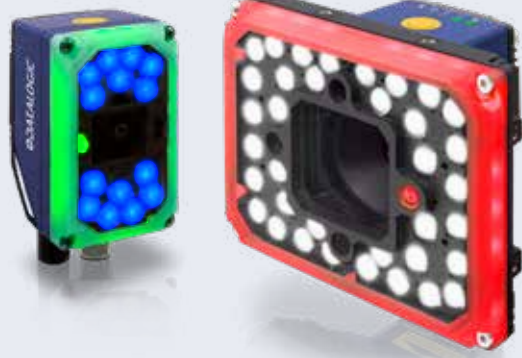


P2X-SERIES

Pushing power to the edge



THE COMPACTNESS OF A SMART CAMERA, THE POWER OF A VISION SYSTEM

The P2x-Series is an industrial smart camera providing exceptional inspection performance and flexibility in a fully-embedded compact housing. Powered by the 100+ inspection tools of IMPACT Machine Vision Software Suite, P2x-Series allows to tackle even the most complex application requirements.

CRISP IMAGES IN ANY CONDITION

P2x-Series Smart Cameras feature one of the most sophisticated optical designs available on the market. Illuminator LEDs embed TIR lenses to convey the maximum amount of light onto the Field-of-View. Top class lenses and state-of-the-art CMOS imager deliver maximum image quality. Optical filters and covers optimize the image quality by removing glare and unwanted reflections.

INTUITIVE VISUAL FEEDBACK

P2x-Series Smart Camera are equipped with a stunning configurable 360° multi color visual feedback embedded in the illuminator module. Configurable through IMPACT Software, the color of the frame provides intuitive visual feedback to workers operating nearby even when no HMI is present. The highly visible 360 feedback alerts the user of inspection results even at far distances.

MAXIMUM INSPECTION ACCURACY AND REPEATABILITY

P2x-Series embedded 2 megapixel resolution imager enables high accuracy applications such as measurement or robot guidance requiring precise part location. In addition, P2x-Series is available with color CMOS imager and features a brand new set of color inspection tools to solve the most demanding applications requiring accurate color analysis.

FULLY INTEGRATED IN THE DATALOGIC MACHINE VISION ECO-SYSTEM

P2x-Series Smart Camera is a complete vision system packed into an embedded compact housing. Unlike competitive smart cameras, IMPACT Software Suite has no limitations when running on P2x Smart Cameras. IMPACT configuration files are fully portable from one Datalogic hardware to the other, therefore users can create vision programs and select the vision device to use at the very end of the application feasibility analysis.

HIGHLIGHTS

- qHD (960 x 540) and 2MP (1920 x 1080) resolution imager options both available in monochrome and color
- Field interchangeable lenses, illuminators and filters
- Two embedded illuminator sizes: 14-LED compact and 36-LED high power both integrating TIR lenses to deliver maximum brightness onto the field of view available in 3 different colors (white, blue and red)
- High quality micro-video lenses available in four different focal lengths: 6, 8, 12.5 and 17.5mm
- Innovative 360° software configurable visual feedback
- Top industrial grade: -10 to 50 °C / 14 to 122 °F operating temperature, IP65/67 rating
- Powered by IMPACT software suite with 100+ inspection tools
- Add-on licenses to run even the most advanced Datalogic algorithms

APPLICATIONS

Automotive

- Component assembling verification
- Dashboard inspection
- Electric fuse box inspection
- Robot guidance

Electronics

- Correct assembling verification
- Component alignment/positioning
- Robot guidance

Food & Beverage

- Lot number and best before date OCR reading
- Bottle cap inspection
- Packaging artwork verification
- Label position, orientation and color

