

COGNEX®

DataMan™ 100 Verifier

Quick Reference Guide

DATAMAN
ID Readers

1

Hardware Installation

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DataMan 100 Verifier Kit Contents

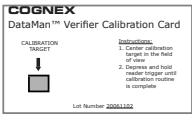
The DM100-100V-00 reader-only kit contains these items:



DataMan 100



ESD-safe front cover



Calibration card

To use the DataMan 100 Verifier, you must supply these items:

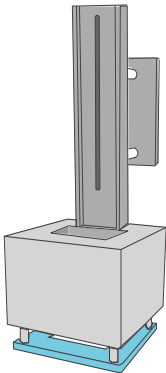


Windows PC meeting requirements listed in the Release Notes

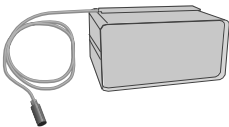


USB cable (5-meter maximum length)

The DM100-100V-02 full kit adds the following additional items:



Light assembly



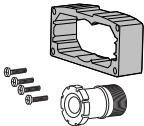
Control unit



USB adapter



5-meter extension cable and ferrite

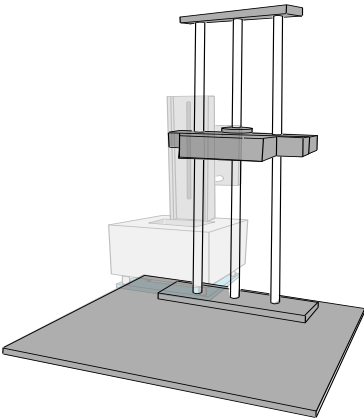


16mm lens, spacer, longer screws



Documentation and CD-ROM

The following accessory is available separately from Cognex:



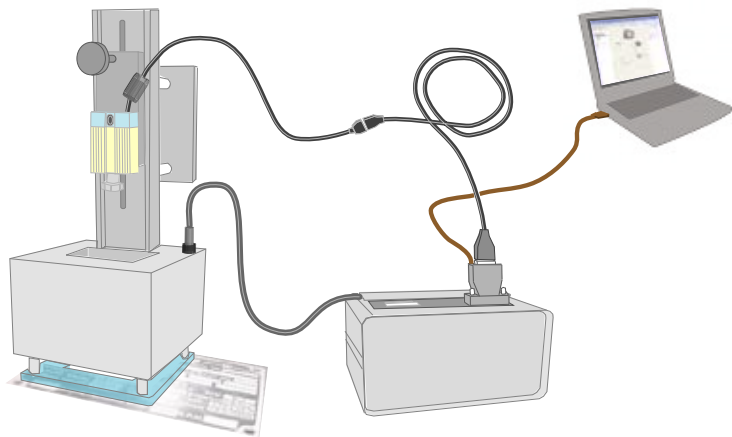
(Optional) Adjustable stand

Overview

The DataMan 100 Verifier performs symbol and code quality verification following AIM DPM Guidelines and supporting ISO15415 and AS9132 standards.

The DataMan 100 Verifier can be used with or without its integrated lighting assembly. The lighting assembly provides precise, adjustable-angle lighting, and an easy-to use part positioning guide that provides repeatable part location for verification.

The DataMan 100 Verifier produces contract-compliant verification results including all of the AIM DPM code quality measures.

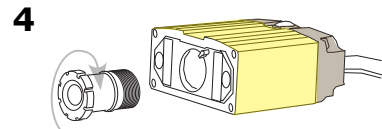
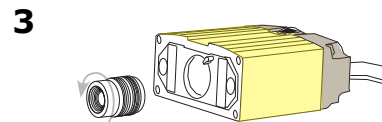
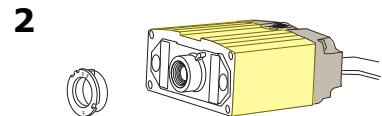
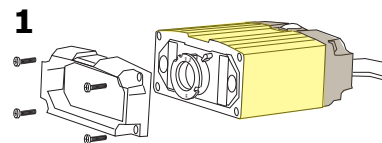


Install 16mm Lens

1. Remove the four screws securing the lens cover.
2. Pull the focus ring off the lens.
3. Unscrew and remove the lens.
4. Install the supplied 16mm lens.

