



FLIR LEPTON 3[®]

High Resolution Micro Thermal Camera

The FLIR Lepton 3, FLIR's highest resolution LWIR micro thermal camera solution, delivers full 160 x 120 thermal resolution – a 4x increase over earlier Lepton versions. The revolutionary Lepton was the first complete longwave infrared thermal camera small enough to be used in smartphones and other mobile devices. The new, higher resolution Lepton 3 gives users better image detail in a powerful, compact, lightweight package for even greater utility in commercial applications as both a thermal camera and a detection sensor. Smaller than a dime and ten times less expensive than a traditional IR camera, the 160 x 120 resolution Lepton brings high quality thermal vision everywhere.

ENHANCED IR SENSOR

Greater resolution & sensitivity than common thermopile arrays

- 160 x 120 active pixels
- Thermal sensitivity <50 mK
- Low operating power – 140 mW typical, 650 mW during shutter event
- Low power standby mode

MICRO THERMAL IMAGER

Uncooled thermal imaging for small electronics

- 56° lens
- Integrated digital thermal image processing
- Integrated shutter
- Fast time to image (<0.5 seconds)

EASE OF INTEGRATION

Simplifies development & manufacturing of thermal-enabled devices

- Small 11.8 x 12.7 x 7.2 mm package
- SPI video interfaces
- Uses standard cell phone-compatible power supplies
- Two-wire serial control interface
- 32-pin socket interface to connector

Specifications

Overview		Lepton 3	
Sensor technology	Uncooled VOx microbolometer		
Spectral range	Longwave infrared, 8 µm to 14 µm		
Array format	160 x 120, progressive scan		
Pixel size	12 µm		
Effective frame rate	8.8 Hz (commercial application exportable)		
Thermal sensitivity	<50 mK (0.050° C)		
Temperature compensation	Automatic. Output image independent of camera temperature.		
Non-uniformity corrections	Automatic with shutter		
Scene dynamic range	Low Gain Mode: up to 450°C; High Gain Mode: up to 150°C		
Image optimization	Factory configured and fully automated		
FOV - horizontal	56°		
FOV - diagonal	71°		
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, 2.8 V to 3.1 V IO		
Power dissipation (Typical, room temp)	140 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		
Weight	0.9 grams		
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		

CORPORATE

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