



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

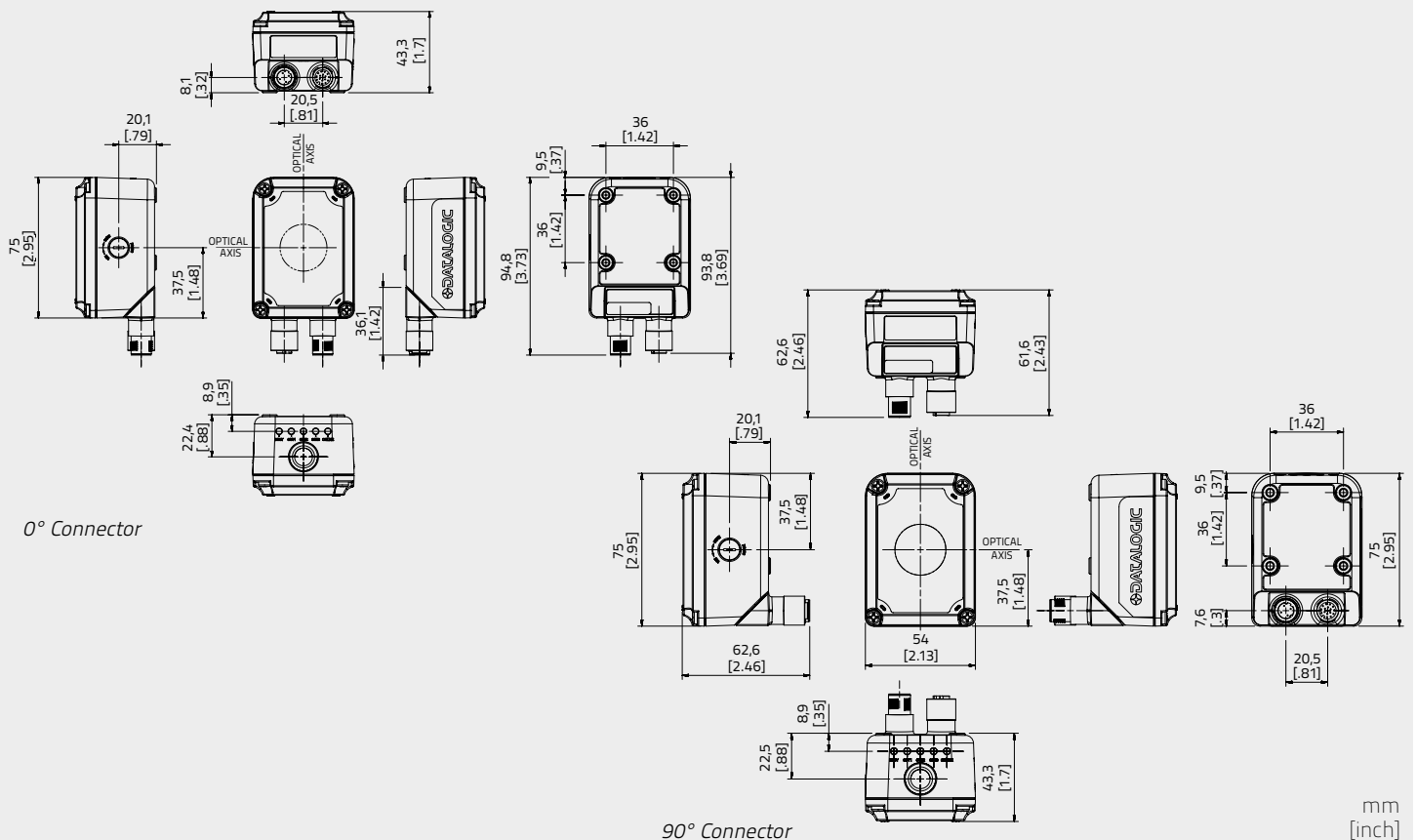
Electronics

- Correct assembling verification
- Component alignment/positioning

TECHNICAL DATA

| | P10 | P11 | P12 | P15 | P16 | P17 |
|-------------------------|--|---------------------------|--------------------------------|--------------------------------|---------------------------|--------------------------------|
| IMPACT Software version | Lite | | Full | Lite | | Full |
| 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 | Gray-scale CMOS global shutter | Color CMOS global shutter | Gray-scale CMOS global shutter |
| Pixel size | 5.3 um | | | | | |
| Imager size | | | | | 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

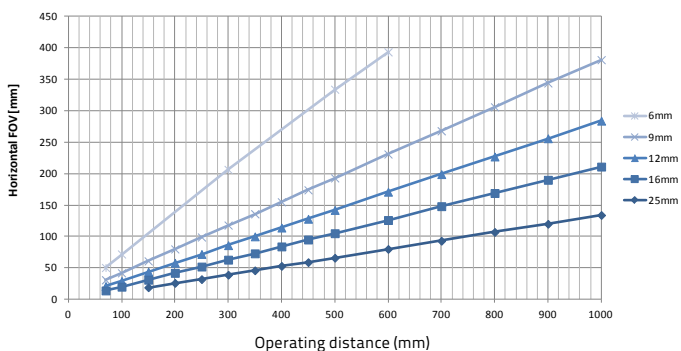
P10, P11 AND P12 FIELD OF VIEW (W x H mm)

| 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 |

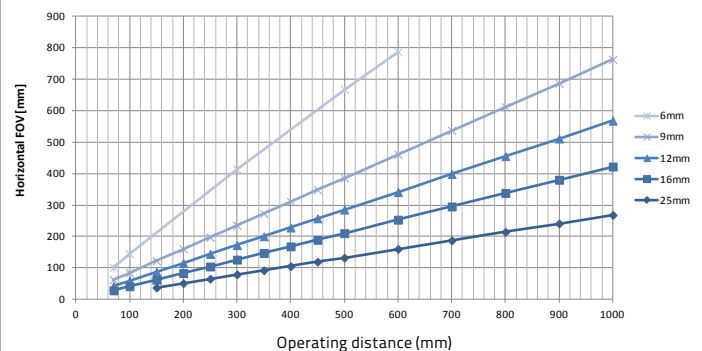
P15, P16 AND P17 FIELD OF VIEW (W x H mm)

| 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, P11 and P12 (640 x 480 pixels)



P15, P16 and P17 (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 |
| Camera, IMPACT P12, Grayscale, 640x480, 120 FPS, 1/4" CMOS, IMPACT Full Feature | 937700006 |
| Camera, IMPACT P17, Grayscale, 1280x1024, 60 FPS, 1/1.8" CMOS, IMPACT Full Feature | 937700007 |

ACCESSORY SELECTION AND ORDER INFORMATION

| MODEL | DESCRIPTION | ORDER N° |
|--|---|-----------|
| ILLUMINATORS | | |
| 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 |
| LENSES | | |
| 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 |
| I/O CABLES | | |
| 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 |
| ETHERNET CABLES | | |
| 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 |
| I/O BOARDS | | |
| 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 |
| LICENSES | | |
| License, OCR, Smart Camera | License, OCR, Smart Camera | 95A906540 |
| License, IMPACT Upgrade, P-Series | License, IMPACT Upgrade, P-Series | 93ACC0154 |