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ELECTRONIC GROUP, INC
480-635-8400 p * aegis-g2@aegiselect.com
http://www.aegis-elec.com

CoaXPress
Monochrome / Color CMOS Camera

STC-MBS212CXP6 (2M / Monochrome / High speed / CXP-6 x1)
STC-MCS212CXP6 (2M / Color / High speed / CXP-6 x1)

Product Specifications and User's Guide

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Precautions for safe use

Please read carefully this “Precautions for safe use” before use the camera. Then the camera uses correctly with agreeing with below notes.

In this “Precautions for safe use”, notes divides into “Warning” and “Caution” to use the camera safety and prevent to harm and damage.

⚠ Warning	This shows, assumption for possibility of serious accident leading death or serious injury if ignore this note and camera uses incorrectly.
⚠ Caution	This shows, assumption for possibility of bear the damage or physical damage if ignore this note and camera uses incorrectly.

About Graphic symbols

This symbol shows general prohibition.

This symbol shows completion or instruction.

[Environment / condition]

⚠ Warning	
Do not use flammable or explosiveness atmospheres. This will cause of personal injury or fire.	Do not use for “safety for human body” related usage. This camera is designed for use “do not harm human body immediately” if by any chance the camera has malfunction.
⚠ Caution	
Use and store under specified environmental conditions (Vibration, shock, temperature, humidity) in the specifications for this camera. This will cause of fire or damage the camera.	

[Installation and cable wiring]

⚠ Warning	
Do not use with out of power voltage range that is specified in the specifications for this camera. This will cause of fire, electrification or malfunction.	Do not wrong wiring. This will cause of fire or malfunction.

⚠ Caution	
Do not grounding DC power (+) of all devices that are connect to the camera. The camera housing is connecting to 0 V line of camera inside circuit. There is a risk of short circuit between camera inside ciurcuit and frame ground. This will cause of malfunction.	It is necessary to wiring and mounting that is specified in the specifications for this camera. This will cause of fire or malfunction.
It is necessary to wiring with turn off the camera. This will cause of electrification or malfunction.	It is necessary to mounting the camera without stress for the cable. This will case of electrification or fire.
Do not use CoaXPress un-supported cable and board. There is a risk of malfunction if the camera connects with wrong environment and turn on the camera.	

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[Usage instruction]

⚠ Warning	
Do not touch the terminal and PCB board While turn on the camera. This will cause of electrification or accident caused by malfunction.	Do not put combustibles near the camera. This will cause of fire.
Do not use without usage that is specified in the specifications for this camera. This will cause of personal injury or malfunction.	Do not push metals including screw driver into radiation holes. This will cause of electrification or malfunction.
Do not touch the camera housing while or afterusing the camera. There is a risk of get burned.	
⚠ Caution	
Do not push contamination into opening of the camera. This will cause of electrification or malfunction.	Do not block the radiation holes. This will cause of fire due to increase the camera inside temperature.

[Maintenance]

⚠ Caution	
Do not disassemble or repair the camera. This will cause of fire, electrification or malfunction.	It is turn off the camera when maintaining or inspecting the camera. This will cause of electrification.

[Disposal]

⚠ Caution	
It is necessary to dispose as industrial waste.	

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1 Product Precautions

- Do not give shock to the camera.
- Do not haul or damage the camera cable.
- Do not wrap the camera with any material while using the camera. This will cause the internal camera temperature to increase.
- When the camera moving or using the place that temperature difference is extreme, countermeasure for dew condensation (heat removal / cold removal) is necessary.
- While the camera is not using, keep the lens cap on the camera to prevent dust or contamination from getting in the sensor or filter and scratching or damaging it.
  Do not keep the camera under the following conditions.
  - In wet, moist, high humidity or dusty place
  - Under direct sunlight
  - In extreme high or low temperature place
  - Near an object that releases a strong magnetic or electric filed
  - Place with strong vibrations
- Apply the power that satisfies the specified in specifications for the camera.
- The defective pixels may appear due to the sensor characteristics.
- Use below recommend materials (or equivalent materials) to clean the surface of glass.
  - Air dust: Non Freon air duster (NAKABAYASHI Co., LTD.)
  - Alcohol: Propan-2-ol (SAN'EI KAKO Co., LTD.)
  - Non-woven: nikowipe clean room (NKB)
- Use a soft cloth to clean the camera.

