

**TECHSPEC® 4mm FL f/2.5, Rugged Blue Series M12 Lens**



4mm FL Rugged Blue Series M12 Lens



Stock #36-352 **20+ In Stock**

⊖ 1 ⊕ €101<sup>00</sup>

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Qty 1-49	€101,00 each
Qty 50+	€80,00 each
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Product Downloads

**General**

Rugged Blue Series **Product Family:**

M12 Imaging Lens **Type:**

**IR Cut Filter:**

No

**Imaging Lens Type:**  
High Performance Lens, Ruggedized to Withstand  
50g of Shock

## Physical & Mechanical Properties

Fixed **Iris Option:**

19.70 **Length (mm):**

14 **Maximum Diameter (mm):**

14 **Outer Diameter (mm):**

5 **Weight (g):**

## Optical Properties

**Horizontal Field of View @ Max Sensor Format:**  
219.4mm - 71.0°

**Field of View at Max Sensor Format:**  
Horizontal: 220mm - 71.1°  
Vertical: 152.6mm - 52.6°  
Diagonal: 310.8mm - 90.8°

**Horizontal Field of View, 1/3" Sensor:**  
219.4mm - 71.0°

**Horizontal Field of View, 1/4" Sensor:**  
152.3mm - 52.5°

6.00 **Maximum Image Circle (mm):**

0.0051 **Numerical Aperture NA, Object Side:**

6(5) **Number of Elements (Groups):**

400 - 700 **Wavelength Range (nm):**

4.00 **Focal Length FL (mm):**

150 - ∞ **Working Distance (mm):**

f/2.5 **Aperture (f/#):**

-25.68 @ Full Field **Distortion (%):**

6.1 - 6.0 **Back Focal Length BFL (mm):**

M4 MgF<sub>2</sub> @ 550nm **Coating Specification:**

5.21 **Entrance Pupil Position (mm):**

7.83 **Object Space Principal Plane (mm):**

2.85 **Image Space Principal Plane (mm):**

-25.68 **Maximum Distortion (%):**

-4.99 **Exit Pupil Position (mm):**

VS **Lens Wavelength Range:**

## Sensor

1/3" **Maximum Sensor Format:**

1.40 **Pixel Size (µm):**

## Threading & Mounting

N/A **Filter Thread:**

S-Mount (M12 x0.5) **Mount:**

## Environmental & Durability Factors

**Type of Ruggedization:**  
Stabilized (Robust Mechanics for Shock and

## Regulatory Compliance

**Compliant** **RoHS 2015:**

**View** **Certificate of Conformance:**

**Compliant** **Reach 247:**

## Product Details

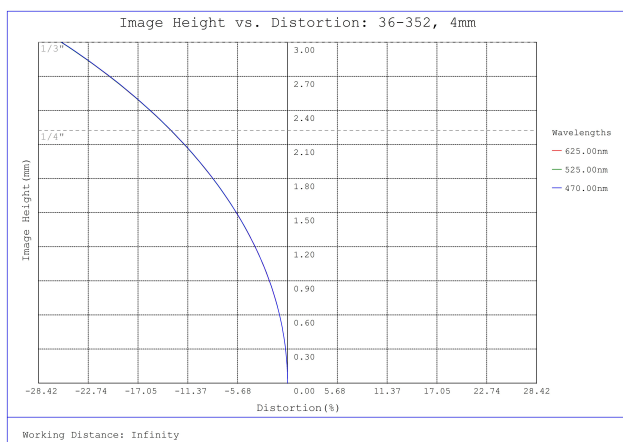
- Up to 1/2", S-Mount Lens
- Up to 5 MegaPixels, 1.4µm Pixel Size Sensors
- Ruggedized Designs (50g Shock) of our Blue Series Lens with Individual Optics Glued in Place
- 2mm to 25mm Focal Length
- **Non-Ruggedized Designs** Also Available

TECHSPEC® Rugged Blue Series M12 Lenses have **stabilized ruggedization**, protecting the lens from damage, while reducing pixel shift and maintaining optical pointing stability after shock and vibration. Each lens consists of several precision glass optics that are glued in place inside a compact, aluminum housing. Gluing the glass optics prevents even the smallest movements that often cause pixel shift. Object to image mapping is maintained even after heavy shock and vibration; if the center of the object maps onto the center pixel, it will always map to that same center pixel. TECHSPEC Rugged Blue Series M12 Lenses are ideal for calibrated imaging applications such as measurement and gauging, 3D stereo vision, robotics and sensing, autonomous vehicles, and object tracking. These lenses are available in a variety of  $f/\#$  options ranging from  $f/2.5$  to  $f/8$ .

