COGNEX®

Xpand 15

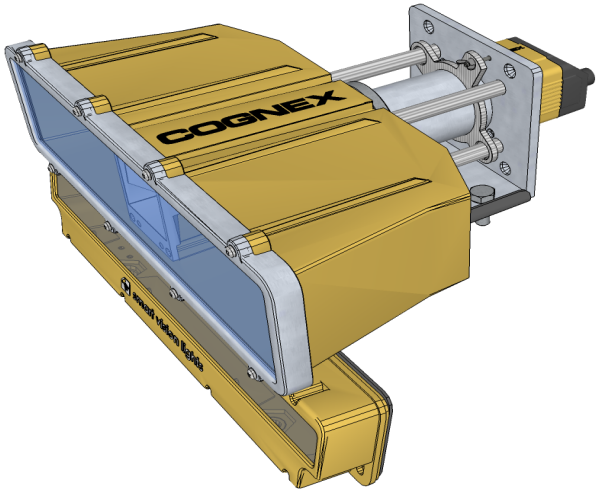
Field of View Expander

Quick Reference Guide

DataMan
ID Readers

About Field of View Expansion

Xpand 15™ is a 15” field of view expander (FOVE), an accessory that is used to widen up the field of view of standard readers. This is achieved by spliting the field of view in vertical direction, and redirecting the partial fields of view side by side.



Compatible Device List

Xpand 15 is compatible with the following devices:

- DataMan 302
- DataMan 303
- DataMan 503

Limitations

Please note the following limitations when using Xpand 15:

- Internal illumination not supported.
- Aimers not supported.
- The light bracket supports 1 ODDM-L300 light.

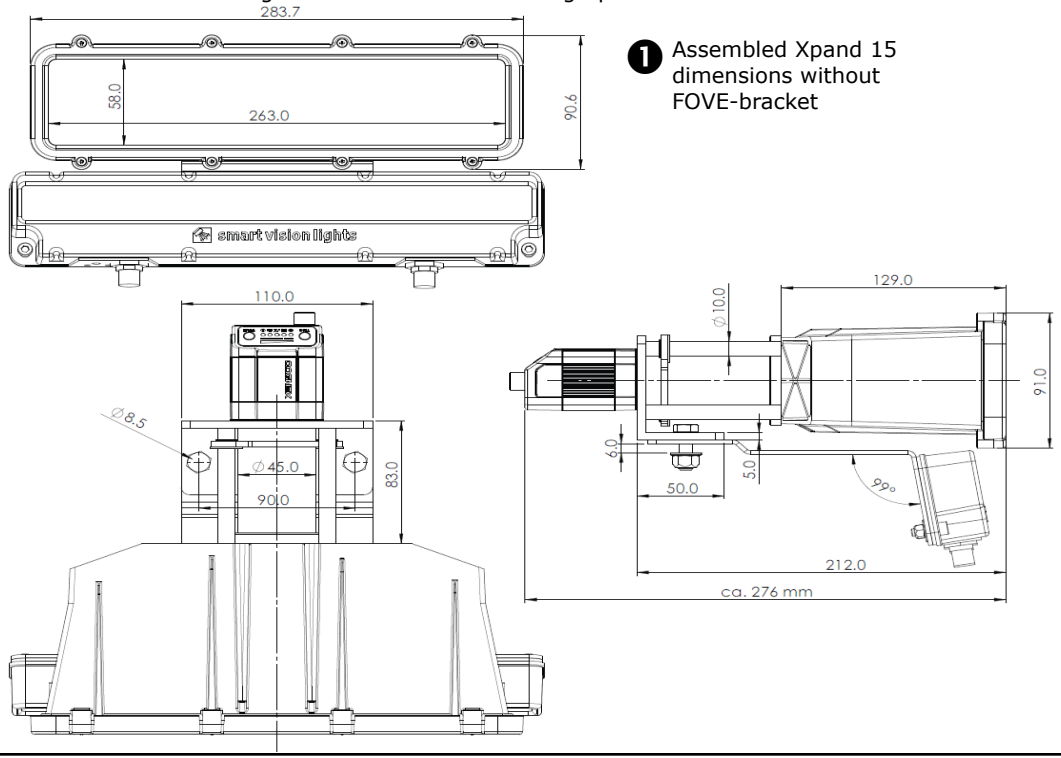
Code Density

Xpand 15 has been designed with the following minimum code density in mind:

Reader	Barcode Size (Mil)	Datamatrix Size (Mil)
DM302	10	20
DM303	8	15
DM503	6	12

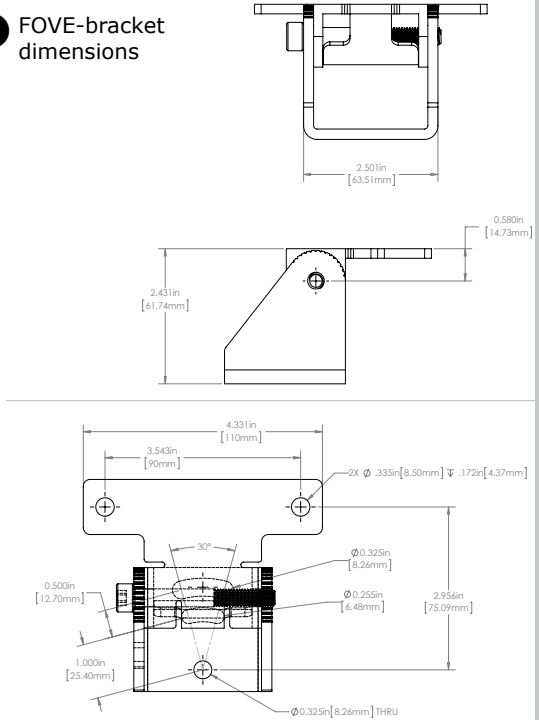
Dimension Information

Please observe the following dimensions when mounting Xpand 15.



