

SWaP

FLIR **BOSON**[™]

Uncooled, Longwave Infrared OEM Thermal Camera Core



The new Boson longwave infrared (LWIR) thermal camera cores set a new standard for size, weight, and power (SWaP) while simultaneously offering another industry first. Boson uses FLIR's novel XIR[™] expandable infrared video processing architecture to enable advanced image processing, video analytics, peripheral sensor drivers, and several industry-standard communication interfaces while keeping power consumption low. Because Boson is available with lots of different lenses, overall length and weight depend on your desired FOV and shutter options.

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

Configurable thermal camera cores or sensor only with industry-leading SWaP

- 640 and 320 resolutions; 12 μm pixel pitch VOx microbolometer
- Multiple high-performance FOV options; eight QVGA options and eight VGA options
- Multiple levels of sensitivity starting at <40 mK
- 21 x 21 x 11 mm, (4.9 cm³) camera body
- Weight as low as 7.5 grams
- Low power consumption, starting at 500 mW
- Rugged construction and highest temperature rating -40°C to +80°C

NEW, POWERFUL XIR EXPANDABLE INFRARED VIDEO PROCESSING ARCHITECTURE

Enables advanced embedded processing and analytics

- Includes embedded algorithms for super resolution, noise filters, gain control, blending, and more
- Embedded video analytics bring high-end intelligence out of the box
- Software-customizable functionality for video processing and power dissipation requirements
- Built-in support for physical and protocol-level interface standards
- Inputs and processing for auxiliary sensors such as third-party cameras, GPS, & IMU

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

Unprecedented integration flexibility for fast, affordable developments

- "Solution Accelerator" configurations; ready-made configurations for different market verticals
- 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

Boson Specifications

Imaging		
Sensor technology	Uncooled VOx microbolometer	
Array format	320 × 256 or 640 × 512	
Pixel pitch	12 μm	
Spectral range	Longwave infrared; 7.5 μm – 13.5 μm	
Thermal Sensitivity	<40 mK (Industrial); <50 mK (Professional); <60 mK (Consumer)	
Full frame rates	60 Hz baseline; 30 Hz runtime selectable	
Slow frame rate	≤9 Hz available	
Non-uniformity Correction NUC	Factory calibrated; updated FFCs with FLIR's Silent Shutterless NUC (SSN™)	
Solar protection	Integral	
Continuous Zoom	1X to 8X zoom	
Symbol overlay	Re-writable each frame; alpha blending for translucent overlay	
Optics		
Array Format	320 x 256	640 x 512
	HFOV; effective focal length	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°; 14.0 mm
	24°; 9.1 mm	24°; 18.0 mm
	16°; 13.8 mm	18°; 24.0 mm
	12°; 18.0 mm	12°; 36.0 mm
	6°; 36.0 mm	8.0°; 55.0 mm
	4.0°; 55.0 mm	5.5°; 73 mm
Electrical		
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	
Peripheral channels	I2C, SPI, SDIO	
Configurable GPIO	Up to 11; User configurable	
Mechanical		
Size	21 × 21 × 11 mm without lens	
Weight	7.5 g without lens (configuration dependent)	
Precision mounting holes	Four tapped M16x0.35 (rear cover). Lens support recommended when lens mass exceeds core mass	
Environmental		
Operating temperature range	-40°C to 80°C	
Non-operating temperature range	-50°C to 105°C	
Shock	1,500 g @ 0.4 msec	
Operational altitude	12 km (max altitude of a commercial airliner or airborne platform)	

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