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AUTOMATION SOLUTION PROVIDER ASP COGNEX

In-Sight® VISION SENSORS

PRODUCT SPECIFICATIONS AND DRAWINGS

2006-1

CONTENTS

INDUSTRY-LEADING PERFORMANCE AND RUGGEDNESS

In-Sight sensors are the standard for machine vision on the factory floor. Their unprecedented vision power and unmatched ruggedness are helping manufacturers around the world improve productivity, ensure product quality, and lower manufacturing costs. And, an array of In-Sight models means that there's one just right for your application.

BREAKTHROUGH PERFORMANCE

Since the inception of Cognex nearly a quarter century ago, we've recognized the importance of performance in successful machine vision applications. Not only the need for high-speed image acquisition and processing, but also the need for a library of powerful vision tools. And that's what Cognex In-Sight delivers today. This assures users of reliable, repeatable performance in the most challenging vision applications.

INDUSTRIAL GRADE DESIGN

In-Sight is the the only family of vision sensors available today that provides industrial-grade features as standard. That means die-cast aluminum and stainless steel housings, sealed M12 connectors, and the included protective lens cover. It all adds up to protection from dust to wash-down … for peace of mind on the factory floor.

® IN-SIGHT® HARDWARE SPECIFICATIONS

IN-SIGHT 5000, 5100, 5400, 5400S, 5400C, 5401, AND 5403

Note: All measurements are provided in millimeters (first number) and inches (number in parenthesis).

Memory				
Job/Program	16MB non-volatile flash memory; Unlimited storage via remote network device			
Image processing	64MB			
Image				
Sensor	***5000***	***5100, 5400, 5400S & 5400C***	***5401***	***5403***
	1/4-inch CCD	1/3-inch CCD	1/3-inch CCD	1/1.8-inch CCD
Optical Properties	(4.60mm x 3.97mm; 4.5mm diagonal) 640 x 480 pixel display (307,200 sq. pixels, 5.6 x 5.6µm pixel size)	(5.84mm x 4.94mm; 6mm diagonal) 640 x 480 pixel display (307,200 sq. pixels, 7.4 x 7.4µm pixel size)	(5.80mm x 4.92mm; 6mm diagonal) 1024 x 768 pixel display (786,432 sq. pixels, 4.65 x 4.65µm pixel size)	(8.50mm x 6.80mm; 8.923mm diagonal) 1600 x 1200 pixel display (1,920,000 sq. pixels, 4.4 x 4.4µm pixel size)
Electronic shutter speed	32µs to 1000ms	16µs to 1000ms	32µs to 1000ms	27µs to 1000ms
Color	***5000, 5100, 5400, 5400S, 5401 & 5403***		***5400C***	
	No		Yes	
Acquisition Rate[1]	Rapid reset, progressive scan, full-frame integration			
	256 gray levels (8 bits/sec)			
	Gain/Offset controlled by software			
	5000	***5100, 5400, 5400S & 5400C***	***5401***	***5403***
	Up to 30 frames per second (exposure dependent)	Up to 60 frames per second (exposure dependent)	Up to 19 frames per second (exposure dependent)	Up to 15 frames per second (exposure dependent)
Lens type	C-mount			
I/O				
Trigger	1 opto-isolated, acquisition trigger input			
	Remote software commands via Ethernet and RS232			
Trigger voltage	ON 20 to 28V (24V nominal)			
	OFF 0 to 3V (12V nominal threshold)			
Trigger current	ON 0.9 to 1.3mA			
	OFF <150µA			
	Resistance ~22,000 Ohms			
Trigger delay	250µSec latency between leading edge of trigger and start of delay acquisition. Input pulse should be minimum of 1ms wide.			
Discrete inputs	8 inputs available, using optional Model 1450 I/O Expansion inputs Module.			
Discrete outputs	2 built-in, high-speed outputs			
	8 additional outputs available, using optional Model 1450 I/O Expansion Module.			

Notes:

1) Maximum acquisition rate is based on 1ms exposure, and a full image frame capture

IN-SIGHT HARDWARE

IN-SIGHT 5000, 5100, 5400, 5400S, 5400C, 5401, AND 5403

Note: All measurements are provided in millimeters (first number) and inches (number in parenthesis).

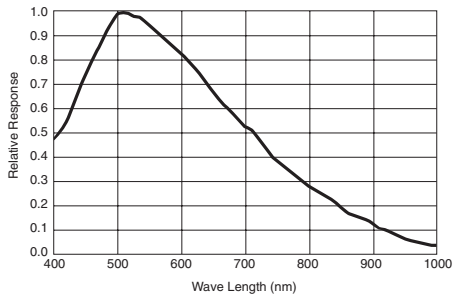
I/O (cont.)		
High-speed output voltage	28V maximum through external load	
High-speed output current	200mA maximum sink current	
	OFF state leakage current 200µA maximum	
	External load resistance 120 to 10K Ohms	
	Each line rated at a maximum 200mA, protected against over-current, short circuit, and transients from switching inductive loads. High current inductive loads require external protection diode.	
Status LEDs	Power, Network Status, Network Traffic, 2 user configurable	
Communications		
Network	1 Ethernet port, 10/100 BaseT, TCP/IP protocol. Supports DHCP (factory default) or static IP address	
Serial	1 RS-232C port (1200 to 115,200 baud rates. 1200 and 2400 baud is not supported by the Model 1450 I/O Expansion Module.)	
Power		
Power consumption	***5000, 5100, 5400, 5400S, 5400C & 5401***	***5403***
	24VDC ± 10%, 350mA	24VDC ± 10%, 500mA
Mechanical		
Material & finish	***All models except 5400S:*** Die-cast aluminum housing, painted ***5400S:*** ASTM 316L stainless steel electropolished-passivated	
Mounting	Eight M4 threaded mounting holes (four front and four back)	
Dimensions	***All models except 5400S:*** 84mm (3.34in) x 124.7mm (4.91in) x 61.6mm (2.43in) with lens cover installed 41mm (1.62in) x 124.7mm (4.91in) x 61.6mm (2.43in) without lens cover installed ***5400S:*** 91.44mm (3.60in) x 124.21mm (4.89in) x 61.47mm (2.42in) with lens cover installed	
Weight	***All models except 5400S:*** 297.6g (10.5oz) lens cover installed, w/o lens ***5400S:*** 909.45g (2lb .08oz) lens cover installed, w/o lens	
Environmental		
Operating temperature	0°C to 45°C (32°F to 113°F)	
Operating humidity	95%, non-condensing	
Storage temperature	-30°C to 80°C (-22°F to 176°F)	
Storage humidity	95%, non-condensing	
Protection (With lens enclosure installed)	5400S model is NEMA 6P/IP68 rated; all other models are NEMA 6/IP67 rated	
Shock	80 Gs (800 M/S^2 at 11 ms) per IEC 68-2-27 EA	
Vibration	10 Gs (10-to 500 Hz at 100 M/S^2 / 15mm for two hours in each axis) per IEC 68-2-6 FC	
Certifications		
Approvals	CE, CUL, FCC	

IN-SIGHT HARDWARE

IN-SIGHT 5000, 5100, 5400, 5400S, 5400C, 5401, AND 5403

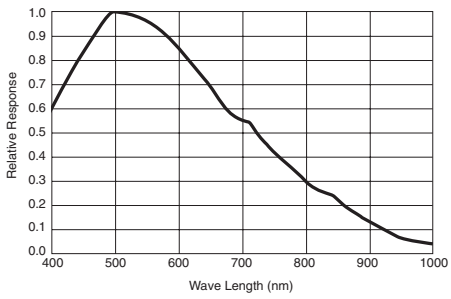
Note: All measurements are provided in millimeters (first number) and inches (number in parenthesis).

IN-SIGHT 5000 SPECTRAL SENSITIVITY CHARACTERISTICS



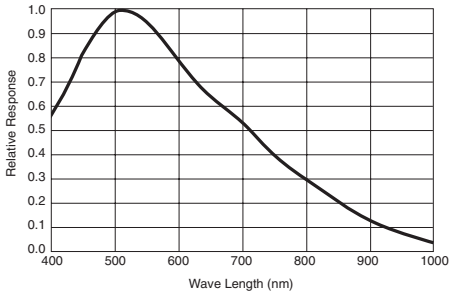
(Includes lens characteristics, excludes light source characteristics)

IN-SIGHT 5100, 5400, AND 5400S SPECTRAL SENSITIVITY CHARACTERISTICS



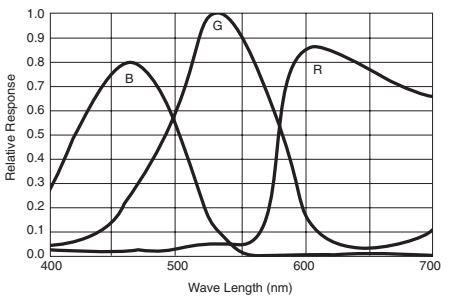
(Includes lens characteristics, excludes light source characteristics)

IN-SIGHT 5401 SPECTRAL SENSITIVITY CHARACTERISTICS



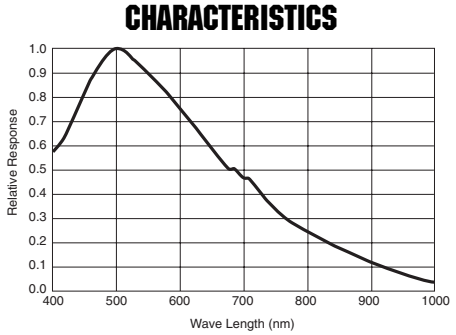
(Includes lens characteristics, excludes light source characteristics)

IN-SIGHT 5400C SPECTRAL SENSITIVITY CHARACTERISTICS



(Includes lens characteristics, excludes light source characteristics)

IN-SIGHT 5403 SPECTRAL SENSITIVITY CHARACTERISTICS

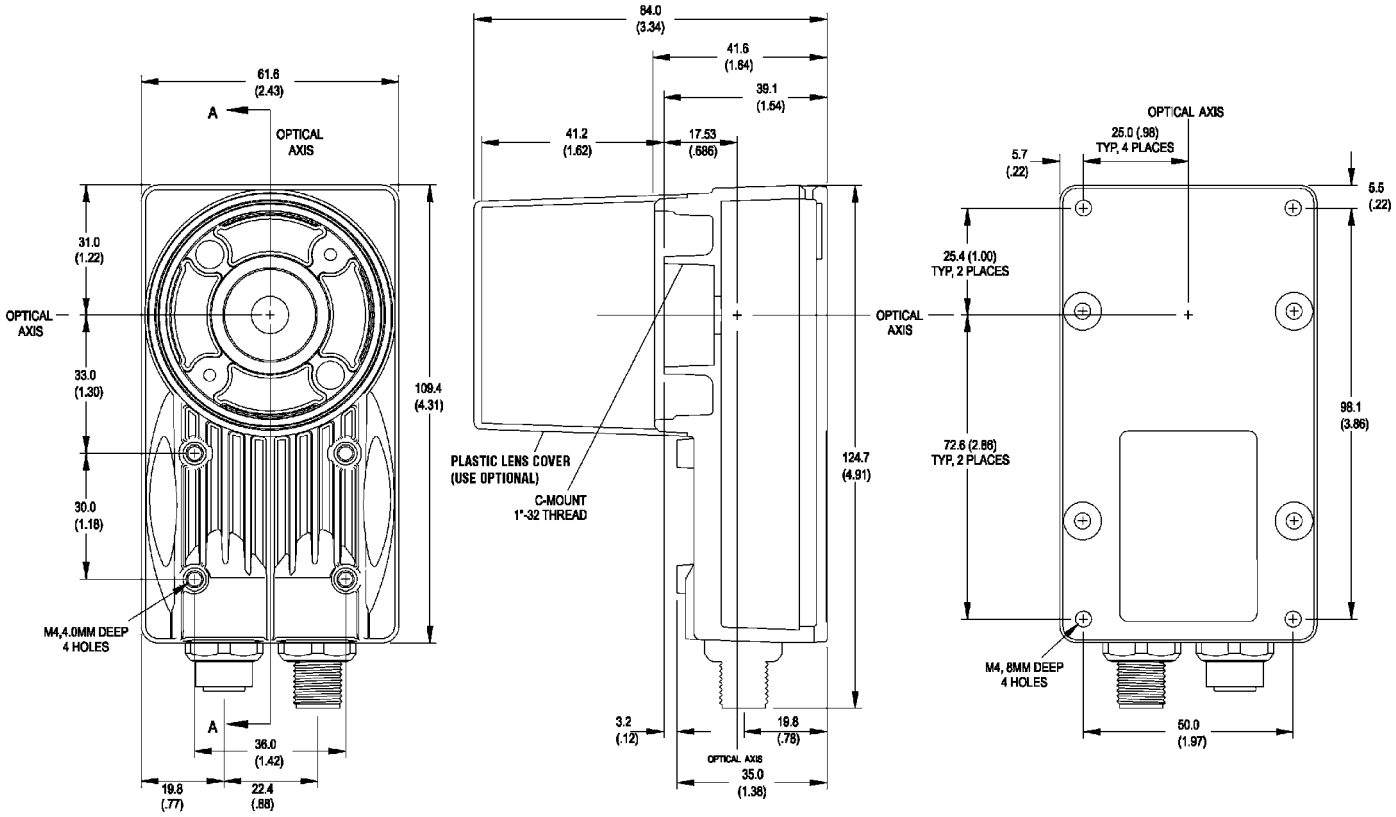


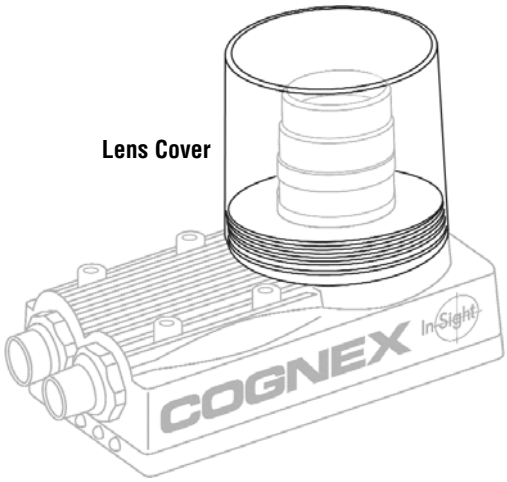
(Includes lens characteristics, excludes light source characteristics)

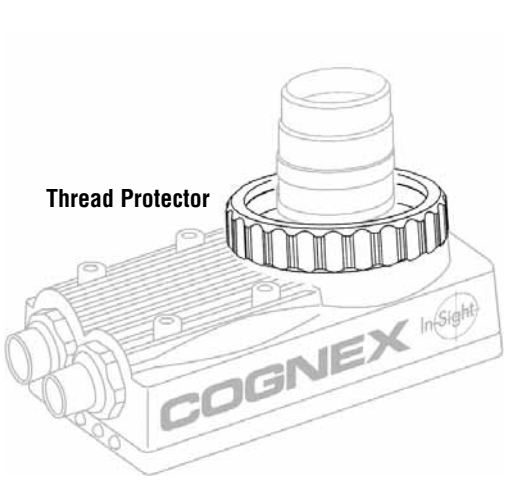
IN-SIGHT HARDWARE

IN-SIGHT 5000, 5100, 5400, 5400C, 5401, AND 5403

Note: All measurements are provided in millimeters (first number) and inches (number in parenthesis).





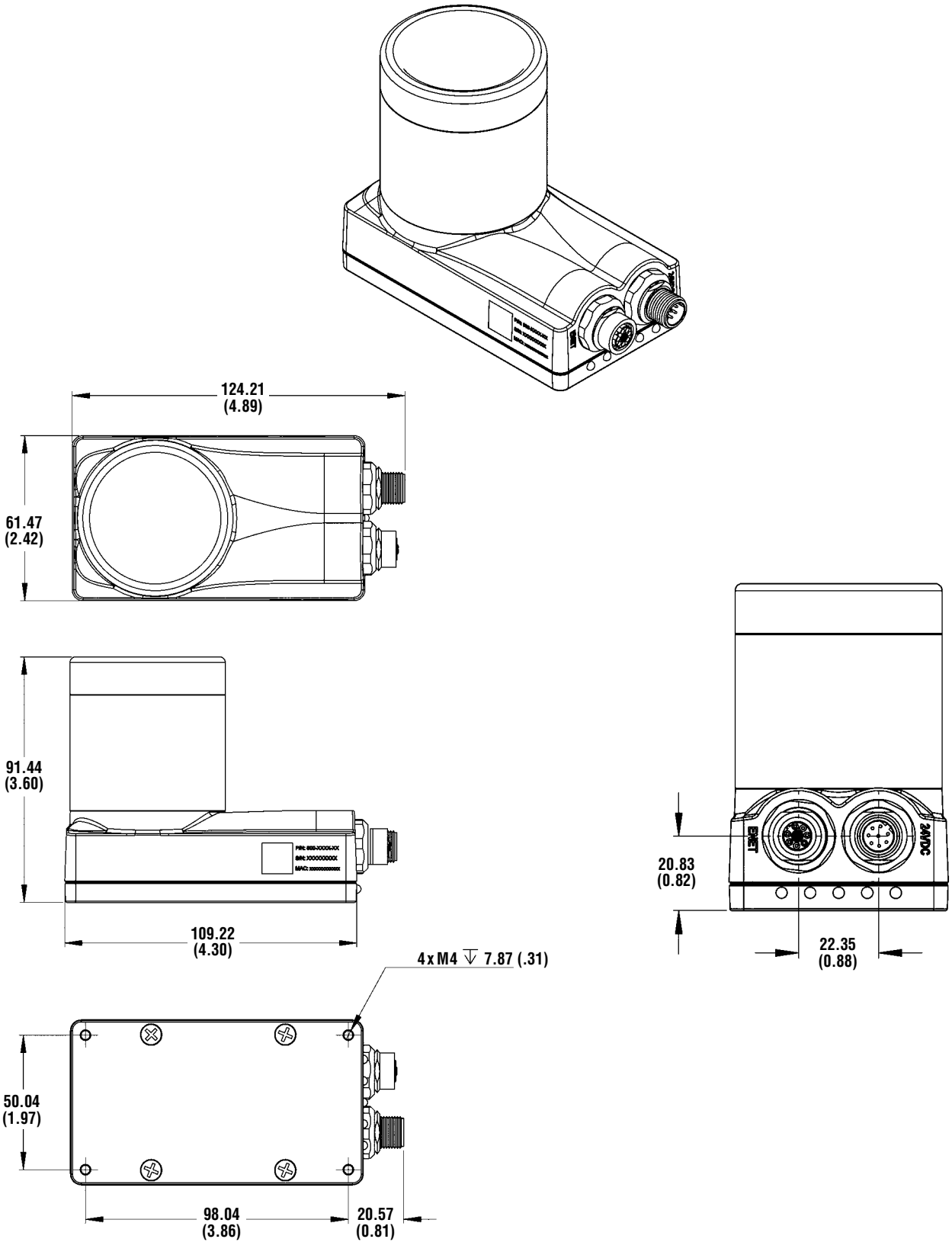


The lens cover included with In-Sight 5000 Series vision sensors provides wash-down and dust protection. A thread protector, also included, protects the threads when the lens cover is not used.

IN-SIGHT HARDWARE

IN-SIGHT 5400S

Note: All measurements are provided in millimeters (first number) and inches (number in parenthesis).



IN-SIGHT HARDWARE SPECIFICATIONS

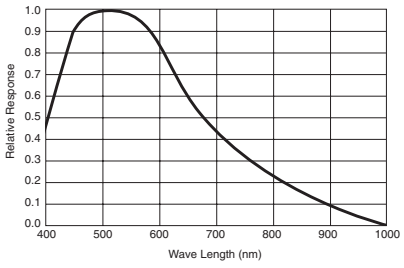
IN-SIGHT 5110, 5410, AND 5411

Note: All measurements are provided in millimeters (first number) and inches (number in parenthesis).

ID Tools		
1D Codes	Code 3 of 9; Code 128; Interleaved 2 of 5; Reduced Space Symbology (RSS); UPC/EAN; PostNet; Planet Code; Pharma Code; UPU-57	
2D Codes	Data Matrix; QR Code; PDF417; Composite Symbology (CS)	
Quality Assessment Metrics		
1D Codes	ISO 15416	
2D Codes		
Data Matrix	ISO 16022, AS9132, Cognex Supplemental Metrics	
QR Code	ISO 18004, Cognex Supplemental Metrics	
Firmware		
	In-Sight version 2.52 and later	
Memory		
Job/Program	16MB non-volatile flash memory; Unlimited storage via remote network device	
Image processing	64MB	
Image		
Sensor	*In-Sight 5110 and 5410*	*In-Sight 5411*
	1/3-inch CCD (5.84mm x 4.94mm; 6mm diagonal) 640 x 480 pixel display (307,200 sq. pixels, 7.4 x 7.4µm pixel size)	1/3-inch CCD (5.80mm x 4.92mm; 6mm diagonal) 1024 x 768 pixel display (786,432 sq. pixels, 7.65 x 7.65µm pixel size)
	Electronic shutter speed: 32µs to 1000ms	
Acquisition	Rapid reset, progressive scan, full-frame integration	
	256 gray levels (8 bits/sec)	
	Gain/Offset controlled by software	
	In-Sight 5110 and 5410	*In-Sight 5411*
	Up to 60 full frames per second (exposure dependent)	Up to 20 full frames per second (exposure dependent)
Lens type	C-mount	
I/O		
Trigger	1 opto-isolated, acquisition trigger input	
	Remote software commands via Ethernet and RS232	
Trigger voltage	ON 20 to 28V (24V nominal); OFF 0 to 3V (12V nominal threshold)	
Trigger current	ON 0.9 to 1.3mA; OFF <150µA	
	Resistance ~22,000 Ohms	
Trigger delay	250µSec latency between leading edge of trigger and start of acquisition. Input pulse should be minimum of 1ms wide.	
Discrete inputs	8 inputs available, using optional Model 1450 I/O Expansion Module.	
Discrete outputs	2 built-in, high-speed outputs	
	8 additional outputs available, using optional Model 1450 I/O Expansion Module.	

