L085-DEVKIT

Brief

L085 is 5.3-130mm focal length (25x) motorized zoom lens is designed for 1/2.7" image sensors, has zoom/focus/iris functions, designed for 5M sensors.

Specifications

Optics

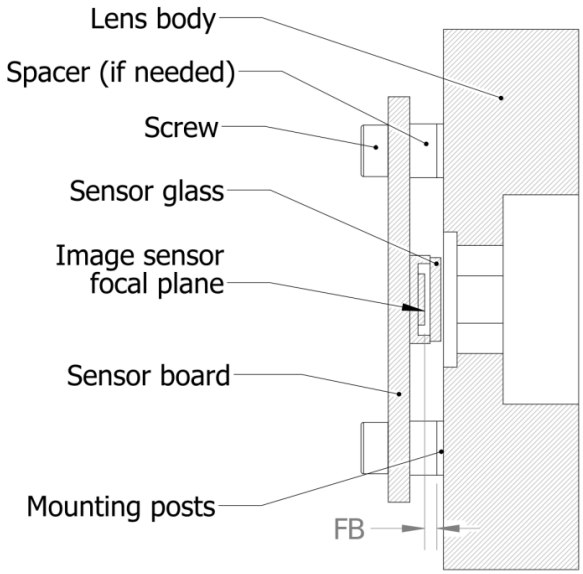
Image sensor	1/2.7" Effective image area > 6.8mm
Focal distance	5.3 ~ 130mm / ±5%
Aperture	f/1.6 ~ f/4.3
Focus range	• WIDE: 0.1m - infinity • TELE: 1.5m - infinity
Field of view (D=8.81mm)	• WIDE: 67.9° • TELE: 2.8°

