Industrial Cameras

Industrial cameras for complete Robot Vision integration.

- High performance industrial cameras that seamlessly communicate with robots and the control environment.
- Cameras include the latest CMOS sensor technology for use in automated processes.
- Well-suited to a wide range of robotics applications with high image quality, high frame rates, and compact design.
- Compatible with all 35+ powerful tools in the Automation Control Environment (ACE) Software for vision guidance and inspection.

Basler

Sentech

Ordering Information

Manufacturer	ORT Part Number*	Model Number*	Pixels (HxV)	Shutter
Sentech	31940-010	STC-MBS43POE	720 x 540	Global
	31940-011	STC-MCS43POE		
	31940-130	STC-MBE132POE	1280 x 1024	
	31940-131	STC-MCE132POE		
	31940-160	STC-MBS163POE	1440 x 1088	
	31940-161	STC-MCS163POE		
	31940-200	STC-MBS202POE	1626 x 1240	
	31940-201	STC-MBS202POE		
	31940-320	STC-MBS312POE	2048 x 1536	
	31940-321	STC-MCS312POE		
	31940-500	STC-MBS500POE	2448 x 2048	
	31940-501	STC-MCS500POE		
	31940-530	STC-MBA503POE	2592 x 1944	Rolling
	31940-531	STC-MCA503POE		
	31940-100	STC-MBA1002POE	3856 x 2764	
	31940-120	STC-MBS1242POE	4000 x 3000	
	31940-121	STC-MCS1242POE		
Basler	24114-250	-	1602 x 1202	Rolling/Global
	24114-251	-	1600 x 1200	
	24114-300	-	2048 x 2048	Global
	24114-301	-	2046 × 2046	

* Orders placed using the ORT part number include the following bundled accessories: tripod mount, 10 m Ethernet cable, and 10 m Power I/O cable. Orders placed using the model number include the camera only.

Accessories

Item	Camera Compatibility	Description	Part Number
Power I/O cable	Basler models	10 m Power-I/O Cable with HRS 6p connector and open end.	09454-610
Cat6 Camera Cable	Basler models	10 m GigE Cat6 cable with RJ45 plug and Mod RJ45 with Horizontal Screw Lock connector.	18472-000
Power I/O cable	Sentech models	10 m Power-I/O Cable with HR10A-7P connector and open end.	21942-000
Cat5e Camera Cable	Sentech models	10 m GigE CAT5e cable with RJ45 plug and Mod RJ45 with Horizontal Screw Lock connector.	21943-000
Camera Tripod Mount	Basler models	Adapter plate for attaching camera to user-supplied tripod.	14308-000
Camera Tripod Mount	Sentech Models	Adapter plate for attaching camera to user-supplied tripod.	21941-000