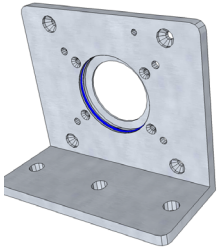
❶ Assembled Xpand 15 dimensions without FOVE-bracket

❷ FOVE-bracket dimensions

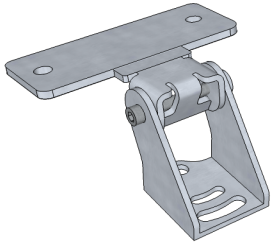


Package Contents

❶ FOVE-bracket



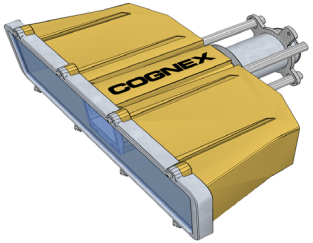
❷ Mounting bracket



(Bracket sold separately)

❸ Bar light bracket

❹ Xpand 15 enclosure



Assembly Overview

The steps below highlight the main steps of assembling your Xpand 15:

1. Mount the camera lens to the reader, using the steps provided in the quick reference guide for your reader.
2. Attach the reader to the FOVE-bracket.
3. Attach the FOVE-bracket with the reader to the FOVE.
4. Attach the bar light(s) to the FOVE.
5. Connect the light to the reader.
6. Connect your assembly to the Setup tool.
7. Set focus.
8. Close sliding lens cover.

Optical Setup

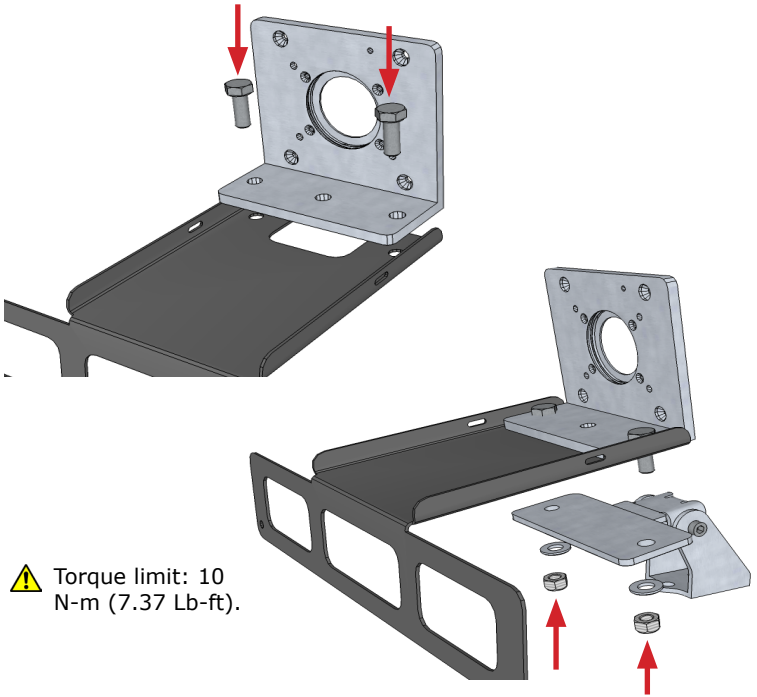
The following lenses can be used with Xpand 15:

Reader	25mm c-mount lens	40mm c-mount lens
DM302	✓	
DM303	✓	
DM503		✓

The recommended apperture size is F:8

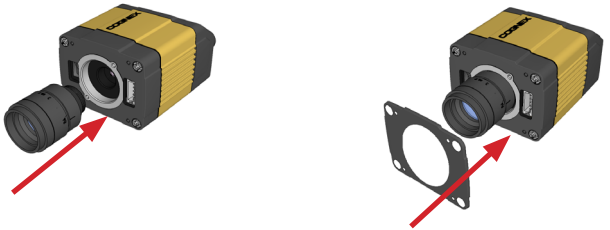
Assembly Instructions

1 Attach the FOVE-bracket to the bar light bracket using two M8x25 mm flat head cap screws, two M8 flat washers and two M8 self locking hex nuts.



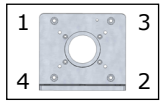
⚠ Torque limit: 10 N-m (7.37 Lb-ft).

2 Mount the camera lens to the reader, using the steps provided in the quick reference guide for your reader, and then place the gasket to the front of the reader by carefully sliding it over the lens.



3 Attach the reader to the bracket subassembly using four M3x10 mm flat head cap screws.

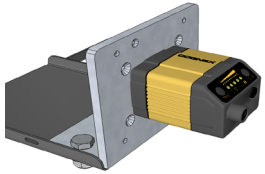
⚠ Tighten in sequence. Torque limit: 35 N-cm (3.1 Lb-In).



