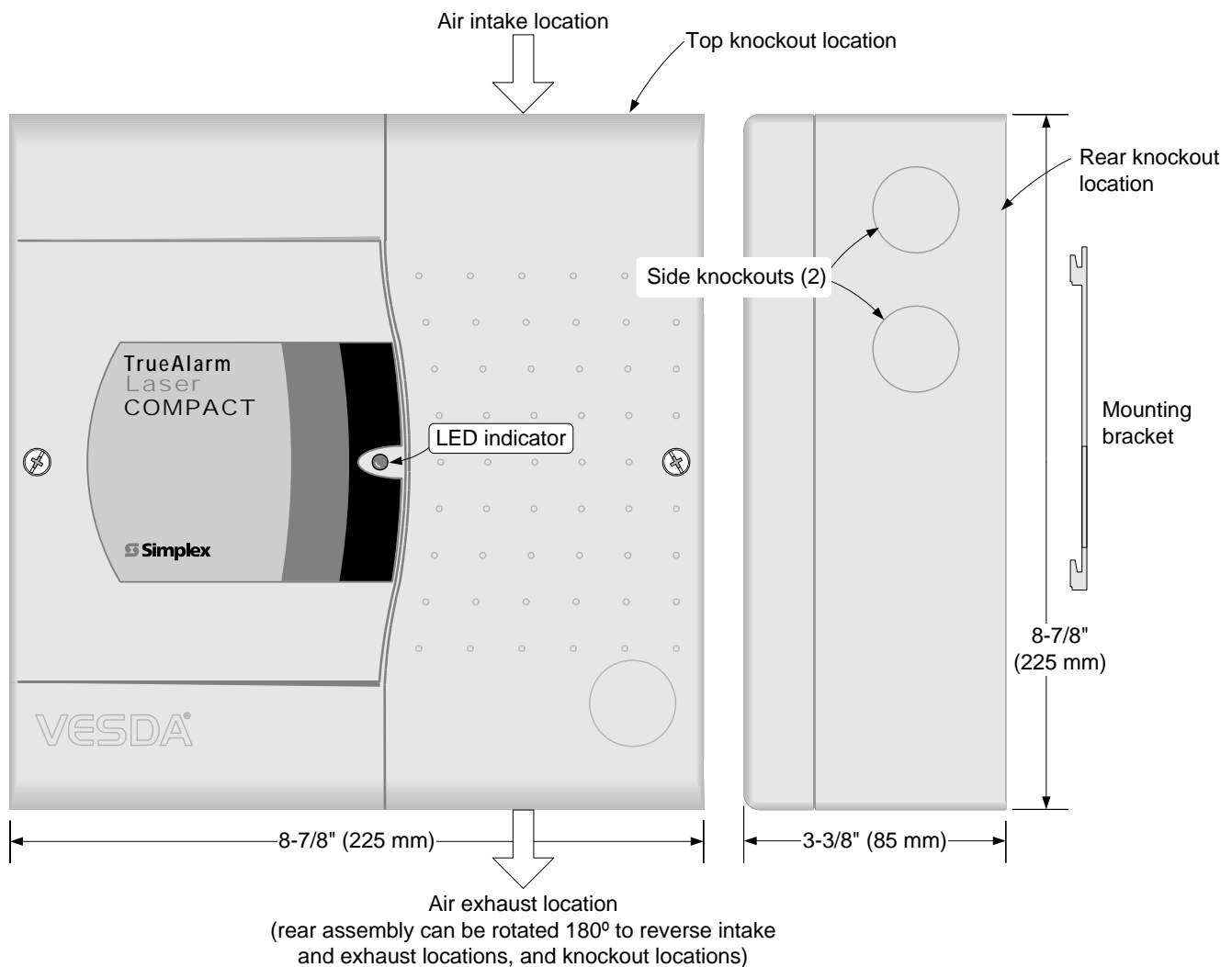| Model	Description
VLC-600	TrueAlarm LaserCOMPACT Smoke Sensor (sampling pipe is ordered separately)
2098-9808	Remote Red LED Status Indicator on single gang stainless steel plate; mounting requires a single gang box, 1 ½" minimum depth; connections are color coded wire leads

Specifications

Sensor Voltage		18 to 30 VDC, supplied from fire alarm control panel
Sensor Current		205 mA @ 24 VDC; supervisory and alarm
Communications	Compatibility	IDNet or MAPNET II addressable communications, automatically selected; refer to page 1 for compatible panel list
	Loading	One address, one unit load per sensor
Electrical Terminations		Terminal blocks for 18 to 12 AWG
Operating Conditions	Sensor Ambient	14° F to 103° F (-10° C to 39° C)
	Sampled Air	-4° F to 140° F (-20° C to 60° C)
	Sensor Humidity	10-95% RH, non-condensing
Sampling Network		Maximum area of coverage = 8000 ft^2, maximum pipe length in accordance with Vision Systems computer design tool (ASPIRE) and NFPA standards
UL Listed Velocity Range		0 to 4000 ft/min (0 to 1200 m/min)
Alarm Sensitivity Range		0.016% to 4.08%/ft obscuration, selected at the fire alarm control panel; **NOTE:** UL listed evacuation alarm sensitivity is not to be less sensitive than 0.625%/ft
Recognized Sensitivity Levels		Three levels, selectable and designated as required at the fire alarm control panel
Sensor Service Access		Internal DB-9, RS-232 connection for a service computer using VESDA Vconfig Pro software program (authorized service access only)
Enclosure Rating		NEMA 1 (IP 30)
Weight		4.2 lbs (1.9 kg)

LED Status Indications

Indication	Meaning
OFF	Power off or active sensor is waiting for panel communications
ON for approximately 3 seconds	Power up self-test due to sensor being in reset cycle
ON Steady	Alarm condition as commanded from panel
1 pulse approximately every 4 seconds	Normal operation, pulse indicates communications with panel
3 pulses (2 Hz rate every 2 seconds)	Internal fault, not communicating with panel, sensor needs internal service diagnostics or replacement

Mounting Information

Air intake location

Top knockout location

Rear knockout location

Side knockouts (2)

TrueAlarm
Laser
COMPACT

Simplex

LED indicator

VESDA®

Mounting bracket

8-7/8" (225 mm)

8-7/8" (225 mm)

3-3/8" (85 mm)

Air exhaust location
(rear assembly can be rotated 180º to reverse intake
and exhaust locations, and knockout locations)

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