



COMPACT LWIR THERMAL CAMERA

FLIR Boson[®]



The Boson[®] longwave infrared (LWIR) thermal camera module sets a new standard for size, weight, power, and performance (SWaP). It utilizes FLIR infrared video processing architecture to enable advanced image processing and several industry-standard communication interfaces while keeping power consumption low. The 12 μm pitch Vanadium Oxide (VOx) uncooled detector comes in two resolutions – 640 x 512 or 320 x 256. It is available with multiple lens configurations, adding flexibility to integration programs.

With a weight as low as 7.5 g and a camera body as small as 21 x 21 x 11 mm, the Boson represents an industry-leading reduction in SWaP with no reduction in performance. Advanced embedded processing and video analytics, as well as software-customizable functionality, give this small camera big capabilities, including integration with auxiliary sensors such as third-party cameras, GPS, and IMU.

www.flir.com/boson



DRAMATIC REDUCTION IN SIZE, WEIGHT AND POWER (SWaP) WITH NO REDUCTION IN PERFORMANCE

A full-featured VGA thermal camera module at less than 4.9 cm³.

- 21 x 21 x 11 mm camera body and weight as low as 7.5 g
- Low power consumption, starting at 500 mW
- 12 μm pixel pitch VOx microbolometer with 320 and 640 resolutions
- Rugged construction and highest temperature rating -40°C to 80°C



POWERFUL INFRARED VIDEO PROCESSING ARCHITECTURE

FLIR infrared video processing with embedded industry-standard interfaces empowers advanced processing and analytics.

- Includes embedded algorithms for noise filters, gain control, blending, and more
- Software-customizable functionality for video processing and power dissipation requirements
- Built-in support for physical and protocol-level interface standards



WIDE CONFIGURABILITY FOR FASTER DEVELOPMENT AND LOWER COST-TO-MARKET

Unprecedented integration flexibility for fast, affordable developments.

- Customized applications through FLIR-trusted third party developers
- Mechanical/electrical compatibility across all versions
- Variety of hardware and image processing integration to fit OEM requirements

SPECIFICATIONS

Thermal Imager		FLIR Boson	
Sensor Technology	Uncooled VOx Microbolometer		
Array Format	320 × 256 or 640 × 512		
Pixel Pitch	12 μm		
Spectral Range	Longwave infrared: 7.5 μm – 14 μm		
Thermal Sensitivity	<40 mK (Industrial); <50 mK (Professional); <60 mK (Consumer)		
Full Frame Rate, Slow Frame Rate	60 Hz baseline; 30 Hz runtime selectable, ≤9 Hz available		
Non-uniformity Correction (NUC)	Factory calibrated; updated FFCs with FLIR Silent Shutterless NUC (SSN™)		
Solar Protection	Integral		
Continuous Electronic Zoom	2X zoom		
Symbol Overlay	Re-writable each frame; alpha blending for translucent overlay		
Optics			
Array Format	320 × 256	640 × 512	
Horizontal Field of View (HFOV); Effective Focal Length	92°; 2.3 mm	95°; 4.9 mm	
	50°; 4.3 mm	50°; 8.7 mm	
	34°; 6.3 mm	32°; 14 mm	
	24°; 9.1 mm	24°; 18 mm	
	16°; 14 mm	18°; 24 mm	
	12°; 18 mm	12°; 36 mm	
	6°; 36 mm	8.0°; 55 mm	
	4°; 55 mm	6°; 73 mm	
Physical Attributes			
Size	21 × 21 × 11 mm (0.83 x 0.83 x 0.43 in) without lens or 640-model shutter		
Weight	7.5 g (0.26 oz) without lens or 640-model shutter		
Precision Mounting Holes	Four tapped M160.35 (rear cover) Lens support recommended when lens mass exceeds 7.5 g		
Interfacing			
Input Voltage	3.3 VDC		
Power Dissipation (Peak)	Varies by configuration; as low as 500 mW		
Video Channels	CMOS or USB-2		
Control Channels	UART or USB		
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 105°C (-58°F to 221°F)		
Shock	1,500 g @ 0.4 msec		
Operational Altitude	12,192 m (40,000 ft)		

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

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19-0374-OEM-COR-Boson Datasheet



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