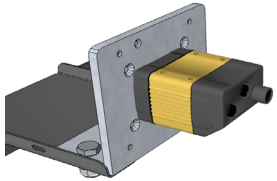
ⓘ For attaching a DataMan 503, please see page 18 below.

Note that the reader can be mounted in two different orientations, as shown in the images below:

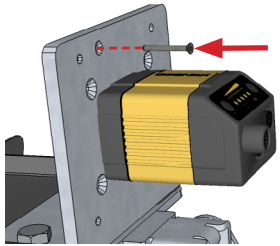
Buttons facing up

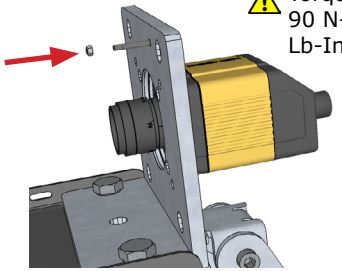


Buttons facing down



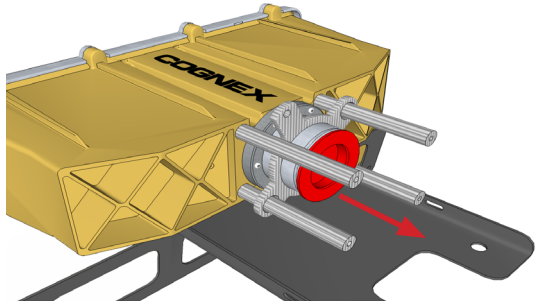
4 Attach the M3x25 mm flat head cap screw to the FOVE-bracket using an M3 hex nut.

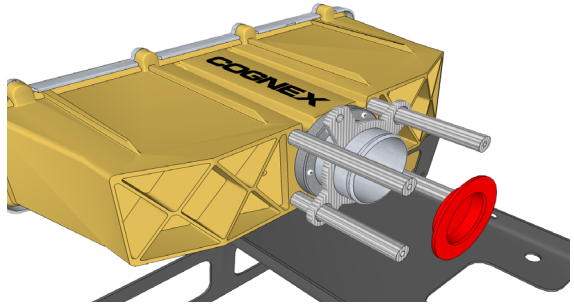




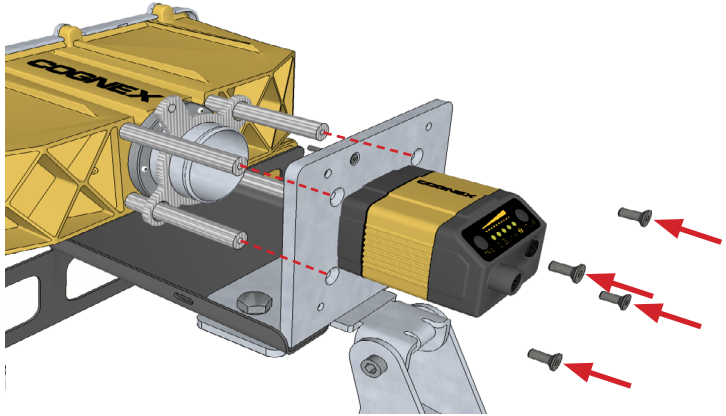
⚠ Torque limit: 90 N-cm (8 Lb-In).

5 Remove the red dust plug from the housing subassembly.

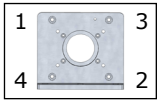




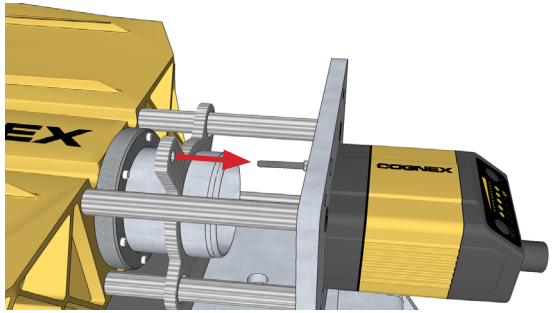
6 Attach the bracket subassembly with the reader to the housing subassembly using four M4x10 mm flat head cap screws. Make sure that the tab on the sliding lens cover aligns with the M3x25 mm screw on the FOVE-bracket.



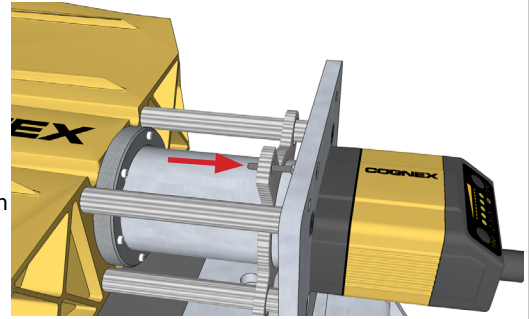
⚠ Tighten in sequence. Torque limit: 90 N-cm (8 Lb-In).



7 Close the sliding lens cover.

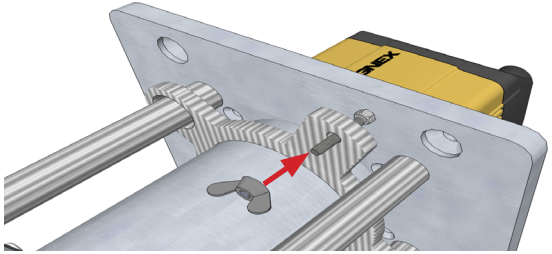


ℹ A small amount of extra force might be needed to have the lens cover snap into place properly against the o-ring in the FOVE-bracket.