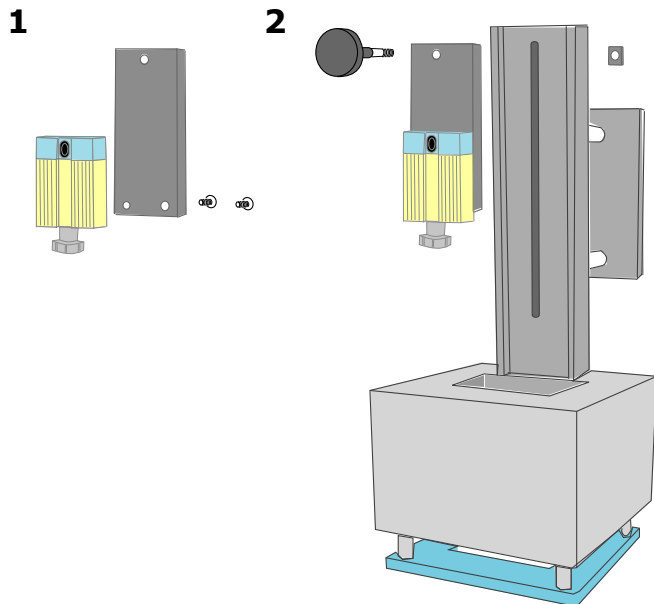
Note: Do not leave the DataMan 100 image sensor exposed to the environment.

Note: Do not re-install the lens cover.



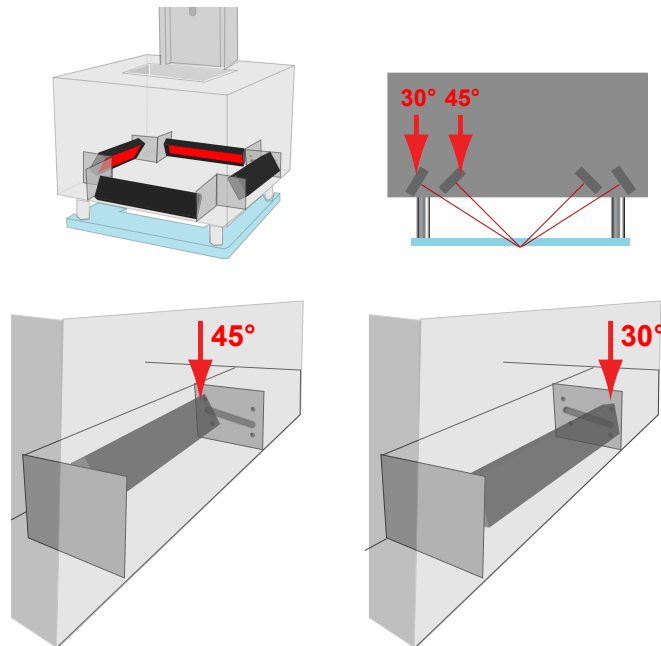
Mount the Reader

1. Mount the DataMan 100 to the mounting plate using the supplied screws.
2. Attach the mounting plate to the lighting unit using thumbscrew and slide nut.



