

**TECHSPEC® 12mm, f/16 Ci Series Fixed Focal Length Lens**



12mm Focal Length

Stock **#86-613** **20+ In Stock**

⊖ 1 ⊕ **\$200<sup>00</sup>**

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Volume Pricing	
Qty 1-24	<b>\$200.00</b> each
Qty 25+	<b>\$181.00</b> each
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Product Downloads

**General**

Ci Series **Product Family:**  
Fixed Focal Length Lens **Type:**

**Physical & Mechanical Properties**

Fixed **Iris Option:**  
**Length (mm):**

29.00

26.5 **Maximum Diameter (mm):**

26.5 **Outer Diameter (mm):**

31 **Weight (g):**

0.31 **Maximum Rear Protrusion (mm):**

26.50 **Diameter (mm):**

## Optical Properties

**Horizontal Field of View @ Max Sensor Format:**

80.9mm - 41.2°

**Field of View at Max Sensor Format:**

Horizontal: 81.3mm - 41.2°

Vertical: 60.5mm - 31.3°

Diagonal: 102.4mm - 50.5°

**Horizontal Field of View, 2/3" Sensor:**

80.9mm - 41.2°

**Horizontal Field of View, 1/1.8" Sensor:**

65.8mm - 34.0°

**Horizontal Field of View, 1/2" Sensor:**

58.3mm - 30.4°

**Horizontal Field of View, 1/2.5" Sensor:**

52.8mm - 27.6°

**Horizontal Field of View, 1/3" Sensor:**

43.5mm - 22.9°

**Horizontal Field of View, 1/4" Sensor:**

32.6mm - 17.2°

**Maximum Image Circle (mm):**

11.00

**Numerical Aperture NA, Object Side:**

0.0033

**Number of Elements (Groups):**

7 (7)

**Focal Length FL (mm):**

12.00

**Working Distance (mm):**

100 - ∞

**Aperture (f/#):**

f/16

**Coating:**

425 - 675nm BBAR

**Coating Specification:**

425 - 675nm BBAR

**Entrance Pupil Position (mm):**

11.01

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

17.32

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

1.98

**Maximum Distortion (%):**

-2.09

**Exit Pupil Position (mm):**

-11.38

**Lens Wavelength Range:**

VIS

## Sensor

**Maximum Sensor Format:**

2/3"

**Pixel Size (µm):**

2.74

## Threading & Mounting

**Filter Thread:**

M25.5 x 0.50 (Male)

**Filter Thread Adapter:**

[#89-941 \(Required\)](#)

**Front Thread:**

M22.0 x 0.75 (Male)

**Mount:**

C-Mount

## Environmental & Durability Factors

**Storage Temperature (°C):**  
-20 to +60

**Type of Ruggedization:**  
Industrial (Fixed Aperture with Simplified Mechanics)

## Regulatory Compliance

**RoHS 2015:**  
Compliant

**REACH 201:**  
Compliant

**Certificate of Conformance:**  
[View](#)

## Product Details

These compact lenses are designed specifically for volume integration into applications such as analytical medical devices, including benchtop-based blood analyzers. For customized  $f\#$  versions to best suit your instrumentation application needs and to discuss volume requirements, please [contact us](#).

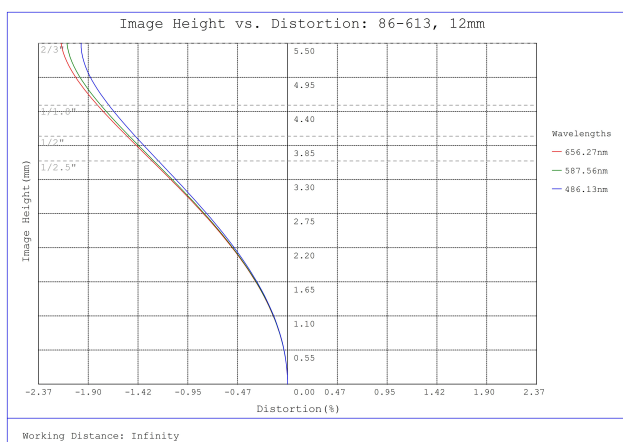
- Up to 2/3", C-Mount Lens
- Up to 7.5 MegaPixels, 2.8 $\mu$ m Pixel Size Sensors
- Instrumentation (Ci) Versions of our C Series Lenses with Streamlined Mechanical Designs and Fixed Apertures
- 3.5mm to 50mm Focal Length
- **Ruggedized (Cr) Designs** Also Available

TECHSPEC® Ci Series Fixed Focal Length Lenses are a streamlined version of our C Series Fixed Focal Length Lenses. They feature the same low lens-to-lens variation and broadband anti-reflection (BBAR) coating for maximum light transmission, while offering reduced weight and size. An adjustable, lockable focus allows for setting and locking the best focus position for instrumentation integration. TECHSPEC® Ci Series Fixed Focal Length Lenses are designed specifically for volume integration into applications such as factory inspection and automation to benchtop biomedical devices. The Ci Series offers a wide range of aperture options, ensuring maximum flexibility of resolution, throughput, and depth of field.