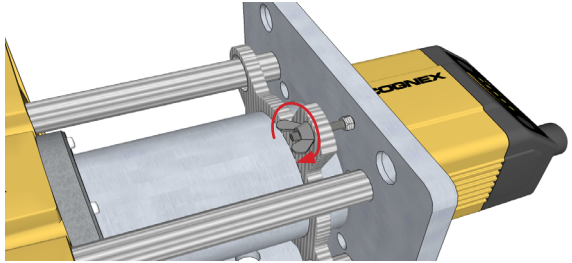


8 Check focus and adjust if necessary as described on page 22. To adjust focus, open the sliding lens cover first. When the focus has been set, close the sliding lens cover as described in step 7 on page 15.

9 Secure the sliding lens cover using the M3 wing nut.



⚠ Torque limit: 50 N-cm (4.4 Lb-In).



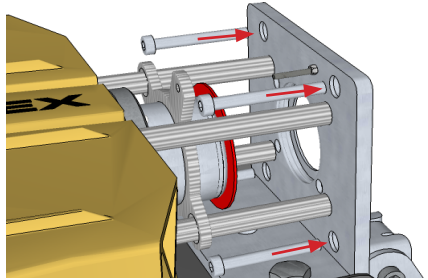
For attaching a DataMan 503 reader to Xpand 15, follow the steps highlighted below.

1 Attach the FOVE-bracket to the bar light bracket, as shown in step 1 on page 10.

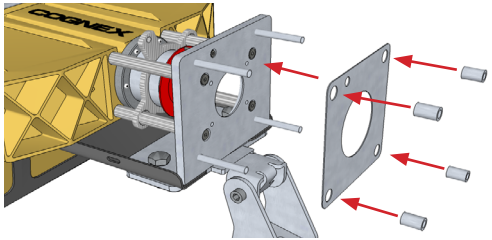
2 Attach the M3x25 mm flat head cap screw to the FOVE-bracket using an M3 hex nut, as shown in step 4 on page 12.

3 Attach the bracket subassembly to the housing subassembly using four M4x10 mm flat head cap screws. Make sure that the tab on the sliding lens cover aligns with the M3x25 mm screw on the FOVE-bracket, as shown in step 6 on page 14.

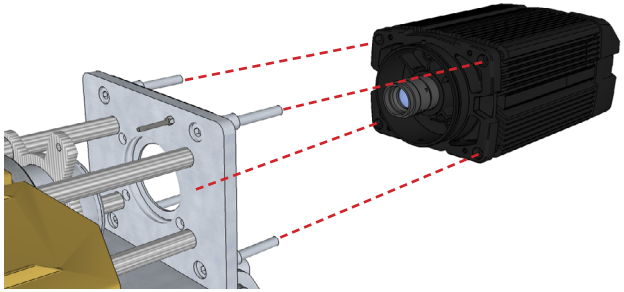
4 Insert the four M4x20 mm screws in the mounting holes in the FOVE-bracket.



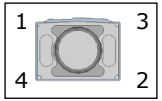
5 Place the DM503 gasket on the FOVE-bracket sliding it over the M4x20 mm screws, and then slide the spacers on the screws.



6 Remove the red dust cover and then, mount the DataMan 503 using the M4x20 mm screws.



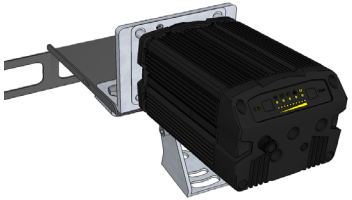
⚠ Tighten in sequence. Torque limit: 1.5 N-m (1.1 Lb-Ft).



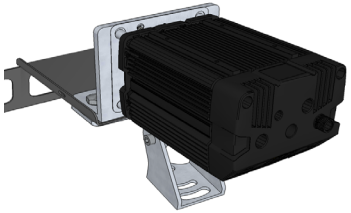
7 Close the sliding lens cover.

Note that the reader can be mounted in two different orientations, as shown in the images below:

Buttons facing up



Buttons facing down

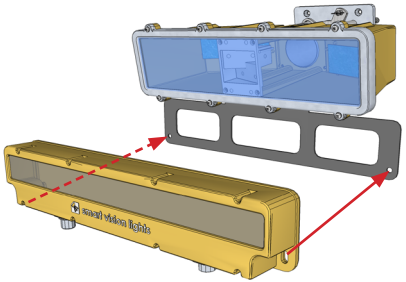


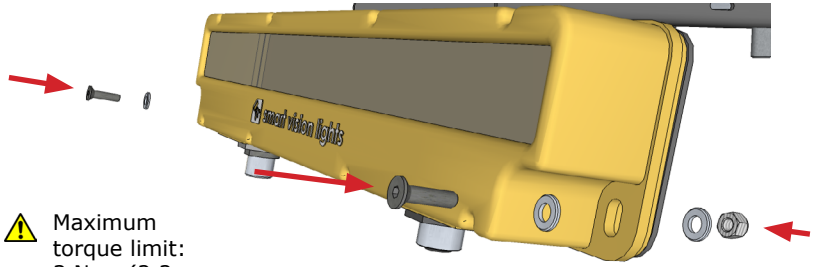
8 Check focus and adjust if necessary as described on page 22. To adjust focus, open the sliding lens cover first. When the focus has been set, close the sliding lens cover as described in step 7 on page 15.

