

IMx-3712US USB3.0 Camera Data Sheet



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USB3.0 Camera



1. General Specifications

Mono

Features (IMB-3712US)		
Image Sensor Type	1.1" Sony CMOS Sensor(IMX253LQR-C)	
Picture Size	4096(H) x 3000(V) 12.29M pixels	
Cell Size(um)	3.45 μm x 3.45 μm	
Real Frame Rate	30 (4096x3000, Mono8) 15 (4096x3000, Mono12) When ROI, the Frame rate is fixed according to the vertical image size.	
Lens Mount	C-Mount	
Scanning System	Progressive System	
Frame Format	Mono8, Mono12	
Trigger	Edge	Rising Edge or Falling Edge (Photo coupler)
	Mode	0, 15
	Source	External Trigger(Photo-coupler) or Software Trigger
Strobe	Support Normal Mode or Trigger Mode(Photo-coupler)	
SIO(RS232)	1 GPIN, 1 GPOUT	
Control Functions	Brightness, Sharpness, Gamma, Auto-Exposure, Shutter, Gain, User Defined LUT	
Digital Interface / Transfer Rate	USB3.0	
Gain	0 ~ 24 dB (Manual or Auto)	
Shutter Speed	50 μsec ~ 2 sec, Global shutter	
Supply Voltage	5V via USB3.0 or 12V external power	
Power	~ 4.5 W max.	
External Dimension	44(H) mm x 40(V) mm x 31.6(D) mm (C-mount except.)	
Operation Temp.	-10°C to 50°C (Humidity: 0%RH ~ 80%RH)	
Storage Temp	-30°C to 60°C (Humidity: 0%RH ~ 90%RH)	
Weight	< 98 g	
Camera Specification	AIA USB3.0 Vision version 1.0	

Remark : Camera Specifications subject to change without notice.

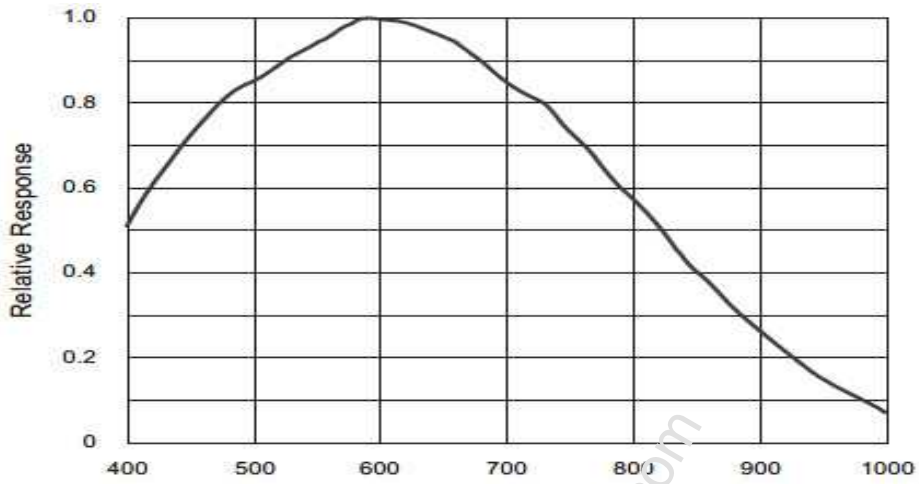
Color

Features (IMC-3712US)		
Image Sensor Type	1.1" Sony CMOS Sensor(IMX253LQR-C)	
Picture Size	4096(H) x 3000(V) 12.29M pixels	
Cell Size(um)	3.45 μm x 3.45 μm	
Real Frame Rate	30 (4096x3000, Bayer 8/Mono8) 15 (4096x3000, Bayer 12, Mono12, YUV422) When ROI, the Frame rate is fixed according to the vertical image size.	
Lens Mount	C-Mount	
Scanning System	Progressive System	
Frame Format	Mono8(B/W), Mono12(B/W), Bayer8, Bayer12, YUV422	
Trigger	Edge	Rising Edge or Falling Edge (Photo coupler)
	Mode	0, 15
	Source	External Trigger(Photo-coupler) or Software Trigger
Strobe	Support Normal Mode or Trigger Mode(Photo-coupler)	
SIO(RS232)	1 GPIN, 1 GPOUT	
Control Functions	Brightness, Sharpness, Gamma, Auto-Exposure, Shutter, Gain, AWB User Defined LUT	
Digital Interface / Transfer Rate	USB3.0	
Gain	0 ~ 24 dB (Manual or Auto)	
Shutter Speed	50 μsec ~ 2 sec. Global shutter	
Supply Voltage	5V via USB3.0 or 12V external power	
Power	~ 4.5 W max.	
External Dimension	44(H) mm x 40(V) mm x 31.6(D) mm (C-mount except.)	
Operation Temp.	-10°C to 50°C (Humidity: 0%RH ~ 80%RH)	
Storage Temp	-30°C to 60°C (Humidity: 0%RH ~ 90%RH)	
Weight	< 98 g	
Camera Specification	AIA USB3.0 Vision version 1.0	

