

P-SERIES SMART CAMERA QUICK REFERENCE GUIDE

SYSTEM SPECIFICATIONS

- Up to 1.3 Megapixel Resolution
- Adjustable focus, fixed length, replaceable lens
- Internal Lighting System
- Up to 120 frames/sec
- Rugged Metal Construction
- Straight or 90° Orientation
- Powerful, Flexible Vision Programming Software
- Sealed Circular connectors
- IP67 protection class

DESCRIPTION

The P-Series smart camera is particularly suitable for industrial environments where protection against harsh external conditions is required.

It is contained in an aluminum housing with a protective cover and an optional internal illuminator and lens. The mechanical dimensions are 95 x 54 x 43 mm with a weight of about 238 g.

STATUS LEDS AND BUTTON

<p>Power: Camera connected to power Net: On – Ethernet link is established. Blinking – Data transmission Busy: LED blinks during task execution and flash memory access Out1: On – Output 1 is on Out2: On – Output 2 is on Out3: On – Output 3 is on Online: On – Loaded tasks will be executed based on their trigger parameters Camera Reset: (See Note Below) To trigger the Camera Button event, press and release the button (internal software trigger event only)</p>	
<p>To Reset the Camera Camera reset deletes all camera user settings and resets the camera's IP Address and Mask to the factory default (192.168.0.128)</p> <ol style="list-style-type: none"> 1. Turn off camera power. 2. Press and hold the Camera Reset button continuously. 3. Turn on power. Continue pressing the Camera Reset button. 4. After about 30 seconds, all the LED indicators turn on for a few seconds. Continue holding the Camera Reset button. 5. The LED indicators turn off for about five seconds, then turn on. 6. When all the LED indicators have turned on and remain lit, release the Camera Reset button. 7. Wait approximately 30 seconds for the camera to restart. 	

SOFTWARE INSTALLATION

All necessary firmware is installed on the P-Series camera at the factory. Vision Program Manager (VPM) software must be installed on a host PC to configure the camera inputs, strobe, general purpose outputs, and internal illuminators. Machine Vision installation software can be downloaded from the Datalogic web site (www.datalogic.com). Refer to the Impact Reference Guide for programming details.

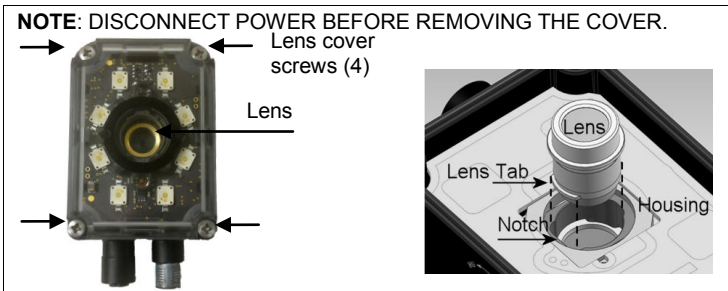
COMMUNICATIONS

Camera communication is provided through the Ethernet port. Maximum cable length is 10 meters. Use Datalogic cable CAB-ETH-M0x.

ILLUMINATOR REPLACEMENT

- NOTE: DISCONNECT POWER BEFORE REMOVING THE ILLUMINATOR.**
1. Remove the four cover screws and carefully remove the illuminator and cover. (See Lens Replacement) The illuminator is integrated with the cover.
 2. Be sure the sealing gasket remains with the cover.
 3. Align the new illuminator with the camera case and gently press down until the illuminator is tight to the case.
 4. Replace the four cover screws. Overtightening can damage the cover.
- NOTE:** Configure the Internal Illuminator in VPM – Camera Setup.

