

Small Hardware / Software Trigger USB2.0

Color / Monochrome Cameras

STC-MC33USB/MB33USB	(VGA)
STC-MC83USB/MB83USB	(XGA)
STC-MC133USB/MB133USB	(Quad-VGA)
STC-MC152USB/MB152USB	(SXGA)
STC-MC202USB/MB202USB	(UXGA)

Product Specifications

Sentech Co.,Ltd

Caution for the PC with the Intel Core i3, i5 or i7

When use the USB camera with some PC, which has the Intel Core i3, i5 or i7, may occur following issue:

CANNOT get any image from the USB camera.

Frame drops frequently

(This issue may occurred for the other manufacture USB camera too)

Cause of this issue:

The image data cannot transfer to the PC because the Intel Core i3, i5 or i7 CPU switch to the power save mode frequently while the image is transferring.

Solution for this issue:

1. Disable the power save mode with change the BIOS settings.

Please change BIOS setting with your responsibility.

The power consumption and the heat of the PC are increased when disable the power save mode. Please understand and accept this before disable the power save mode.

2. Disable the power save mode with the Sentech PC power management software.

The power save mode can disable with the Sentech PC power management software "StPowerCtrl".

Please contact to the Sales representative about this software.

The power consumption and the heat of the PC are increased when disable the power save mode. Please understand and accept this before disable the power save mode.

3. Change the camera clock from "Normal" to "1/2" or "1/4". (Reduce the frame rate)

Revisions

Rev	Date	Changes	Note
1.00	2011/09/14	New document	
1.01	2011/11/21	Update Change the description for STC-MB/MC133USB	
1.02	2012/03/16	Update Add the Dimensions drawing (with tripod)	
1.03	2013/05/23	Update Revised Effective picture elements on STC-MB/MC33USB, STC-MB/MC83USB and STC-MB/MC133USB	
1.04	2014/10/21	Update Changed company name Revised Effective picture elements on STC-MB/MC33USB	
1.05	2015/03/17	Update Revised Maximum shutter speed to 1/100,000 sec	
1.06	2017/02/01	Update Add STC-MB33USB-C (C mount type)	

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Specifications

Electronic specifications / Mechanical specifications / Environmental specifications

STC-MC33USB / STC-MB33USB

Product		STC-MC33USB	STC-MB33USB
Electronic Specifications	Image Sensor	1/3" interline VGA color progressive CCD: ICX424AQ (Sony)	
		1/3" interline VGA monochrome progressive CCD: ICX424AL (Sony)	
	Total picture elements	692 (H) x 504 (V)	
	Effective picture elements	659 (H) x 494 (V)	
	Chip size	5.79 (H) x 4.89 (V) mm	
	Cell size	7.40 (H) x 7.40 (V) μm	
	Scanning system	Progressive	
	Resolution	640 (H) x 480 (V) (Full scanning) 640 (H) x 224 (V) (1/2 partial scanning) 640 (H) x 80 (V) (1/4 partial scanning)	
	Scanning methods	Full scanning, 1/1 partial scanning, 1/2 partial scanning, 1/4 partial scanning, Variable partial scanning	Full scanning, 1/1 partial scanning, 1/2 partial scanning, 1/4 partial scanning, Variable partial scanning, Binning scanning, Binning 1/1 partial scanning, Binning 1/2 partial scanning, Binning 1/4 partial scanning, Binning variable partial scanning
	Maximum framer rate	59.94 fps (Normal) / 29.97 fps (1/2 clock) / 14.98 fps (1/4 clock) / 89.91 fps (3/2 clock)	
		120.11 fps (Normal) / 60.05 fps (1/2 clock) / 30.02 fps (1/4 clock) / 180.165 fps (3/2 clock)	
		240.22 fps (Normal) / 120.11 fps (1/2 clock) / 60.055 fps (1/4 clock) / 360.33 fps (3/2 clock)	
	Pixel frequency	24.5454 MHz (Normal) / 12.2727 MHz (1/2 clock) / 6.13635 MHz (1/4 clock) / 36.818 MHz (3/2 clock)	
	Video output	8bit / 10bit / 12bit	
	Minimum scene illumination	18 Lux at F1.2	0.17 Lux at F1.2
	Sync. System	Internal	
	Electronic shutter	Auto / Manual (software selectable)	
	Normal 1/2 clock 1/4 clock 3/2 clock	1/100,000 to 1/59.94 seconds	
		1/100,000 to 1/29.97 seconds	
		1/100,000 to 1/14.99 seconds	
		1/100,000 to 1/89.91 seconds	
	Gain	Auto / Manual (software selectable)	
	Gamma	Manual (software selectable)	
	White balance	Auto / Manual / One shot (software selectable)	
	Trigger mode	Free-run / Edge preset trigger / Pulse width trigger / Start & stop trigger (software selectable) (Hardware trigger and Software trigger are available)	
	Input/output	USB2.0 High speed	
	Power	+5 V through USB connector (+4.4 to +5.25V)	
		Less than 420 mA	
Mechanical Specifications	Dimensions	28 (W) x 28 (H) x 37 (D) mm (excluding the connector)	
	Lens mount	CS mount	
	Weight	Approximately 45g	
	Interface connector	USB: mini-B USB connector IO signal: 6pin connector (HR10A-7R-6PB or equivalent)	
Environmental Specifications	Operational temperature	0 to 40 deg. C	
	Storage temperature	-30 to 65 deg. C	
	Vibration	20Hz to 200Hz to 20Hz (5min./cycle), acceleration 10G, 3 directions 30 min. each	
	Shock	Acceleration 70G, half amplitude 6ms, 3 directions 3 times each	
	Standard compliancy	EMS: EN61000-6-2, EMI: EN61000-6-3 (Class B)	
RoHS		RoHS compliance	

STC-MB33USB-C

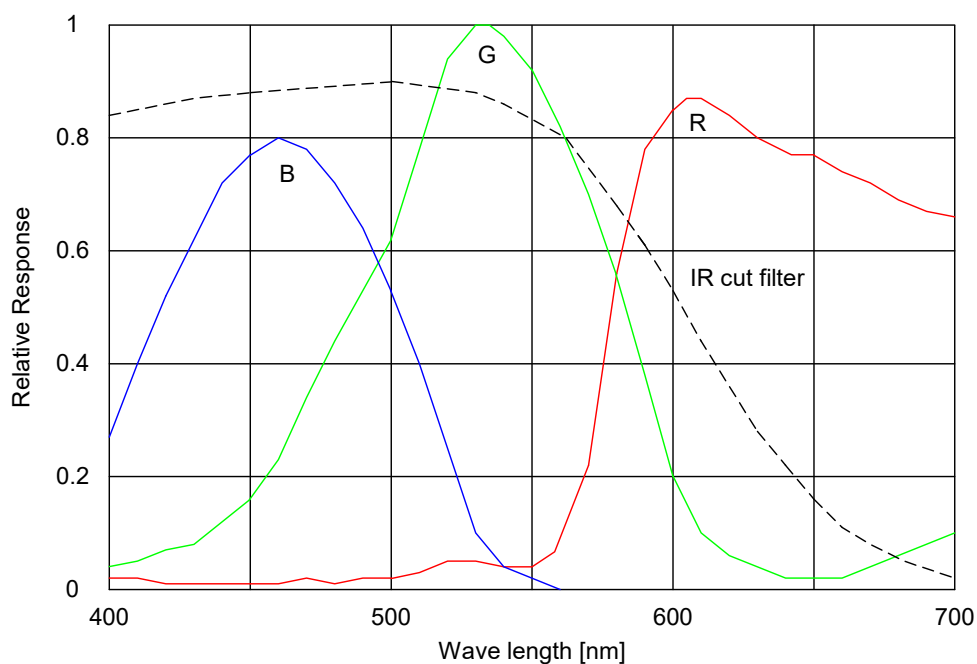
Product		STC-MB33USB
Electronic Specifications	Image Sensor	1/3" interline VGA monochrome progressive CCD: ICX424AL (Sony)
	Total picture elements	692 (H) x 504 (V)
	Effective picture elements	659 (H) x 494 (V)
	Chip size	5.79 (H) x 4.89 (V) mm
	Cell size	7.40 (H) x 7.40 (V) μ m
	Scanning system	Progressive
	Resolution	640 (H) x 480 (V) (Full scanning) 640 (H) x 224 (V) (1/2 partial scanning) 640 (H) x 80 (V) (1/4 partial scanning)
	Scanning methods	Full scanning, 1/1 partial scanning, 1/2 partial scanning, 1/4 partial scanning, Variable partial scanning, Binning scanning, Binning 1/1 partial scanning, Binning 1/2 partial scanning, Binning 1/4 partial scanning, Binning variable partial scanning
	Maximum frame rate	Full scanning: 59.94 fps (Normal) / 29.97 fps (1/2 clock) / 14.98 fps (1/4 clock) / 89.91 fps (3/2 clock) 1/2 partial scanning: 120.11 fps (Normal) / 60.05 fps (1/2 clock) / 30.02 fps (1/4 clock) / 180.165 fps (3/2 clock) 1/4 partial scanning: 240.22 fps (Normal) / 120.11 fps (1/2 clock) / 60.055 fps (1/4 clock) / 360.33 fps (3/2 clock)
	Pixel frequency	24.5454 MHz (Normal) / 12.2727 MHz (1/2 clock) / 6.13635 MHz (1/4 clock) / 36.818 MHz (3/2 clock)
	Video output	8bit / 10bit / 12bit
	Minimum scene illumination	0.17 Lux at F1.2
	Sync. System	Internal
	Electronic shutter	Auto / Manual (software selectable)
	Normal	1/100,000 to 1/59.94 seconds
	1/2 clock	1/100,000 to 1/29.97 seconds
	1/4 clock	1/100,000 to 1/14.99 seconds
	3/2 clock	1/100,000 to 1/89.91 seconds
	Gain	Auto / Manual (software selectable)
	Gamma	Manual (software selectable)
Mechanical Specifications	White balance	-
	Trigger mode	Free-run / Edge preset trigger / Pulse width trigger / Start & stop trigger (software selectable) (Hardware trigger and Software trigger are available)
	Input/output	USB2.0 High speed
	Power	+5 V through USB connector (+4.4 to +5.25V)
	Consumption	Less than 420 mA
Environmental Specifications	Dimensions	28 (W) x 28 (H) x 42 (D) mm (excluding the connector)
	Lens mount	C mount
	Weight	Approximately 45g
	Interface connector	USB: mini-B USB connector IO signal: 6pin connector (HR10A-7R-6PB or equivalent)
	Operational temperature	0 to 40 deg. C
	Storage temperature	-30 to 65 deg. C
	Vibration	20Hz to 200Hz to 20Hz (5min./cycle), acceleration 10G, 3 directions 30 min. each
	Shock	Acceleration 70G, half amplitude 6ms, 3 directions 3 times each
	Standard compliancy	EMS: EN61000-6-2, EMI: EN61000-6-3 (Class B)
	RoHS	RoHS compliance