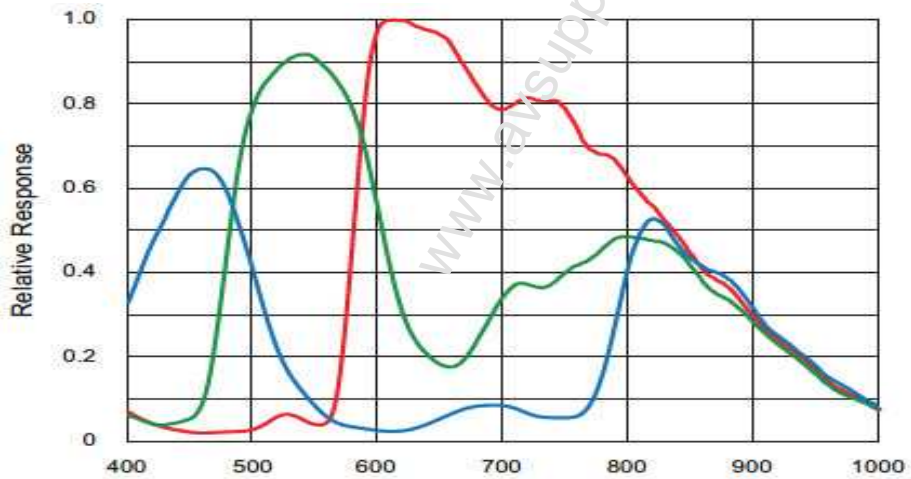
Remark : Camera Specifications subject to change without notice.

2. Spectral Response

 It excludes lens and light source characteristics.



IMB-3712US Spectral Response (From Sensor Data Sheet)

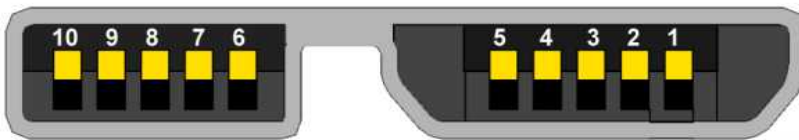


IMC-3712US Spectral Response (From Sensor Data Sheet)

3. Camera Interface and Connectors

3.1 USB 3.0 Connector

The USB 3.0 connector for the camera’s USB connection is a standard Micro-B USB 3.0 connector. It provides a USB 3.0 connection to supply power to the camera and to transmit video data and control signals. Connection assignments and numbering adhere to the Universal Serial Bus 3.0 standard. The recommended mating connector is any standard Micro-B USB 3.0 plug.



USB 3.0 Micro B Connector

USB 3.0 Micro-B Connector Pin Assignments

Pin	Signal Name	Description
1	VBUS	Power
2	D-	USB 2.0 differential pair
3	D+	
4	ID	OTG identification
5	GND	Ground for power return
6	MicA_SSTX-	SuperSpeed transmitter differential pair
7	MicA_SSTX+	
8	GND_DRAIN	Ground for Super-Speed signal return
9	MicA_SSRX-	Super-Speed receiver differential pair
10	MicA_SSRX+	

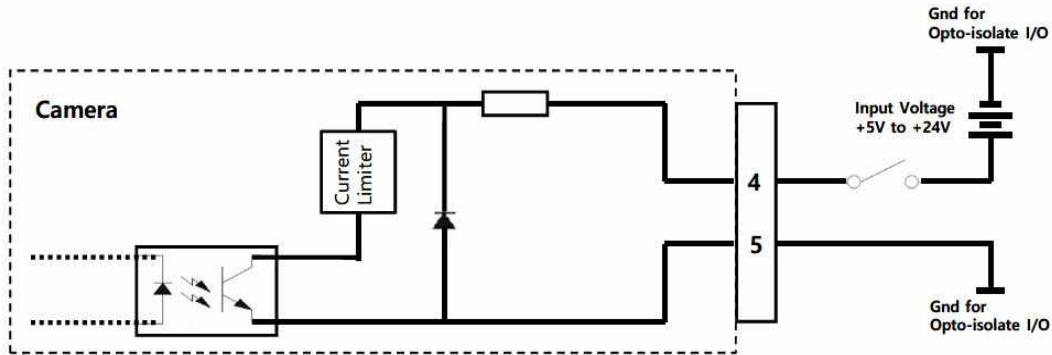
3.2 12-pin Connector Pin Numbering

Pin	Description		Pin	Description
	Pin	Description		
1	Ext. PWR GND	7	GND	
2	Ext. PWR IN (+12V)	8	RS-232 (Rx)	
3	GND	9	RS-232 (Tx)	
4	I/O Input (trigger)	10	GND	
5	I/O Input GND	11	I/O Output GND	
6	NC	12	I/O Output (strobe)	