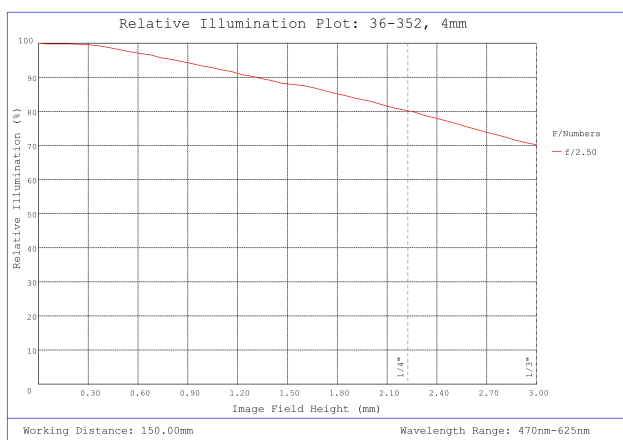
Edmund Optics has created multiple product families of our TECHSPEC® M12 S-Mount Lenses, which are designed to provide high resolution. These high performance lenses feature precision glass designs in a metal housing and have optimized specifications between each product family to meet your application needs.

- **Blue Series M12 Lenses:** High resolution finite conjugate designs optimized for machine vision working distances.
- Rugged Blue Series M12 Lenses: **Stabilized ruggedization** versions of our Blue Series M12 Lenses, utilizing the same optics.
- **Green Series M12 Lenses:** Finite conjugate designs optimized for machine vision working distances.
- **Red Series M12 Lenses:** Infinite conjugate designs optimized for high resolution performance out to infinity.
- **HEO Series M12 Lenses:** Harsh Environment Optics (HEO) sealed versions of our Red Series M12 Lenses.
- **Liquid Lens M12 Lenses:** Integrated liquid lens for fast electronic focus.

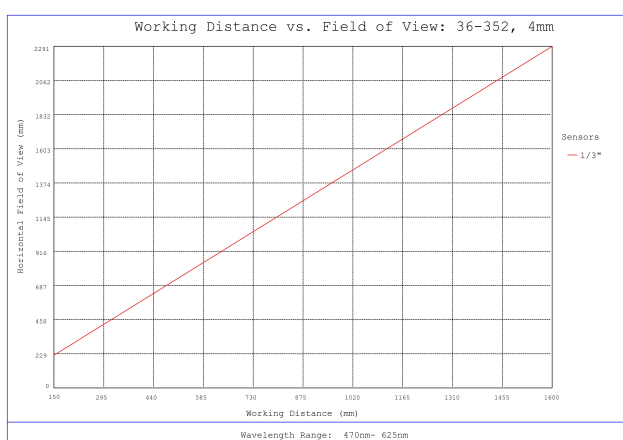
## Technical Information



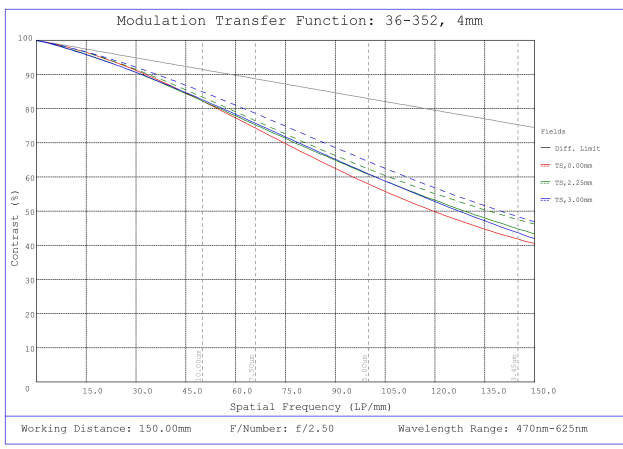
#36-352, 4mm FL  $f/2.5$ , Rugged Blue Series M12 Lens, Distortion Plot



