DATALOGIC

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 90º 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 an internal illuminator, lens, and protective cover. The mechanical dimensions are 95 x 54 x 43 mm with a weight of about 238 g.

STATUS LEDS AND BUTTON

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
Button: Camera Reset (See Note Below)
To trigger the Camera Button event, press and release the button (internal software trigger event only)

Rear View
Power — Eth
Status LEDs
Top View (90º)
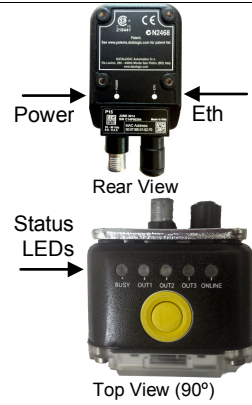
To Reset the Camera
Camera reset deletes all camera user settings and resets the camera's IP Address and Mask to the factory default (192.168.0.128)
1. Turn off camera power.
2. Press and hold the Camera Reset button continuously.
3. Turn on power. Continue pressing the Camera Reset button.
4. After 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.
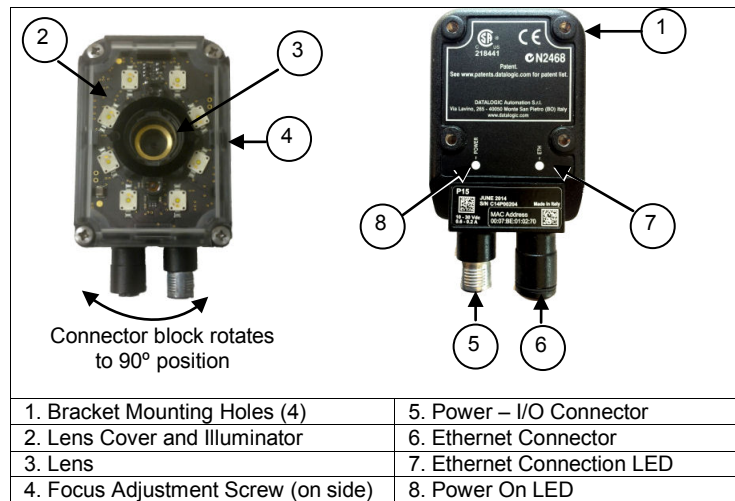
ILLUMINATOR REPLACEMENT

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

NOTE: DISCONNECT POWER BEFORE REMOVING THE COVER.

Lens cover screws (4)
Lens
Lens Tab
Notch
Lens
Housing
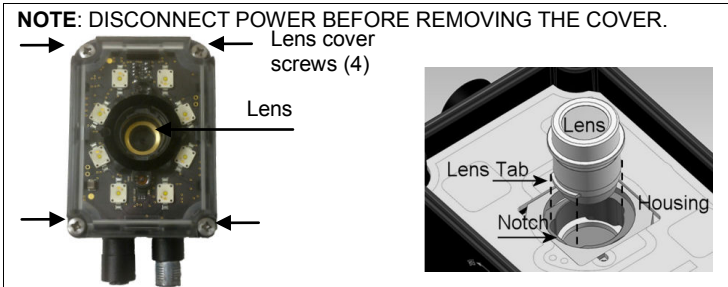
To Remove the Camera Lens
1. Remove the four cover screws and carefully remove the cover.
2. Grasp the lens firmly, then press in until the lens stops moving.
3. Turn the lens 90º counter-clockwise.
4. Lift the lens straight up until it clears the lens housing.
To Replace the Camera Lens
1. Align the 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 90º 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

Connector block rotates to 90º position

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 has an M12 17-pin connector on the camera end and a 25-pin male D-sub connector on the other end. **NOTE:** Do not disconnect the cable while power is on.