(Caution)

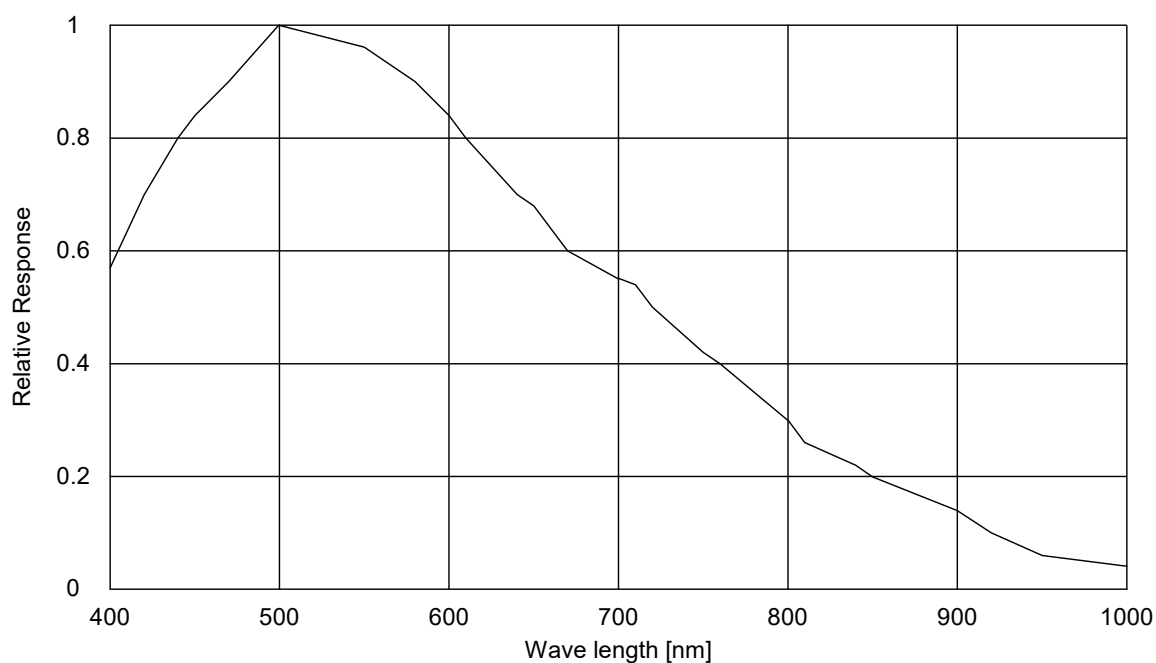
Please DO NOT connects or disconnect any USB devices including USB memory while use this USB camera.
Its possibility to the USB camera DOES NOT recognize after connect or disconnect USB devices.

Spectral Sensitivity Characteristics

STC-MC33USB (with IR cut filter)



STC-MB33USB



STC-MC83USB / STC-MB83USB

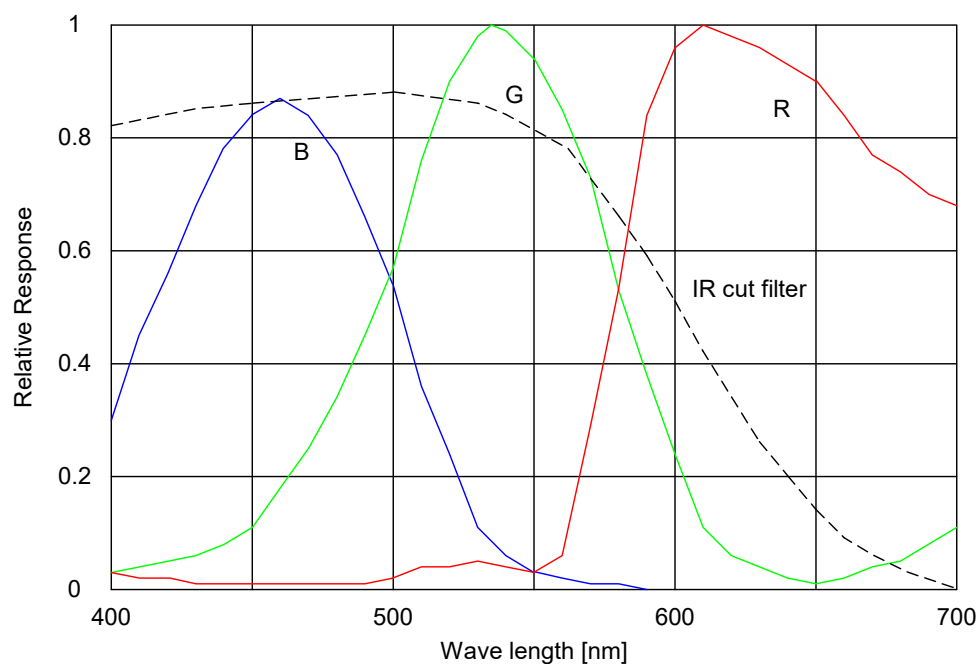
Product		STC-MC83USB	STC-MB83USB
Electronic Specifications	Image Sensor	1/3" interline XGA color progressive CCD: ICX204AK (Sony)	1/3" interline XGA monochrome progressive CCD: ICX204AL (Sony)
	Total picture elements	1077 (H) x 788 (V)	
	Effective picture elements	1024 (H) x 779 (V)	
	Chip size	5.80 (H) x 4.92 (V) mm	
	Cell size	4.65 (H) x 4.65 (V) μ m	
	Scanning system	Progressive	
	Resolution	1024 (H) x 768 (V) (Full scanning) 1024 (H) x 344 (V) (1/2 partial scanning) 1024 (H) x 136 (V) (1/4 partial scanning)	
	Scanning methods	Full scanning, 1/1 partial scanning, 1/2 partial scanning, 1/4 partial scanning, Variable partial scanning	Full scanning, 1/1 partial scanning, 1/2 partial scanning, 1/4 partial scanning, Variable partial scanning, Binning scanning, Binning 1/1 partial scanning, Binning 1/2 partial scanning, Binning 1/4 partial scanning, Binning variable partial scanning
	Maximum framer rate	Full scanning 29.18 fps (Normal) / 14.59 fps (1/2 clock) / 7.295 fps (1/4 clock) 1/2 partial scanning 60.02 fps (Normal) / 30.01 fps (1/2 clock) / 15.00 fps (1/4 clock) 1/4 partial scanning 120.35 fps (Normal) / 60.175 fps (1/2 clock) / 30.087 fps (1/4 clock)	
	Pixel frequency	29.5 MHz (Normal) / 14.75 MHz (1/2 clock) / 7.375 MHz (1/4 clock)	
	Video output	8bit / 10bit / 12bit	
	Minimum scene illumination	21 Lux at F1.2	0.54 Lux at F1.2
	Sync. System	Internal	
	Electronic shutter	Auto / Manual (software selectable)	
	Normal	1/100,000 to 1/29.18 seconds	
	1/2 clock	1/100,000 to 1/14.59 seconds	
	1/4 clock	1/100,000 to 1/7.30 seconds	
	Gain	Auto / Manual (software selectable)	
	Gamma	Manual (software selectable)	
Mechanical Specifications	White balance	Auto / Manual / One shot (software selectable)	
	Trigger mode	Free-run / Edge preset trigger / Pulse width trigger / Start & stop trigger (software selectable) (Hardware trigger and Software trigger are available)	
	Input/output	USB2.0 High speed	
	Power	+5 V through USB connector (+4.4 to +5.25V)	
	Consumption	Less than 300 mA	
Environmental Specifications	Dimensions	28 (W) x 28 (H) x 37 (D) mm (excluding the connector)	
	Lens mount	CS mount	
	Weight	Approximately 45g	
	Interface connector	USB: mini-B USB connector IO signal: 6pin connector (HR10A-7R-6PB or equivalent)	
	Operational temperature	0 to 40 deg. C	
	Storage temperature	-30 to 65 deg. C	
	Vibration	20Hz to 200Hz to 20Hz (5min./cycle), acceleration 10G, 3 directions 30 min. each	
	Shock	Acceleration 70G, half amplitude 6ms, 3 directions 3 times each	
	Standard compliancy	EMS: EN61000-6-2, EMI: EN61000-6-3 (Class B)	
	RoHS	RoHS compliance	

