

# COGNEX

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## DataMan<sup>®</sup> 260

Quick Reference Guide

10/9/2015  
Version 5.6.0

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# Symbols


The following symbols indicate safety precautions and supplemental information.

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 **WARNING:** This symbol indicates the presence of a hazard that could result in death, serious personal injury or electrical shock.


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 **CAUTION:** This symbol indicates the presence of a hazard that could result in property damage.


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 **Note:** Notes provide supplemental information about a subject.

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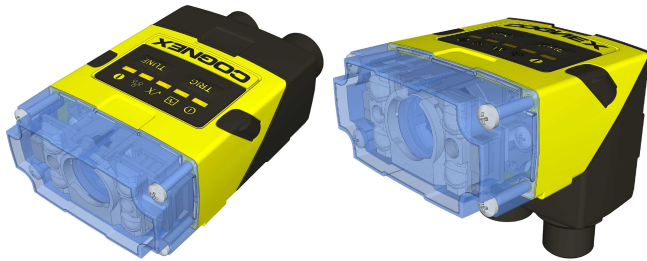
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 **Tip:** Tips provide helpful suggestions and shortcuts that may not otherwise be apparent.

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# Getting Started

## About DataMan 260



The DataMan 260 readers are best in class ID readers, offering superior performance with the latest ID tools, flexibility to configure the reader in terms of lighting and optics to optimize the application, and an ease-of-use giving the user the ability to setup and deploy an application quickly and efficiently all without the need for PC:

- Superior performance, 1-D and 2-D code reading, including HotBars2™ and patent-pending PowerGrid™
- Flexible optics/lighting, including field upgrades, allowing for the protection of your investment
- Ease-of-use, including an auto-tune and trigger button on the reader, the ability to configure the reader in a straight or right-angle orientation and auto-focus capability utilizing a liquid lens

The DataMan 260 readers provide support for Ethernet and RS-232 communications.

Key highlights:

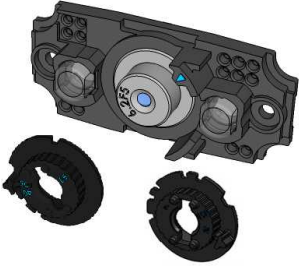
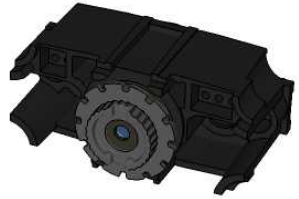


- 1DMax with HotBars2™, best in class 1-D reading, 2DMax with PowerGrid™, best in class 2-D reading. Reading codes no other ID reader on the market can.
- Multiple options for LED lighting, along with optical filters and polarizing filters. Options for different powered lens, with autofocus capabilities for each.
- Intelligent tuning and dynamic configuration of the reader combined to make the installation and setup of the application a snap.

This document provides basic information about how to configure and use DataMan 260 readers. Additional information is available through the Windows **Start** menu or the DataMan Setup Tool **Help** menu after you install the DataMan software on your PC:

- The **DataMan Communications & Programming Guide** shows how to integrate your DataMan reader with your automation software and factory network.  
Cognex->DataMan Software v x.x.x->Documentation->Communications And Programming
- The **DataMan Reader Configuration Codes** document provides printable 2-D codes that you can use to configure the DataMan reader.  
Cognex->DataMan Software v x.x.x->Documentation->English->Reader Configuration Codes
- The **DataMan Fixed Mount Readers Reference** is a complete online hardware reference for the DataMan fixed-mount ID readers.  
Cognex->DataMan Software v x.x.x->Documentation->English->DM260 ->Fixed Mount Reference Manual
- The **DataMan Questions and Answers** document provides context-sensitive information. You can view this help inside the DataMan Setup Tool or as a stand-alone help file.  
Cognex->DataMan Software v x.x.x->Documentation->DM260->Questions and Answers
- The **Release Notes** list detailed system requirements and additional information about this DataMan software release.  
Cognex->DataMan Software v x.x.x->Documentation->DataMan v x.x.x Release Notes

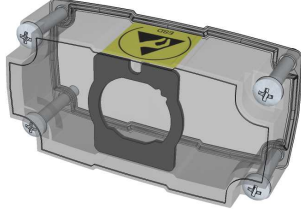


## DataMan 260 Accessories

### LENS OPTIONS

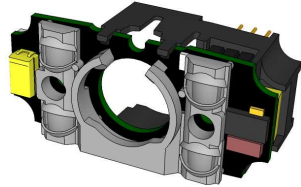
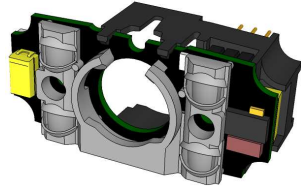
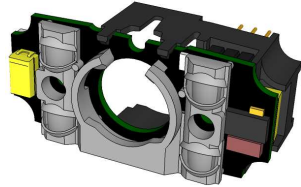
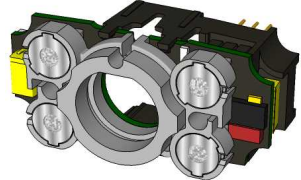
<p>6.2 mm lens kit (DM150-LENS-62)</p> <ul style="list-style-type: none"> <li>• 6.2 mm optics mount</li> <li>• 6.2 mm lens</li> <li>• manual lens cap (not assembled)</li> <li>• long range lens cap (not assembled)</li> <li>• screws</li> </ul>	
<p>16 mm lens with extended optics mount (requires the use of an extended front cover and high-powered red LED) (DM260-LENS-16)</p> <ul style="list-style-type: none"> <li>• 16 mm optics mount</li> <li>• 16 mm lens</li> <li>• manual lens cap (assembled)</li> <li>• screws</li> </ul>	
<p>Liquid Lens Module (LLM) to be used with 6.2 mm lens or 16 mm lens (DMA-LLM-150-260)</p>	
<p>16 mm lens with Liquid Lens kit (DM260-KIT-16LL)</p> <ul style="list-style-type: none"> <li>• 16 mm optics mount</li> <li>• 16 mm lens</li> <li>• Liquid Lens Module (DMA-LLM-150-260)</li> <li>• High Powered red LED illumination (DM260-LED-RED-HP)</li> <li>• 2-LED half-polarized extended cover (DM260-LENS-16CVR-P)</li> </ul> <p><b>Note:</b> Do not use on PoE devices!</p>	

### LENS COVERS

<p>Clear lens cover (DM150-CVR-CLR)*</p>	
--	---

<p>Clear lens cover, ESD safe (DM150-CVR-ESD)*</p>	
<p>Extended lens cover (DM260-LENS-16CVR)**</p>	
<p>Extended lens cover, polarized (DM260-LENS-16CVR-P)**</p>	

**LIGHT OPTIONS**


<p>Red LED illumination (DM150-LED-RED)*</p>	
<p>White LED illumination (DM150-LED-WHT) *</p>	
<p>Blue LED illumination (DM150-LED-BLU)*</p>	
<p>High Powered red LED illumination (DM260-LED-RED-HP)**</p>	



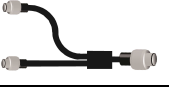
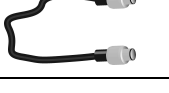
**Note:** \*Use with a 6.2 mm lens only!  
**\*\*Use with a 16 mm lens only! The HP red LED is not supported on PoE devices.**

**FILTERS**

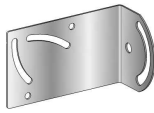
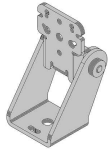
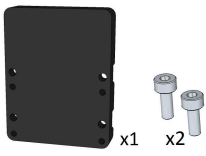
<p>Blue bandpass filter (DM150-BP470)</p>	
<p>Red bandpass filter (DM150-BP635)</p>	

**CABLES**

<p>Connection cable 24V, I/O, RS-232 (CCBL-05-01)</p>	
---	---


Connection cable RS-232 (CCB-M12xDB9Y-05)	
X-Coded to RJ45 Ethernet Cable, 5 m (CCB-84901-2001-xx, where xx can be 02, 05, 10 or 15, indicating length in meters)	
Adapter cable, M12x12 to M8x4/M8x5, 0.5 m (DM260-ADAP-M12M8)	
Adapter cable, ETH, M12, X-CODED/A-CODED, 0.5 m (CCB-M12x8MS-XCAC)	

**MOUNTING BRACKETS**

Mounting bracket (DM100-UBRK-000)	
Pivot mounting bracket (DM100-PIVOTM-00)	
DataMan 362 to DataMan 262 adapter kit (DM-ADAP-PLT) <ul style="list-style-type: none"> <li>• Adapter plate</li> <li>• M3x8 hex socket head screws</li> </ul>	



## DataMan 260 Systems

	Omni-directional 1-D Code Reading	1DMax™ — Best-In-Class 1-D Reading	IDQuick™ — High-Speed 2-D Reading	2DMax™ — for hard to read DPM and damaged 2-D codes	Resolution
DataMan 260S*	√	√	√		752x480 Global shutter
DataMan 260QL	√	√			752x480 Global shutter
DataMan 260Q	√	√	√		752x480 Global shutter
DataMan 260X	√	√	√	√	752x480 Global shutter
DataMan 262S*	√	√	√		1280x960 Global shutter
DataMan 262QL	√	√			1280x960 Global shutter
DataMan 262Q	√	√	√		1280x960 Global shutter
DataMan 262X	√	√	√	√	1280x960 Global shutter

\*Maximum decode rate of 2 codes/sec

## Communication Modules

The DataMan 260 is available with the following communication options:

- Ethernet 24V
- Ethernet-PoE (Power over Ethernet)

## Ethernet Interfaces

The DataMan 260 readers provide the following interface modules:

- **Ethernet / RS-232:** This module has Ethernet and RS-232 interfaces and requires 24V external power (Non-PoE).
- **Ethernet-PoE / RS-232:** This module has Ethernet and RS-232 interfaces and supports Power over Ethernet.



**Note:** Connectors without a cable should be covered by a protective cap to meet the IP requirements.

This I/O module has an M12x8 X-coded connector for the Ethernet signals and a (male) M12x12 connector for power, I/O and RS-232.

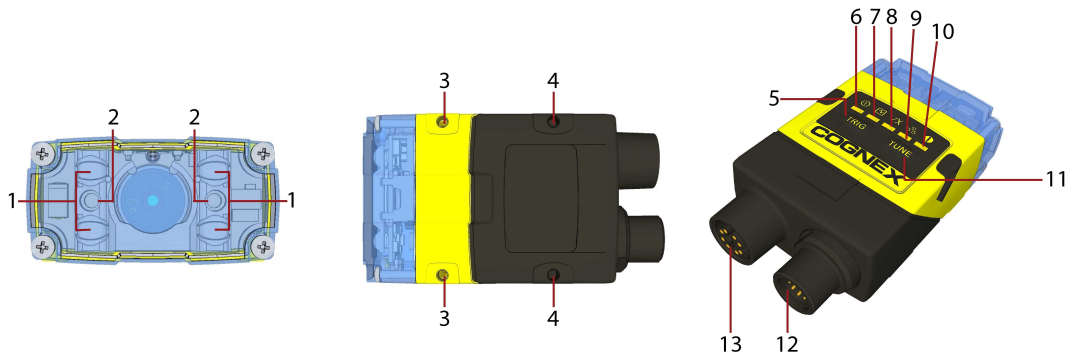
The signals on the M12x12 connector are the following:

PIN	Signal: Ethernet	Signal: Ethernet-PoE
1	OUT_2	OUT_2
2	TXD	TXD
3	RXD	RXD
4	OUT_3	OUT_3
5	IN_1	IN_1
6	IN_COM	IN_COM
7	+24V VIN	N.C.
8	+24V RTN	RS232GND
9	OUT_COM	OUT_COM
10	IN_0	IN_0
11	OUT_0	OUT_0
12	OUT_1	OUT_1

**Note:** When angled cables are mounted, all of them point downwards or, in the case of the 90° configuration, backwards.

## Reader Layout

The following images shows the built-in lighting system and other features of the DataMan 260 reader.