Distortion	• WIDE: -2.9% • TELE: 0.3%
Recommended image sensor	IMX335

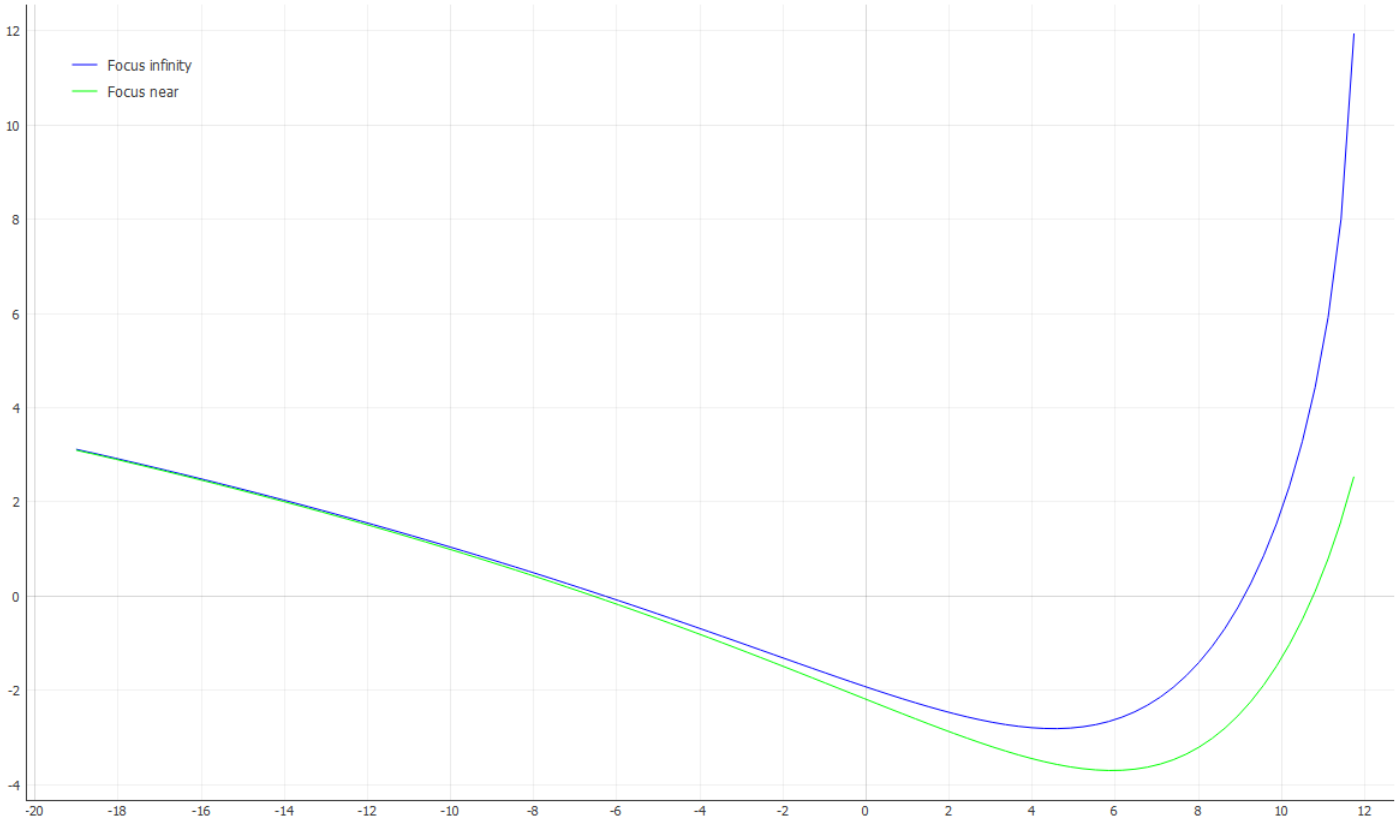
Mechanics

Flange back (**FB**, see diagram below)	-0.325mm (in glass t=0.3 IRCF)
Lens zoom structure	The stepper motor is directly connected to the screw
Lens focusing structure	The stepper motor is directly connected to the screw
Lens size	• Length: 92.49mm • Width: 50.1mm • Height: 43.8mm • Front end diameter: 44.6mm
Weight	116g (+controller 7.8g)

In order to accommodate different image sensors, the focal distance is set back by flange back (FB) distance. The actual distance for a specific sensor has to be calculated and spacers used. If the image plane is not set correctly, focus irregularities in the projected picture are expected.

