

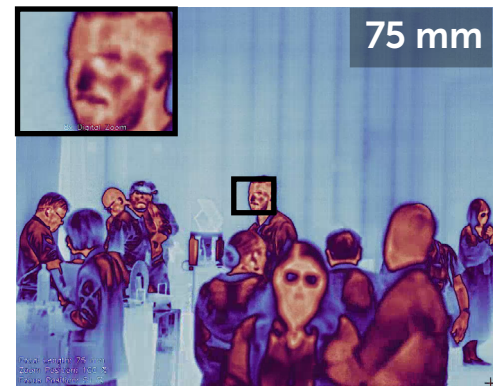
High Performance, Uncooled, LWIR OEM Thermal Camera Module

BOSON®+ CZ 14-75



The ITAR-free Boson+ CZ 14-75 combines Teledyne FLIR's Boson+ world-class longwave infrared (LWIR) OEM camera module and 5x continuous zoom (CZ) lens offering a high-performance imaging solution. It features an industry-leading thermal sensitivity of ≤ 20 mK and an upgraded automatic gain control (AGC) filter delivering dramatically enhanced scene contrast and sharpness. The high-performance lens and control electronics maintain focus through zoom and provide real-time thermal gradient compensation as well as flexibility for user-defined command syntax and expansion for additional features.

The Boson+ camera module and 14 mm to 75 mm CZ lens are designed for each other, providing optimal performance and a single system warranty only achievable from a single source. The factory-integrated system lowers development and manufacturing risk and improves time-to-market, making the reliable Boson+ CZ 14-75 ideal for unmanned aerial vehicles, perimeter surveillance, light armored vehicle situational awareness and targeting, and soldier sighting systems.



MARKET-LEADING THERMAL SENSITIVITY, CONTRAST, AND LATENCY

NEDT of ≤ 20 mK extends detection, recognition, and identification (DRI) performance

- 640x512 resolution, 12 μ m pixel pitch LWIR microbolometer
- ≤ 20 mK thermal sensitivity
- Rugged construction with an operating temperature rating of -40 °C to 80 °C
- Upgraded AGC provides blacker blacks and whiter whites

SEAMLESS OPTO-MECHANICAL INTEGRATION

Camera and lens factory-designed to optimize performance and cost

- Factory alignment eliminates boresight wander through zoom
- Calibrated for maximum performance and MTF
- Object focus range compensation for near targets
- Thermal gradient compensation provides focus through full temperature range

DESIGNED FOR INTEGRATORS

Advanced control electronics, hardware, and integration support simplify integration and maximize reliability

- USB, CMOS, and MIPI video output interfaces
- Flexible user-defined command aliases
- Built-in Test (BIT) provides real-time feedback
- Classified under US Department of Commerce jurisdiction as EAR 6A003.b.4.b

For more information visit:
oem.flir.com/boson

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SPECIFICATIONS

THERMAL IMAGER	
Resolution	640 x 512
Pixel Pitch	12 µm
Spectral Band	Longwave infrared; 8 µm – 14 µm
Thermal Sensitivity	≤20 mK
Frame Rate	60 Hz baseline; 30 Hz runtime selectable
Non-uniformity Correction (NUC)	Factory calibrated; updated FFCs with FLIR Silent Shutterless NUC (SSN™)
Solar Protection	Yes, lens only
Optical Continuous Zoom	5x
Digital Zoom	8x
Symbol Overlay	Re-writable each frame; alpha blending for translucent overlay

IMAGING & OPTICAL	
f-number	1.2
Focal Length	NFOV = 75mm +4% / -0% WFOV = 14mm +0% / -4%
Spectrally Weighted Lens Transmittance	HEAR L1: ≥ 84% for band 8-12 µm DLC L1: ≥ 78% for band 8-12 µm
NFOV/WFOV Co-boresight location	<0.15 mm
Boresight Drift Through Zoom	<0.10 mm
Boresight Repeatability	≤ 0.025 mm
Parfocality	At 20 °C the lens shall stay in focus through zoom within 1/4-wave at 10.6µm
Minimum Focus Distance	NFOV > 18 m WFOV > 3 m
Distortion	WFOV <6%; NFOV < 1%
Relative Illumination	RI falloff < 10%; Flux change through zoom <4%
Time to Zoom	<1.5 sec
Time to Focus	<0.5 sec

PHYSICAL ATTRIBUTES	
Size	101 (l) x 77 (w) x 77 (h) mm (3.97 x 3.03 x 3.03 in)
Weight	390 g (13.75 oz)

INTERFACING	
Power Supply	Nominal voltage 12V +/- 1V
Serial Communication	The following serial communications shall be set: RS232, 38400 baud, 1 stop bit, 8 data bits, no parity
Peripheral Channels	I2C, SPI, SDIO
Sensor Video Channels	CMOS, MIPI or USB3
Camera Control Channels	UART, USB or I2C

Specifications are subject to change without notice.
For the most up-to-date specs, go to oem.flir.com/boson

ENVIRONMENTAL	
Operational Temperature Range	-40 °C to 80 °C (-40 °F to 176 °F)
Non Operating Temperature Range	-40 °C to 80 °C (-40 °F to 176 °F)
Focus Over Temperature	Maintain focus from -35 °C to 70 °C (-31 °F to 158 °F)
IP Rating [at front of lens]	IP67
Protection and Anti-Reflection Coatings	Lens elements shall be coated with anti-reflection coatings subject to adhesion, moderate abrasion, and humidity per durability requirements of MIL-PRF-13830
DLC Option	With DLC front coating, lens to withstand humidity, severe abrasion, and salt fog exposure
ESS Thermal	Lens assembly to be subjected to -35 °C to +70 °C temperature extremes with a maximum of 5 °C/min ramp rate and a minimum dwell of 60 min at each temperature extreme
ESS Vibration	Random vibration, from 10 Hz to 500 Hz with the following vibration profile along the optical axis for a minimum of 10 minutes: at 10 Hz, 0.01 G2/Hz at 50 Hz, 0.01 G2/Hz at 80 Hz, 0.04 G2/Hz at 350 Hz, 0.04 G2/Hz at 500 Hz, 0.01 G2/Hz
Shock	9G with 11msec half-sine pulse, minimum 3 pulses for each of 3 axes
Design and Construction	Lens assembly to meet MIL-STD-1472 and MIL-HDBK-1686
Operational Altitude	12 km (max altitude of a commercial airliner or airborne platform)

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