(Caution)

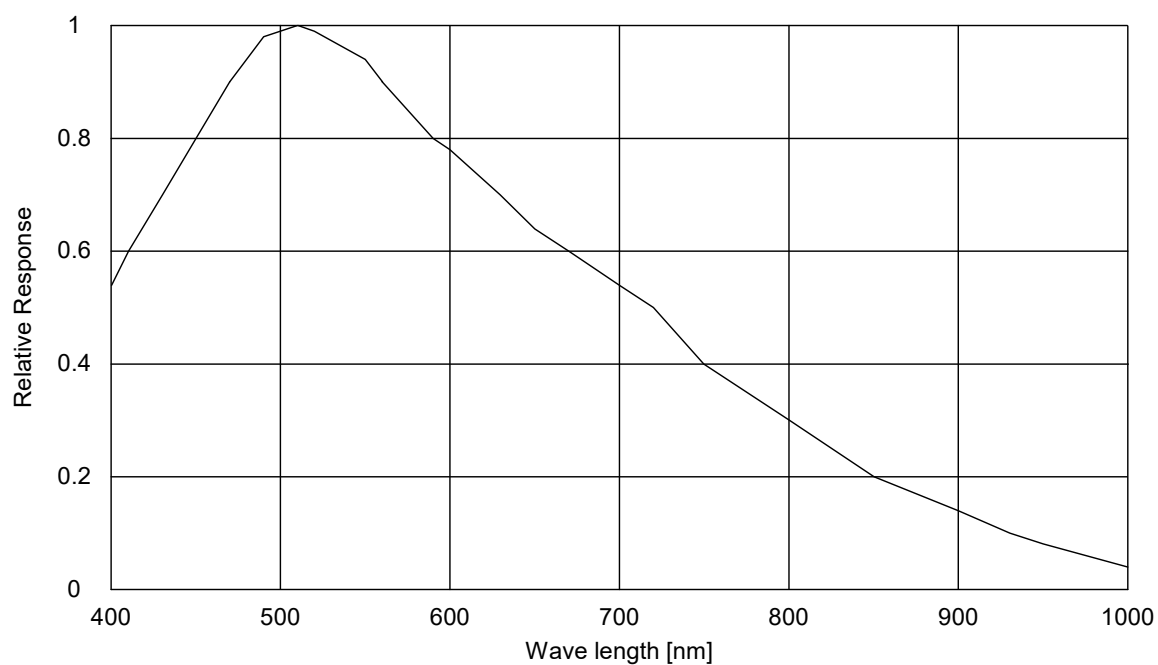
Please DO NOT connect or disconnect any USB devices including USB memory while use this USB camera.
Its possibility to the USB camera DOES NOT recognize after connect or disconnect USB devices.

Spectral Sensitivity Characteristics

STC-MC83USB (with IR cut filter)



STC-MB83USB



STC-MC133USB / STC-MB133USB

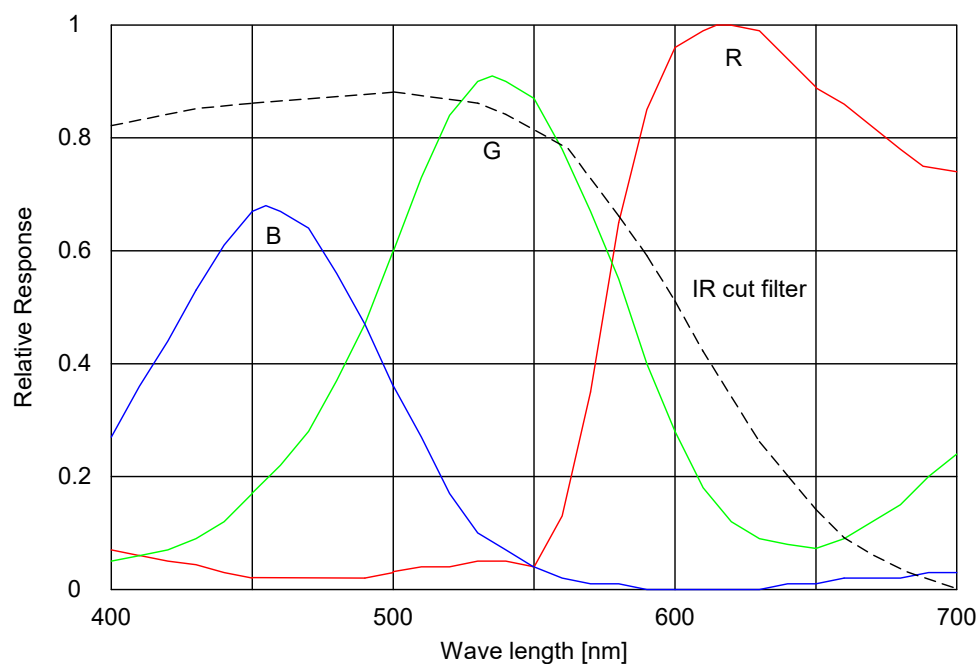
Product		STC-MC133USB	STC-MB133USB
Electronic Specifications	Image Sensor	1/3" interline Quad-VGA color progressive CCD: ICX445AQ (Sony)	1/3" interline Quad-VGA monochrome progressive ICX445AL (Sony)
	Total picture elements	1348 (H) x 976 (V)	
	Effective picture elements	1280 (H) x 966 (V)	
	Chip size	6.26 (H) x 5.01 (V) mm	
	Cell size	3.75 (H) x 3.75 (V) μ m	
	Scanning system	Progressive	
	Resolution	1280 (H) x 960 (V) (Full scanning) 1280 (H) x 440 (V) (1/2 partial scanning) 1280 (H) x 168 (V) (1/4 partial scanning)	
	Scanning methods	Full scanning, 1/1 partial scanning, 1/2 partial scanning, 1/4 partial scanning, Variable partial scanning	Full scanning, 1/1 partial scanning, 1/2 partial scanning, 1/4 partial scanning, Variable partial scanning, Binning scanning, Binning 1/1 partial scanning, Binning 1/2 partial scanning, Binning 1/4 partial scanning, Binning variable partial scanning
	Maximum framer rate	Full scanning 22.40 fps (Normal) / 11.20 fps (1/2 clock) / 5.60 fps (1/4 clock) 1/2 partial scanning 44.81 fps (Normal) / 22.40 fps (1/2 clock) / 11.20 fps (1/4 clock) 1/4 partial scanning 89.80 fps (Normal) / 44.90 fps (1/2 clock) / 22.45 fps (1/4 clock)	
	Pixel frequency	36.818 MHz (Normal) / 18.409 MHz (1/2 clock) / 9.20453 MHz (1/4 clock)	
	Video output	8bit / 10bit / 12bit	
	Minimum scene illumination	11 Lux at F1.2	0.15 Lux at F1.2
	Sync. System	Internal	
	Electronic shutter	Auto / Manual (software selectable)	
	Normal	1/100,000 to 1/22.40 seconds	
	1/2 clock	1/100,000 to 1/11.20 seconds	
	1/4 clock	1/100,000 to 1/5.60 seconds	
	Gain	Auto / Manual (software selectable)	
	Gamma	Manual (software selectable)	
Mechanical Specifications	White balance	Auto / Manual / One shot (software selectable)	
	Trigger mode	Free-run / Edge preset trigger / Pulse width trigger / Start & stop trigger (software selectable) (Hardware trigger and Software trigger are available)	
	Input/output	USB2.0 High speed	
	Power	+5 V through USB connector	
	Consumption	Less than 300 mA	
Environmental Specifications	Dimensions	28 (W) x 28 (H) x 37 (D) mm (excluding the connector)	
	Lens mount	CS mount	
	Weight	Approximately 45g	
	Interface connector	USB: mini-B USB connector	
	Operational temperature	IO signal: 6pin connector (HR10A-7R-6PB or equivalent) 0 to 40 deg. C	
	Storage temperature	-30 to 65 deg. C	
	Vibration	20Hz to 200Hz to 20Hz (5min./cycle), acceleration 10G, 3 directions 30 min. each	
	Shock	Acceleration 70G, half amplitude 6ms, 3 directions 3 times each	
	Standard compliancy	EMS: EN61000-6-2, EMI: EN61000-6-3 (Class B)	
	RoHS	RoHS compliance	

(Caution)

