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# **Adafruit MLX90614 Library Documentation**

***Release 1.0***

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## Contents

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<b>1</b>	<b>Dependencies</b>	<b>3</b>
<b>2</b>	<b>Installing from PyPI</b>	<b>5</b>
<b>3</b>	<b>Usage Example</b>	<b>7</b>
<b>4</b>	<b>Contributing</b>	<b>9</b>
<b>5</b>	<b>Documentation</b>	<b>11</b>
<b>6</b>	<b>Table of Contents</b>	<b>13</b>
6.1	Simple test . . . . .	13
6.2	adafruit_ml×90614 . . . . .	14
6.2.1	Implementation Notes . . . . .	14
<b>7</b>	<b>Indices and tables</b>	<b>15</b>
	<b>Python Module Index</b>	<b>17</b>
	<b>Index</b>	<b>19</b>



CircuitPython module for the Melexis MLX90614 Contact-less Infrared Temperature sensor. See [examples/mlx90614\\_simpletest.py](#) for a demo of the usage.



# CHAPTER 1

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## Dependencies

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This driver depends on:

- [Adafruit CircuitPython](#)
- [Bus Device](#)

Please ensure all dependencies are available on the CircuitPython filesystem. This is easily achieved by downloading the [Adafruit library and driver bundle](#).





## CHAPTER 2

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### Installing from PyPI

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On supported GNU/Linux systems like the Raspberry Pi, you can install the driver locally [from PyPI](#). To install for current user:

```
pip3 install adafruit-circuitpython-mlx90614
```

To install system-wide (this may be required in some cases):

```
sudo pip3 install adafruit-circuitpython-mlx90614
```

To install in a virtual environment in your current project:

```
mkdir project-name && cd project-name
python3 -m venv .env
source .env/bin/activate
pip3 install adafruit-circuitpython-mlx90614
```



## CHAPTER 3

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### Usage Example

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See `examples/mlx90614_simpletest.py` for a demo of the usage.



## CHAPTER 4

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### Contributing

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Contributions are welcome! Please read our [Code of Conduct](#) before contributing to help this project stay welcoming.



## CHAPTER 5

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### Documentation

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For information on building library documentation, please check out [this guide](#).





## 6.1 Simple test

Ensure your device works with this simple test.

Listing 1: examples/mlx90614\_simpletest.py

```
1  # Designed specifically to work with the MLX90614 sensors in the
2  # adafruit shop
3  # ----> https://www.adafruit.com/product/1747
4  # ----> https://www.adafruit.com/product/1748
5  #
6  # These sensors use I2C to communicate, 2 pins are required to
7  # interface Adafruit invests time and resources providing this open
8  # source code,
9  # please support Adafruit and open-source hardware by purchasing
10 # products from Adafruit!
11
12 import board
13 import busio as io
14 import adafruit_mlx90614
15
16 # the mlx90614 must be run at 100k [normal speed]
17 # i2c default mode is is 400k [full speed]
18 # the mlx90614 will not appear at the default 400k speed
19 i2c = io.I2C(board.SCL, board.SDA, frequency=100000)
20 mlx = adafruit_mlx90614.MLX90614(i2c)
21
22 # temperature results in celsius
23 print("Ambient Temp: ", mlx.ambient_temperature)
24 print("Object Temp: ", mlx.object_temperature)
```

## 6.2 adafruit\_mlx90614

CircuitPython module for the MLX90614 IR object temperature sensor.

- Author(s): Mikey Sklar based on code from these projects: Limor Fried - <https://github.com/adafruit/Adafruit-MLX90614-Library> Bill Simpson - [https://github.com/BillSimpson/ada\\_mlx90614](https://github.com/BillSimpson/ada_mlx90614) Mike Causer - <https://github.com/mcauser/micropython-mlx90614>

### 6.2.1 Implementation Notes

#### Hardware:

- Adafruit Melexis Contact-less Infrared Sensor - MLX90614 3V (Product ID: 1747)
- Adafruit Melexis Contact-less Infrared Sensor - MLX90614 5V (Product ID: 1748)
- Sensors: <https://www.adafruit.com/product/1747> <https://www.adafruit.com/product/1748>
- Datasheet: <https://cdn-shop.adafruit.com/datasheets/MLX90614.pdf>

#### Software and Dependencies:

- Adafruit CircuitPython firmware for the supported boards: <https://github.com/adafruit/circuitpython/releases>

**class** `adafruit_mlx90614.MLX90614` (*i2c\_bus*, *address=90*)

Create an instance of the MLX90614 temperature sensor. You must pass in the following parameters: - *i2c*: An instance of the I2C bus connected to the sensor. - *frequency=100000* - this sensor does not respond to the default 400000 i2c bus speed

Optionally you can specify: - *address*: The I2C address of the sensor. If not specified the sensor's default value will be assumed.

**`ambient_temperature`**

Ambient Temperature in celsius.

**`object_temperature`**

Object Temperature in celsius.

## CHAPTER 7

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### Indices and tables

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- `genindex`
- `modindex`
- `search`



### a

adafruit\_mlx90614, [13](#)



## A

`adafruit_mlx90614` (*module*), [13](#)

`ambient_temperature`  
(*adafruit\_mlx90614.MLX90614* *attribute*),  
[14](#)

## M

`MLX90614` (*class in adafruit\_mlx90614*), [14](#)

## O

`object_temperature`  
(*adafruit\_mlx90614.MLX90614* *attribute*),  
[14](#)