Industrial Cameras

Specifications

Sentech Camera Specifications

Part Number	31940-010/ 31940-011	31940-130/ 31940-131	31940-160/ 31940-161	31940-200/ 31940-201	31940-320/ 31940-321	31940-500/ 31940-501	31940-530/ 31940-531	31940-100	31940-120/ 31940-121
Image Sensor	IMX287	EV76C560	IMX273	IMX430	IMX265	MX264	MT9P031	MT9J003	IMX226
Sensor Size (in)	1/2.9	1/1.8	1/2.9	1/1.7	1/1.8	2/3	1/2.5	1/2.3	1/1.7
Cell Size (µm)	6.9 x 6.9	5.3 x 5.3	3.45 x 3.45	4.5 x 4.5	3.45 x 3.45	3.45 x 3.45	2.2 x 2.2	1.67 x 1.67	1.85 x 1.85
Exposure Time	1 µs to 16.777 seconds (Default: 3,425 µs)	10 µs to 1.0300 seconds (Default: 16,379 µs)	1 µs to 16.777 seconds (Default: 13,936 µs)	1 µs to 16.777 seconds (Default: 18,166 µs)	1 µs to 16.777 seconds (Default: 28,404 µs)	1 µs to 16.777 seconds (Default: 45,345 µs)	32 µs to 16.777 seconds (Default: 107,488 µs)	32.25 µs to 2.113 seconds (Default: 96,750 µs)	213 µs to 16.777 seconds (Default: 107,488 µs)
Interface	PoE: IEEE802.3af CLASS2 (1000BASE-T)								
Protocol	GigE Vision 2.1 and GenICam SFNC 2.4, IEEE1588 (PTP)								
I/O	One opto-isolated input, one opto-isolated output, and one open collector GPIO (input or output)								
Power Input Voltage[*1]	+10.8 to +26.4 VDC external power (via power/IO connector) / Power Over Ethernet (IEEE802.3af)								
Power Consumption	+12 V / +24 V: 3.7 W / PoE: 4.7 W	+12 V / +24 V: 3.1 W / PoE: 3.7 W	+12 V / +24 V: 3.7 W / PoE: 4.7 W	+12 V / +24 V: 4.0 W / PoE: 4.9 W	+12 V / +24 V: 3.5 W / PoE: 4.4 W	+12 V / +24 V: 3.6 W / PoE: 4.4 W	+12 V / +24 V: 3.1 W / PoE: 3.9 W	+12 V / +24 V: 3.8 W / PoE: 5.0 W	+12 V / +24 V: 3.4 W / PoE: 4.1 W
Dimensions[*2]	29 (W) x 29 (H) x 53 (D) mm								
Lens Mount	C Mount								
Interface Connectors	Ethernet connector: RJ45 connector; Power/IO connector: HR10A-7R-6PB (Hirose) or equivalent								
Weight	65 g	63 g	65 g	65 g	65 g	65 g	62 g	62 g	65 g
Minimum Operational Temperature/ Humidity	0° C / 20% RH non-condensing								
Maximum Operational Temperature/ Humidity[*3]	+39° C / 85% RH non-condensing	+35° C /85% RH non-condensing	+39° C /85% RH non-condensing	+36° C / 85% RH non-condensing	+39° C / 85% RH non-condensing	+40° C / 85% RH non-condensing	+36° C /85% RH non-condensing	+23° C / 85% RH non-condensing	+40° C / 85% RH non-condensing
Storage Temperature/Humidity	-20° – 70° C, 20 – 85% RH non-condensing	-20° – 75° C, 20 – 85% RH non-condensing	-20° – 70° C, 20 – 85% RH non-condensing	-20° – 70° C, 20 – 85% RH non-condensing	-20° – 70° C, 20 – 85% RH non-condensing	-20° – 70° C, 20 – 85% RH non-condensing	-20° – 70° C, 20 – 85% RH non-condensing	-20° – 70° C, 20 – 85% RH non-condensing	-20° – 70° C, 20 – 85%RH non-condensing
Vibration	20 Hz to 200 Hz to 20 Hz (5 min. / cycle), acceleration 10 G, XYZ 3 directions, 30 min. each								
Shock	Acceleration 38 G, half amplitude 6 ms, XYZ 3 directions, 3 times each								
Standard Compliancy	EMS: EN61000-6-2, EMI: EN55011								
RoHS	RoHS Compliant								

*1 When an external power supply and Power over Ethernet (PoE) are both supplied to the camera at the same time, the camera defaults to the external power supply.
*2 Dimensions exclude the connectors at the rear of the camera.
*3 Ensure the camera is installed with the appropriate heat dissipation. A mounted lens and a tripod with an aluminum plate can decrease the camera housing temperature for heat dissipation. When the internal temperature sensor on the camera shows less than 65 deg. C, the camera housing temperature (top plate) will be less than 57 deg. C.

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Basler Camera Specifications

