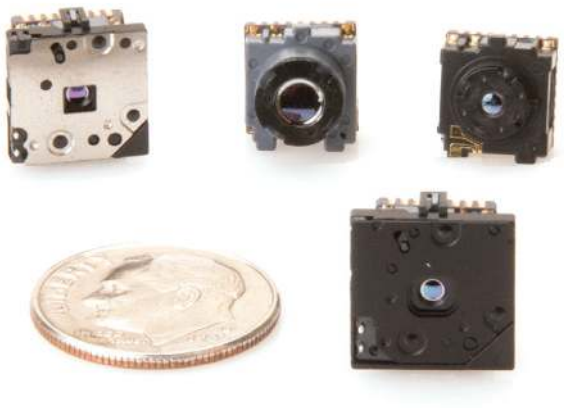

FLIR LEPTON®

80 x 60 Radiometric Longwave Infrared (LWIR) Camera Module

The FLIR Lepton® is a radiometric-capable LWIR camera solution that is smaller than a dime, can fit inside a smartphone, and is ten times less expensive than a traditional IR camera. Using a focal plane array of 80 × 60 active pixels, Lepton easily integrates into native mobile-devices and other electronics as an IR sensor or thermal imager. The radiometric Lepton captures accurate, calibrated, non-contact temperature data in every pixel of each image for even greater utility in commercial applications. Non-radiometric versions are also available.

ENHANCED IR SENSOR

Greater sensitivity than common thermopile arrays

- Thermal sensitivity <50 mK
- Temperature stabilized output for radiometric processing
- Low operating power – 150 mW typical, 650 mW during shutter event
- Low power standby mode

MICRO THERMAL IMAGER

Uncooled thermal imaging for small electronics

- Integrated digital thermal image processing
- Multiple lens options: 50° / 25° FOV
- Shutterless option available
- Fast time to image (<0.5 seconds)

EASE OF INTEGRATION

Simplifies development and manufacturing of thermal-enabled devices

- Package as small as 8.5 x 8.5 x 5.6 mm (non-radiometric)
- Export Compliant (<9Hz)
- SPI video interfaces
- Uses standard cell phone-compatible power supplies
- Two-wire serial control interface
- 32-pin socket interface to connector

Specifications

Overview	LEPTON 50° Radiometric	LEPTON 50° shutterless	LEPTON 25°	LEPTON 50° w/shutter
Sensor technology	Uncooled VOx microbolometer			
Spectral range	Longwave infrared, 8 µm to 14 µm			
Array format	80 × 60, progressive scan			
Pixel size	17 µm			
Effective frame rate	8.6 Hz (commercial application exportable)			
Thermal sensitivity	<50 mK (0.050° C)			
Temperature compensation	Automatic. Output image independent of camera temperature.			
Scene Dynamic Range	High Gain Mode: -10 °C to 140 °C, typical* Low Gain Mode: -10°C to 450 °C, typical*	0° to 120°C		
Radiometric accuracy	High gain: Greater of ±10°C or 10% (typical) Low gain: Greater of ±5°C or 5% (typical)	N/A		
Non-uniformity corrections	Automatic with shutter	Shutterless, automatic (with scene motion)		Automatic with shutter
Image optimization	Factory configured and fully automated			
FOV - horizontal	51°	51°	25°	51°
FOV - diagonal	63.5°	63.5°	31.3°	63.5°
Output format	User-selectable 14-bit, 8-bit (AGC applied), or 24-bit RGB (AGC and colorization applied)			
Solar protection	Integral			
Electrical				
Input clock	25-MHz nominal, CMOS IO Voltage Levels			
Video data interface	Video over SPI			
Control port	CCI (I2C-like), CMOS IO Voltage Levels			
Input supply voltage (nominal)	2.8 V, 1.2 V, 2.5 V to 3.1 V IO			
Power dissipation (Typical, room temp)	150 mW (operating), 650 mW (during shutter event), 4 mW (standby)			
Mechanical				
Package dimensions – socket version (w x l x h)	11.8 x 12.7 x 7.2 mm	8.5 × 8.5 × 5.6 mm (w × l × h)		10.5 x 11.7 x 6.4 mm
Weight	0.9 grams	0.55 grams	0.55 grams	0.9 grams
Environmental				
Optimum operating temperature range	-10°C to +80°C	-10 °C to +65 °C		
Non-operating temperature range	-40 °C to +80 °C			
Shock	1500 G @ 0.4 ms			

*Scene dynamic range is a function of sensor characteristics and ambient temperature.
Range values reported are typical values at room temperature ambient

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17-1545-OEM-COR-Lepton2.5