

TECHSPEC® 16mm C Series Fixed Focal Length Lens

#59-870



16mm Focal Length, #59-870

TECHSPEC® C Series Fixed Focal Length Lenses are designed for use in machine vision applications with the working distance and resolution requirements of factory automation and inspection in mind. TECHSPEC® C Series Fixed Focal Length Lenses feature large maximum apertures, allowing these high performance lenses to be used in even the most restrictive lighting conditions. Each lens has a broadband anti-reflection coating, locking iris and focus adjustment with recessed set screws, and a ruggedized, robust housing for space-restrictive applications. C Series lenses are manufactured to high tolerances, which result in high levels of imaging performance with low lens-to-lens variation. Through combining optical performance, industrial features, and compact package sizes, our TECHSPEC® C Series Fixed Focal Length Lenses are ideal for use in factory automation and inspection.

General

| | |
|--------------------|-------------------------|
| Type: | Fixed Focal Length Lens |
| Imaging Lens Type: | Compact Lens |

Physical & Mechanical Properties

| | |
|-------------------------------|----------|
| Iris Option: | Variable |
| Length (mm): | 40.50 |
| Maximum Diameter (mm): | 33 |
| Outer Diameter (mm): | 33.0 |
| Weight (g): | 74 |
| Maximum Rear Protrusion (mm): | 1 |

Optical Properties

| | |
|---|---|
| Horizontal Field of View, 1/2" Sensor: | 22.7° |
| Horizontal Field of View, 2/3" Sensor: | 30.9° |
| Horizontal Field of View, 1/3" Sensor: | 17.1° |
| Maximum Image Circle (mm): | 11.00 |
| Numerical Aperture NA, Object Side: | 0.0402 |
| Horizontal Field of View @ Max Sensor Format: | 30.9° |
| Number of Elements (Groups): | 7 (6) |
| Horizontal Field of View, 1/1.8" Sensor: | 25.5° |
| Horizontal Field of View, 1/2.5" Sensor: | 20.6° |
| Focal Length FL (mm): | 16.00 |
| Primary Magnification PMAG: | 0.145 |
| Working Distance (mm): | 100 - ∞ |
| Aperture (f/#): | f/1.6 - f/16 |
| Coating: | 425 - 675nm BBAR |
| Coating Specification: | 425 - 675nm BBAR |
| Entrance Pupil Position (mm): | 24.42 |
| Horizontal Field of View, 1/4" Sensor: | 12.8° |
| Object Space Principal Plane (mm): | 21.31 |
| Image Space Principal Plane (mm): | -3.00 |
| Field of View at Max Sensor Format: | Horizontal: 31.0° Vertical: 23.4° Diagonal: 38.3° |
| Maximum Distortion (%): | -0.77 |
| Exit Pupil Position (mm): | -5.43 |
| Lens Wavelength Range: | VIS |

Sensor

| | |
|------------------------|------|
| Maximum Sensor Format: | 2/3" |
|------------------------|------|

Threading & Mounting

| | |
|----------------|-----------------------|
| Filter Thread: | M25.5 x 0.50 (Female) |
|----------------|-----------------------|