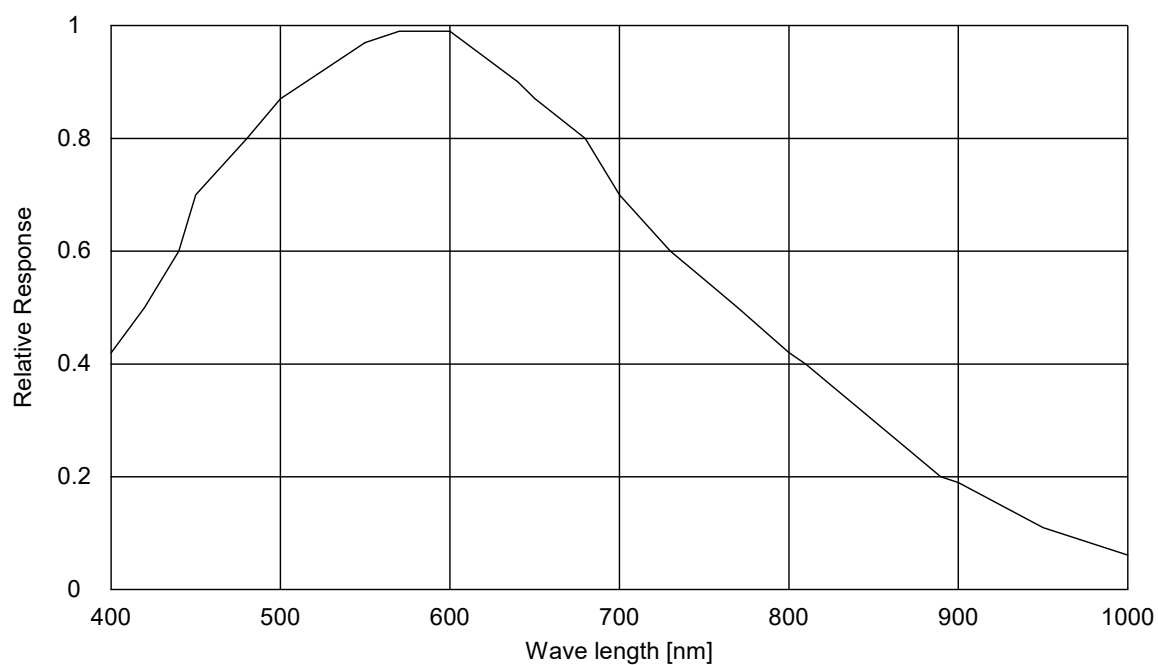
Please DO NOT connects or disconnect any USB devices including USB memory while use this USB camera.
Its possibility to the USB camera DOES NOT recognize after connect or disconnect USB devices.

Spectral Sensitivity Characteristics

STC-MC133USB (with IR cut filter)



STC-MB133USB



STC-MC152USB / STC-MB152USB

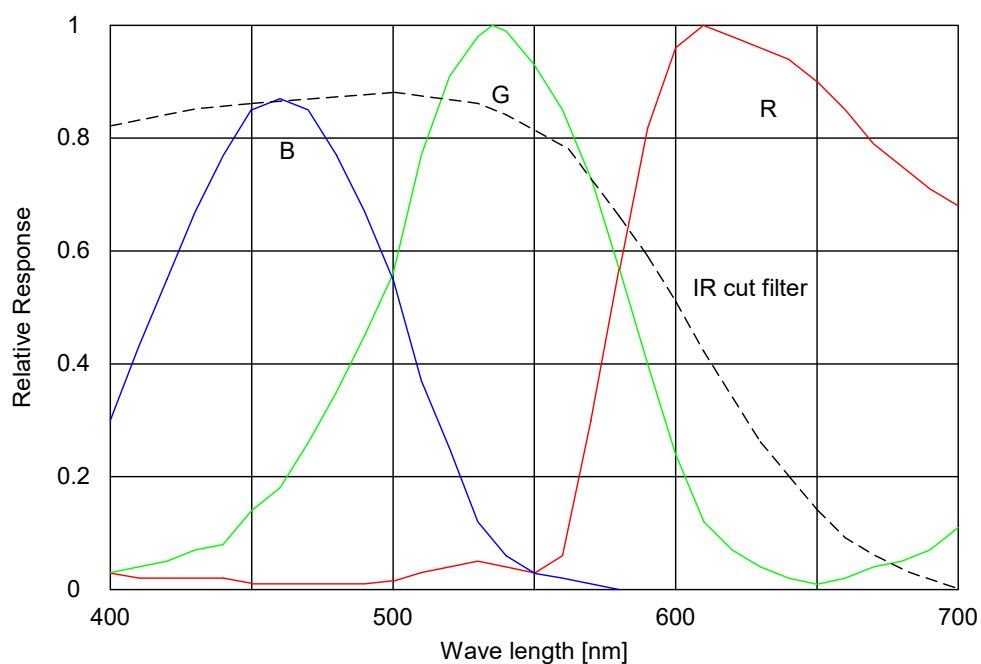
Product		STC-MC152USB	STC-MB152USB
Electronic Specifications	Image Sensor	1/2" interline SXGA color progressive CCD: ICX205AK (Sony)	1/2" interline SXGA monochrome progressive CCD: ICX205AL (Sony)
	Total picture elements	1434 (H) x 1050 (V)	
	Effective picture elements	1392 (H) x 1040 (V)	
	Chip size	7.60 (H) x 6.20 (V) mm	
	Cell size	4.65 (H) x 4.65 (V) μ m	
	Scanning system	Progressive	
	Resolution	1360 (H) x 1024 (V) (Full scanning) 1360 (H) x 476 (V) (1/2 partial scanning) 1360 (H) x 184 (V) (1/4 partial scanning)	
	Scanning methods	Full scanning, 1/1 partial scanning, 1/2 partial scanning, 1/4 partial scanning, Variable partial scanning	Full scanning, 1/1 partial scanning, 1/2 partial scanning, 1/4 partial scanning, Variable partial scanning, Binning scanning, Binning 1/1 partial scanning, Binning 1/2 partial scanning, Binning 1/4 partial scanning, Binning variable partial scanning
	Maximum frame rate	Full scanning 19.26 fps (Normal) / 9.63 fps (1/2 clock) / 4.815 fps (1/4 clock) 1/2 partial scanning 38.52 fps (Normal) / 19.26 fps (1/2 clock) / 9.63 fps (1/4 clock) 1/4 partial scanning 77.04 fps (Normal) / 38.52 fps (1/2 clock) / 19.26 fps (1/4 clock)	
	Pixel frequency	36.818 MHz (Normal) / 18.409 MHz (1/2 clock) / 9.20453 MHz (1/4 clock)	
	Video output	8bit / 10bit / 12bit	
	Minimum scene illumination	18 Lux at F1.2	0.47 Lux at F1.2
	Sync. System	Internal	
	Electronic shutter	Auto / Manual (software selectable)	
	Normal	1/100,000 to 1/19.26 seconds	
	1/2 clock	1/100,000 to 1/9.63 seconds	
	1/4 clock	1/100,000 to 1/4.81 seconds	
	Gain	Auto / Manual (software selectable)	
	Gamma	Manual (software selectable)	
Mechanical Specifications	White balance	Auto / Manual / One shot (software selectable)	-
	Trigger mode	Free-run / Edge preset trigger / Pulse width trigger / Start & stop trigger (software selectable) (Hardware trigger and Software trigger are available)	
	Input/output	USB2.0 High speed	
	Power	+5 V through USB connector (+4.4 to +5.2V)	
	Consumption	Less than 420 mA	
Environmental Specifications	Dimensions	28 (W) x 28 (H) x 42 (D) mm (excluding the connector)	
	Lens mount	C mount	
	Weight	Approximately 45g	
	Interface connector	USB: mini-B USB connector IO signal: 6pin connector (HR10A-7R-6PB or equivalent)	
	Operational temperature	0 to 40 deg. C	
	Storage temperature	-30 to 65 deg. C	
	Vibration	20Hz to 200Hz to 20Hz (5min./cycle), acceleration 10G, 3 directions 30 min. each	
	Shock	Acceleration 70G, half amplitude 6ms, 3 directions 3 times each	
	Standard compliancy	EMS: EN61000-6-2, EMI: EN61000-6-3 (Class B)	
	RoHS	RoHS compliance	

(Caution)

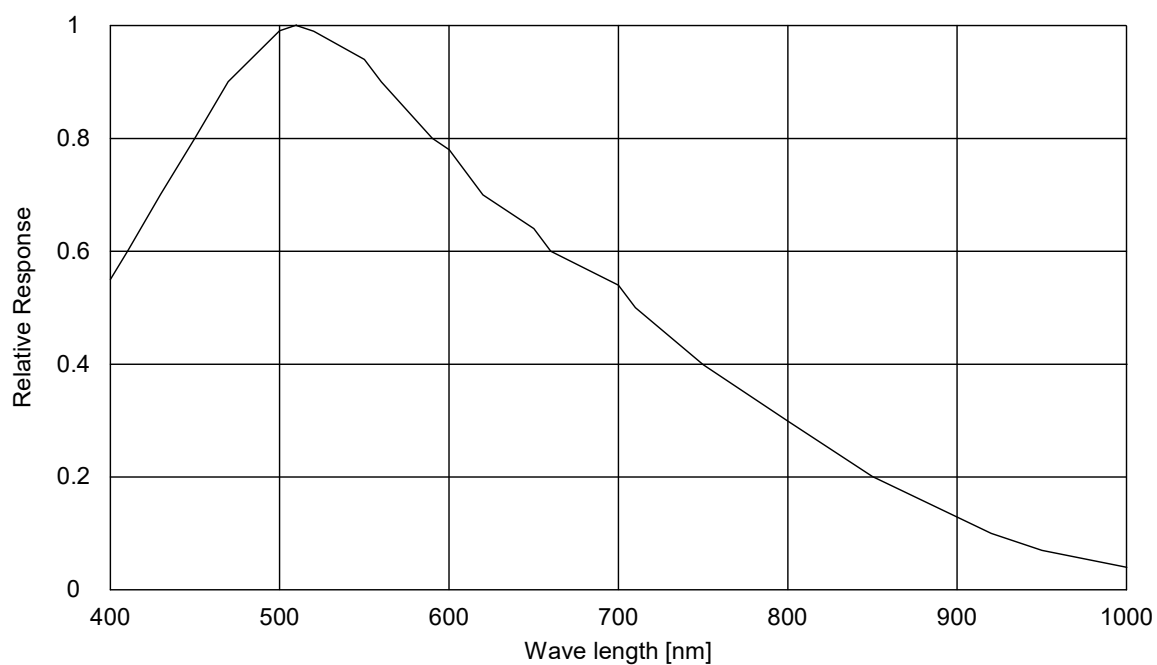
Please DO NOT connect or disconnect any USB devices including USB memory while use this USB camera.
Its possibility to the USB camera DOES NOT recognize after connect or disconnect USB devices.

