



## SERIES VR504 BARRIER LASER



VR504-T Transmitter with water cooled housing shown mounted on a LSS-36 Swivel and Lift Mounting Stand

- **Laser Light Barrier**
- **Special Filtering Accommodates Viewing Through Furnaces.**
- **Powerful & Safe Class 1 Laser with 500 Meter Range.**
- **Powerful 1.3 Watt beam penetrates the heaviest steam.**
- **Collimated 0.75° laser beam accommodates 40 mm misalignment.**
- **Fast Switching ideal for edge measurement.**
- **Optional Secondary Alarm for Indication of Lens Contamination & Misalignment**
- **Robust Stainless Steel Housing. Optional air or water cooled jacket .**

### Typical Applications

<b>Furnace Door Monitoring</b>	For prevention of product collision with furnace door.
<b>Furnace Wall Monitoring</b>	For prevention of product collision with furnace internal wall.
<b>Photo-Switch Replacement</b>	Highly reliable long range through beam sensor.

### Product Description

The VR504 barrier laser was developed for the requirements of the steel industry. This powerful barrier laser is designed for penetrating the heaviest steam and furnace flames; yet it is a totally safe Class 1 Laser. This dependable barrier laser works even under the most difficult conditions, such as high temperatures, vibration, high dust concentrations and contamination, without problems.

The VR504 barrier laser is available in three models to suit individual requirements. All models include a 2 Amp, 30VDC/125VAC Form C relay output. Green "Power" and Red "Alarm" LED's provide a visual indication of operation and alarm state. Model VR504-K includes a secondary alarm output, adjustable to a predetermined level for indicating lens contamination and misalignment. Model VR504-T operates at a faster detection frequency and includes an adjustable alarm response time from 8 - 350 msec.

Encapsulated within a robust IP65 rated stainless steel housing these lasers are specifically built for mounting in the harshest environments. An optional totally encased air or water cooling jacket is available that facilitates mounting close to furnaces or hot product. Optional bolt-on tempered glass shields are available to prevent lens damage.

Additional options include a LSS-36 Swivel and Lift Mounting Stand and a LAK-504-01 Laser Alignment Kit. The LSS-36 Stand provides a convenient mounting with adjustments in the X, Y & Z axis. The LAK-504-01 Alignment Kit includes a snap on battery operated transmitter laser pointer and a snap on receiver reflector. The kit aids in aligning the transmitter with the receiver during initial set-up and maintenance.

All VR504 barrier lasers are totally safe Class 1 Lasers and have no working restrictions and do not require any additional protection.

**MODULOC CONTROLS - BUILT TO LAST - MODULOC CONTROLS - BUILT TO LAST**

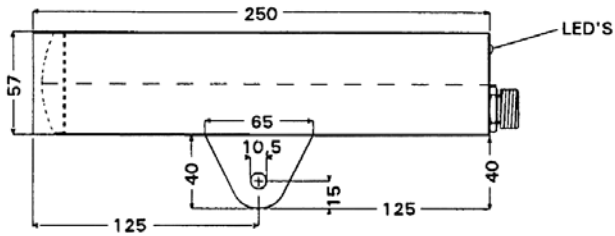
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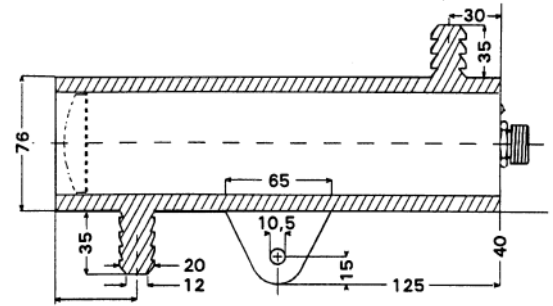
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## Dimensions



**VR504 Transmitter & Receiver Dimensions**



**VR504-C Transmitter & Receiver Dimensions**

With optional Air/Water Cooled Enclosure

Water Cooled Max. Temp.: 90°C  
Air Cooled Max. Temp.: 65°C

### Receiver

**Housing:** Stainless Steel/Glass  
**Housing Rating:** IEC IP65  
**Vibration Rating:** IEC 68

### Transmitter

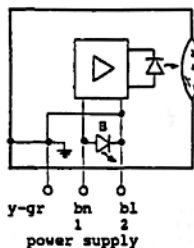
**Housing:** Stainless Steel/Glass  
**Housing Rating:** IEC IP65  
**Vibration Rating:** IEC 68  
**Cable Length:** 2 M

## General Specifications

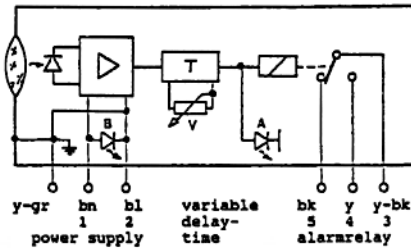
Laser Type	Solid State Optical Output	Receiver Wavelength	900 nm +/- 10%
Laser Wavelength	904 nm Laser	Receiver Field Of View	50 mrad
Laser Power	1.3 W x 20 ns	Detection Frequency	100 Hz +/- 10% Standard & Model -K
Laser Safety Class	1 according to DIN EN 60825-1	Detection Frequency	650 Hz +/- 10% Model -T
Maximum Range	500 meters	Response Time	16 msec Standard & Model -K
Operating Frequency	1kHz	Adjustable Response Time	8 - 350 msec Model -T
Beam Divergence	15 mrad (Equiv 0.75°)	Alarm Relay Output:	2A - 30VDC/125VAC
Operating Temperature	-15°C to +55°C both TX and RX	Output Relay Release Time	800 msec max. Standard & Model -K
Supply Voltage	24 VDC +/- 20% both TX and RX	Output Relay Release Time	350 msec max. Model -T
Current Consumption	40 mA Transmitter	Output Alarm Pulse	350 msec Standard & Model -K
Current Consumption	100 mA Receiver	Output Alarm Pulse	250 msec Model -T
Secondary Alarm Output	Open collector 1000 Ohm @ 24VDC adjustable triggered by level of received laser signal strength Model -K only		

### TRANSMITTER

Pin-no.:	Color:	Assignment:
1	brn	+24VDC
2	blu	0 VDC
3	blk	GND



Optical Signal



### RECEIVER

Standard & Model -T

Pin-no.:	Color:	Assignment:
1	brn	+24VDC
2	blu	0 VDC
3	yel/blk	Relay Common
4	yel	Relay N.O.
5	blk	Relay N.C.
6	yel/grn	GND

### Transmitter Connections

Green "Power" LED

### Receiver Connections

Green "Power" and Red "Alarm" LED's

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**MODULOC**  
Control Systems

We reserve the right to alter specifications without prior notice. Specifications without tolerances are typical values.

Your Local Sales Representative:



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