1	Illumination LEDs
2	LED aimers
3-4*	Mounting holes (M3 x 3.5mm)
5	Trigger button
6	Power
7	Train status/Trigger status
8	Good/bad read
9	Network
10	Error
11	Tune button
12	Power, I/O and RS-232
13	Ethernet

**Note:** \*Use only one set of mounting holes (either 3 OR 4) for mounting.

**Note:** The five status LEDs together also function as a peak meter using an orange light.

### Indicator LEDs

Type	Signal	Color	Meaning
Status	Power	GREEN	Power ON
	Train status	GREEN	Trained
		YELLOW	Untrained
	Error	RED	Error - check device log
Action	Good/bad read	GREEN	Good read
		RED	Bad read
	Network	YELLOW	Link up
		<i>blink</i>	Data transfer
	Peak meter	Yellow	Tune
Focus			

## Changing Orientation

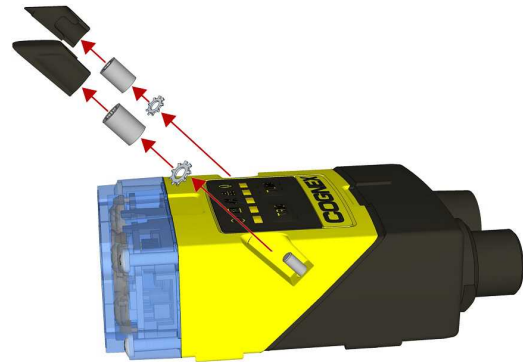
Perform the following steps to change between straight and angled configuration.

**Note:** Switching between straight and right angle configuration is recommended only up to 10 times in the lifetime of the reader.

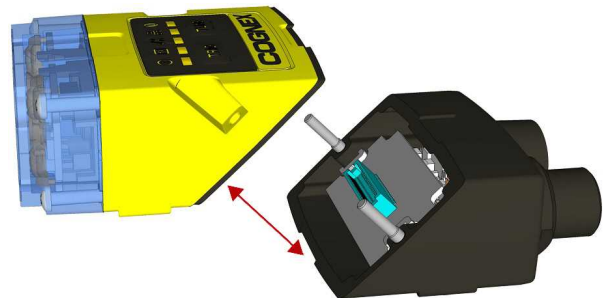
**Note:** Disconnect the DataMan 260 reader from power before changing the orientation.

**WARNING:** Make sure that no electrostatic charges are applied to the PCB. (E.g. wear ESD shoes.) If the main module is separated from the I/O module, take care to assemble them correctly. Otherwise, IP rating can be lost.

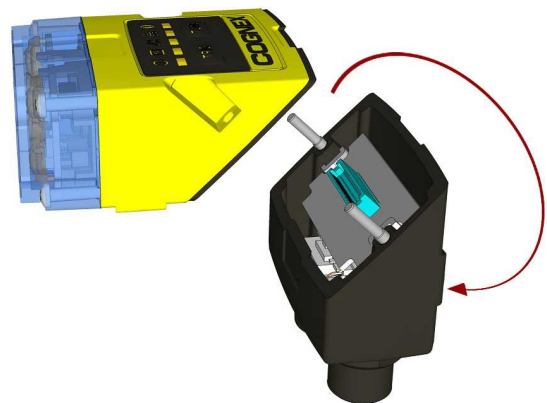
1. Remove the screw covers and unscrew the screws.



2. Disconnect the main module and the I/O module by firmly pulling them apart.

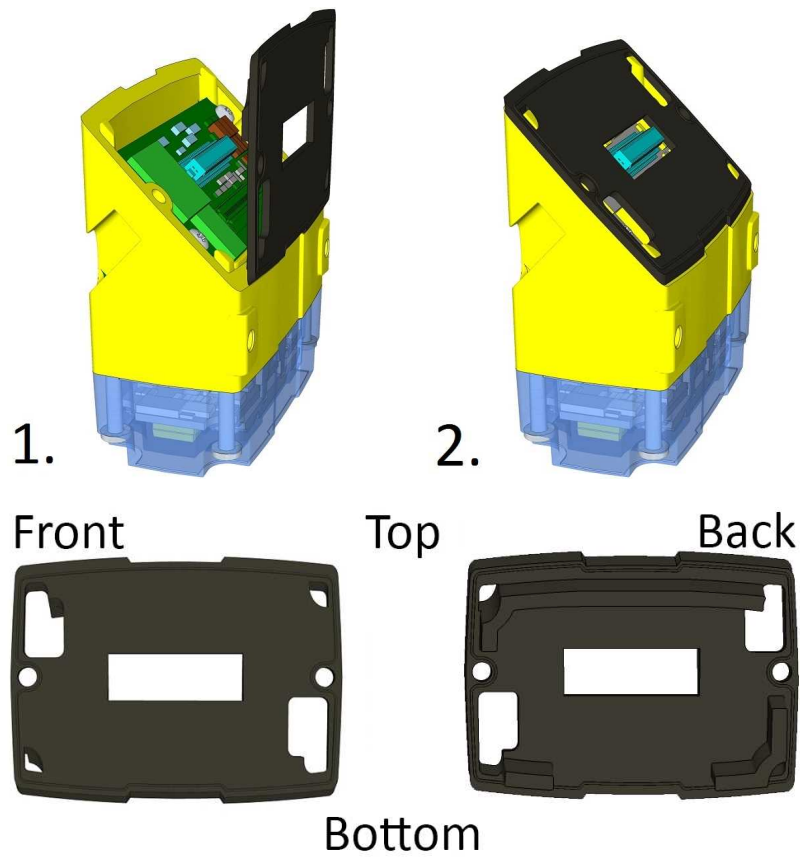


3. Change the orientation.



**Note:** Make sure that the gasket is properly seated on the main module. Ensure that the flat gasket side is facing away from the module.

Place the bottom edge of the gasket onto the underside of the main module. Press on the top edge to fully seat the gasket:



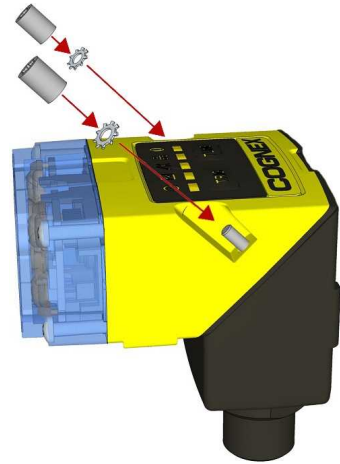
**Note:** The flat side of the gasket (marked as "Front" in the image above) has to face outside.

**WARNING:** Do not touch any electrical component.

4. Connect the I/O module to the main module.

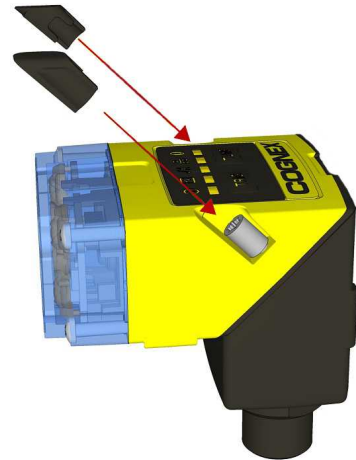


5. Loosely fasten the modules together with the two T10 cap nut screws until they attach to the housing surface, but do not torque.



6. After each cap nut has been fastened, torque to 0.12 Nm and place back the screw covers.

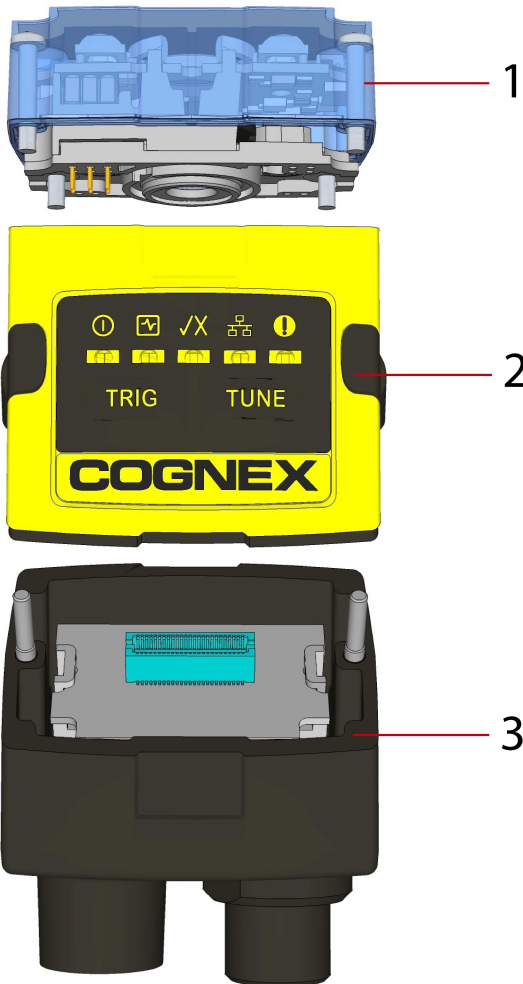
**Note:** There are unique left and right screw covers. Take care to attach them correctly.



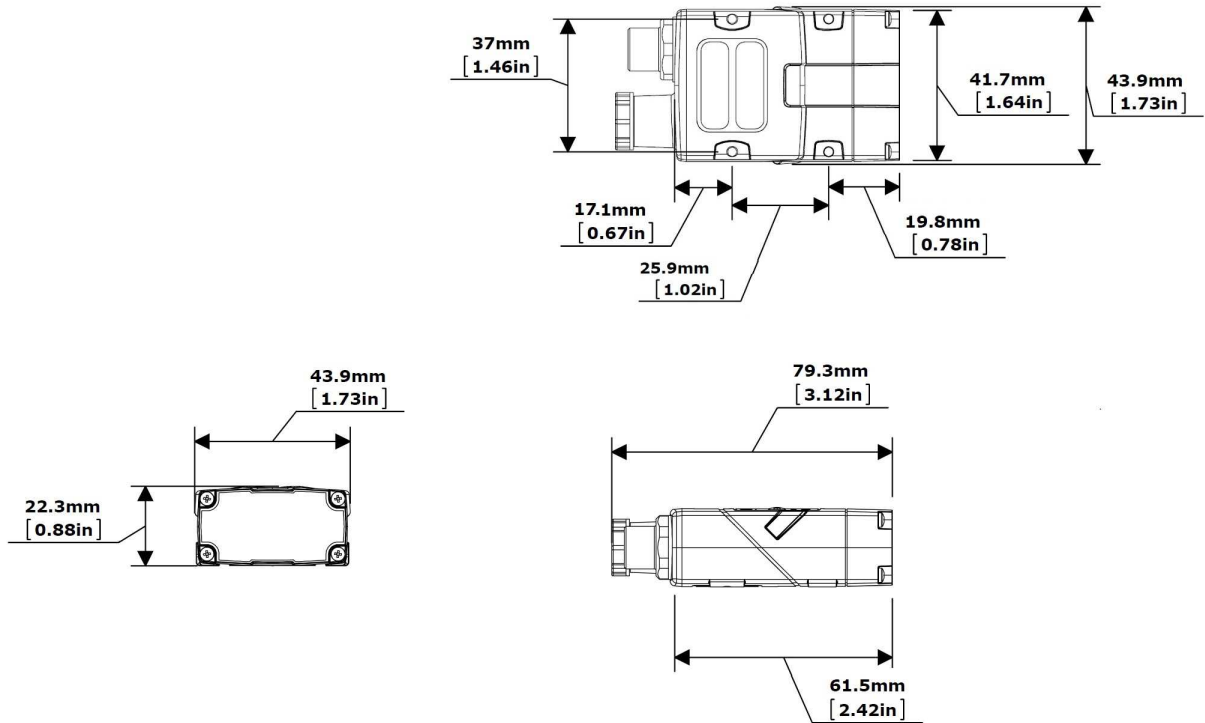
## Dimensions

The DataMan 260 consists of three main parts:

