High Performance, Uncooled, LWIR OEM Thermal Camera Module

BOSON®+

NDAA compliant and ITAR free, the Boson+ sets the standard for longwave infrared (LWIR) OEM thermal camera performance and size, weight, and power (SWaP). It features an industry-leading thermal sensitivity of less than or equal to (≤)20 mK. The upgraded automatic gain control (AGC) filter and new DDE+ deliver dramatically enhanced scene contrast and sharpness. Lower video latency enhances tracking, seeker performance, and decision support.

Boson+ is a plug-and-play upgrade widely-deployed Boson and include optional factory-integrated continuous zoom lenses to streamline development and maximize performance. With customer-selectable USB, CMOS, or MIPI video interfaces, it is easier than ever to integrate Boson+ into a wide range of embedded processors from Qualcomm, Ambarella, and more. The user-friendly SDK, updated GUI, and comprehensive product documentation further simplify OEM integration for unmanned ground vehicles (UGV), unmanned aircraft systems (UAS), wearables, security applications, handhelds, and thermal sights.

MARKET-LEADING THERMAL SENSITIVITY, CONTRAST, AND LATENCY

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

- ≤20 mK thermal sensitivity
- DDE+ provides improved spatial filtering and sharpening
- Low latency for faster decision support
- Upgraded AGC provides blacker blacks and whiter whites

OPTIMIZED SIZE, WEIGHT, AND POWER (SWaP)

Full-featured LWIR thermal camera module just 7.5 grams and less than 4.9 cm^3

- Low power consumption, starting at 500 mW
- Compact, 640x512 or 320x256 resolution, 12 µm pixel pitch LWIR microbolometer
- Rugged construction and operating temperature rating of -40 °C to 80 °C
- Factory-integrated 5x continuous zoom lens available

PLUG-AND-PLAY UPGRADE

Shared mechanical, electrical, and video interface across all Boson models

- Flexible USB, CMOS, and MIPI video output interfaces
- Comprehensive product documentation and easy-to-use GUI
- Highly-qualified Technical Services team
- NDAA compliant and classified under US Department of Commerce jurisdiction as EAR 6A003.b.4.a

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

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SPECIFICATIONS

THERMAL IMAGER		
Resolution	640 x 512 or 320 x 256	
Pixel Pitch	12 µm	
Spectral Band	Longwave infrared; 8 µm – 14 µm	
Sensitivity [NEdT]	Industrial: ≤20 mK Professional: ≤30 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	
Digital Zoom	1x to 8x zoom	
Symbol Overlay	Re-writable each frame; alpha blending for translucent overlay	
RADIOMETRY		
Temperature Measurement	Available on select models in the first quarter of 2025.	
Scene Dynamic Range	**320 x 256**	**640 x 512**
	to 150 °C (high gain) to 350 °C (low gain)	to 140 °C (high gain)
Temperature Accuracy	±5 °C accuracy or less, depending upon operating conditions	
LENS OPTIONS		
Resolution	**320 x 256**	**640 x 512**
Horizontal Field of View (HFOV); Effective Focal Length	92°; 2.3 mm	95°; 4.9 mm
	50°; 4.5 mm	50°; 9.2 mm
	50°; 4.3 mm	32°; 14 mm
	34°; 6.3 mm	32°; 13.6 mm
	24°; 9.1 mm	24°; 18 mm
	16°; 13.8 mm	18°; 24 mm
	12°; 18 mm	12°; 36 mm
	6°; 36 mm	8°; 55 mm
	4°; 55 mm	6°; 73 mm
	Available without lens	
PHYSICAL ATTRIBUTES		
Size	21 x 21 x 11 mm (0.83 x 0.83 x 0.43 in) without lens	
Weight	7.5 g (0.26 oz) without lens	
Precision Mounting Holes	Four tapped M16x0.35 (rear cover)	
INTERFACING		
Input Voltage	3.3 VDC	
Power Consumption	Varies by configuration. 320+ as low as 500 mW 640+ as low as 1000 mW	
Video Channels	CMOS, MIPI or USB3	
Control Channels	UART, USB or I2C	
Configurable GPIO	Up to 11; user configurable	
ENVIRONMENTAL		
Operating Temperature Range	-40 °C to 80 °C (-40 °F to 176 °F)	
Non-Operating Temperature Range	-50 °C to 85 °C (-58 °F to 185 °F)	
Shock	1,500 g @ 0.4 msec	
Operational Altitude	12 km (max altitude of a commercial airliner or airborne platform)	

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

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