



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 μ m to 14 μ m
Array format		160 x 120, progressive scan
Pixel size		12 μ m
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

HEADQUARTERS

FLIR Systems, Inc.
27700 SW Parkway Ave.
Wilsonville, OR 97070
PH: +1 877.773.3547

SANTA BARBARA

FLIR Systems, Inc.
6769 Hollister Ave.
Goleta, CA 93117
PH: +1 805.690.6602

CHINA

FLIR Systems Co., Ltd
Room 502, West Wing, Hanwei Building
No. 7 Guanghua Ave.
Chaoyang District, Beijing 100004, China
Phone: +86 10-59797755

EUROPE

FLIR Systems, Inc.
Luxemburgstraat 2
2321 Meer
Belgium
PH: +32 (0) 3665 5100

www.flir.com
NASDAQ: FLIR

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17-1208-OEM-COR