9 Close the sliding lens cover, and then secure it using the M3 wing nut, as shown in step 9 on page 16.

Mounting Bar Lights

Attach the ODDM-L300 bar light to the bar light mounting bracket using two M5x16 mm socket head cap screws, four M5 flat washers and two M5 hex nuts.

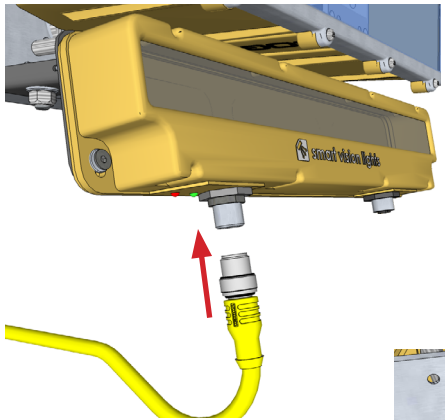




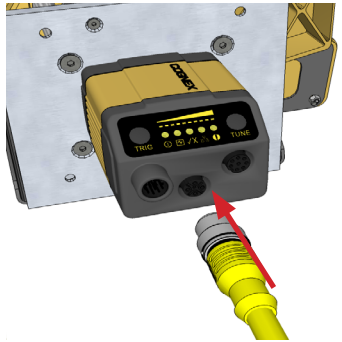
⚠ Maximum torque limit: 3 N-m (2.2 Lb-In).

Cabling Instructions

Connect the ODDM-L300 bar light to the reader using an M12 cable.



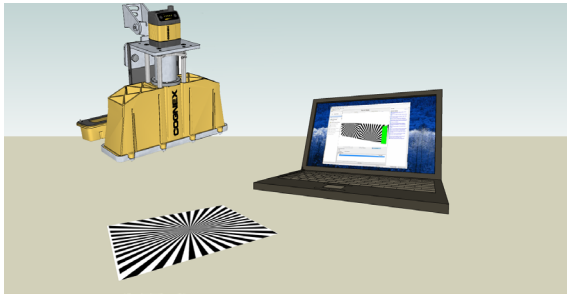
⚠ Make sure that the reader is unpowered before connecting the light connector.



Setting Focus

After closing the sliding lens cover, follow these steps to adjust focus:

1. Place the assembled Xpand 15 with the reader and bar-light attached at the desired working distance from focus target.
2. Connect the reader to the Setup Tool.
3. On the Results Display pane, check the Focus Feedback option and enable Live Display.
4. Use the *DataMan Focus Target* template, available through the Windows Start menu, to align the edge of the reader body to the line marked with the target distance used in your application.
5. Adjust focus for maximum sharpness. Enhance image quality in the Setup Tool for better guidance.