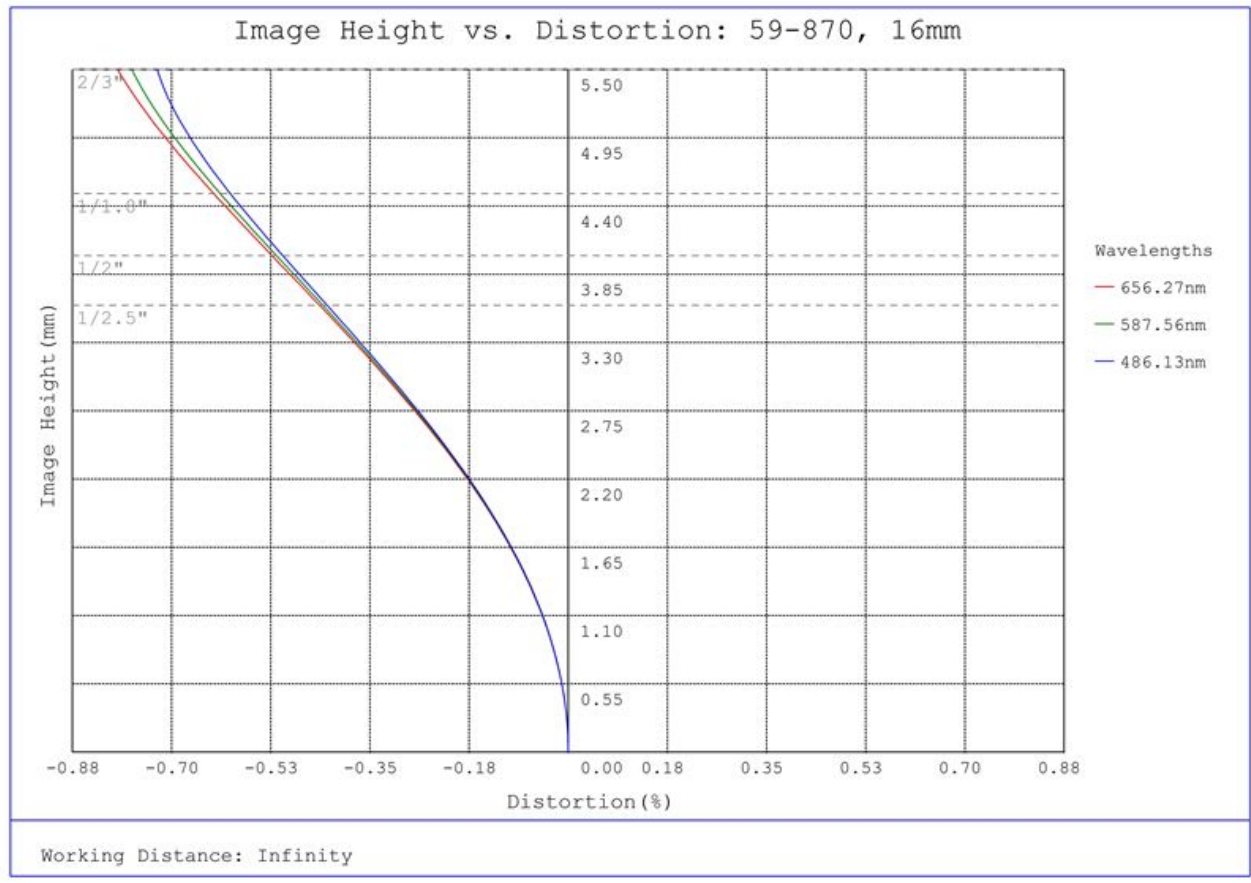
Mount:

