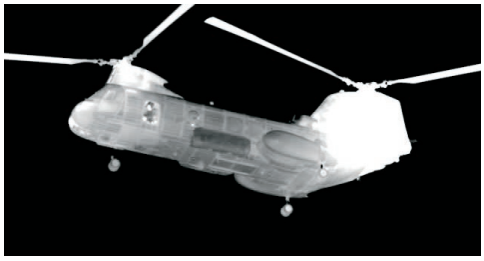
Compact LWIR - Thermal Camera Core

BOSON®

The Boson longwave infrared (LWIR) thermal camera module sets the standard for size, weight, power, and performance (SWaP). Utilizing FLIR's advanced image processing and several industry-standard communication interfaces, Boson enables applications from firefighting to unmanned aerial vehicles and automotive development kits, all for as little as 500mW. The 12 µm pitch Vanadium Oxide (VOx) uncooled detector comes in two resolutions – 640 × 512 or 320 × 256. Both resolutions are available with multiple lens configurations, adding flexibility to integration programs. Radiometric models are also available with absolute temperature measurement in select configurations.

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.



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 cm^3.

- 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

For More Information Visit:
www.flir.com/boson

www.teledyneflir.com

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SPECIFICATIONS

Thermal Imager	FLIR Boson	
Thermal Imaging Detector	Uncooled VOx Microbolometer	
Array Format	320 x 256 or 640 x 512	
Pixel Pitch	12 µm	
Thermal Spectral Range	Longwave infrared; 8 µm – 14 µm	
Thermal Sensitivity	<40 mK (Industrial); <50 mK (Professional); <60 mK (Consumer)	
Radiometric Temperature Measurement	Available in some models	
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	
Lens Options		
Array Format	320 x 256	640 x 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	50°; 9.2 mm
	24°; 9.1 mm	32°; 13.6 mm
	16°; 14 mm	32°; 14 mm
	12°; 18 mm	24°; 18 mm
	6°; 36 mm	18°; 24 mm
	4°; 55 mm	12°; 36 mm
		8.0°; 55 mm
		6°; 73 mm
Physical Attributes		
Size	21 x 21 x 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 M16x0.35 (rear cover)	
Interfacing		
Input Voltage	3.3 VDC	
Power Dissipation	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 85°C (-58°F to 185°F)	
Shock	1,500 g @ 0.4 msec	
Operational Altitude	12,192 m (40,000 ft) (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/boson

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