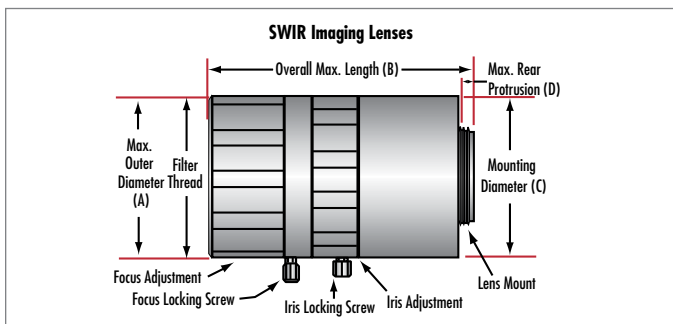


TECHSPEC® SWIR IMAGING LENSES



- Designed, Coated, and Tested for SWIR Wavelengths
- Compact, Lightweight, COTS Imaging Lenses
- Low f/# for High Throughput

Designed for the short-wave infrared (SWIR) wavelengths, 0.9 - 1.7µm, TECHSPEC® SWIR Fixed Focal Length Imaging Lenses are a compact, lightweight solution for SWIR imaging applications, including inspection, sorting, and quality control. TECHSPEC® SWIR Fixed Focal Length Imaging Lenses are anti-reflection (AR) coated from 800nm - 1.8µm and are designed to cover large, 25mm sensors. These commercial off-the-shelf lenses (COTS) have low f/#s for high throughput and improved performance.



M42 x 1.0 Mounting Adapter for 25mm Lens #83-151

| TECHSPEC® SWIR FIXED FOCAL LENGTH IMAGING LENSES | | | | | | | | *Horizontal |
|--|----------------------|--------------------------|-----------------------|------------------|----------------|--------|-----------|--------------|
| Focal Length | Max. Sensor Diagonal | FOV Range on Max. Sensor | FOV* on 20.5mm Sensor | Working Distance | Aperture (f/#) | Weight | Mount | Stock Number |
| 25mm | 25.6mm | 206.8 - 55.8° | 128.2 - 35.5° | 200mm - ∞ | f2.1 - f16 | 180g | C-Mount | #83-160 |
| 50mm | 25.6mm | 140.7mm - 29° | 112.3mm - 23.3° | 275mm - ∞ | f2.25 - f22 | 566g | C-Mount | #83-165 |
| 50mm | 25.6mm | 140.7mm - 29° | 112.3mm - 23.3° | 275mm - ∞ | f2.25 - f22 | 482g | F-Mount | #83-166 |
| 50mm | 25.6mm | 140.7mm - 29° | 112.3mm - 23.3° | 275mm - ∞ | f2.25 - f22 | 574g | M42 x 1.0 | #83-167 |

| DIMENSIONS (mm) | | | | | | |
|-----------------|----|------|----|------|---------------|--|
| Focal Length | A | B | C | D | Filter Thread | |
| 25mm, C-Mount | 40 | 63.5 | 40 | 7.62 | M34 x 0.50 | |
| 50mm, C-Mount | 56 | 112 | 55 | 0 | M43 x 0.75 | |
| 50mm, F-Mount | 56 | 103 | 55 | 28 | M43 x 0.75 | |
| 50mm, M42 x 1.0 | 56 | 124 | 55 | 0 | M43 x 0.75 | |

WANT TO LEARN MORE? VISIT WWW.EDMUNDOPTICS.COM/SWIR



Contact us for a Volume Quote Today!

www.edmundoptics.com/swir

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SWIR IMAGING APPLICATIONS

WHAT IS SWIR?

Short-Wave Infrared (SWIR) light is typically defined as light in the 0.9 – 1.7 μ m wavelength range, but can also be classified from 0.7 – 2.5 μ m. Since silicon sensors have an upper limit of approximately 1.0 μ m, SWIR imaging requires unique components capable of performing in the SWIR range. Indium Gallium Arsenide (InGaAs) sensors are the primary sensors used in SWIR, covering the typical SWIR band, but can extend as low as 550nm to as high as 2.5 μ m. Although linear line-scan InGaAs sensors are commercially available, area scan InGaAs sensors are typicallyITAR restricted, but are available for a number of commercial applications with proper licenses. SWIR imaging lenses are specially designed, optimized, and anti-reflection coated for SWIR wavelengths.

WHY USE SWIR?

Unlike Mid-Wave Infrared (MWIR) and Long-Wave Infrared (LWIR) light, which is emitted from the object itself, SWIR is similar to visible light in that photons are reflected or absorbed by an object, providing the strong contrast needed for higher resolution imaging. Ambient star light and background radiance (nightglow) are natural emitters of SWIR and provide excellent illumination for outdoor, nighttime imaging.

SWIR APPLICATIONS

- **Electronic Board Inspection**
- **Solar Cell Inspection**
- **Identifying and Sorting**
- **Produce Inspection**
- **Surveillance**
- **Anti-Counterfeiting**
- **Process Quality Control**



The Last Judgment by Jan Provost and imaged in the SWIR waveband by the Detroit Institute of Arts, details the artist's original intention by carefully examining the underdrawing which lies beneath the paint film. One can see 10 trumpets underneath the archangel versus the 5 trumpets that were actually painted. The placement of the painted trumpets appears to have necessitated a reposition of the sailing vessel. The toes on top of the globe were also not painted in the same location as the original underdrawing.



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