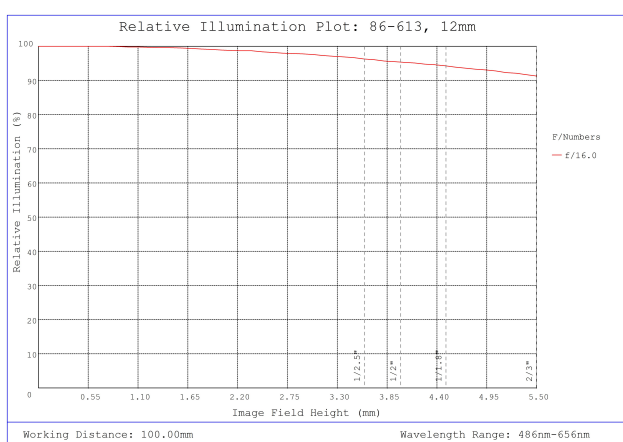
Edmund Optics has created a family of high performance optical designs (the C Series family) and developed 6 customized optomechanical solutions targeted for specific applications. These lens sub-families utilize the same optics as the C Series lenses providing the same optical performance in a variety of optomechanical solutions to meet your application requirements:

- **C Series:** Features locking cam focus and iris adjustment and is the most adjustable version of these optical designs; they are the typical high quality machine vision lenses. Also available with a [VIS-NIR Broadband Anti-Reflection \(BBAR\) Coating](#).
- **Ci Series:** Simplified mechanics featuring fixed apertures with compact housing. [Industrial Ruggedization](#) for reduced size, cost, and locked focus.
- **Cr Series:** All optics glued in place and a locking C-clamp focus ring. [Stabilized Ruggedization](#) for reduced pixel shift and improved focus stability.
- **Cx Series:** Modular, flexible mechanics allows lenses to be taken apart for easy integration of accessories such as liquid lenses, apertures, and more.
- **Liquid Lens Cx Series:** Designed with an integrated liquid lens for quick autofocus.
- **Cw Series:** Waterproof, designed to meet IEC [Ingress Protection](#) Code IPX7 and IPX9K.

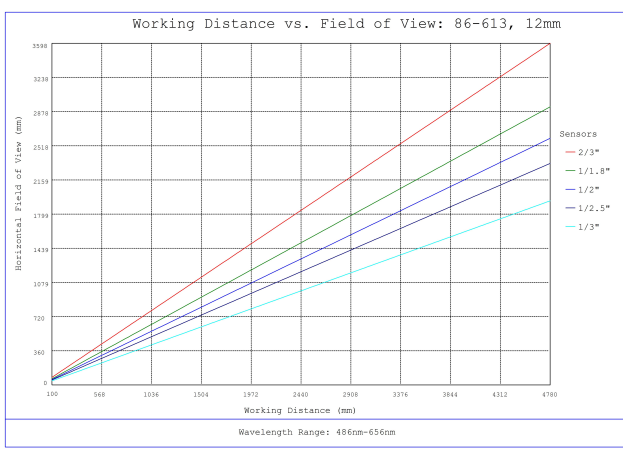
## Technical Information



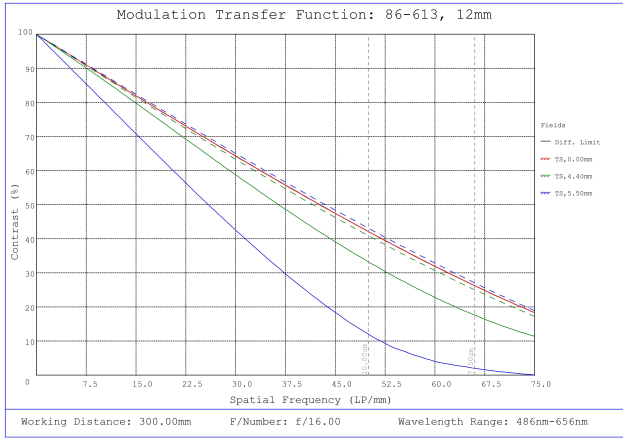
#86-613, 12mm,  $f/16$  Ci Series Fixed Focal Length Lens, Distortion Plot