2 Warranty

■Warranty period

One year after delivery (However, the camera had malfunction with camera uses correctly)
In below case for a fee even within warranty period.

- The malfunction caused by incorrect usage, incorrect modify or repair.
- The malfunction caused by external shock including the camera dropping after delivery the camera.
- The malfunction caused by fire, earthquake, flood disaster, thunderbolt struck, other natural disaster or wrong voltage.

■Warranty coverage

Exchange or repair the malfunction camera if the malfunction is occurred by our responsibility.
"Warranty" mean is warranty for the delivered camera itself. Please accept the induction damage by the camera malfunction is not included.

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3 Overview

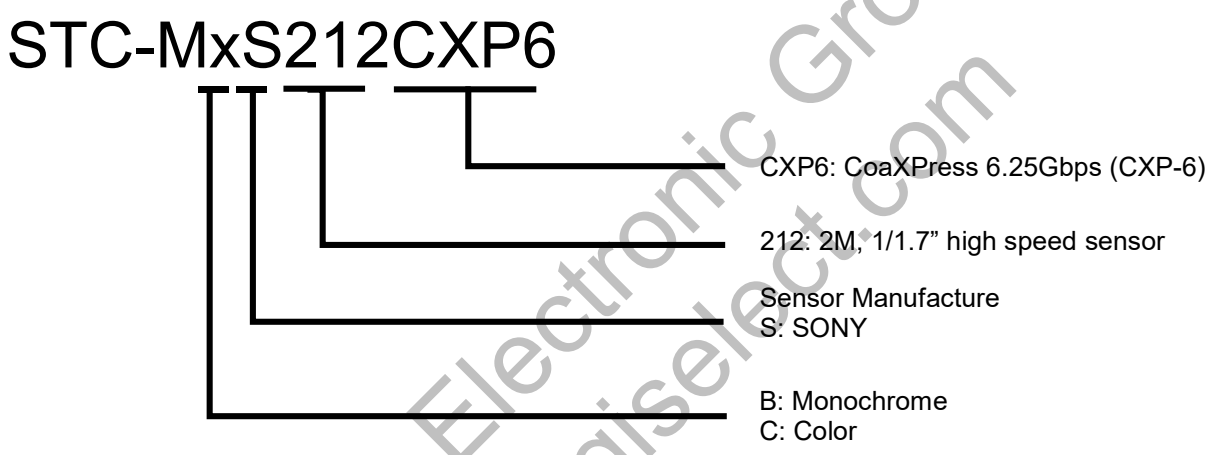
This document describes the specifications of the following cameras

STC-MBS212CXP6 / STC-MCS212CXP6

3.1 Features

- CoaXPress (CXP) Interface: CXP-6, 1 lane
- PoCXP (Power Over CoaXPress) support
- Maximum frame rate (Full resolution): 239 fps @ 2M 8bits
- CMOS (Global Shutter)
- Up to TBD Pixel Defect Correction (Default: ON)
- 8bits, 10bits, 12bits output