C-Mount

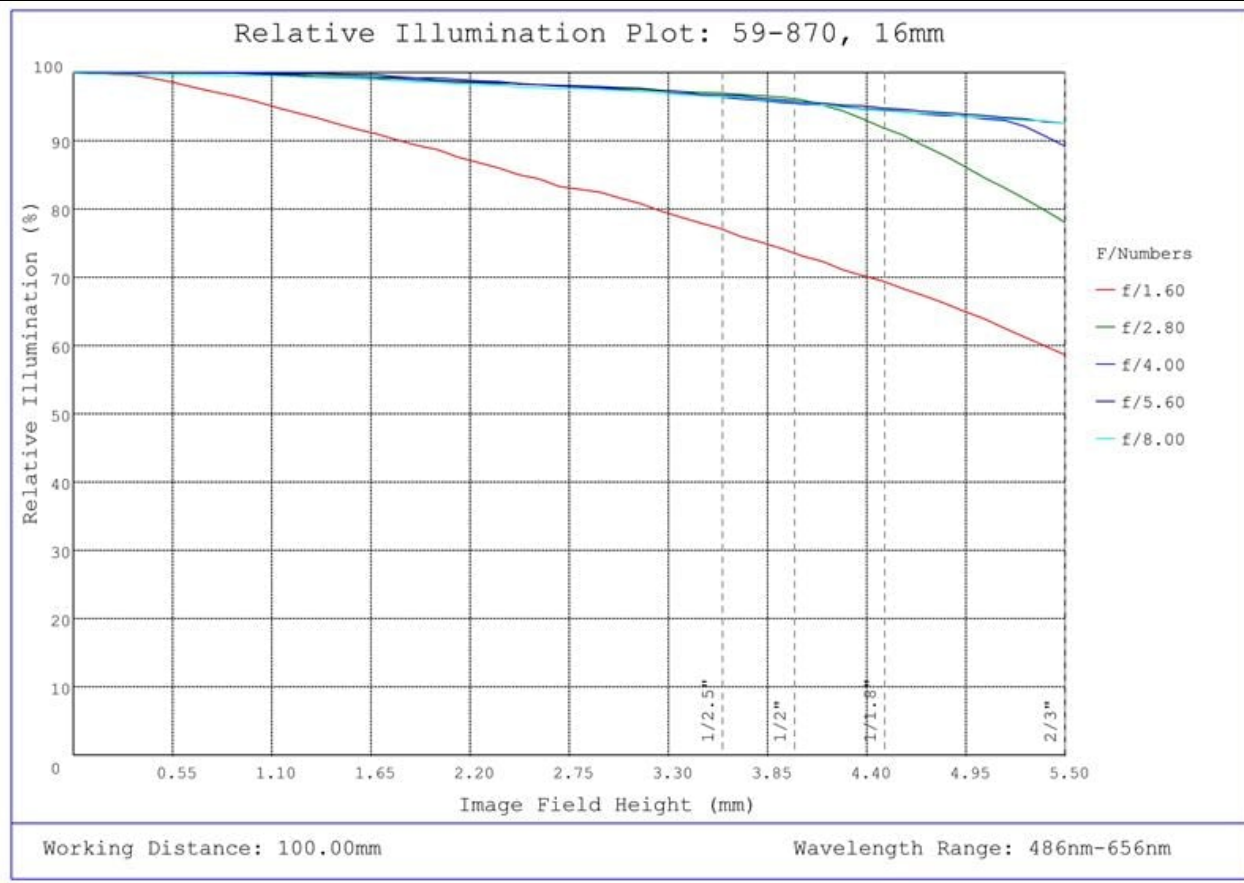
Environmental & Durability Factors

Storage Temperature (°C):

-20 to +60 For questions regarding operating temperature please
contact our support team



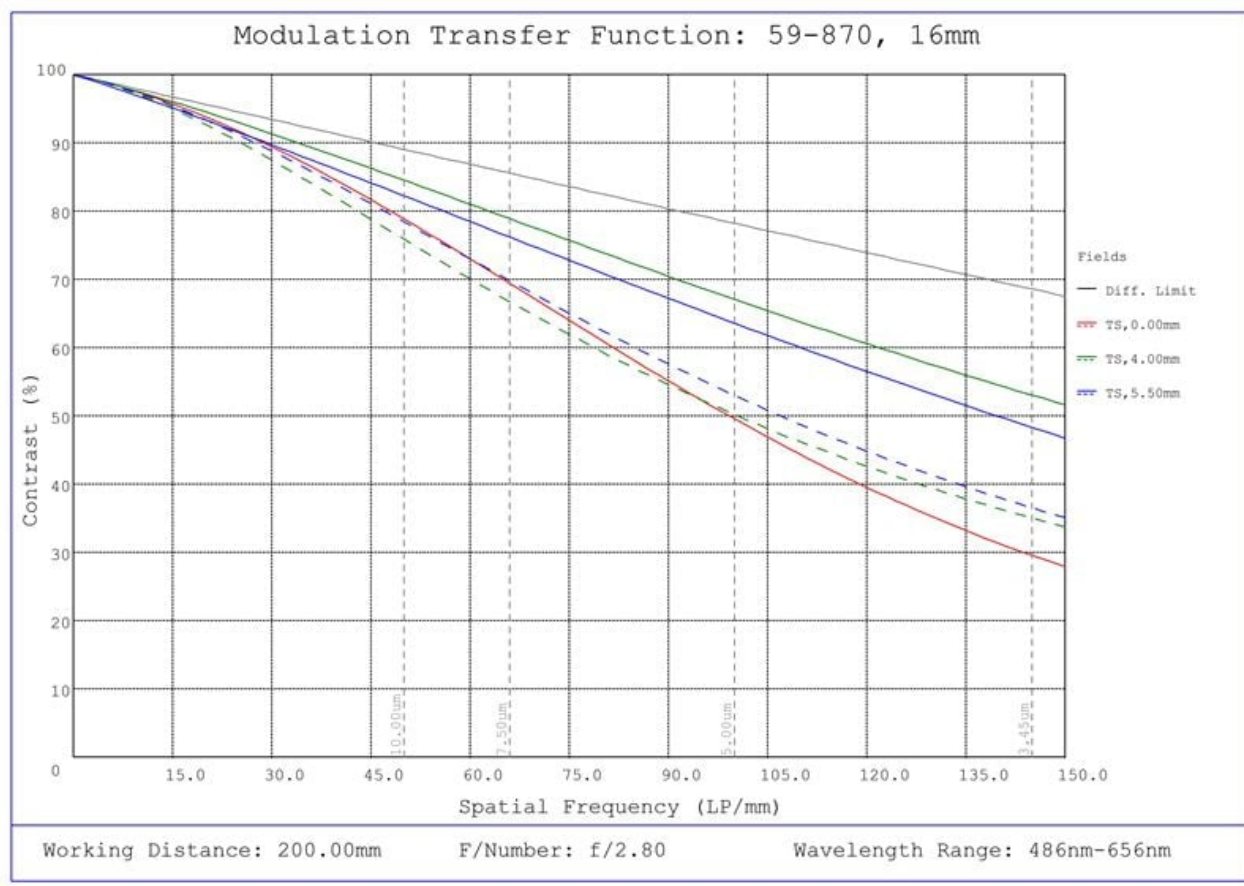
#59-870, 16mm C Series Fixed Focal Length Lens, Distortion Plot