Pin Assignments for the 12-pin Connector and Related Designations

3.3 Opto-isolated Input

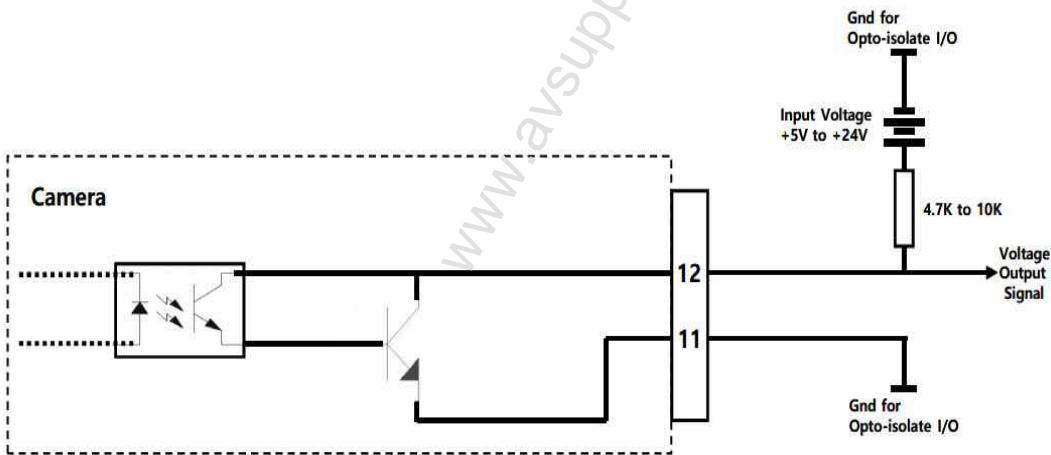
The Input is Opto-isolated. The operating voltage of this Input port is up to +24 VDC and the allowable current is 5 to 15mA.



Opto-isolated Input Line Schematic

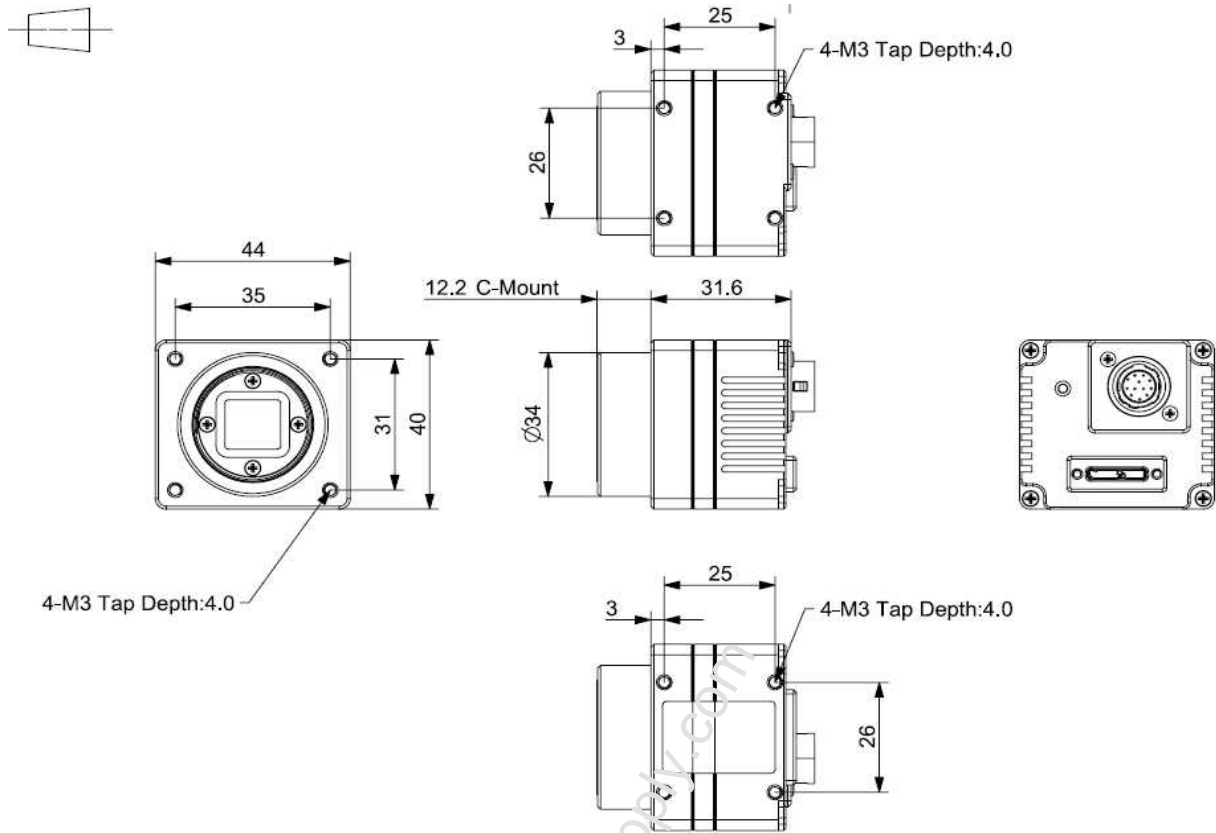
3.4 Opto-isolated Output

The Output is Opto-isolated. The operating voltage of this Output port is up to +24 VDC and the allowable current is 100mA.



Opto-isolated Output Line Schematic

4. Camera Dimension



Mechanical Dimension (unit: mm)

Images