Set Lighting Angle

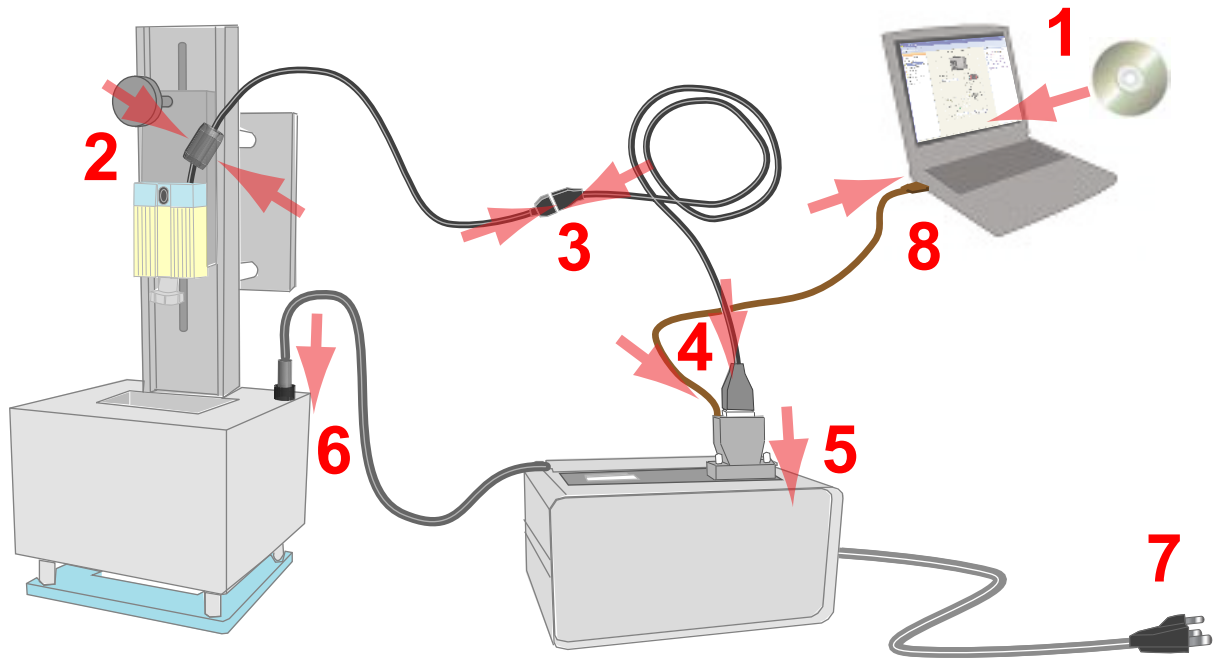
The DataMan 100 Verifier supports both 30° and 45° lighting angles. Each lighting bank is positioned by a pair of detents. Make sure that all lighting banks are set to the same angle.



Install PC Software and Connect Verifier

- 1. Install the DataMan software on your PC. (Insert the CD-ROM and follow the on-screen instructions.)
- 2. Attach the ferrite core approximately 1 cm from the reader.
- 3. Connect the extension cable to the reader.
- 4. Connect the extension cable and the USB cable to the USB adapter.
- 5. Connect the USB adapter to the control unit.
- 6. Connect the control unit cable to the lighting module.
- 7. Connect the control unit to AC power.
- 8. Connect the USB cable to your PC.

When the connections are complete, turn on the control unit.



Connect to the DataMan 100

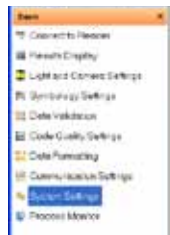
After installing the DataMan PC software and connecting the equipment as described on the previous page, connect to the reader by following these steps:

1. Launch the Setup tool (**Start->Cognex->DataMan Setup Tool Vx.x.x->Setup Tool**).
2. Click **Refresh**.
3. Select a node labeled **DM100**, then click **Connect**.

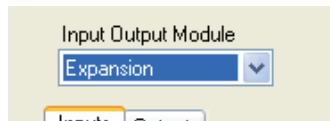


Configure the Setup Tool

- 1 Click **System Settings**

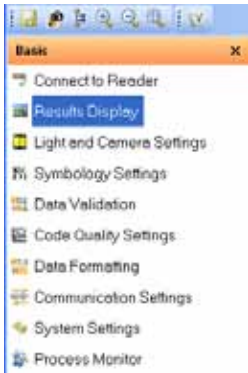


- 2 Select **Expansion** for **Input Output Module**



Focus the Lens

1 Click Results Display



2 Check Live Display Enabled

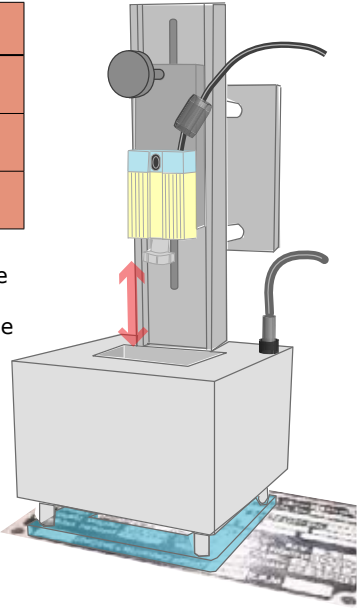


Note: If the checkbox is grayed out, click on **Code Quality Settings** and uncheck **Code Quality Enabled**. You cannot use Live Display when Code Quality is enabled.

