Lenses for Mid-Wave Infrared (MWIR) Cameras for 3 - 5 µm

MWIR Zoom Lens Assemblies

Teledyne FLIR custom and off-the-shelf mid-wave infrared (MWIR) continuous zoom (CZ) optical assemblies and lenses are for integrators and operators who do not compromise on quality. All lens assemblies have near diffraction limited performance and include advanced features that ensure continuous focus through the zoom. Formerly New England Optical Systems (NEOS) and now part of Teledyne FLIR, the world-class technical services team provides product support and can also develop new or customize existing lens assemblies for a camera, application, and mission. Designed to maximize infrared-camera performance, the MWIR CZ lens assemblies provide the competitive advantages required in the field and marketspace for a wide range of defense, security, and commercial applications.

UNCOMPROMISED PERFORMANCE AND RELIABILITY

Designs have near diffraction limited performance through zoom enabling users to Detect, Recognize, and Identify (DRI) threats in real time.

- Optimized for smaller pixel, larger-format focal plane arrays (FPA)
- Elimination of expanders minimizes lens count, maximizes transmission, reduces size & weight, and improves MTF
- Proprietary alignment method improves performance, boresight retention, and reliability through zoom

SMART OPTICS ENSURE CONTINUOUS FOCUS

Control electronics and additional features go beyond simple focus and zoom to provide focus when and where you need it.

- Compensate for range and thermal gradient
- Includes built-in-test (BIT), data logging module, ID module and other features
- High speed communication at 1 kHz

CUSTOM DESIGNS AND SUPPORT FOR THE MISSION

Teledyne FLIR technical services team can develop new or customize existing zoom lens assemblies for a camera, application, and mission.

- Provide the ideal interface to your camera to match cold shield height
- Accommodate operational environment or custom enclosure
- Collaborate and support to make the mission a success

APPLICATIONS

DEFENSE

- AIRBORNE & GROUND ISR
- REMOTE WEAPON STATION
- TARGETING
- COUNTER-UAS

SECURITY

- BORDER SURVEILLANCE
- PERIMETER SECURITY
- NAVIGATION
- SEARCH & RESCUE
- UAV SYSTEMS

COMMERCIAL

- OEM CAMERA LENSES
- THERMOGRAPHY

For more information visit:
www.flir.com/optics

TELEDYNE FLIR

SPECIFICATIONS

Optical	MWIR CZ 15-300	MWIR CZ 25-250	MWIR CZ 30-600	MWIR CZ 20-420
Waveband	3.6 - 4.9 µm	3.6 - 4.2 µm	3.6 - 4.2 µm	3.0 - 5.0 µm
Focal Length Range	15 - 300 mm	25 - 250 mm	30 - 600 mm	20 - 420 mm
f#	4.0	5.5	5.5	5.5
Transmission (spectrally weighted)	> 72%	> 80%	> 79%	> 78%
Distortion	< 5% at NFOV, < 8% at WFOV	< 2% at maximum field height across all zoom positions	< 3% at maximum field height across all zoom positions	< 5% at maximum field height across all zoom positions
Cold Shield Height	19.4 mm	19.7 mm	19.7 mm	19.7 mm
Focal Plane Dimension	12.80 x 10.24 mm (16.4 mm circular)	9.60 x 7.68 mm (12.30 mm circular)	9.60 x 7.68 mm (12.30 mm circular)	9.60 x 7.68 mm (12.30 mm circular)
Minimum Object Distance	5 m(WFOV)/50 m (NFOV)	1 m (WFOV)/25 m (NFOV)	1 m (WFOV)/125 m (NFOV)	1 m (WFOV)/50 m (NFOV)
Mechanical				
Focus/Zoom Mechanism	Motorized adjustable	Motorized adjustable	Motorized adjustable	Motorized adjustable
Focus Time	< 1 sec (infinity to close focus in NFOV)	< 1 sec (infinity to close focus in NFOV)	< 1 sec (infinity to close focus in NFOV)	< 1 sec (infinity to close focus in NFOV)
Zoom Time (end to end)	NFOV to WFOV ≤ 2 sec	NFOV to WFOV ≤ 2 sec	NFOV to WFOV ≤ 2 sec	NFOV to WFOV ≤ 2 sec
Through Zoom Boresight	≤ 0.10 mm	≤ 0.05 mm	≤ 0.10 mm	≤ 0.10 mm
NFOV Boresight Retention	< 0.05	N/A	N/A	N/A
Weight	< 919 grams	< 355 grams without main controller board	< 1600 grams	< 715 grams
Dimensions	106 x 115 mm	117 x 94 x 69 mm	167 x 163 x 132 mm	127.5 x 88 mm
Environment				
Control Features	Thermal Gradient Compensation Object Range Compensation ID Module Built-In Test (BIT) Data Logging Module (optional) High Speed Communication - SPI (optional) User Defined Command Aliases Easily Upgradable and Expandable			
Drive Voltage	12 VDC			
Current Consumption	Standby < 0.2 A (20°C) Power UP < 0.7 A (20°C) Typical Move < 0.4 A (20°C)			
Communication Protocol	RS422, 115200 baud (default) Option: RS232 and programmable baud rate			
Environmental				
Operating Temperature	-32°C to +80°C			
Storage Temperature	-54°C to +85°C			
Shock	10 G			
Vibration	Random vibration, from 10 Hz to 500 Hz			
Front Optic Sealing	IP67			

Specifications are subject to change without notice.
For the most up-to-date specs, go to www.teledyneflir.com

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21-0819_MWIR Zoom Lens Assemblies-Datasheet 04/23/24