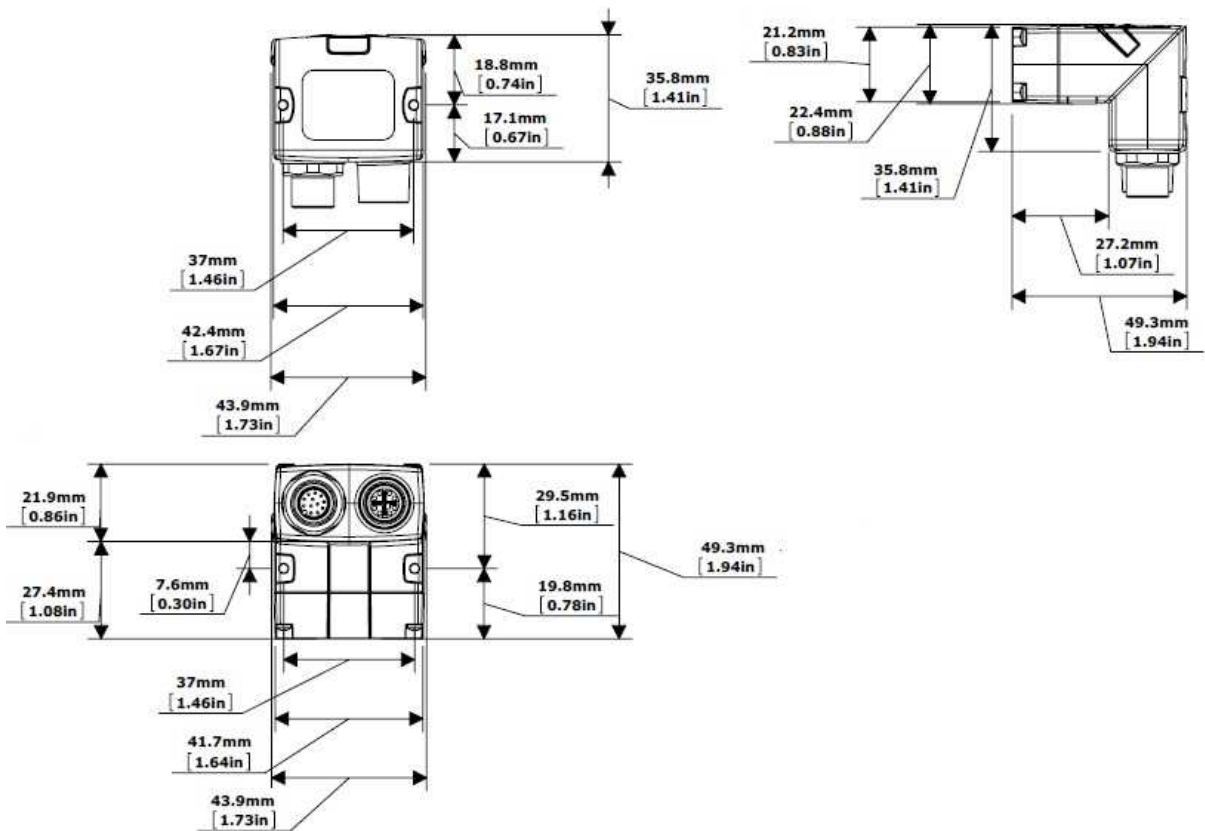
1. Optics module (lens including lens mount, illumination and front cover including filter mounting option for a Diameter ( $\varnothing$ ):  $12.3\text{mm} < \varnothing < 12.7\text{mm}$ , Thickness (t):  $1.6\text{mm} < t < 2\text{mm}$  filter)
2. Main module, including sensor and CPU
3. I/O module



The size of the DataMan 260 in the straight configuration is shown in the following figure:



The size of the DataMan 260 in the angled configuration is shown in the following figure:





## Installing an Optical Filter

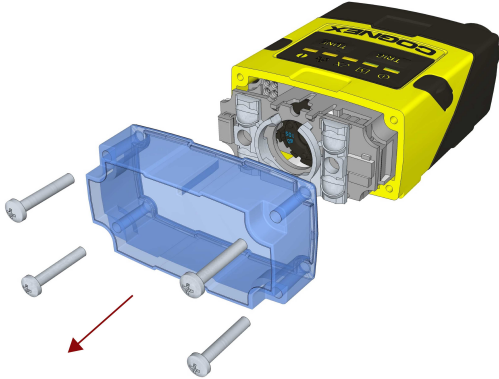
Perform the following steps to install an optical filter in the optics module of the DataMan 260 reader.

**Note:** Disconnect the DataMan 260 reader from power before installing an optical filter.

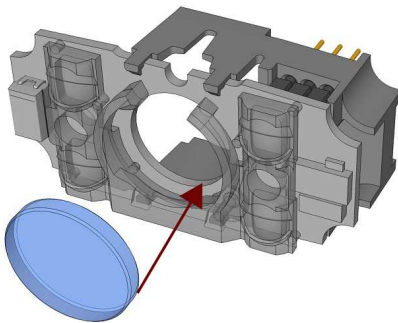
Observe the following constraints on the filter:

- Diameter ( $\varnothing$ ):  $12.3\text{mm} < \varnothing < 12.7\text{mm}$
- Thickness (t):  $1.6\text{mm} < t < 2\text{mm}$  filter

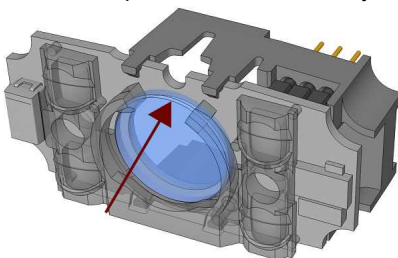
1. First, remove the front cover: unscrew the four screws and take off the LED cover.



2. Insert the filter at the bottom side of the round opening in the transparent plastic part.

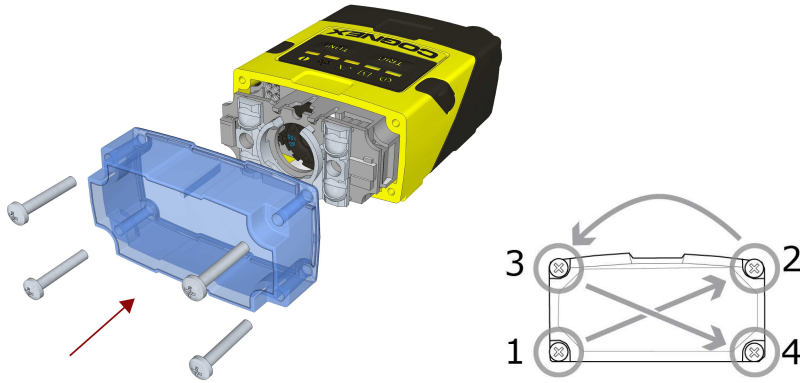


3. Push the top side of the filter firmly until it is sitting flat against the PCB.



**Note:** Use finger to push the filter in and then a q-tip to clean the filter, or use a q-tip to push the filter into place.

- Attach the front cover. Observing the tightening sequence below, tighten all four screws to 9 Ncm using a torque wrench.



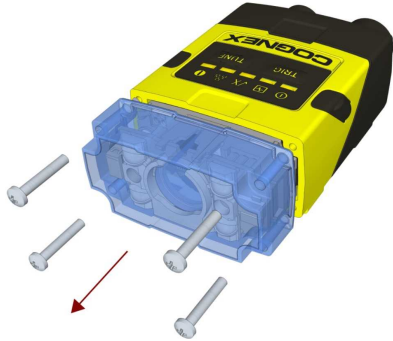
**Note:** The rib in the front cover must be oriented to the top side.

## Installing a Liquid Lens

Perform the following steps to install a liquid lens on your DataMan 260 reader.

**Note:** Disconnect the DataMan 260 reader from power before installing the liquid lens.

1. Remove the front cover: unscrew the four screws and take off the LED cover.



2. Remove the illumination module.



3. Turn the lens cap to the 105 mm position.



4. Remove the lens cap from the imager lens by pulling it.



Do not rotate the imager lens while the lens cap is removed. Otherwise, focus calibration will be lost.

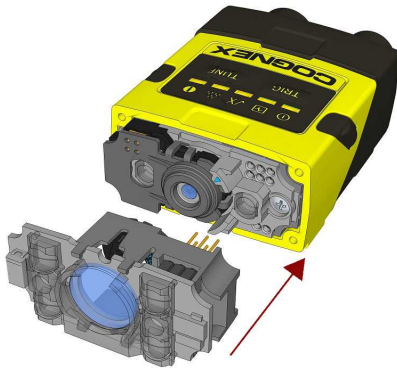
5. Attach the liquid lens accessory by aligning the 2x2 connectors of the liquid lens with the 2x2 sockets on the optics mount.



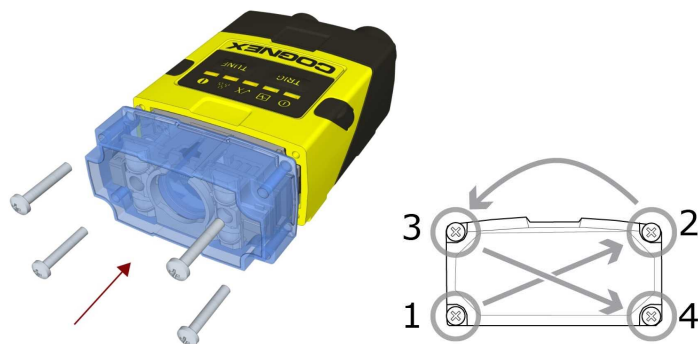
6. Press the liquid lens onto the imager lens until you reach the stop.



7. Reattach the illumination.



8. Attach the front cover. Observing the tightening sequence below, tighten all four screws to 9 Ncm using a torque wrench.



**Note:** The rib in the front cover must be oriented to the top side.

**Note:** The DataMan 260 liquid lens must be calibrated after field exchange. This can be done under **Focus Settings** in the DataMan Setup Tool. For more information, see the *DataMan Questions and Answers* document.

**A reboot is required for the lens to operate with the new settings.**

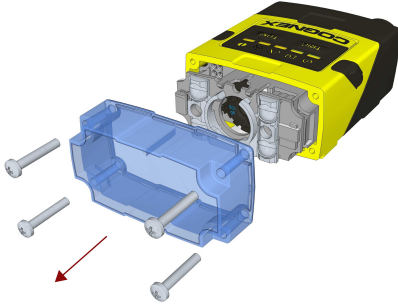
## Changing from a 6.2 mm Lens to a 16 mm Lens

Perform the following steps to change a 6.2 mm lens to a 16 mm lens on your DataMan 260 reader.

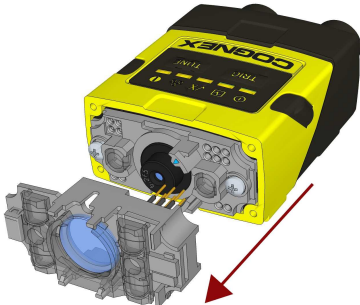
**Note:** Disconnect the DataMan 260 reader from power before changing lenses.

**WARNING:** This modification must be made in a dust-free and ESD safe area.

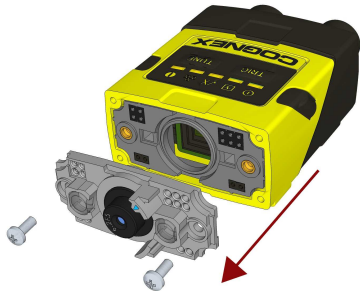
1. Remove the front cover: unscrew the four screws and take off the LED cover.



2. Remove the illumination module.



3. Unscrew the two Phillips head screws and remove the 6.2 mm lens mount.



4. Attach the 16 mm lens mount.



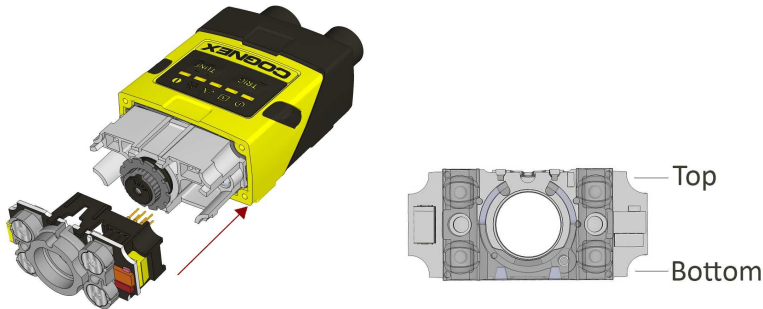
5. Fasten the two Phillips head screws to 0.06 Nm using a torque wrench.

