

ISC-8000 Series Camera Reference Guide



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Regulations/Conformity

Note: For the most up-to-date CE declaration and regulatory conformity information, please refer to the Cognex online support site: <http://www.cognex.com/Support>.

Safety and Regulatory	
Manufacturer	Cognex Corporation One Vision Drive Natick, MA 01760 USA
	ISC-8200/8200C: Regulatory Model 1AAW ISC-8400/8400C: Regulatory Model 1AAW ISC-8401/8401C: Regulatory Model 1AAW ISC-8402/8402C: Regulatory Model 1AAW ISC-8405: Regulatory Model 1AAU
FCC	FCC Part 15, Class A This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference; and (2) this device must accept any interference received, including interference that may cause undesired operation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.
KCC 	ISC-8200/8200C: Regulatory Model 1AAW: MSIP-REM-CGX-1AAW ISC-8400/8400C: Regulatory Model 1AAW: MSIP-REM-CGX-1AAW ISC-8401/8401C: Regulatory Model 1AAW: MSIP-REM-CGX-1AAW ISC-8402/8402C: Regulatory Model 1AAW: MSIP-REM-CGX-1AAW ISC-8405: Regulatory Model 1AAU: MSIP-REM-CGX-1AAU
NRTL	TÜV SÜD AM SCC/NRTL OSHA Scheme for UL/CAN 61010-1.
CB	TÜV SÜD AM, IEC/EN 61010-1. CB report available upon request.
RoHS	Compliant to the latest applicable Directive.

China RoHS



Part Name 部件名称	Hazardous Substances 有害物质					
	Lead (Pb) 铅	Mercury (Hg) 汞	Cadmium (Cd) 镉	Hexavalent Chromium (Cr (VI)) 六价铬	Polybrominated biphenyls (PBB) 多溴联苯	Polybrominated diphenyl ethers (PBDE) 多溴二苯醚
Regulatory Model 1AAU Regulatory Model 1AAW	X	O	O	O	O	O
<p>This table is prepared in accordance with the provisions of SJ/T 11364. 这个标签是根据 SJ/T 11364 的规定准备的。</p> <p>O: Indicates that said hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement of GB / T26572 - 2011. 表示本部件所有均质材料中含有的有害物质低于 GB / T26572 - 2011 的限量要求。</p> <p>X: Indicates that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB / T26572 - 2011. 表示用于本部件的至少一种均质材料中所含的危害物质超过 GB / T26572 - 2011 的限制要求。</p>						

For European Community Users

Cognex complies with Directive 2012/19/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 on waste electrical and electronic equipment (WEEE).

This product has required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment, if not properly disposed.

In order to avoid the dissemination of those substances in our environment and to diminish the pressure on the natural resources, we encourage you to use the appropriate take-back systems for product disposal. Those systems will reuse or recycle most of the materials of the product you are disposing in a sound way.



The crossed out wheeled bin symbol informs you that the product should not be disposed of along with municipal waste and invites you to use the appropriate separate take-back systems for product disposal.

If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration.

You may also contact your supplier for more information on the environmental performance of this product.

Precautions

Observe these precautions when installing the Cognex product, to reduce the risk of injury or equipment damage:


- An IEEE 802.3af compliant, and UL or NRTL listed, Power over Ethernet (PoE) power source rated Class 0, 2, 3 or 4 must be used. Any other voltage creates a risk of fire or shock and can damage the components. Applicable national and local wiring standards and rules must be followed.
- To reduce the risk of damage or malfunction due to over-voltage, line noise, electrostatic discharge (ESD), power surges, or other irregularities in the power supply, route all cables and wires away from high current wiring or high-voltage power sources.
- Do not install Cognex products where they are directly exposed to environmental hazards such as excessive heat, dust, moisture, humidity, impact, vibration, corrosive substances, flammable substances, or static electricity.
- Do not expose the image sensor to laser light; image sensors can be damaged by direct, or reflected, laser light. If your application requires the use of laser light that may strike the image sensor, a lens filter at the corresponding laser's wavelength is recommended. Contact your local integrator or application engineer for suggestions.
- The In-Sight camera does not contain user-serviceable parts. Do not make electrical or mechanical modifications to In-Sight camera components. Unauthorized modifications may void your warranty.
- Changes or modifications not expressly approved by the party responsible for regulatory compliance could void the user's authority to operate the equipment.
- Service loops should be included with all cable connections.
- Cable shielding can be degraded or cables can be damaged or wear out more quickly if a service loop or bend radius is tighter than 10X the cable diameter. The bend radius must begin at least six inches from the connector.
- This device is certified for office use only and if used at home, there can be frequency interference problems.
- This device should be used in accordance with the instructions in this manual.
- All specifications are for reference purpose only and may be changed without notice.


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Symbols

The following symbols indicate safety precautions and supplemental information.

 **WARNING:** This symbol indicates the presence of a hazard that could result in death, serious personal injury or electrical shock.

 **CAUTION:** This symbol indicates the presence of a hazard that could result in property damage.

 **Note:** Notes provide supplemental information about a subject.

 **Tip:** Tips provide helpful suggestions and shortcuts that may not otherwise be apparent.

Introduction

The In-Sight[®] camera is a compact, network-ready machine camera used for automated inspection, measurement, identification and robot guidance applications on the factory floor. All models can be easily configured remotely over a network using an intuitive user interface.

Support

Several resources are available to assist you in using the vision controller with the connected Cognex device:

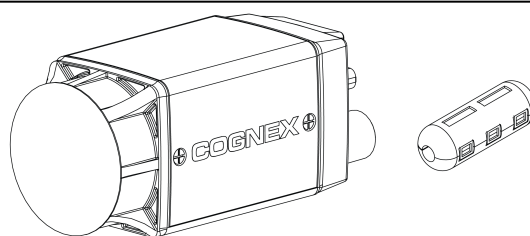
- The *In-Sight[®] VC200 Vision Controller Reference Guide*, included with In-Sight VC Explorer software.
- The *In-Sight[®] Multi-Camera User Guide*, included with In-Sight VC Explorer software.
- In-Sight online support: <http://www.cognex.com/support/ISVC200>.

Standard Components

Note:



- Cables are sold separately.
- If any of the standard components appear to be missing or damaged, immediately contact your Cognex Authorized Service Provider (ASP) or Cognex Technical Support.



Component	Description
Camera	Provides image acquisition, vision processing and Ethernet connectivity.
Ferrite	Ferrite included for attachment to the accessory Breakout cable.
	Note: The ferrite is only included with the ISC-8405 camera.

Accessories

The following components can be purchased separately. For a complete list of options and accessories, contact your local Cognex sales representative.

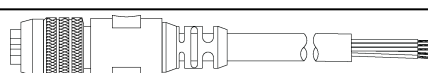
Cables

Note: Cables are sold separately.