Spectral Sensitivity Characteristics

STC-MC152USB (with IR cut filter)



STC-MB152USB



STC-MC202USB / STC-MB202USB

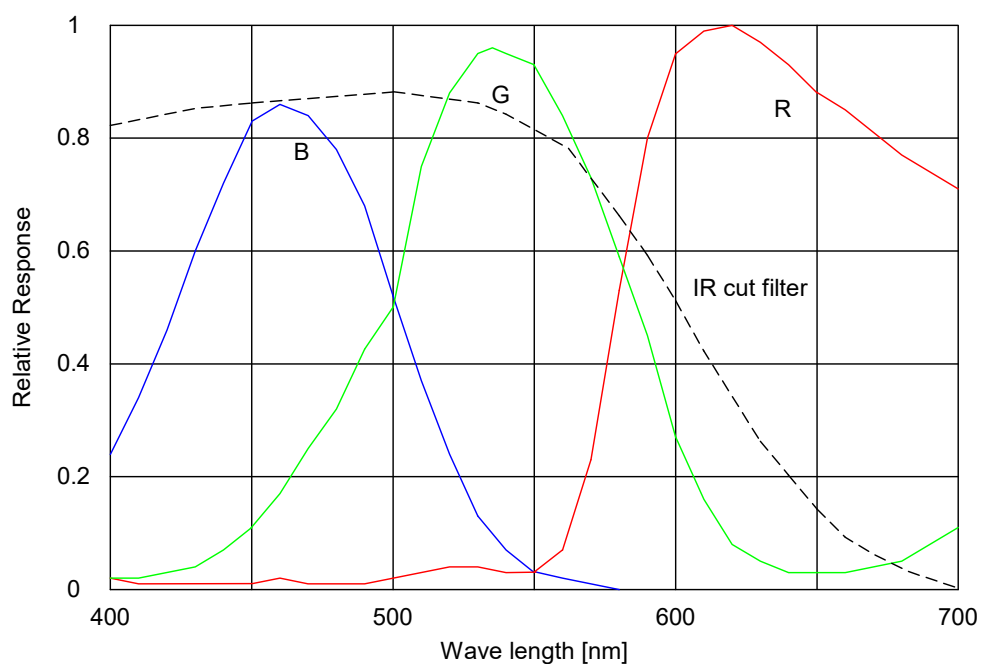
Product		STC-MC202USB	STC-MB202USB
Electronic Specifications	Image Sensor	1/1.8" interline UXGA color progressive CCD: ICX274AQ (Sony)	1/1.8" interline UXGA monochrome progressive CCD: ICX274AL (Sony)
	Total picture elements	1688 (H) x 1248 (V)	
	Effective picture elements	1628 (H) x 1236 (V)	
	Chip size	8.50 (H) x 6.80 (V) mm	
	Cell size	4.40 (H) x 4.40 (V) μ m	
	Scanning system	Progressive	
	Resolution	1600 (H) x 1200 (V) (Full scanning) 1600 (H) x 544 (V) (1/2 partial scanning) 1600 (H) x 208 (V) (1/4 partial scanning)	
	Scanning methods	Full scanning, 1/1 partial scanning, 1/2 partial scanning, 1/4 partial scanning, Variable partial scanning	Full scanning, 1/1 partial scanning, 1/2 partial scanning, 1/4 partial scanning, Variable partial scanning, Binning scanning, Binning 1/1 partial scanning, Binning 1/2 partial scanning, Binning 1/4 partial scanning, Binning variable partial scanning
	Maximum framer rate	Full scanning 15.32 fps (Normal) / 7.66 fps (1/2 clock) / 3.83 fps (1/4 clock) 1/2 partial scanning 30.63 fps (Normal) / 15.31 fps (1/2 clock) / 7.65 fps (1/4 clock) 1/4 partial scanning 61.27 fps (Normal) / 30.63 fps (1/2 clock) / 15.31 fps (1/4 clock)	
	Pixel frequency	36.818 MHz (Normal) / 18.409 MHz (1/2 clock) / 9.20453 MHz (1/4 clock)	
	Video output	8bit / 10bit / 12bit	
	Minimum scene illumination	7.7 Lux at F1.2	0.13 Lux at F1.2
	Sync. System	Internal	
	Electronic shutter	Auto / Manual (software selectable)	
	Normal	1/100,000 to 1/15.32 seconds	
	1/2 clock	1/100,000 to 1/7.66 seconds	
	1/4 clock	1/100,000 to 1/3.83 seconds	
	Gain	Auto / Manual (software selectable)	
	Gamma	Manual (software selectable)	
Mechanical Specifications	White balance	Auto / Manual / One shot (software selectable)	-
	Trigger mode	Free-run / Edge preset trigger / Pulse width trigger / Start & stop trigger (software selectable) (Hardware trigger and Software trigger are available)	
	Input/output	USB2.0 High speed	
	Power	+5 V through USB connector (+4.4 to +5.25V)	
Environmental Specifications	Consumption	Less than 450 mA	
	Dimensions	28 (W) x 28 (H) x 42 (D) mm (excluding the connector)	
	Lens mount	C mount	
	Weight	Approximately 45g	
Environmental Specifications	Interface connector	USB: mini-B USB connector IO signal: 6pin connector (HR10A-7R-6PB or equivalent)	
	Operational temperature	0 to 40 deg. C	
	Storage temperature	-30 to 65 deg. C	
	Vibration	20Hz to 200Hz to 20Hz (5min./cycle), acceleration 10G, 3 directions 30 min. each	
	Shock	Acceleration 70G, half amplitude 6ms, 3 directions 3 times each	
	Standard compliancy	EMS: EN61000-6-2, EMI: EN61000-6-3 (Class B)	
Environmental Specifications	RoHS	RoHS compliance	

(Caution)

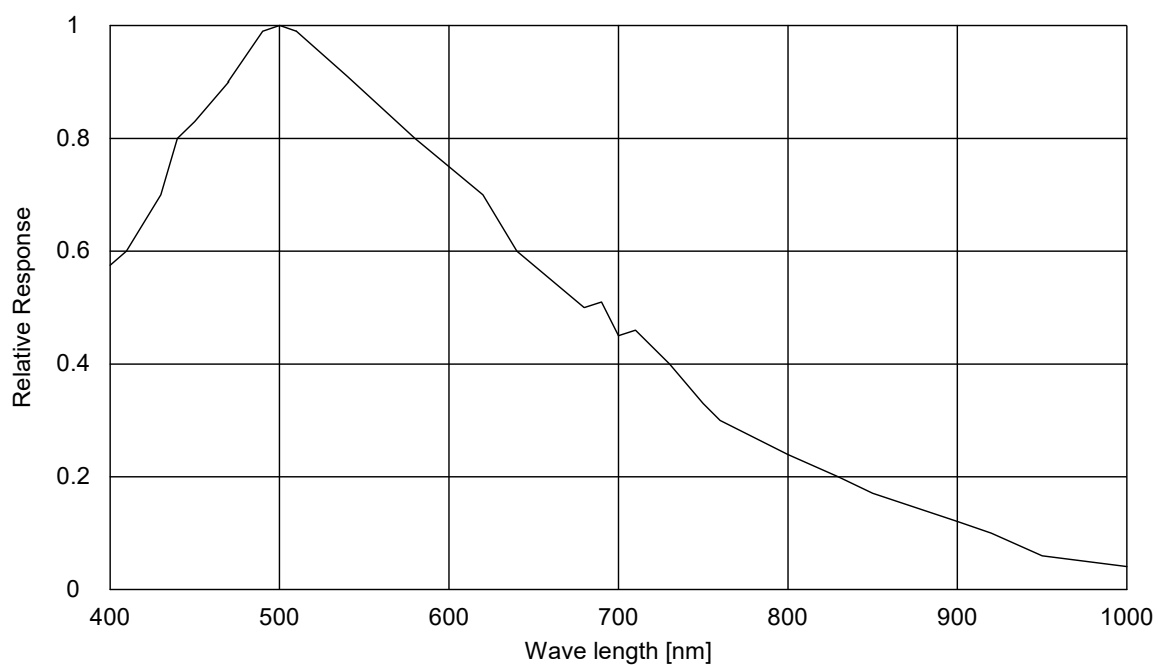
Please DO NOT connect or disconnect any USB devices including USB memory while use this USB camera.
Its possibility to the USB camera DOES NOT recognize after connect or disconnect USB devices.

Spectral Sensitivity Characteristics

STC-MC202USB (with IR cut filter)



STC-MB202USB



Interface connector specifications

1. USB connector: Mini-B USB type

2. I/O connector: HR10A-7R-6PB (Hirose) or equivalent

This connector is for the input and output signals.