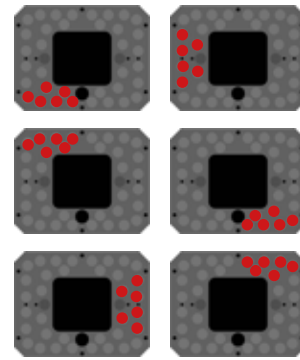
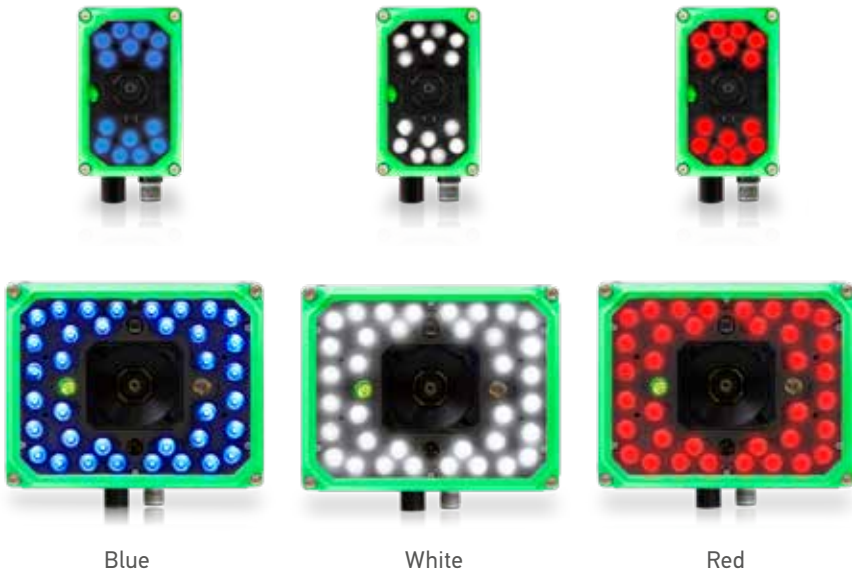
Medical and Pharma


- Packaging/sealing verification
- GTIN, serial and batch number OCR reading
- Medical device assembly control
- Vial in tray counting
- Flip-off cap inspection

TECHNICAL DATA


	P20M	P20C	P22M	P22C
Imager sensor	CMOS with Global Shutter			
Mono/Color	Monochrome	Color	Monochrome	Color
Resolution	qHD (960 x 540 pixels)		2MP (1920 x 1080 pixels)	
Sensor frame rate	60 frames/s			
Pixel size	5.6 µm square		2.8 µm square	
Digital OUT	OUT 1 and 2: NPN or PNP short circuit protected, opto-isolated only when connected to CBX500/800 OUT 3: NPN or PNP short circuit protected, Opto-isolated only when connected to CBX800 (Strobe signal is shared with Output 3. Output 3 is active only if the External Strobe is disabled)			
Digital IN	IN 1 (external trigger) and IN 2: opto-isolated and polarity insensitive (Max voltage: 30 VDC, Max Input current: 10mA)			
Led indicators	Power, Busy/Trigger, Out 1; Out 2; Out 3, Online			
Keypad Button	Reset; Camera Button Event (internal software event only); Loader			
Ethernet	1000 Mbit/s (supports application protocols: TCP/IP, EtherNet/IP, Profinet IO, Modbus TCP, MC protocol)			
RS232	2,400 to 115,200 bit/s			
RAM	1 GB			
Storage	380 MB			
Lens options	Micro-video lens: 6 mm / 8 mm / 12.5 mm / 17.5 mm			
Lens focusing	Mechanical with focusing screw			
Illuminators	Illuminator colors: Blue, Red, White Illuminator power: High Power 14 LEDs, Very High Power 36 LEDs			
LED safety	According to EN 62471			
YAG Laser Protection	Yes, with dedicated filter accessory			
Polarizing Filter	Yes, with dedicated polarizer front cover accessory			
Power supply	24 VDC ± 10%			
Max power consumption	14 LEDs illuminator: 0.42 A, 10 W max 36 LEDs illuminator: 0.62 A, 15 W max			
Operating temperature	-10 to 50 °C (14 to 122° F)			
Storage temperature	-20 to 70 °C (-4 to 158°F)			
Max humidity	90% non condensing			
Vibration Resistance EN 60068-2-6	14 mm @ 2 to 10 Hz; 1.5 mm @ 13 to 55 Hz; 2 g @ 70 to 500 Hz; 2 hours on each axis			
Bump Resistance EN 60068-2-29	30 g; 6 ms; 5,000 shocks on each axis			
Shock Resistance EN 60068-2-27	30g ; 11 ms; 3 shocks on each axis			
Protection Class EN 60529	IP65/67			
Case Material	Aluminium case and plastic protective window cover			
Dimensions (H x W x L) with lens cover	14 LEDs illuminator: 109 x 54 x 56 mm (4.3 x 2.1 x 2.2in.) 36 LEDs illuminator: 116 x 126 x 70 mm (4.6 x 4.9 x 2.8in.)			
Weight	14 LEDs illuminator: about 380 g (13.4oz.) 36 LEDs illuminator: about 640 g (22.5oz.)			
Warranty	2-Year Factory Warranty			