CAUTION: All cable connectors are “keyed” to fit the connectors on the camera; do not force the connections or damage may occur.

Breakout Cable

The Breakout cable provides access to the camera’s trigger and strobe output. The pin-outs for the cable are listed in the [Breakout Cable Specifications on page 22](#).

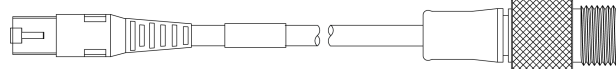


M8 Connector

Length	Part Number
0.6m	CCB-M8IO-00
2m	CCB-M8IO-02
5m	CCB-M8IO-05
10m	CCB-M8IO-10
15m	CCB-M8IO-15

Ethernet Cable (ISC-8200 and ISC-8400 Series)

The Ethernet cable provides Ethernet connectivity and supplies power to the camera. The pin-outs for the cable are listed in the [Ethernet Cable Specifications \(ISC-8200 and ISC-8400 Series\) on page 23](#).



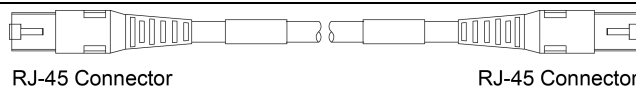
RJ-45 Connector

M12 X-coded Connector

Length	Part Number
2m	CCB-84901-2001-02
5m	CCB-84901-2001-05
10m	CCB-84901-2001-10
15m	CCB-84901-2001-15

Ethernet Cable (ISC-8405)

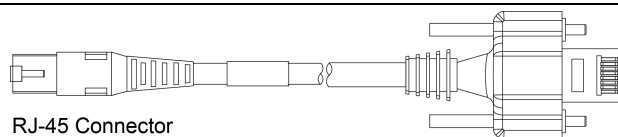
The Ethernet cable provides Ethernet connectivity and supplies power to the camera. The pin-outs for the cable are listed in the [Ethernet Cable Specifications \(ISC-8405\) on page 24](#).



RJ-45 Connector

RJ-45 Connector

Length	Part Number
5m	CGE-CBL-SHLD-5M
10m	CGE-CBL-SHLD-10M
20m	CGE-CBL-SHLD-20M



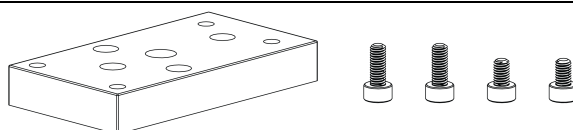
RJ-45 Connector

Horizontal Screw-Locking
RJ-45 Connector

Length	Part Number
5m	CGE-CBL-FLEX-H-5M
10m	CGE-CBL-FLEX-H-10M
20m	CGE-CBL-FLEX-H-20M

Mounting Block Kit

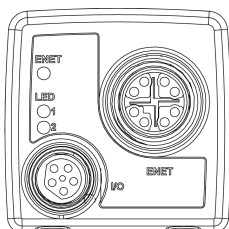
The mounting block kit includes M3 screws for mounting the camera (quantity 4) and a mounting block for securing the camera to a mounting surface.



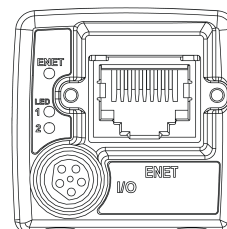
Description	Part Number
Mounting kit and M3 screws	BKT-IS8K-01

Connectors and Indicators

ISC-8200 and ISC-8400 Series



ISC-8405



Connector/Indicator	Description
ENET LED	<ul style="list-style-type: none"> 1000-BaseT: LED turns on when the camera is receiving power during startup, and blinks green once network traffic is detected. 100-BaseT: LED turns on when the camera is receiving power during startup, and blinks green and red (appears orange) once network traffic is detected. 10-BaseT: LED turns on when the camera is receiving power during startup, and blinks red once network traffic is detected.
LED 1	Green when active.
LED 2	Red when active.
I/O Port	The I/O port is an M8 port that provides connection to the acquisition trigger and strobe output via the Breakout cable. For more information, refer to Breakout Cable Specifications on page 22 .
ENET Port	The ENET port is a 10/100/1000 port that provides Gigabit Ethernet connectivity and supplies Power over Ethernet (PoE) via the Ethernet cable. For more information, refer to Ethernet Cable Specifications (ISC-8200 and ISC-8400 Series) on page 23 and Ethernet Cable Specifications (ISC-8405) on page 24 .

Note:


- When initially powered up, the ENET LED turns on and is orange and LED 1 turns on and is steady green for approximately 10 seconds. Next, LED 2 flashes green and then red, and then both LED 1 and LED 2 turn off. Next, the ENET LED turns off and then momentarily flashes when a network connection is established, and then begins blinking once network traffic is detected.
- If both LED 1 and LED 2 are solid red, the camera's firmware update was interrupted.

Installation

This section describes the connection of the camera to the In-Sight® VC200 vision controller. For a complete list of options and accessories, contact your Cognex sales representative.

Note: Cables are sold separately.

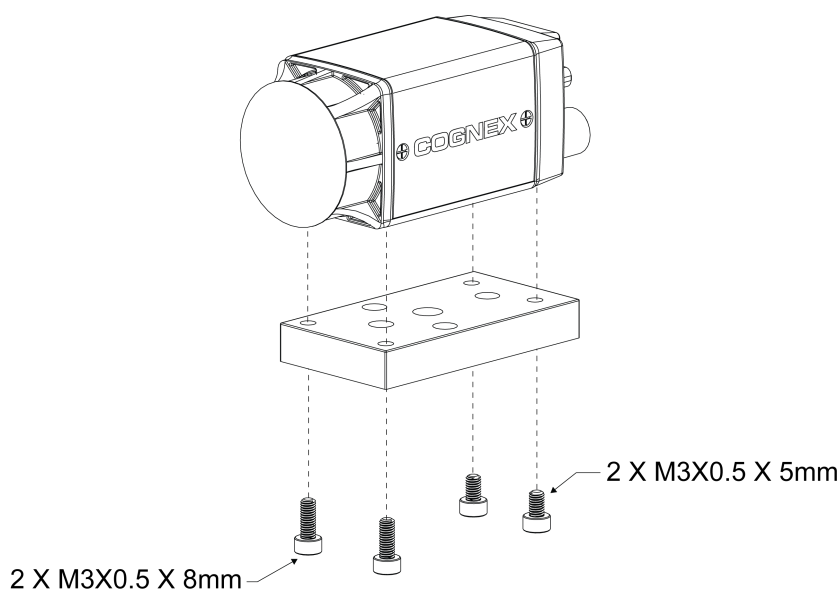
CAUTION: All cable connectors are “keyed” to fit the connectors on the camera; do not force the connections or damage may occur.