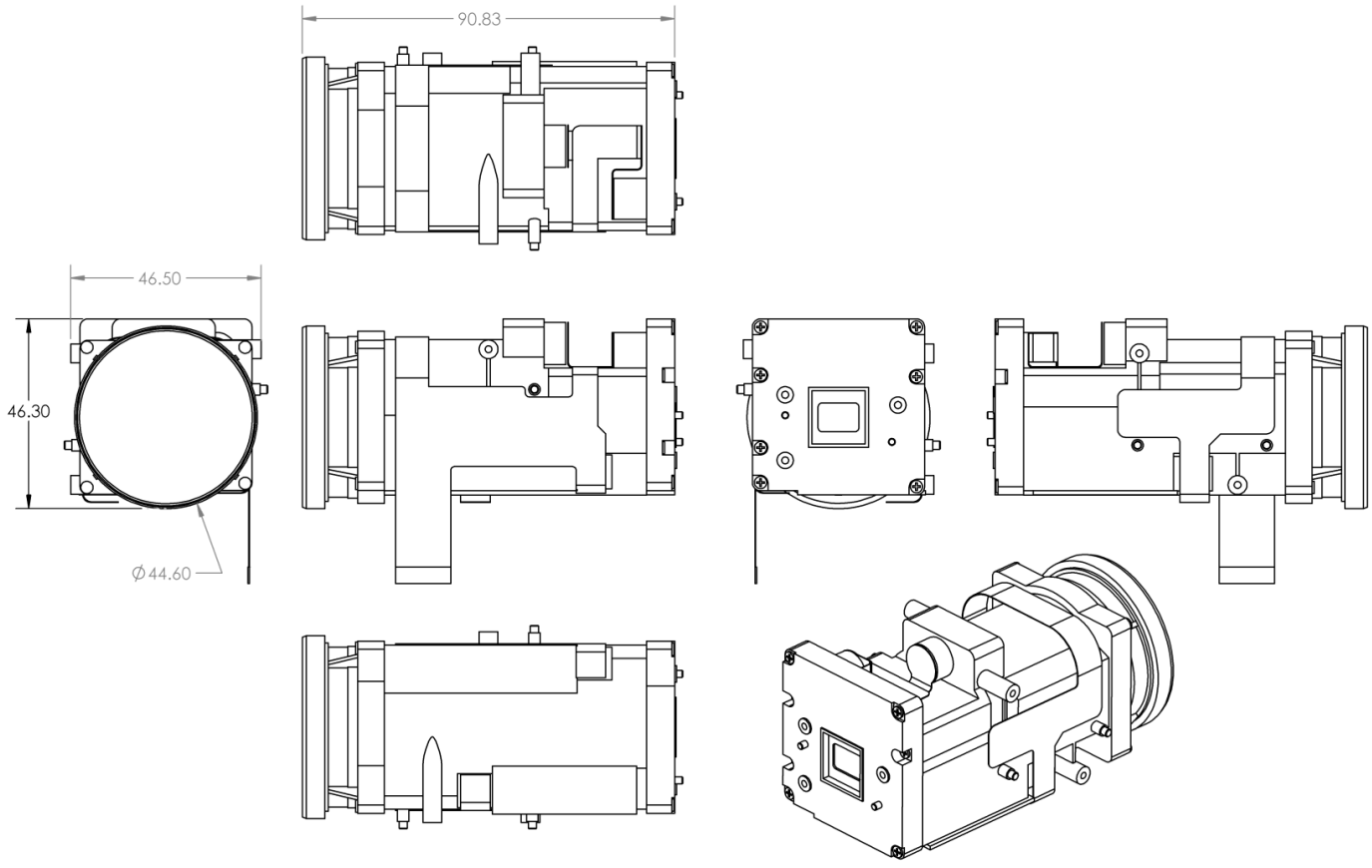


Zoom-Focus curve diagram



Please check the software in the GitHub repository for more detailed table.

Dimensions



Detailed 3D model is hosted on GitHub 3D models repository

Wiring

Lens signals routed by 26 pin 0.5mm pitch FFC cable.

