FLIR LEPTON®

Longwave Infrared (LWIR) Camera Module

The FLIR Lepton is an LWIR camera solution that is smaller than a dime, can fit inside a cell phone, and is ten times less expensive than a traditional IR camera. Using a focal plane array (FPA) of 80 × 60 active pixel, Lepton easily integrates into native mobile-devices and other electronics as an IR sensor or thermal imager.

ENHANCED IR SENSOR

Greater sensitivity than common thermopile arrays

- Thermal sensitivity <50 mK
- Optional temperature-stable output to support radiometric processing
- Low operating power, 150mW
- Low power standby mode

MICRO THERMAL IMAGER

Uncooled thermal imaging for small electronics

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

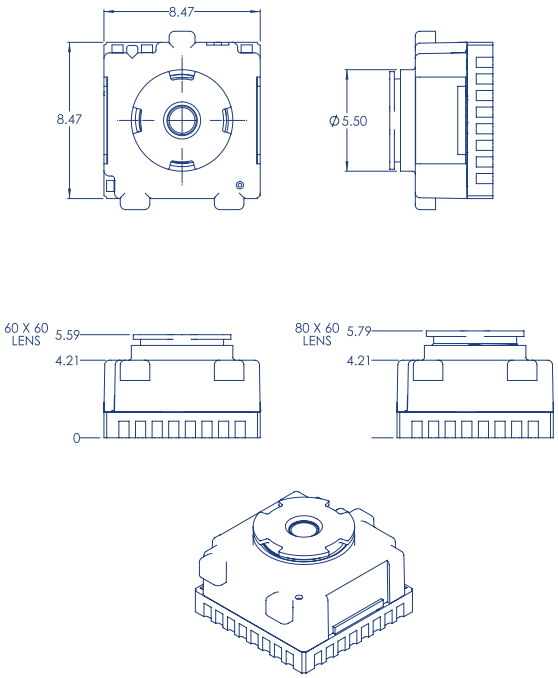
EASE OF INTEGRATION

Simplifies development and manufacturing of thermal-enabled devices

- 8.5 x 8.5 x 5.6 mm package
- Export Compliant (<9Hz)
- MIPI and 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° 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 (exportable)		
Thermal sensitivity	<50 mK (0.050° C)		
Temperature compensation	Automatic. Output image independent of camera temperature.		
Non-uniformity corrections	Shutterless, automatic (with scene motion)		Automatic with shutter
Image optimization	Factory configured and fully automated		
FOV - horizontal	51°	25°	51°
FOV - diagonal	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	Nominally 150 mW at room temperature (operating), 4 mW (standby)		
Mechanical			
Package dimensions – socket version	8.5 × 8.5 × 5.6 mm (w × l × h)		
Weight	0.55 grams (typ)	0.55 grams (typ)	0.55 grams (typ)
Environmental			
Optimum operating temperature range	-10 °C to +65 °C		
Non-operating temperature range	-40 °C to +80 °C		
Shock	1500 G @ 0.4 ms		



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