Mount the Camera

Note:

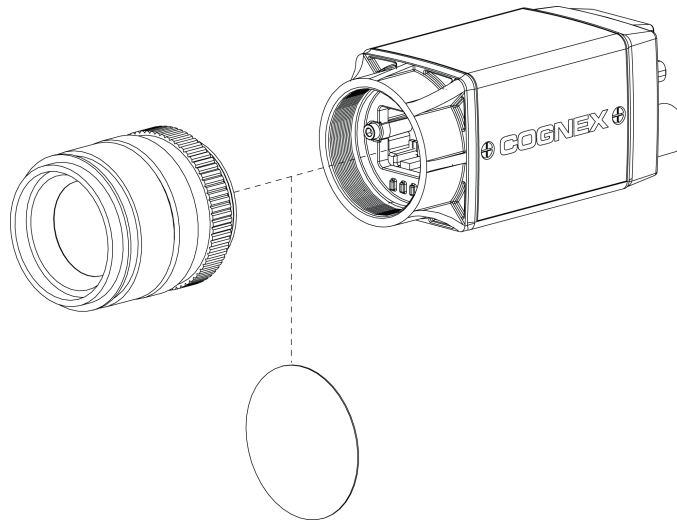
- For the mounting holes closest to the lens opening, the thread length of the M3 screw should not exceed 4.5mm. For the mounting holes closest to the connectors, the thread length of the M3 screw should not exceed 1.6mm. This does not include the thickness of the mounting material used. For more information, refer to [ISC-8200 and ISC-8400 Series Camera on page 25](#) and [ISC-8405 Camera on page 27](#).
- The accessory mounting kit includes a mounting block and M3 screws (quantity 4) for mounting the camera and securing it to a mounting surface. The mounting block also provides 1/4-20 and M6 mounting holes for attaching the camera to a mounting surface. For more information, refer to [ISC-8200 and ISC-8400 Series Camera with Mounting Block \(BKT-IS8K-01\) on page 26](#) and [ISC-8405 Camera with Mounting Block \(BKT-IS8K-01\) on page 28](#).
- It is recommended that the camera be grounded, either by mounting the camera to a fixture that is electrically grounded or by attaching a wire from the camera's mounting fixture to frame ground or Earth ground.

- Align the holes on the mounting surface with the mounting holes on the camera.
- Insert the M3 screws into the mounting holes and tighten using a 2.5mm hex wrench; the maximum torque is 0.3 Nm (2.5 in-lb).



Install the Lens

1. Remove the protective film covering the threaded lens opening, if present.
2. Attach a C-Mount lens to the camera. The exact lens focal length needed depends on the working distance and the field of view required for your machine vision application.



Connect the Breakout Cable

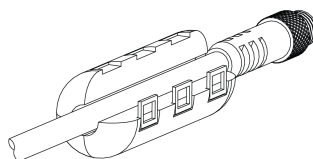
The camera's I/O connector provides connection to the camera's acquisition trigger and strobe output.

CAUTION: A ferrite is included with the ISC-8405 camera standard components. To reduce emissions, the ferrite must be attached to the Breakout cable.

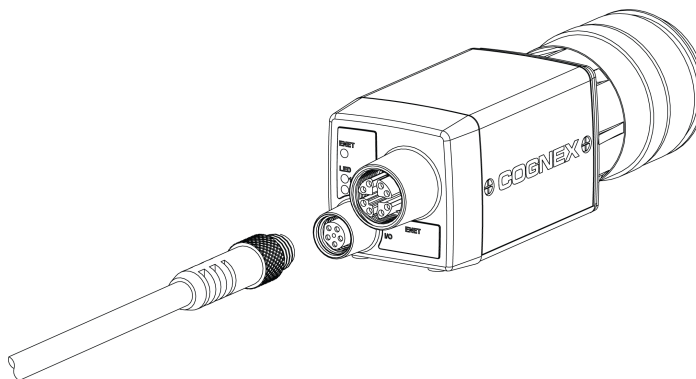
Note:

- I/O wiring or adjustments to I/O devices should be performed when the camera is not receiving power.
- The Ethernet cable should be unplugged, or the vision controller powered down before making adjustments to the connections at the far end of the Breakout cable.
- Unused wires can be clipped short or tied back using a tie made of non-conductive material.

1. If installing the ISC-8405 camera, attach the ferrite around the Breakout cable, adjacent to the strain relief on the cable.



2. Connect the Breakout cable's M8 connector to the camera's I/O connector.
3. Connect the trigger and strobe wires to an appropriate device (for example, a trigger sensor or strobe light). For more information, refer to [Breakout Cable Specifications on page 22](#).



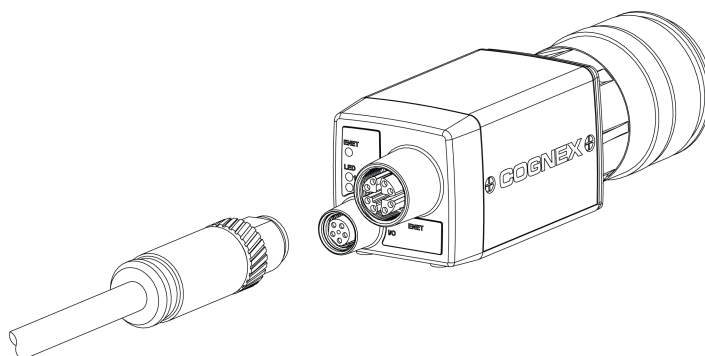
Connect the Ethernet Cable

CAUTION:

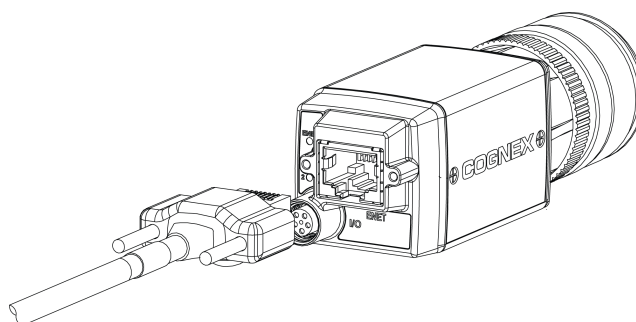
- Cognex recommends only cold-plugging the camera; turn the vision controller power off when connecting or disconnecting the camera.
- The Ethernet cable must be shielded. For the ISC-8405 camera, Cognex strongly recommends Cat 6 or Cat 7 Ethernet cables with S/STP shielding.
- The Ethernet cable shield must be grounded at the far end.
- The vision controller's CAM ports provide Power over Ethernet (PoE) to supported Cognex devices; connecting other PoE devices to these ports could damage the vision controller or the PoE device.