| Part Number	24114-250	24114-251	24114-300	24114-301
Image Sensor	EV76C570		CMV4000	CMV4000
Sensor Size	1/1.8		1	
Cell Size (µm)	4.5 x 4.5		5.5 x 5.5	
Exposure Time	10/35µs (global/rolling) - 840000µs		24µs - 10000000µs	
Interface	Fast Ethernet (100 Mbit/s) Gigabit Ethernet (1000 Mbit/s)			
Protocol	GigEVision 1.x, SFNC 1.x			
I/O	1 Opto-coupled input line and 1 Opto-coupled output line			
Power Input Voltage	12 VDC (10.8 VDC minimum, 13.2 VDC maximum), includes <1% ripple.			
Power Consumption	PoE: 2.7 W / 12 VDC: 2.1 W		PoE: 3.1 W / 12 VDC: 2.6 W	
Dimensions[1]	42.0 x 29 x 29 CS Mount / 54.0 x 29 x 29 C Mount			
Lens Mount	C Mount	C mount / CS mount	C Mount	C Mount
Interface Connectors	Ethernet connector: RJ45 connector; Power/IO connector: HR10A-7R-6PB (Hirose) or equivalent			
Weight	<90 g			
Minimum Operational Temperature/ Humidity	0° C / 20%, RH non-condensing			
Maximum Operational Temperature/ Humidity	50° C / 80%, RH non-condensing			
Storage Temperature/Humidity	-20–80° C / 20–80 %, RH non-condensing			
Vibration	Sine (each axis): 10–58 Hz / 1.5 mm; 58–500 Hz / 20 g; 1 Octave/Minute, 10 repetitions / Random (each axis): 15-500 Hz / 0.05 PSD (ESS standard profile) / 00:30 h			
Shock	20 g / 11 ms / 100 shocks positive; 20 g / 11 ms / 100 shocks negative			
Standard Compliancy	CE, EAC, UL Listed, FCC, GenICam, GigE Vision, IP30, IEEE 802.3af (PoE), REACH, KC			
RoHS	RoHS Compliant			

*1 Dimensions exclude the connectors at the rear of the camera.