LENS REPLACEMENT



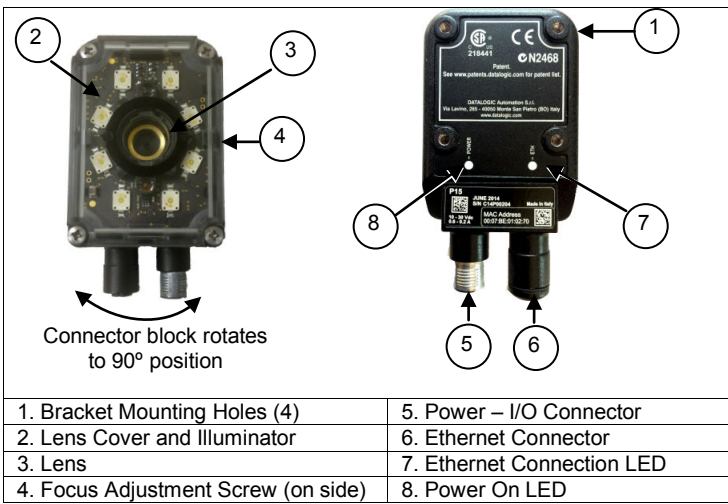
To Remove the Camera Lens

1. Remove the four cover screws and carefully remove the cover.
2. Grasp the lens firmly, then press in until the lens stops moving.
3. Turn the lens 90° counter-clockwise.
4. Lift the lens straight up until it clears the lens housing.

To Replace the Camera Lens

1. Align the tabs on the lens with the notches in the lens housing.
2. Grasp the lens firmly, then press in until the lens stops moving.
3. Turn the lens 90° clockwise.
4. Release the lens.
5. When the lens is mounted correctly, it should not turn in the housing.
6. Replace the four cover screws. Overtightening can damage the cover.

GENERAL VIEW



1. Bracket Mounting Holes (4)	5. Power – I/O Connector
2. Lens Cover and Illuminator	6. Ethernet Connector
3. Lens	7. Ethernet Connection LED
4. Focus Adjustment Screw (on side)	8. Power On LED

POWER & I/O CONNECTIONS

This table lists CBX 500 and 800 connection box power and I/O connections. **NOTE:** Do not disconnect the cable while power is on.

CBX500/800 Terminal Block Connections	
Input Power	
Vdc	Power Supply Input voltage +
GND	Power Supply Input voltage -
Earth	Protection Earth Ground
Inputs	
+V	Power Source – External Trigger
I1A	External Trigger A (Polarity Insensitive)
I1B	External Trigger B (Polarity Insensitive)
-V	Power Reference – External Trigger
+V	Power Source - Inputs
I2A	Input 2A (Polarity Insensitive)
I2B	Input 2B (Polarity Insensitive)
-V	Power Reference – Inputs
Outputs	
+V	Power Source - Outputs
-V	Power Reference – Outputs
O1+	Output 1 + Opto-isolated, polarity sensitive
O1-	Output 1 - Opto-isolated, polarity sensitive
O2+	Output 2 + Opto-isolated, polarity sensitive
O2-	Output 2 - Opto-isolated, polarity sensitive
O3A	CBX500: Strobe / Output 3 (Single pin connection)
O3B	CBX500: Not Used
O3A	CBX800: Strobe + / Output 3 + (Opto-isolated; See Note)
O3B	CBX800: Strobe - / Output 3 -
RS232 Interface	
RX	Receive
TX	Transmit
SGND	Signal Ground

NOTE: The strobe signal connection is shared with Output 3. If the Strobe Pulse Length is zero, Output 3 is active. (Configure in VPM – Impact – General)