1. Connect the Ethernet cable's M12 connector to the camera's ENET connector.



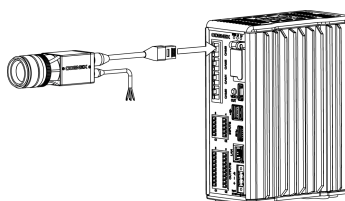
If installing the ISC-8405 camera and using a compatible horizontal screw-locking Ethernet cable, use a screw driver to tighten the connector screws until snug, to secure it to the camera. The screws must be tight to ensure a reliable connection.



2. Connect the other end of the cable to one of the vision controller's CAM ports.



Note: If using a vision controller that supports a two camera configuration, connect the camera Ethernet cables to the vision controller's CAM 0 and CAM 1 ports.



3. Restore power to the vision controller's 24VDC power supply and turn it on if necessary.

Specifications

The following sections list general specifications for the camera.

ISC-8200 and ISC-8400 Series Camera Specifications

Specifications	ISC-8200 ISC-8400	ISC-8200C ISC-8400C	ISC-8401	ISC-8401C	ISC-8402	ISC-8402C
Image Processing Memory	512MB SDRAM					
Sensor Type	1/1.8 inch CMOS, global shutter					
Sensor Properties	3.6mm diagonal, 4.5 x 4.5µm sq. pixels		7.38mm diagonal, 4.5 x 4.5µm sq. pixels		9mm diagonal, 4.5 x 4.5µm sq. pixels	
Maximum Resolution (pixels) ¹	640 x 480		1280 x 1024		1600 x 1200	
Electronic Shutter Speed	14µs to 520ms		17.4µs to 750ms		20µs to 940ms	
Acquisition	Rapid reset, progressive scan, full-frame integration.					
Bit Depth	256 grey levels (8 bits/pixel)	24-bit color	256 grey levels (8 bits/pixel)	24-bit color	256 grey levels (8 bits/pixel)	24-bit color
Lens Type	C-Mount					
Trigger	1 opto-isolated, acquisition trigger input. Trigger using discrete inputs and industrial Ethernet protocols via the vision controller.					
Discrete Inputs	None built-in. 8 opto-isolated discrete inputs available via the vision controller. For more information, refer to the <i>In-Sight® VC200 Vision Controller Reference Guide</i> .					
Discrete Outputs	1 strobe opto-isolated output line built-in. 16 opto-isolated discrete outputs available via the vision controller. For more information, refer to the <i>In-Sight® VC200 Vision Controller Reference Guide</i> .					
Status LEDs	Network, LED 1 and LED 2.					
Network Communication	1 Ethernet port, 10/100/1000 BaseT with auto MDIX. IEEE 802.3af TCP/IP Protocol.					
Serial Communication	None.					
Power	Class 2 Power over Ethernet (PoE) device.					
Power Type	PoE Type A and Type B.					
Power Consumption	6.49 W maximum per Class 2 PoE.					
Current	Per Class 2 PoE requirements.					
Voltage	48VDC nominal, applied from a Class 2 PoE device, which is typically powered from some other voltage.					
Material	Die-cast zinc housing.					
Finish	Painted.					
Mounting	Four M3 threaded mounting holes (1/4-20 and M6 mounting holes also available on accessory mounting block).					
Dimensions	31.0mm (1.22in) x 31.2mm (1.23in) x 75.1mm (2.96in) without accessory mounting block. 39.0mm (1.54in) 31.2mm (1.23in) x 75.1mm (2.96in) with accessory mounting block.					

¹ The number of image sensor rows are configurable and can be set within the In-Sight Multi-Camera IDE. Decreasing the number of rows will increase the number of frames per second acquired by the camera. Refer to the *In-Sight® Multi-Camera User Guide* for more information.

Specifications	ISC-8200 ISC-8400	ISC-8200C ISC-8400C	ISC-8401	ISC-8401C	ISC-8402	ISC-8402C
Weight	132.2 g (4.66 oz.) without accessory mounting block. 163.2 g (5.76 oz.) with accessory mounting block.					
Case Temperature ¹	0°C to 50°C (32°F to 122°F)					
Storage Temperature	-20°C to 80°C (-4°F to 176°F)					
Humidity	< 80% non-condensing					
Protection	IP40 with cables and lens attached.					
Shock (Shipping and Storage)	IEC 60068-2-27: 18 shocks (3 shocks in each polarity in each (X, Y, Z) axis) 80 Gs (800m/s ² at 11ms, half-sinusoidal)					
Vibration (Shipping and Storage)	IEC 60068-2-6: vibration test in each of the three main axis for 2 hours @ 10 Gs (10 to 500 Hz at 100m/s ² / 15mm)					
Regulations/Conformity	CE, FCC, KCC, TÜV SÜD NRTL, EU RoHS, China RoHS					

¹ Case temperature can be verified using the camera's Temperature property within In-Sight Multi-Camera IDE, which displays the camera's internal temperature in degrees Celsius. The internal temperature will be ± 5 degrees above the camera case temperature. Refer to the *In-Sight® Multi-Camera User Guide* for more information. Additional cooling measures are required if the case temperature cannot be kept below 50°C. Examples of such measures include: mounting the camera to a heat sink using the M3 mounting screws, reducing the ambient temperature and ensuring there is air flow over the camera.

ISC-8405 Camera Specifications

Specifications	ISC-8405
Image Processing Memory	512MB SDRAM
Sensor Type	1/2.5 inch CMOS, rolling shutter
Sensor Properties	7.13mm diagonal, 2.2 x 2.2µm sq. pixels
Maximum Resolution (pixels) ¹	2592 x 1944
Electronic Shutter Speed	32µs to 1000ms
Acquisition	Rapid reset, progressive scan, full-frame integration.
Bit Depth	256 grey levels (8 bits/pixel)
Lens Type	C-Mount
Trigger	1 opto-isolated, acquisition trigger input. Trigger using discrete inputs and industrial Ethernet protocols via the vision controller.
Discrete Inputs	None built-in. 8 opto-isolated discrete inputs available via the vision controller. For more information, refer to the <i>In-Sight® VC200 Vision Controller Reference Guide</i> .
Discrete Outputs	1 strobe opto-isolated output line built-in. 16 opto-isolated discrete outputs available via the vision controller. For more information, refer to the <i>In-Sight® VC200 Vision Controller Reference Guide</i> .
Status LEDs	Network, LED 1 and LED 2.
Network Communication	1 Ethernet port, 10/100/1000 BaseT with auto MDIX. IEEE 802.3af TCP/IP Protocol.
Serial Communication	None.
Power	Class 2 Power over Ethernet (PoE) device.
Power Type	PoE Type A and Type B.
Power Consumption	6.49 W maximum per Class 2 PoE.
Current	Per Class 2 PoE requirements.
Voltage	48VDC nominal, applied from a Class 2 PoE device, which is typically powered from some other voltage.
Material	Die-cast zinc housing.
Finish	Painted.
Mounting	Four M3 threaded mounting holes (1/4-20 and M6 mounting holes also available on accessory mounting block).
Dimensions	31.0mm (1.22in) x 31.2mm (1.23in) x 71.6mm (2.82in) without accessory mounting block. 39.0mm (1.54in) x 31.2mm (1.23in) x 71.6mm (2.82in) with accessory mounting block.
Weight	78 g (2.75 oz.) without accessory mounting block. 109 g (3.84 oz.) with accessory mounting block.
Case Temperature ²	0°C to 50°C (32°F to 122°F)
Storage Temperature	-20°C to 80°C (-4°F to 176°F)