6. In the case of a manual focus lens, press the 16 mm lens cap onto the lens. The lens has 12 cutouts so it can be locked in steps of 30 degrees.



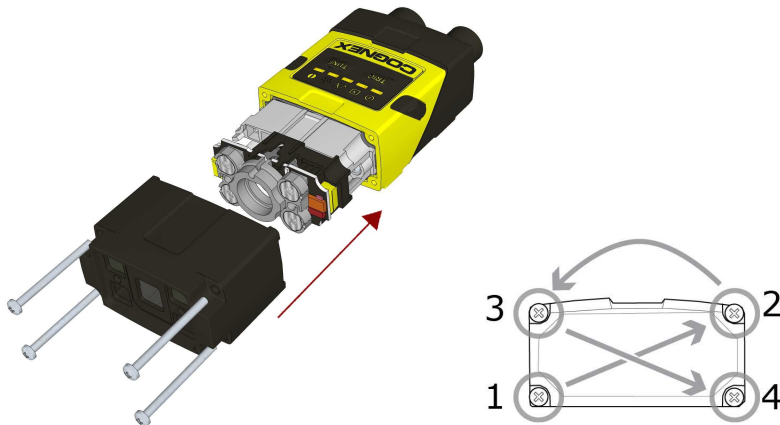
In the case of a liquid lens, mount the liquid lens cap onto the 16 mm lens. (See [Installing a Liquid Lens](#).)

7. Attach the illumination board.



**Note:** Take care to attach the illumination with the right orientation.

8. Attach the front cover. Observing the tightening sequence below, tighten all four screws to 9 Ncm using a torque wrench.



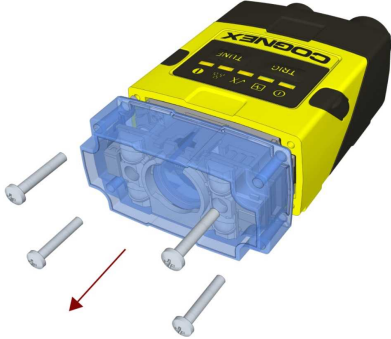
**Note:** The rib in the front cover must be oriented to the top side.

## Changing to an Illumination with a Different Color

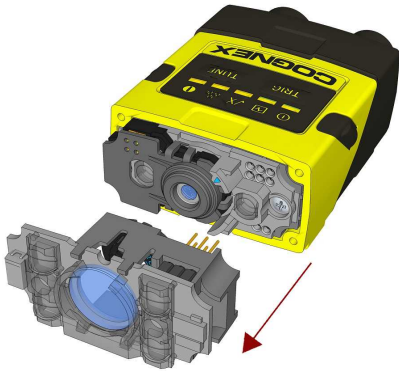
Perform the following steps to change the illumination.

**Note:** Disconnect the DataMan 260 reader from power before changing to an illumination with a different color.

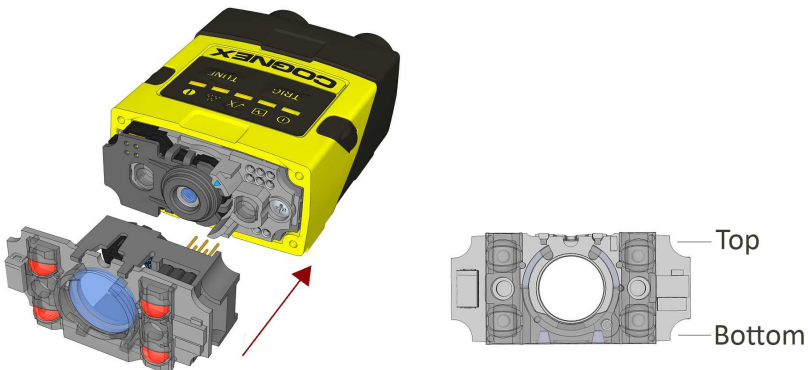
1. Remove the front cover: unscrew the four screws and take off the LED cover.



2. Remove the illumination module.



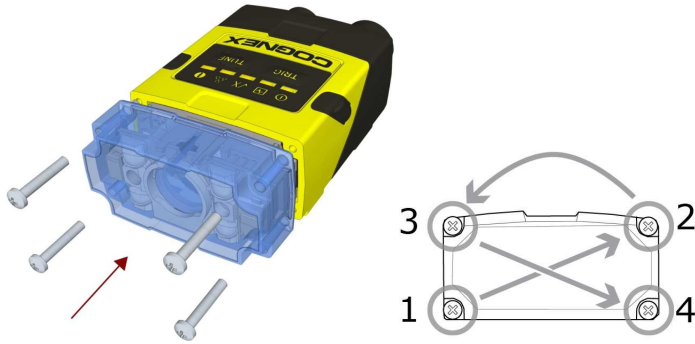
3. Attach a new color illumination module.



**Note:** Take care to attach the illumination with the right orientation.



4. Attach the front cover. Observing the tightening sequence below, tighten all four screws to 9 Ncm using a torque wrench.



**Note:** The rib in the front cover must be oriented to the top side.

# Setting Up Your DataMan

## Mounting

Mounting the DataMan 260 at a slight angle (15°) can reduce reflections and improve reader performance.



## Replacing a DataMan 362 with a DataMan 262 on the Factory Floor

An adapter kit (DM-ADAP-PLT) is available for DataMan 262 using which you can replace a DataMan 362 device with a DataMan 262 device in the field.

The kit includes the following:

Adapter plate



M3x8 hex socket head screws

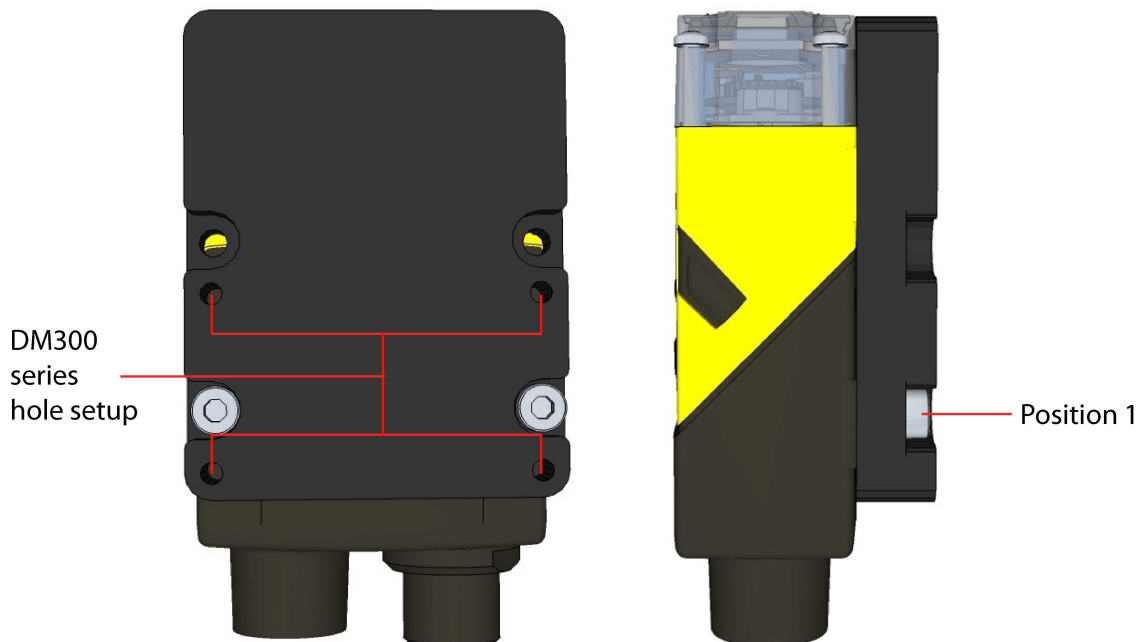


The adapter plate has 8 holes: 4 threaded and 4 through holes.

You can attach the adapter plate to the DataMan 262 reader in two positions:

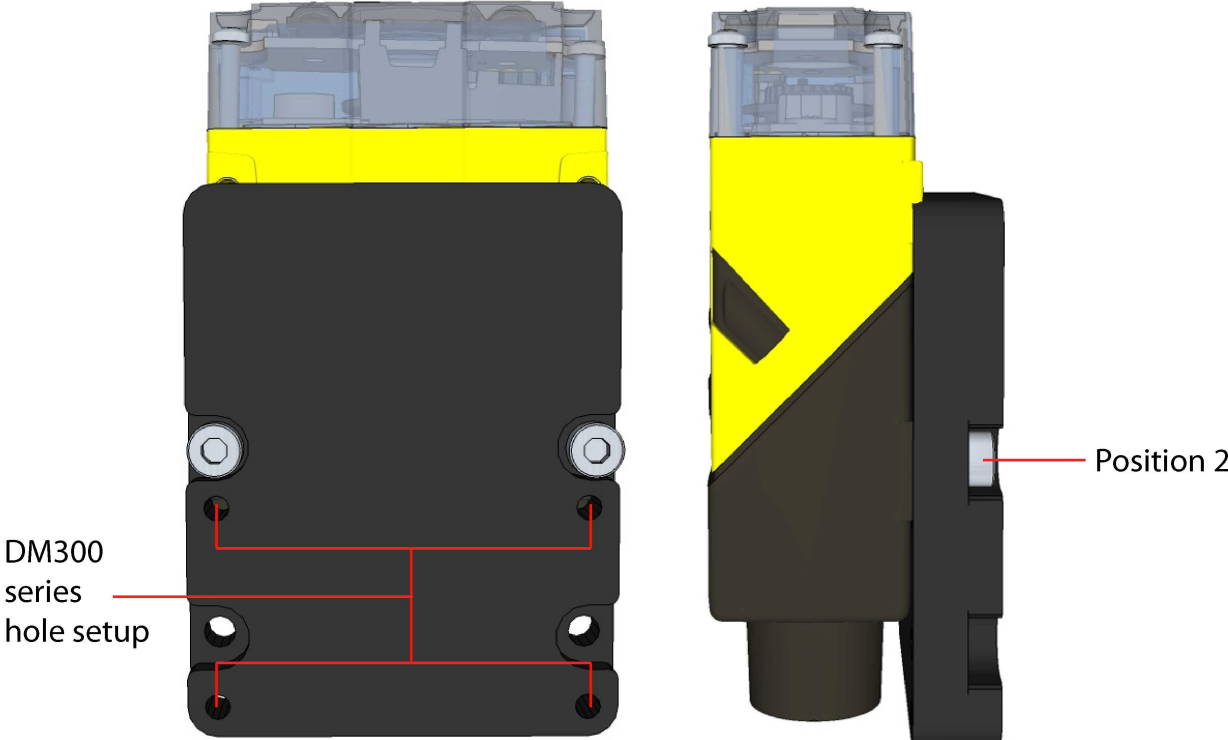
### **Position 1:**

The mechanically correct position. The DataMan 262 device's front surface is inside as compared to the DataMan 362 front surface.



**Position 2:**

The optically correct position. The Field of View is more or less same as that of DataMan 362, but the front surface is sticking out compared to DataMan 362.



**Note:** The adapter plate must always be connected to the mounting holes of the DataMan 262 IO modul. The threaded holes in the adapter plate are maching with the DataMan 362 mounting holes.