Camera Dimensions
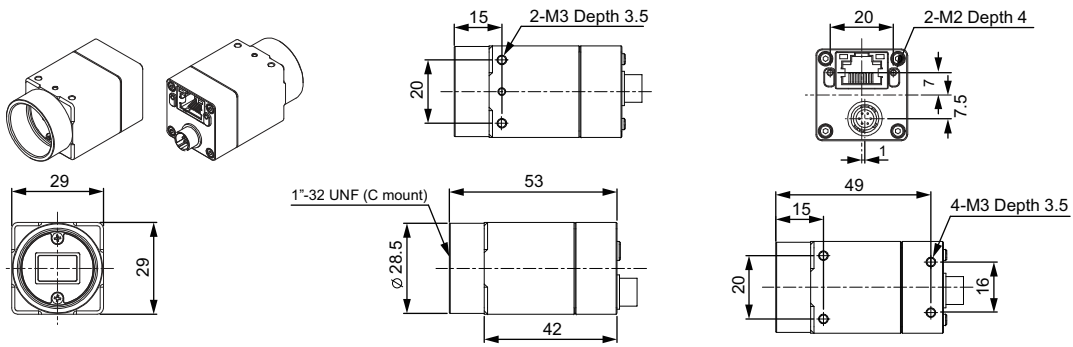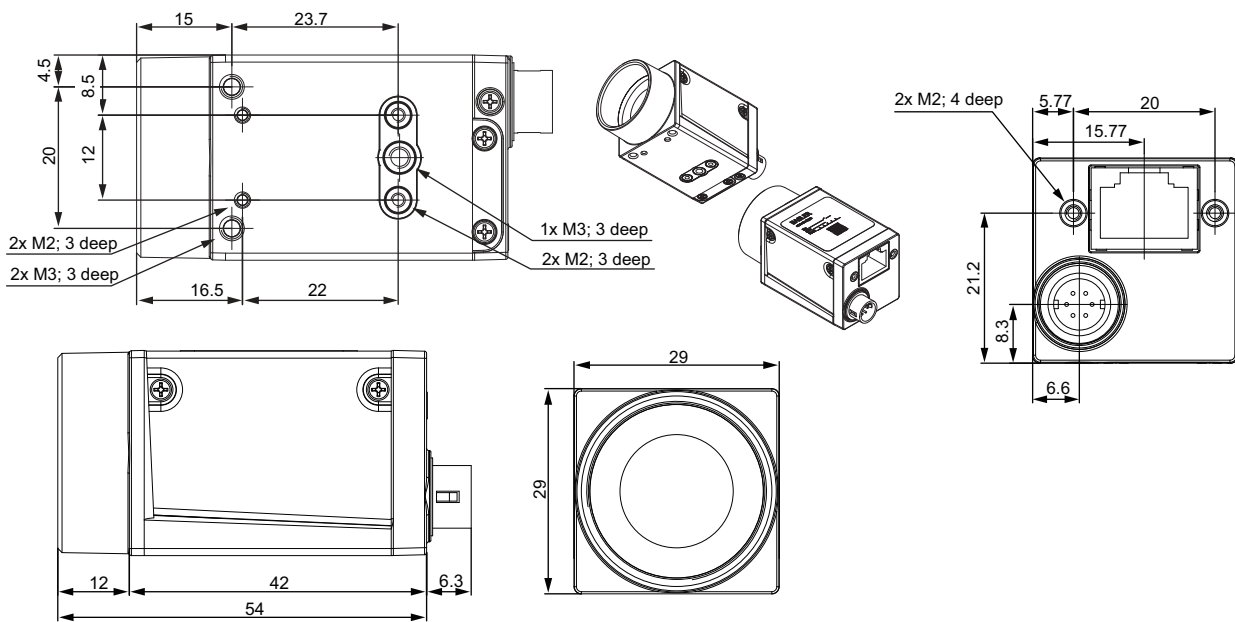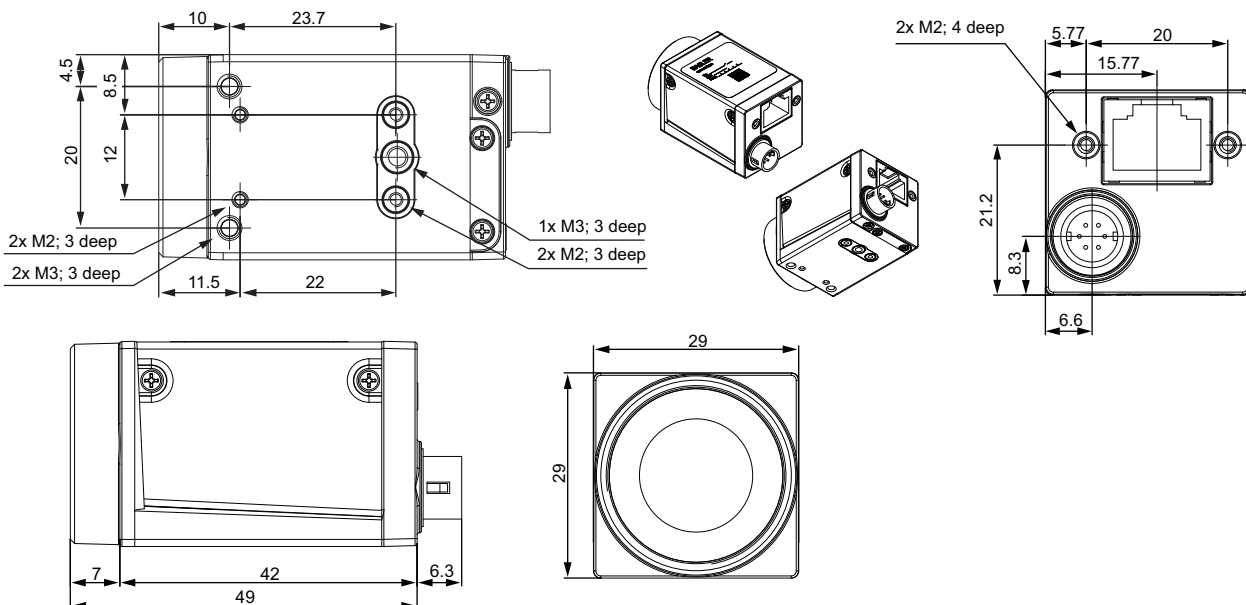
Sentech Models

Basler Models

(C Mount Models)

(CS Mount Models)

Camera Connections

Sentech Connections

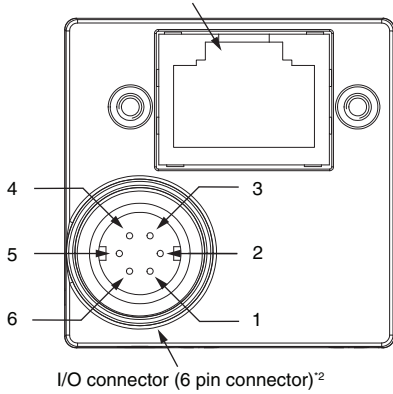Ethernet connector (RJ-45 connector)[*1]