¹ The number of image sensor rows are configurable and can be set within the In-Sight Multi-Camera IDE. Decreasing the number of rows will increase the number of frames per second acquired by the camera. Refer to the *In-Sight® Multi-Camera User Guide* for more information.

² Case temperature can be verified using the camera's Temperature property within In-Sight Multi-Camera IDE, which displays the camera's internal temperature in degrees Celsius. The internal temperature will be ±5 degrees above the camera case temperature. Refer to the *In-Sight® Multi-Camera User Guide* for more information. Additional cooling measures are required if the case temperature cannot be kept below 50°C. Examples of such measures include: mounting the camera to a heat sink using the M3 mounting screws, reducing the ambient temperature and ensuring there is air flow over the camera.

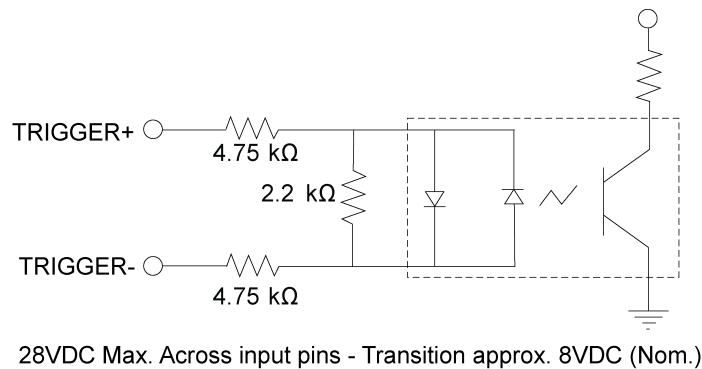
Specifications	ISC-8405
Humidity	< 80% non-condensing
Protection	IP30 with cables and lens attached.
Shock (Shipping and Storage)	IEC 60068-2-27: 18 shocks (3 shocks in each polarity in each (X, Y, Z) axis) 80 Gs (800m/s^2 at 11ms, half-sinusoidal)
Vibration (Shipping and Storage)	IEC 60068-2-6: vibration test in each of the three main axis for 2 hours @ 10 Gs (10 to 500 Hz at 100m/s^2 / 15mm)
Regulations/Conformity	CE, FCC, KCC, TÜV SÜD NRTL, EU RoHS, China RoHS

Acquisition Trigger Input

The camera features one acquisition trigger input, which is optically isolated. The acquisition trigger input can be configured to trigger from either an NPN (current sinking) or PNP (current sourcing) device.

Specification	Description
Voltage	ON: 20 to 28VDC (24VDC nominal) OFF: 0 to 3VDC (8VDC nominal threshold)
Current	ON: 1.9 to 3.0mA from 20 to 28V input. OFF: < 300 μ A for <3VDC input. Resistance: ~10 kOhms
Delay ¹	72 μ s maximum latency between leading edge of trigger and start of acquisition. Input pulse should be minimum of 1ms wide.

- The Breakout cable can be used to trigger from an NPN photoelectric sensor or PLC output. Connect TRIGGER+ to +24VDC and connect TRIGGER- to the output of the photoelectric sensor. When the output turns ON, it pulls TRIGGER- down to 0VDC, turning the opto-coupler ON. For more information, refer to [Breakout Cable Specifications on page 22](#).
- The Breakout cable can also be used to trigger from a PNP photoelectric sensor or PLC output. Connect TRIGGER+ to the output of the photoelectric sensor and connect TRIGGER- to 0VDC. When the output turns ON, it pulls TRIGGER+ up to +24VDC, turning the opto-coupler ON. For more information, refer to [Breakout Cable Specifications on page 22](#).



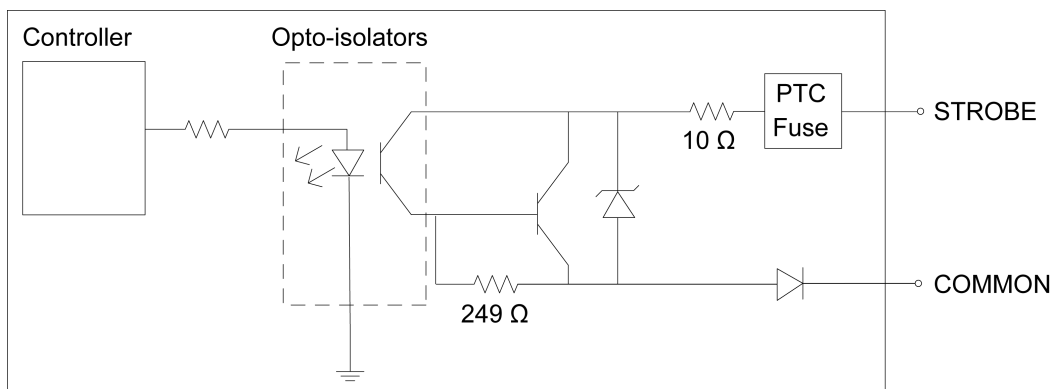
¹ Maximum latency is based on a 1 μ s trigger debounce.

Strobe Output

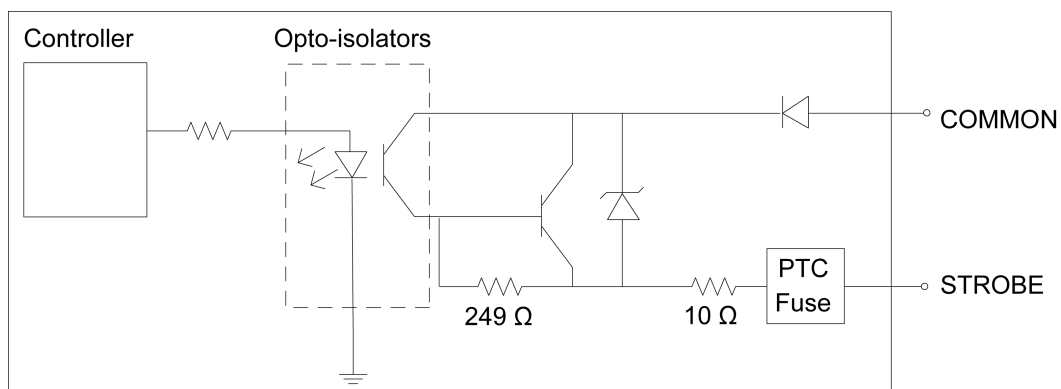
The camera features one built-in strobe output, which is optically isolated. The strobe output can be used as either an NPN (current sinking) or PNP (current sourcing) line.