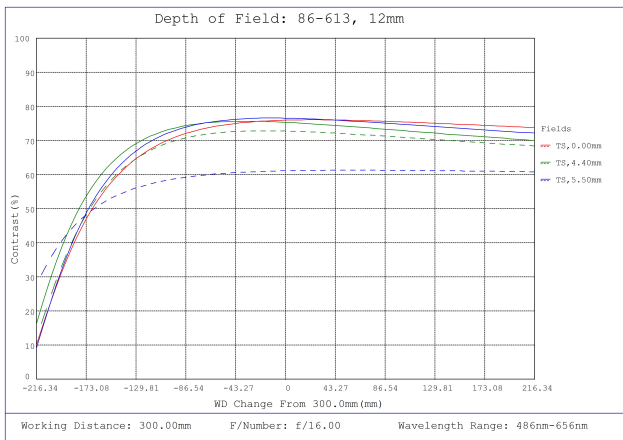
#86-613, 12mm,  $f/16$  Ci Series Fixed Focal Length Lens, Relative Illumination Plot



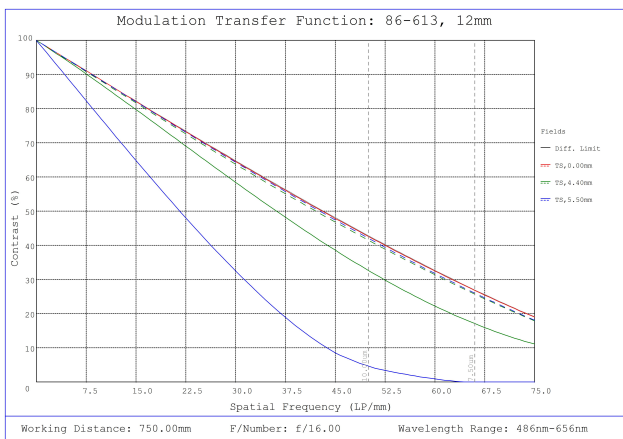
#86-613, 12mm, f/16 Ci Series Fixed Focal Length Lens, Working Distance versus Field of View Plot



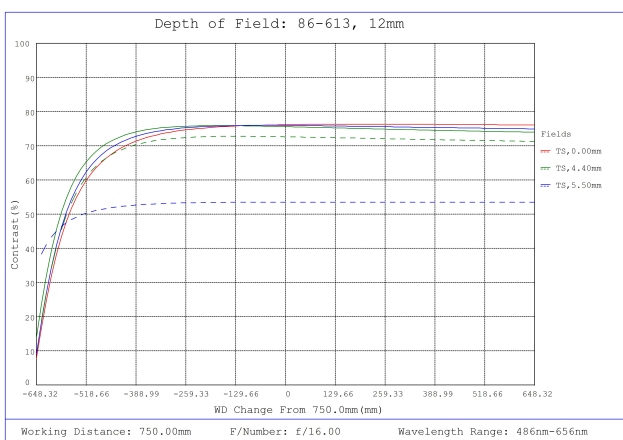
#86-613, 12mm, f/16 Ci Series Fixed Focal Length Lens, Modulated Transfer Function (MTF) Plot, 300mm Working Distance, f16



#86-613, 12mm, f/16 Ci Series Fixed Focal Length Lens, Depth of Field Plot, 300mm Working Distance, f16



#86-613, 12mm, f/16 Ci Series Fixed Focal Length Lens, Modulated Transfer Function (MTF) Plot, 750mm Working Distance, f16



#86-613, 12mm, f/16 Ci Series Fixed Focal Length Lens, Depth of Field Plot, 750mm Working Distance, f16

Focal Length	A	B	C	D
6mm	M34.0 x 0.5	47.8mm	34mm	1.17mm
12mm	M22.0 x 0.75	29.0mm	22mm	0.96mm
16mm	M22.0 x 0.75	40.8mm	22mm	1.09mm
25mm	M22.0 x 0.75	29.9mm	22mm	1.33mm
35mm	M25.5 x 0.5	41mm	22.5mm	3.82mm
50mm	M30.5 x 0.5	49.5mm	30.5mm	2.06mm



## Compatible Cameras