I/O connector (6 pin connector)[*2]
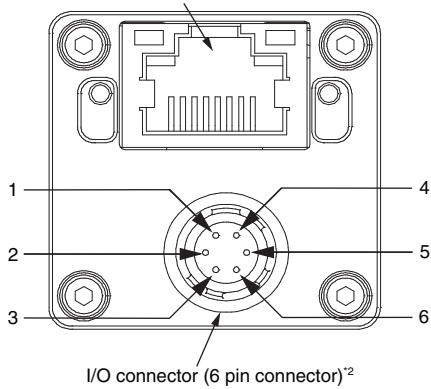
Pin	Description
1	Power IN (+10.8 to +26.4 VDC)
2	Opto isolated IN (Line 0)
3	Open Collector GPIO (Line 2)
4	Opto isolated OUT (Line 1) Open Collector
5	Opto isolated Common
6	Ground

Basler Connections

Ethernet connector (RJ-45 connector)[*1]

I/O connector (6 pin connector)[*2]

Pin	Description
1	Camera Power (+12 VDC)
2	Opto IN 1
3	No Connection
4	Opto OUT 1
5	Opto I/O Ground
6	Camera Power (0 VDC)

*1 Supply power to the camera via Power over Ethernet (PoE) or with apower supply and I/O cable. A PoE NIC or Ethernet switch is needed to supply power via PoE.
*2 Connect all cables according to the specifications prescribed in the camera's documentation.

Industrial Cameras

Related Manuals

Document Number	Manual Title	Description
I667	Robot Vision Manager User's Manual	Provides information necessary for understanding the integration of cameras and V+ programs.
I633	Automation Control Environment (ACE) Version 4 User's Manual	Instruction for the use of the ACE Version 4 software.
I679	Automation Control Environment (ACE) Version 4 Camera Configuration User's Manual	Provides information on configuring cameras for use with the ACE software.
18S112-06	GigE Vision Monochrome / Color CMOS PoE Camera STC-MBS43POE (0.4M / Monochrome) STC-MCS43POE (0.4M / Color) Product Specifications and User's Guide	Provides product information and specifications for part number 31940-010 and 31940-011 cameras.
18S113-07	GigE Vision Monochrome / Color CMOS PoE Camera STC-MBS312POE (3.2M / Monochrome) STC-MCS312POE (3.2M / Color) Product Specifications and User's Guide	Provides product information and specifications for part number 31940-320 and 31940-321 cameras.
19S185-06	GigE Vision Monochrome / Color CMOS PoE Camera STC-MBE132POE (1.3M / Monochrome) STC-MCE132POE (1.3M / Color) Product Specifications and User's Guide	Provides product information and specifications for part number 31940-130 and 31940-131 cameras.
18S109-06	GigE Vision Monochrome / Color CMOS PoE Camera STC-MBS163POE (1.6M / Monochrome) STC-MCS163POE (1.6M / Color) Product Specifications and User's Guide	Provides product information and specifications for part number 31940-160 and 31940-161 cameras.
18S110-05	GigE Vision Monochrome / Color CMOS PoE Camera STC-MBS202POE (2M / Monochrome) STC-MCS202POE (2M / Color) Product Specifications and User's Guide	Provides product information and specifications for part number 31940-200 and 31940-201 cameras.
18S111-07	GigE Vision Monochrome / Color CMOS PoE Camera STC-MBS500POE (5M / Monochrome) TC-MCS500POE (5M / Color) Product Specifications and User's Guide	Provides product information and specifications for part number 31940-500 and 31940-501 cameras.
19S182-09	GigE Vision Monochrome / Color CMOS PoE Camera STC-MBA503POE (5M / Monochrome) STC-MCA503POE (5M / Color) Product Specifications and User's Guide	Provides product information and specifications for part number 31940-530 and 31940-531 cameras.
19S183-06	GigE Vision Monochrome CMOS PoE Camera STC-MBA1002POE (10M / Monochrome) Product Specifications and User's Guide	Provides product information and specifications for part number 31940-100 cameras.
18S052-05	GigE Vision Monochrome / Color CMOS PoE Camera STC-MBS1242POE (12M / Monochrome) STC-MCS1242POE (12M / Color) Product Specifications and User's Guide	Provides product information and specifications for part number 31940-120 and 31940-121 cameras.

NOTE: Refer to the Basler website for Basler camera documentation.

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Note: Do not use this document to operate the Unit.

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