

# SWIR Hyperspectral Lenses

Navitar's 1" fixed focal length SWIR Hyperspectral lenses are specifically designed for SWIR (short wave infrared) cameras and applications.

SWIR imaging applications require the optical system to efficiently transmit light in visible, near infrared and short wave infrared wavelengths. In order to accomplish this task the lens design and coatings must be capable of maintaining a high level of transmission throughout a broad wavelength range. Navitar's C-mount SWIR lenses are capable of offering high resolution images in conditions ranging from bright daylight, fog/haze, twilight and dusk.

### Features

- Available in 8mm, 12mm, 16mm, 25mm, 35mm, and 50mm focal lengths
- Coated for optimized imaging in the SWIR wavelength
- Constructed for rugged environments
- Designed to cover 1" (16 mm diagonal) sensors
- Offer high resolution images and transmission in the 700nm - 1900nm wavelength of 75% or better
- Provide superior image quality and maximum transmission

### Applications

- Perimeter Surveillance
- Food Sorting
- Tollway Monitoring
- Border & Port Security
- Quality Control
- Aerial Imaging



## 1" Format Fixed Focal Length SWIR Hyperspectral Lenses

(Manual iris and focus control with locking screws are standard with all lens models.)

| Part #  | Focal Length (mm) | F-Stop/Iris Range | Object Area (mm) at MOD 1" | Object Area (mm) at MOD 2/3" | Object Area (mm) at MOD 1/2" | Filter Diameter |
|---------|-------------------|-------------------|----------------------------|------------------------------|------------------------------|-----------------|
| SWIR-8  | 8                 | 1.4 - 16          | 167h x 123v                | 112h x 82v                   | 80h x 59v                    | M55 P=0.75      |
| SWIR-12 | 12.5              | 1.4 - 16          | 316h x 233v                | 213h x 158v                  | 165h x 123v                  | M35 P=0.5       |
| SWIR-16 | 16                | 1.4 - 16          | 244h x 181v                | 165h x 123v                  | 119h x 89v                   | M35.5 P=0.5     |
| SWIR-25 | 25                | 1.4 - 16          | 161h x 120v                | 109h x 82v                   | 79h x 59v                    | M35.5 P=0.5     |
| SWIR-35 | 35                | 1.4 - 16          | 110h x 82v                 | 75h x 56v                    | 54h x 41v                    | M35.5 P=0.5     |
| SWIR-50 | 50                | 1.4 - 16          | 122h x 91v                 | 84h x 63v                    | 61h x 46v                    | M40.5 P=0.5     |

## OptiStar® SWIR Lenses

Navitar OptiStar® Lenses are designed specifically to meet the latest advancements in SWIR technology. Their rugged design offers superior image quality, better transmission and performance from the visible spectrum into the shortwave infrared region.

OptiStar lenses function in the wavelengths of 500nm - 1700nm, with 90% +/- 5% transmission across the range. The lenses are available with manual or auto iris. Navitar's OptiStar lenses are capable of offering high resolution images in conditions ranging from bright daylight, fog/haze, twilight and dusk.

Our OptiStar lenses were designed through a collaborative effort between Navitar and SWIR camera makers. This allowed us to create a multifaceted lens line that can be incorporated into an array of cameras, suitable for a vast number of SWIR applications.

### Features

- Lower f/# and enhanced design for better performance in dark environments.
- Higher transmission over a larger wavelength range (500nm - 1700nm).
- Higher resolution in low light applications.

### Applications

- Perimeter Surveillance
- Food Sorting
- Tollway Monitoring
- Border & Port Security
- Quality Control
- Aerial Imaging



## OptiStar® SWIR Lenses

| Part #  | Focal Length (mm) | F-Stop/Iris Range | Object Area (mm) at MOD 1/2" | Object Area (mm) at MOD 1/3" | Focusing Range (m) | Focus Control | Iris Control |
|---------|-------------------|-------------------|------------------------------|------------------------------|--------------------|---------------|--------------|
| 1-19179 | 50                | 1.1 - 8           | 102h x 78v                   | 77h x 77v                    | 1 - inf.           | Manual        | Manual       |
| 1-19180 | 50                | 1.1 - 8           | 102h x 78v                   | 77h x 77v                    | 1 - inf.           | Manual        | Auto         |
| 1-18882 | 25                | 1.4 - 11          | 194h x 135v                  | 146h x 101v                  | 1 - inf.           | Manual        | Manual       |