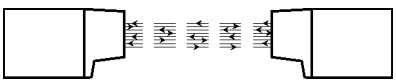
Through-Beam LASER BARRIER

Laser Barrier
VLP21/VRH



1500 m

For Extreme Detection

Visible Laser Alignment Pointer

Alarm signal

Designed for Harsh Environment

Lt 968

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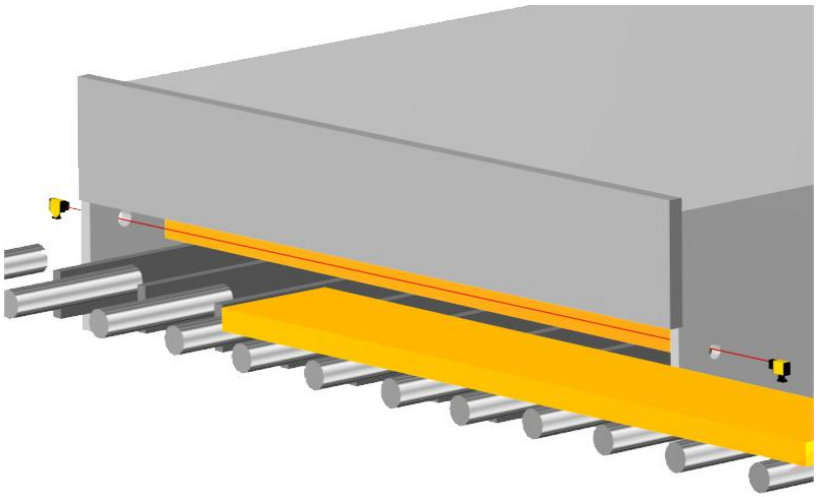
Typical Applications

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 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 **VLP** and remains on during 10 min.
There are 2 models depending on the laser pointer type:

- the **VLP21** integrates a **red Class 2** (<1mW) pointer,
- the **VLP21-5** integrates a **green Class 3R** (<5mW) pointer, giving 5 times more power and multiplying by 3 the visibility for human eyes.

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 / VRH***
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

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Emitter

Reference	***VLP21***	***VLP21-5***
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)	Red 650 nm, Class 2 (< 1mW)	Green 515-530 nm, Class 3R (< 5mW)
	Laser pointer remains 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

CE

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/cm², 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	

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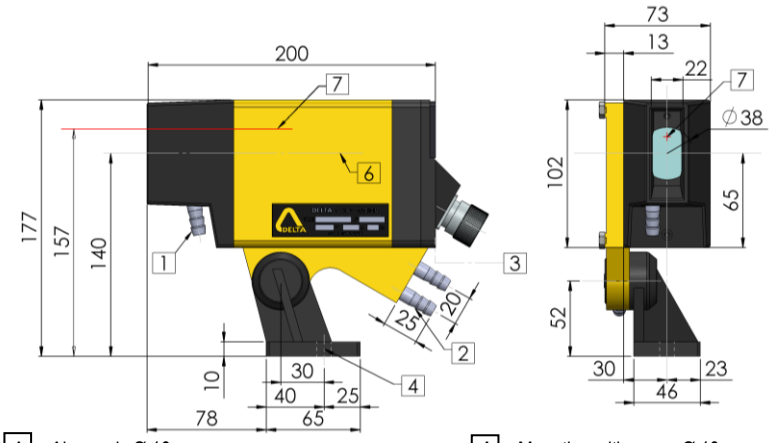
Dimensions

VLP21
VRH

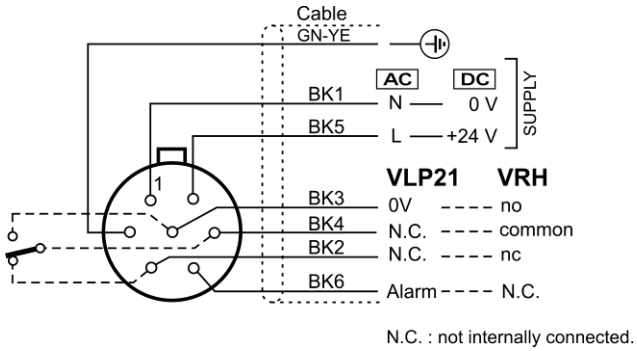


Laser Class 1M

Laser Class 2
Laser Class 3R

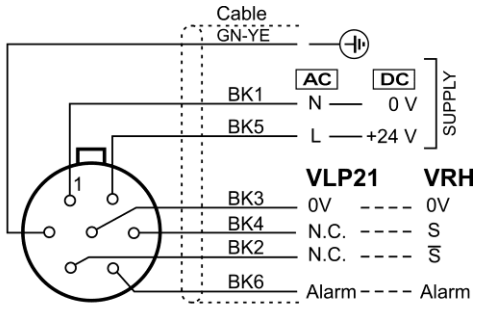
1	Air supply Ø 10	4	Mounting with screw Ø 10
2	Water supplies Ø 10	6	Optical axis
3	Connector clearance 90 mm	7	Laser pointer **(for Emitters VLP21 and VLP21-5 only)**.

Connection



N.C. : not internally connected.

VLP21/VRH-**R**



VLP21/VRH-**S**

Reference for order

VLP21• / VRH- •

Laser pointer	*Output*	*Supply voltage*
: < 1 mW red (class 2)	S : Static (push-pull)	230 VAC
-5 : < 5 mW green (class 3R)	R : Relay	115 VAC
		24 VAC
		24 VDC

E.g.: VLP21-5/VRH-S 230VAC (with green laser pointer <5mW class 3R on emitter, static output on receiver, power supply 230VAC).

Accessories

- Heat shield to protect from direct radiation, reference 7093146.

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