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TECHSPEC® 12mm, f/1.8 UCr Series Fixed Focal Length Lens

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General

Product Family:
UCr Series

Imaging Lens Type:
Ruggedized High Performance Lens with Compact Form Factor

Physical & Mechanical Properties

Iris Option:
Fixed

Length (mm):
38.00

Maximum Diameter (mm):
22.00

Outer Diameter (mm):
22.00

Maximum Length (mm):
38.00

Optical Properties

Horizontal Field of View @ Max Sensor Format:
34.0°

Field of View at Max Sensor Format:
Horizontal: 34° Vertical: 25.6° Diagonal: 42.2°

Horizontal Field of View, 1/1.8" Sensor:
34.0°

Horizontal Field of View, 1/2" Sensor:
30.3°

Horizontal Field of View, 1/2.5" Sensor:
27.5°

Horizontal Field of View, 1/3" Sensor:
22.8°

Horizontal Field of View, 1/4" Sensor:
17.1°

Maximum Image Circle (mm):
9.00

Numerical Aperture NA, Object Side:
0.0284

Number of Elements (Groups):
7 (6)

Wavelength Range (nm):
380 - 700

Focal Length FL (mm):
12.00

Working Distance (mm):
100 - ∞

Aperture (f/#):
f/1.8

Coating:
λ/4 MgF_2

Coating Specification:
λ/4 MgF_2

Entrance Pupil Position (mm):
16.05

Object Space Principal Plane (mm):
23.04

Image Space Principal Plane (mm):
-1.82

Maximum Distortion (%):
-3.03

Exit Pupil Position (mm):
-18.56

Lens Wavelength Range:
VIS

Wavelength:
VIS

Sensor

Optimized Sensor Format:
1/2.5"

Maximum Sensor Format:
1/1.8"

Pixel Size (µm):
1.85

Threading & Mounting

Filter Thread:
M22 x 0.75 (Female)

Front Thread:
M22 x 0.75 (Female)

Mount:
S-Mount (M12 x 0.5)

Environmental & Durability Factors

Storage Temperature (°C):

	-20 to +60 For questions regarding operating temperature please contact our support team
Type of Ruggedization:	Stabilized (Robust Mechanics for Shock and Vibration)

Regulatory Compliance

Certificate of Conformance:	View

Product Details

- **Ruggedized Designs** of our **UC Series Lens**
- 1/1.8", S-Mount Lens with 50g Shock Resistance
- Up to 12 MegaPixels, 1.85µm Pixel Size Sensors

TECHSPEC® UCr Series Fixed Focal Length Lenses utilize the same optics as the **TECHSPEC® UC Series Lenses** while providing stabilized ruggedization to protect the lens from damage while maintaining optical pointing and positioning after shock and vibration. All individual lens elements are glued in place to reduce pixel shift on the sensor, ensuring the object-to-image mapping is maintained after heavy shock and vibration. These lenses provide high performance at an affordable cost in a compact form without sacrificing quality or feel. TECHSPEC® UCr Series Fixed Focal Length Lenses are designed for pixels that are ≤1.85µm, these lenses provide high levels of resolution (>200 lp/mm) across the sensor and are compatible with all standard S-Mount cameras.

Edmund Optics has created a family of high-performance ultra-compact optical designs (the UC Series family) and developed 3 customized optomechanical solutions targeted for specific applications. These lens sub-families utilize the same optics as the UC Series lenses providing the same optical performance in a variety of optomechanical solutions to meet your application requirements:

UC Series: Features locking cam focus and iris adjustment in an ultra-compact design and is the most adjustable version of these optical designs; they are the typical high-quality machine vision lenses.

UCi Series: Simplified mechanics featuring fixed apertures with compact housing. **Industrial Ruggedization** for reduced size, cost, and locked focus.

UCr Series: All optics glued in place and a locking C-clamp focus ring. **Stabilized Ruggedization** for reduced pixel shift and improved focus stability.

UCw Series: Waterproof, designed to meet IEC **Ingress Protection** Code IPX7 to withstand exposure to water up to 1 meter depth for 30 minutes.

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