3.2 Product Number Naming Method



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4 Specifications

4.1 Electronic Specifications

Model Number		STC-MBS212CXP6	STC-MCS212CXP6
Image Sensor		1/1.7" 2M Progressive Monochrome CMOS (SONY: IMX422)	1/1.7" 2M Progressive Color CMOS (SONY: IMX22)
Shutter Type		Global Shutter	
Active Picture Elements		1,624 (H) x 1,240 (V)	
Cell Size		4.5 (H) x 4.5 (V) µm	
Scanning System		Full scanning / ROI	
Frame Rate (Full resolution)		**8bits: 239 fps** 10bits Packed: 194 fps 12bits Packed: 165 fps	
ADC bit width		12bits	
Image Output Format		**Mono8** Mono10Packed Mono12Packed	**BayerRG8** BayerRG10Packed BayerRG12Packed
CoaXPress Data Output		CXP-6 (6.25 Gbps) 1 Lane	
Noise Level	8bits output	Less than TBD digits (Gain 0 dB)	
	10bitsPacked output	Less than TBD digits (Gain 0 dB)	
	12bitsPacked output	Less than TBD digits (Gain 0 dB)	
Sensitivity (*1)		TBD Lux	TBD Lux
Exposure Time		1 µseconds to 16.777 seconds (**Default: TBD µseconds**)	
Gain	Analog	0 to 18 dB **(Default: 0 dB)**	
	Digital	x1 to x3 **(Default: x1)**	
Black Level		0 to 63 digits @ 8bits	
White Balance Gain		N/A	0 (Black Level) to x4 (**Default: x1**)
ROI		Horizontal: TBD to 1,624 pixels / Vertical: 4 to 1,240 lines (**Default: 1,624 x 1,240**) Adjustable Steps for size: 8 pixels in horizontal direction / 4 lines in vertical direction Adjustable Steps for offset: 8 pixels in horizontal direction / 4 lines in vertical direction	
Multi ROIs		TBD	
Gamma		TBD	
Binning		Horizontal and Vertical summing / **Off**	N/A
Decimation		N/A	
Image Flip		Horizontal / Vertical / Horizontal and Vertical / **Off**	
Defective Pixel Correction		Up to TBD points	
Auto Image Control	Auto Exposure	N/A	
	Auto Gain	N/A	
	Auto White Balance	N/A	TBD
Operational Mode		Edge Preset Trigger / Pulse Width Trigger / CXP Tigger Packet / **Free Run**	
Interface		GenICam	
Protocol		CoaXPress Standard Version 1.1	
I/O		4 GPIOs	
Power	Input Voltaga	PoCXP (+18.5 to +26 Vdc) / External power (+24 Vdc)	
	Consumption	Maximum: Less than TBD W, Typical: TBD W	

Bold: Default

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Precautions

(*1) The sensitivity is measuring the luminance when white level achieved 100 % in below conditions. (TBD)

Camera Setting		Environment	
Parameter	Setting	Parameter	Setting
Gain Up	0 dB	Light Source	Light Box (White)
AGC	Off	Color temperature	5,100K
White Balance	Optimum	Lens	
Electrical Shutter	1/30 seconds	F on Lens	F5.6
Black Level	Optimum	Target Luminance	IM-600 (Topcon)
Gamma	Factory Setting		

