



## Engineering peace of mind

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Machine Vision - ISO Verification - Serialization





## P-SERIES

The P-Series is an ultra-compact cost effective smart camera offering advanced machine vision functionalities in a fully embedded stand-alone device.

The P-Series is available with gray-scale or color CMOS image sensors with two different resolutions: 640x480 pixels at over 120fps and 1280x1024 pixels at up to 60fps.

Lenses and illuminators are fully interchangeable and can be mounted and replaced by the user. Five focal lengths and nine lighting options result in 90 different combinations delivering outstanding installation flexibility while offering superior image acquisition capabilities.

With compact dimensions and the rotating connectors, the P-Series can be installed even in extremely narrow spaces. The IP67 rated metal housing guarantees maximum protection in the most harsh factory environments containing dust, water and oil.

The P-Series is powered by the IMPACT LITE software package. With more than 25 inspection tools, IMPACT LITE revolutionizes device programming by making the inspection configuration quick and intuitive. Controls are dragged and dropped into the inspection tree for easy and simple quality control deployment.



VISION

## HIGHLIGHTS

- Fully integrated ultra-compact device
- Rotating connectors for 0° & 90° form factor
- Rugged IP67 rated housing
- VGA and 1.3 megapixel resolutions
- Gray-scale and color CMOS sensor
- Interchangeable lenses, illuminators and filters
- Built-in Serial and Ethernet interfaces
- Powered by IMPACT LITE software

## APPLICATIONS

### Packaging and labelling

- Correct positioning of color printing alignment markers
- 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
- Color and shape detection of medical tablets
- Inspection of flip-off caps (presence and color)