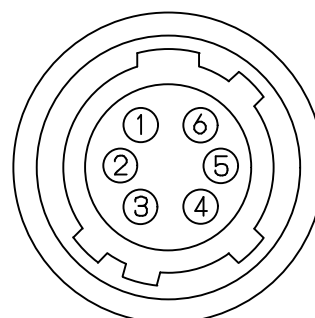
Trigger input and the output signals can be assigned through the camera setting communication.

The power in the connector is for the input / output signals, NOT for the camera power.

Pin assignment

No.	Signal type	IO direction	Spec.	Initial signal
1	IO GND	-	IO GND	-
2	OUT2	OUT	Opt. Isolated	No signal
3	OUT1	OUT	Opt. Isolated	No signal
4	IN2	IN	Opt. Isolated	No signal
5	IN1	IN	Opt. Isolated	No signal
6	IO VCC IN	-	IO VCC +3 to +26.4Vdc	-

Input and output signals are isolated.



[Connector on the rear panel]

Input / Output signals specifications

1. Input signals specifications

1.1 Function for the input signals

The following functions can be configured for the input signals (IN1 and IN2) through the software.

No.	Functions	Polarity
1	No signal (Default)	-
2	General input	-
3	Trigger signal input	Positive / Negative
4	Read out signal input	Positive / Negative
5	Sub trigger signal input	Positive / Negative

The polarity for the trigger signal input, the read out signal input and the sub trigger signal input can be selectable.

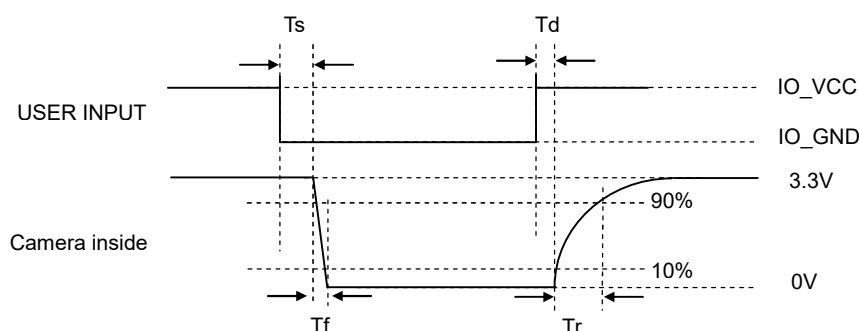
(Recommend: Use with the negative polarity for reduces the timing delay by the photo-coupler)

1.2 Characteristics of the input signals

Input signal level: High: IO VCC IN (+3 to +26.4V)
Low: Smaller than 0.4V

Input signal duration: The signal duration should be longer than “Tf + Tr”.
Please check “Input signal response timings” for Tf and Tr.

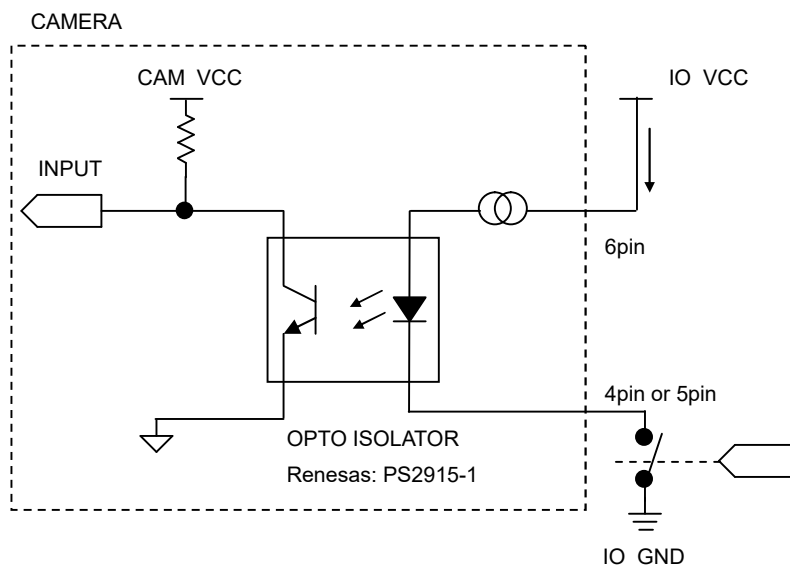
Input signal response timings:



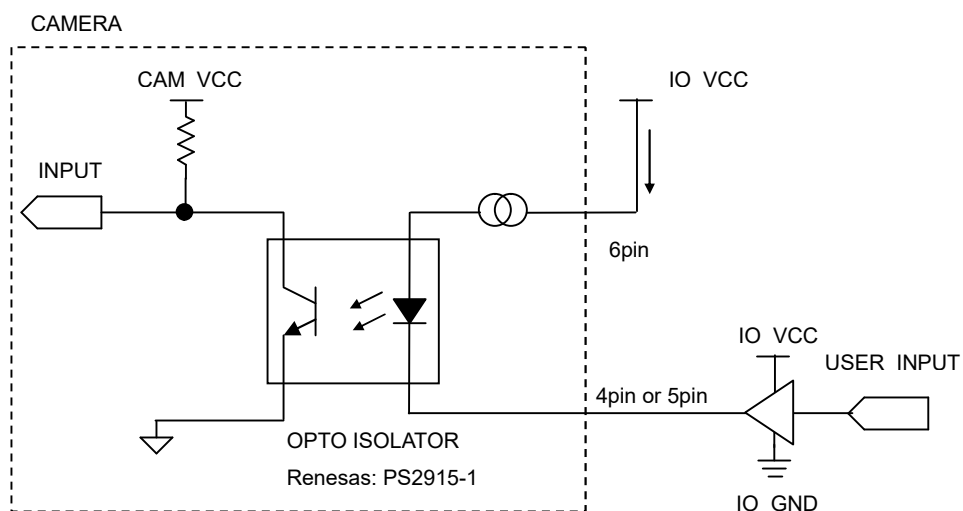
	IO_VCC			
	3.3[V]	5.0[V]	12[V]	24[V]
Td	35.2 [us]	38.2 [us]	39.6 [us]	39.6 [us]
Tr	23.8 [us]	24.0 [us]	23.6 [us]	23.6 [us]
Ts	2.6 [us]	2.16 [us]	1.8 [us]	1.76 [us]
Tf	3.36 [us]	2.28 [us]	2.0 [us]	1.88 [us]

1.3 Input signal circuits

Example circuits 1



Example circuits 2



2. Output signals specifications

2.1 Function for the output signals

The following functions can be configured for the output signals (OUT1 and OUT2) through the software.

No.	Functions	Polarity
1	No signal (Default)	-
2	General input	-
3	Trigger signal output	Positive / Negative
4	Exposure end signal output	Positive / Negative
5	CCD read out end signal output	Positive / Negative
6	Strobe signal output (Time setting)	Positive / Negative
7	Strobe signal output (Exposure time)	Positive / Negative

The polarity for the trigger signal, the exposure end signal, the CCD read out end signal, the strobe signal (time setting) and the strobe signal (exposure time) can be selectable.

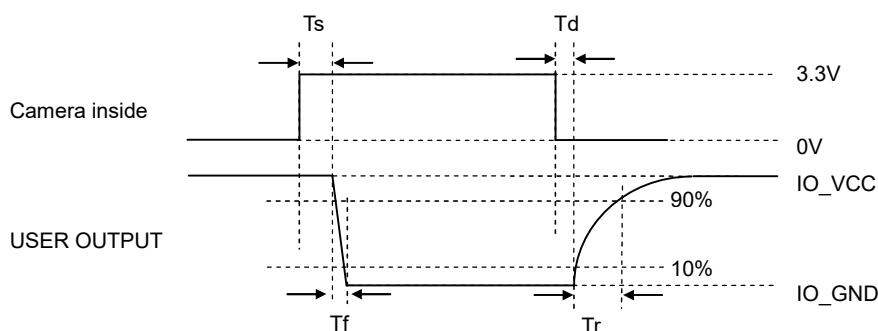
(Recommend: Use with the negative polarity for reduces the timing delay by the photo-coupler)

2.2 Characteristics of the output signals

Output signal level: High: IO VCC IN (+3 to +26.4V)
Low: Smaller than 0.8V

Output signal duration: The signal duration should be longer than " $T_f + T_r$ ".
Please check "Output signal response timings" for T_f and T_r .
The signal duration can adjust by the software.

