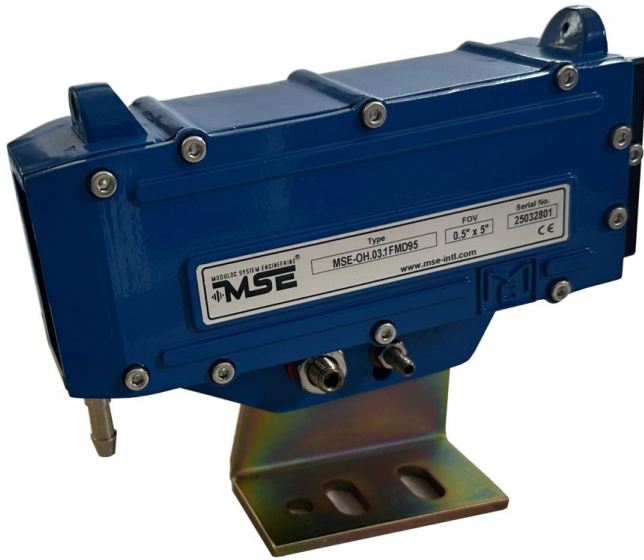




- Available FOV:  $\frac{1}{2}^\circ \times 25^\circ$ ,  $\frac{1}{2}^\circ \times 15^\circ$ , or  $\frac{1}{2}^\circ \times 5^\circ$
- Robust cast aluminum housing rated IP66
- Water Cooling with separate air purge facility.
- Optional unique air purge & cooling facility.
- Gunsight Alignment.
- Utilizes Linearized Flexible Armored Fiber Optic Cables
- Ambient temperature rating of 90°C without cooling, 120°C with air cooling and 180°C with water cooling.

### General Description

The MSE-OH.03FMD95 Remote Precision Rectangular Lens is specifically engineered for mounting in high ambient temperatures very close to the product line. It can be used in areas where with heavy steam or water is present. This lens is highly suited to Hot Bar & Rod Mills, Hot Rail Mills, Hot Strip Mills, and Hot Plate Mills.

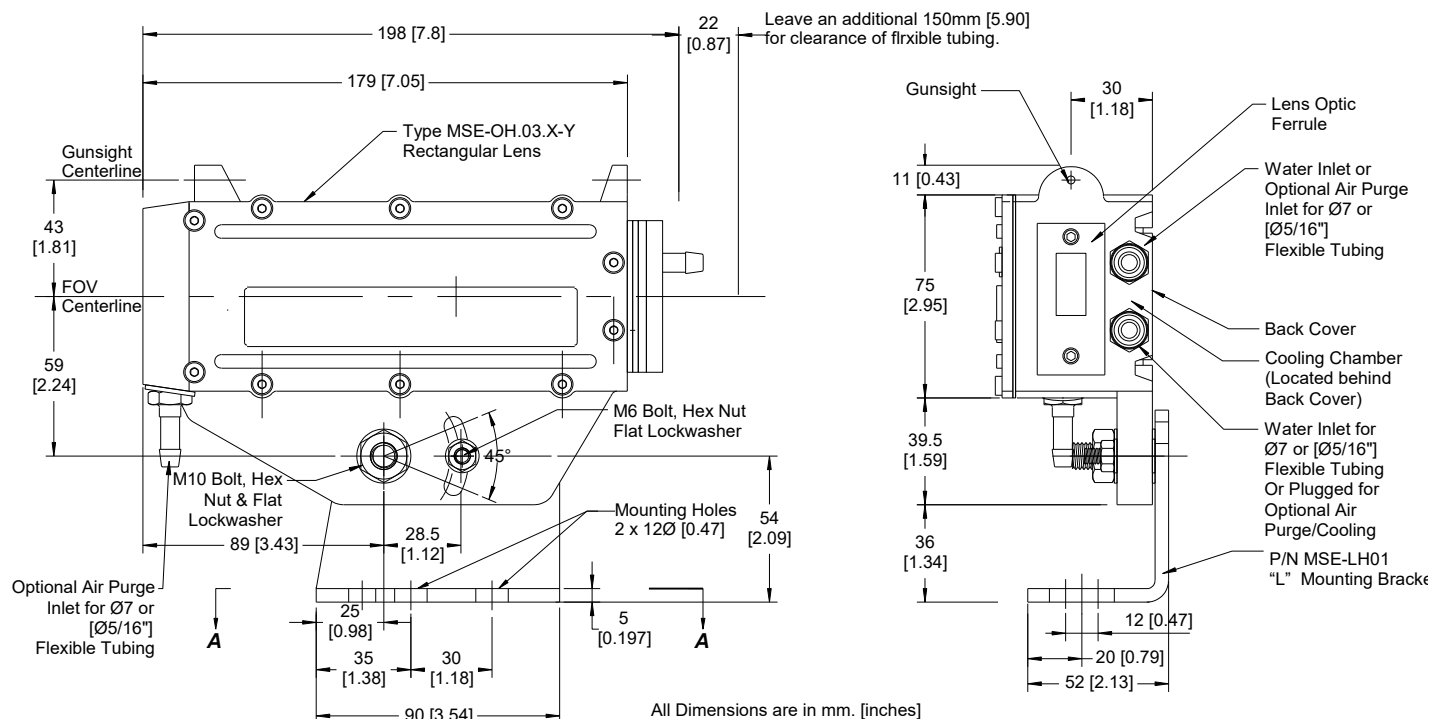
Where high accuracy is required or the product deviates about the center line (i.e. Rod Mill) either the MSE-OH.03.XX.Y-FMD95 Optic Head with a precision rectangular lens with a FOV of  $\frac{1}{2}^\circ \times 25^\circ$ ,  $\frac{1}{2}^\circ \times 15^\circ$  or the  $\frac{1}{2}^\circ \times 5^\circ$ , should be utilized. Even product that is dramatically deviating about the center of field of view can be monitored with this precision rectangular lens arrangement. The precision rectangular lens can be further vertically shuttered in the field to accommodate the application constraints.