Specification	Description
Voltage	28VDC maximum through external load.
Current	100mA maximum sink current.
	OFF state leakage current 100 μ A maximum.
	External load resistance 240 Ohms to 10 kOhms.
	Maximum 100mA, protected against over-current, short circuit and transients from switching inductive loads. High current inductive loads require an external protection diode.
Delay ¹	30 μ s (maximum due to opto-isolators turning ON).

For NPN lines, the external load should be connected between the STROBE output and the positive supply voltage (+24VDC nominal). COMMON should be connected to the negative supply voltage (0VDC). The STROBE output pulls down to less than 3VDC when ON, which causes current to flow through the load. When the STROBE output is OFF, no current flows through the load.



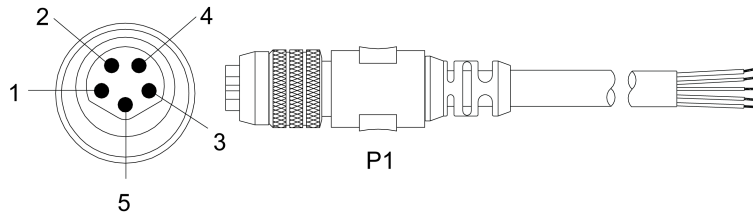
For PNP lines, the external load should be connected between the STROBE output and the negative supply voltage (0VDC). When COMMON is connected to the positive supply voltage (+24VDC nominal), the STROBE output pulls up to greater than 21VDC when ON, and current flows through the load. When the STROBE output is OFF, no current flows through the load.



¹ Delay when opto-isolators turn OFF depends on the load to which the output is connected. With a 240 Ohm load, the maximum delay will be 35 μ s.

Breakout Cable Specifications

The camera's Breakout cable can be connected to devices, such as a trigger sensor or strobe light. The Breakout cable is not terminated.



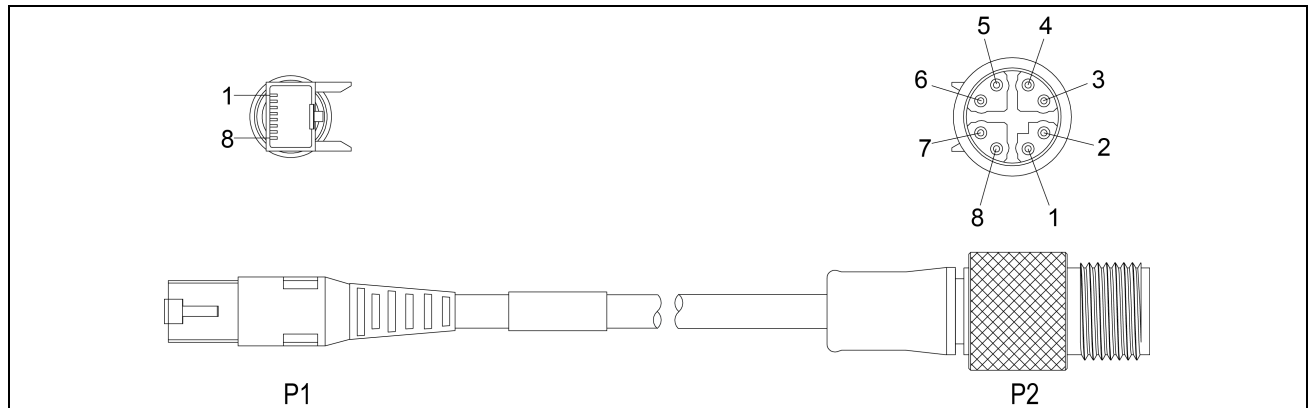
P1 Pin Number	Signal Name	Wire Color
1	UNUSED	Brown
2	STROBE	White
3	TRIGGER+	Blue
4	TRIGGER-	Black
5	COMMON	Gray

Note:

- Cables are sold separately.
- Unused wires can be clipped short or tied back using a tie made of non-conductive material.

Ethernet Cable Specifications (ISC-8200 and ISC-8400 Series)

The Ethernet cable provides Ethernet connectivity and supplies power to the camera.



P1 Pin Number	Wire Color	Signal Name	P2 Pin Number
1	White/Orange	TxRx A +	1
2	Orange	TxRx A -	2
3	White/Green	TxRx B +	3
4	Blue	TxRx C +	8
5	White/Blue	TxRx C -	7
6	Green	TxRx B -	4
7	White/Brown	TxRx D +	5
8	Brown	TxRx D -	6

Note:



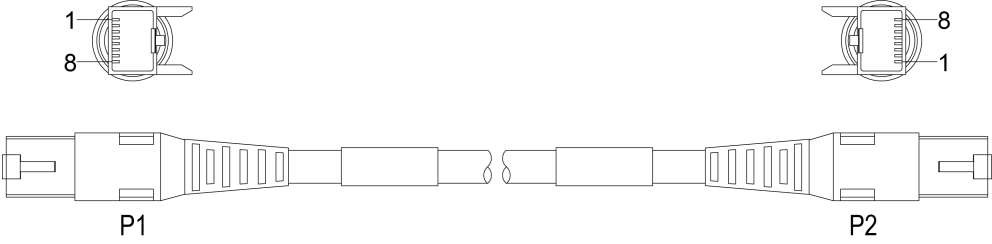
- Cables are sold separately.
- The wiring for this cable follows standard industrial Ethernet M12 specifications. This differs from the 568B standard.



CAUTION: The Ethernet cable shield must be grounded at the far end.

Ethernet Cable Specifications (ISC-8405)

The Ethernet cable provides Ethernet connectivity and supplies power to the camera.

			
P1 Pin Number	Wire Color	Signal Name	P2 Pin Number
1	White/Orange	TxRx A +	1
2	Orange	TxRx A -	2
3	White/Green	TxRx B +	3
4	Blue	TxRx C +	4
5	White/Blue	TxRx C -	5
6	Green	TxRx B -	6
7	White/Brown	TxRx D +	7
8	Brown	TxRx D -	8

Note: Cables are sold separately.

CAUTION:



- The Ethernet cable must be shielded. For the ISC-8405 camera, Cognex strongly recommends Cat 6 or Cat 7 Ethernet cables with S/STP shielding.
- The Ethernet cable shield must be grounded at the far end.