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

M12 17-pin male (Pin Side)
D-sub 25-pin male (Pin Side)

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

Bottom
Rear
Front 90º
Side 90º
Focus Adjustment Screw
Side
All measurements in MM
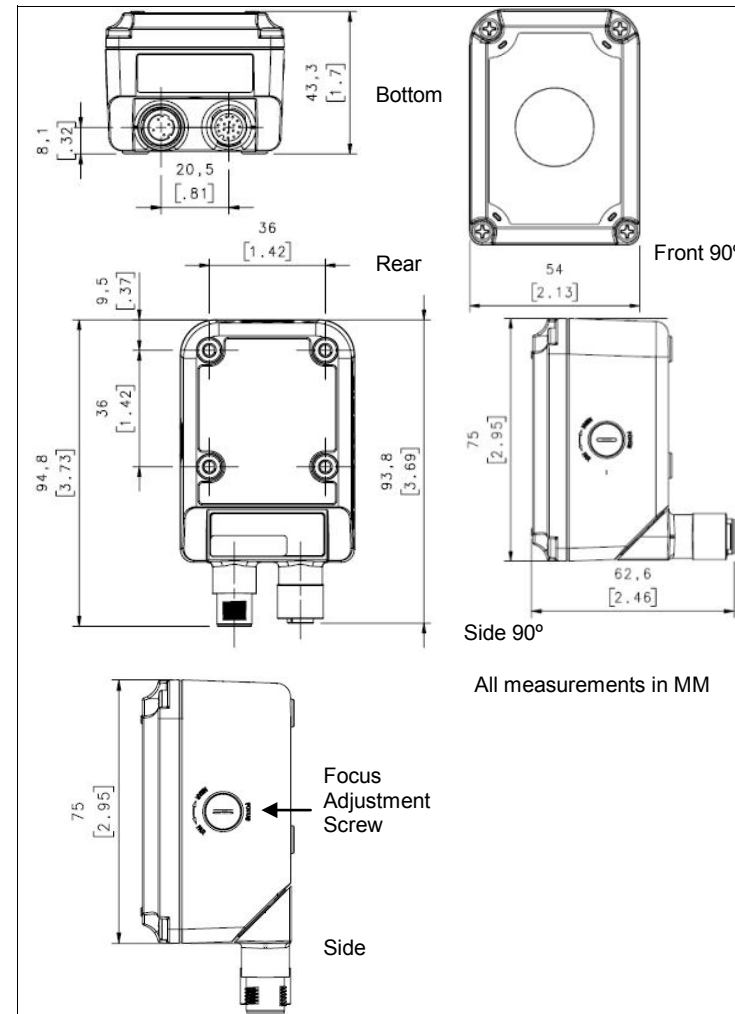
TECHNICAL DATA

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 @ 0º	95 x 54 x 43 mm (3.7 x 2.1 x 1.7 in.)
Connector @ 90º	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 50ºC (32 to 122ºF
Storage Temperature	-20 to 70ºC (-4 to 158ºF)
Humidity	90% non-condensing
Certifications	CE, CSA

LENS FILTER REPLACEMENT

Filter Clips
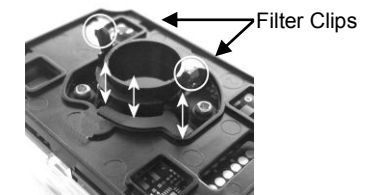
NOTE: DISCONNECT POWER BEFORE REMOVING THE ILLUMINATOR.
To remove the optional lens filter
1. Remove the four cover screws and carefully remove the illuminator and cover. (See Lens Replacement) The illuminator is integrated with the cover.
2. Gently squeeze the clips on each side of the filter while 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.

COMPLIANCE
Only connect Ethernet and dataport connections to a network which has routing only within the plant or building and no routing outside the plant or building.
CE COMPLIANCE
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.
DECLARATION OF CONFORMITY
We DATALOGIC AUTOMATION declare under our sole responsibility that these products are conform to the 2004/108/CE and successive amendments.
WARRANTY
DATALOGIC AUTOMATION warrants its products to be free from defects.
DATALOGIC AUTOMATION will repair or replace, free of charge, any product found to be defective during the warranty period of 24 months from the manufacturing date.
This warranty does not cover damage or liability deriving from the improper application of DATALOGIC AUTOMATION products.
DATALOGIC AUTOMATION
Via Lavino 265 - 40050 Monte S.Pietro - Bologna – Italy
Tel: +39 051 6765611 - Fax: +39 051 6759324
www.datalogic.com - e-mail:info.automation.it@datalogic.com

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