ILLUMINATORS



 Software configurable lighting segments to optimize image brightness on the Field-of-View



 Two different options of Total Internal Reflection (TIR) LED lenses to match smart camera lens aperture

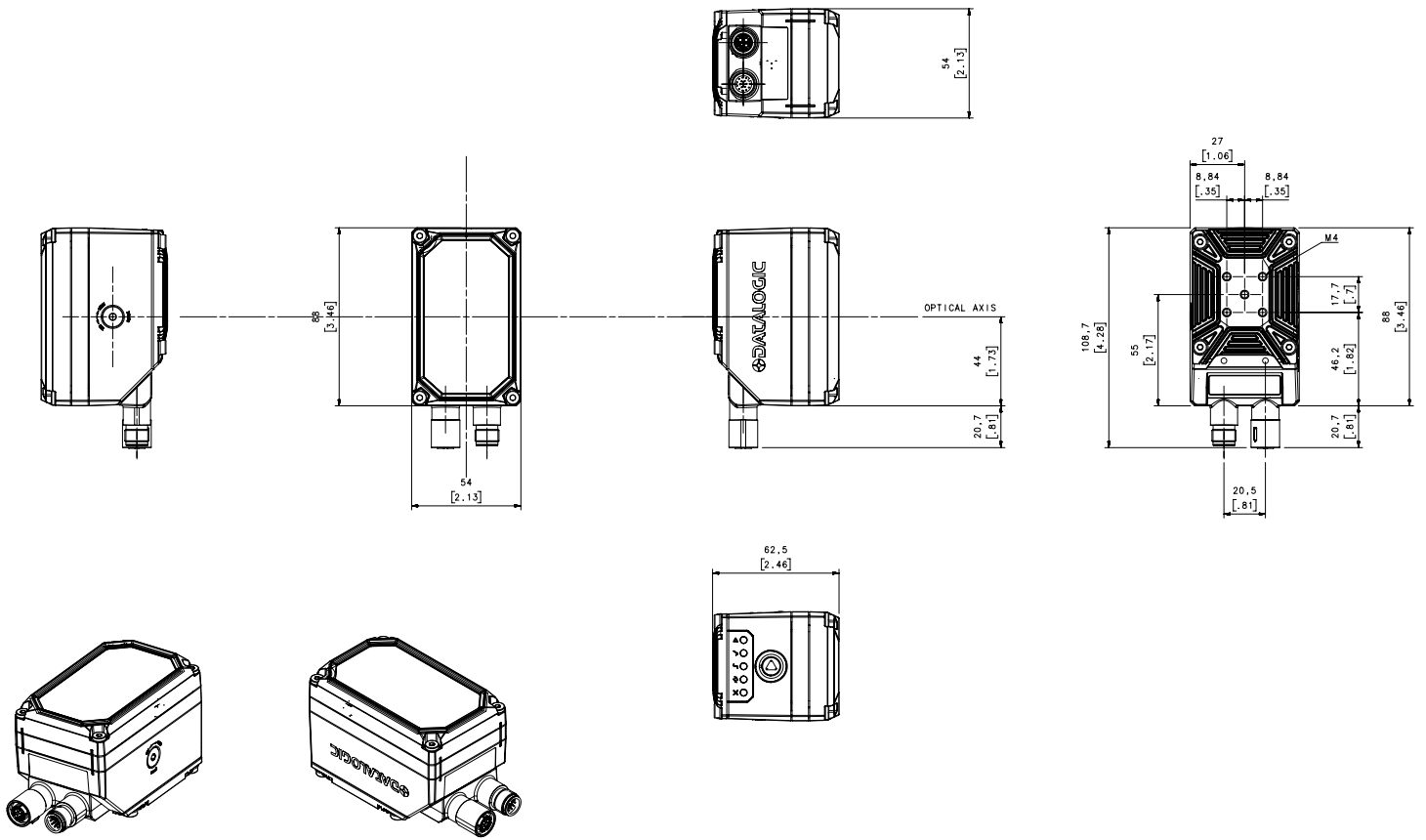
LENSES

P2X-SERIES FIELD OF VIEW				
OPERATING DISTANCE	6 mm	8 mm	12.5 mm	17.5 mm
50 mm	67 x 37	46 x 26	24 x 13	
100 mm	117 x 66	82 x 46	46 x 25	31 x 17
200 mm	218 x 122	155 x 87	90 x 49	62 x 35
300 mm	318 x 179	227 x 128	133 x 73	93 x 52
400 mm	419 x 236	300 x 169	177 x 96	124 x 70
500 mm	519 x 292	373 x 209	220 x 120	155 x 87
600 mm	620 x 349	445 x 250	263 x 144	185 x 104
700 mm	720 x 405	518 x 291	307 x 167	216 x 121
800 mm	821 x 462	590 x 332	350 x 191	247 x 139
900 mm	921 x 518	663 x 373	394 x 214	277 x 156
1000 mm	1022 x 575	735 x 414	437 x 238	308 x 173
1100 mm		808 x 454	480 x 262	339 x 190
1200 mm		880 x 495	524 x 285	369 x 208
1300 mm			567 x 309	400 x 225
1400 mm			611 x 333	431 x 242
1500 mm			654 x 357	461 x 259