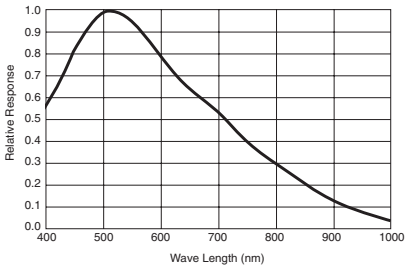
I/O (cont.)	
High-speed output voltage	28V maximum through external load
High-speed output current	200mA maximum sink current
	OFF state leakage current 200µA maximum
	External load resistance 120 to 10K Ohms
	Each line rated at a maximum 200mA, protected against overcurrent, short circuit, and transients from switching inductive loads. High current inductive loads require external protection diode.
Status LEDs	Power, Network Status, Network Traffic, 2 user configurable
Lighting	
Lighting methods	May be used with Cognex external light modules, or with the integrated light ring included in optional Image Formation System (IFS) kits. Kits include ring light, lens, and protective lens cover.
Communications	
Network	1 Ethernet port, 10/100 BaseT, TCP/IP protocol. Supports Ethernet/IP and ModBus/TCP. Supports DHCP (factory default) or static IP address
Serial	1 RS-232C port (1200 to 115,200 baud rates. 1200 and 2400 baud is not supported by the Model 1450 I/O Expansion Module.)
Power	
Power consumption	24VDC ± 10%, 350mA
Mechanical	
Material and finish	Die-cast aluminum housing, painted
Mounting	Eight M4 threaded mounting holes (four front and four back)
Dimensions	84mm (3.34in) x 124.7mm (4.91in) x 61.6mm (2.43in) with lens cover installed 41mm (1.62in) x 124.7mm (4.91in) x 61.6mm (2.43in) without lens cover installed
Weight	297.6 g (10.5oz) lens cover installed, w/o lens
Environmental	
Operating temperature	0°C to 45°C (32°F to 113°F)
Operating humidity	0 to 95%, non-condensing
Storage temperature	-30°C to 80°C (-22°F to 176°F)
Storage humidity	0 to 95%, non-condensing
Protection	IP67 (NEMA Type 6) with lens cover installed
Shock	80 Gs (800 M/S^2 at 11 ms) per IEC 68-2-27 EA
Vibration	10 Gs (10-to 500 Hz at 100 M/S^2 / 15mm for two hours in each axis) per IEC 68-2-6 FC
Certifications	
Approvals	CE, CUL, FCC

IN-SIGHT 5110 AND 5410 SPECTRAL SENSITIVITY CHARACTERISTICS



(Includes lens characteristics, excludes light source characteristics)

IN-SIGHT 5411 SPECTRAL SENSITIVITY CHARACTERISTICS



(Includes lens characteristics, excludes light source characteristics)

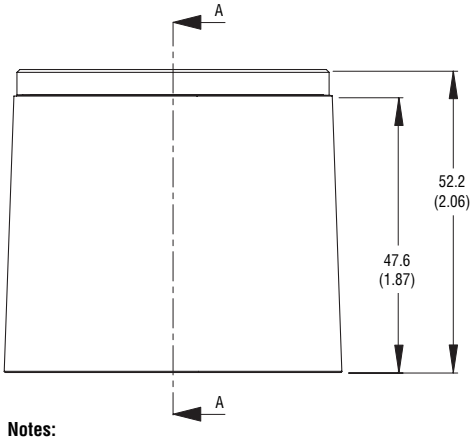
DIMENSIONAL DRAWINGS ARE SHOWN ON PAGE 4

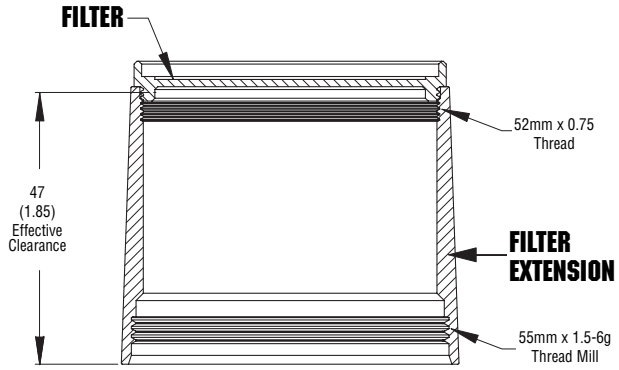
IN-SIGHT HARDWARE

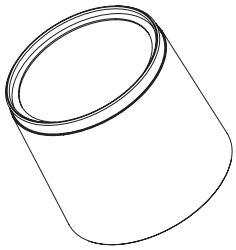
METAL LENS COVER (OPTIONAL FOR ALL IN-SIGHT 5000 SERIES VISION SENSORS EXCEPT THE 5400S)

Note: All measurements are provided in millimeters (first number) and inches (number in parenthesis).

LNS-CVR-R-00 (Red)
LNS-CVR-UV-00 (UV)







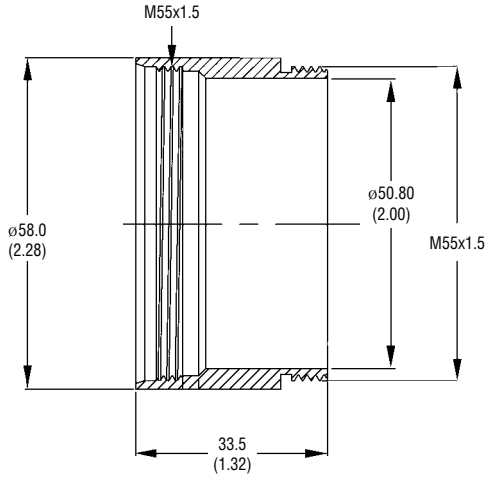
Notes:

Any standard 52mm x .75 mm filter can be used with the extension.

The maximum distance from the top of the In-Sight 5XXX C-mount to the inside surface of the filter glass is typically 41.5mm (1.63).

METAL EXTENSION RING (OPTIONAL FOR ALL IN-SIGHT 5000 SERIES VISION SENSORS EXCEPT THE 5400S)

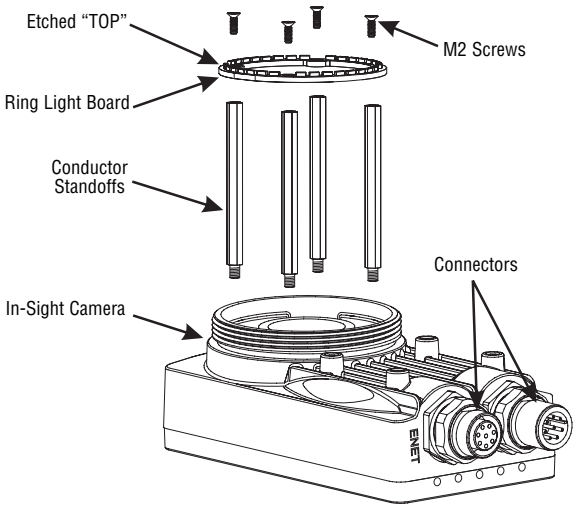
LNS-CVR-EXT-01



Note:
Material: Black anodized aluminum

DIFFUSE RING LIGHT (DRL) (OPTIONAL FOR IN-SIGHT 5110, 5410, AND 5411 ID READERS)

IFS-DRL-050



IN-SIGHT HARDWARE

IMAGE FORMATION SYSTEM (IFS) KIT (OPTIONAL FOR IN-SIGHT 5110, 5410, AND 5411 ID READERS)

Seven kits are available, each with a different lens

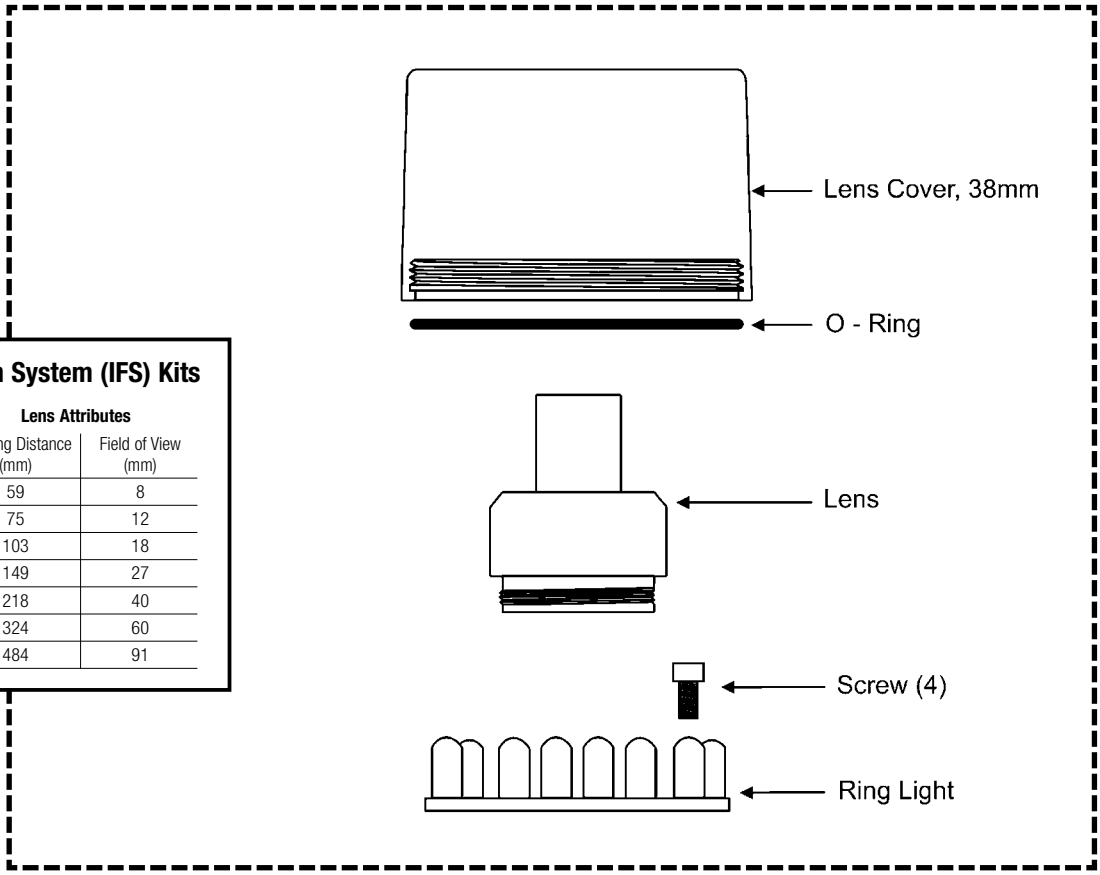
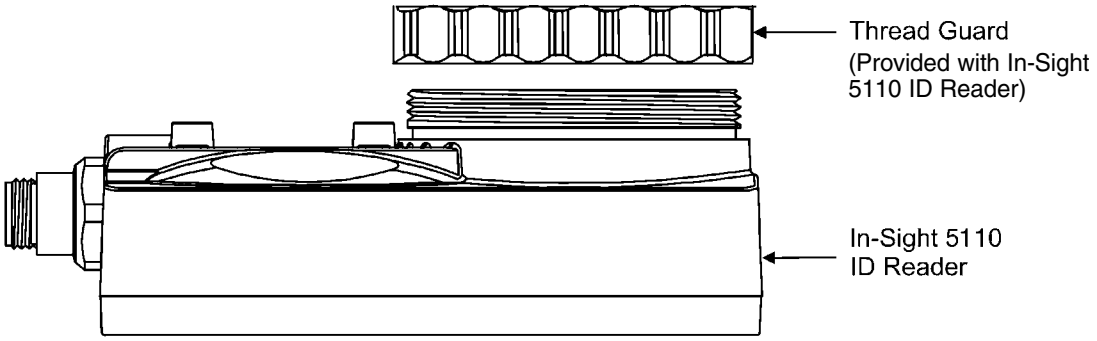


Image Formation System (IFS) Kits

Kit Part Number	Lens Attributes	
	Working Distance (mm)	Field of View (mm)
IFS-RRL050-0008	59	8
IFS-RRL050-0012	75	12
IFS-RRL050-0018	103	18
IFS-RRL050-0027	149	27
IFS-RRL050-0040	218	40
IFS-RRL050-0060	324	60
IFS-RRL050-0090	484	91

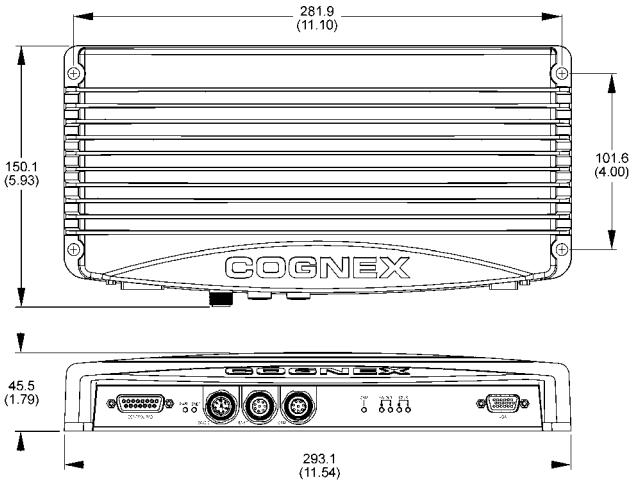


IN-SIGHT HARDWARE SPECIFICATIONS

IN-SIGHT 3400

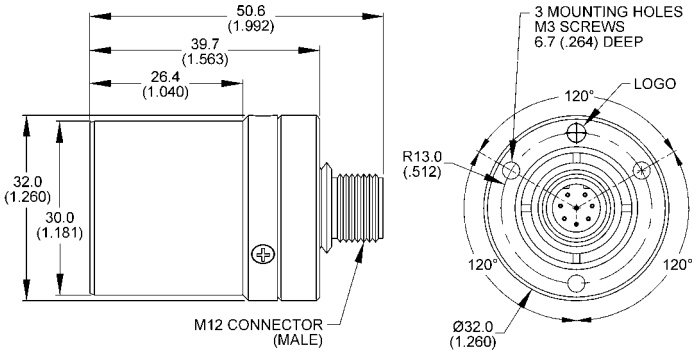
Note: All measurements are provided in millimeters (first number) and inches (number in parenthesis).

Processor



Memory	
Job and program	16MB non-volatile flash memory; Unlimited storage via remote storage network device
Image acquisition and processing	64MB SDRAM
I/O	
Trigger	1 opto-isolated, acquisition trigger input
	Remote software commands via Ethernet and RS232
Inputs	Eight Discrete inputs, using optional I/O Expansion Module
Outputs	2 built-in, high-speed outputs
	Eight Discrete outputs, using optional I/O Expansion Module
Status LEDs	Seven total: POWER, ENET Status, CAMERA Status, 2 High-speed Status and two User defined
Communications	
Network	1 Ethernet port, 10/100 BaseT, TCP/IP protocol Supports DHCP (factory default) or static IP address
Serial	RS-232C port (1,200 to 230,400 baud rates)
Mechanical	
Material	Painted, cast aluminum housing
Mounting	Four 6.86mm (.27") through-holes
Weight	1094g
Power	
Power consumption	24VDC ± 10%, isolated, 400mA
Environmental	
Operating temperature	0°C to 35°C (32°F to 95°F)
Operating humidity	95%, non-condensing
Storage temperature	-40°C to 85°C (-40°F to 185°F)
Storage humidity	95%, non-condensing
Dust penetration	IP52 and UL 50 (NEMA 12)
Shock	30G per IEC 68-2-27
Vibration	2G from 10-2000Hz as per IEC 68-2-6
Certifications	
Approvals	CE, CUL, FCC (Pending)

Camera



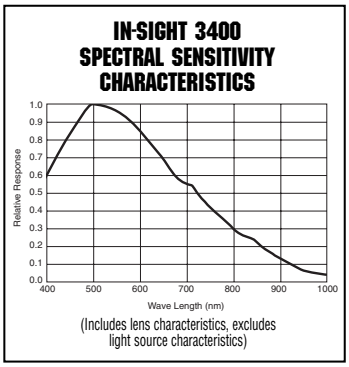


Image	
Sensor	1/3-inch CCD (5.84mm x 4.94mm; 6mm diagonal)
	640 x 480 pixel display (307,200 sq. pixels, 7.4 x 7.4µm)
	Electronic shutter speed: .032ms to 1000ms
Acquisition	Rapid reset, progressive scan (supports partial scan), full-frame integration
	256 gray levels (8 bits/sec)
	Gain controlled by software
	Up to 38 frames per second
Lens type	CS-mount; C-mount (with adaptor)
Mechanical	
Material	Anodized, cast aluminum housing
Mounting	Three M3 mounting holes
Weight	68g
Environmental	
Operating temperature	0°C to 50°C (32°F to 122°F)
Operating humidity	95%, non-condensing
Storage temperature	-40°C to 85°C (-40°F to 185°F)
Storage humidity	95%, non-condensing
Water penetration	30-minute immersion per IP67 (NEMA 6) with optional industrial enclosure
Shock	80G per IEC 68-2-27
Vibration	10G from 10-500Hz with per IEC 68-2-6 (See accessory kit note on following page)
Certifications	
Approvals	CE, CUL, FCC (Pending)

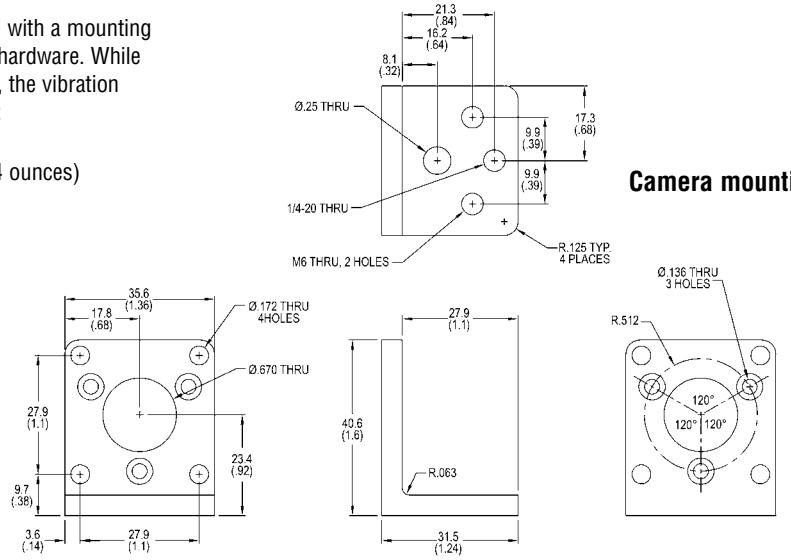
IN-SIGHT HARDWARE

IN-SIGHT 3400 CAMERA MOUNTING

Note: All measurements are provided in millimeters (first number) and inches (number in parenthesis).

The In-Sight 3400 vision sensor camera is supplied with a mounting bracket, vibration dampener, and related mounting hardware. While the bracket alone is sufficient for most installations, the vibration dampener is required for the following installations:

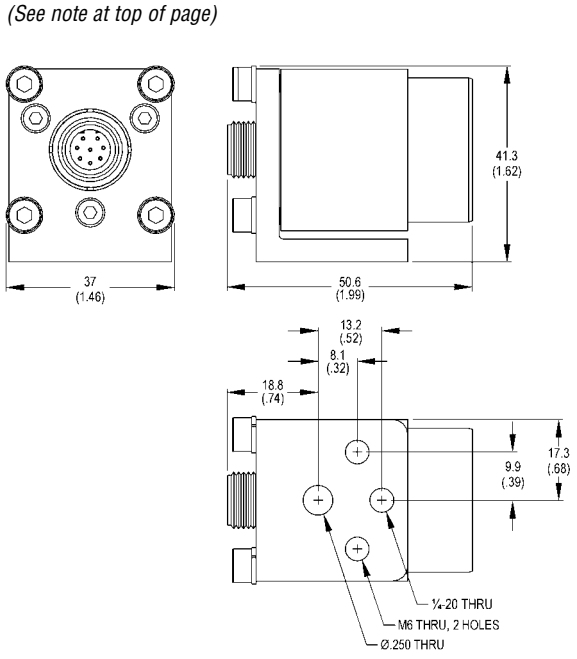
- Vibration levels over 3G
- Use of lenses weighing more than 55 grams (1.94 ounces)

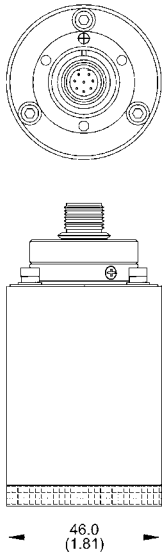


Camera mounting bracket

Camera, mounting bracket, and vibration dampener assembly

(See note at top of page)

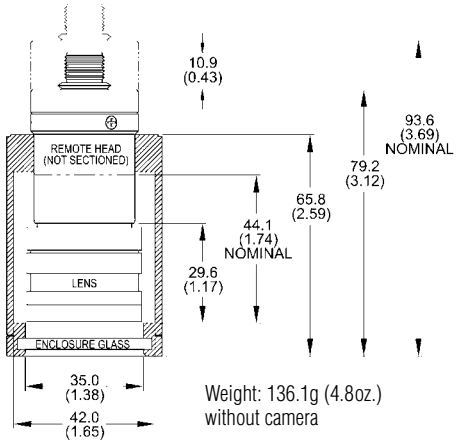




Optional industrial camera enclosure

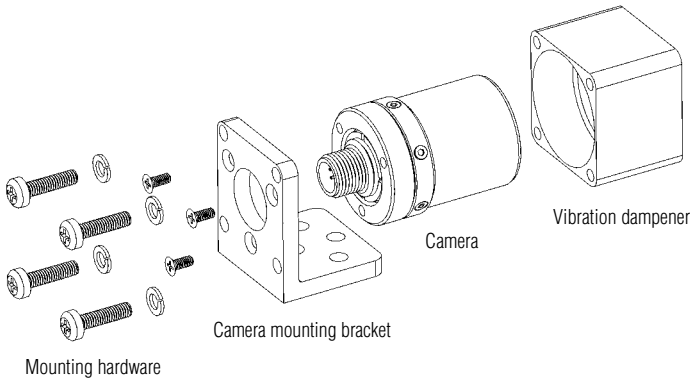
(Not for use with vibration dampener)

Protects the camera from harsh factory conditions. Rated for IP67 (NEMA 6) environments.