### Automotive

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

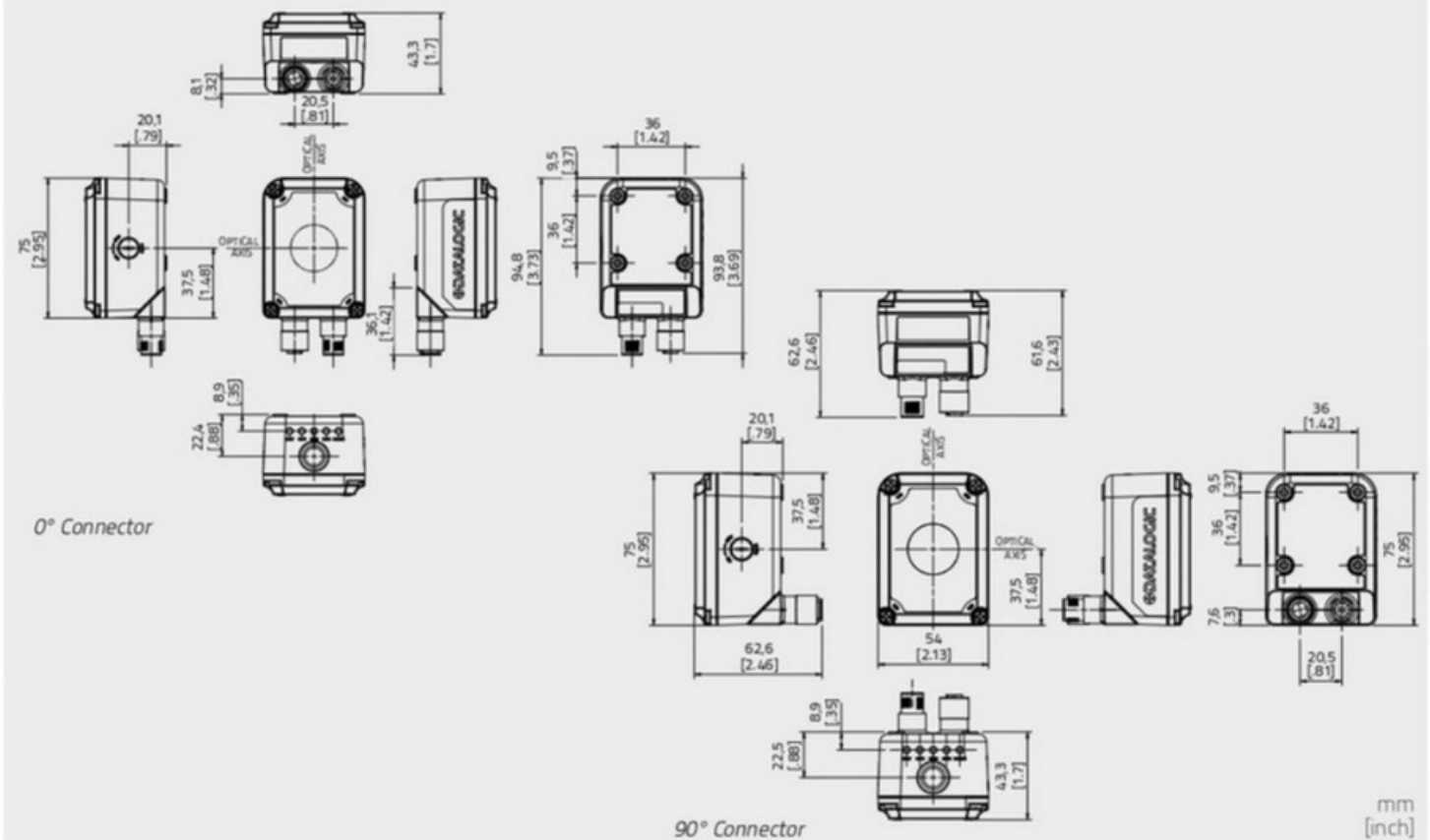
### Electronics

- Correct assembling verification
- Component alignment/positioning

## TECHNICAL DATA

	P10	P11	P15	P16
Resolution	VGA (640 x 480 pixels)		SXGA (1280 x 1024 pixels)	
Imager type	Gray-scale CMOS global shutter	Color CMOS global shutter	Gray-scale CMOS global shutter	Color CMOS global shutter
Pixel size	5.3 µm			
Imager size	1/4"		1/1.8"	
Frame rate	120 fps		60 fps	
Processor	660 MHz DSP			
Dedicated I/O	1 IN			
Configurable I/O	1 IN / 3 OUT			
I/O type	Isolated INPUT Non-isolated OUTPUT			
External button	Yes			
Ethernet	10/100 Mbit/s			
RS-232 serial	Yes			
RAM	256 MB			
Storage	256 MB			
Lens options	6mm / 9mm / 12mm / 16mm / 25 mm			
Illuminator options	Wide angle 8 LEDs: Red, White, IR, Blue, Red with Polarizer, White with Polarizer Multi-chain 50 LEDs: Red, White, Blue			
Power requirements	10 – 30 Vdc			
Protection class	IP67			
Dimensions	95 x 54 x 43 mm (3.7 x 2.1 x 1.7 in.) – Connector @ 0° 75 x 54 x 62 mm (3.0 x 2.1 x 2.4 in.) – Connector @ 90°			
Case material	Aluminium, Plastic protective window cover			
Operating temperature	0 to 50 °C (32 to 122 °F)			
Storage temperature	-20 to 70 °C (-4 to 158 °F)			
Humidity	90% non condensing			
Certifications	CE, CSA			

## DIMENSIONS





## LIGHTING

Nine different interchangeable lighting solutions are available:

### WIDE ANGLE



RED



WHITE



BLUE



INFRARED



RED WITH POLARIZER



WHITE WITH POLARIZER

### MULTI-CHAIN



RED



WHITE



BLUE

## OPTICS

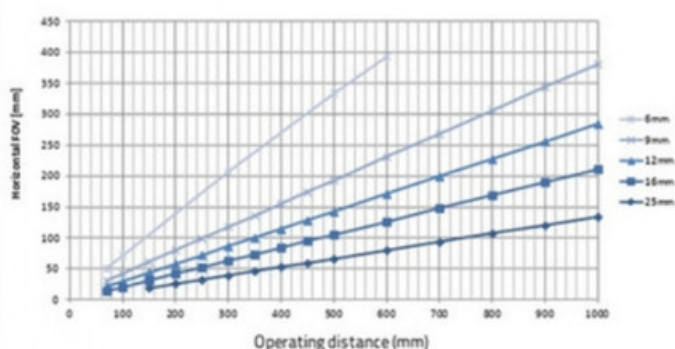
### P10 AND P11 FIELD OF VIEW (W x H mm)