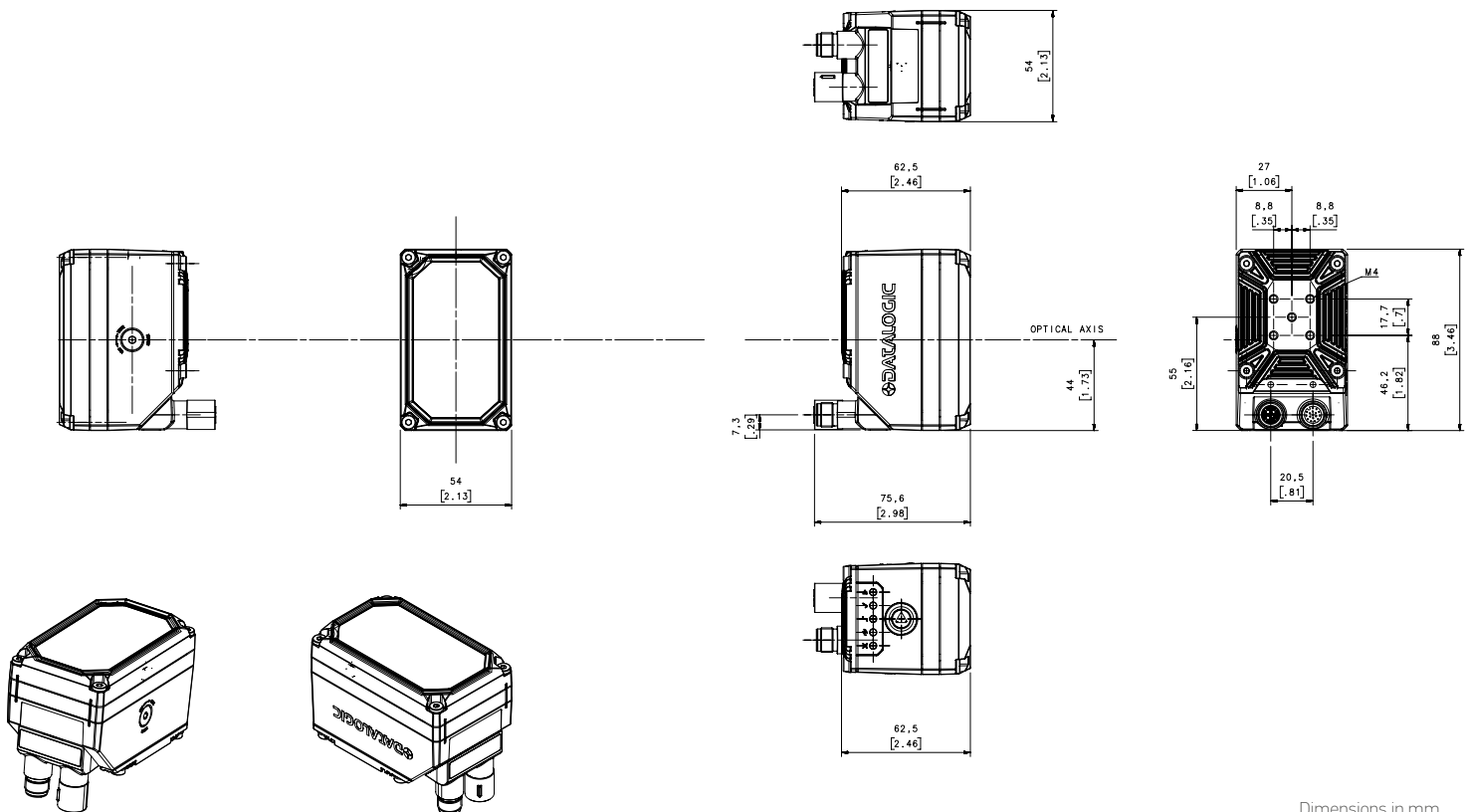


DIMENSIONS

P2X-SERIES 14 LED ILLUMINATOR - STRAIGHT 0° CONNECTORS