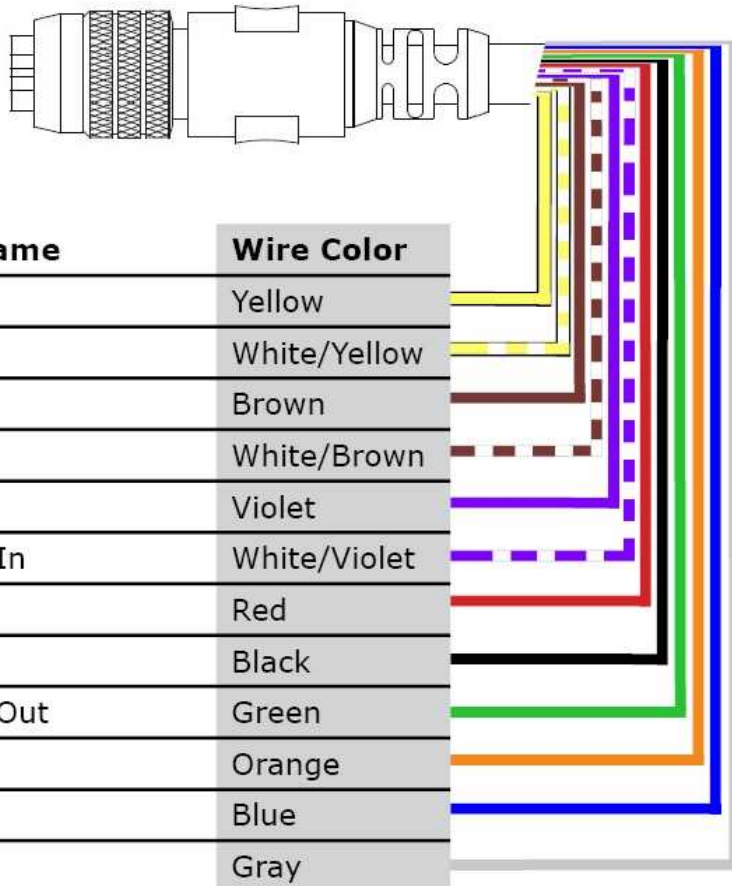
## I/O Cables

The I/O breakout cable (CCBL-05-01) provides access to trigger and high-speed outputs. Unused wires can be clipped short or tied back using a tie made of non-conductive material. For RS-232, use the Power Supply return path for ground.

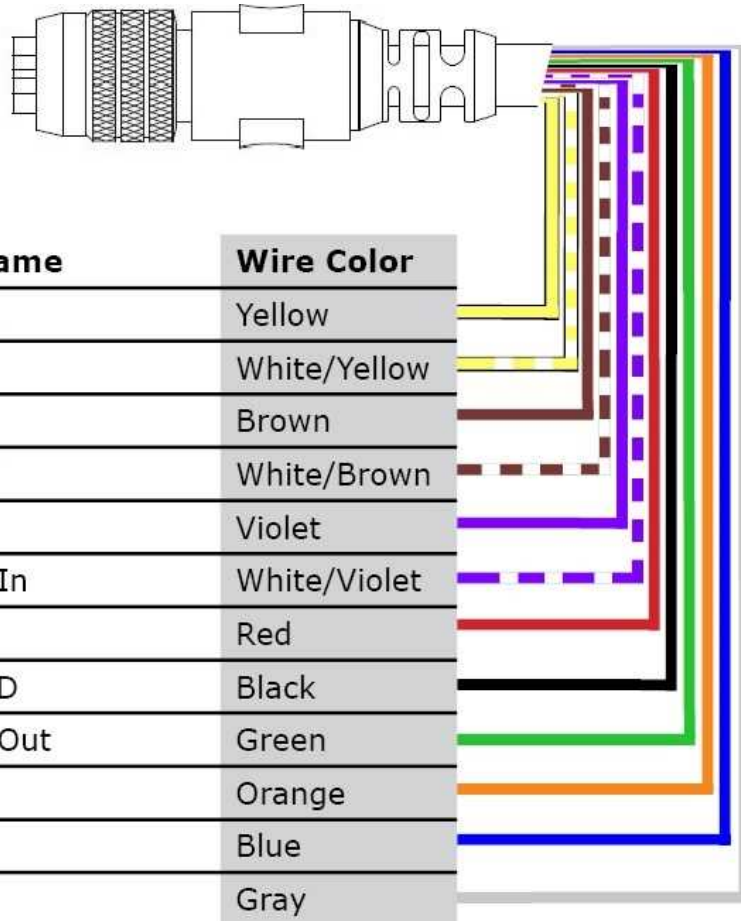
This image shows the plug on the device:



Signal: Ethernet



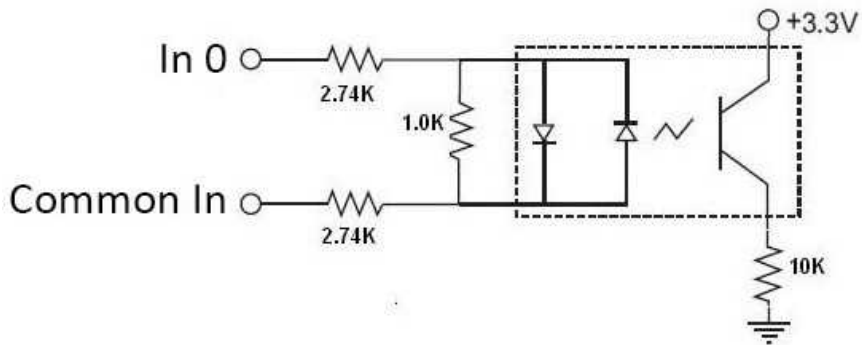
Signal: Ethernet-PoE



### Acquisition Triggering

The acquisition trigger input on the reader is opto-isolated. To trigger from an NPN (pull-down) type photo-detector or PLC output, connect **In 0** to +24V and connect **Common In** to the output of the detector. When the output turns on, it pulls **Common In** down to 0V, turning the opto-coupler on.

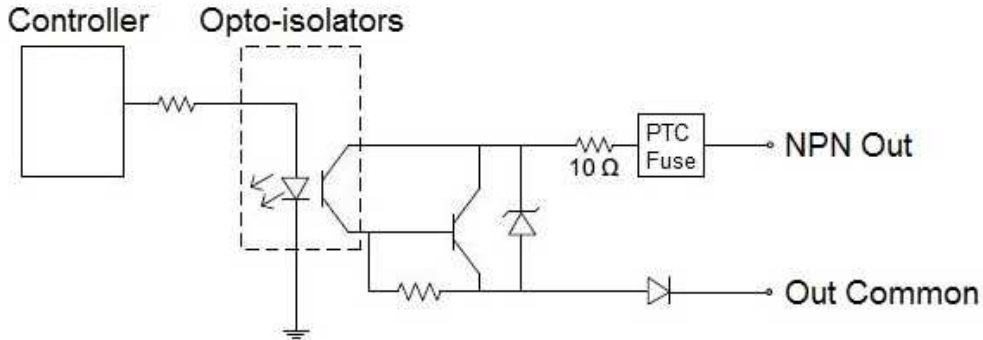
To trigger from a PNP (pull-up) photo-detector or PLC output, connect **In 0** to the output of the detector and connect **Common In** to 0V. When the output turns on, it pulls **In 0** up to 24V, turning the opto-coupler ON.



28V Max. Across input pins - Transition approx. 12V (Min).

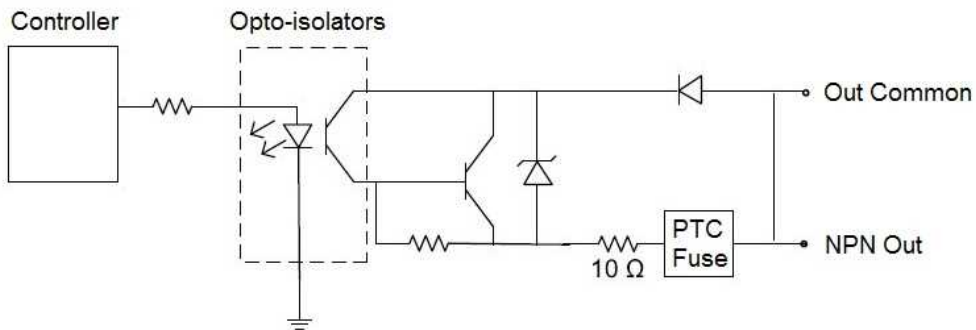
## High-Speed Output Lines

The high-speed outputs can be used as either NPN (pull-down) or PNP (pull-up) lines. For NPN lines, the external load should be connected between the output and the positive supply voltage (<28V). The outputs pull down to less than 3V when ON, which causes current to flow through the load. When the outputs are OFF, no current flows through the load.



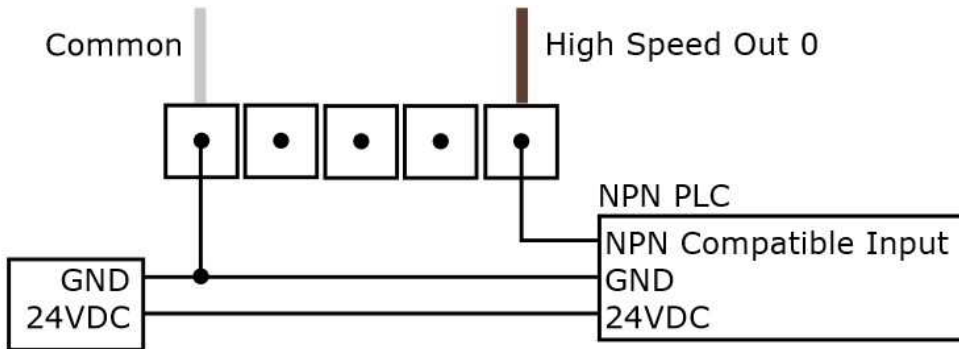
Specification	Description
Voltage	28V maximum through external load
Current	50mA maximum sink current OFF state leakage current 100µA External load resistance 240 Ohms to 10K Ohms Each line rated at a maximum 50mA, protected against over-current, short circuits and transients from switching inductive loads. High current inductive loads require external protection diode.

For PNP lines, the external load should be connected between the output and the negative supply voltage (0V). When connected to a 24VDC power supply, the outputs pull up greater than 21V when ON, and current flows through the load. When the outputs are OFF, no current flows through the load.

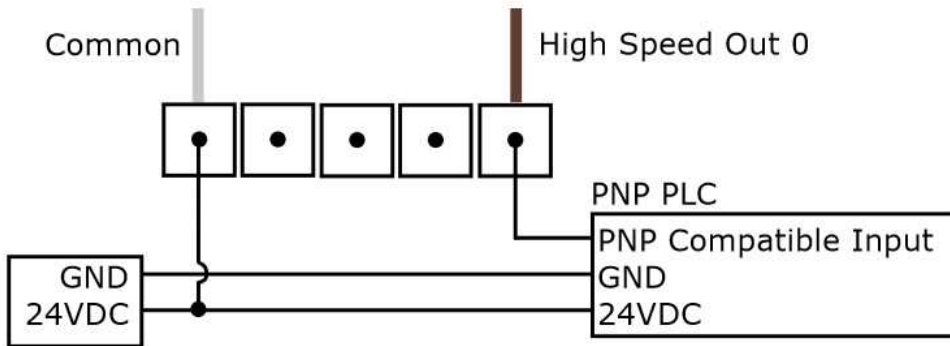


## High-Speed Output Wiring

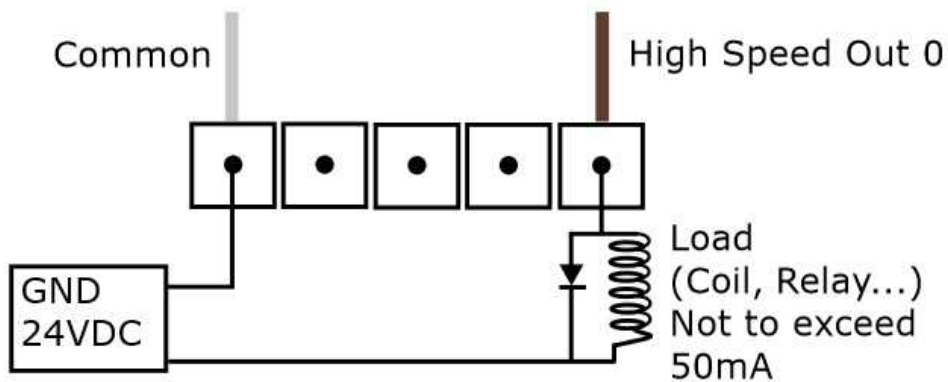
To connect to an NPN-compatible PLC input, connect Output 0 or Output 1 directly to the PLC input. When enabled, the output pulls the PLC input down to less than 3V.



To connect to a PNP-compatible PLC input, connect Output 0 or Output 1 directly to the PLC input. When enabled, the output pulls the PLC input up to greater than 21V.