Weight: 136.1g (4.8oz.) without camera

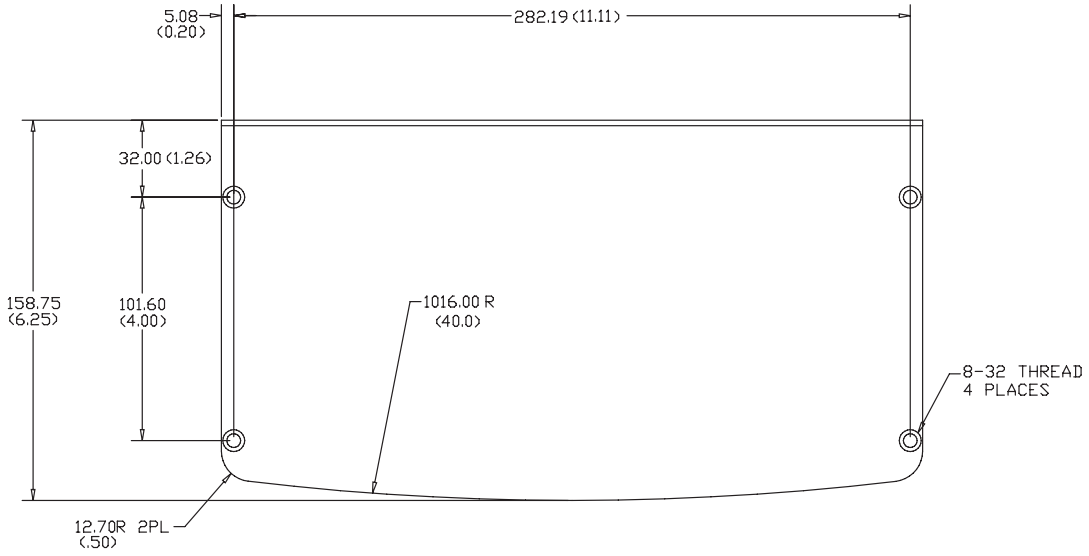
Exploded view of assembly



IN-SIGHT HARDWARE

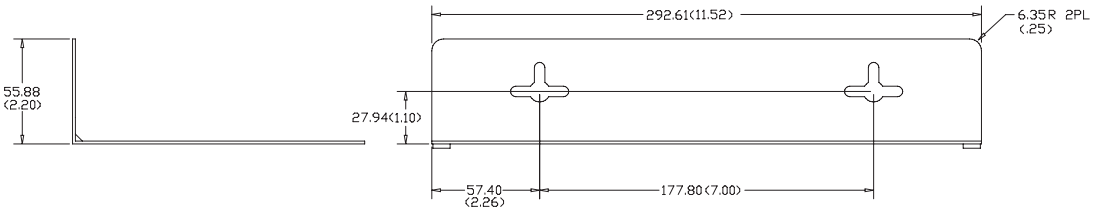
PROCESSOR MOUNTING BRACKETS (OPTIONAL FOR IN-SIGHT 3400 VISION SENSOR)

Note: All measurements are provided in millimeters (first number) and inches (number in parenthesis).



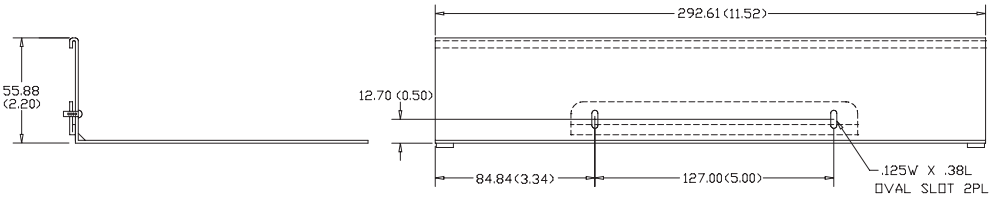
WALL MOUNT

370-0253



DIN RAIL MOUNT

370-0252

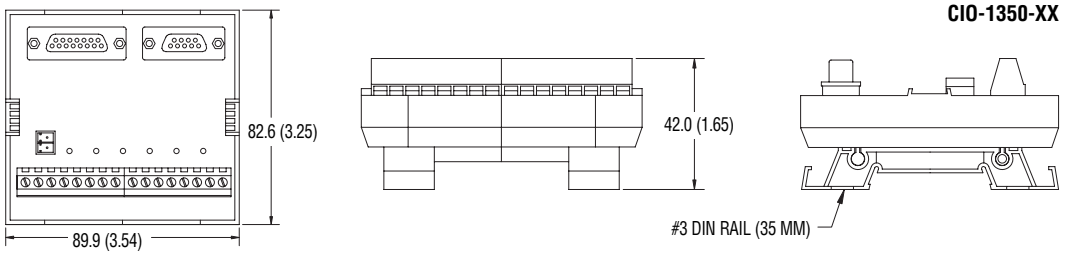


IN-SIGHT I/O SPECIFICATIONS

IN-SIGHT BREAKOUT MODULE (FOR USE WITH IN-SIGHT 5000 SERIES VISION SENSORS AND ID READERS)

Note: All measurements are provided in millimeters (first number) and inches (number in parenthesis).

CIO-1350-XX

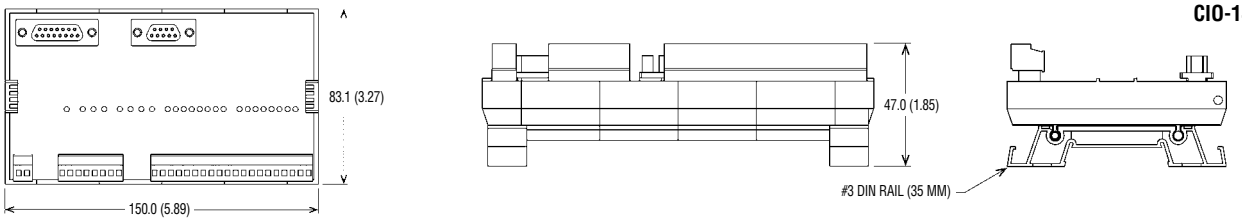


I/O	
Acquisition trigger	1 independent discrete input, optically isolated
Outputs	2 discrete outputs
Input delay	
Trigger input	ON: 30 µSec @ 3.5 mA; 8 µSec @ 15 mA OFF: 45 µSec @ 3.5 mA; 80 µSec @ 15 mA
Output delay	ON: 6 µSec OFF: 130 µSec @ 5 µA; 95 µSec @ 10 mA; 85 µSec @ 15 mA
Trigger input resistance	~ 1000 Ohms
Trigger input state current	ON: 3.5 to 15 mA OFF: 500 µA
Maximum output current	200 mA (sink)
ON state voltage drop	0.8VDC @ 10 mA; 2.6VDC @ 15 mA
OFF state leakage current	100 µA; maximum @ 15VDC

Mechanical	
Terminal block torque	7 in-lb (0.8 N-M) Maximum
Cable	4.6m (15ft) supplied; 12.3m (40ft) and 15.2m (50ft) optional
Power	
Operating voltage (field side)	5VDC to 24VDC
Power consumption	24VDC +/-10%, 50mA plus camera load
Status LEDs	1 each for power, acquisition trigger, and outputs
Field wiring size	26 to 12 AWG
Environmental	
Operating temperature	0°C to 50°C (32°F to 122°F)
Operating humidity	5 to 95% non-condensing
Storage temperature	–20°C to 85°C (–4°F to 185°F)
Storage humidity	5 to 95% non-condensing

IN-SIGHT EXPANSION MODULE (FOR USE WITH ALL IN-SIGHT VISION SENSORS AND ID READERS)

CIO-1450-XX



I/O	
Acquisition trigger	1 independent discrete input, optically isolated
General purpose inputs	8 discrete inputs
General purpose outputs	10 discrete (2 high-speed, 8 general purpose)
Serial	1 RS-232C port (1200 to 115,200 baud rates), RxD, TxD, and Flow control (RTS/CTS)
Input delay	
Trigger input	250 µSec
8 general-purpose inputs	600 µSec maximum delay
Output delay	
2 high-speed outputs	ON: 6 µSec OFF: 130 µSec @ 5µA; 95 µSec @ 10mA, 85 µSec @ 15mA
8 general-purpose outputs	Pulse mode 375 µSec max Set/Reset mode 550 µSec max
Trigger input resistance	~2K Ohms
Input state current	
Trigger	ON: 10 to 14.4mA OFF: <300µA
General purpose inputs	1.3mA
Maximum output current	
High-speed outputs	200mA (Sink)
General purpose outputs	150mA (Sink)
ON state voltage drop	Depends on output load configuration

I/ O (cont.)	
OFF state leakage current	
General purpose inputs	<50µA
High-speed outputs	200µA
General purpose outputs	200µA
Mechanical	
Terminal block torque	0.3 N-m (2.7 in-lb) Maximum
Cable	4.6m (15ft) supplied; 12.3m (40ft) and 15.2m (50ft) optional
Power	
Operating voltage (field side)	5VDC to 24VDC
Power consumption	24VDC ±10%, 1.25 Amps, 30W supply*
Status LEDs	1 each for power, acquisition trigger, inputs, and outputs 2 each for camera and remote RS232
Field wiring size	26 to 16 AWG
Environmental	
Operating temperature	0°C to 50°C (32°F to 122°F)
Operating humidity	10 to 90%, non-condensing
Storage temperature	-10°C to 65°C (14°F to 149°F)
Storage humidity	10 to 90%, non-condensing

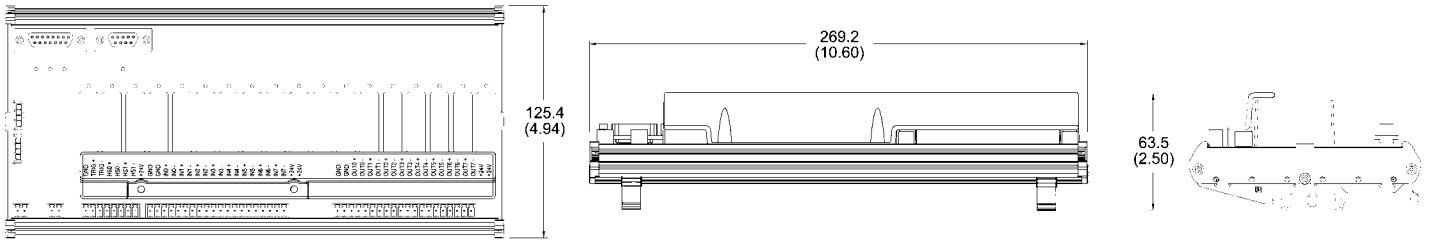
* Maximum draw when I/O Expansion Module supplies power to an In-Sight 4100 sensor, and when all inputs, outputs, and LED indicators are in use. Draw will be less than 30W under typical usage.

IN-SIGHT I/O

IN-SIGHT EXPANSION MODULE (FOR USE WITH IN-SIGHT 5000 SERIES VISION SENSORS AND ID READERS, AND 3400 VISION SENSORS)

CIO-1460-XX

Note: All measurements are provided in millimeters (first number) and inches (number in parenthesis).



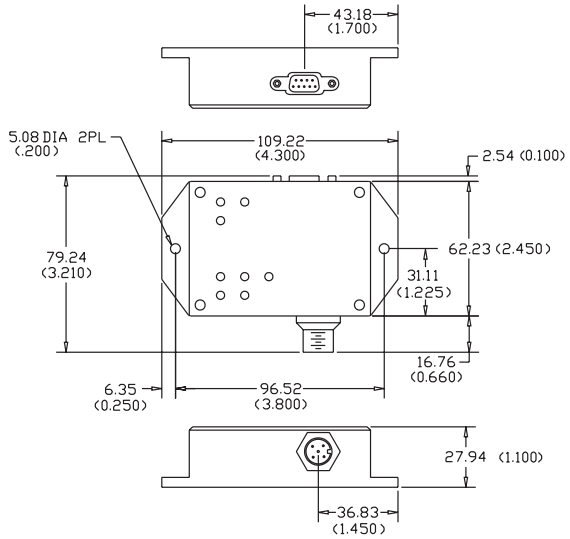
I/O	
Acquisition trigger	1 independent discrete input, optically isolated
General purpose inputs	8 opto-isolated discrete
General purpose outputs	10 opto-isolated discrete (2 high-speed, 8 general-purpose)
Serial	1 RS-232C port (1200 to 115,200 baud rates), RxD, TxD, and Flow control (RTS/CTS)
Input voltage	
Trigger input	ON 20 to 28V (24V nominal) OFF 0 to 3V (12V nominal threshold)
8 general-purpose inputs	ON 3 to 32V (24V nominal) OFF 0 to 1.5V (10V nominal threshold)
Input current	
Trigger input	ON 10 to 14.4mA; OFF <300µA Resistance ~2K Ohms
8 general-purpose inputs	ON >50mA; OFF <50mA
Delay	
Trigger input	250 µSec latency between leading edge of trigger and start of acquisition. Input pulse should be a minimum of 1 ms wide.
8 general-purpose inputs	600 µSec max. between change of input state and completion of serial transmission to the In-Sight sensor.
Outputs	
Voltage	60V maximum through external load
Current	ON >50mA, 2.5A max, Fuse protected; OFF <50mA

Mechanical	
Housing	Black plastic
Mounting	#3 DIN-rail (35mm)
Terminal block torque	0.3 N-m (2.7 in-lb) Maximum
Cable	4.6m (15ft) supplied; 12.3m (40ft) and 15.2m (50ft) optional
Weight	691.8 g (24.4 oz)
Power	
Operating voltage (field side)	
Power consumption	24VDC ± 10%, ~ 250mA with camera[a]
Status LEDs	1 each for power, external lights, acquisition trigger, inputs and outputs 1 each for Camera and Remote RS232
Light input/output	12VDC to 24VDC
Field wiring size	26 to 16 AWG
Environmental	
Operating temperature	0°C to 50°C (32°F to 122°F)
Operating humidity	10 to 90%, non-condensing
Storage temperature	-10°C to 65°C (14°F to 149°F)
Storage humidity	10 to 90%, non-condensing
Shock	30Gs per IEC 68-2-27 (Pending)
Vibration	2Gs per IEC 68-2-6 (Pending)
Certifications	
Pending	CE, UL, FCC

a. Maximum draw when the 1460 I/O Expansion Module supplies power to an In-Sight sensor, and when all inputs, outputs, and LED indicators are in use. Draw will be less than 30W under typical usage.

DEVICENET INTERFACE MODULE (OPTIONAL FOR ALL IN-SIGHT VISION SENSORS AND ID READERS) CIO-2550-00

Note: All measurements are provided in millimeters (first number) and inches (number in parenthesis).

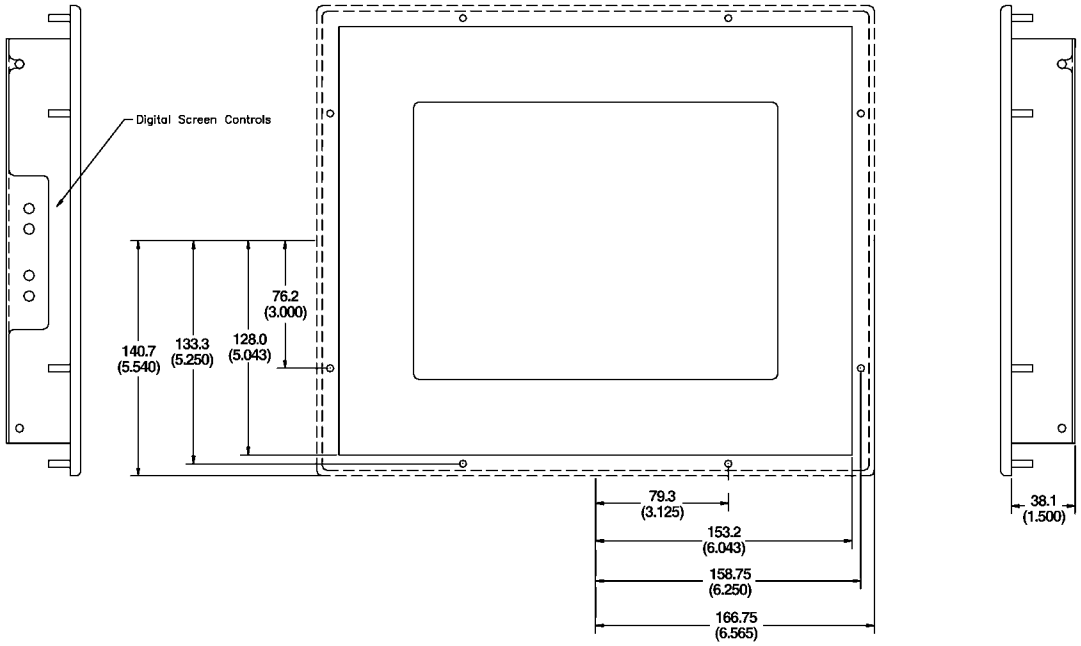


Data	
Data size	8/7 bits (software config.)
Parity	Even/odd/none
Stop bits	1 (fixed)
Data rate (serial)	300, 1220, 2400, 4800, 9600, 19.2 kbs (software selected)
(DeviceNet)	125, 250, 500 kbs
Flow control	None. RTS/CTS, X-On/X-OFF
Power	
Isolation	500v
ESD protection	+/-10kv
Overload protection	+/-30kv
Short circuit	Indefinite
Output levels	+/-7.9v (typical)
Environmental	
Operating temperature	0°C to 70°C (32°F to 158°F)

IN-SIGHT DISPLAYS

FLAT PANEL MONITOR (OPTIONAL FOR IN-SIGHT 3400 VISION SENSOR) CIM-LCD-104

10.4" DIAGONAL/TFT ACTIVE MATRIX



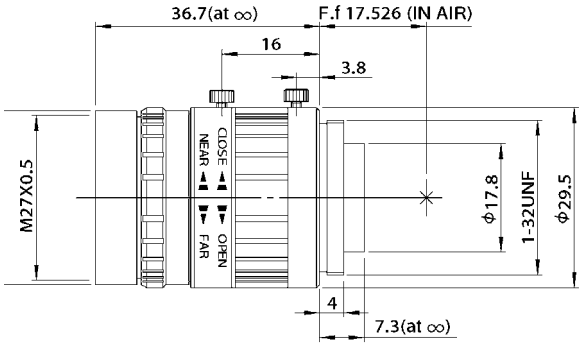
Liquid Crystal Display (LCD)	
Active area	211mm (8.31")(h) x 158.75mm (6.25")(v)
Pixel format	640(h) x 480(v)
Brightness	400 Nits Typical
Contrast ratio	300:1 Typical
Viewing angle	(Horizontal) 60° / 60° (Vertical) 45° / 55°
Back light life	50,000 Hours (Half Life)
Colors supported	256,000
Impact Window	
Thickness	.118 Nominal
Finish	Anti Glare
Finish external	UV Hard Coat
Material	Polycarbonate
Mechanical	
Bezel outside dimension	333.5mm (13.130")(h) x 281mm (11.080")(v)
Bezel material	6.35mm (.250") 6061 Aluminum
Bezel finish	Black Powder Coating

Mechanical (cont.)	
Front end construction	NEMA 4/12
Chassis depth	(Behind Cabinet Door) 28.54mm (1.125") (add 63.5mm (2.5") for cables unless bottom exit cables specified)
Chassis construction	18 Ga. Stainless Steel
Weight	3.18kg (7lbs)
Power	
Input voltage	24VDC nominal
Input wattage	25 Watts typical
Environmental	
Operating temperature	0°C to 50°C (32°F to 122°F)
Operating humidity	10 to 95%, non-condensing
Storage temperature	0°C to 60°C (32°F to 140°F)
Storage humidity	10 to 95%, non-condensing
Certifications	
Approvals	UL

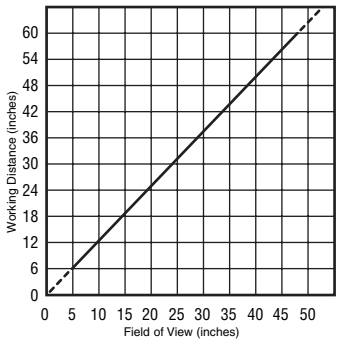
IN-SIGHT LENS SPECIFICATIONS

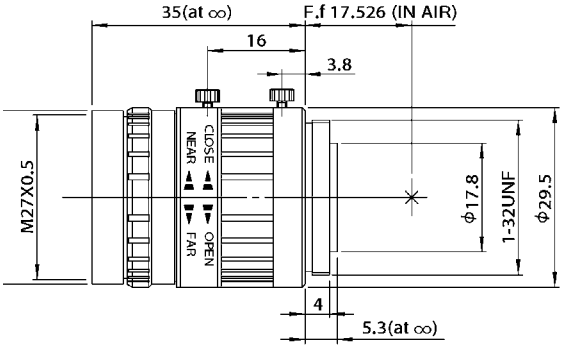
FUJINON

Notes: - Measurements are provided in millimeters.
- Solid lines in charts are measured values; dashed lines are extrapolated values.

