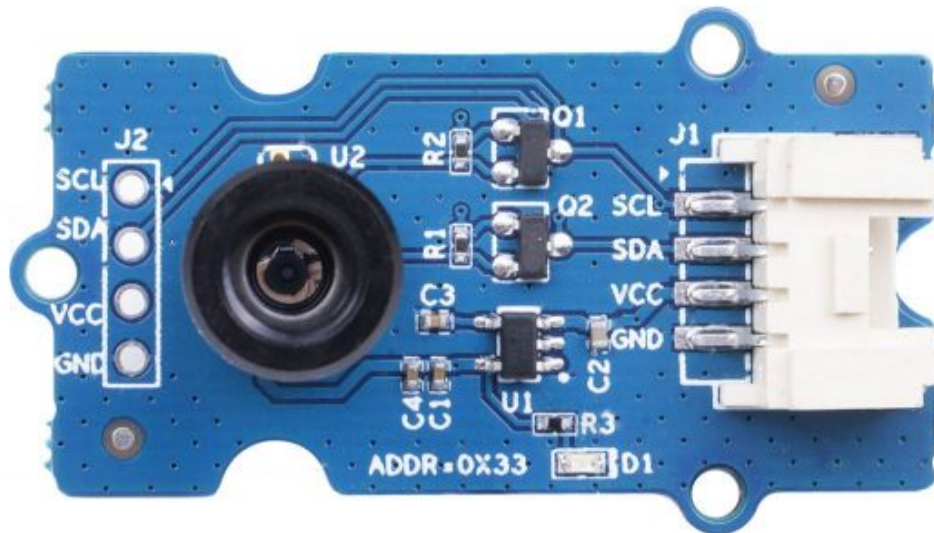


Grove - Thermal Imaging Camera - MLX90641 16x12 IR Array with 110° FOV - Seed Studio



PRODUCT DETAILS

Features

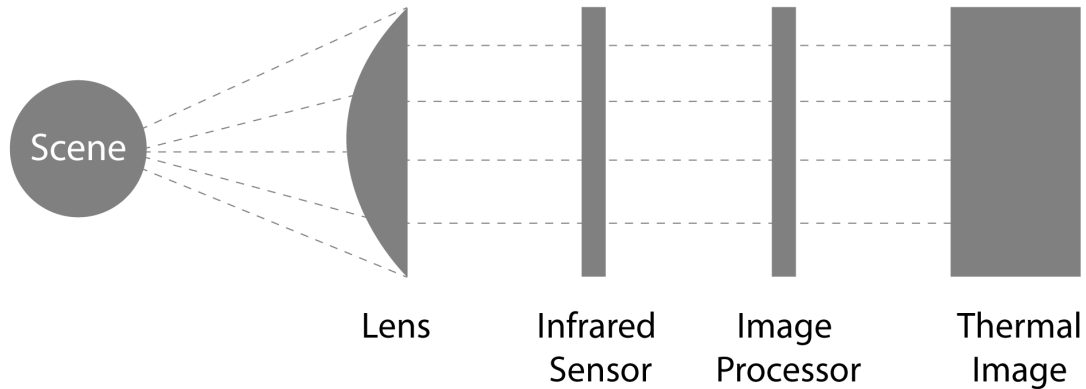
- Compact size 16x12 pixel IR thermal sensor array (MLX90641)
- High FOV (field-of-view) of 110°x75° to capture more area
- Wide temperature measurement range (-40°C~300°C)
- I2C Grove interface for easy communication with an MCU
- Fully calibrated IR array for convenient setup

Description

This IR thermal camera carries a 16x12 array of thermal sensors (MLX90641) and it can detect the temperature of objects from far away with a center area accuracy of $\pm 1^{\circ}\text{C}$ and average accuracy of $\pm 1.5^{\circ}\text{C}$. In order to obtain the thermal images easily, the I2C protocol is used to get the low-resolution images from the camera. The FOV (Field of View) of this camera is 110°x75°, and the temperature measurement range is -40°C to 300°C.

How Does Thermal Imaging Work?

All objects emit some amount of infrared radiation. This IR thermal imaging camera has a sensitive heat sensor that can detect tiny differences in temperature from the objects in the surrounding. Then it collects this radiation information from the objects and creates an electronic image that is based on the temperature difference information. The hotter an object is, the more infrared radiation it produces. However, this Infrared light is invisible to the naked eye and if the intensity is too high, it can be felt as heat.



This module can be connected to an MCU using the I2C interface. However, it needs an MCU that has over 20000 bytes of RAM to drive the camera. As a matter of fact, Dev boards like Arduino UNO cannot be used with this Sensor camera due to its lower ability of calculation. We recommend you choose [Arch Mix](#) as an MCU to control the camera because it really has an excellent performance to process the complex data from the IR sensor camera.

Applications

- High precision non-contact temperature measurements
- Microwave ovens
- Intrusion / Movement detection systems
- Temperature sensing element for residential, commercial and industrial building air conditioning
- Industrial temperature control of moving parts
- Visual IR thermometers

Specifications

Specification	Details
Resolution	16x12
FOV	110°x75°
Measuring range	-40°C ~ 300°C
Refresh Rate	0.5Hz ~ 64Hz
Interface	I2C

Specification	Details
Voltage	3.3V-5V
Current	~18mA

Parts List

1 x Grove - Thermal Imaging Camera - MLX90641 16x12 IR Array with 110° FOV

What is Grove?

Grove makes it easier to connect, experiment, and simplify the prototyping process. No jumpers or soldering required. We have developed more than 300 Grove modules, covering a wide range of applications that can fulfil a variety of needs. Not only are these open hardware, but we also have open-source software.

Note

For all Grove users (especially beginners), we provide you with the guidance of operation. Please read the [instructions](#) through the official website before your using the product.



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