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### Arduino Infra Red Sharp Lib

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[New pull request](#)[Find File](#)[Clone or download ▾](#) guillaume-rico Merge pull request #6 from per1234/keywords-separator ... Latest commit 04194ac on Nov 21, 2017

 examples/SharpSensorCm	Add files	3 years ago
 README.md	Add GP2YA41SK0F	3 years ago
 SharpIR.cpp	Add GP2YA41SK0F	3 years ago
 SharpIR.h	Add support for 100cm to 500cm SHARP GP2Y0A710K0F	3 years ago
 keywords.txt	Use correct separator in keywords.txt	a year ago

 README.md

# SharpIR

Arduino Infra Red Sharp Lib

Based on an original work of Dr. Marcal Casas-Cartagena .

1. Perform 25 reading of analog pin (Nb samples can be changed in .h)
2. Sort values
3. Convert median value to cm

## Usage

- #include <SharpIR.h>
- SharpIR sharp(ir\_analog\_pin, model);
- int dist = sharp.distance();

Model :

- GP2Y0A02YK0F --> "20150"
- GP2Y0A21YK --> "1080"
- GP2Y0A710K0F --> "100500"
- GP2YA41SK0F --> "430"

# Sharp IR Volt Centimeter conversion

## GP2Y0A02YK0F

Model: "20150" [20cm to 150cm]

Volt	Distance
2,8	15
2,5	20
2	30
1,55	40
1,24	50
1,05	60
0,905	70
0,82	80
0,7	90
0,66	100
0,6	110
0,55	120
0,5	130
0,455	140
0,435	150

Using MS Excel, we can calculate function (For distance > 15cm) :

Distance = 60.374 X POW(Volt , -1.16)

## GP2Y0A21YK

Model: "1080" [10cm to 80cm]

Volt	Distance
2,6	10
2,1	12
1,85	14
1,65	15
1,5	18
1,39	20
1,15	25
0,98	30

Volt	Distance
0,85	35
0,75	40
0,67	45
0,61	50
0,59	55
0,55	60
0,5	65
0,48	70
0,45	75
0,42	80

Using MS Excel, we can calculate function (For distance > 10cm) :

Distance = 29.988 X POW(Volt , -1.173)

## GP2Y0A710K0F

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### Model: "100500" [100cm to 500cm]

Based on the SHARP datasheet we can calculate the linear function:  $y = 137500x + 1125$  which gives us:  $1 / ((\text{Volt} - 1125) / 137500) = \text{distance\_in\_cm}$  (For distance > 100cm)

## GP2YA41SK0F ( <=> GP2D120 )

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### Model: "430" [4cm to 30cm]

Based on the SHARP datasheet we can calculate the function (For distance > 3cm) :

Distance = 12.08 X POW(Volt , -1.058)