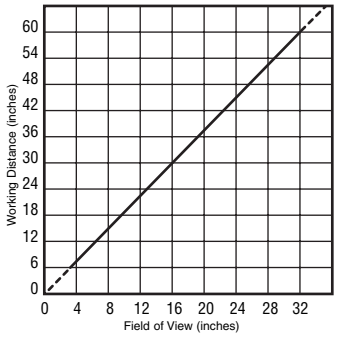


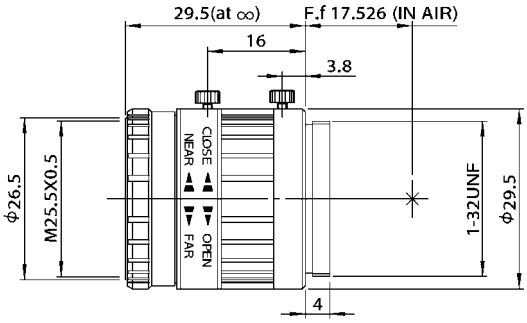
6MM LENS LNS-DF6HA1-00



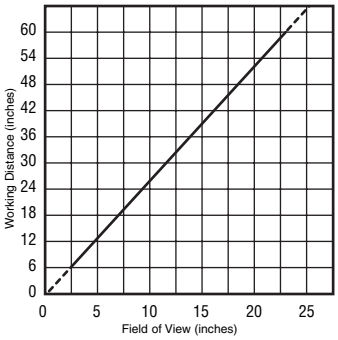


9MM LENS LNS-HF9HA1-00

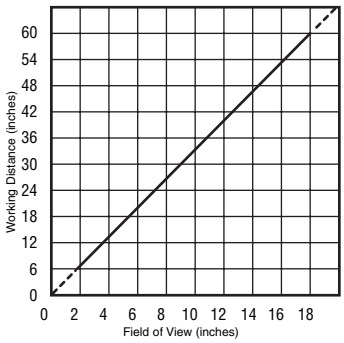




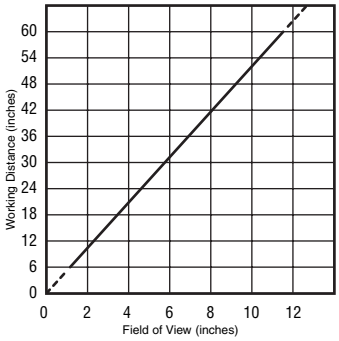
12.5MM LENS LNS-HF125HA1-00



16MM LENS LNS-HF16HA1-00



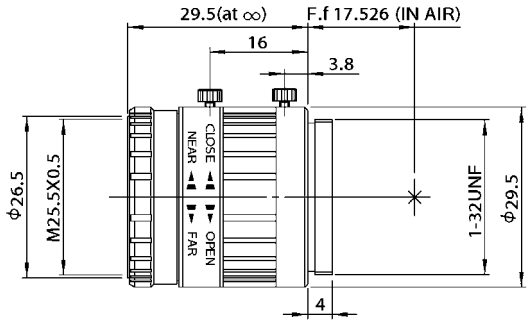
25MM LENS LNS-HF25HA1-00



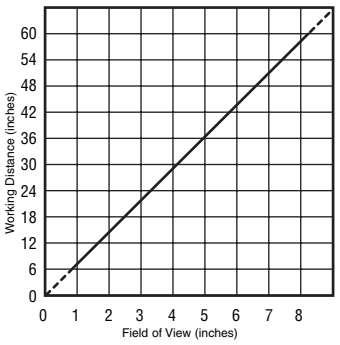
IN-SIGHT LENSES

FUJINON

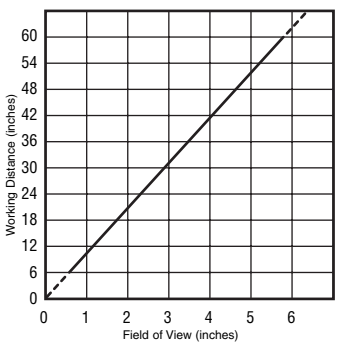
Notes: - Measurements are provided in millimeters.
- Solid lines in charts are measured values; dashed lines are extrapolated values.

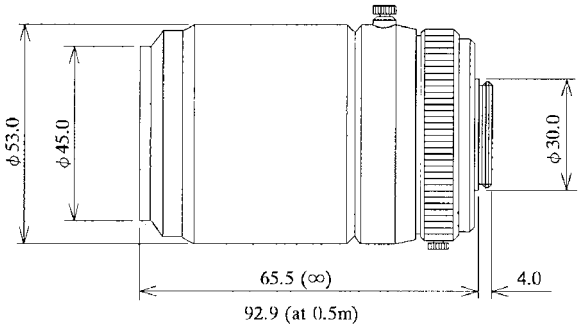


35MM LENS LNS-HF35HA1-00

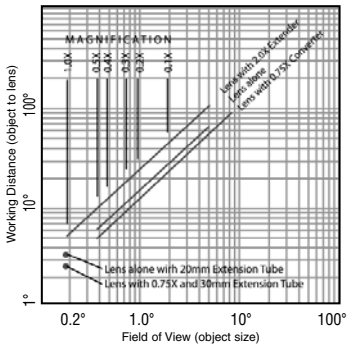


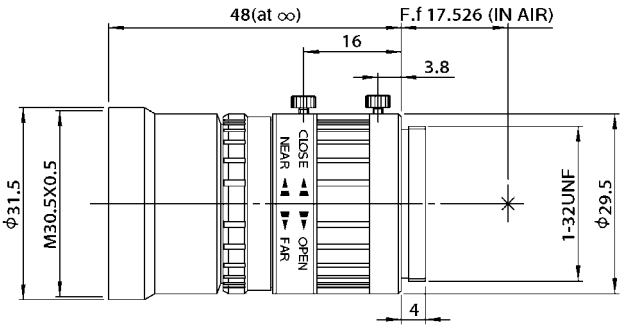
50MM LENS LNS-HF50HA1-00



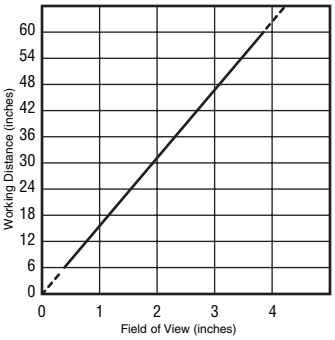


55MM LENS Telecentric 114-0050





75MM LENS LNS-HF75HA-1B



Part Number	Size	Manufacturer	Lock-down screws	Sharp Cut Filter	Polarizer	Can be used with In-Sight 3400 camera enclosure
LNS-DF6HA1-00*	6mm	Fujinon	Yes	LNS-R6427-00	LNS-FLTRPL27-00	Yes
LNS-HF9HA1-00	9mm	Fujinon	Yes	LNS-R6427-00	LNS-FLTRPL27-00	Yes
LNS-HF125HA1-00	12.5mm	Fujinon	Yes	LNS-R6425-00	LNS-FLTRPL25-00	Yes
LNS-HF16HA1-00	16mm	Fujinon	Yes	LNS-R6425-00	LNS-FLTRPL25-00	Yes
LNS-HF25HA1-00	25mm	Fujinon	Yes	LNS-R6425-00	LNS-FLTRPL25-00	Yes
LNS-HF35HA1-00	35mm	Fujinon	Yes	LNS-R6425-00	LNS-FLTRPL25-00	Yes
LNS-HF50HA1-00	50mm	Fujinon	Yes	LNS-R6425-00	LNS-FLTRPL25-00	Yes
LNS-HF75HA-1B	75mm	Fujinon	Yes	LNS-R6430-00	LNS-FLTRPL30-00	Yes

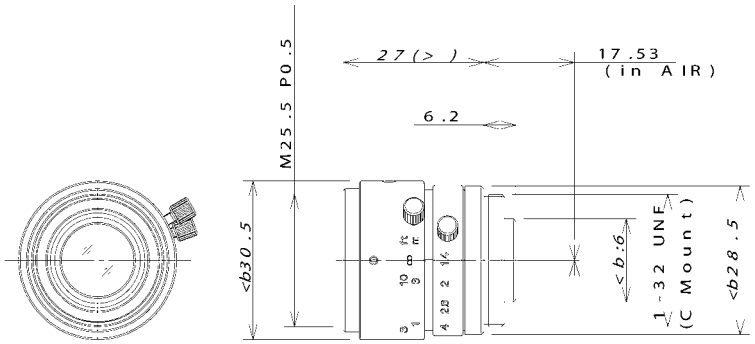
* Not for use with the In-Sight Model 5403 vision sensor, which utilizes a 1/1.8-inch CCD. This lens is designed for 1/2-inch and smaller CCDs used on other In-Sight models.

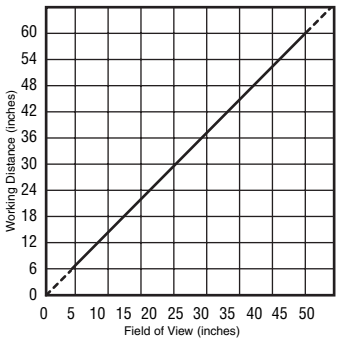
IN-SIGHT LENSES

TAMRON

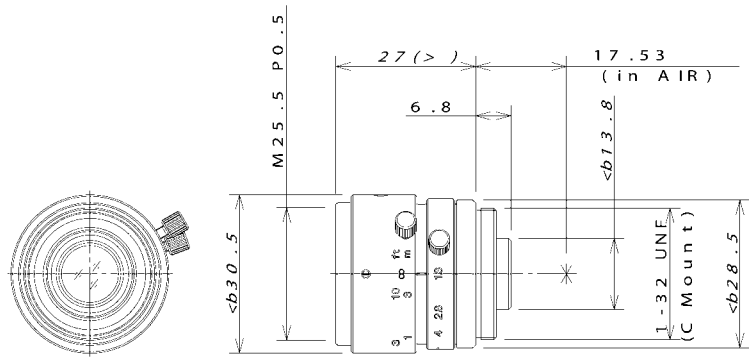
Notes: - Measurements are provided in millimeters.
- Solid lines in charts are measured values; dashed lines are extrapolated values.

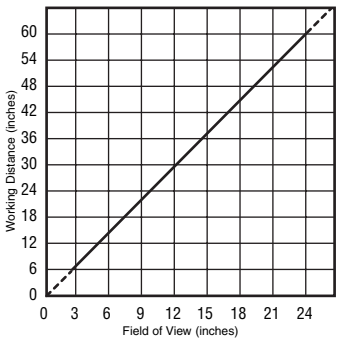
8MM LENS LNS-23FM08L-00



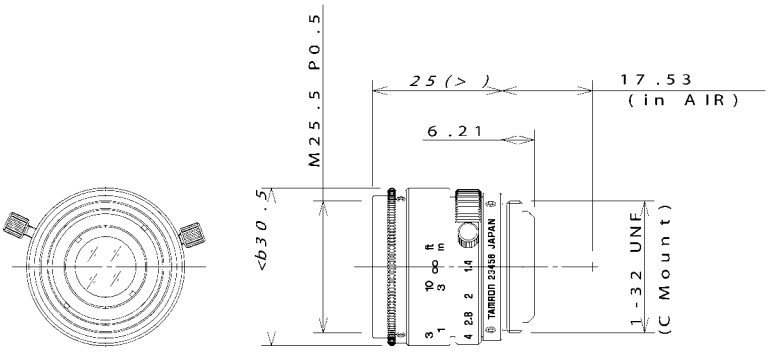


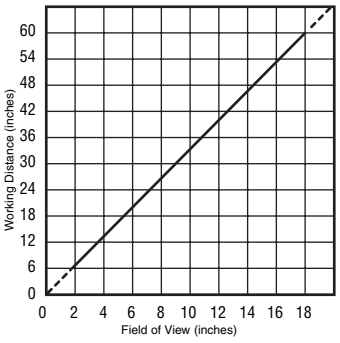
12MM LENS LNS-23FM12L-00



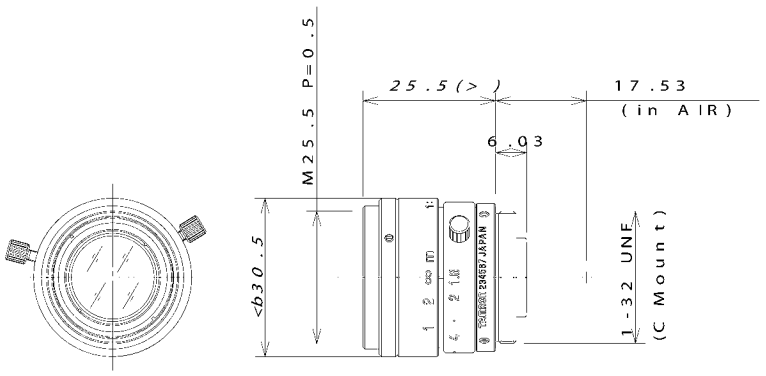


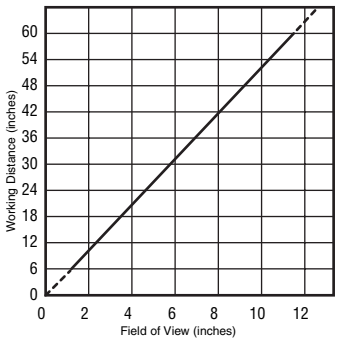
16MM LENS LNS-23FM16L-00





25MM LENS LNS-23FM25L-00

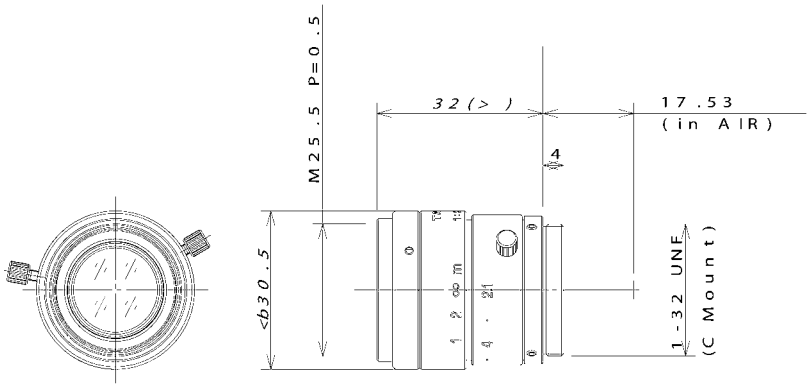




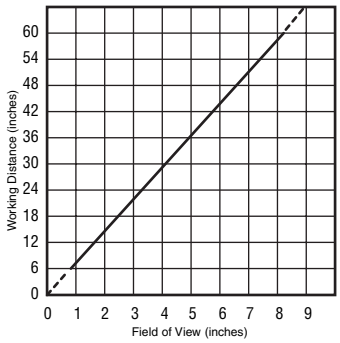
IN-SIGHT LENSES

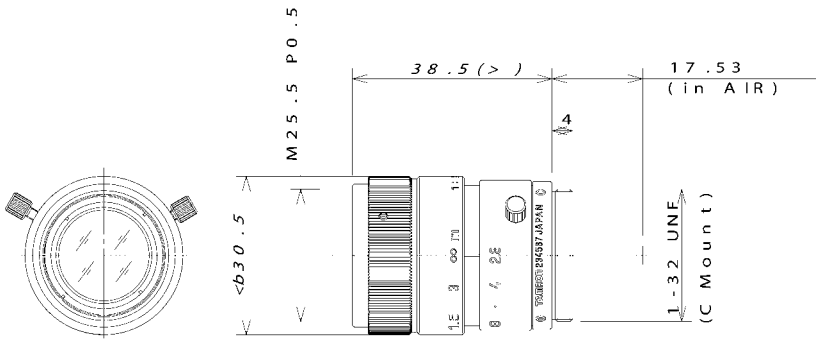
TAMRON

Notes: - Measurements are provided in millimeters.
- Solid lines in charts are measured values; dashed lines are extrapolated values.

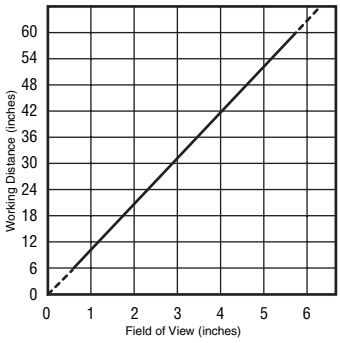


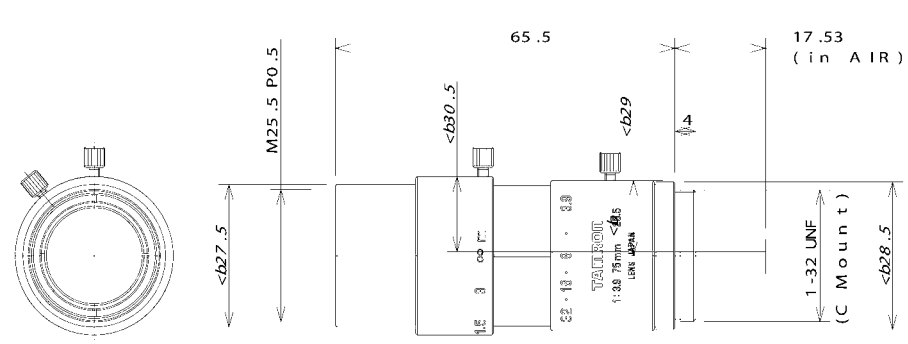
35MM LENS LNS-23FM35L-00



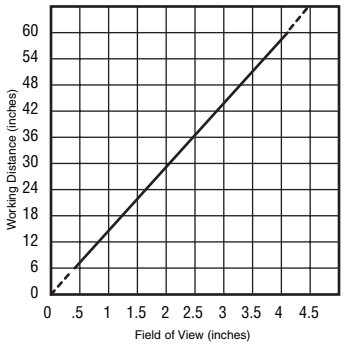


50MM LENS LNS-23FM50L-00





75MM LENS LNS-23FM75L-00

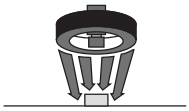
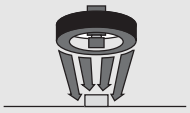
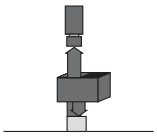


Part Number	Size	Manufacturer	Lock-down screws	Sharp Cut Filter	Polarizer	Can be used with In-Sight 3400 camera enclosure
LNS-23FM08L-00	8mm	Tamron	Yes	LNS-R6425-00	LNS-FLTRPL25-00	Yes
LNS-23FM12L-00	12mm	Tamron	Yes	LNS-R6425-00	LNS-FLTRPL25-00	Yes
LNS-23FM16L-00	16mm	Tamron	Yes	LNS-R6425-00	LNS-FLTRPL25-00	Yes
LNS-23FM25L-00	25mm	Tamron	Yes	LNS-R6425-00	LNS-FLTRPL25-00	Yes
LNS-23FM35L-00	35mm	Tamron	Yes	LNS-R6425-00	LNS-FLTRPL25-00	Yes
LNS-23FM50L-00	50mm	Tamron	Yes	LNS-R6425-00	LNS-FLTRPL25-00	Yes
LNS-23FM75L-00	75mm	Tamron	Yes	LNS-R6425-00	LNS-FLTRPL25-00	No

* Above lenses for use with all 5000 Series vision sensors utilizing 2/3-inch or smaller CCDs.

IN-SIGHT LIGHTING SPECIFICATIONS

COGNEX LIGHT MODULES (OPTIONAL FOR ALL IN-SIGHT VISION SENSORS)

Light Type Category	Operation	Attributes of Light Type	Application	Category*	Drawing No.**
Ring Lights		• Provides soft, even illumination from all directions. • Emphasizes surface features on non-reflective parts. • De-emphasizes contrast between part and background.	• Measuring small molded plastic parts. • Measuring parts that cannot be illuminated with back lighting.	A	L1
				B	L2
					L3
					L4
					L5
					L3
					L47
					L43
					L6
					L7
				C	L8
Low Angle Ring Lights		• Provides soft, low angle illumination from all directions. • Emphasizes edges along with scratches on glossy surfaces of parts.	• Used in above applications, where working distance is limited.	B	L9
					L10
					L11
					L42
					L44
					L53
					L45
					L46
				C	L39
Diffuse Lights		• Provides high-intensity, on-axis illumination. • Emphasizes flat regions of part surface. • De-emphasizes deviations in part surface.	• Verifying presence of liners inside bottle-caps. • Measuring interior features with varying depths.	A	L12
				B	L13
					L14
					L15
					L48
					L49
					L52
					L51
					L16

* Denotes compatible power supply and cable category

** Designates outline drawings on pages 26 to 36

IN-SIGHT LIGHTING

COGNEX LIGHT MODULES (OPTIONAL FOR ALL IN-SIGHT VISION SENSORS)

Cognex Lighting Module Part Numbers & Description		Power Requirements			
		Non-Strobed Applications		Strobed Applications	
		In-Sight 1000, 4000, 5000 Series	In-Sight 2000, 3000 Series	In-Sight 1000, 4000, 5000 Series	In-Sight 2000, 3000 Series
CLM-4260-00[1]	100mm outer diameter ring	CLA-400-00 or CLA-CS100-00	CLA-2000-01	CLA-4000-00	CLA-1000-00
CLM-LDR232RD-00	32mm outer diameter ring	CLA-PD3012-00 and CLA-CBx-00, or CLA-PB2430-00 and CLA-CBx-00		CLA-PD3012-00 and CLA-STU3000-00 and CLA-CBx-00, or CLA-PTU3012-00 and CLA-CBx-00	
CLM-LDR250RD-00	50mm outer diameter ring				
CLM-LDR270RD-00	70mm outer diameter ring				
CLM-LDR270IR95-00	70mm outer diameter ring (IR)				
CLM-LDR290RD-00	90mm outer diameter ring				
CLM-LDR250BL-00	50mm outer diameter ring (Blue)	CLA-PD3024-00 and CLAFCBx-00		CLA-PD3024-00 and CLA-STU3000-00 and CLAFCBx-00, or CLA-PTU3024-00 and CLAFCBX-00	
CLM-LFR100SW-00	100mm outer diameter ring				
CLM-LDR274BLLA-00	74mm outer diameter ring (Blue)				
CLK-LDR270SW-00	70mm outer diameter ring (White)				
CLK-LDR290SW-00	90mm outer diameter ring (White)				
CLK-3010-00	Fluorescent Ring Light	120VAC, 50/60Hz14W			
CLK-3010-01	Fluorescent Ring Light	220VAC, 50/60Hz14W			