#59-870, 16mm C Series Fixed Focal Length Lens, Relative Illumination Plot



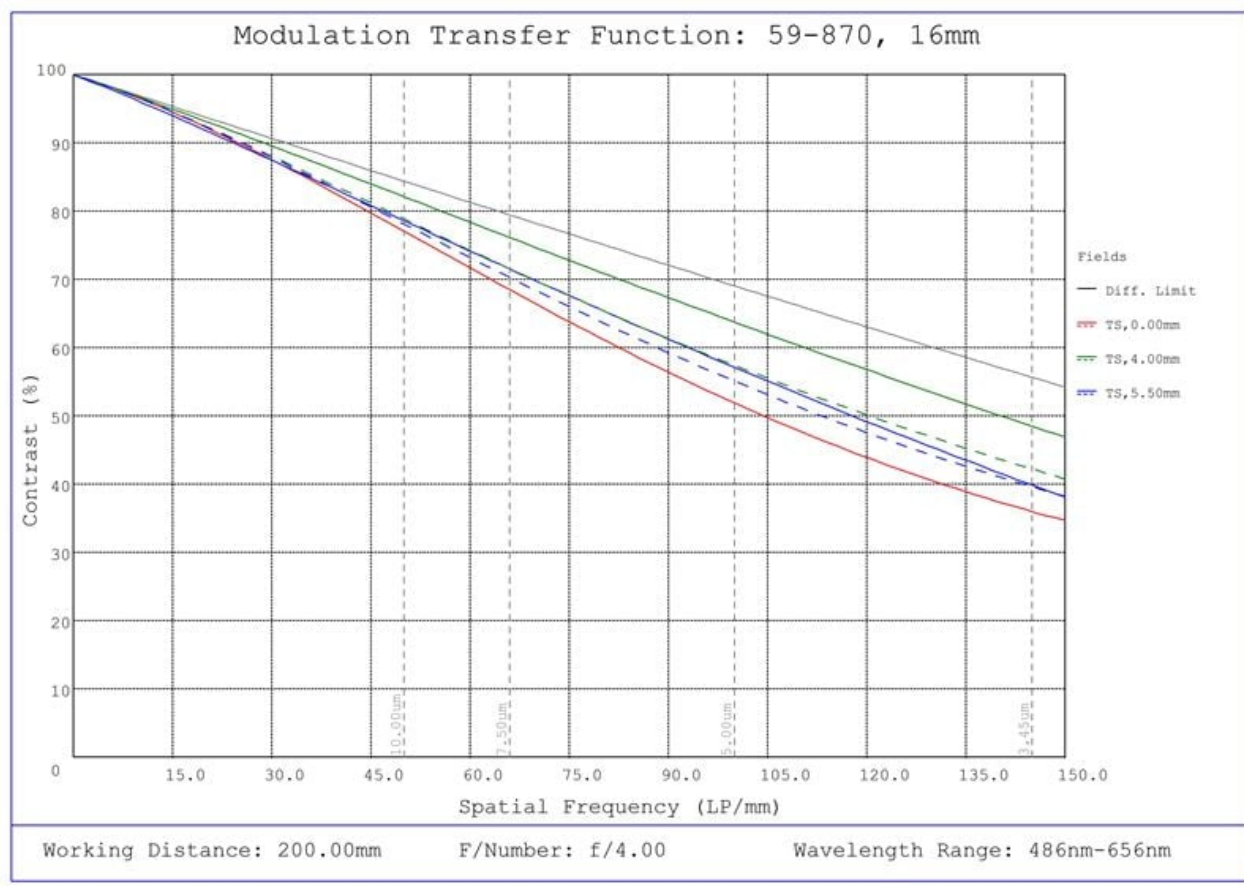
#59-870, 16mm C Series Fixed Focal Length Lens, Working Distance versus Field of View Plot



#59-870, 16mm C Series Fixed Focal Length Lens, Modulated Transfer Function (MTF) Plot, 200mm Working Distance, f2.8



