

# TECHSPEC® 4.5mm f/11 Sealed Cw Series Fixed Focal Length Lens



Stock #15-618 **2 In Stock**

1 £393<sup>00</sup>

**ADD TO CART**

4.5mm Focal Length



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Qty 1+	£393.00 each
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Prices shown are exclusive of VAT/local taxes

Product Downloads	
PDF Drawing:pdf	Zemax
eDrawing:eprt	Whitepapers
Whitepapers	EO Spec Sheet

## General

<b>Product Family:</b>	Cw Series	<b>Note:</b>	C-Mount compatible with O-ring 25mm ID x 2mm
<b>Type:</b>	Fixed Focal Length Lens		

## Physical & Mechanical Properties

<b>Iris Option:</b>	Fixed	<b>Length (mm):</b>	40.82
<b>Maximum Diameter (mm):</b>	54.00	<b>Outer Diameter (mm):</b>	54
<b>Maximum Rear Protrusion (mm):</b>	3.3		

## Optical Properties

<b>Field of View at Max Sensor Format:</b>	Horizontal: 84.7° Vertical: 66.1° Diagonal: 100.0°	<b>Horizontal Field of View, 1/1.8" Sensor:</b>	84.7°
<b>Horizontal Field of View, 1/2" Sensor:</b>	76.8°	<b>Horizontal Field of View, 1/2.5" Sensor:</b>	70.1°
<b>Horizontal Field of View, 1/3" Sensor:</b>	59.34°	<b>Maximum Image Circle (mm):</b>	9.00
<b>Numerical Aperture NA, Object Side:</b>	0.0050	<b>Number of Elements (Groups):</b>	9 (8)
<b>Focal Length FL (mm):</b>	4.50	<b>Working Distance (mm):</b>	75 - ∞

<b>Aperture (f/#):</b>	f/11	<b>Coating Specification:</b>	425 - 675nm BBAR
<b>Entrance Pupil Position (mm):</b>	27.308	<b>Object Space Principal Plane (mm):</b>	-31.12
<b>Image Space Principal Plane (mm):</b>	35.70	<b>Maximum Distortion (%):</b>	15.959
<b>Exit Pupil Position (mm):</b>	-9.272	<b>Lens Wavelength Range:</b>	VIS

## Sensor

<b>Maximum Sensor Format:</b>	1/1.8"	<b>Pixel Size (µm):</b>	2.74
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## Threading & Mounting

<b>Filter Thread:</b>	M49 x 0.75 (Female)	<b>Mount:</b>	C-Mount
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## Environmental & Durability Factors

<b>Environmental Rating:</b>	IPX7	<b>Type of Ruggedization:</b>	Waterproof (IPX7)
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## Regulatory Compliance

<b>Certificate of Conformance:</b>	<a href="#">View</a>
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## Product Details

- Up to 2/3", C-Mount Lens
- Waterproof (Cw) Versions of C Series Fixed Focal Length Lenses
- Meets IEC Ingress Protection Ratings of IPX7 and IPX9K
- Designed to Eliminate the Need for a Protective Lens Cover

TECHSPEC® Cw Series Fixed Focal Length Lenses are waterproof versions of our [TECHSPEC® C Series Fixed Focal Length Lenses](#). Designed to meet IEC Ingress Protection Codes IPX7 and IPX9K, these lenses withstand exposure to water up to 1 meter depth for 30 minutes and operate in close-range high pressure, high temperature water spray downs with the exception of all 3.5 and 4.5mm options which are IPX7. These lenses include a hydrophobic coated window to prevent water droplets from settling on the lens' surface. To prevent moisture from entering the housing, the lenses are sealed with multiple O-rings. TECHSPEC® Cw Series Fixed Focal Length Lenses are designed for up to 7.5 MegaPixel, 2/3" sensors and are ideal for applications including food, pharma, automotive, and security. These lenses won the Bronze-Level 2021 Vision Systems Design Innovators Award.

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

*#15-618, 4.5mm f/11 Sealed Cw Series Fixed Focal Length Lens, Distortion Plot*

*#15-618, 4.5mm f/11 Sealed Cw Series Fixed Focal Length Lens, Relative Illumination Plot*

*#15-618, 4.5mm f/11 Sealed Cw Series Fixed Focal Length Lens, Working Distance versus Field of View Plot*

*#15-618, 4.5mm f/11 Sealed Cw Series Fixed Focal Length Lens, Modulated Transfer Function (MTF) Plot, 200mm Working Distance, f11*

*#15-618, 4.5mm f/11 Sealed Cw Series Fixed Focal Length Lens, Depth of Field Plot, 200mm Working Distance, f11*

*#15-618, 4.5mm f/11 Sealed Cw Series Fixed Focal Length Lens, Modulated Transfer Function (MTF) Plot, 500mm Working Distance, f11*

*#15-618, 4.5mm f/11 Sealed Cw Series Fixed Focal Length Lens, Depth of Field Plot, 500mm Working Distance, f11*

## Accessories

**Note:** Compatible accessories for individual stock numbers may vary. If unsure about which accessories work with your products, please contact us [here](#).

	Title	Compare	Stock Number	Price	Buy
<a href="#">MORE+</a>	CW Series to LUCID Triton™ C-Mount Adapter with O-Ring		#23-669	£42.40 <a href="#">Request Quote</a>	20+ In Stock <input type="text" value="1"/>
<a href="#">MORE+</a>	5 pk. O-Ring for Cw Lenses		#22-790	£18.80 <a href="#">Request Quote</a>	5 In Stock <input type="text" value="1"/>
<a href="#">MORE+</a>	5.3 oz. Tube O-Ring Grease		#22-791	£46.80 <a href="#">Request Quote</a>	2 In Stock <input type="text" value="1"/>

## Related Products



C Series Fixed Focal Length Lenses



HEO Series M12 Lenses



HRr Series Fixed Focal Length Lenses



Ci Series Fixed Focal Length Lenses

## Frequently Purchased Together



#59-448 - M49 x 0.75 Male to M52 x 0.75 Female Step-Up Adapter  
£27.40



#66-104 - SCHOTT RG-780, 50mm Dia., 3mm Thick, Colored Glass Longpass Filter  
£84.00



#83-340 - 2" Diameter Threaded Filter Holder for Imaging Lenses  
£62.80



#15-625 - 8.5mm, f/1.3 Cw Series Fixed Focal Length Lens  
£255.00

## Resources

### Media Type

- Application Note
- Video

#### APPLICATION NOTE

Anti-Reflection (AR) Coatings

#### APPLICATION NOTE

An Introduction to Optical Coatings

#### VIDEO

Wavelength and f#

- Trending in Optics
- Published Article
- FAQ
- Glossary
- Technical Tool



**APPLICATION NOTE**

**Understanding Focal Length and Field of View**

**APPLICATION NOTE**

**Introduction to Modulation Transfer Function**

**VIDEO**

**LIGHT TALK - EPISODE 5: Ruggedized Imaging...**

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