

# Laser Barrier

## VLP21/VRH



**1500 m**

**For Extreme Detection**

**Visible Laser Alignment Pointer**

**Alarm signal**

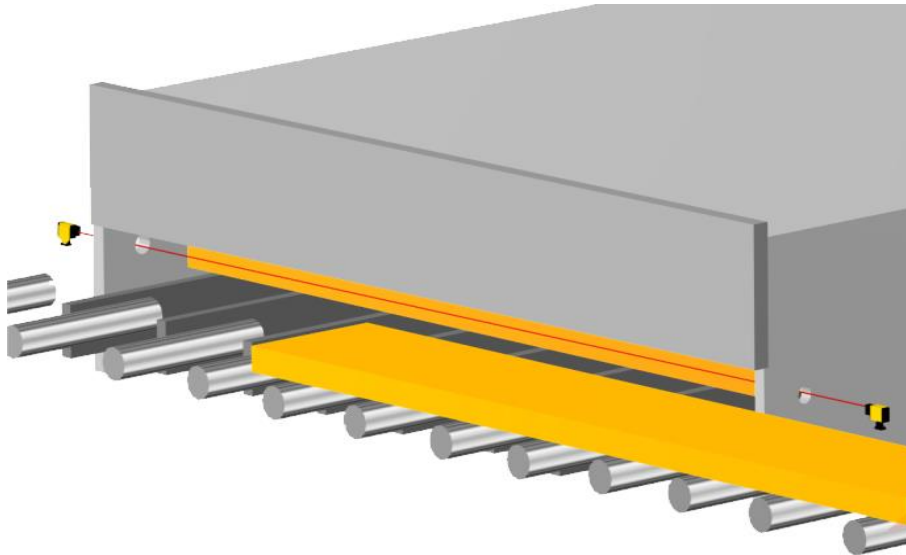
**Designed for Harsh Environment**



## Typical Applications

Slab – bloom detection at the exit of reheating furnace.

The Emitter **VLP21** unit emits a high power infrared laser pulse. This pulse is received by a photosensitive diode fitted with an optical filter and whose signal is processed by the incorporated circuitry of the Receiver **VRH**. The output changes state depending on whether the modulated beam is interrupted or not. The modulation of the emission, the particular characteristics of the optical filter and the automatic correction for ambient light make the sensor insensitive to any other source.



## Special Features

- Very high power infrared laser pulse.
- Insensitivity to ambient light and radiation from furnaces.
- Pre-failure, alarm output when the lenses are becoming dirty (signal at the limit of detection threshold).
- Air purging and water-cooling.
- Modular construction allowing rapid maintenance.

## Commissioning and Alignment

The red laser alignment pointer makes the installation of the optical barrier **VLP21/VRH** simple and rapid. The laser pointer is activated with a push button at the back of the emitter unit **VLP21** and remains on during 10 min. The receiver has a special alignment mode and the LED blinking rate gives an indication of the signal level. These features are used to optimize the receiver alignment.

## Technical characteristics

Reference		VLP21
Maximum distance between emitter and receiver		1500 m
Detection margin	Distance emitter - receiver: 5 m	>100 000
	Distance emitter - receiver: 15 m	> 10 000
Maximum product or background temperature		1400 °C



**Emitter**

Reference	VLP21
Emission Laser class (IEC 60825-1)	High power laser pulse Class 1M
Wavelength	905 nm
Angle of dispersion	Emitter: 1.6° Receiver: 3°
Light spot diameter at 15 m	About 400 mm
Laser alignment pointer Laser class (IEC 60825-1)	Class 2 - 650 nm On during 10 min after activation with test button
Alarm	Low impedance: 0/24 V - 50 mA Short circuit protection 0V when internal temperature is too high or internal failure
LED indication	LED 3 colours

**Receiver**

Reference	VRH- S	VRH- R
Outputs Electrical characteristics	2 complementary push-pull outputs Low impedance : 0/24 V - 50 mA Short circuit protection	Relay output Single pole change over Switching capacity : 230 V – 2.5 A
Alarm	Low impedance : 0/24 V - 50 mA Short circuit protection 0V when received light level is too low, when internal temperature is too high, or internal failure	-
Response time	2 ms	Make time : 8 ms, Break time : 4 ms
Operation mode - Time delay selection switch	Dark operation : no delay, 50 ms, 100 ms, 200 ms, 500 ms Light operation : no delay, 50 ms, 200 ms, 500 ms Alignment mode	
LED indication	LED 3 colours	