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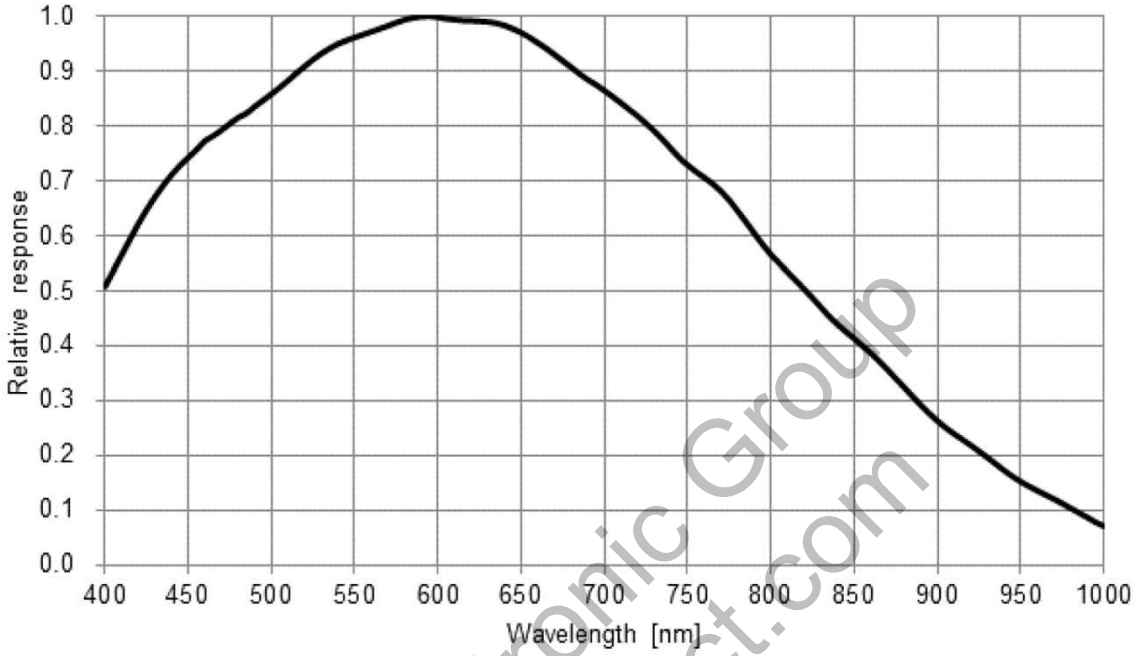
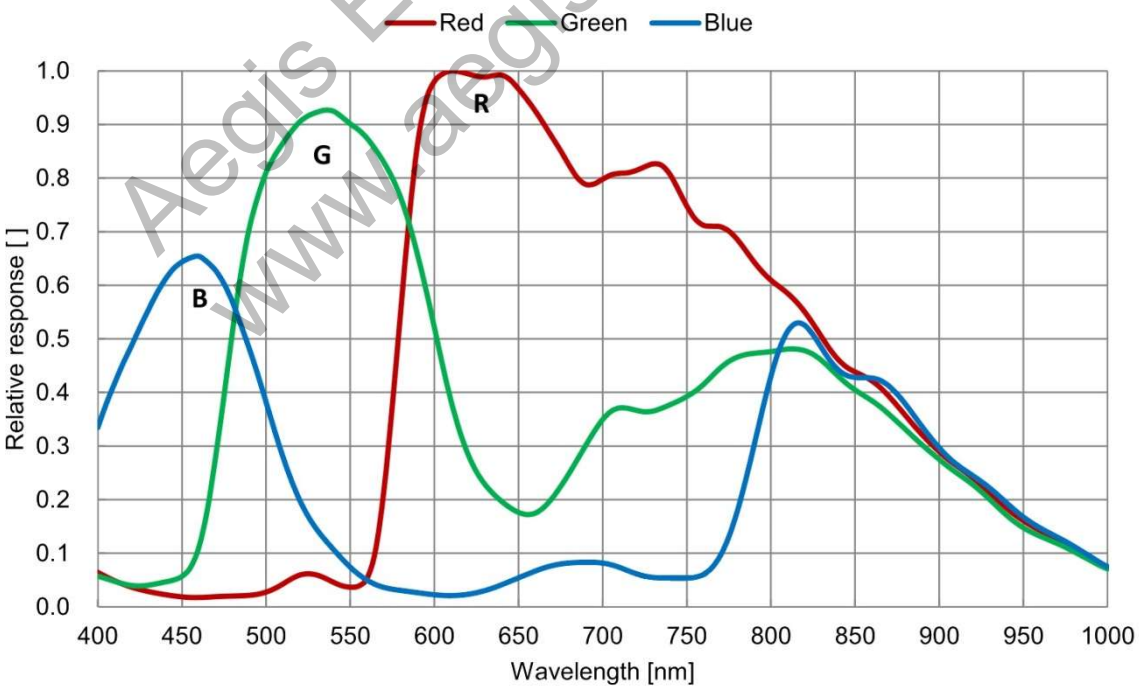
4.2 Spectral Sensitivity Characteristics

4.2.1 STC-MBS212CXP6 (Monochrome)



4.2.2 STC-MCS212CXP6 (Color)



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4.3 Mechanical Specifications

Model Number	STC-MBS212CXP6	STC-MCS212CXP6
Dimensions	28 (W) x 28 (H) x 40 (D) mm (*1)	
Optical Filter	No Optical Filter	
Optical Center Accuracy	Positional accuracy in Horizontal and Vertical directions: +/- 0.3 mm Rotational accuracy of Horizontal and Vertical: +/- 1.5 deg.	
Material	Aluminum alloy (AC)	
Lens Mount	C Mount	
Interface Connector	CXP connector: BNC, 75 Ohm x 1 IO: HR10A-7R-6PB (Hirose) or equivalent x 1	
Camera Mounting	TBD	
Weight	Approximately TBD g	