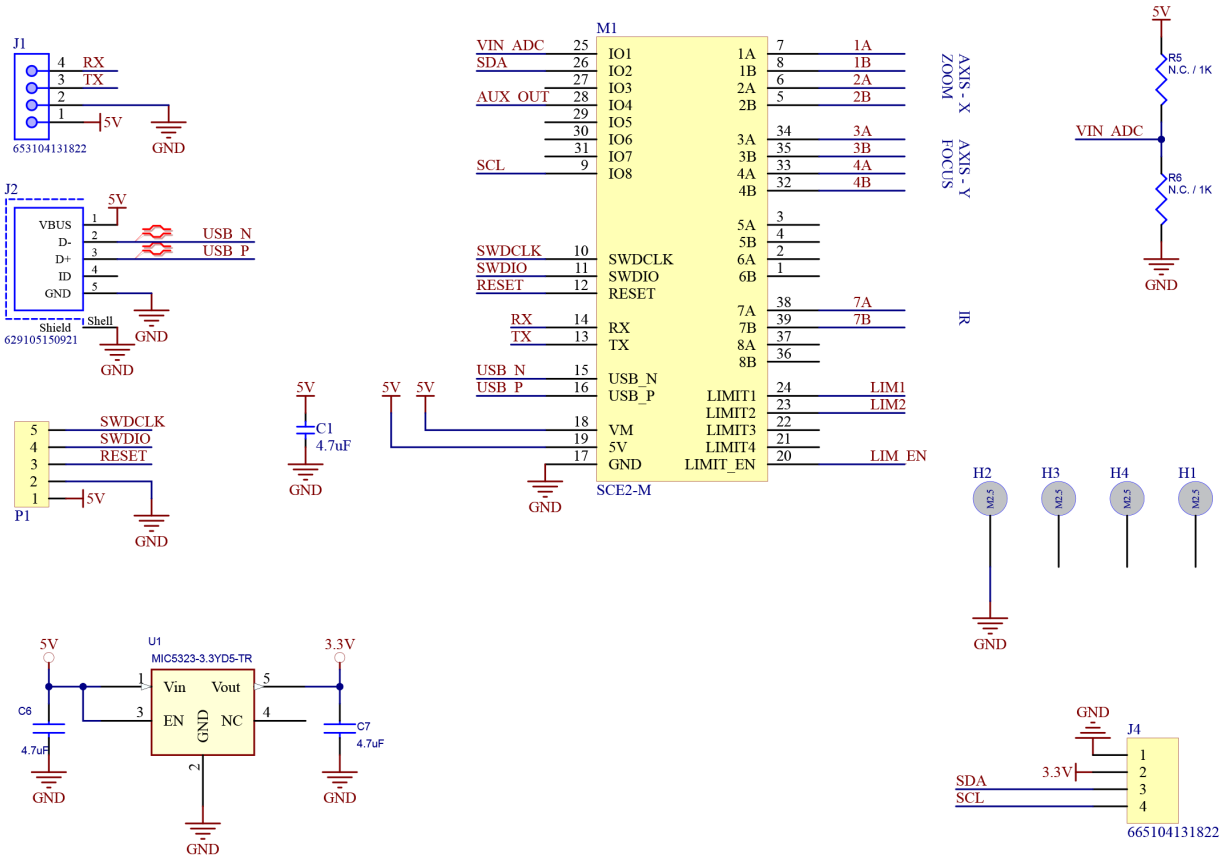
Nr	Function
1	ZOOM A+
2	ZOOM B+
3	ZOOM A-
4	ZOOM B-
5	IR-
6	IR+
7	N.C.
8	HALL+
9	BIAS+
10	HALL-
11	BIAS-
12	N.C.
13	IRIS DRIVE+
14	IRIS DRIVE-
15	IRIS CONT+
16	IRIS CONT-
17	Focus RST