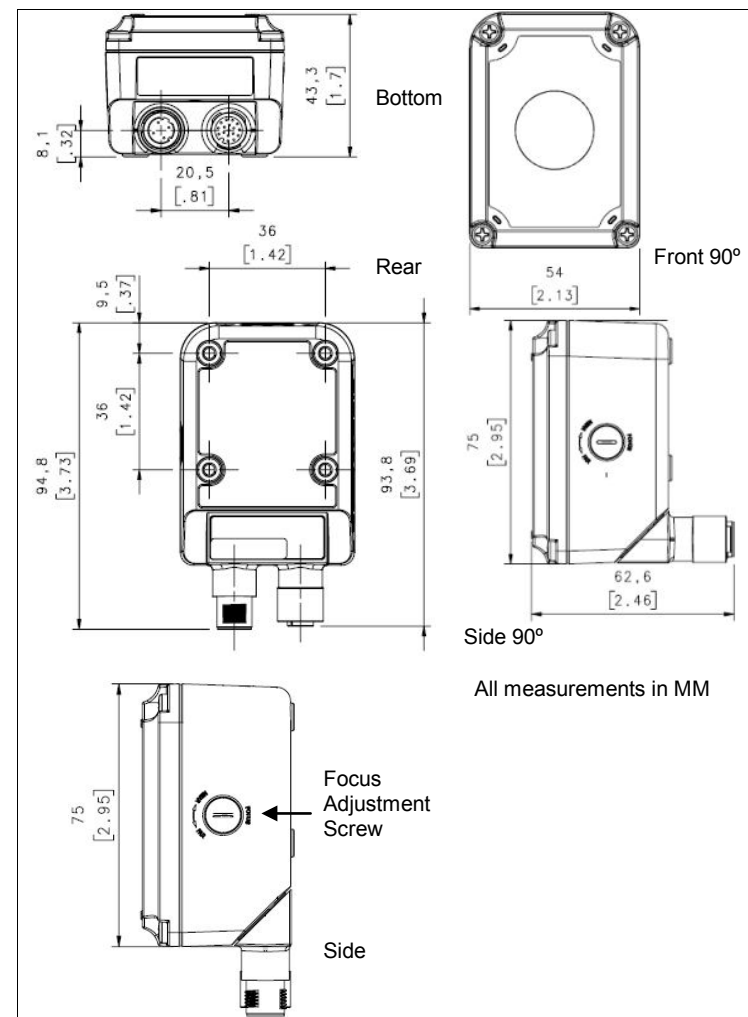
POWER & I/O CONNECTION DIAGRAM

M12 17-pin to D-sub 25-pin Power, COM, and I/O cable
 The CAB-DSxx-S cable is an M12 17-pin connector to a 25-pin male D-sub connector. The CAB-GDxx cable is 17-pin to pigtail. **NOTE:** Do not disconnect the cable while power is on.

Pigtail	M12	D-sub	Name: Function
1 Brn	1 Red	9 & 13	Vdc: Power Supply Input voltage +
2 Blu	2 Blk	7 & 25	GND: Power Supply Input voltage -
	Connector Case	1 (Shield)	CHASSIS: Connector case - electrical connection to chassis
5 Pnk	6 Org	18	I1: External Trigger + or - (Note 1)
6 Yel	5 Grn-Blk	19	I1: External Trigger + or - (Note 1)
3 Wht	13 Gry	6	I2: Input 2 + or - (Note 1)
13 Wht-Grn	3 Grn-Red	10	I2: Input 2 + or - (Note 1)
9 Red	9 Pur	8	O1: Output 1 (Notes 2, 3)
8 Gry	8 Wht-Red	11	O2: Output 2 (Notes 2, 3)
16 Yel-Brn	16 Blk-Wht	14 & 16	O3: Output 3 (Notes 2, 4, 5)
10 Vio	14 Yel-Blu	20	RESERVED
14 Brn-Grn	4 Yel-Wht	21	RESERVED
17 Wht-Gry	17 Yel	2	TX: RS232 Transmit
11 Gry-Pnk	11 Brn	3	RX: RS232 Receive
4 Grn	12 Pnk	4	RESERVED
12 Red-Blu	10 Grn	5	RESERVED

NOTES:
 1: Polarity Insensitive
 2: Short-circuit protected; NPN or PNP (configure in VPM-Camera Setup)
 3: Opto-isolated only when connected to CBX500 or CBX800 connection box
 4: Opto-isolated only when connected to CBX800 connection box
 5: Strobe signal connection shared with Output 3. If the Strobe Pulse Length is zero, Output 3 is active. (Configure in VPM – Impact – General)

MECHANICAL DIMENSIONS



Support Through The Website
 Datalogic provides several services as well as technical support through its website. Log on to www.datalogic.com and click on the SUPPORT > Machine Vision category link. From this page you can select your product model from the dropdown list which gives you access to: Downloads including Data Sheets, Manuals, Software & Utilities, and Drawings; Repair Program for On-Line Return Material Authorizations (RMAs) plus Repair Center contact information; Service Program containing details about Maintenance Agreements; Technical Support through email or phone.