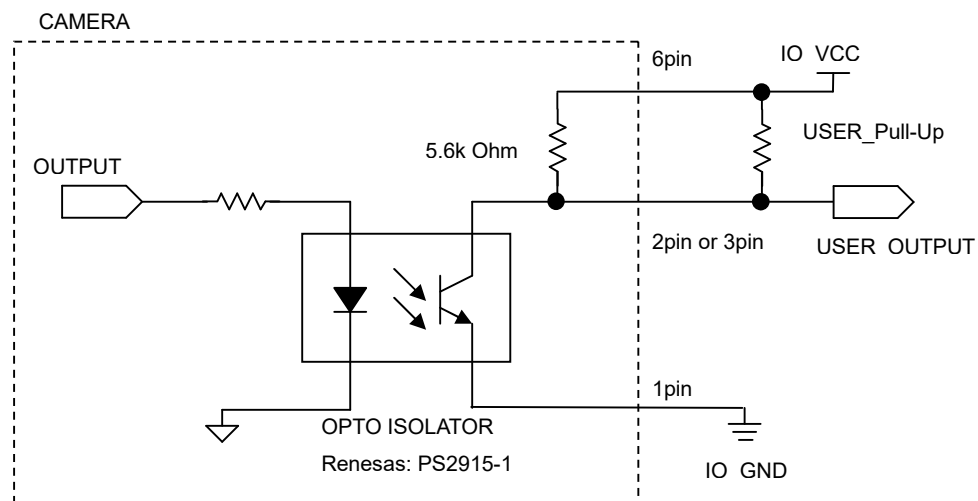
Output signal response timings:



	IO_VCC			
	3.3[V]	5.0[V]	12[V]	24[V]
T_d	41.6 [us]	56.8 [us]	49.6 [us]	44.8 [us]
T_r	126 [us]	76.8 [us]	81.6 [us]	49.6 [us]
T_s	1.68 [us]	1.72 [us]	1.70 [us]	1.88 [us]
T_f	1.8 [us]	1.78 [us]	3.34 [us]	4.88 [us]