3 With a symbol placed against the clear standoff, adjust the height of the reader. The correct reader height depends on both the cell size and the overall code size. The following table lists the recommended distance (from the top of the lighting enclosure to the face of the lens) for typical code and cell sizes.

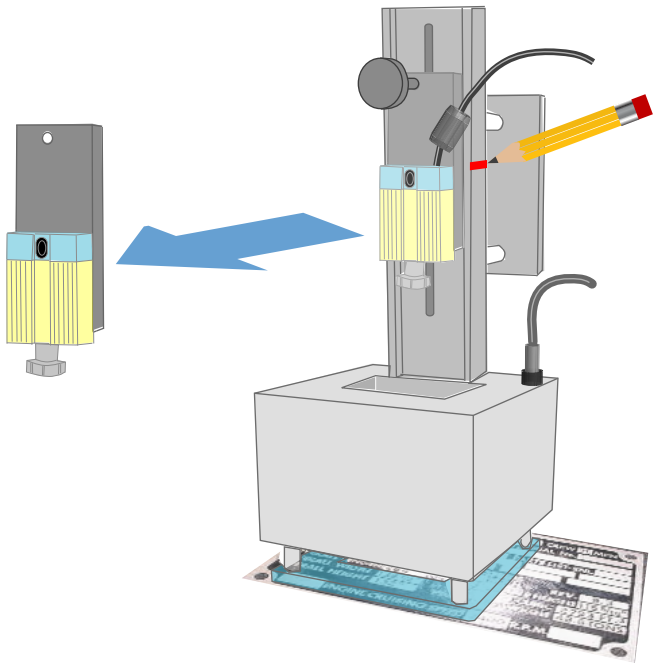
Code Size	Minimum cell size	Focus distance
5 – 13mm (0.125 – 0.5 in)	7.5 mil	4mm (0.16 in)
6 – 19mm (0.25 – 0.75 in)	15 mil	35mm (1.38 in)
13 – 25mm (0.5 – 1.0 in)	25 mil	100mm (3.94 in)

Position the reader at the distance recommended for your code size, then adjust the lens focus until the image is sharp.

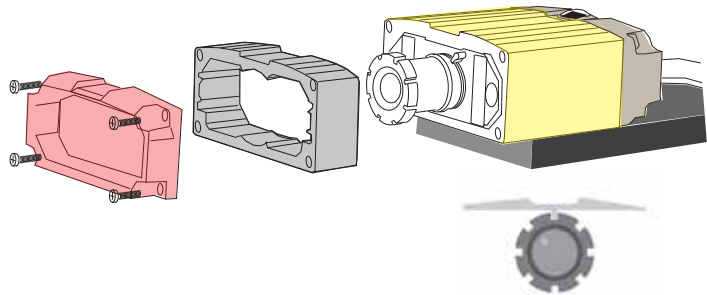


Focus the Lens

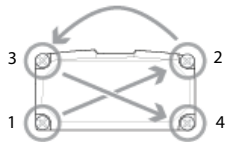
- 4** Mark the position of the reader on the vertical slide, then remove the carrier from the slide.



- 5** Install the black spacer, taking care to adjust the lens so that it engages the tab in the spacer, and the red ESD-safe lens using the supplied extra-long screws.

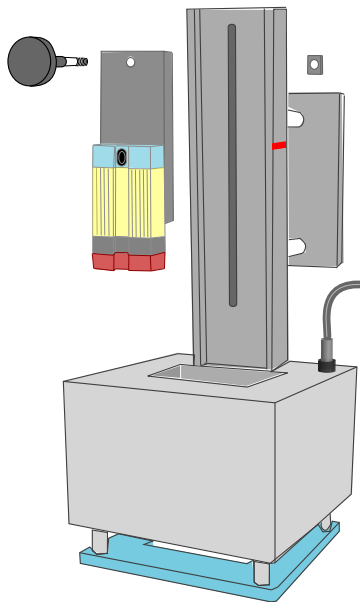


- 6** Tighten the cover screws in the order shown. Tighten the cover screws to 9 N-cm (0.8 pound-inch).