TECHNICAL DATA

Resolution (pixels)	P10, 11, 12 – 640 x 480 P15, 16, 17, 19 – 1280 x 1024
Color Imager	P11, 16
Imager Type	CMOS global shutter
Pixel Size	5.3 µm
Imager Size	P10, 11, 12 ¼" CMOS P15, 16, 17, 19 1/1.8" CMOS
Frame Rate	P10, 11, 12 – 120 fps P15, 16, 17, 19 – 58 fps
Processor	660 MHz DSP
Dedicated I/O	2 In / 3 Out
External Button	Reset and Event Input
Ethernet	10/100 Mbit/s
RS-232 Serial	Yes
RAM	256 MB
Storage	256 MB
Lens Options	6mm / 9mm / 12mm / 16mm / 25mm
Illuminator Options	Standard LEDs: Red, White, IR, Blue Multi chain 50 LEDs: Red, White, Blue
Power Requirements	10 to 30 VDC
Protection Class	IP67
Dimensions Connector @ 0°	95 x 54 x 43 mm (3.7 x 2.1 x 1.7 in.)
Dimensions Connector @ 90°	75 x 54 x 62 mm (3.0 x 2.1 x 2.4 in.)
Case Material	Aluminum, Plastic 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

LENS FILTER REPLACEMENT

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- NOTE: DISCONNECT POWER BEFORE REMOVING THE ILLUMINATOR.**
- To remove the optional lens filter**
1. Remove the four cover screws and carefully remove the illuminator and cover. (See Lens Replacement) The illuminator is integrated with the cover.
 2. Gently squeeze the clips on each side of the filter while you gently pull straight up from the illuminator.
- To replace the optional lens filter**
1. Line up the clips on the filter with the notches in the illuminator.
 2. Gently squeeze the clips on each side of the filter while you gently press straight down on the filter.

Patent. See www.patents.datalogic.com for patent list.
 This product is covered by one or more of the following patents:
 Utility patents: EP0996284B1, EP0999514B1, EP1014292B1, EP1128315B1, EP1396811B1, EP1413971B1, JP4435343B2, JP4571258B2, US6512218, US6616039, US6808114, US6997385, US7053954, US7387246, US8058600, US8368000
 DATALOGIC reserves the right to make modifications and improvements without prior notification.
EAC COMPLIANCE
 Customs Union:
 The CU Conformity certification has been achieved; this allows the Product to bear the Eurasian mark of conformity.
CE Compliance
 CE marking states the compliance of the product with essential requirements listed in the applicable European directive. Since the directives and applicable standards are subject to continuous updates, and since Datalogic promptly adopts these updates, therefore the EU declaration of conformity is a living document. The EU declaration of conformity is available for competent authorities and customers through Datalogic commercial reference contacts. Since April 20th, 2016 the main European directives applicable to Datalogic products require inclusion of an adequate analysis and assessment of the risk(s). This evaluation was carried out in relation to the applicable points of the standards listed in the Declaration of Conformity. Datalogic products are mainly designed for integration purposes into more complex systems. For this reason it is under the responsibility of the system integrator to do a new risk assessment regarding the final installation.

Warning
 This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.
FCC COMPLIANCE
 Modifications or changes to this equipment without the expressed written approval of Datalogic could void the authority to use the equipment.
 This device complies with PART 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference which may cause undesired operation.
 This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

DATALOGIC S.r.l.
 Via S. Vitalino 13 - 40012 Calderara di Reno - Italy
www.datalogic.com
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