Dimensions

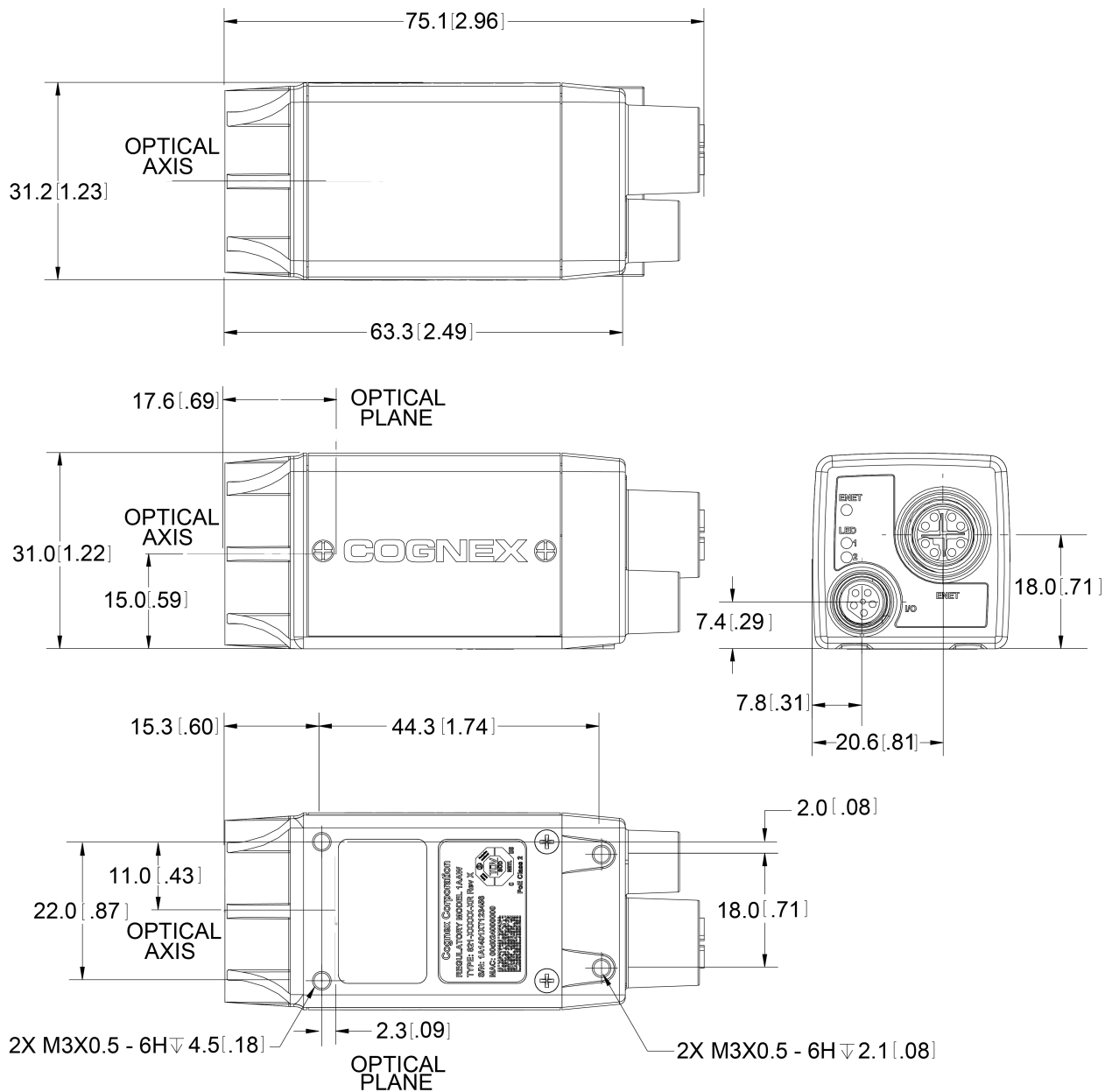
The following sections list dimensions of the camera and optional accessories.

ISC-8200 and ISC-8400 Series Camera

Note:



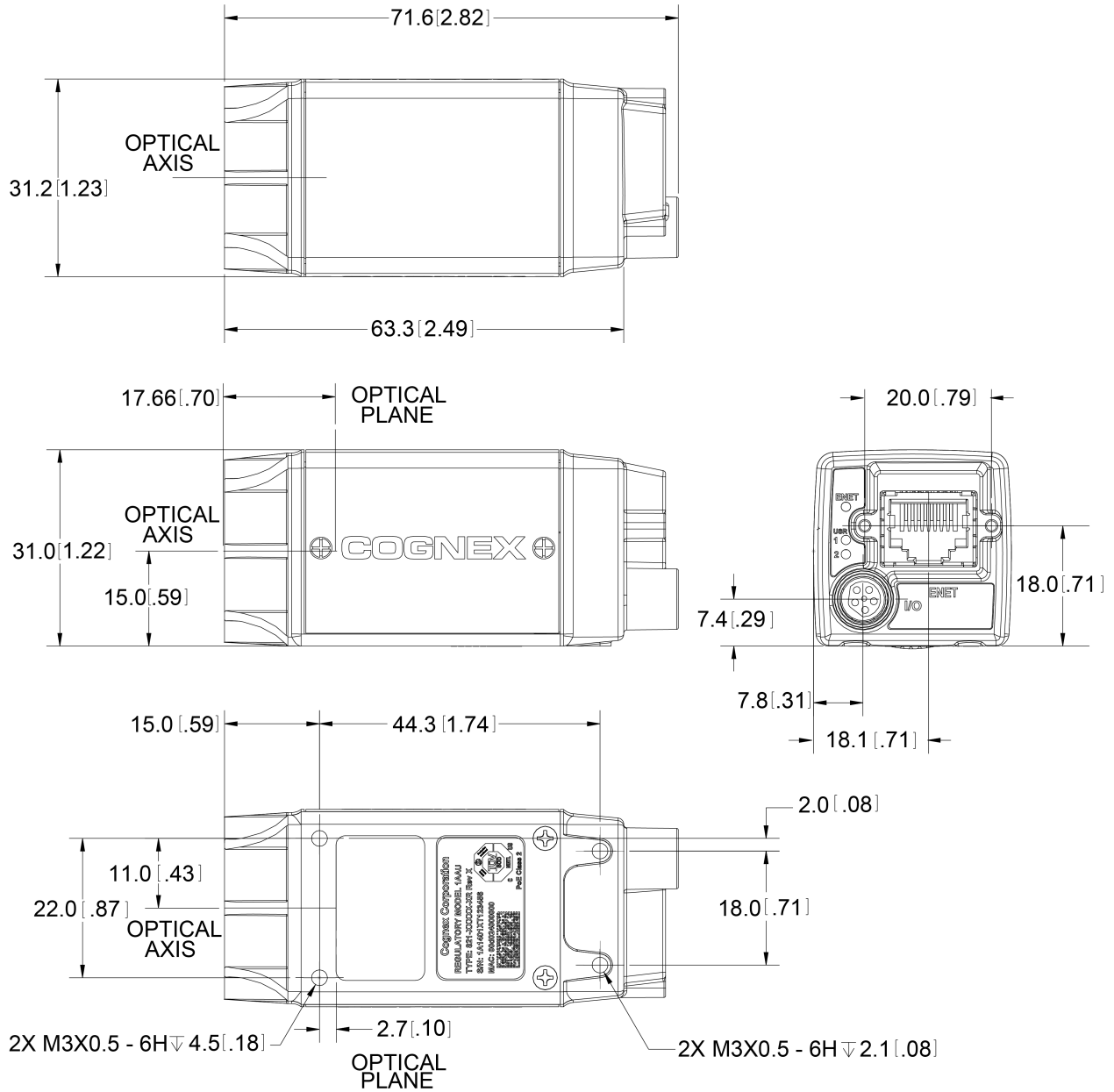
- All dimensions are in millimeters [inches] and are for reference purposes only.
- All specifications are for reference purpose only and may be changed without notice.