To connect the high-speed outputs to a relay, LED or similar load, connect the negative side of the load to the output and the positive side to +24V. When the output switches on, the negative side of the load is pulled down to less than 3V, and 24 appears across the load. Use a protection diode for a large inductive load, with the anode connected to the output and the cathode connected to +24V.



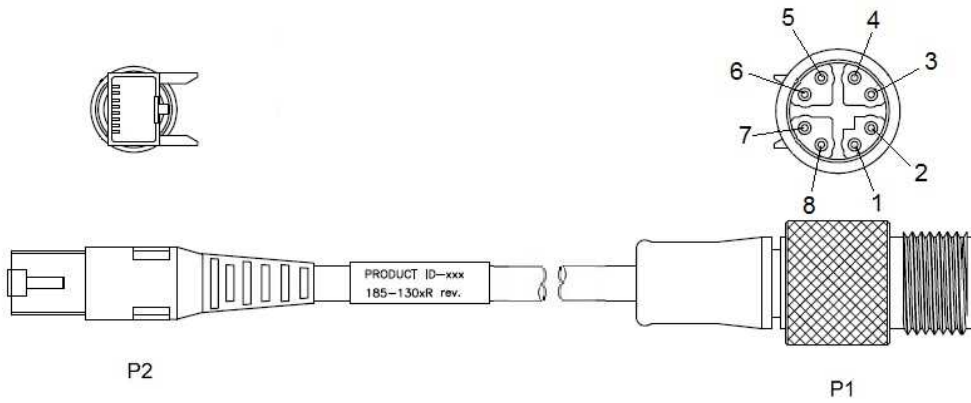


## Ethernet Cables

The Ethernet cable (CCB-84901-2001-05) provides Ethernet connection for network communications. The Ethernet cable can be connected to a single device or provide connections to multiple devices via a network switch or router.

**Note:** Cables are sold separately. The wiring for this cable follows standard industrial Ethernet M12 specifications. This differs from the 568B standard.

### X-coded to RJ45 Cable



P2 Pin#	Wire Color	P1 Pin#
1/C	White/Orange	1
2/C	Orange	2
3/C	White/Green	3
4/C	Blue	8
5/C	White/Blue	7
6/C	Green	4
7/C	White/Brown	5
8/C	Brown	6

## Installing the DataMan Software

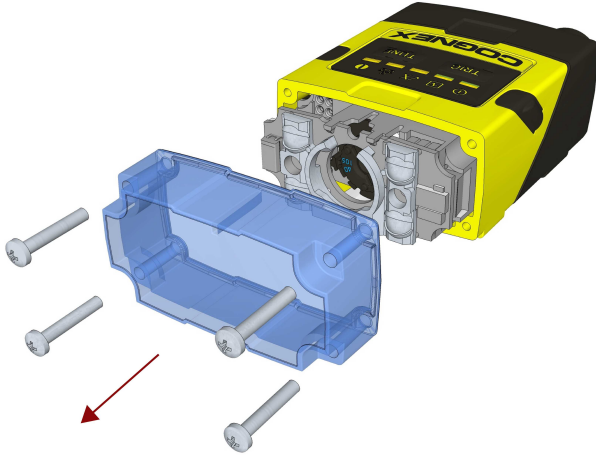
Perform the following steps to install DataMan Setup Tool:

1. Check the **DataMan Release Notes** for a full list of system requirements.
2. Download the DataMan Setup Tool from <http://www.cognex.com/support/dataman> and follow the on-screen steps.
3. Connect the DataMan 260 to your PC.
4. Choose **Start->Programs->Cognex->DataMan Software vx.x.x->Setup Tool** to launch Setup Tool. Detected readers will appear under **COM ports**.
5. Click **Refresh** to update the list of connected devices.
6. Select the device from the Network list (**Discovered Devices**) and click **Connect**.

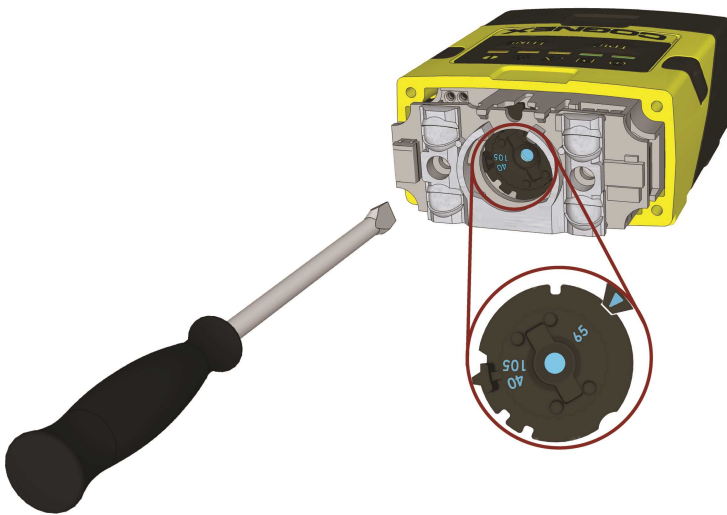
## Setting the Focus Position

DataMan 260 can operate in one of three distance ranges. Follow the steps below to set the focus position.

1. Remove the screws and the front cover.

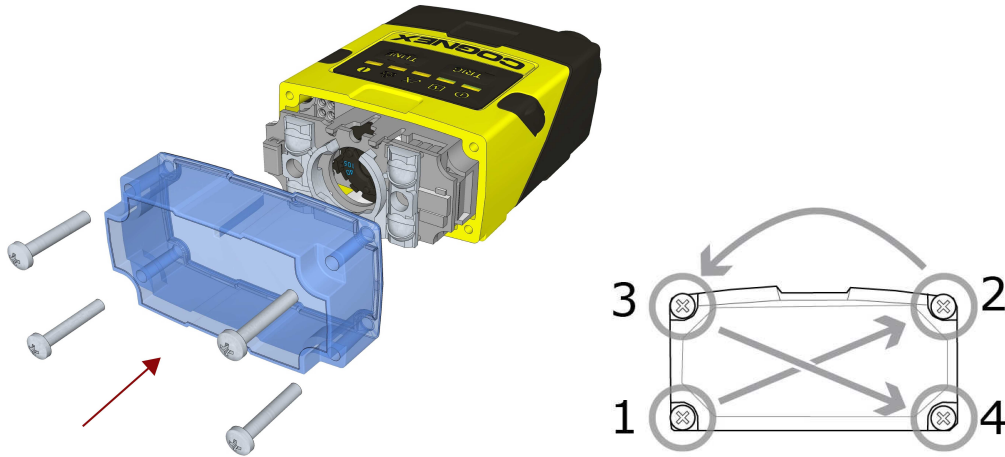


2. Using a flathead screwdriver, set the focus position from the front. Always turn clockwise to focus to a larger distance and counterclockwise to focus to a shorter distance.



**Note:** If an optical filter has been mounted, first disconnect the DataMan 260 reader from power and remove the illumination module with the filter before adjusting the focus.

3. Remount the front cover. Observing the tightening sequence below, tighten all four screws to 9 Ncm using a torque wrench.



**Note:** If you use an optical filter and the illumination was removed, remount the illumination module first and then remount the front cover.

**Note:** The rib in the front cover must be oriented to the top side.

# Field of View and Reading Distances

## DataMan 260 Readers with a 6.2 mm Lens

### Short Range (Focused to 105 mm)

The following tables show the field of view (FoV) widths of the 6.2 mm lens focused to 105 mm at various distances.

VGA

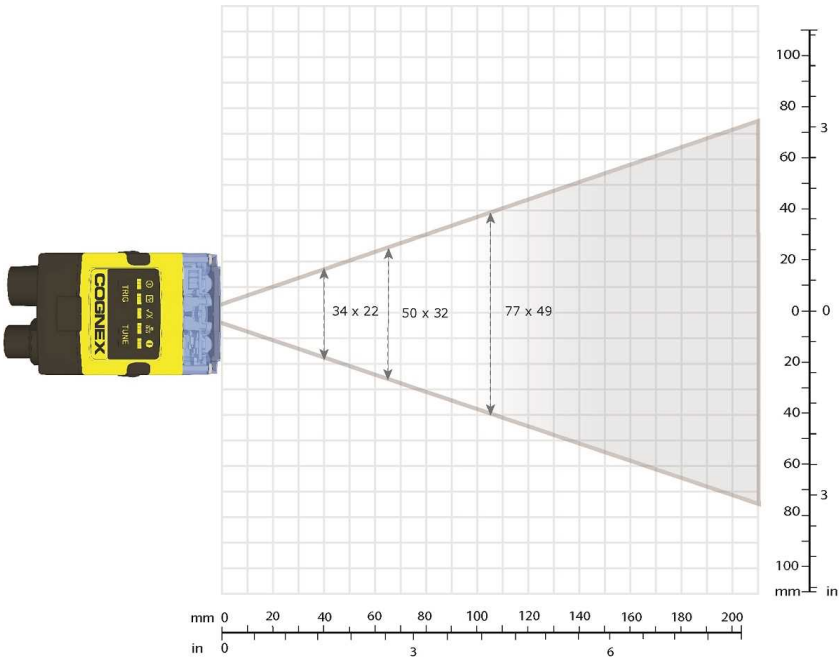
Distances in mm	2D min. code	1D min. code
40	4 MIL	4 MIL
65	5 MIL	4 MIL
105	10 MIL	6 MIL

1.2 Mp

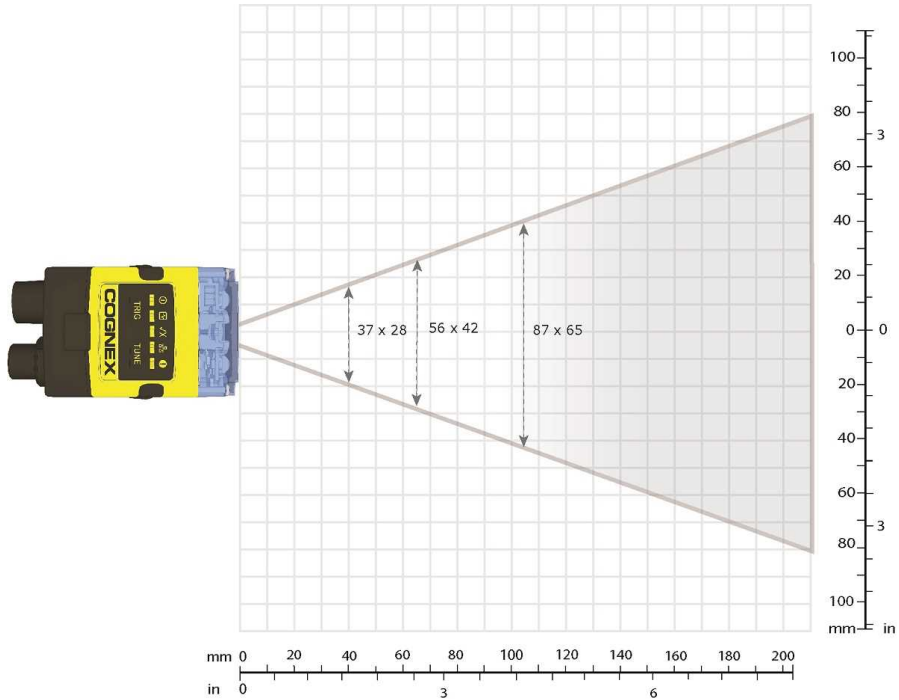
Distances in mm	2D min. code	1D min. code
40	3 MIL	2 MIL
65	4 MIL	2 MIL
105	7 MIL	5 MIL

The following maps show the FoV of the DataMan 260 readers with a 6.2 mm lens. The horizontal and vertical field of view is shown for working distances of 40 mm, 65 mm and 105 mm.

### VGA + 6.2 mm Lens



1.2 Mp + 6.2 mm Lens



Long Range (Focused to 190 mm)

The following tables show the field of view (FoV) widths of the 6.2 mm lens focused to 190 mm at various distances.