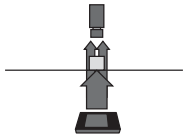
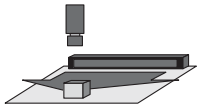
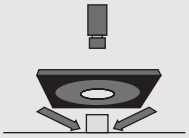
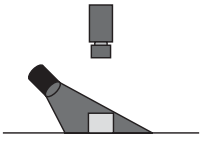
CLM-LDR274RDLA-00	74mm outer diameter ring	CLA-PD3012-00 and CLA-CBx-00, or CLA-PB2430-00 and CLA-CBx-00		CLA-PD3012-00 and CLA-STU3000-00 and CLA-CBx-00, or CLA-PTU3012-00 and CLA-CBx-00	
CLM-LDR2132RDLA-00	132mm outer diameter ring				
CLM-LDR2170RDLA-00	170mm outer diameter ring				
CLM-FPQ75BL-00	75mm x 75mm square light (Blue)	CLA-PD3024-00 and CLAFCBx-00		CLA-PD3024-00 and CLA-STU3000-00 and CLAFCBx-00, or CLA-PTU3024-00 and CLAFCBX-00	
CLM-LDQ100ASW-00	4-bar array (White) 108mm x 108mm				
CLM-LDQ100A-00	4-bar array 108mm x 108mm	CLA-PD3012-00 and CLA-CBx-00, or CLA-PB2430-00 and CLA-CBx-00		CLA-PD3012-00 and CLA-STU3000-00 and CLA-CBx-00, or CLA-PTU3012-00 and CLA-CBx-00	
CLM-LDQ150A-00	4-bar array 148mm sq.				
CLM-FPR100-00	100mm outer diameter ring				
CLM-FPQ75-00	75mm square				
CLK-003630-00	630mm outer diameter ring	220VAC, 50/60Hz14W			

CLM-2449-00[1]	52mm illumination window	CLA-400-00 or CLA-CS100-00	CLA-2000-01	CLA-4000-00	CLA-1000-00
CLM-LFVCP18-00	18mm illumination window	CLA-PD3012-00 and CLA-CBx-00, or CLA-PB2430-00 and CLA-CBx-00		CLA-PD3012-00 and CLA-STU3000-00 and CLA-CBx-00, or CLA-PTU3012-00 and CLA-CBx-00	
CLM-LFV50A-00	50mm illumination window				
CLM-LFV70A-00	70mm illumination window				
CLM-LFR130-00	125mm outer diameter flat				
CLM-LKR70A-00	74mm shallow dome				
CLM-LFV70-00	84mm x 120mm				
CLM-LFV34BL-00	46mm square (Blue)	CLA-PD3024-00 and CLAFCBx-00		CLA-PD3024-00 and CLA-STU3000-00 and CLAFCBx-00, or CLA-PTU3024-00 and CLAFCBX-00	
CLK-LFV50ASW-00	50mm illumination window (White)				

[1] Includes bracket B2 on page 39

IN-SIGHT LIGHTING

COGNEX LIGHT MODULES (OPTIONAL FOR ALL IN-SIGHT VISION SENSORS)

Light Type Category	Operation	Attributes of Light Type	Application	Category*	Drawing No.**
Back Lights		• Provides maximum contrast between part outline and background. • Emphasizes outline of part and part features. • De-emphasizes interior features.	• Measuring external part edges. • Verifying hole patterns in stamped metal parts.	A	L17
				B	L18
					L19
					L20
					L21
					L54
					L40
					L50
					L22
Dome Lights		• Provides extremely even, diffuse illumination. • Evenly illuminates mirrored surfaces. • De-emphasizes 3-dimensional part surface characteristics.	• Detecting printing on wrinkled foil. • Measuring connector pins.	A	L23
				B	L24
Linear Array Lights		• Provides even, concentrated illumination along a straight line. • Emphasizes part surface irregularities and “raised” features.	• Measuring long, thin parts, and parts where edges need to be highlighted.	A	L25
				B	L26
					L27
					L28
					L30
					L29
					L31
Dark Field Lights		• Provides extremely low-angle illumination for imaging of part surface irregularities. • Emphasizes surface irregularities and “raised” features on parts.	• Inspecting metal parts with dents, bumps, or other “raised” features.	A	L32
				B	L33
					L34
					L35
					L36
Spot Lights		• Provides diffuse beam of light for achieving maximum contrast in a certain direction. • Emphasizes a specific feature on a part.	• Verifying the presence of individual components in an assembly. • Inspecting parts with features that are angled in a certain direction.	A	L37
					L38
				B	L41

* Denotes compatible power supply and cable category

** Designates outline drawings on pages 26 to 36

IN-SIGHT LIGHTING

COGNEX LIGHT MODULES (OPTIONAL FOR ALL IN-SIGHT VISION SENSORS)

Cognex Lighting Module Part Numbers & Description		Power Requirements			
		Non-Strobed Applications		Strobed Applications	
		In-Sight 1000, 4000, 5000 Series	In-Sight 2000, 3000 Series	In-Sight 1000, 4000, 5000 Series	In-Sight 2000, 3000 Series
CLM-4401-00	100mm x 100mm back light	CLA-400-00 or CLA-CS100-00	CLA-2000-01	CLA-4000-00	CLA-1000-00
CLM-LDLTP27x27-00	27mm x 27mm back light	CLA-PD3012-00 and CLA-CBx-00, or CLA-PB2430-00 and CLA-CBx-00		CLA-PD3012-00 and CLA-STU3000-00 and CLA-CBx-00, or CLA-PTU3012-00 and CLA-CBx-00	
CLM-LDLTP51x51-00	51mm x 51mm back light				
CLM-LDLTP100100-00	100mm x 100mm back light				
CLM-LDLTP211200-00	211mm x 200mm back light	CLA-PD5024-00 or CLA-CBx-00		CLA-PD5024-00, CLA-CBx-00 and CLA-STU3000-00	
CLM-LDLTP250X190	250mm x 190mm				
CLK-LFL100IR95-00	100x80 IR back light	CLA-PD3012-00 and CLA-CBx-00, or CLA-PB2430-00 and CLA-CBx-00		CLA-PD3012-00 and CLA-STU3000-00 and CLA-CBx-00, or CLA-PTU3012-00 and CLA-CBx-00	
CLM-LFL100-00	100mm x 80mm edge-lit				
CLK-LFL100SW-00	100mm x 80mm edge-lit (White)	CLA-PD3024-00 and CLAFCBx-00		CLA-PD3024-00 and CLA-STU3000-00 and CLAFCBx-00, or CLA-PTU3024-00 and CLAFCBX-00	
CLM-7248-00[1]	Covers areas up to 80mm	CLA-400-00 or CLA-CS100-00	CLA-2000-01	CLA-4000-00	CLA-1000-00
CLM-LDM90A-00	Covers areas up to 90mm	CLA-PD3012-00 and CLA-CBx-00, or CLA-PB2430-00 and CLA-CBx-00		CLA-PD3012-00 and CLA-STU3000-00 and CLA-CBx-00, or CLA-PTU3012-00 and CLA-CBx-00	
CLM-4554-00	233mm x 20mm line illumination	CLA-400-00 or CLA-CS100-00	CLA-2000-01	CLA-4000-00	CLA-1000-00
CLM-LDL42X15-00	42mm x 15mm line illumination	CLA-PD3012-00 and CLA-CBx-00, or CLA-PB2430-00 and CLA-CBx-00		CLA-PD3012-00 and CLA-STU3000-00 and CLA-CBx-00, or CLA-PTU3012-00 and CLA-CBx-00	
CLM-LDL74X27N-00	74mm x 27mm line illumination				
CLM-LDL130X15-00	130mm x 15mm line illumination				
CLM-LDL247X16-00	247mm x 16mm line illumination				
CLK-LDL42x15SW-00	42mm x 15mm line illumination (White)	CLA-PD3024-00 and CLAFCBx-00		CLA-PD3024-00 and CLA-STU3000-00 and CLAFCBx-00, or CLA-PTU3024-00 and CLAFCBX-00	
CLK-LDL130x15SW-00	130mm x 15mm line illumination (White)				
CLM-1660-00[2]	101mm inner ring diameter	CLA-400-00 or CLA-CS100-00	CLA-2000-01	CLA-4000-00	CLA-1000-00
CLM-LDR75LA1-00	46mm inner ring diameter	CLA-PD3012-00 and CLA-CBx-00, or CLA-PB2430-00 and CLA-CBx-00		CLA-PD3012-00 and CLA-STU3000-00 and CLA-CBx-00, or CLA-PTU3012-00 and CLA-CBx-00	
CLM-LDR96LA1-00	60mm inner ring diameter				
CLM-LDR146LA1-00	110mm inner ring diameter				
CLM-LDR206LA1-00	170mm inner ring diameter				
CLM-2420-00	Covers up to 50mm at a distance of 100mm	CLA-400-00 or CLA-CS100-00	CLA-2000-01	CLA-4000-00	CLA-1000-00
CLM-1236880100L-00	Covers up to 50mm at a distance of 100mm (Infrared spot light)				
CLM-LSP41RD-00	Covers up to 50mm at a distance of 100mm	CLA-PD3012-00 and CLA-CBx-00, or CLA-PB2430-00 and CLA-CBx-00		CLA-PD3012-00 and CLA-STU3000-00 and CLA-CBx-00, or CLA-PTU3012-00 and CLA-CBx-00	

[1] Includes bracket B3 on page 39 [2] Includes bracket B4 on page 39

IN-SIGHT LIGHTING

LIGHT MODULE POWER SOURCES AND ADAPTERS

POWER SUPPLIES

	Category*	Drawing No.**	Model	Power Requirements	Voltage/Power Output
	A	P1	CLA-400-00	AC90~264VAC	24V/30w
	B	P2	CLA-PD3012-00	AC90~264VAC	12V/28w
		P2	CLA-PD3024-00	AC90~264VAC	24V/28w
		P3	CLA-PD5024-00	AC90~264VAC	24V/50w

POWER SUPPLY AND STROBE ADAPTER COMBINATION

	Category*	Drawing No.**	Model	Trigger Input
	A	P5	CLA-4000-00	TTL level positive & negative edge trigger
		P6	CLA-6000-00	TTL level positive & negative edge trigger
	B	P10	CLA-PTU3012-00	Photocoupler input (5mA)

STROBE ADAPTERS

	Category*	Drawing No.**	Model	Trigger Input
	A	P4	CLA-1000-00	Supplied by an In-Sight 2000 or 3000 camera via 13' 2" cable
	B	P7	CLA-STU3000-00	Photocoupler input (4mA)

POWER ADAPTERS

	Category*	Drawing No.**	Model	Trigger Input
	A	P8	CLA-CS100-00	None (Doesn't support strobing)
	B	P9	CLA-PB2430-00	None (Doesn't support strobing)

LIGHT MODULE CABLES AND ADAPTERS

CABLE & CABLE ADAPTERS

Category*	Model	Description
A	CLA-2000-01	Patch cable connecting any category “A” light to an In-Sight 2000 or 3000
	185-0036	Extension cable that adds additional length to any category “A” light
	185-0035	Extension cable that adds additional length to any category “A” light
	185-0037	Dual “Spot” Light adapter cable, provides power to 2 spot lights
B	CLA-CB2-00	Extension cable that adds additional length to any 12V category “B” light
	CLA-CB5-00	Extension cable that adds additional length to any 12V category “B” light
	CLA-CBW-00	Dual light adapter. Enables two category “B” 12V lights to be connected to a single power supply. Total power of the 2 lights must not exceed power supplies limit.

* Denotes compatible light module category **Designates outline drawings on pages 37 and 38

IN-SIGHT LIGHTING

LIGHT MODULE POWER SOURCES AND ADAPTERS

Digital Light Control	External Light Control	No. of Lights Supported
none	none	2 Lights (supports any 2 category “A” lights)
256 levels	External light control bit, light pulse, int/ext switching	2 Lights (combined power draw of the 2 lights must not exceed power output of unit).

Output	Power Requirements	Pulse Width
Provides power & strobe output for a single category “A” light	24VDC @ 1.25A max. w/ overload protection	.01 to 64 msec
Provides power & strobe output for 2 category “A” lights	24VDC @ 1.25A max. w/ overload protection	.01 to 64 msec
12V, 80mA Max per circuit, 2 circuits, 28 Watts Max	VAC 100-240	.01 to 99 msec

Output	Power Requirements	Pulse Width
Provides power & strobe output for a single category “A” light (can strobe 2 spot lights)	Supplied by an In-Sight 2000 or 3000 via 6' 4" cable	.01 to 1.9 msec
High-speed CMOS output; drive on/off control input of power unit	Supplied by digital power supplies	.01 to 99.99 msec

Output	Power Requirements
14.4W	24VDC input
12V and 24V outputs; L1:24W, L2:24W (Sum of L1 and L2 must be less than 30W)	24VDC input, 50W max

Length	No. of Lights Supported
3 feet	1
10 feet	1
30 feet	1
30 feet	2 (spot lights)
6.5 feet	1
15 feet	1
14 inches	2

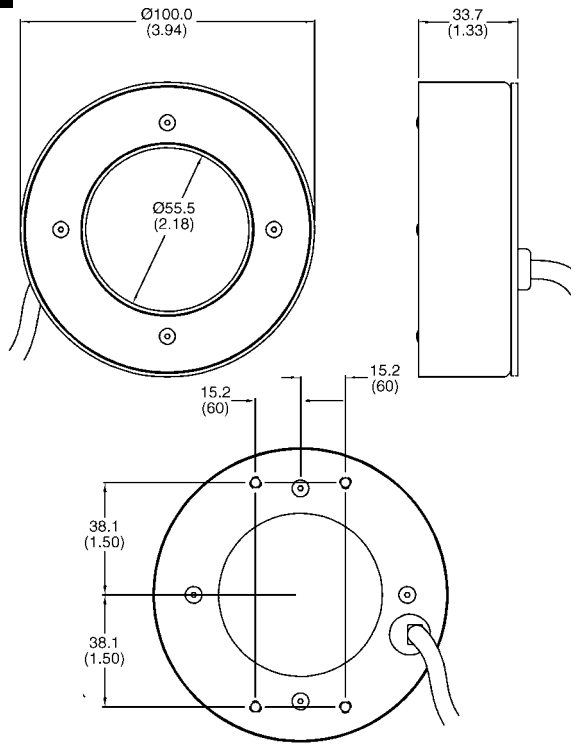
* Denotes compatible light module category **Designates outline drawings on pages 37 and 38

IN-SIGHT LIGHTING

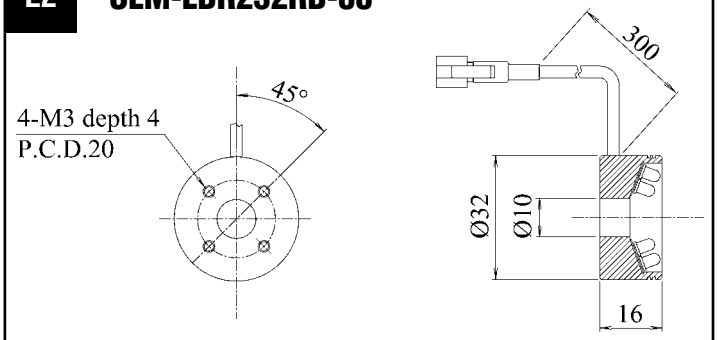
COGNEX LIGHT MODULES (OPTIONAL FOR ALL IN-SIGHT VISION SENSORS) "L" numbers refer to charts on pages 20-23.

Note: Measurements are provided in millimeters. Numbers in parenthesis are in inches.

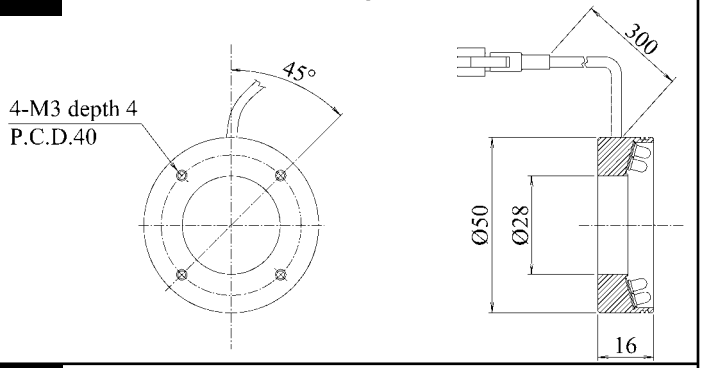
L1 CLM-4260-00



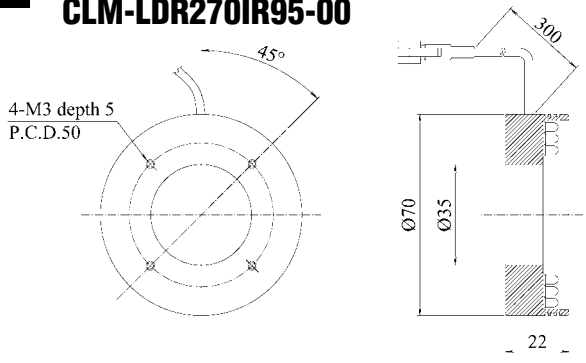
L2 CLM-LDR232RD-00



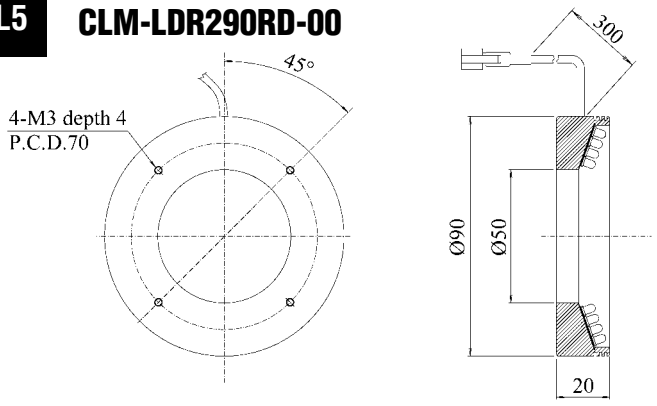
L3 CLM-LDR250RD-00 / CLM-LDR250BL-00



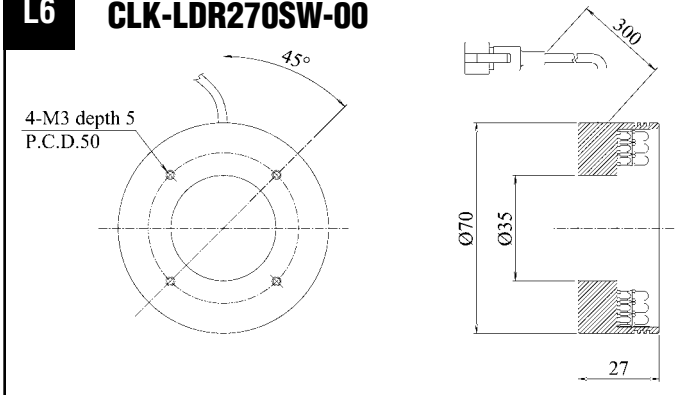
L4 CLM-LDR270RD-00 / CLM-LDR270SW-00 CLM-LDR270IR95-00



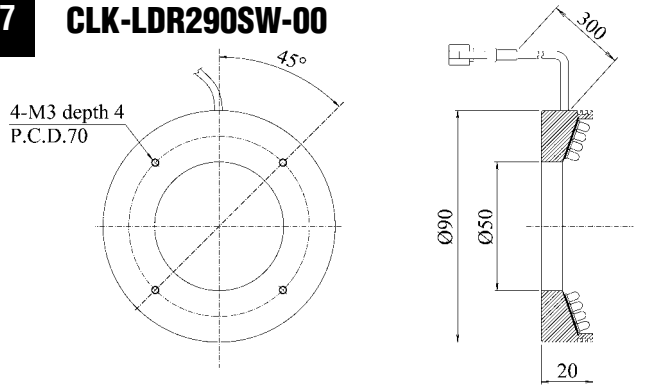
L5 CLM-LDR290RD-00



L6 CLK-LDR270SW-00



L7 CLK-LDR290SW-00

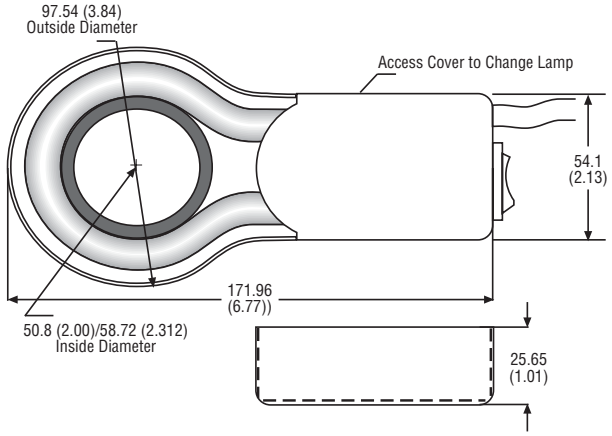


LIGHTING

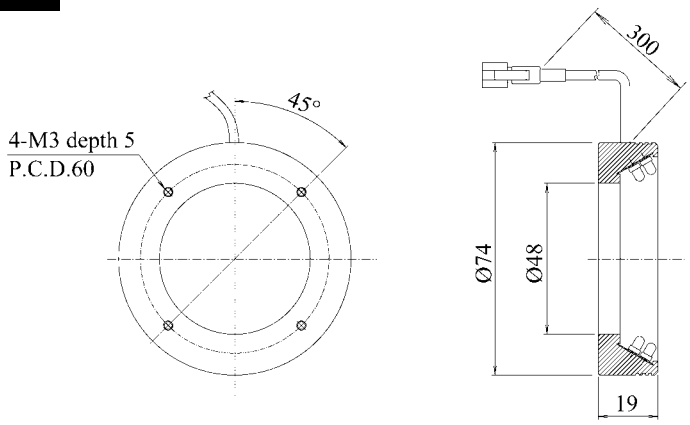
COGNEX LIGHT MODULES (OPTIONAL FOR ALL IN-SIGHT VISION SENSORS) "L" numbers refer to charts on pages 20-23.

Note: Measurements are provided in millimeters. Numbers in parenthesis are in inches.