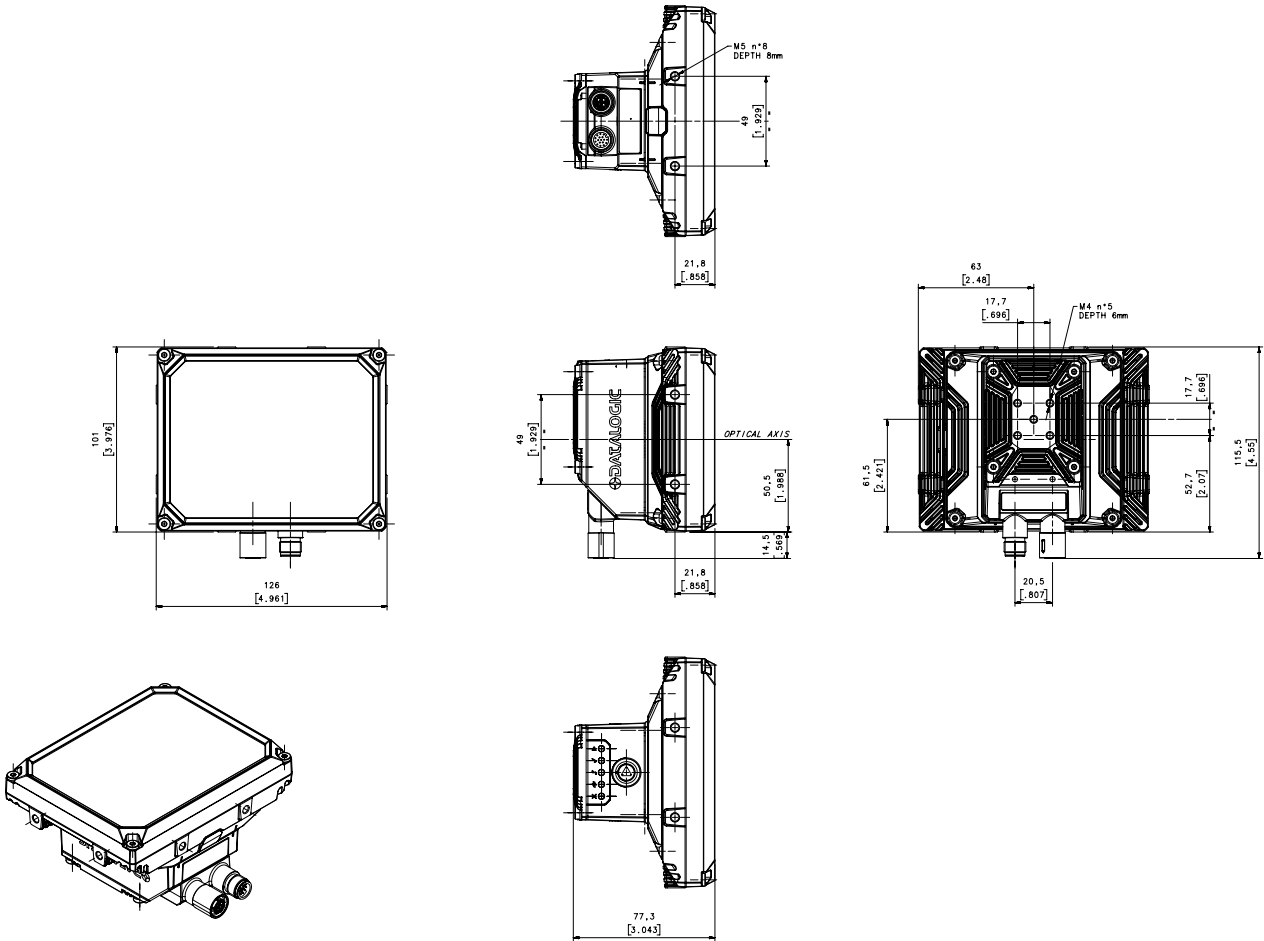


P2X-SERIES 14 LED ILLUMINATOR - 90° CONNECTORS

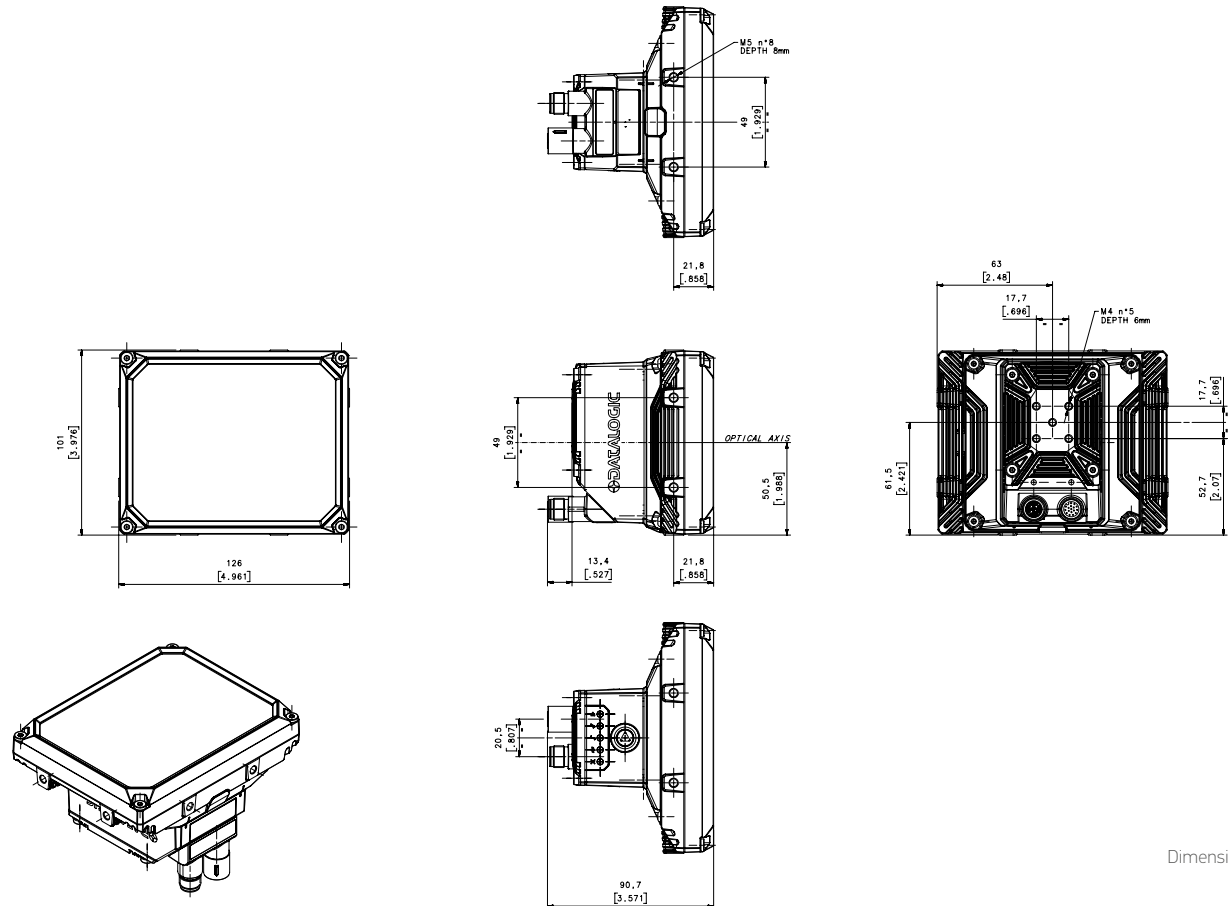