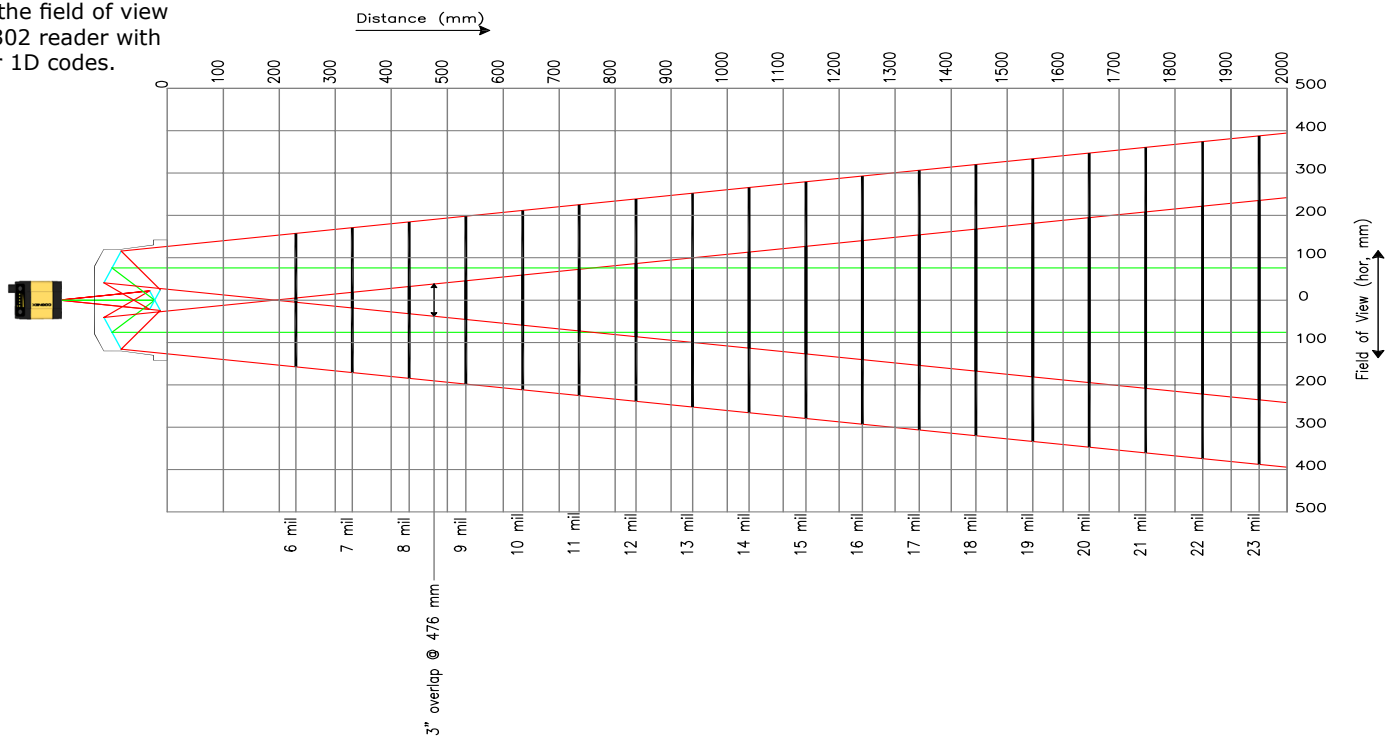
Field of View

The following field of view maps are provided in this document from pages 20 to 31:

- DataMan 302 with 25 mm lens for 1D codes
- DataMan 302 with 25 mm lens for 2D codes
- DataMan 303 with 25 mm lens for 1D codes
- DataMan 303 with 25 mm lens for 2D codes
- DataMan 503 with 40 mm lens for 1D codes
- DataMan 503 with 40 mm lens for 2D codes

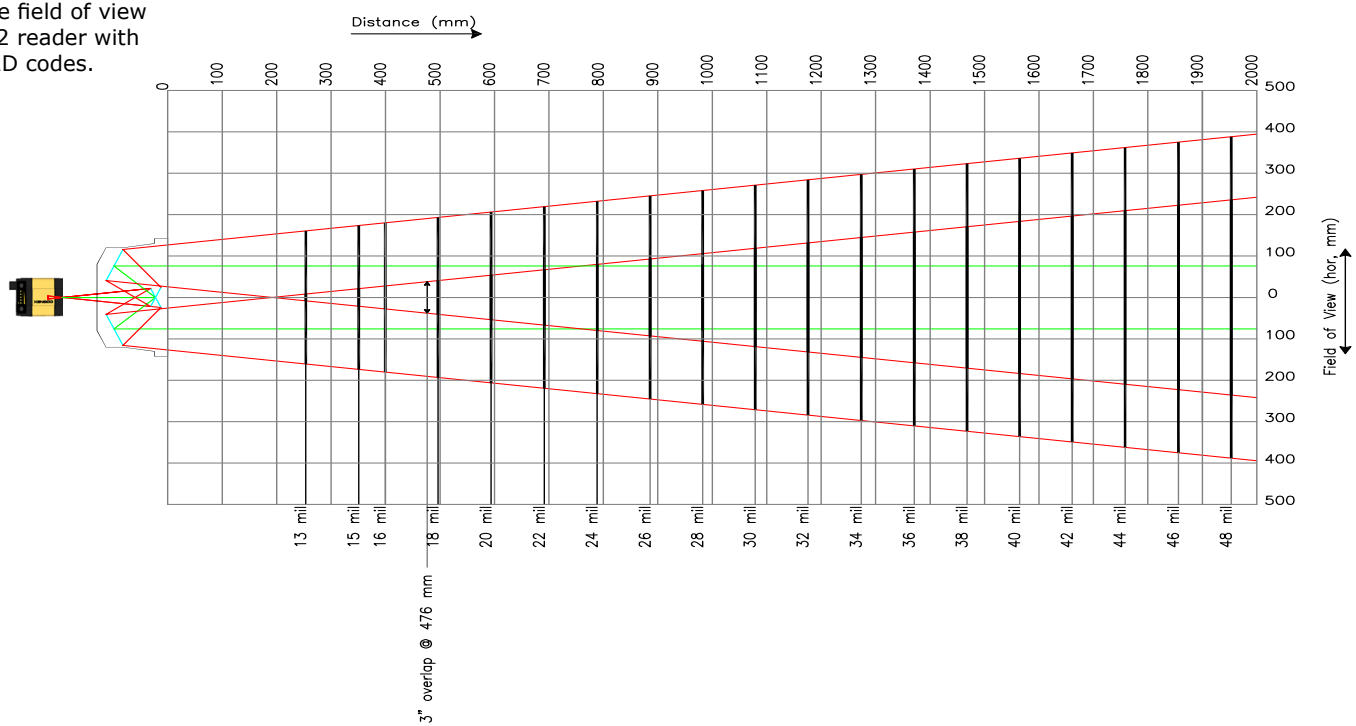
Field of View for Xpand 15 (DataMan 302 with 25 mm lens)

This map shows the field of view of the DataMan 302 reader with a 25 mm lens for 1D codes.