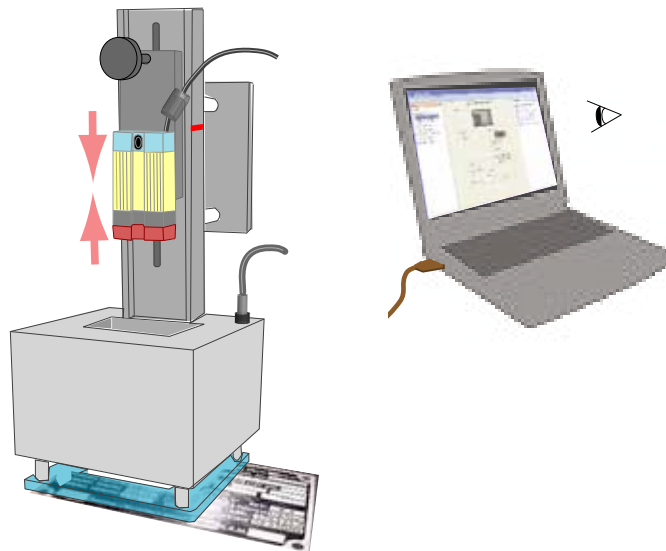


Focus the Lens

7 Re-mount the carrier at the position marked in step 4.



8 Make fine focus adjustments by sliding carriage up or down slightly.

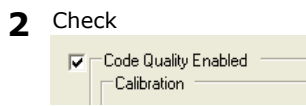
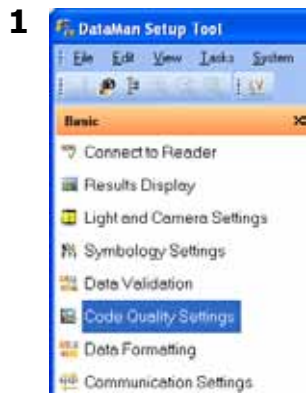


9 When focus is set, un-check **Live Display Enabled**

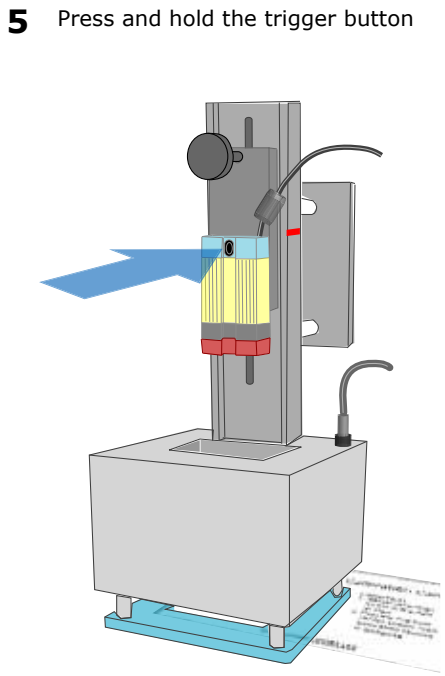
☐ Live Display Enabled

Calibrate the DataMan 100

You have to calibrate the DataMan 100 regardless of which kit you use.

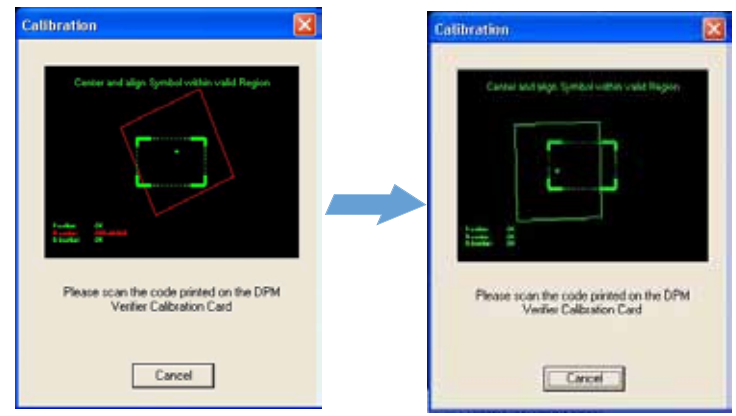


3 Align the calibration symbol from the calibration card under the DataMan reader



6 Use the calibration graphics to align the calibration symbol with the DM100.

Adjust the placement of the calibration symbol until the alignment graphics turn green.