**Other data**

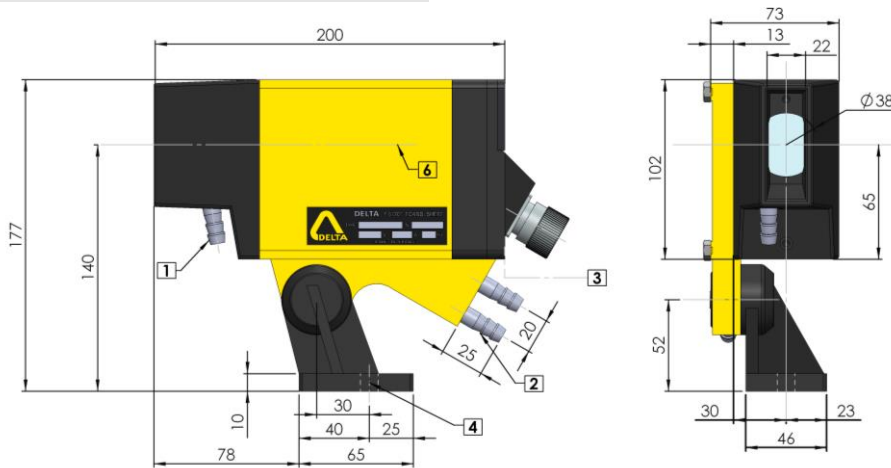


Operating voltage	220 V (-15%) to 240 V (+10%) - 50 / 60 Hz or 110 V (-15%) to 120 V (+10%) - 50 / 60 Hz or 24 V (±10%) - 50 / 60 Hz	24 V DC (±20%)
Power consumption	10 VA	8 W
Cable	Connector fitted with silicone cable with protective steel braid Standard length of 2 m (other length: 3, 5 or 8 m)	
Weight	5 kg (Emitter and Receiver)	
Protection rating	IP 67 (Cast aluminium case)	
Air purging	Protection of the optic with clean air : 50 to 200 g/cm <sup>2</sup> , 4 to 16 l/min	
Operating temperature	-20 to 70 °C (0 to 160 °F) without cooling. Up to 120 °C (250 °F) with water cooling: industrial quality water at about 25 °C, pressure 1-2 bar and flow 1-5 l/min	



## Dimensions

VLP21  
VRH



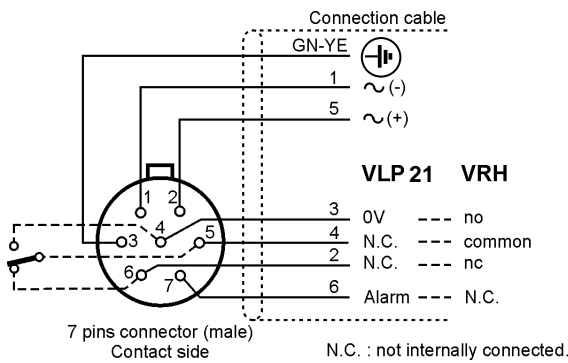
- 1 Air supply Ø 10
- 2 Water supplies Ø 10
- 3 Connector clearance 90 mm
- 4 Mounting with screw Ø 10
- 5 Not used on this model
- 6 Optical axis



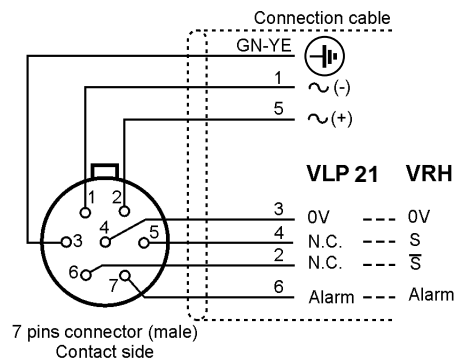
Laser Class 1M

Laser Class 2

## Connection



VLP21/VRH-R



VLP21/VRH-S

## Reference for order

VLP21/VRH- ●

**Output**  
S : Static (push-pull)  
R : Relay

**Supply voltage**  
230 VAC  
115 VAC  
24 VAC  
24 VDC

E.g.: VLP21/VRH-S 230VAC

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Subject to change without prior notice

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