Dimensions in mm

P2X-SERIES 36 LED ILLUMINATOR - STRAIGHT 0° CONNECTORS



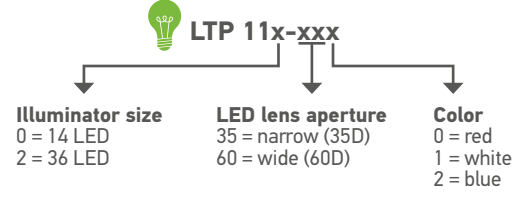
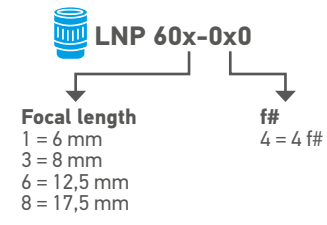
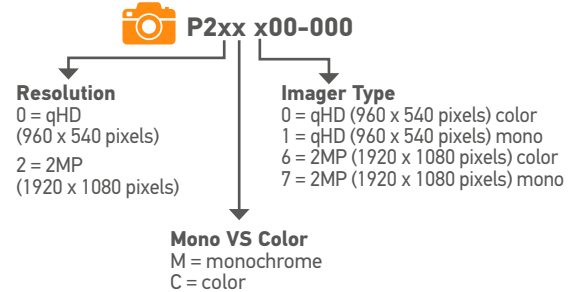
P2X-SERIES 36 LED ILLUMINATOR - 90° CONNECTORS



