TeraRanger Evo Thermal

Monitor temperature and heat variations, detect movement and capture the unseen! The Evo Thermal sensor offers versatile performance in a compact and affordable design!

Key features

- 32x32 pixel thermal image
- Available in 2 versions: 90° and 33° Field-Of-View
- Repeatability < ±0.3°C for 33° version - Suitable for applications measuring human body temperature
- Small and lightweight design (from 7 grams)
- UART and USB interface
- Low power consumption
- Privacy protected, non-intrusive data collection
- Operates in a broad range of conditions: sunlight, darkness, poor visibility
- Free Graphical user interface available on PC

Applications

Human body temperature monitoring - Fever detection

Heat source tracking, counting

Building efficiency optimization

Adaptive lighting

Heat movement monitoring

Machine and process temperature monitoring

Fever detection and human body temperature monitoring

The latest generation Evo Thermal 33 sensor is ideally suited for facial fever screening applications. Please see the related Application Note document here (https://www.terabee.com/wp-content/uploads/2020/05/Application-note-on-fever-detection-with-Evo-Thermal-33.pdf)

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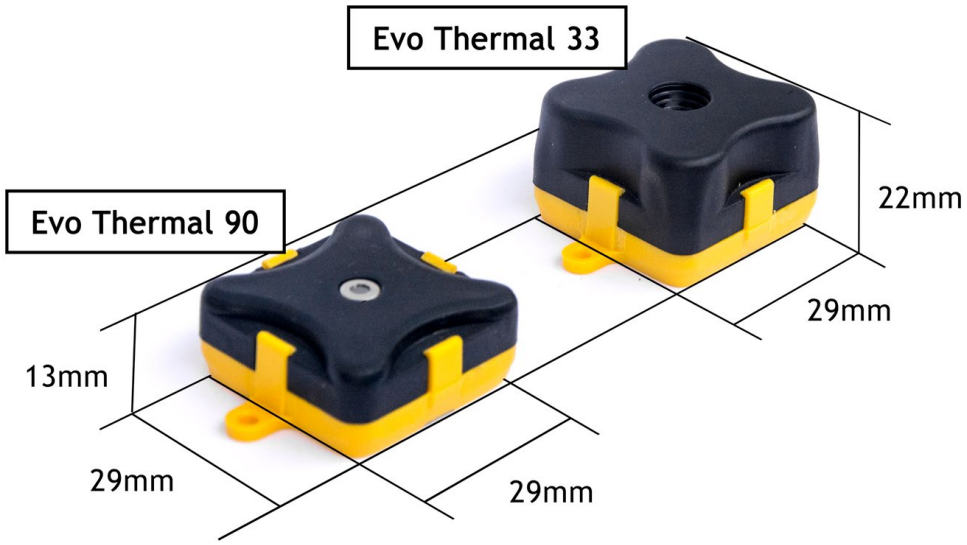
Technical specifications

	Evo Thermal 90	Evo Thermal 33 [1]
Performance		
Principle	Infrared thermopile array	Infrared thermopile array
Resolution	32 x 32 pixels	32 x 32 pixels
Field of View	90°x 90°	33° x 33°
Update rate	7 Hz	7 Hz
Temperature range	-20° C to 670° C	30° C to 45° C [5]
Repeatability [2]	± 2° C	< ± 0.3° C
Temperature Accuracy	± 2°C for targets below 100° C; 2% for targets above 100° C [3]	± 0.5° C [4]
NETD: (at 1Hz, 25°C)	330mK (0.33°C)	254 mK (0.25° C)
Range, specific to human body detection	Up to 5 m	Up to 5 m
Temperature Compensation	Automatic	Automatic
Supply Voltage	5V DC ±5%	5V DC ±5%
Current consumption: (typical-maximum)	45mA - 75mA	45mA - 75mA
Operating temperature	-10° C to 65° C	15°C to 30° C
Interfaces	USB 2.0 Micro-B UART, +3.3V level, 460800,8,N,1	USB 2.0 Micro-B UART, +3.3V level, 460800,8,N,1
Connectors	Single 9 pin Hirose DF13 (UART Blackboard) Micro USB (USB Backboard)	Single 9 pin Hirose DF13 (UART Blackboard) Micro USB (USB Backboard)
Weight	7g (sensor) + 3g (backboard)	9g (sensor) + 3g (backboard)
Dimensions: (sensor + backboard)	Approx. 29x29x13mm	Approx. 29x29x22mm
Conformity	RoHS, CE certified	RoHS, CE certified

(1) Shipped from November 2020 onwards.
(2) Repeatability from sensor to sensor within a production batch.
(3) Accuracy may vary depending on distance, target emissivity, and ambient temperature.
(4) Accuracy calculated as average over multiple sensors @ 25°C internal temperature and using the center zone of the sensor. Below or above 25°C internal temperature accuracy may vary.
(5) Evo Thermal 33 has the availability to measure temperature under 30°C or above 45° C. Please contact us for more information.



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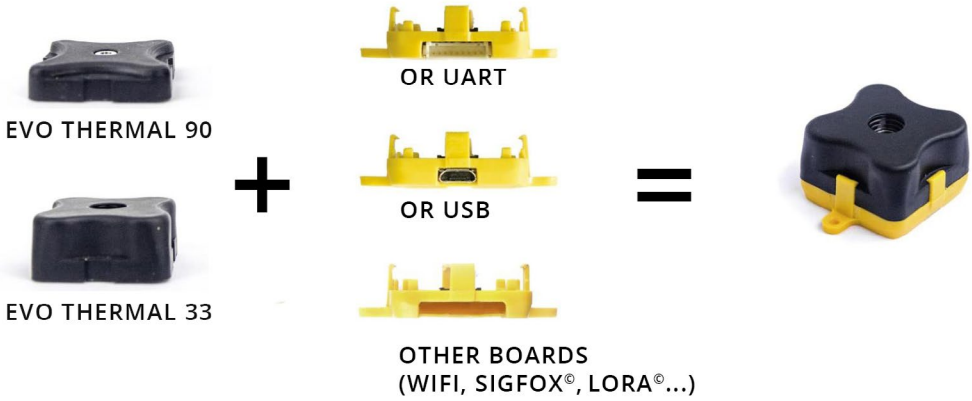
Customizable and modular Evo design



Evo Thermal sensors consist of a thermographic sensing device (black module, 7g or 9g) and a choice of backboard (yellow module, 3g), which simply plugs-in to provide the sensor with a communication link and power management capabilities. You simply choose the backboard that best suits your application and communication protocol!
USB and UART backboards are available. Other Backboards with industry-standard interfaces and protocols can also be made to support your application. Contact us at terabee-sales@terabee.com to discuss your project requirements.

The TeraRanger Evo Thermal sensors can be purchased via our online store at: https://www.terabee.com/sensors-modules/thermal-cameras/

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