ISC-8405 Camera

Note:

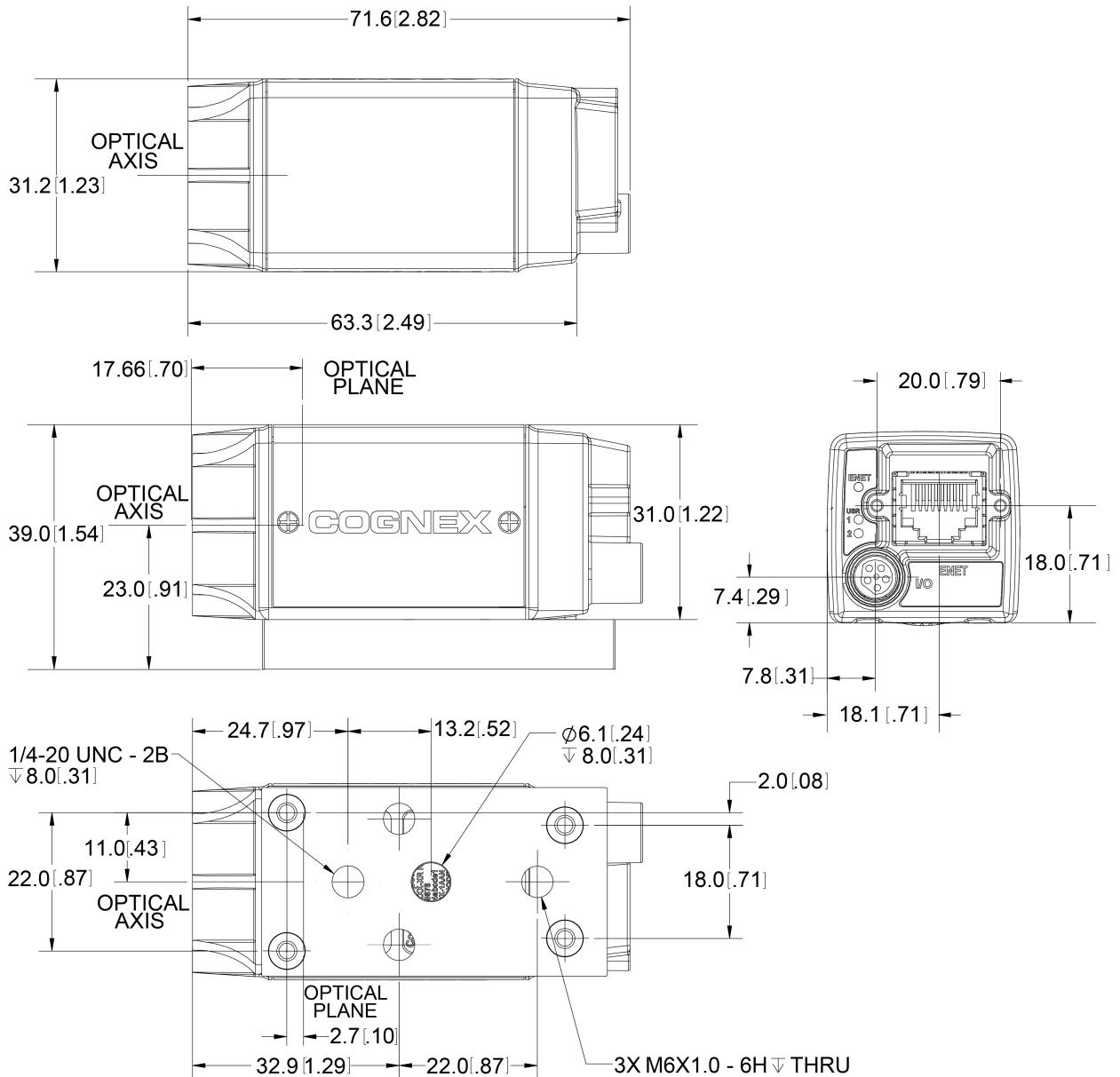

- All dimensions are in millimeters [inches] and are for reference purposes only.
- All specifications are for reference purpose only and may be changed without notice.



ISC-8405 Camera with Mounting Block (BKT-IS8K-01)

Note:


- All dimensions are in millimeters [inches] and are for reference purposes only.
- All specifications are for reference purpose only and may be changed without notice.



Cleaning/Maintenance

Clean the Housing

To clean the outside of the camera housing, use a small amount of mild detergent cleaner or isopropyl alcohol on a cleaning cloth. Do not pour the cleaner directly onto the camera housing.



CAUTION: Do not attempt to clean any In-Sight product with harsh or corrosive solvents, including lye, methyl ethyl ketone (MEK) or gasoline.

Clean the Camera Image Sensor Window

To remove dust from the outside of the image sensor window, use a pressurized air duster. The air must be free of oil, moisture or other contaminants that could remain on the glass and possibly degrade the image. Do not touch the glass window. If oil/smudges still remain, clean the window with a cotton bud using alcohol (ethyl, methyl or isopropyl). Do not pour the alcohol directly on the window.

Clean the Cover

To remove dust from the lens cover, use a pressurized air duster. The air must be free of oil, moisture or other contaminants that could remain on the lens cover. To clean the plastic window of the lens cover, use a small amount of isopropyl alcohol on a cleaning cloth. Do not scratch the plastic window. Do not pour the alcohol directly on the plastic window.