(*1) Excluding connectors

4.4 Environmental Specifications

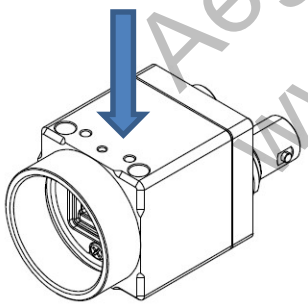
Model Number	STC-MBS212CXP6	STC-MCS212CXP6
Operational Temperature / Humidity	Environmental Temperature: 0 to TBD deg. C, Environmental Humidity: 0 to 85 %RH (No Condensation)	
Storage Temperature / Humidity	Environmental Temperature: -20 to TBD deg. C, Environmental Humidity: 0 to 85%RH (No Condensation)	
Vibration	20 Hz to 200 Hz to 20 Hz (5 min. / cycle), acceleration 10G, XYZ 3 directions 30 min. each	
Shock	Acceleration 38 G, half amplitude 6 mseconds, XYZ 3 directions 3 times each	
Standard Compliancy	EMS: EN61000-6-2, EMI: EN55011	
RoHS	RoHS Compliance	

(*1) Please insure the camera is installed with the appropriate heat dissipation. If camera has a mounted lens and a tripod with an aluminum plate, this could decrease the camera housing temperature for heat dissipation. When the internal temperature sensor on the camera shows less than TBD deg. C, the camera housing temperature (top plate) will be less than TBD deg. C.

Taking these steps will maintain the heat rating of the electronic components of the camera.

Upper side of camera

Measuring point



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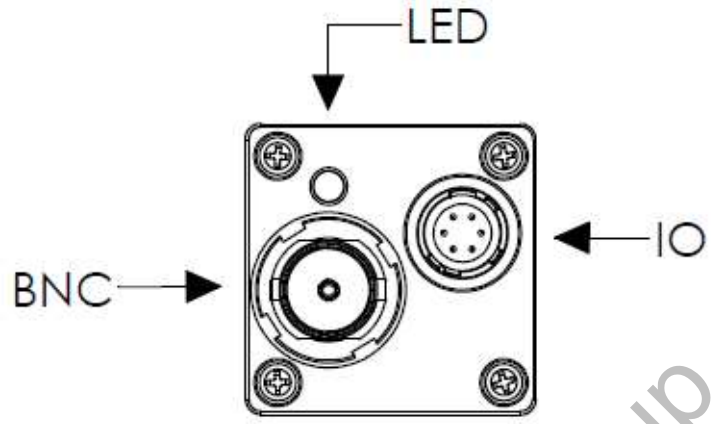
4.5 External Connector Specifications



4.5.1 Micro BNC connector

Micro BNC, 75 Ohm x 1
This camera is PoCXP supported CoaXPress camera.
The CoaXPress frame grabber board is supplied power to camera through Micro BNC connector.

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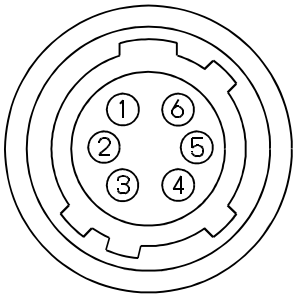
4.5.2 IO Connector (TBD)

HR10A-7R-6PB (Hirose) or equivalent.
This connector is for input and output signals.
As for the cable part (Female connector), HR10A-7P-6S (Hirose) or equivalent can be used.

Pin assignment

Pin No.	Signal Name	IN/OUT	Signal Voltage
1	GND	-	0 V
2	Line3	IN/OUT	+3.3 V
3	Line2	IN/OUT	+3.3 V
4	Line1	IN/OUT	+3.3 V
5	Line0	-	+3.3 V
6	-	-	-



Output signal selection for Line 0 to 3
The output signal can be selectable from below: (TBD)