WORKING DISTANCE	6mm	9mm	12mm	16mm	25mm
70 mm	51 x 38	31 x 23	21 x 16	14 x 10	-
150 mm	108 x 81	61 x 46	44 x 33	31 x 23	19 x 14
300 mm	207 x 155	118 x 88	86 x 65	63 x 47	39 x 29
500 mm	334 x 250	193 x 145	142 x 106	105 x 79	66 x 50
600 mm	394 x 295	231 x 173	171 x 128	126 x 95	80 x 60

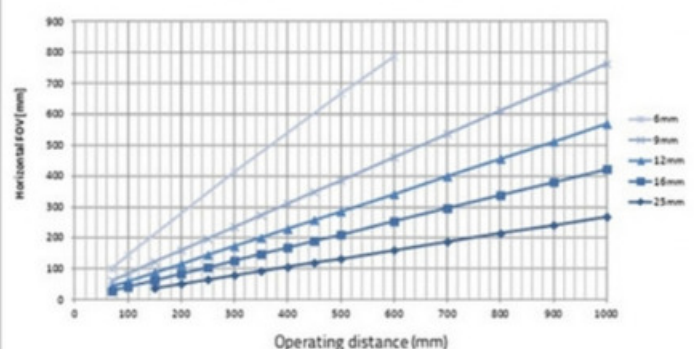
### P15 AND P16 FIELD OF VIEW (W x H mm)

WORKING DISTANCE	6mm	9mm	12mm	16mm	25mm
70 mm	101 x 81	62 x 50	42 x 34	28 x 22	-
150 mm	216 x 173	122 x 98	87 x 70	62 x 50	37 x 30
300 mm	413 x 330	235 x 188	172 x 138	126 x 101	79 x 63
500 mm	668 x 534	386 x 309	285 x 228	210 x 168	132 x 106
600 mm	787 x 630	461 x 369	341 x 273	253 x 202	160 x 128

P10 and P11 (640 x 480 pixels)



P15 and P16 (1280 x 1024 pixels)



## MODEL SELECTION AND ORDER INFORMATION

MODEL	ORDER N°
Camera, IMPACT P10, Grayscale, 640x480, 120 FPS, 1/4" CMOS	937700000
Camera, IMPACT P11, Color, 640x480, 120 FPS, 1/4" CMOS	937700004
Camera, IMPACT P15, Grayscale, 1280x1024, 60 FPS, 1/1.8" CMOS	937700001
Camera, IMPACT P16, Color, 1280x1024, 60 FPS, 1/1.8" CMOS	937700005