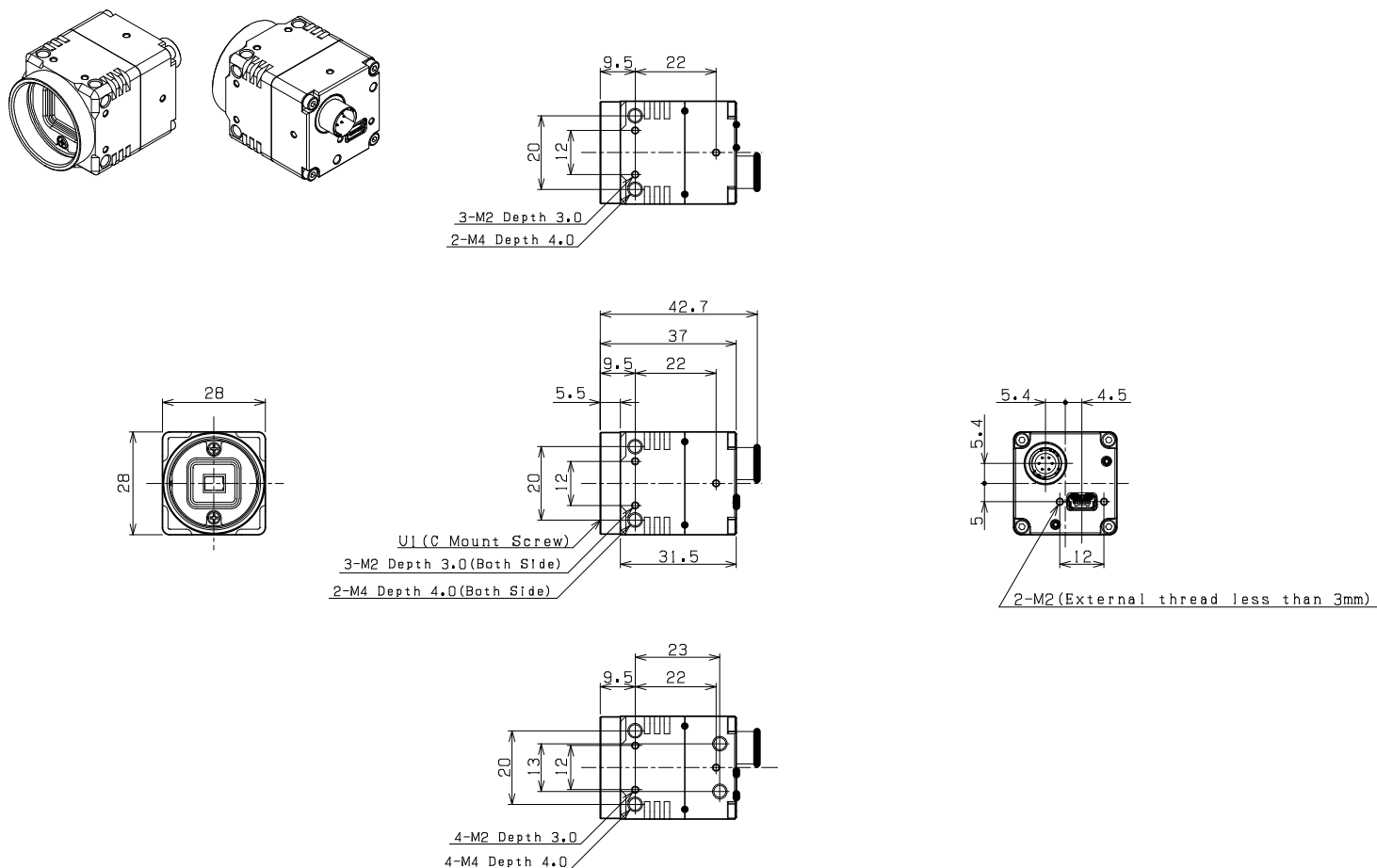
2.3 Output signal circuits

Example circuits 1



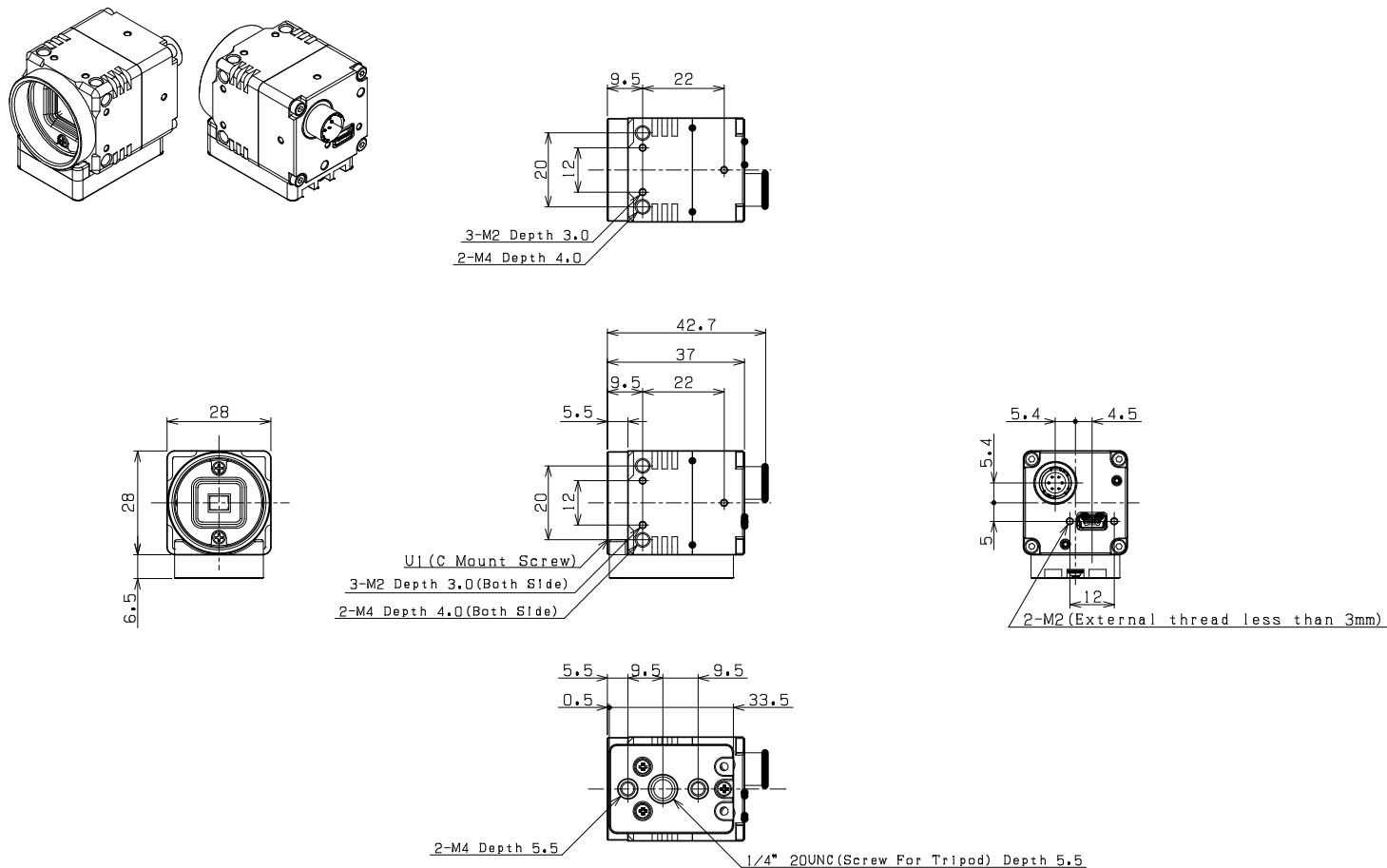
Dimensions

STC-MB33USB/MC33USB/MB83USB/MC83USB/MB133USB/MC133USB



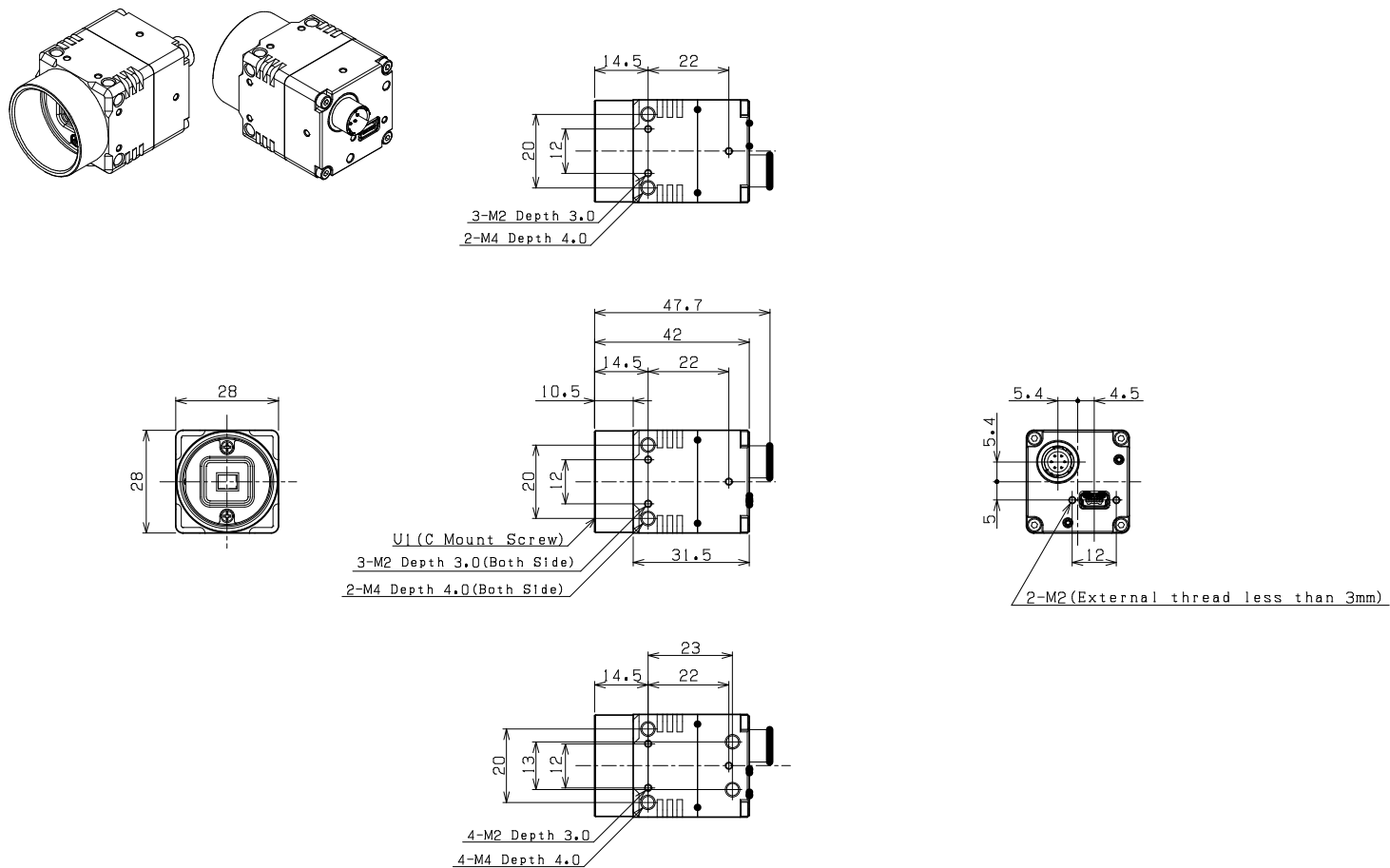
Unit: mm

STC-MB33USB/MC33USB/MB83USB/MC83USB/MB133USB/MC133USB (with tripod)



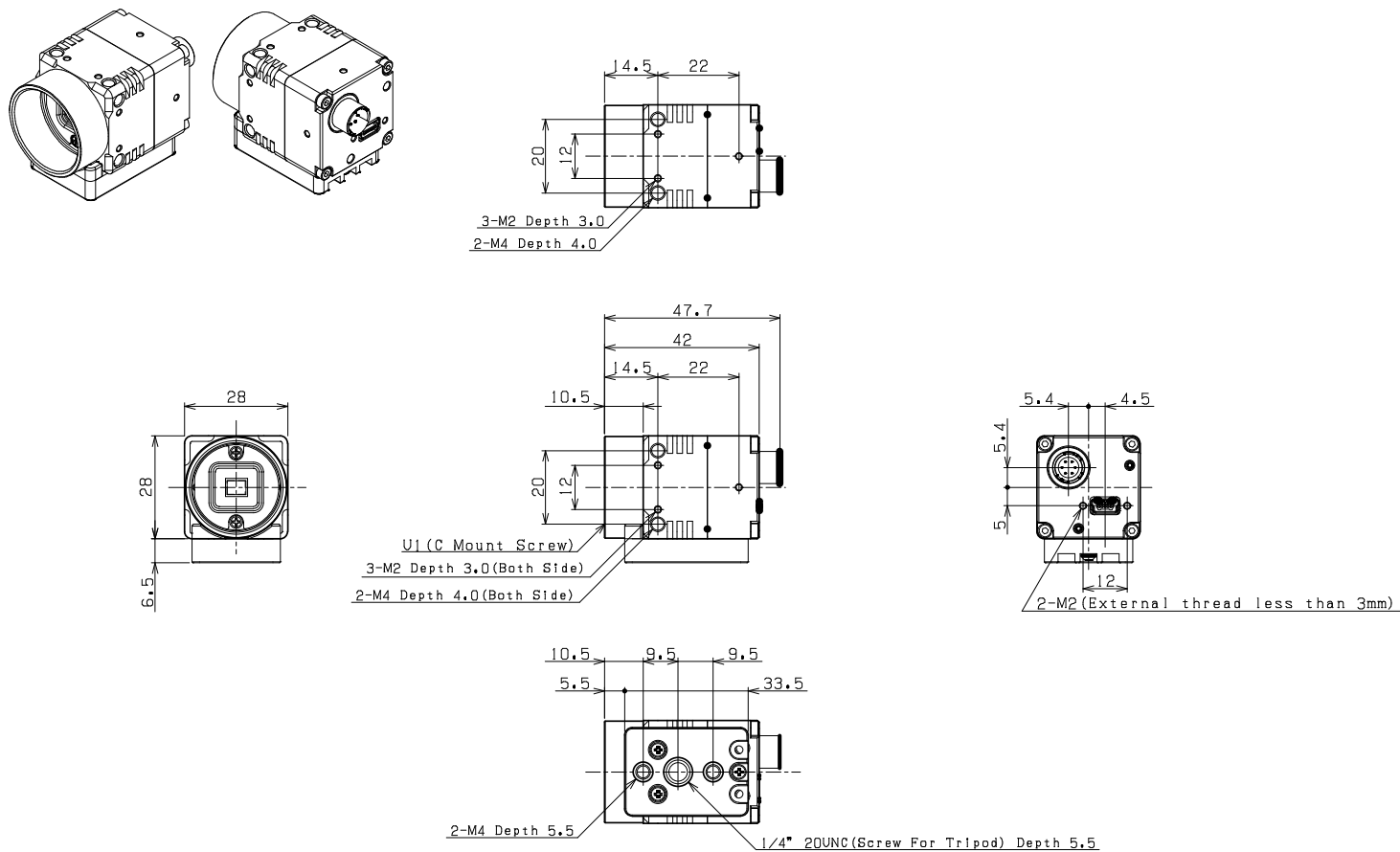
Unit: mm

STC-MB152USB/MC152USB/MB202USB/MC202USB/MB33USB-C



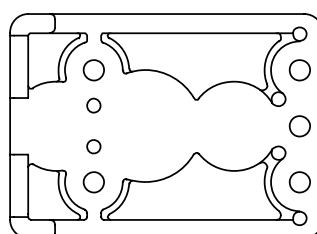
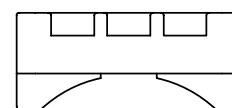
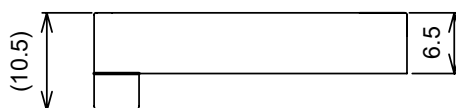
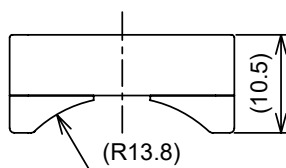
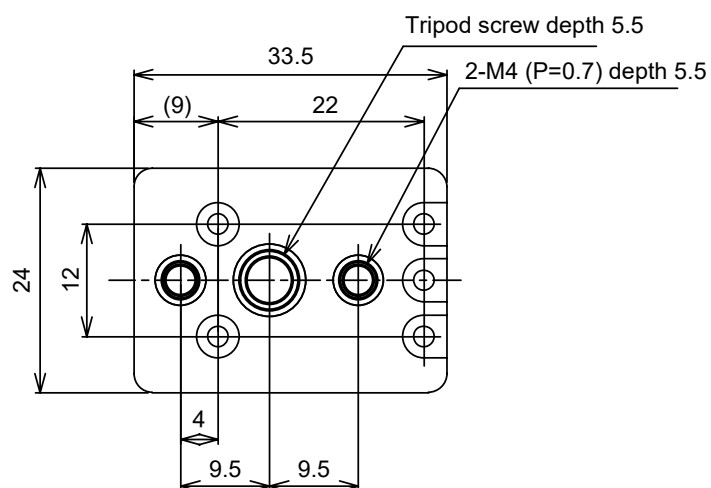
Unit: mm

STC-MB152USB/MC152USB/MB202USB/MC202USB/MB33USB-C (with tripod)



Unit: mm

Tripod



Unit: mm

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