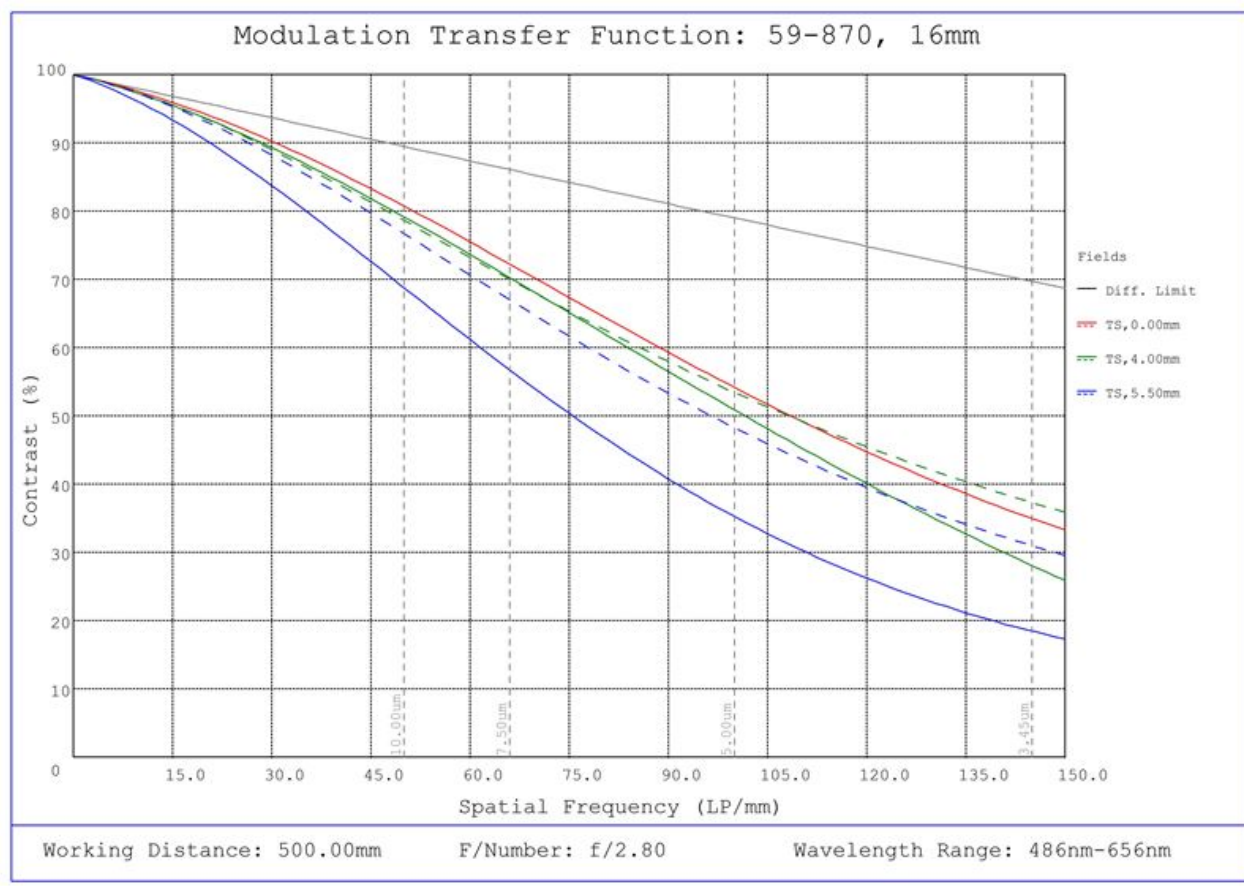
#59-870, 16mm C Series Fixed Focal Length Lens, Depth of Field Plot, 200mm Working Distance, f2.8



#59-870, 16mm C Series Fixed Focal Length Lens, Modulated Transfer Function (MTF) Plot, 200mm Working Distance, f4