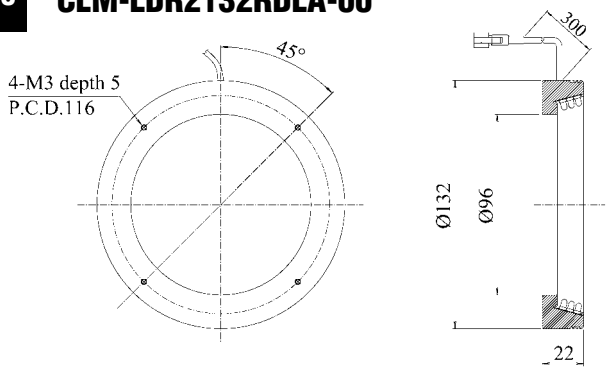
L8 CLK3010-00 / CLK-3010-01



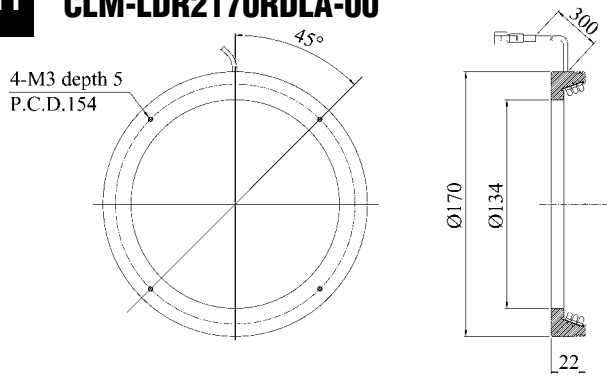
L9 CLM-LDR274RDLA-00



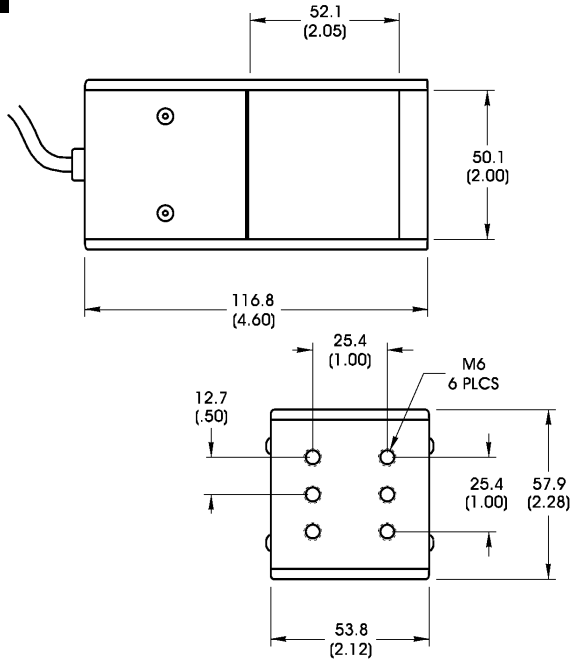
L10 CLM-LDR2132RDLA-00



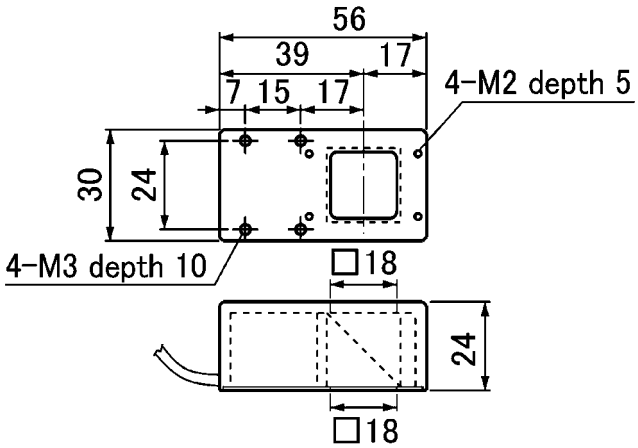
L11 CLM-LDR2170RDLA-00



L12 CLM-2449-00



L13 CLM-LFVCP18-00

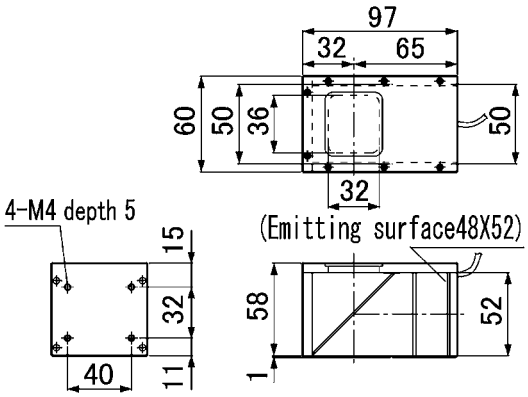


IN-SIGHT LIGHTING

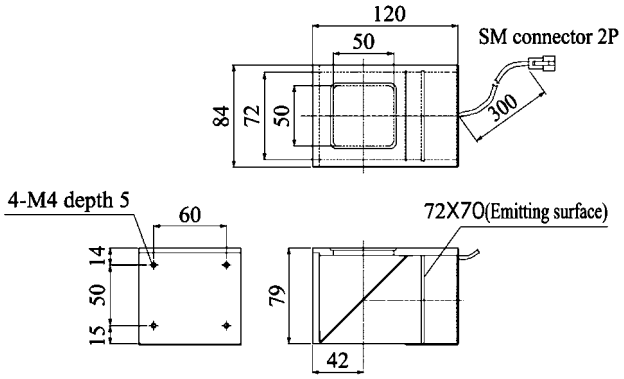
COGNEX LIGHT MODULES (OPTIONAL FOR ALL IN-SIGHT VISION SENSORS) "L" numbers refer to charts on pages 20-23.

Note: Measurements are provided in millimeters. Numbers in parenthesis are in inches.

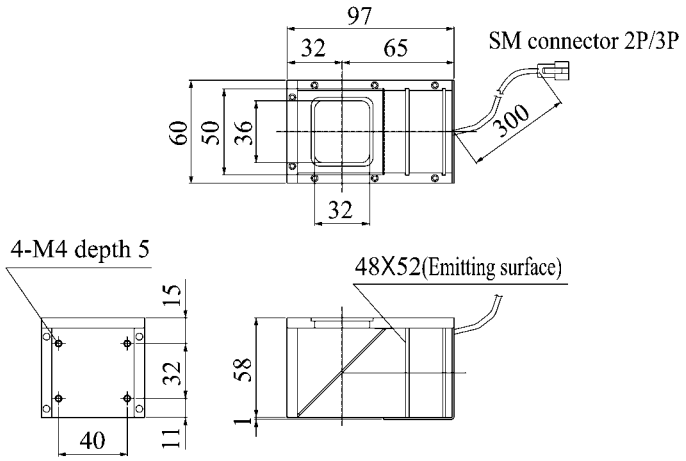
L14 CLM-LFV50A-00



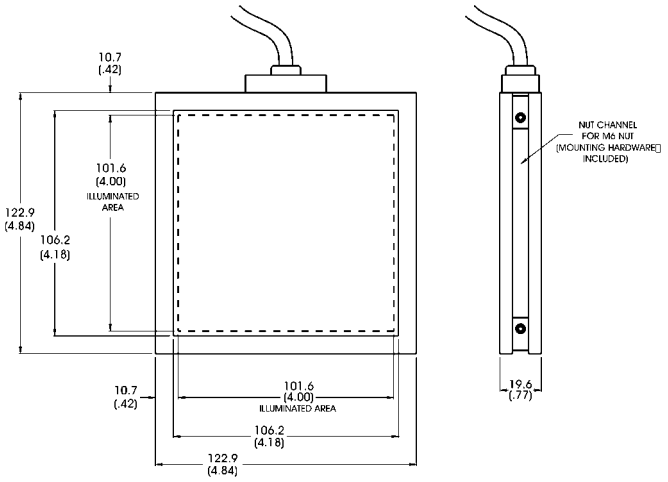
L15 CLM-LFV70A-00



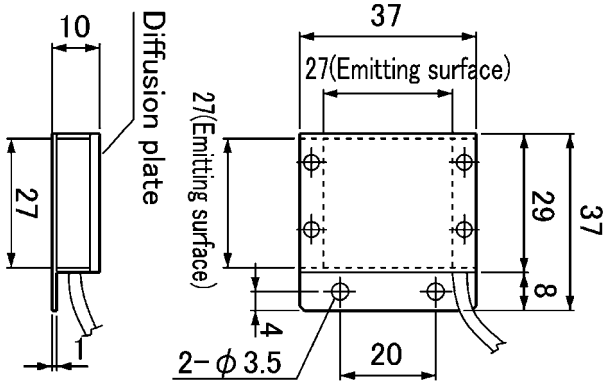
L16 CLK-LFV50ASW-00



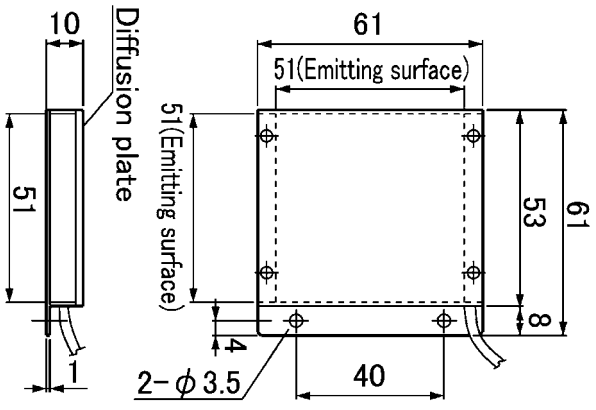
L17 CLM-4401-00



L18 CLM-LDLTP27X27-00



L19 CLM-LDLTP51X51-00

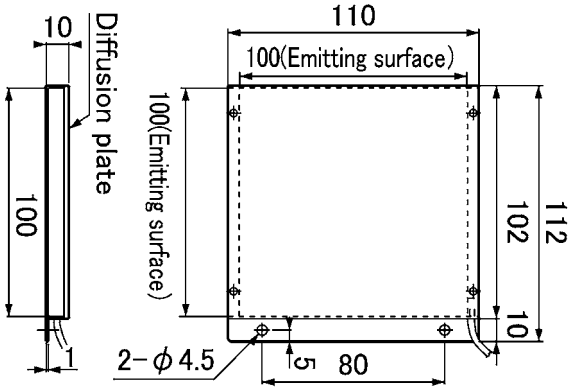


IN-SIGHT LIGHTING

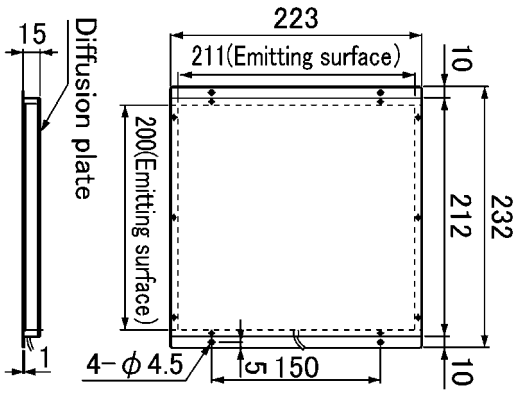
COGNEX LIGHT MODULES (OPTIONAL FOR ALL IN-SIGHT VISION SENSORS) "L" numbers refer to charts on pages 20-23.

Note: Measurements are provided in millimeters. Numbers in parenthesis are in inches.

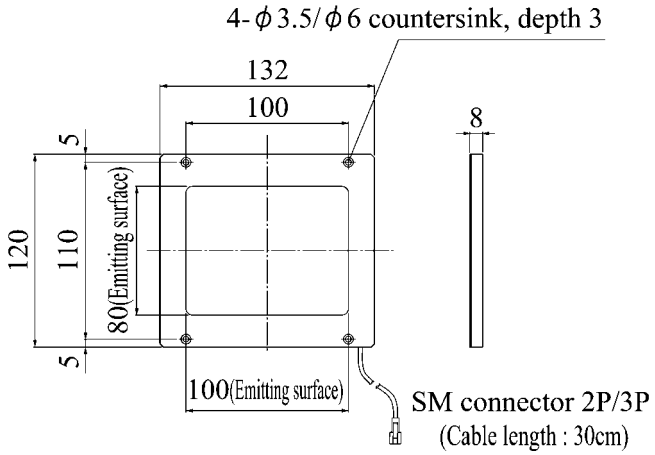
L20 CLM-LDLTP100100-00



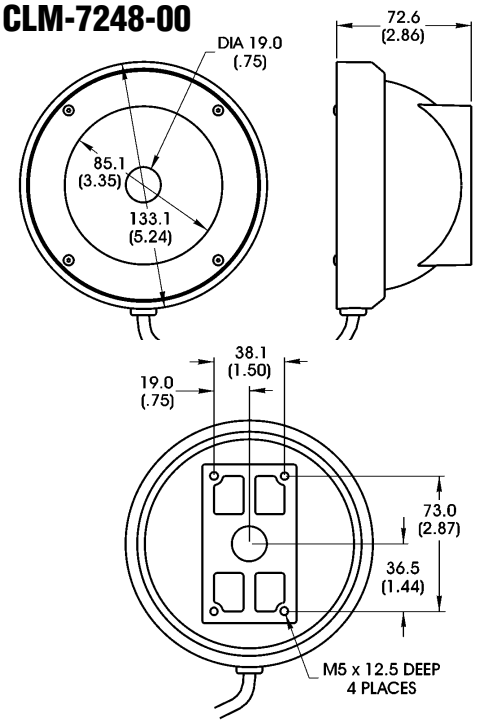
L21 CLM-LDLTP211200-00



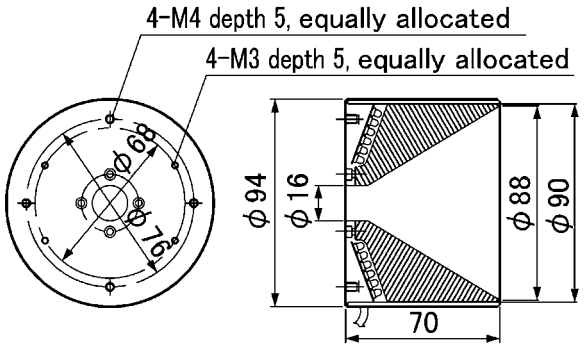
L22 CLK-LFL100SW-00



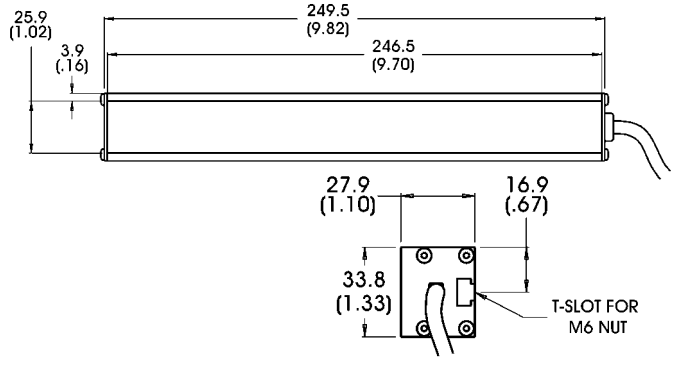
L23 CLM-7248-00



L24 CLM-LDM90A-00



L25 CLM-4554-00

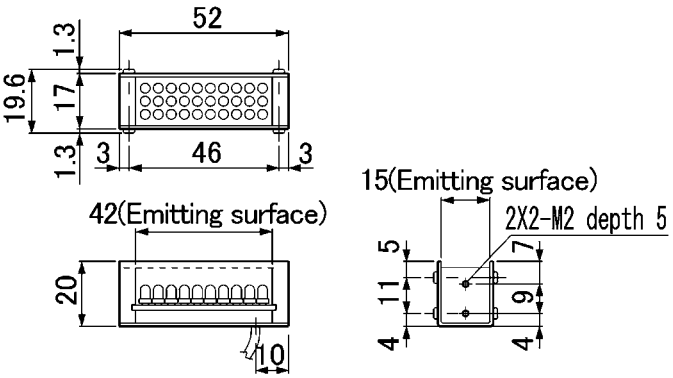


IN-SIGHT LIGHTING

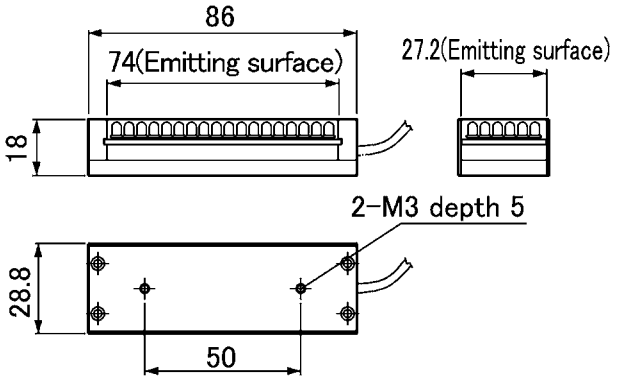
COGNEX LIGHT MODULES (OPTIONAL FOR ALL IN-SIGHT VISION SENSORS) "L" numbers refer to charts on pages 20-23.

Note: Measurements are provided in millimeters. Numbers in parenthesis are in inches.

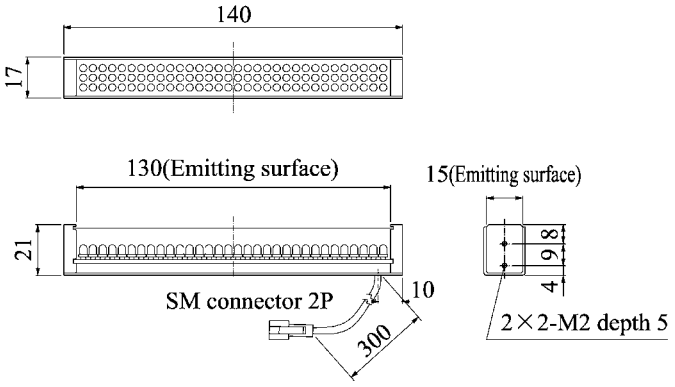
L26 CLM-LDL42X15-00



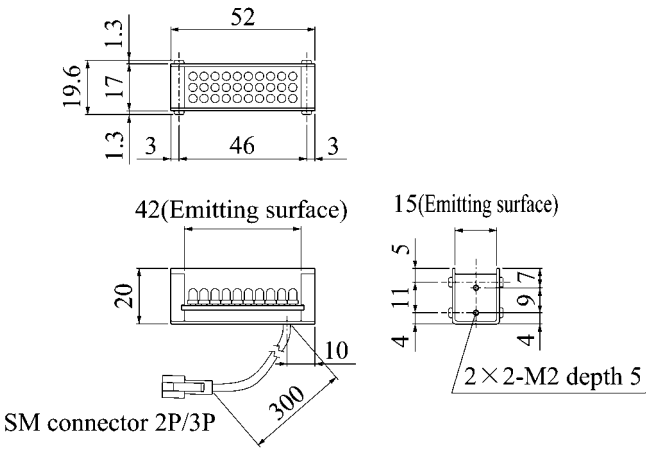
L27 CLM-LDL74X27N-00



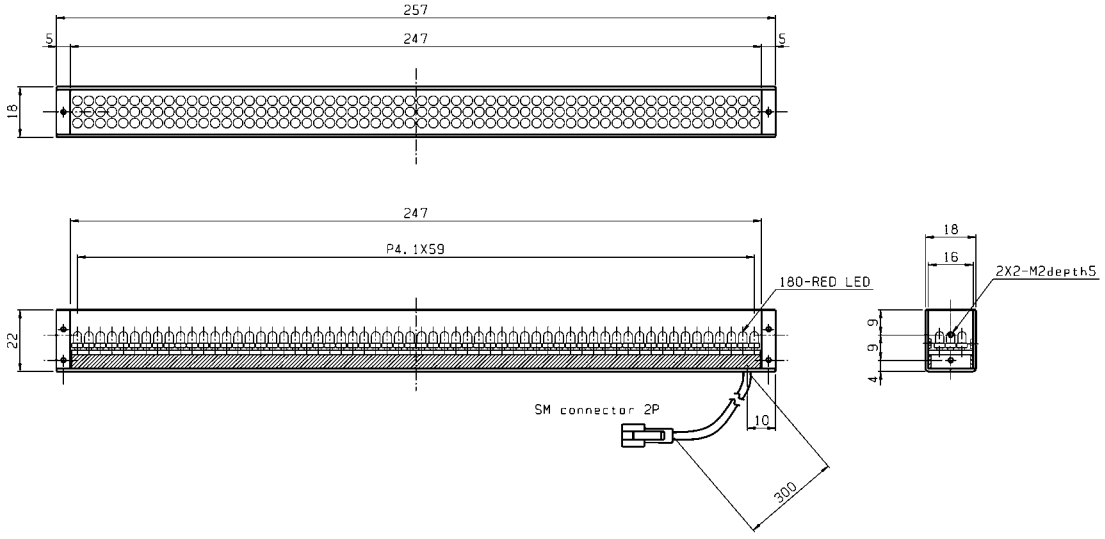
L28 CLM-LDL130X15-00



L29 CLK-LDL42X15SW-00



L30 CLM-LDL247X16-00

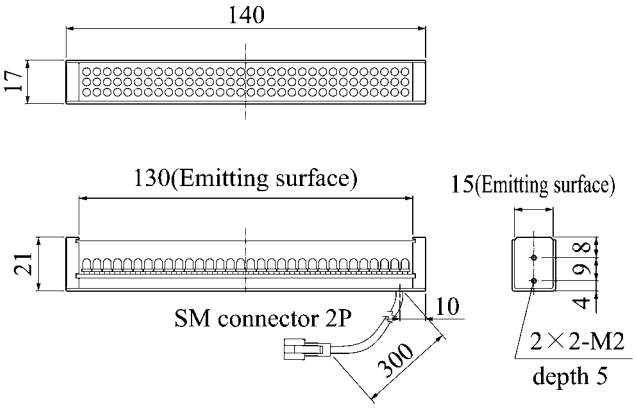


IN-SIGHT LIGHTING

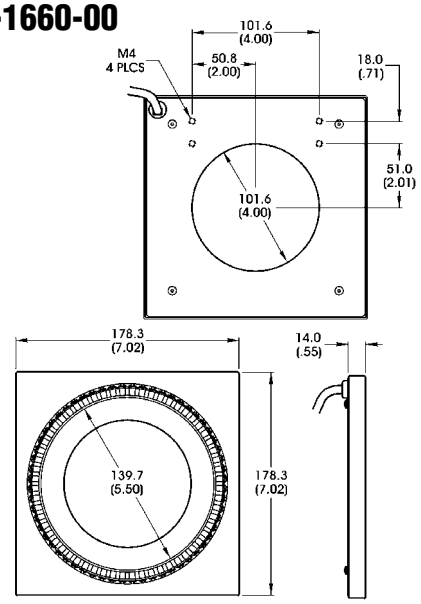
COGNEX LIGHT MODULES (OPTIONAL FOR ALL IN-SIGHT VISION SENSORS) "L" numbers refer to charts on pages 20-23.