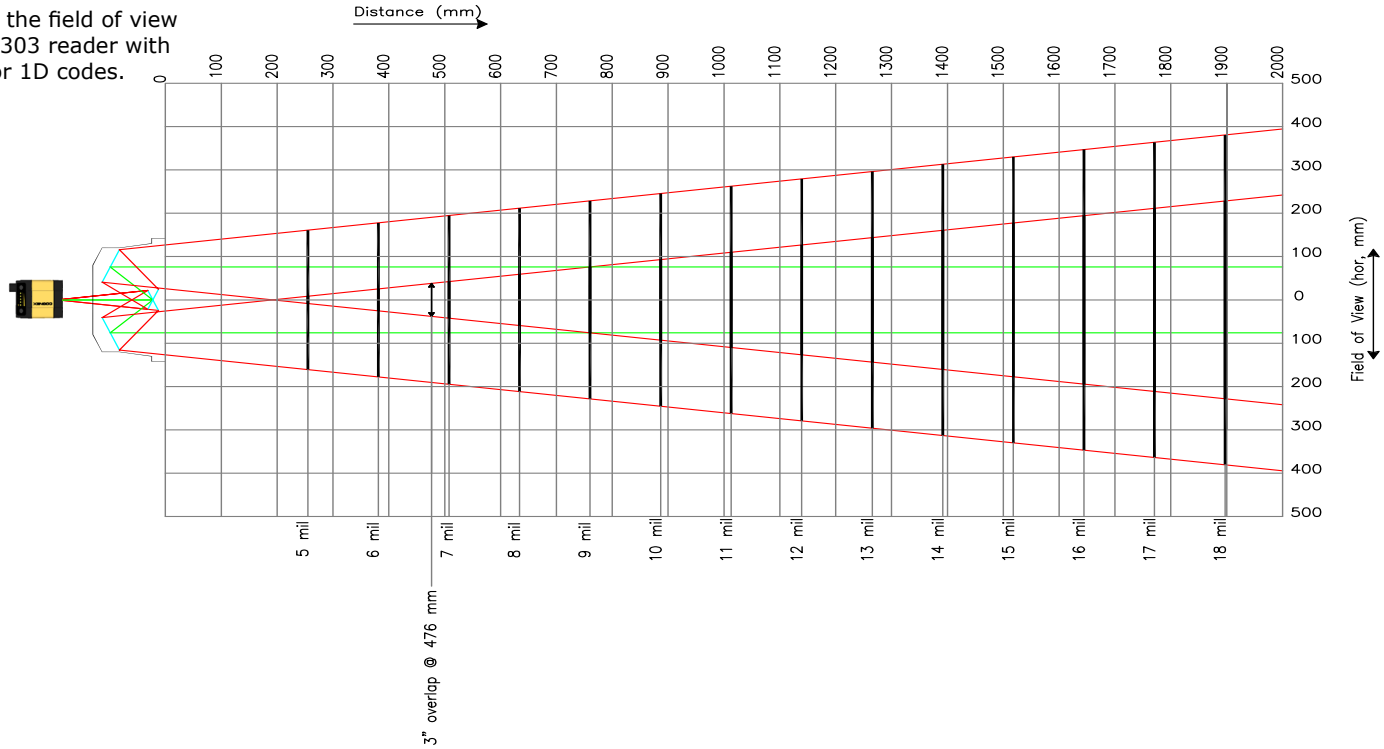
Field of View for Xpand 15 (DataMan 302 with 25 mm lens)

This map shows the field of view of the DataMan 302 reader with a 25 mm lens for 2D codes.



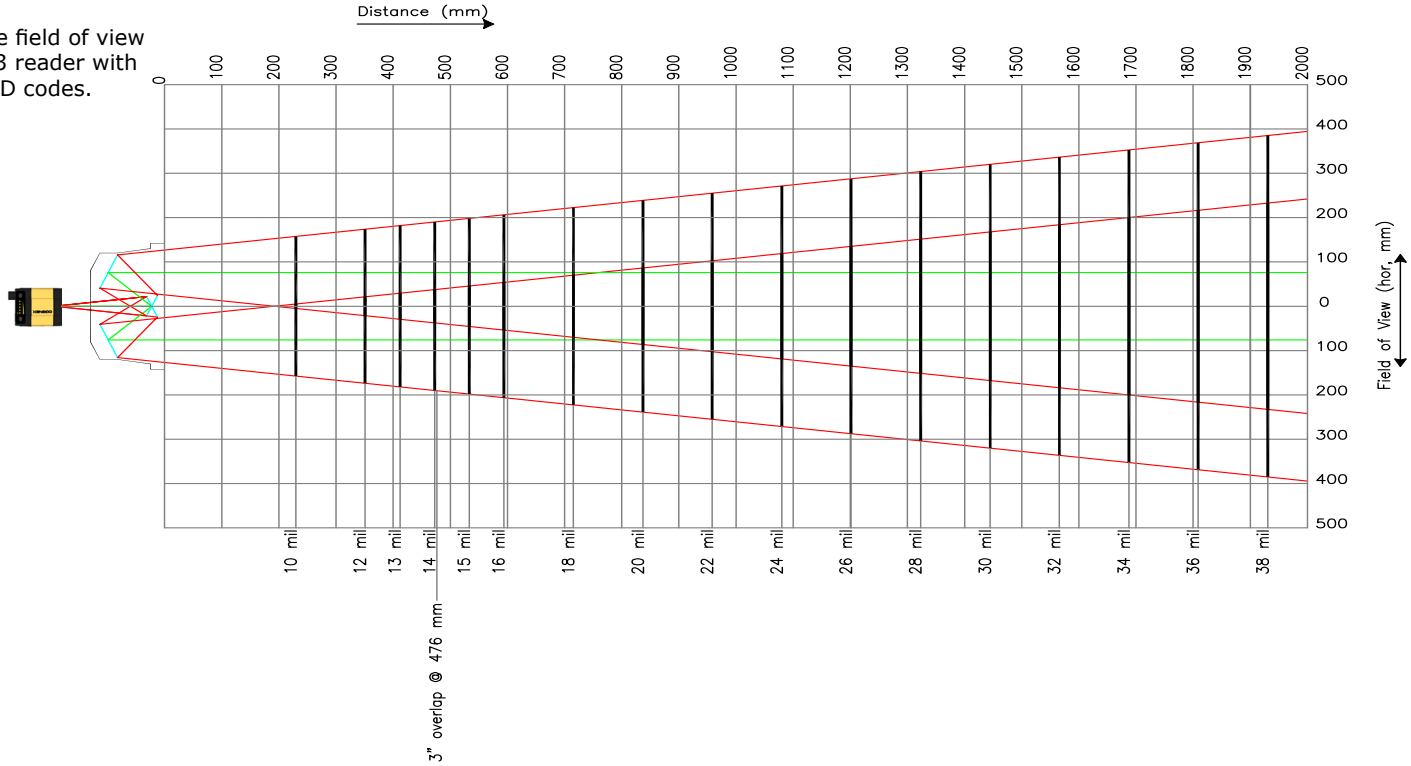
Field of View for Xpand 15 (DataMan 303 with 25 mm lens)