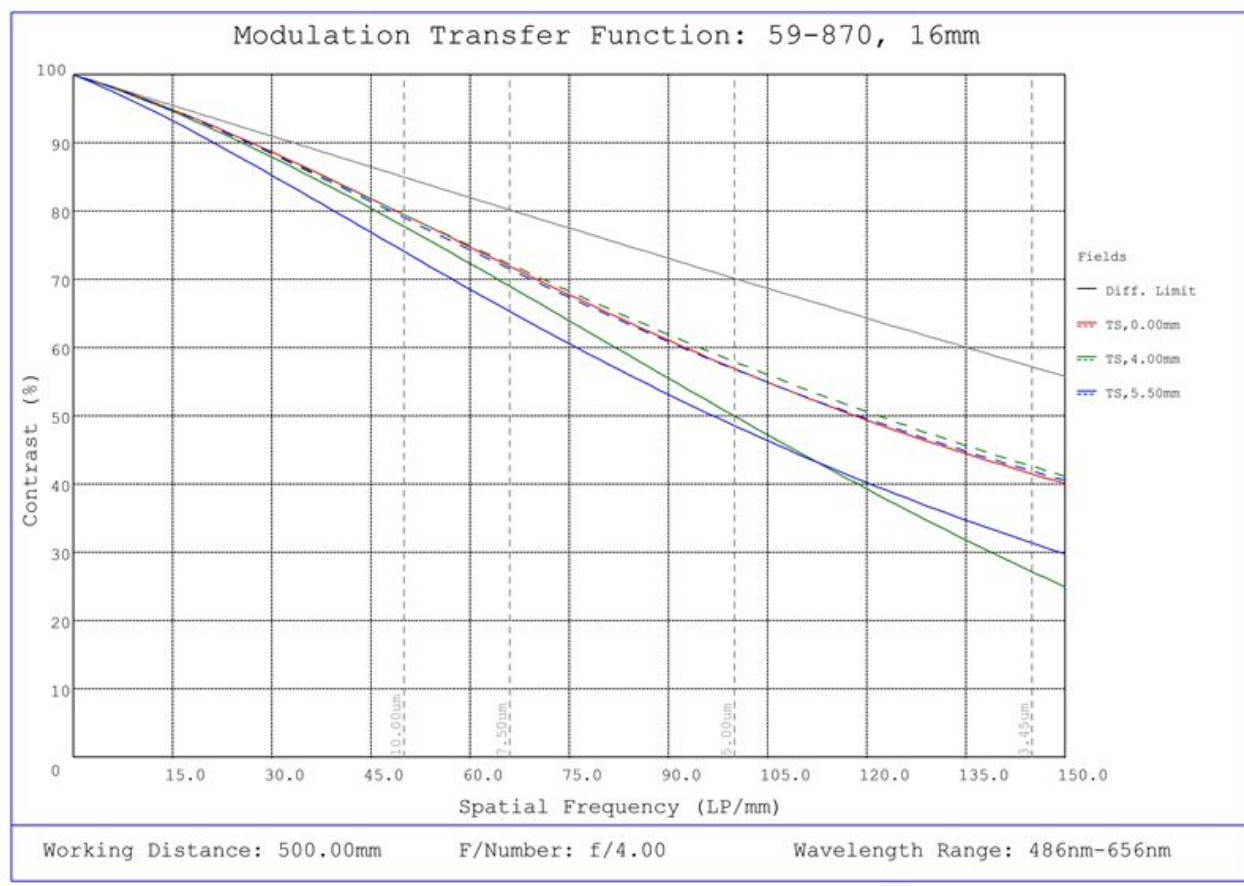
#59-870, 16mm C Series Fixed Focal Length Lens, Depth of Field Plot, 200mm Working Distance, f4



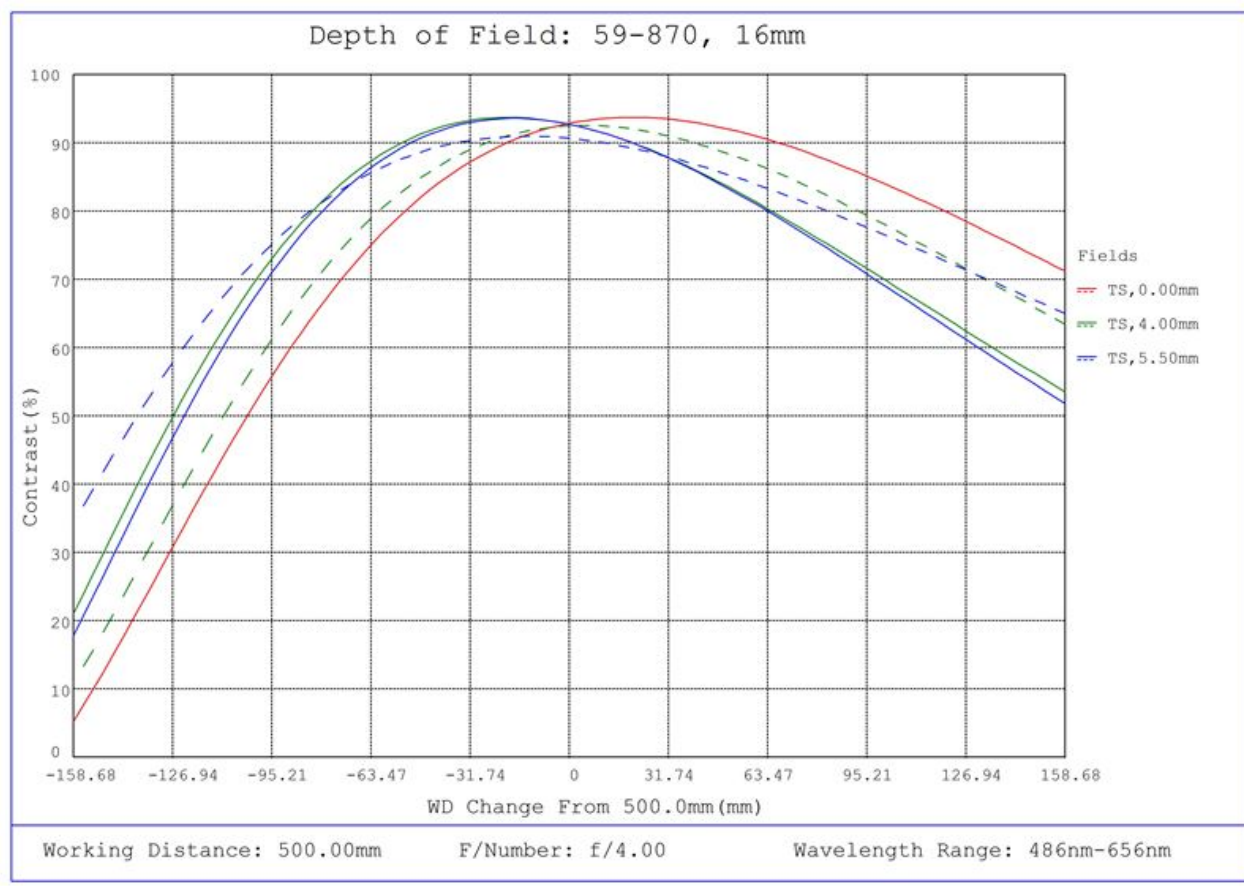
#59-870, 16mm C Series Fixed Focal Length Lens, Modulated Transfer Function (MTF) Plot, 500mm Working Distance, f2.8