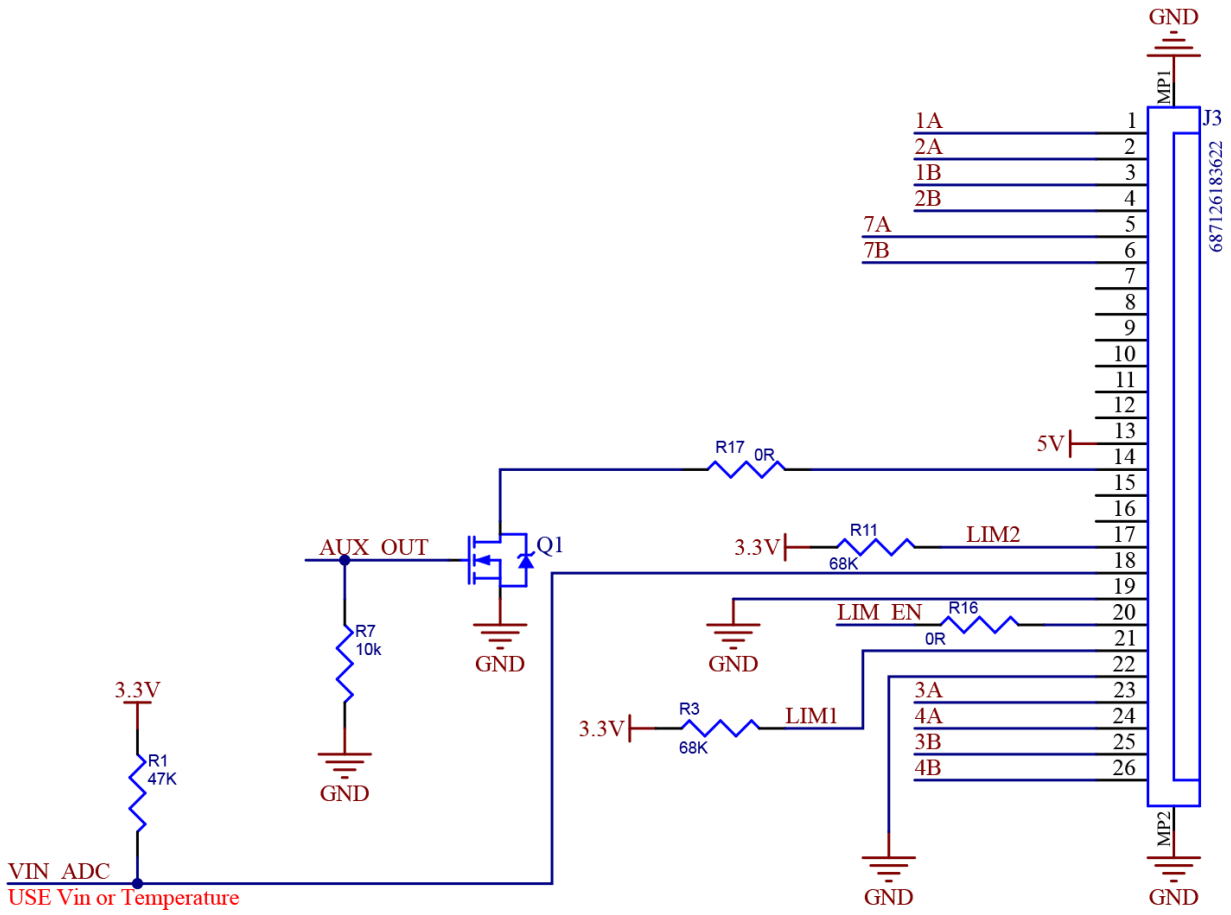
18	Therm1
19	Therm2
20	SENS VCC
21	Zoom RST
22	SENS GND
23	Focus A+
24	Focus B+
25	Focus A-
26	Focus B-

Controller

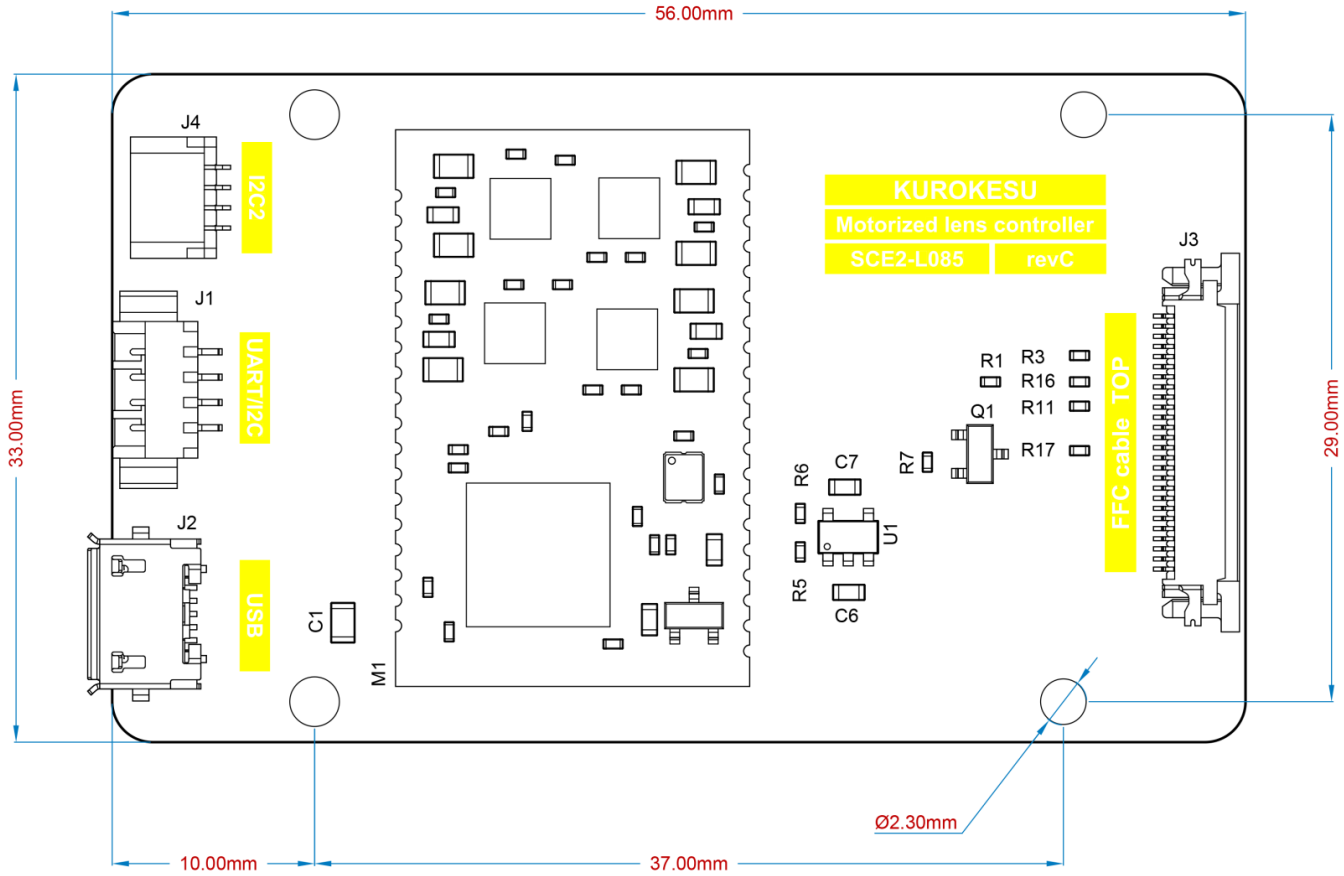
Controller uses SCE2-M module populated on the custom carrier board.