VGA

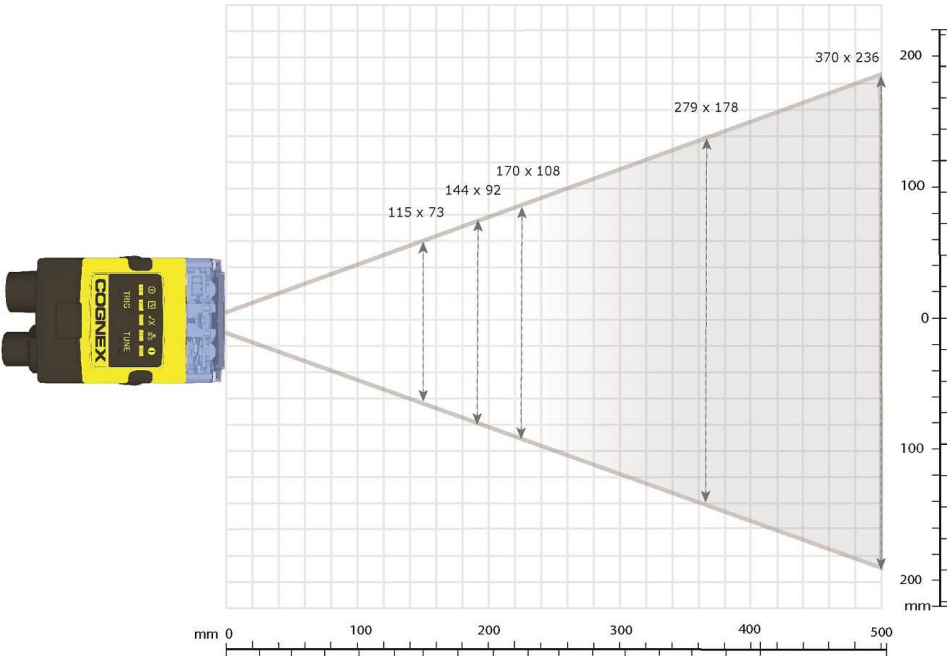
Distances in mm	2D min. code	1D min. code
150	12 MIL	6 MIL
190	15 MIL	10 MIL
225	18 MIL	10 MIL
375	30 MIL	15 MIL
500	35 MIL	20 MIL
1 m	-	35 MIL

1.2 Mp

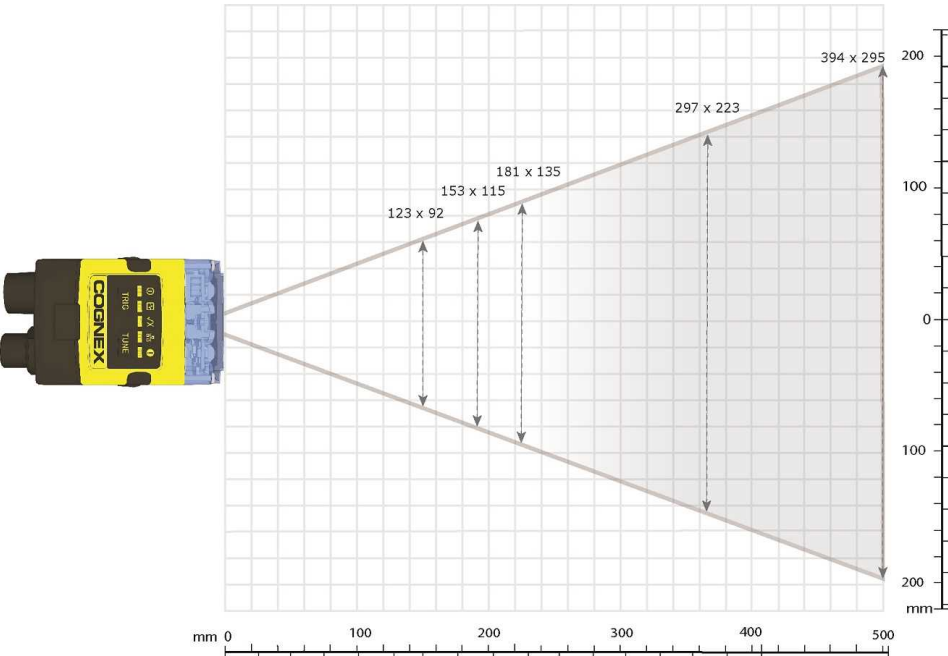
Distances in mm	2D min. code	1D min. code
150	12 MIL	5 MIL
190	10 MIL	6 MIL
225	15 MIL	6 MIL
375	20 MIL	10 MIL
500	25 MIL	15 MIL
1 m	-	30 MIL

The following maps show the FoV of the DataMan 260 readers with a 6.2 mm lens. The horizontal and vertical field of view is shown for working distances of 150 mm, 190 mm, 225 mm, 375 mm and 500 mm.

**VGA + 6.2 mm Lens**



**1.2 Mp + 6.2 mm Lens**



### DataMan 260 Readers with a 16 mm Lens

The following tables show the field of view (FoV) widths of the 16 mm lens at various distances.

VGA

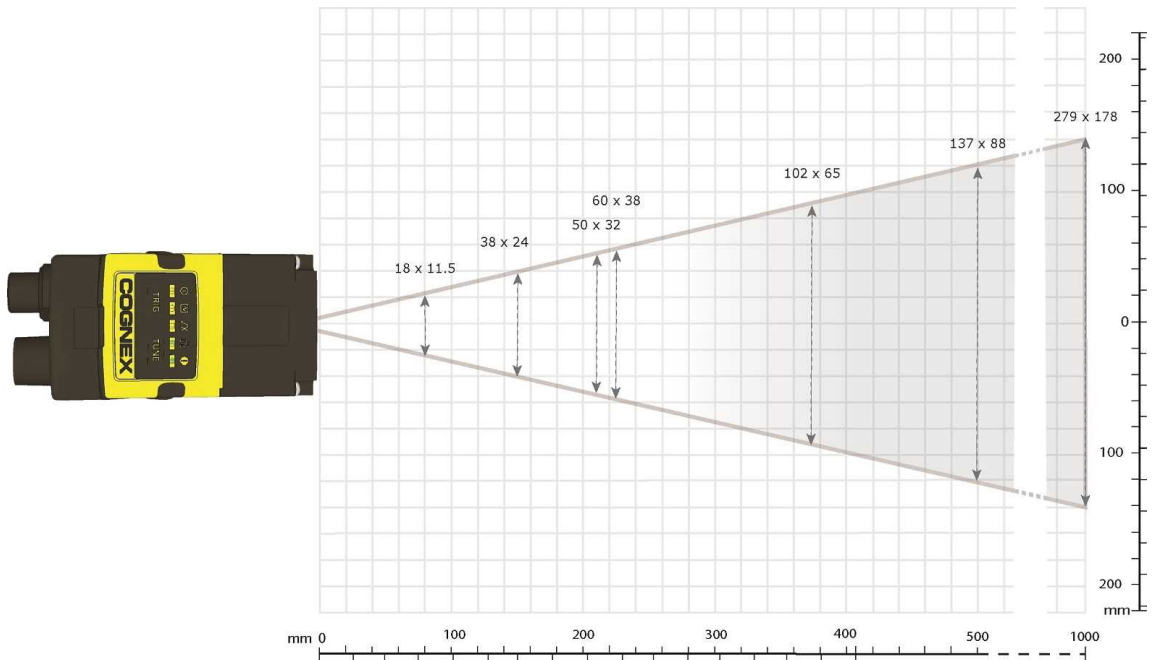
Distances in mm	2D min. code	1D min. code
80	3 MIL	2 MIL
150	5 MIL	3 MIL
190	6 MIL	4 MIL
225	7 MIL	4 MIL
375	12 MIL	5 MIL
500	15 MIL	10 MIL
1 m	25 MIL	15 MIL

1.2 Mp

Distances in mm	2D min. code	1D min. code
80	2 MIL	2 MIL
150	3 MIL	2 MIL
190	4 MIL	2 MIL
225	4 MIL	3 MIL
375	7 MIL	4 MIL
500	10 MIL	6 MIL
1 m	20 MIL	15 MIL

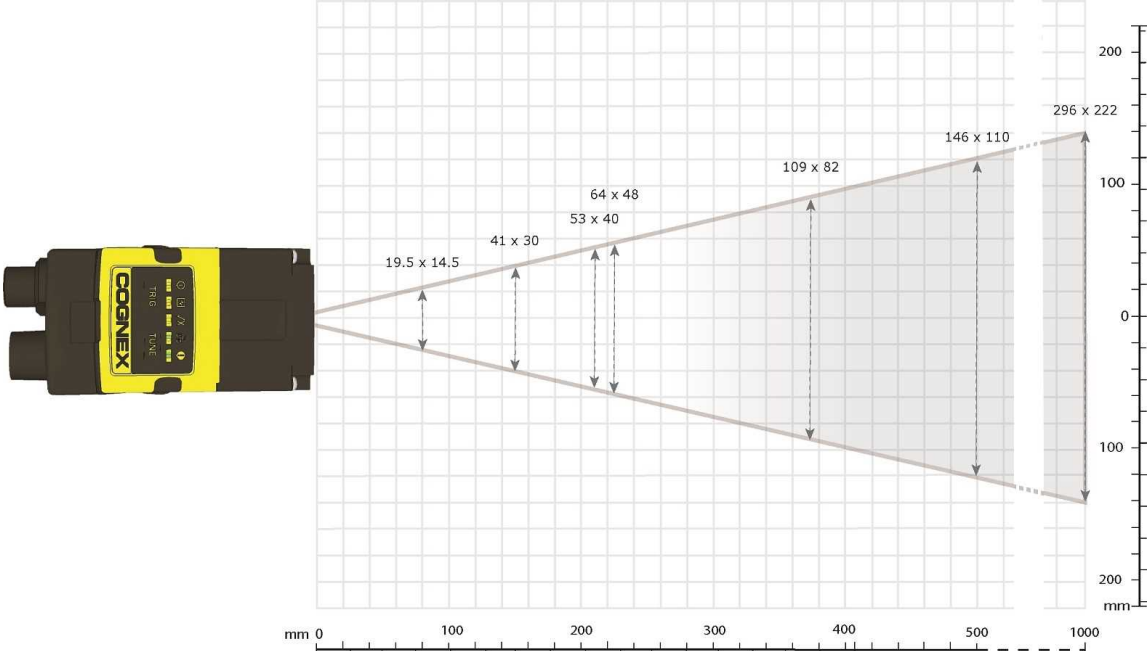
The following maps show the FoV of the DataMan 260 readers with a 16 mm lens. The horizontal and vertical field of view is shown for working distances of 80 mm, 150 mm, 225 mm, 375 mm, 500 mm and 1000 mm.

#### DataMan 260 with a 16 mm Lens







DataMan 262 with a 16 mm Lens



## External Triggering and Trigger Modes

If you are using external triggering, you can use any of the following methods to trigger your DataMan 260 reader:

1. Press the Trigger button (  ) on the reader.
2. Send a pulse on the I/O cable: Trigger + (blue), Trigger - (black).
3. Send a serial trigger command over the RS-232 or the Ethernet connection.
4. Click the Trigger button (  ) or press **<Ctrl>-T** in DataMan Setup Tool.

DataMan 260 supports a variety of trigger modes:

- **Single:** Acquires a single image and attempts to decode any symbol it contains or more than one symbol in cases where multicode is enabled. The reader relies on an external trigger source.
- **Presentation:** Repeatedly scans for a symbol and decodes it whenever one is detected. The reader relies on an internal timing mechanism to acquire images.
- **Manual** (default): Begins acquiring images when you press the trigger button on the reader or the discrete trigger input is activated, and continues acquiring images until a symbol is found and decoded or you release the button or the discrete trigger input is deactivated.
- **Burst:** Performs multiple image acquisitions based on an external trigger and decodes one or multiple symbols appearing in the sequence of images.
- **Self:** Similar to *Presentation* mode in that the reader perpetually scans for symbols and decodes them each time one is detected. Unlike *Presentation* mode, however, *Self* mode supports multicode results and a decode attempt occurs with every image. The main difference between *Self* and *Presentation* is the fixed and exact interval for image acquisitions in *Self*.
- **Continuous:** Begins acquiring images based on a single external trigger and continues to acquire images until a symbol is found and decoded, or until multiple images containing as many codes as specified in multicode mode are located, or until the trigger is released.