## ACCESSORY SELECTION AND ORDER INFORMATION

MODEL	DESCRIPTION	ORDER N°
<b>ILLUMINATORS</b>		
LT-050 - Red Wide Angle Illuminator	Lighting, P-Series, LT-050, Wide angle 8 LEDs, red	95A901780
LT-055 - White Wide Angle Illuminator	Lighting, P-Series, LT-055, Wide angle 8 LEDs, white	95A901790
LT-053 - Blue Wide Angle Illuminator	Lighting, P-Series, LT-053, Wide angle 8 LEDs, blue	95A901800
LT-052 - IR Wide Angle Illuminator	Lighting, P-Series, LT-052, Wide angle 8 LEDs, IR	95A901810
LT-057 - Red Multi Chain Illuminator	Lighting, P-Series, LT-057, Multi-chain 50 LEDs, red	95A901820
LT-059 - White Multi Chain Illuminator	Lighting, P-Series, LT-059, Multi-chain 50 LEDs, white	95A901830
LT-058 - Blue Multi Chain Illuminator	Lighting, P-Series, LT-058, Multi-chain 50 LEDs, blue	95A901840
LT-051 - Red Wide Angle Illuminator with Polarizer	Lighting, P-Series, LT-051, Wide angle 8 LEDs, red with polarizer	95A901870
LT-056 White Wide Angle Illuminator with Polarizer	Lighting, P-Series, LT-056, Wide angle 8 LEDs, white with polarizer	95A901890
<b>LENSES</b>		
Micro Video Lens, 6mm	Micro Video Lens, P-Series, 6mm	95A901730
Micro Video Lens, 9mm	Micro Video Lens, P-Series, 9mm	95A901740
Micro Video Lens, 12mm	Micro Video Lens, P-Series, 12mm	95A901750
Micro Video Lens, 16mm	Micro Video Lens, P-Series, 16mm	95A901760
Micro Video Lens, 25mm	Micro Video Lens, P-Series, 25mm	95A901770
Micro Video Lens with IR Filter, 25mm	Micro Video Lens, P-Series, 25mm with IR bandpass filter	95A901860
IR Bandpass Filter, P-Series	Filter, P-Series, IR bandpass filter	95A901850
YAG Cut Filter, P-Series	Filter, P-Series, YAG cut filter	95A901880
<b>I/O CABLES</b>		
CAB-DS01-S M12-IP67 TO CBX 1M	Cable, PWR & I/O, CAB-DS01-S, P-Series to CBX (DB25), 1 meter	93A050058
CAB-DS03-S M12-IP67 TO CBX 3M	Cable, PWR & I/O, CAB-DS03-S, P-Series to CBX (DB25), 3 meters	93A050059
CAB-DS05-S M12-IP67 TO CBX 5M	Cable, PWR & I/O, CAB-DS05-S, P-Series to CBX (DB25), 5 meters	93A050060
CAB-DS10-S M12-IP67 TO CBX 10M	Cable, PWR & I/O, CAB-DS10-S, P-Series to CBX (DB25), 10 meters	93A051390
<b>ETHERNET CABLES</b>		
CAB-ETH-M01 M12-IP67 ETH. CAB. (1M)	Cable, Ethernet, CAB-ETH-M01 M12-IP67 to RJ45, 1 meter	93A051346
CAB-ETH-M03 M12-IP67 ETH. CAB. (3M)	Cable, Ethernet, CAB-ETH-M03 M12-IP67 to RJ45, 3 meters	93A051347
CAB-ETH-M05 M12-IP67 ETH. CAB. (5M)	Cable, Ethernet, CAB-ETH-M05 M12-IP67 to RJ45, 5 meters	93A051348
CAB-ETH-M10 M12-IP67 ETH. CAB. (10M)	Cable, Ethernet, CAB-ETH-M10 M12-IP67 to RJ45, 10 meters	93A051391
<b>I/O BOARDS</b>		
Terminal block, DB25 Female	I/O Board, A30/T4x, Female DB25, DIN Rail Mountable	95A906346
CBX500 CONNECTION BOX MODULAR	I/O Board, A30/T4x, CBX500 CONNECTION BOX MODULAR	93A301068
CBX800 GATEWAY	I/O Board, A30/T4x, CBX800 GATEWAY	93A301077
BM300 PROFIBUS MODULE	BM300 PROFIBUS MODULE	93ACC1810
BM310 PROFIBUS IP65 MODULE	BM310 PROFIBUS IP65 MODULE	93ACC1811
BA100 DIN RAIL ADAPTERS	BA100 DIN RAIL ADAPTERS	93ACC1821
BA200 BOSCH ADAPTERS	BA200 BOSCH ADAPTERS	93ACC1822
<b>LICENSES</b>		
License, OCR, Smart Camera	License, OCR, Smart Camera	95A906540
License, IMPACT Upgrade, P-Series	License, IMPACT Upgrade, P-Series	93ACC0154