Schematics


J1
4 RX
3 TX
2
1
5V
GND
653104131822
J2
5V
VBUS
D-
D+
ID
GND
Shell
USB_N
USB_P
GND
629105150921
GND
P1
5
4
3
2
1
SWDCLK
SWDIO
RESET
5V
GND
5V
C1
4.7uF
GND
M1
VIN_ADC 25
SDA 26
27
AUX_OUT 28
29
30
31
SCL 9
SWDCLK 10
SWDIO 11
RESET 12
RX 14
TX 13
USB_N 15
USB_P 16
18
19
17
IO1
IO2
IO3
IO4
IO5
IO6
IO7
IO8
SWDCLK
SWDIO
RESET
RX
TX
USB_N
USB_P
VM
5V
GND
1A 7
1B 8
2A 6
2B 5
3A 34
3B 35
4A 33
4B 32
5A 3
5B 4
6A 2
6B 1
7A 38
7B 39
8A 37
8B 36
LIMIT1 24
LIMIT2 23
LIMIT3 22
LIMIT4 21
LIMIT_EN 20
SCE2-M
5V 5V
GND
AXIS - X
ZOOM
AXIS - Y
FOCUS
IR
LIM1
LIM2
LIM_EN
5V
R5
N.C. / 1K
VIN_ADC
R6
N.C. / 1K
GND
H2
H3
H4
H1
M2.5
GND
U1
MIC5323-3.3YD5-TR
5V
3.3V
Vin
Vout
EN
GND
NC
C6
4.7uF
C7
4.7uF
GND
GND
GND
J4
GND
3.3V
SDA
SCL
1
2
3
4
665104131822


GND
MP1
J3
1A
2A
1B
2B
7A
7B
5V
R17 0R
AUX_OUT
Q1
R7
10k
GND
3.3V
R1
47K
VIN_ADC
USE Vin or Temperature
3.3V
R11
68K
LIM2
LIM_EN
R16
0R
GND
3.3V
R3
68K
LIM1
3A
4A
3B
4B
MP2
GND
GND
687126183622

PCB



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