

## What is IRThermometer

The IRThermometer is a non-contact infrared thermometer. It is designed to return ambient temperature as well as the temperature of any target the sensor is pointing towards. This sensor can return values in both Celsius and Fahrenheit.

Following sections provide operations and specifications of sensor.

## Connections and Placement

IRThermometer can be connected directly to any of the four sensor ports of EV3.

## Programming Techniques for reading

### EV3:

To use capabilities of the sensor, please download the EV3 block available at the following URL:



[http://www.mindsensors.com/index.php?controller=attachment&id\\_attachment=327](http://www.mindsensors.com/index.php?controller=attachment&id_attachment=327)

Installation instructions for the EV3 block are available at:

<http://www.mindsensors.com/content/13-how-to-install-blocks-in-ev3>

Download EV3 sample programs from the following URL and modify it to suit your needs.

[http://www.mindsensors.com/index.php?controller=attachment&id\\_attachment=328](http://www.mindsensors.com/index.php?controller=attachment&id_attachment=328)

### ROBOTC:

The driver implementation is available in Xander's driver suite at following url:



<https://github.com/botbench/robotcdriversuite>

the header file for the driver is: mindsensors-irthermometer.h

### NXC:

API not available yet.

## I2C Registers:

The IRThermometer appears as a set of registers as follows:

Register	Read	Write
0x41	-	Command Register
0x42 (LB) 0x43 (HB)	Ambient Temperature in Celsius (two bytes) *	-
0x44 (LB) 0x45 (HB)	Target Temperature in Celsius (two bytes) *	-
0x46 (LB) 0x47 (HB)	Ambient Temperature in Fahrenheit (two bytes) *	-
0x48 (LB) 0x49 (HB)	Target Temperature in Fahrenheit (two bytes) *	-
0x4A	Emissivity (not yet implemented)	Emissivity (not yet implemented)

\* The value in registers is x100 the temperature reading (i.e. if you are reading the registers directly, after combining registers, divide the value by 100 for temperature reading).

## Supported Commands

Command	Function
-	No commands are currently supported

## I2C Bus address

Factory Default Address: 0x2A.

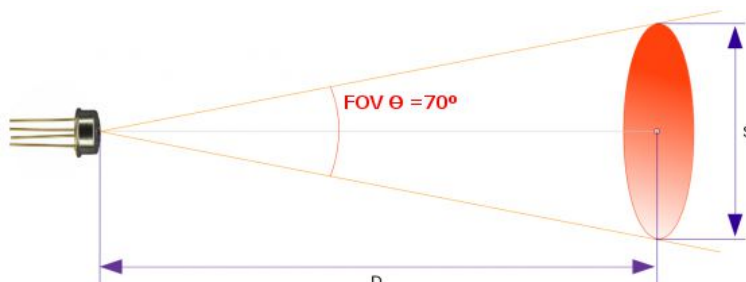
## Current Consumption

Average measured current profile is as follows:

Current Consumption	Duration
2mA	Continuous

## Field Of View

FOV of the IRThermometer is 70 degrees. This is sufficient for very close objects.



The IRThermometer Collimator Cap will narrow the FOV to 45 degrees, allowing for more accurate targeting of objects.