#59-870, 16mm C Series Fixed Focal Length Lens, Depth of Field Plot, 500mm Working Distance, f2.8



#59-870, 16mm C Series Fixed Focal Length Lens, Modulated Transfer Function (MTF) Plot, 500mm Working Distance, f4



#59-870, 16mm C Series Fixed Focal Length Lens, Depth of Field Plot, 500mm Working Distance, f4



June 22, 2025

To Whom It May Concern,

This document certifies that the product stated below has been reviewed as requested by Edmund Optics:

| Stock No. | Description |
|-----------|---------------------------------------|
| 59-870 | 16mm C Series Fixed Focal Length Lens |

This item is EU RoHS (2015/863/EU) compliant without the use of exemptions.

This certification means that:

- EO's suppliers have confirmed the material composition of this product.
- EO has implemented rigorous procedures to document this compliance.
- The information provided may, or may not, be based upon actual test data, or on information from our Vendors, Raw Material Suppliers or Subcontractors.



Jay Budd, Director of Corporate Compliance

June 22, 2025

Edmund Optics Inc. - 101 E Gloucester Pike, Barrington, NJ 08007 | 1-800-363-1992 | Compliance@edmundoptics.com

June 22, 2025

| Stock No. | Description |
|-----------|---------------------------------------|
| 59-870 | 16mm C Series Fixed Focal Length Lens |

Edmund Optics certifies that all articles included in this shipment are in compliance with the terms and conditions of this order. The company also certifies that the articles included in this shipment are in accordance to all agreed upon specifications and quality assurance provisions. Please call 1-800-363-1992 should any questions arise from this shipment.



Jeff Harvey- EVP of Operations



June 22, 2025

To Whom It May Concern,

This document certifies that the product stated below has been reviewed as requested by Edmund Optics:

| Stock No. | Description |
|-----------|---------------------------------------|
| 59-870 | 16mm C Series Fixed Focal Length Lens |

This item does not contain any of the substances listed on the Reach SVHC list as of 23 January 2024 in quantities exceeding 0.1% weight by weight.

Please note the following:

- Entry 11 of Annex V of the REACH regulation EC 1907/2006 as amended by regulation 987/2008, exempts "non-hazardous" glass components from registration.
- Items considered to be packing materials and which do not form part of, or are not required for the operation of, the product, are not considered to be within scope of this declaration.
- EO does not routinely analyze products for substances not purposely added or specified within the design specifications, drawings and assembly procedures.