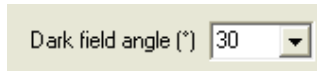


Calibrate the DataMan 100

- 7** Wait for the calibration process to finish. The Setup tool will indicate when the DataMan reader is calibrated:



- 8** Using the **Dark field angle (°)** drop-down menu, enter the lighting bank angle that you configured, as shown on page 7.



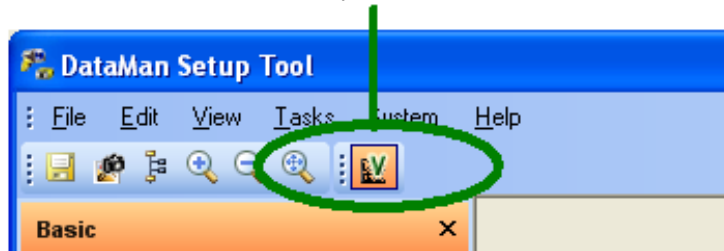
The value that you enter here is included as part of each verification operation, but it does not affect the verification operation.

Perform Code Quality Verification

In order to perform Direct Part Mark verification your reader must be calibrated as described in the previous section. To read symbols and view verification results, perform the following steps:

1. Start the DataMan Setup tool and connect to your reader.
2. Enable the **Turn Code Quality On** icon in the tool bar.

Code Quality On icon



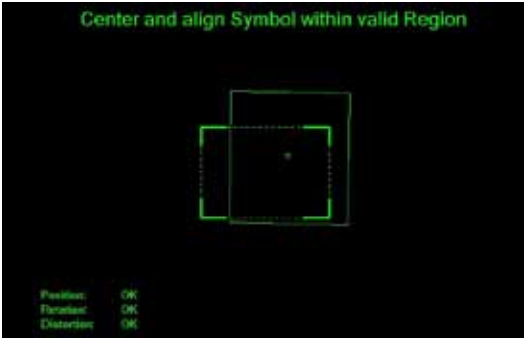
4. Select the **Results Display** task pane.
5. Place the symbol under the reader and press the trigger. The symbol must be centered within the field of view, and the reader must be perpendicular to the surface containing the symbol and at the correct rotation.

Perform Code Quality Verification

If the symbol is out of position, the Setup Tool displays this guide:



Move the symbol until the center of the red rectangle lies within the green target rectangle and turns green:



Code Quality Results

The Results Display task pane presents the results of the verification on the right-hand side.



Overall verification result (Pass/Fail)

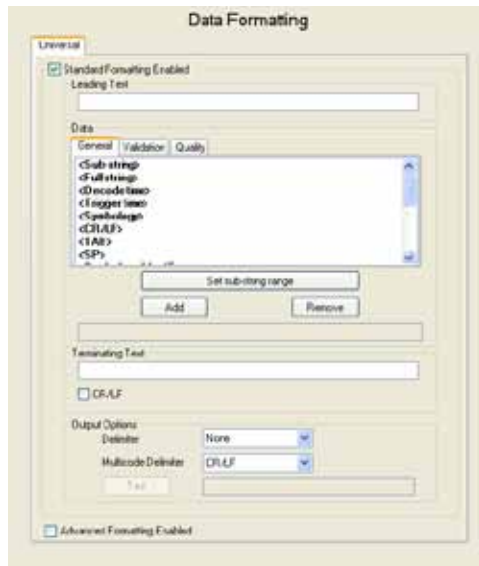
Individual AIM/DPM metrics and grades

Process control metrics (if enabled)

For more information on interpreting the verification results, select **View->Q+A Help**. The **Results Display** task pane can toggle between displaying results or Q+A information.

Formatting Output Data

Use the **Data Formatting** task pane of the DataMan Setup Tool to construct a customized output string each time you read and verify a symbol. This allows the verifier to return Code Quality results when connected to a third-party application instead of the DataMan Setup Tool.