The MSE-OH.03.XX.Y-FMD95 Optic Head is supplied with a robust cast aluminum housing which is rated IP66. The housing features a cooling chamber compartment which is separated from the lens compartment. As standard the cooling chamber is supplied with a water cooling radiator. A water inlet and a water outlet are located at the back of the housing. Separate air purge inlet is supplied located in the front of the casting. The air purge provides positive air pressure in front of the lens to keep it clean and to blow away steam that might be in front of the lens. The water cooling radiator can also be connected to an air supply for cooling or to a vortex inline cooler if water for cooling is not available.

As an option a unique air purge & air cooling facility can be supplied in place of water cooling. An air purge inlet is provided at the back of the housing. Pressurized air passes through the cooling chamber compartment, cooling the cast aluminum housing thus cooling the lens compartment. The pressurized air then vents out in front of the housing via a slot in front of the lens providing air purging of the lens. Further cooling of the air can be accomplished with the use of an in-line vortex tube air cooler.

For severe environments an Air Purge Nozzle (Tube) can be fitted onto the front of the Optic Head housing. The air purge nozzle is constructed of stainless steel for long life. This air purge nozzle is used to further direct the air purge and increase the pressure to clear steam and particulate from the lens. The nozzle is constructed to allow easy attachment to the cast housing with only an metric hex key. The nozzle has an additional air inlet if additional air purge is required in severe environments. The nozzle is hinged to allow easy cleaning of the lens when required.

## Dimensions



## Lens FOV and Additional Lens Information

| Lens Type                          | MSE-OH.03.05.D-FMD95            | MSE-OH.03.15.D-FMD95             | MSE-OH.03.25.D-FMD95             |
|------------------------------------|---------------------------------|----------------------------------|----------------------------------|
| Field of View (FOV)                | 1/2° x 5°                       | 1/2° x 15°                       | 1/2° x 25°                       |
| Scanned Area at 1 meter (39.37 in) | 10 x 100 mm<br>(0.39 x 3.94 in) | 10 x 300 mm<br>(0.39 x 11.81 in) | 10 x 500 mm<br>(0.39 x 19.69 in) |

## General Specifications

|                     |                                                                                                                                                                                                     |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Housing:            | Aluminum AL6, Oven baked blue paint.                                                                                                                                                                |
| Lens:               | Tempered Glass with IR Filter                                                                                                                                                                       |
| Housing Rating:     | IEC IP66, DIN, 89011                                                                                                                                                                                |
| Weight:             | 1.7 Kg                                                                                                                                                                                              |
| Temperature Rating: | -20°C to +120°C (-4°F to 248°F) cooling not used<br>-20°C to +150°C (-4°F to 302°F) with shop air cooling<br>to +200°C (to 392°F) with water cooling using ≤20°C (68°F) water or vortex cooled air. |

## Part Number Specifications

|               |                                                                                                            |
|---------------|------------------------------------------------------------------------------------------------------------|
| Part Number:  | MSE-OH.03.XX.Y-FMD95                                                                                       |
| Lens: (XX=)   | 05 = 1/2° x 5° F.O.V. (Optional)<br>15 = 1/2° x 15° F.O.V. (Optional)<br>25 = 1/2° x 25° F.O.V. (Standard) |
| Cooling: (Y=) | D = Water Cooled & Air Purged (Standard)<br>A = Air Cooled & Air Purged (Optional)                         |
| Example:      | MSE-OH.03.05-D-FMD95<br>0.5° x 5° Lens, Water Cooled & Air Purged                                          |

## Air & Water Specifications

|                 |                                                                                                              |
|-----------------|--------------------------------------------------------------------------------------------------------------|
| Air Pressure:   | Air Purge: < 0.3 bar for normal conditions.<br>Air Purge & Cooling: 1 to 3 bar for very difficult conditions |
| Water Pressure: | Normally 0.3 to 1 bar. 3 bar maximum!                                                                        |
| Water Volume:   | Regulate at 2 liters/min                                                                                     |

This MSE-OH.03.XX.Y-FMD95 Remote Rectangular Lens is manufactured by Moduloc System Engineering Ltd. Located Yantai ETDZ Shandong, China P.R. and was established in 2007.

The MSE-OH.03.XX.Y-FMD95 Lens is a direct replacement for the Type FR Remote Rectangular Lenses previously manufactured by Moduloc Control Systems Ltd of the United Kingdom. These Lenses can be used and interchanged directly with the Moduloc MD9100 and MD95100 Hot Metal Detectors and can be used with Moduloc LG-XX-CB and LGH-XX-CB Fiber Optic Cables.

## MODULOC SENSOR ENTERPRISES

# MSE

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