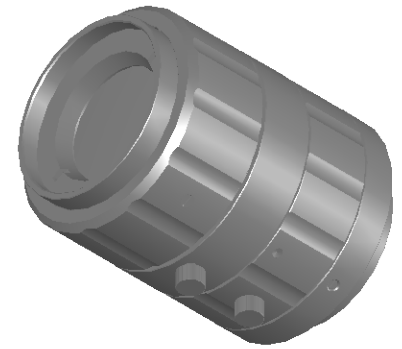
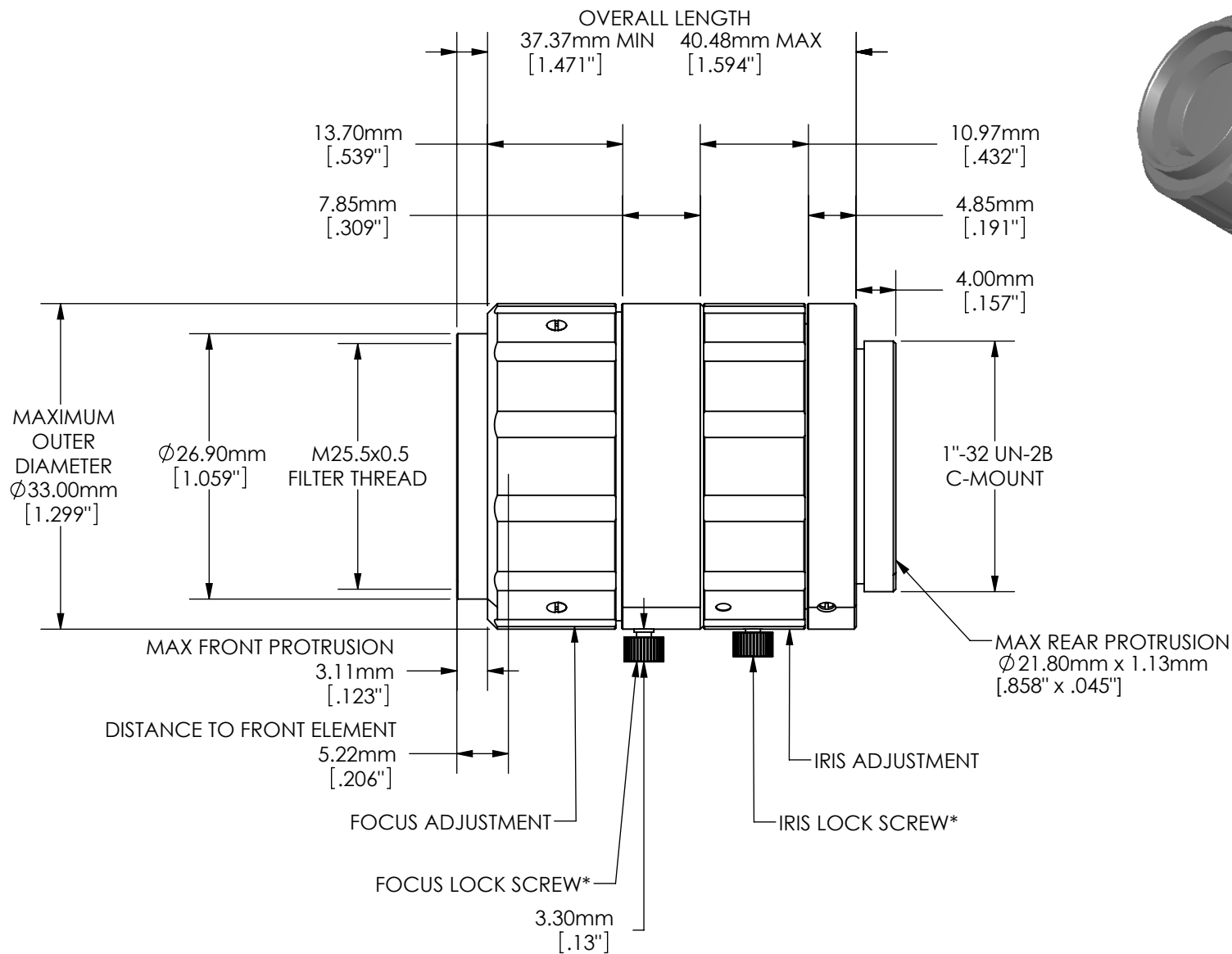
This certification means that:

- EO's suppliers have confirmed the material composition of this product.
- EO has implemented rigorous procedures to document this compliance.
- The information provided may, or may not, be based upon actual test data, or on information from our Vendors, Raw Material Suppliers or Subcontractors.



Jay Budd, Director of Corporate Compliance
June 22, 2025

Edmund Optics Inc. - 101 E Gloucester Pike, Barrington, NJ 08007 | 1-800-363-1992 | Compliance@edmundoptics.com



*ALSO INCLUDES RECESSED SET SCREW OPTION

**FOR INFORMATION ONLY:
DO NOT MANUFACTURE
PARTS TO THIS DRAWING**

SPECIFICATIONS SUBJECT TO CHANGE
WITHOUT NOTICE.
DIMENSIONS ARE FOR REFERENCE ONLY.
FOR DETAILED SPECIFICATIONS,
PLEASE REFER TO THE SPEC SHEET.



Edmund Optics

| | | | |
|--------|---------------------------------------|--|-----------------|
| TITLE | 16mm C Series Fixed Focal Length Lens | | |
| DWG NO | 59870 | | SHEET 1 OF 1 |

Enable 3D View