

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 seven VGA options
- Multiple levels of sensitivity starting at <40 mK
- 21 x 21 x 11 mm, (4.9 cm<sup>3</sup>) 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 x 256 or 640 x 512	
Pixel pitch	12 µm	
Spectral range	Longwave infrared; 7.5 µm – 13.5 µm	
Thermal Sensitivity	<40 mK (Industrial); <50 mK (Performance); <60 mK (Commercial)	
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	Yes	
Symbol overlay	Re-writable each frame; alpha blending for translucent overlay	
Optics		
Array Format	<b>320 x 256</b>	<b>640 x 512</b>
	HFOV; effective focal length	HFOV; effective focal length
	92°; 2.3 mm	50°; 8.7 mm
	50°; 4.3 mm	32°; 13.8 mm
	34°; 6.3 mm	24°; 18.0 mm
	24°; 9.1 mm	18°; 25.0 mm
	16°; 14.0 mm	12°; 36.0 mm
	12°; 18.0 mm	8.0°; 55.0 mm
	6.1°; 36.0 mm	5.5°; 73 mm
	4.0°; 55.0 mm	
Electrical		
Input voltage	3.3 VDC	
Power dissipation	Varies by configuration; as low as 500 mW	
Video channels	CMOS or USB	
Control channels	RS-232 or USB	
Peripheral channels	I2C, SPI, SDIO	
Configurable GPIO	Up to 11; User configurable	
Mechanical		
Size	21 x 21 x 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 (Industrial & Performance grades)	
Non-operating temperature range	-50°C to 85°C	
Shock	1,500 g @ 0.4 msec	
Operational altitude	12 km	

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