## Training and Trigger Modes



Training is supported for the following trigger modes:

- Single trigger
- Burst mode
- Self trigger
- Continuous mode

## Training

Training your reader with the expected symbology may help increase decode yield.

To train your reader, place a code in front of the reader and do one of the following:

- Press and hold the trigger button (  ) for at least 3 seconds and then release it.
- Click and hold the trigger button in Setup Tool (  ) for at least 3 seconds and then release it.
- Click **Train Code** in the **Action** ribbon of DataMan Setup Tool.

If using Single trigger mode, upload the code through **File** -> **Train Image**.

**Note:** You can use training in *Single*, *Burst*, *Continuous* or *Self* trigger modes. Only a single symbol of each kind of symbology can be trained per read setup.

DataMan 260 reports the status of the training and brightness optimization operations using its signaling LEDs. The second LED from left on the reader flashes green to indicate that the reader is currently trained, or yellow to indicate that it is not trained.



Connect the reader to the Setup Tool to untrain it and allow it to recognize other enabled symbologies.

### Incremental Training for Multiple Symbologies

If you want to train the reader to recognize multiple symbologies, you can present a single image showing all the desired symbologies and perform the training procedure described in the previous section.

If you cannot present a single image showing all the necessary symbologies, you can enable incremental training on the **Training** tab of the **Symbology Settings** page:


The screenshot shows the 'DataMan SetupTool - DM260-1C8FF8 [10.86.80.75]' window. The 'Symbology Settings' pane is active, with the 'Training' tab selected. The 'Incremental Training' checkbox is checked and highlighted with a red box. Other settings include 'Data Matrix 18x18 10.0ppm', 'QR Code / MaxiCode / Aztec Code', and '1D / Stacked / Postal'. The 'Result History' pane shows a successful read of '010599907520024...' with a status of 'Read', arrival time of '11:45:37.131', and decode time of '16ms'. The 'Image' pane shows a scanned barcode with the number '016096099'.

With incremental training enabled, you can train the reader using multiple images showing the symbologies you expect to decode. The reader will train each new symbology while retaining the existing trained symbologies.

## Tuning

By tuning, your DataMan 260 reader automatically selects the best settings for the given reading situation, based on parameters of illumination, camera and decoder properties, and focal distance. Tuning autodiscriminates all enabled symbologies (both 1-D and 2-D). If multiple symbols are found in the field of view, tuning locks on the first one found. Use this feature to create an optimum setting to read your codes.

You can use any of the following methods to tune your reader:

Press the Tune button (  ) at least for 3 seconds on your reader. The first press starts the tuning and the second press cancels the tuning, if it is still ongoing.



Turn on tuning in DataMan Setup Tool (  ).

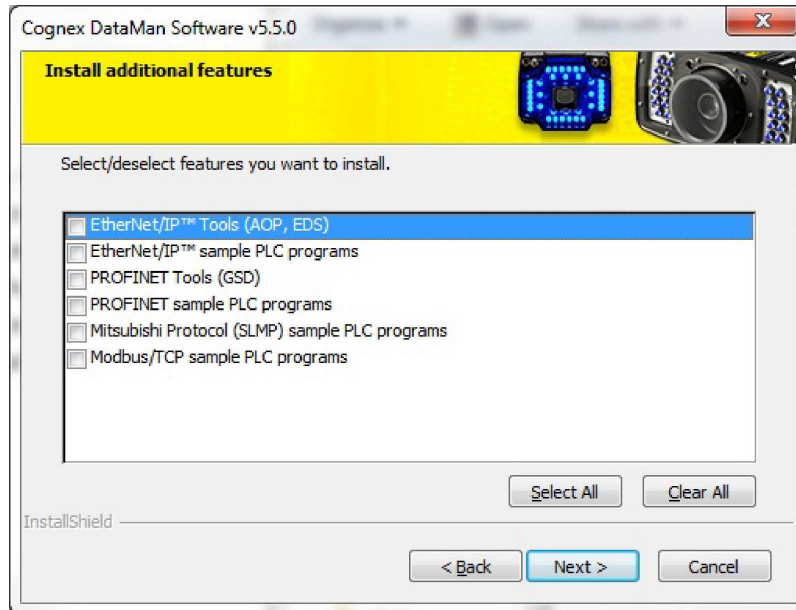
Start tuning by sending a DMCC, for more information, see the **Command Reference**, available through the Windows **Start** menu or the Setup Tool **Help** menu.

Use Input line 1 for tuning. Go to the **System Settings** pane in Setup Tool and check **Tune**. You can also use the **In1** button on the toolbar.

## Industrial Protocols

The DataMan 260 readers support the following industrial protocols:

- EtherNet/IP™
- PROFINET
- MC Protocol
- Modbus TCP



Select industrial protocol samples and tools you want to use when you install the DataMan Software. There are three ways to enable or disable Industrial Protocols. Using either method, a reboot is required for the changes to take effect.

1. Enable the protocols using the Industrial Protocols pane of the DataMan Setup Tool (under Communication Settings).
2. Scan the appropriate Reader Configuration codes (see **Reader Configuration Codes** available through the Windows **Start** menu or the Setup Tool **Help** menu).
3. Send the appropriate DMCC (see **Command Reference** available through the Windows **Start** menu or the Setup Tool **Help** menu).

For more information on using the industrial protocols, read the **DataMan Communications and Programming Guide** available through the Windows **Start** menu or the Setup Tool **Help** menu.



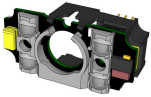


## DataMan 260 Specifications

Weight	142 g		
Operating Temperature	0°C — 40°C (32°F — 104°F)		
Storage Temperature	-10°C — 60°C (-14°F — 140°F)		
Maximum Humidity	<95% (non-condensing)		
Environmental	IP65		
Shock and Vibration	<ul style="list-style-type: none"> <li>• IEC 60068-2-27: 1000 shocks, semi-sinusoidal, 11g, 10ms</li> <li>• IEC 60068-2-6: vibration test in each of the three main axis for 2 hours @ 10 Gs (10 to 500 Hz at 100m/s<sup>2</sup> / 15mm)</li> </ul>		
RS-232	RxD, TxD according to TIA/EIA-232-F		
Codes	Data Matrix™ (IDMax: ECC 0, 50, 80, 100, 140, and 200; IDQuick: ECC200) QR Code and microQR Code UPC/EAN/JAN Codabar, Interleaved 2 of 5, Code 25, Code 39, Code 128, and Code 93, Pharma, Postal, RSS/CS, PDF 417, MicroPDF 417, AztecCode, DotCode, MaxiCode, MSI		
Discrete I/O operating Limits	HS Output 0, 1, 2, 3	IMAX	@ 24 VDC 50 mA
		RMAX	@ 12 VDC 150 Ω
			@ 24 VDC 470 Ω
	Input 0 (Trigger)	V <sub>IH</sub>	±15 — ±25 V
	Input 1	V <sub>IL</sub>	0 — ±5 V
		I <sub>TYP</sub>	@ 12 VDC 2.0 mA
			@ 24 VDC 4.2 mA
Power Supply Requirements	<ul style="list-style-type: none"> <li>• Ethernet with external power (no PoE): 24 VDC +/- 10%</li> <li>• ETH: Class 1 PoE supply, max. 3.84 W</li> </ul> Supplied by LPS or NEC class 2 only		
Ethernet Speed	10/100		
Duplex Mode	Full duplex or half duplex		


## Imager Specifications


Specification	DataMan 260 Imager	DataMan 262 Imager
Image Sensor	1/3 inch CMOS	1/3 inch CMOS
Image Sensor Properties	4.51 mm x 2.88 mm (W x H), 6.0 μm square pixels	4.8 mm x 3.6 mm (W x H), 3.75 μm square pixels
Image Resolution (pixels)	752 x 480	1280 x 960
Lens Type	S-mount 6.2 mm F:5 (with optional liquid lens) S-mount 16 mm F:7 (with optional liquid lens)	S-mount 6.2 mm F:5 (with optional liquid lens) S-mount 16 mm F:7 (with optional liquid lens)

## Illumination Options

Illumination Board	USB Powered		PoE Powered		24V Externally Powered	
	Max. exposure time	Max. duty cycle	Max. exposure time	Max. duty cycle	Max. exposure time	Max. duty cycle
<b>Standard Red</b> 	500 $\mu$ s	3%	500 $\mu$ s	3%	1 ms	6%
<b>High power red</b> 	Not supported		Not supported		10 ms	10%
<b>Standard White</b> 	500 $\mu$ s	3%	500 $\mu$ s	3%	1 ms	6%
<b>Standard Blue</b> 	500 $\mu$ s	3%	500 $\mu$ s	3%	1 ms	6%
<b>IR</b> 	500 $\mu$ s	3%	500 $\mu$ s	3%	1 ms	6%

# Precautions

 **CAUTION:** This device requires the use of an LPS or NEC class 2 power supply (non-PoE device) or the use of a PoE Class 1 (PoE device).

 **Note:** For product support, contact <http://support.cognex.com>

Observe these precautions when installing the Cognex product, to reduce the risk of injury or equipment damage:

- To reduce the risk of damage or malfunction due to over-voltage, line noise, electrostatic discharge (ESD), power surges, or other irregularities in the power supply, route all cables and wires away from high-voltage power sources.
- Changes or modifications not expressly approved by the party responsible for regulatory compliance could void the user's authority to operate the equipment.
- Cable shielding can be degraded or cables can be damaged or wear out more quickly if a service loop or bend radius is tighter than 10X the cable diameter. The bend radius must be at least six inches from the connector.
- Class A Equipment (broadcasting and communication equipment for office work): Seller and user shall be notified that this equipment is suitable for electromagnetic equipment for office work (Class A) and can be used outside the home.
- This device should be used in accordance with the instructions in this manual.
- All specifications are for reference purpose only and may be changed without notice.






# Regulations/Conformity

The DataMan 260 has Regulatory Model 1AA5 and meets or exceeds the requirements of all applicable standards organizations for safe operation. However, as with any electrical equipment, the best way to ensure safe operation is to operate them according to the agency guidelines that follow. Please read these guidelines carefully before using your device.

Regulator	Specification
USA	FCC 47 CFR Part 15 Subpart B, Class A
Canada	ICES-003
European Community	EN55022 (CISPR 22) Class A
	EN55024:1998 +A1:2001 +A2: 2003
	EN60950
Australia	C-TICK, AS/NZS CISPR 22 / EN 55022 for Class A Equipment
Japan	J55022, Class A

**Note:** For the most up-to-date regulations and conformity information, please refer to the Cognex online support site: <http://www.cognex.com/Support>.

**CAUTION:** IP protection is ensured only when all connectors are attached to cables or shielded by a sealing cap.

Safety and Regulatory	
European Compliance 	The CE mark on the product indicates that the system has been tested to and conforms with the provisions noted within the 2004/108/EC Electromagnetic Compatibility Directive and the 2006/95/EC Low Voltage Directive. For further information please contact: Cognex Corporation, One Vision Drive Natick, MA 01760 USA. Cognex Corporation shall not be liable for use of our product with equipment (i.e., power supplies, personal computers, etc.) that is not CE marked and does not comply with the Low Voltage Directive.
FCC Class A Compliance Statement 	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 instructions, 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 personal expense.
Canadian Compliance	This Class A digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.
C-Tick Statement 	Conforms to AS/NZS CISPR 22/ EN 55022 for Class A Equipment.
UL and cUL Statement	UL and cUL listed: UL60950-1 1st ed. and CSA C22.2 No.60950-1 1st ed. Certified to CB scheme IEC 60950-1:2001 1st ed.

## For European Community Users

Cognex complies with Directive 2002/96/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on waste electrical and electronic equipment (WEEE).

This product has required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment, if not properly disposed.

In order to avoid the dissemination of those substances in our environment and to diminish the pressure on the natural resources, we encourage you to use the appropriate take-back systems for product disposal. Those systems will reuse or recycle most of the materials of the product you are disposing in a sound way.



The crossed out wheeled bin symbol informs you that the product should not be disposed of along with municipal waste and invites you to use the appropriate separate take-back systems for product disposal.

If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration.

You may also contact your supplier for more information on the environmental performance of this product.



Reset Scanner to  
Factory Defaults



Reboot Scanner