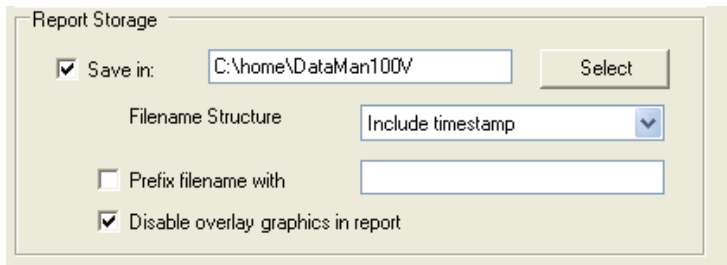


In addition to standard formatting, the DataMan Setup Tool supports the use of Perl-Style Regular Expression features in Advanced mode.

Data Logging

Use the **Data Logging** task pane to generate a Code Quality Report for each symbol that you read and verify. Be aware that data logging works only when the reader is connected to the DataMan Setup Tool.

1. Select **View->Advanced** if the DataMan Setup Tool is not in Advanced mode.
2. Select the **Data Logging** task pane under **System Settings**.
3. Enable the **Report Storage** option and use the **Save in** option, as shown in the following example, to configure a directory location to save each report along with an image of the verified symbol:



In addition, you can enable the **Prefix filename with** option to give each Code Quality Report a set prefix.

Saving the Setup

Once you have configured your reader with the settings you want it to use, choose **System->Save Settings** to save the configuration.

Choose **File->Save Configuration** to save the configuration to a directory on the PC. A saved configuration can be opened later and uploaded to any reader, allowing multiple readers to use the same configuration settings.

Be aware, however, that each reader must be calibrated individually.

Code Quality Configuration Codes

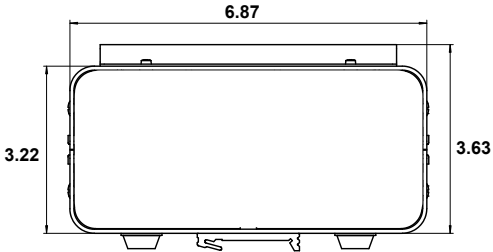
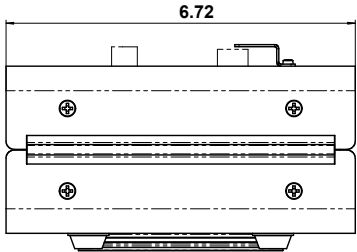
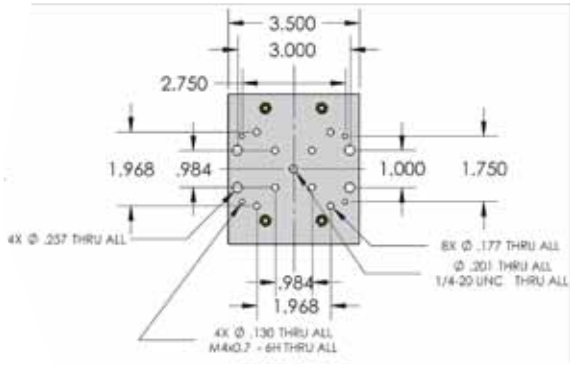
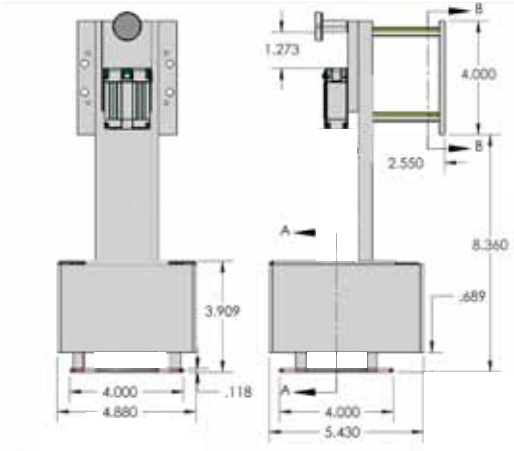
Use the following Code Quality configuration symbols to quickly turn Code Quality on and off without connecting the reader to the DataMan Setup Tool. Additional Code Quality Reader Configuration symbols are available in the online documentation.

Code Quality On

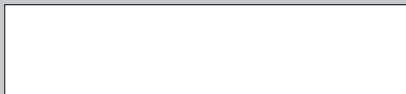


Code Quality Off





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