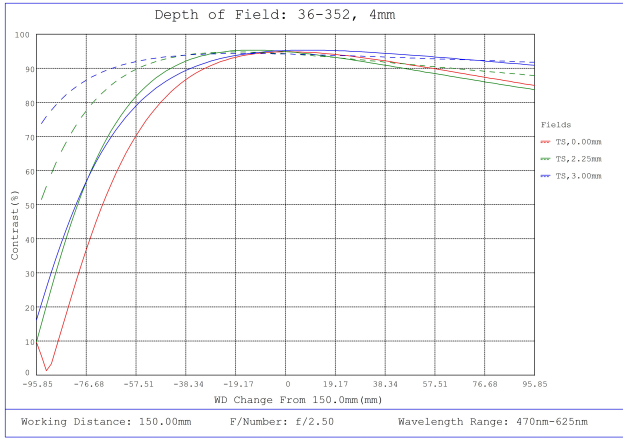
#36-352, 4mm FL  $f/2.5$ , Rugged Blue Series M12 Lens, Relative Illumination Plot



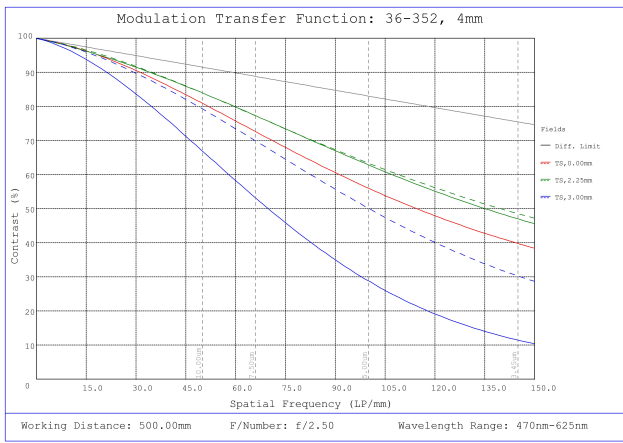
#36-352, 4mm FL  $f/2.5$ , Rugged Blue Series M12 Lens, Working Distance versus Field of View Plot



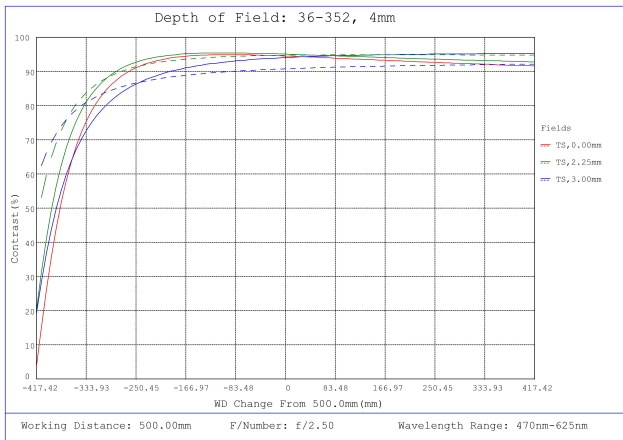
#36-352, 4mm FL f/2.5, Rugged Blue Series M12 Lens, Modulated Transfer Function (MTF) Plot, 150mm Working Distance, f2.5



#36-352, 4mm FL f/2.5, Rugged Blue Series M12 Lens, Depth of Field Plot, 150mm Working Distance, f2.5



#36-352, 4mm FL f/2.5, Rugged Blue Series M12 Lens, Modulated Transfer Function (MTF) Plot, 500mm Working Distance, f2.5



#36-352, 4mm FL f/2.5, Rugged Blue Series M12 Lens, Depth of Field Plot, 500mm Working Distance, f2.5