

***MSE-RT20 Retro-Reflective  
Laser Thru-Beam Barrier***

- Visible Red Class II Laser for precise distance measurement
- Visible Retro-Reflective Laser Thru-Beam Barrier
- >20 (65.6 feet) Meter Range
- Detects Hot or Cold Metal Product in Production Lines
- Detects small C.S.A. product
- Edge Resolution of 3 mm (0.12 in) per Meter (3.28 feet)
- IR Filtering enables use in Steel Slabs furnace entry door
- Class II Laser Visible Laser Light
- Continuous Self-Check with LED Indication
- Robust cast aluminum housing rated IP66 with unique combined air purge & cooling. Optional water cooling with air purging is also available.

***General Description***

The MSE-RT20 Retro-Reflect Laser Barrier operates over a range of greater than 20 meters (65.6 feet) enabling precise detection of hot or cold product in difficult areas of metal industry.

The MSE-RT20 Retro-Reflect Laser Barrier is a robust sensor especially suited for precise detection and measurement of narrow profile product. Utilizing modulated optical beam with IR filtering enables precise detection of both cold and hot metal product.

Straightforward alignment is easily accomplished via the visible red Class II laser beam. Continuous self-check facility with LED indication of reflector contamination or poor signal return.

The MSE-RT20 is supplied with an 8A/250VAC SPNO/SPNC Form C output relay, and NPN & PNP 500mA transistor outputs.

The MSE-RT20 aluminum housing is supplied with built-in air coolant chamber venting as air purge. Standard operating temperature without air cooling is 40°C (104°F) and with air cooling is 60°C (140°F). Optional water cooling is available for an operating temperature up to 70°C (158°F) or 80°C (176°F).

Several reflectors designs are available with temperature ratings from 90°C (194°F) up to 500°C (932°F). Optional air purged and air cooled reflectors are also available.

The MSE-RT20 provides highly accurate detection over the whole range as a result of a linear laser beam.

***Typical Applications***

**Furnace Door Monitoring**  
**Photo-Switch Replacement**  
**Metals Industry**

For prevention of product collision with furnace door.  
Highly reliable retro-reflective through beam sensor.  
Detection of Hot and/or Cold Product

## Housing Specifications

**Housing:** Aluminum AL6, Oven baked blue paint  
**Housing Rating:** IEC IP66, DIN 89011  
**Weight w/o Cable:** 1.9 Kg (4.2 lb)  
**Electrical Connector:** IP65 Plug/Socket, 12 Pin  
**Cable Length:** 2m (standard) - Optional 5m, 10m, 15m, 20m

## Air & Water Specifications

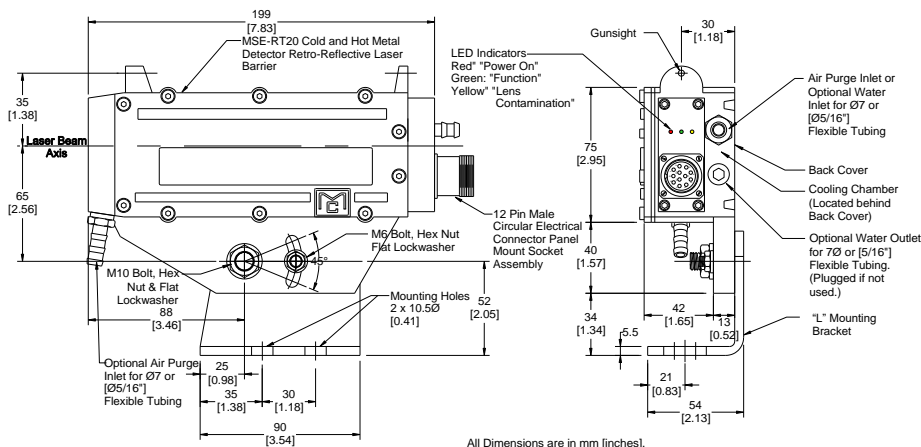
**Air Pressure:** Non-instrument dry air  
 1 - 2 cu ft./min at 5 PSI for normal conditions  
 5 cu ft./min 10 - 15 PSI for severe conditions  
**Water Pressure:** 1 - 2 bar  
**Water Volume:** Regulate between 0.5 - 1 liter/min.  
**Water Temperature:** For Ambient Temperature up to +80°C use industrial quality water chilled at 20°C minimum

## Part Number Specifications

**Example: MSE-RT20-A**  
 (With Air Cooling and Air Purging)

**Cooling:** -A Air Cooled & Air Purged  
 -D Water Cooled & Air Purged

## Dimensions



All Dimensions are in mm [inches].

## General Specifications

Operating range	Greater than 20m (65.6 FT) using special reflector	Supply Voltage	24 VDC ±20%
Edge Accuracy	3 mm (0.12 in) per meter (39.37 in) divergence	Power Consumption	1 Watt
Edge Resolution	± 1mm (0.039 in)+ divergence	Operating Temperature	-20°C (-4°F) to +50°C (122°F) no cooling
Response time	0.05 ms on/off (10 ms lock between edges)		-20°C (-4°F) to +60°C (122°F) with air cooling
			+2°C (-4°F) to +80°C (122°F) with air cooling
Laser Wavelength	Visible Red 650nm	Storage Temperature	-20°C (36°F) to 70°C (158°F)
Laser Classification	Class II, Safety Class 2 (DIN EN 60825-1)	Output (#1)	Relay Output, Form C Contact (SPNO/SPNC) 250 VAC, 8A, 20 ms response time
Laser Power	1 mW	Output (#2)	Switch selectable NPN & PNP Transistor Outputs, N.O., 500 mA, 45V, 2A peak
Laser Divergence	0.5 mrad	Function Indication	Green LED
Laser Spot Diameter	0.2mm (0.008 in) at 20m (65.6 FT)	Contamination Indication	Flashing Yellow LED
MTTF	32,000 hrs		
Power Indication:	Red LED		



**Reflector REF-HT1**  
**Air Purged**  
 Rating: 140°C (284°F)



**Reflector REF-01HT**  
**Air Purged**  
 Rating: 500°C (932°F)

## Terminal Connections

Pin No.	Wire Color	Function
1	White	+ 24VDC Supply
2	Red	0VDC Supply
3	Green	Shield/Ground
4	Pink	N.C. Relay Output
5	Blue	Relay Common Output
6	Grey	N.O. Relay Output
7	Yellow	PNP Transistor Output
8	Violet	NPN Transistor Output

Shield: Yellow/Green (Overall Shield)

This MSE sensor is manufactured by Moduloc System Engineering Ltd. Yantai Shandong, China P.R. which was established 2007.  
 The MSE-RT20 is a direct replacement for the Model No. LT200M previously manufactured by Moduloc Control Systems Ltd of the United Kingdom.  
 Please contact MSE for additional questions on other replacement model numbers.

**MODULOC SENSOR ENTERPRISES**  
**MSE**

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

Your Local Sales Contact:

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