Note: Measurements are provided in millimeters. Numbers in parenthesis are in inches.

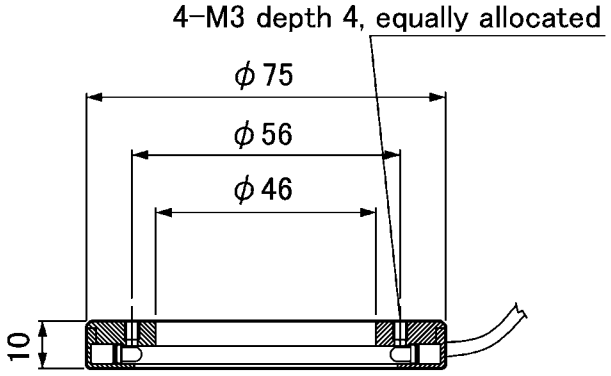
L31 CLK-LDL130X15SW-00



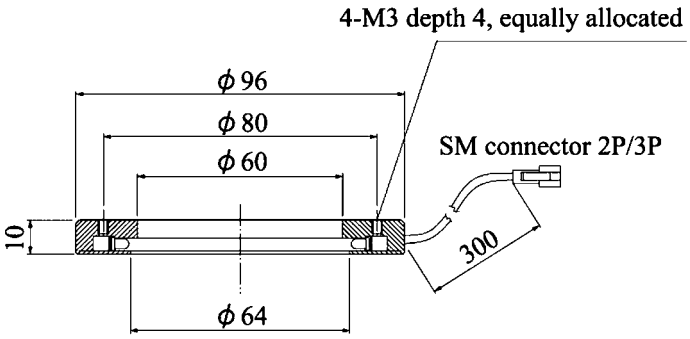
L32 CLM-1660-00



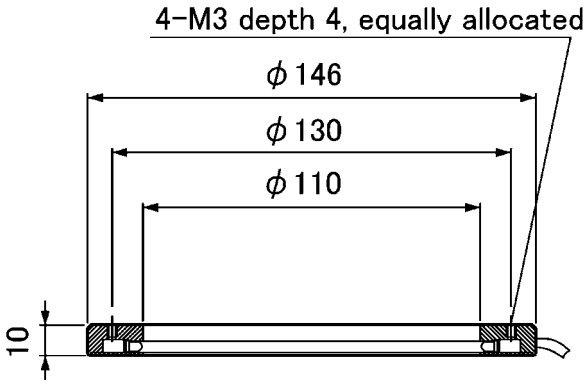
L33 CLM-LDR75LA1-00



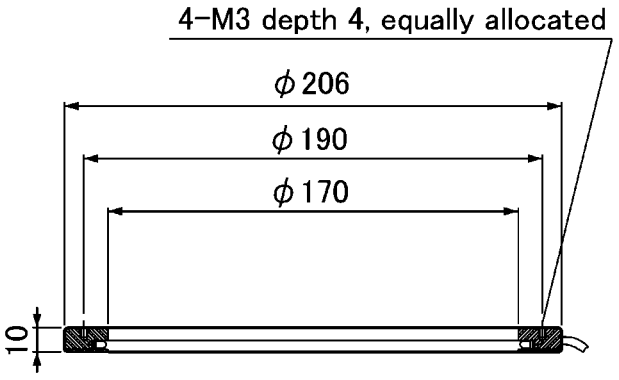
L34 CLM-LDR96LA1-00



L35 CLM-LDR146LA1-00



L36 CLM-LDR206LA1-00

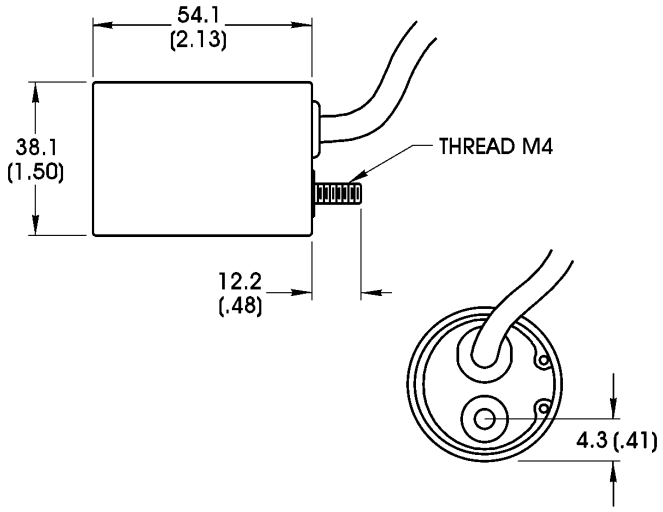


IN-SIGHT LIGHTING

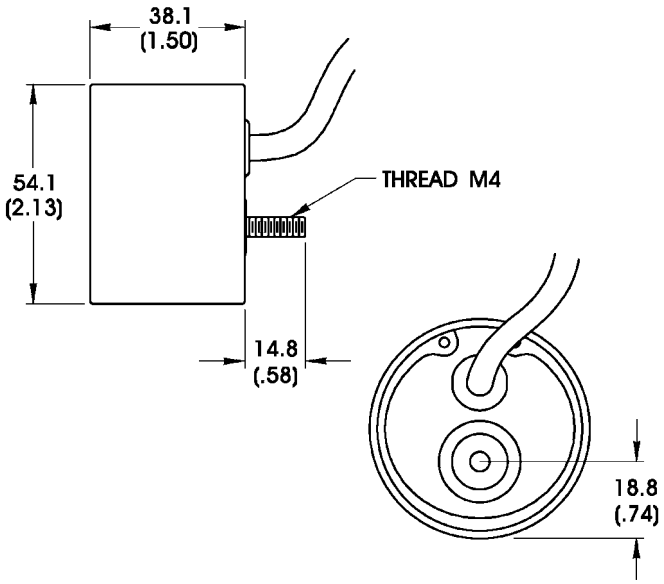
COGNEX LIGHT MODULES (OPTIONAL FOR ALL IN-SIGHT VISION SENSORS) "L" numbers refer to charts on pages 20-23.

Note: Measurements are provided in millimeters. Numbers in parenthesis are in inches.

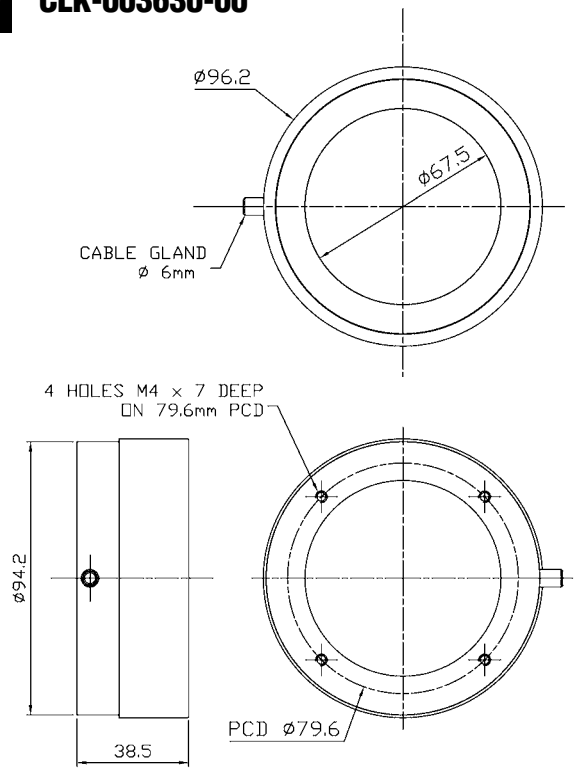
L37 CLM-2420-00



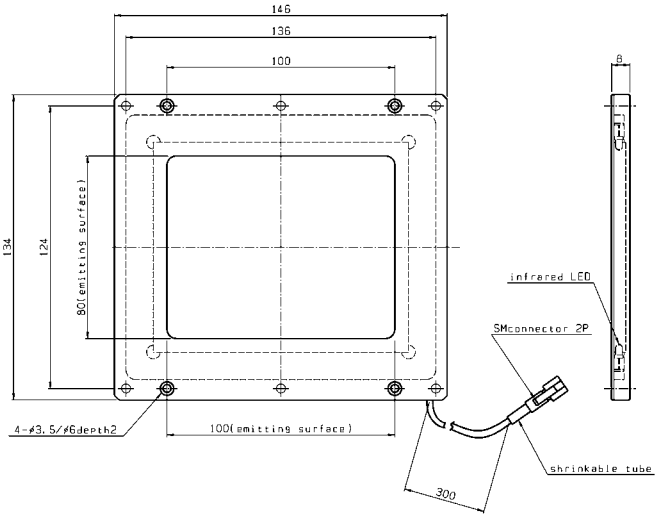
L38 CLM-1236880100L-00



L39 CLK-003630-00



L40 CLK-LFL-100IR95-00

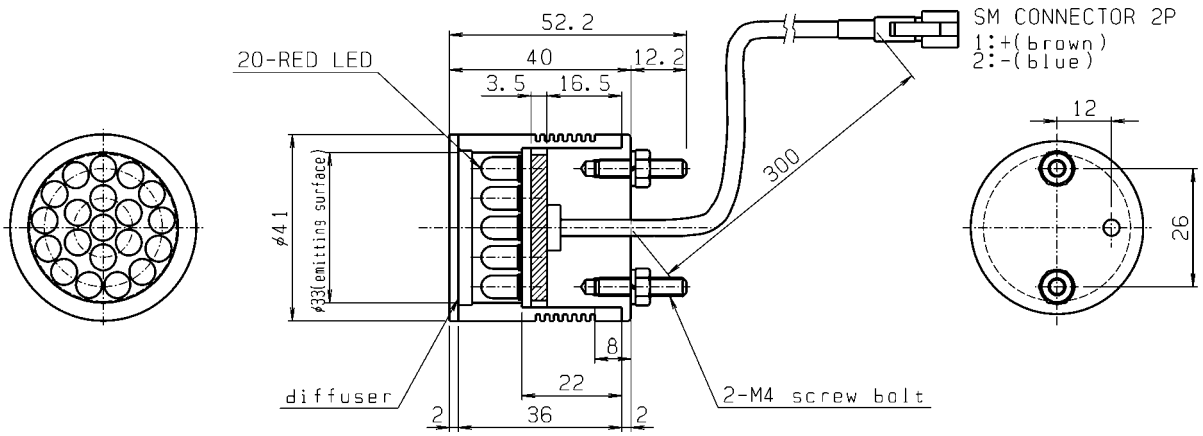


IN-SIGHT LIGHTING

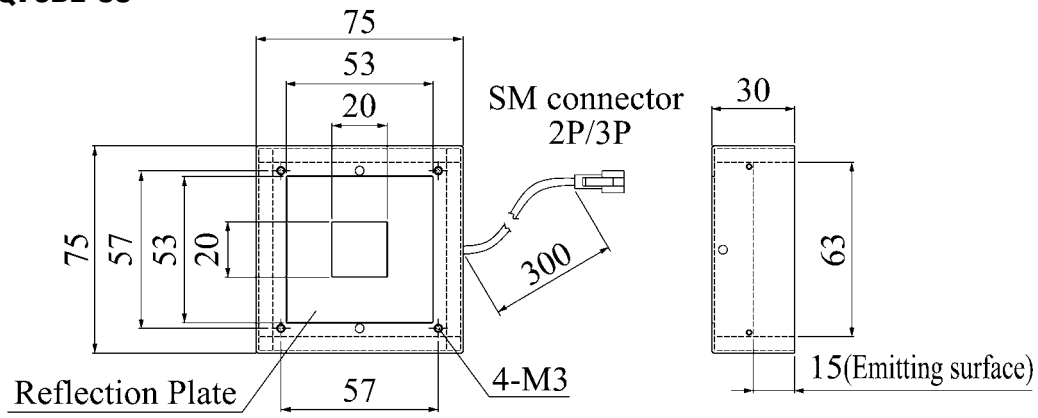
COGNEX LIGHT MODULES (OPTIONAL FOR ALL IN-SIGHT VISION SENSORS) "L" numbers refer to charts on pages 20-23.

Note: Measurements are provided in millimeters. Numbers in parenthesis are in inches.

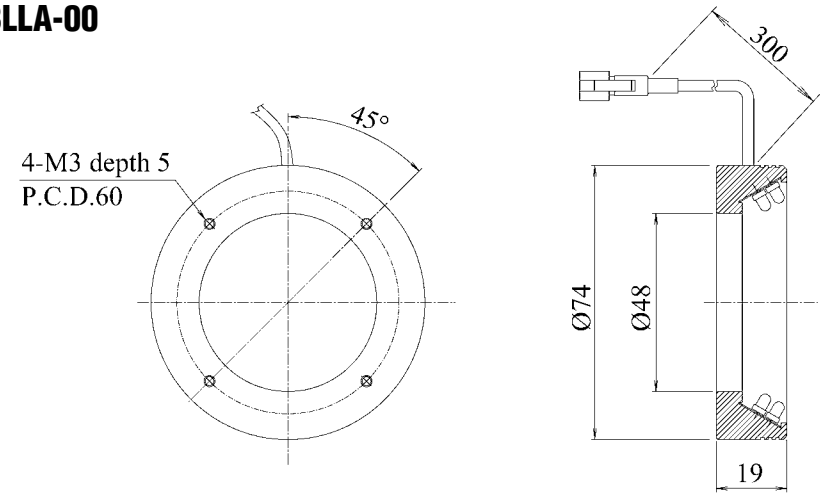
L41 CLM-LSP41RD-00



L42 CLM-FPQ75BL-00



L43 CLM-LDR274BLLA-00

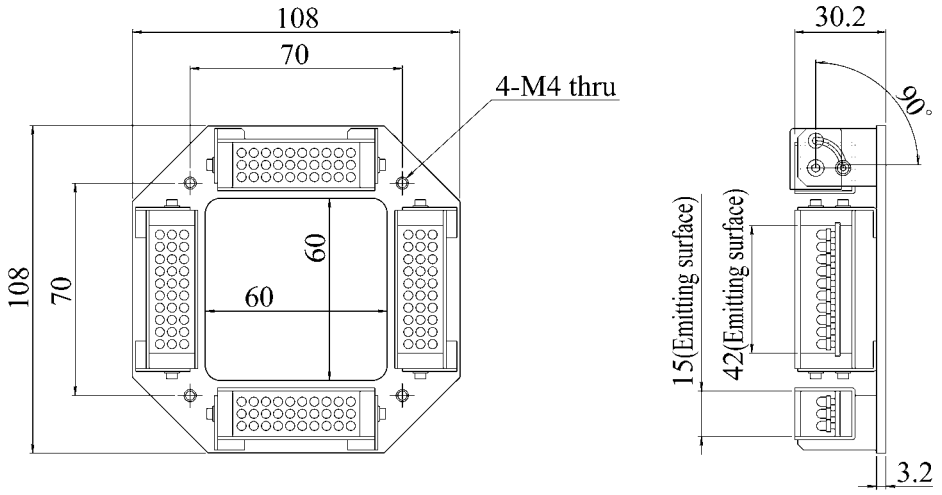


IN-SIGHT LIGHTING

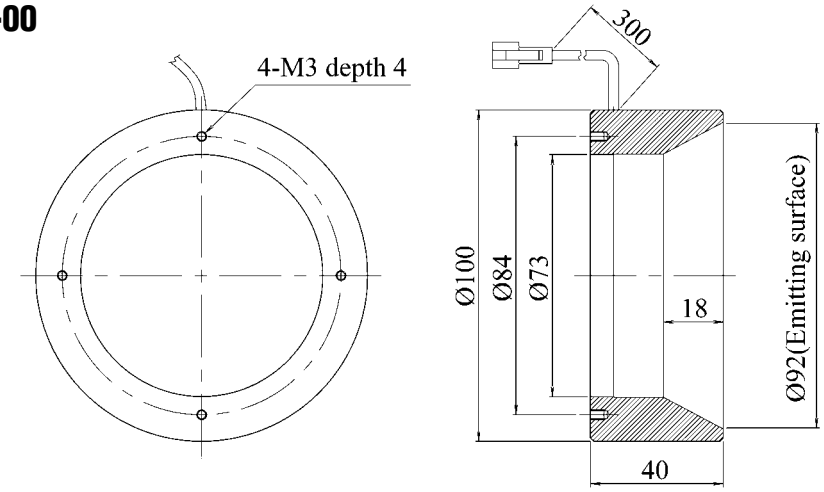
COGNEX LIGHT MODULES (OPTIONAL FOR ALL IN-SIGHT VISION SENSORS) "L" numbers refer to charts on pages 20-23.

Note: Measurements are provided in millimeters. Numbers in parenthesis are in inches.

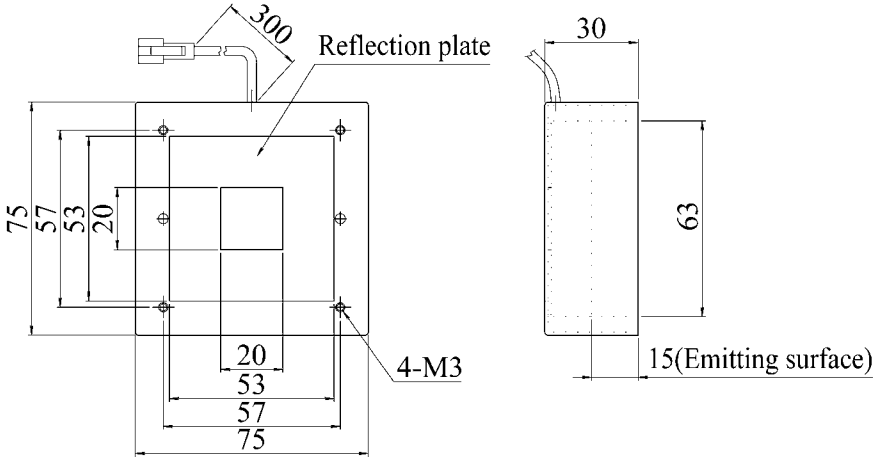
L44 CLM-LDQ100ASW-00 / CLM-LDQ100A-00



L45 CLM-FPR100-00



L46 CLM-FPQ75-00

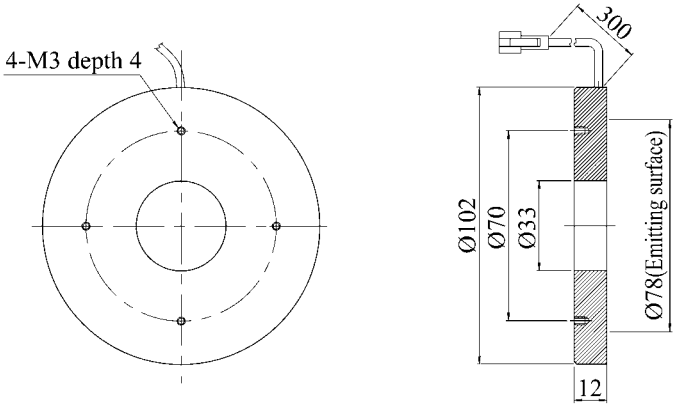


IN-SIGHT LIGHTING

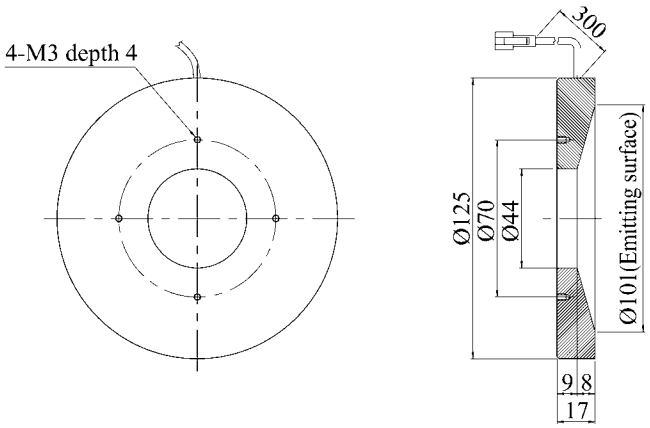
COGNEX LIGHT MODULES (OPTIONAL FOR ALL IN-SIGHT VISION SENSORS) "L" numbers refer to charts on pages 20-23.

Note: Measurements are provided in millimeters. Numbers in parenthesis are in inches.