GenICam
UserOutput
TriggerOut
TriggerThroughOut
FrameEndOut
TBD

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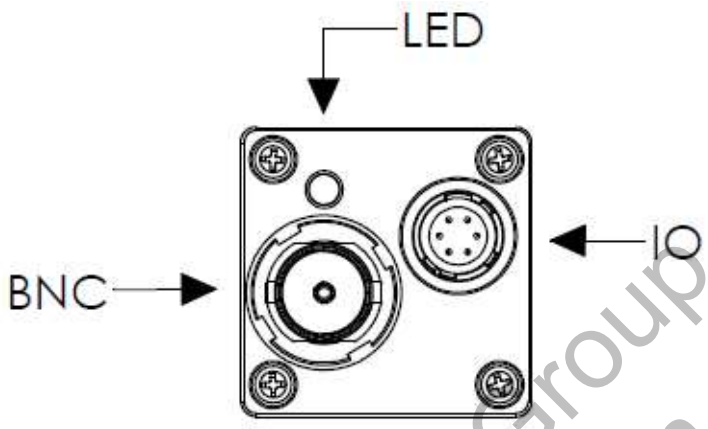
4.5.3 Connector indicator lamp

Connector indicator LED exists beside of Micro BNC connector.
LED informs status of communication. The detail of status is as following table.



Status	LED Blinking Pattern
No connection	Off
System booting	Solid orange
External powered, but no CXP connection	RED slow blinking
PoCXP connection	Fast flash alternating green / orange shown for a minimum
CXP connection with external power	Fast flash orange
Device / Host connected, but no data being transferred	Solid green
Device / Host incompatible, PoCXP	Slow flash alternating red / green
Device / Host incompatible, CXP with external power	Slow flash alternating red / orange
Device / Host connected, waiting for trigger	Slow flash orange
Device / Host connected, data being transferred	Fast flash green
Data Transfer Error	Solid red (500 mseconds)
System Error	Red fast blinking

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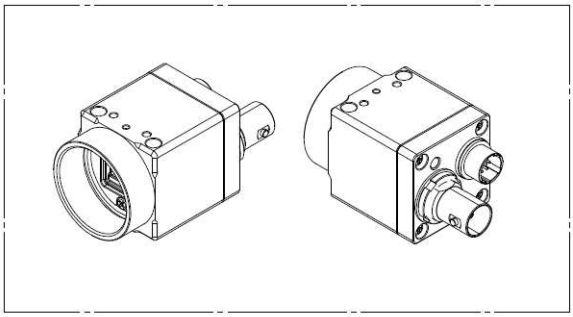
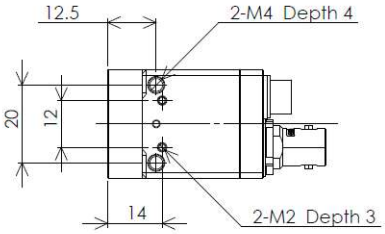
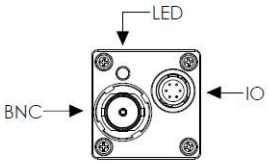
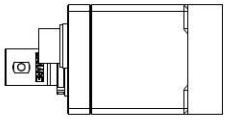
5 Dimensions

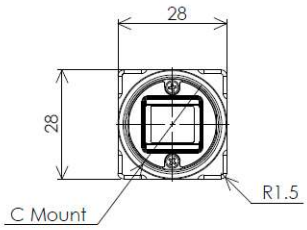
Tentative.

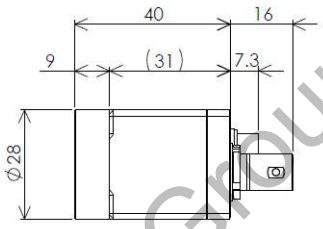


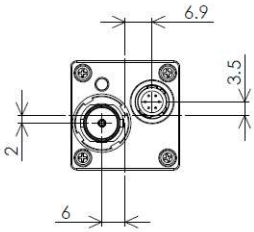


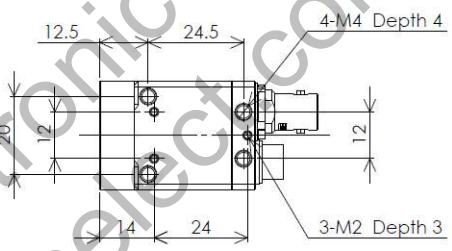












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Unit: mm

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6 Revision History

Rev	Date	Changes	Note
ES00	2020/02/25	● New Document	

Note: Product specifications would be changed without notification.

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