Dimensions in mm

MODELS AND ACCESSORIES ORDER INFORMATION

CATEGORY	ORDER N°	DESCRIPTION
Cameras	937710021	P20M 100-000 ML
	937710022	P20C 000-000 ML
	937710023	P22M 700-000 ML
	937710024	P22C 600-000 ML
Lenses	95A900010	LNP 601-040 ML 6MM FF4 1/3"
	95A900011	LNP 603-040 ML 8MM FF4 1/3"
	95A900012	LNP 606-040 ML 12.5MM FF4 1/3"
	95A900013	LNP 608-040 ML 17.5MM FF4 1/3"
	95A900014	LNP Micro Lens Kit M320/P2
Illuminators	95A900023	LTP 110-600 SN14L 60D RED 625nm
	95A900026	LTP 110-350 SN14L 35D RED 625nm
	95A900025	LTP 110-602 SN14L 60D BLU 475nm
	95A900028	LTP 110-352 SN14L 35D BLU 475nm
	95A900024	LTP 110-601 SN14L 60D WHT white
	95A900027	LTP 110-351 SN14L 35D WHT white
	95A900031*	LTP 112-600 SN36L 60D RED 625nm
	95A900034*	LTP 112-350 SN36L 35D RED 625nm
	95A900033*	LTP 112-602 SN36L 60D BLU 475nm
	95A900036*	LTP 112-352 SN36L 35D BLU 475nm
	95A900032*	LTP 112-601 SN36L 60D WHT white
	95A900035*	LTP 112-351 SN36L 35D WHT white
	95A900038	Adapter LL ML LT 36L M320/P2
Covers	93ACC0271**	Cover STD LT 14L M320/P2
	93ACC0273	Cover Polarizer LT 14L M320/P2
	93ACC0272	Cover STD LT 36L M320/P2
	93ACC0274	Cover Polarizer LT 36L M320/P2
Filters	95A900018	Filter YAG Cut LT 14L M320/P2
	95A900022	Filter YAG Cut LT 36L M320/P2
Add-on Licenses	95A900008	LICENSE, ENHANCED, SMART CAMERA
	95A900009	LICENSE, PRO, SMART CAMERA
Brackets	93ACC0283	BK-32-010 SIDE FIX BRACKET M320/P2 BODY
	93ACC0282**	BK-32-000 STD FIX BRACKET M320/P2 BODY
Cables	93A050058	CAB-DS01-S M12-IP67 TO CBX 1M
	93A050059	CAB-DS03-S M12-IP67 TO CBX 3M
	93A050060	CAB-DS05-S M12-IP67 TO CBX 5M
	93A051390	CAB-DS10-S M12-IP67 TO CBX 10M
	93A050122	CAB-ETH-X-M01 M12-IP67 GETH-X CAB 1M
	93A050123	CAB-ETH-X-M03 M12-IP67 GETH-X CAB 3M
	93A050124	CAB-ETH-X-M05 M12-IP67 GETH-X CAB 5M
	93A050140	CAB-ETH-X-M10 M12-IP67 GETH-X CAB 10M
	93A050128	CAB-ETH-X-RJ ADAPTER CAB GETH-X to RJ45
93A050129	CAB-ETH-X-D ADAPTER CAB GETH-X to ETH-D	



*Requires Adapter LL ML LT 36L M320/P2 (order no. 95A900038)
 **Already included in the smart camera package.

MAIN ACCESSORIES



93ACC0282*** BK-32-000 STD FIX BRACKET M320/P2 BODY
 93ACC0273 Cover Polarizer LT 14L M320/P2
 93ACC0271*** Cover STD LT 14L M320/P2
 93ACC0274 Cover Polarizer LT 36L M320/P2
 93ACC0272*** Cover STD LT 36L M320/P2
 93ACC0283 BK-32-010 SIDE FIX BRACKET M320/P2 BODY
 95A900018 Filter YAG Cut LT 14L M320/P2
 95A900022 Filter YAG Cut LT 36L M320/P2

***Already included in the smart camera package
 ****Already included and pre-mounted on 36 LED illuminators