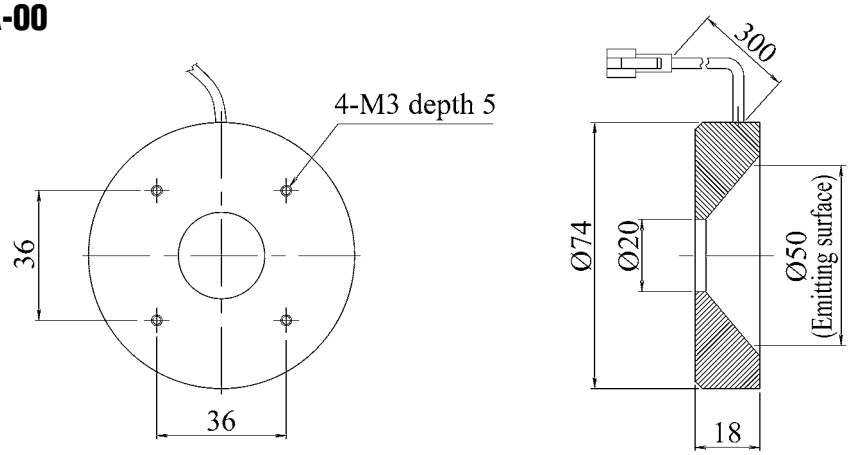
L47 CLM-LFR100SW-00



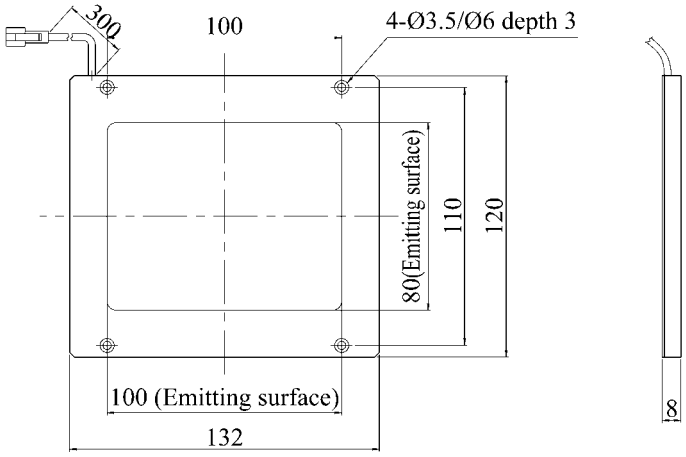
L48 CLM-LFR130K-00



L49 CLM-LKR70A-00



L50 CLM-LFL100-00

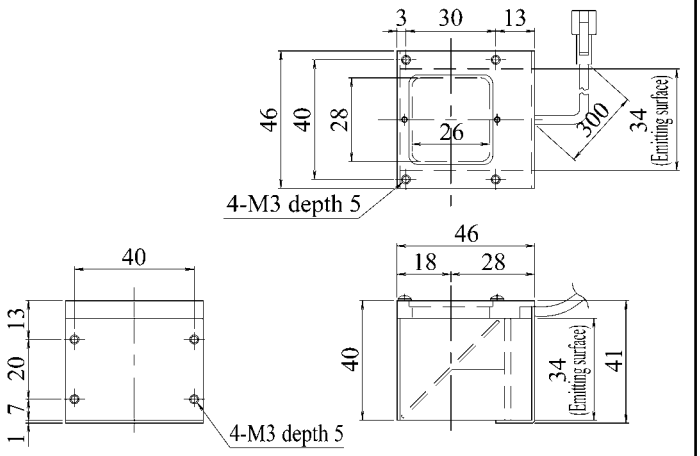


IN-SIGHT LIGHTING

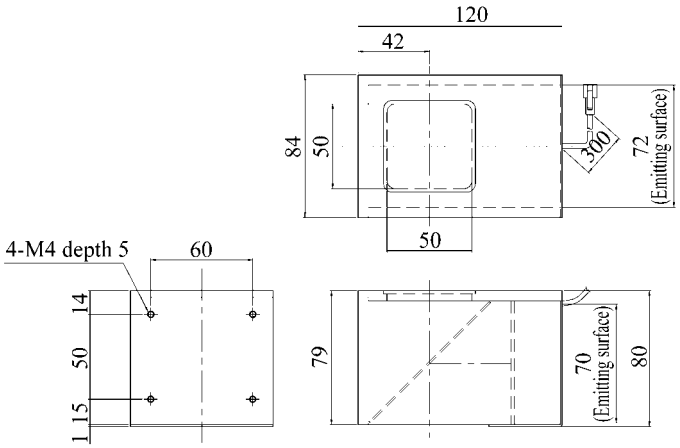
COGNEX LIGHT MODULES (OPTIONAL FOR ALL IN-SIGHT VISION SENSORS) "L" numbers refer to charts on pages 20-23.

Note: Measurements are provided in millimeters. Numbers in parenthesis are in inches.

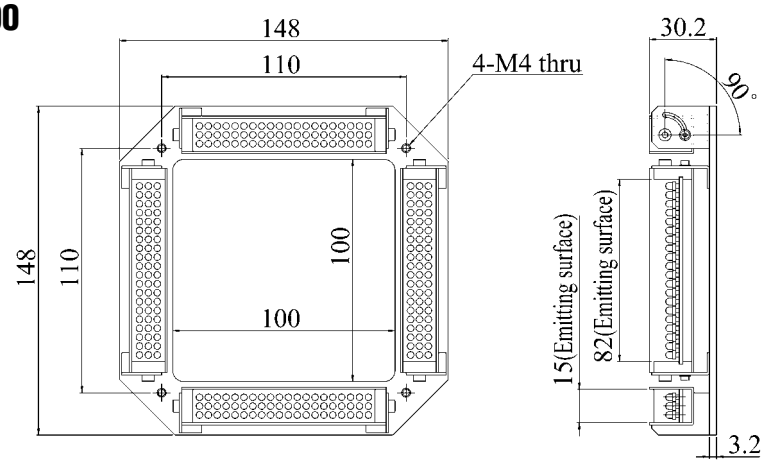
L51 CLM-LFV34BL-00



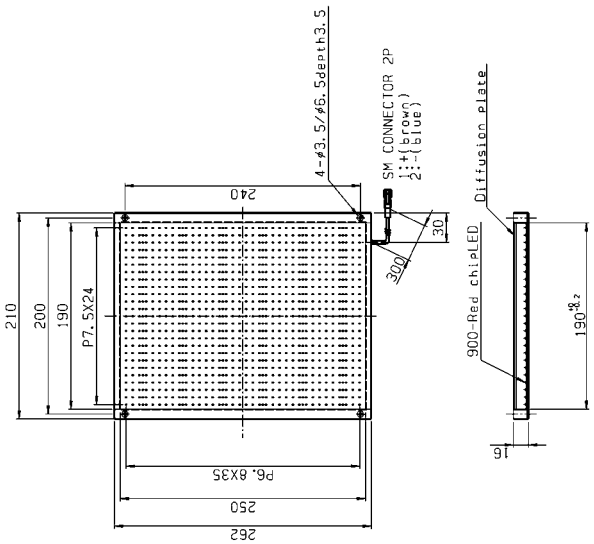
L52 CLM-LFV70-00



L53 CLM-LDQ150A-00



L54 CLM-LDLTP250X190-00

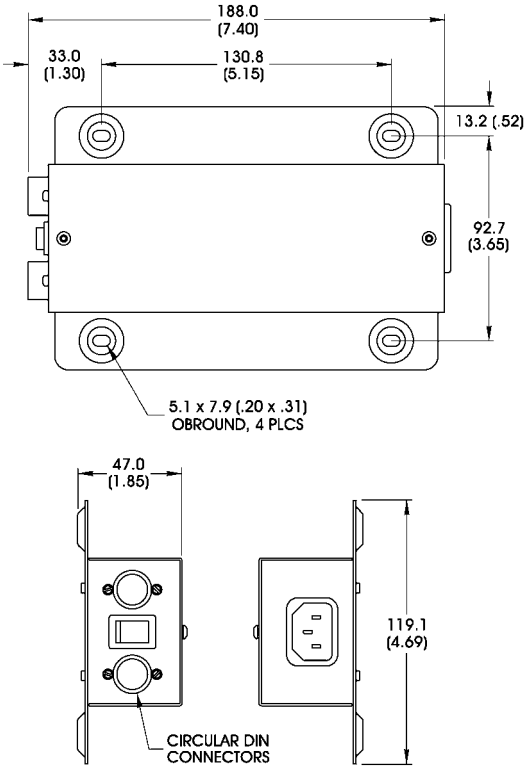


IN-SIGHT LIGHTING

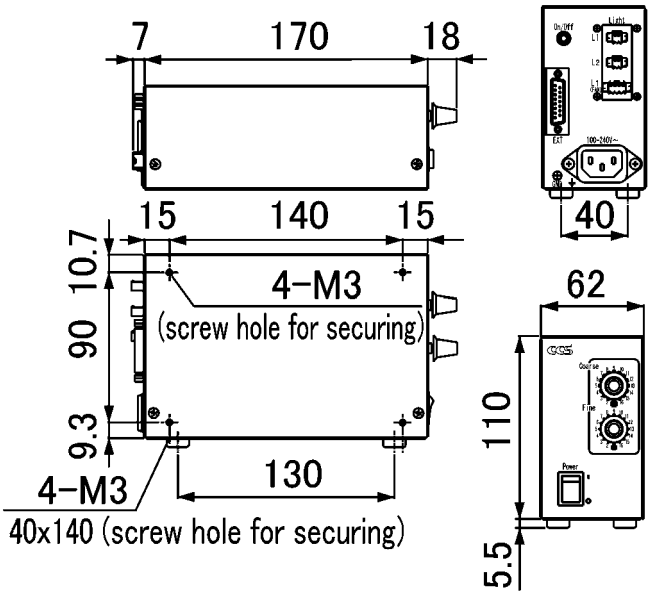
COGNEX POWER MODULES (OPTIONAL FOR ALL IN-SIGHT VISION SENSORS) "P" numbers refer to chart on page 24-25.

Note: Measurements are provided in millimeters. Numbers in parenthesis are in inches.

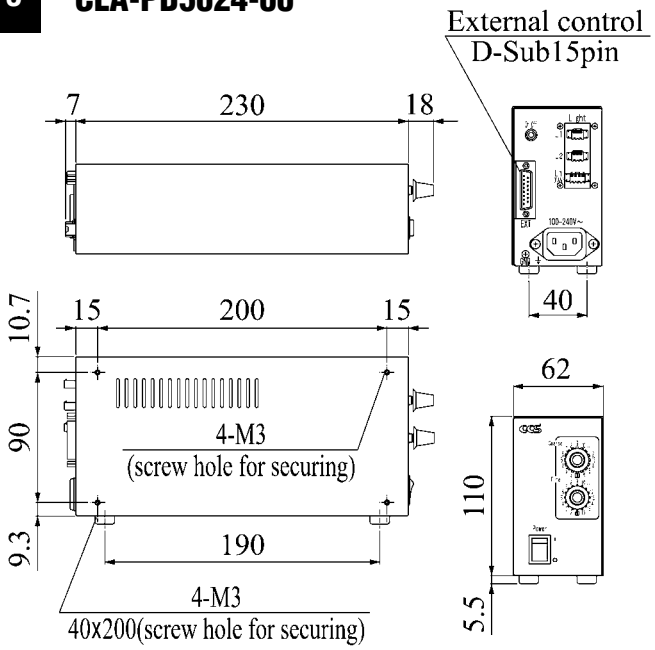
P1 CLA-400-00



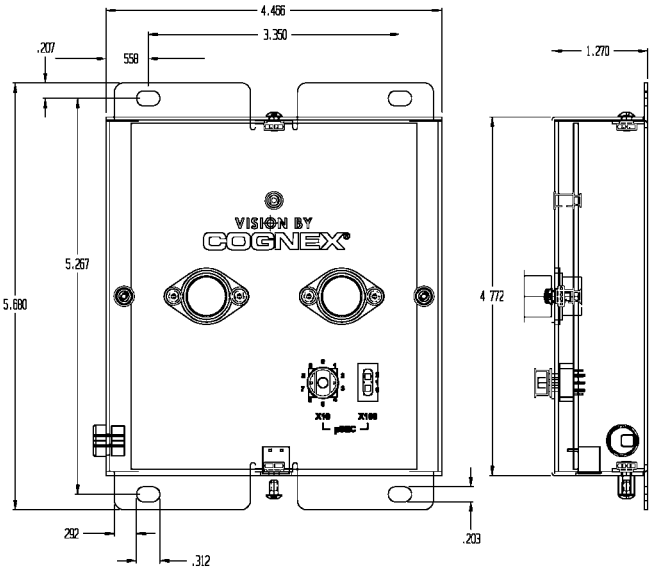
P2 CLA-PD3012-00 / CLA-PD3024-00



P3 CLA-PD5024-00



P4 CLA-1000-00

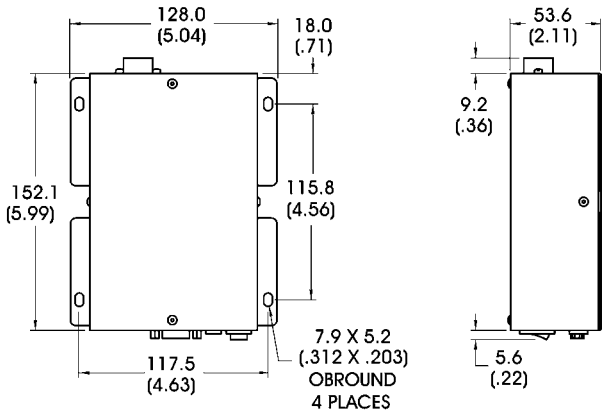


IN-SIGHT LIGHTING

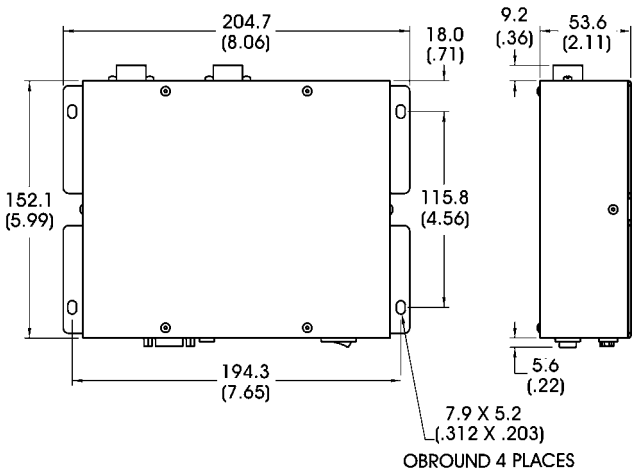
COGNEX POWER MODULES (OPTIONAL FOR ALL IN-SIGHT VISION SENSORS) "P" numbers refer to chart on page 24-25.

Note: Measurements are provided in millimeters. Numbers in parenthesis are in inches.

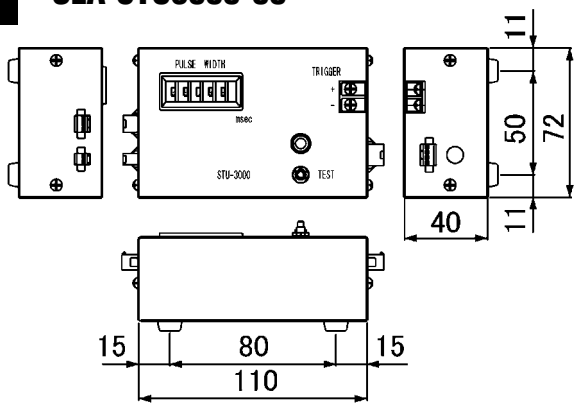
P5 CLA-4000-00



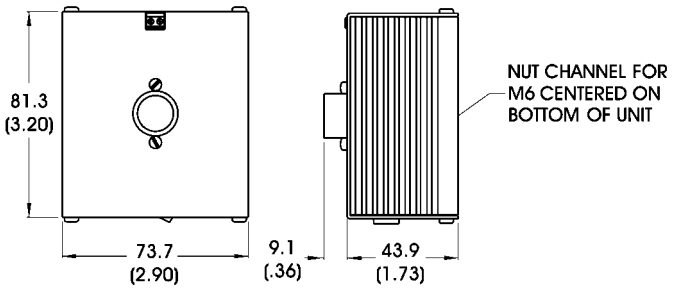
P6 CLA-6000-00



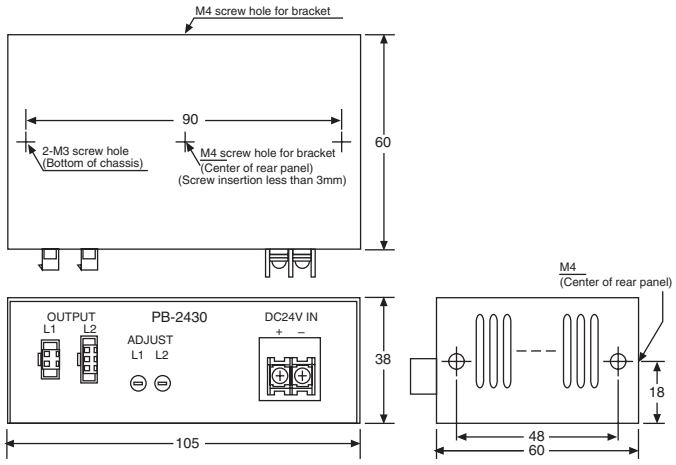
P7 CLA-STU3000-00



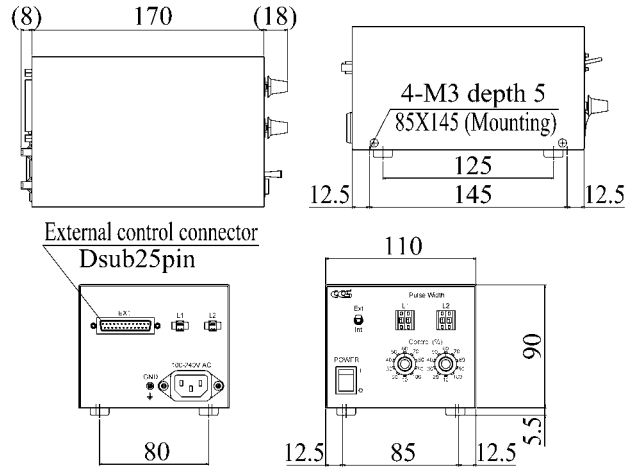
P8 CLA-CS100-00



P9 CLA-PB2430-00



P10 CLA-PTU3012-00

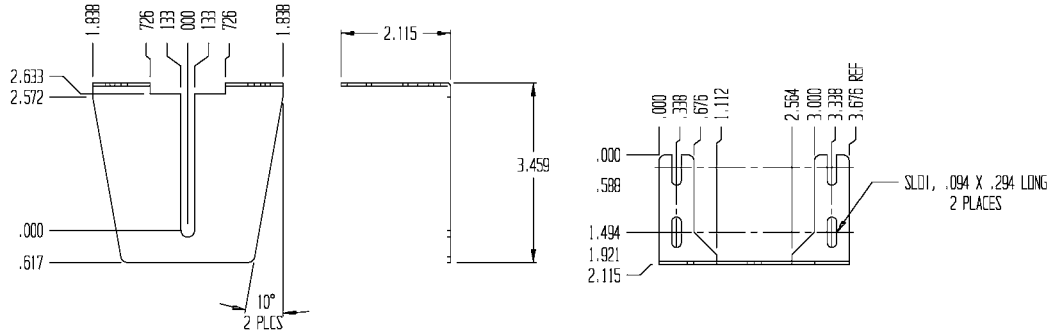


IN-SIGHT LIGHTING

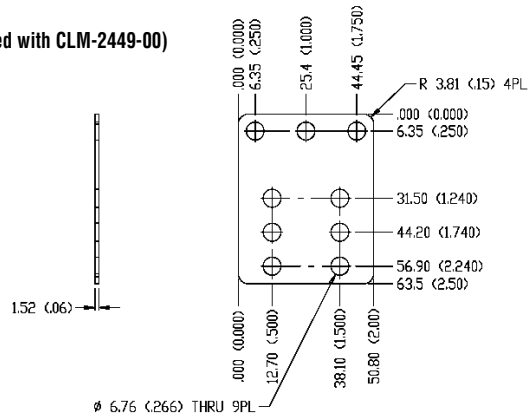
COGNEX LIGHT MODULE BRACKETS "B" numbers refer to chart on page 21 and 23.

Note: Measurements are provided in millimeters. Numbers in parenthesis are in inches.

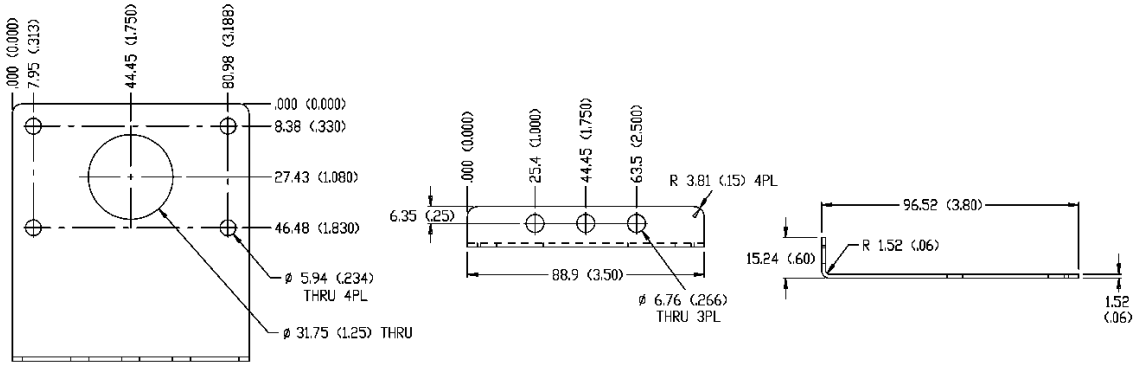
B1 RING LIGHT BRACKET (Included with CLM-4260-00)



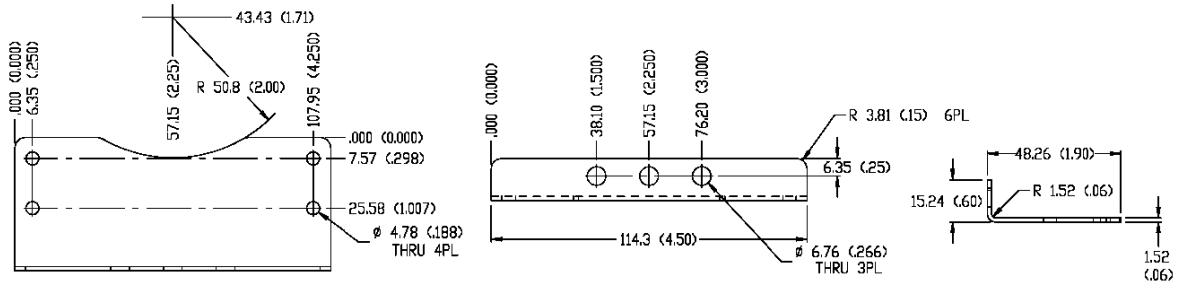
B2 DIFFUSE LIGHT BRACKET (Included with CLM-2449-00)



B3 DOME LIGHT BRACKET (Included with CLM-7248-00)



B4 DARK FIELD LIGHT BRACKET (Included with CLM-1660-00)



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