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 $cm^3$) 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 (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 | **320 x 256** | **640 x 512** |
| | 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 × 21 × 11 mm without lens | |
| Weight | 7.5 g without lens (configuration dependent) | |
| Precision mounting holes | Four tapped M16x0.35 (rear cover).<br>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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