This map shows the field of view of the DataMan 303 reader with a 25 mm lens for 1D codes.



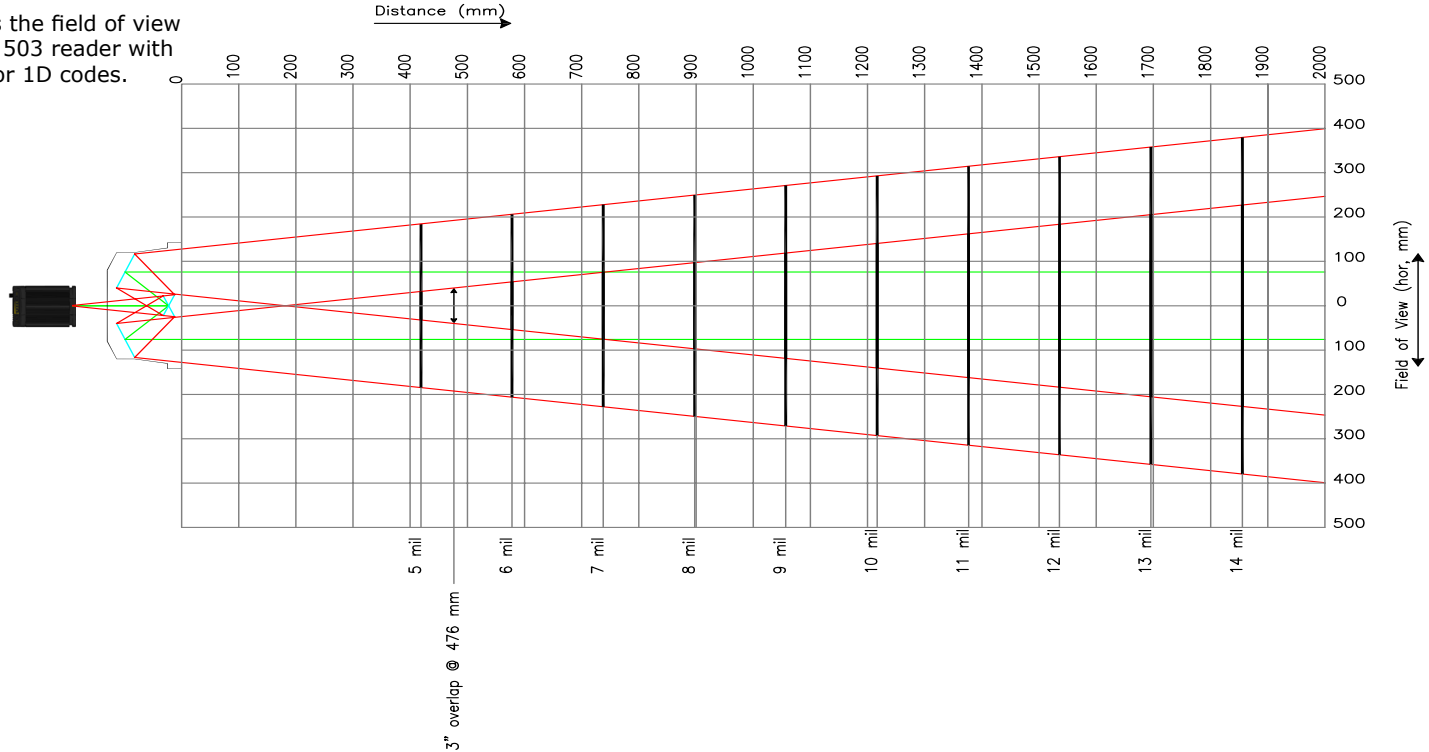
Field of View for Xpand 15 (DataMan 303 with 25 mm lens)

This map shows the field of view of the DataMan 303 reader with a 25 mm lens for 2D codes.



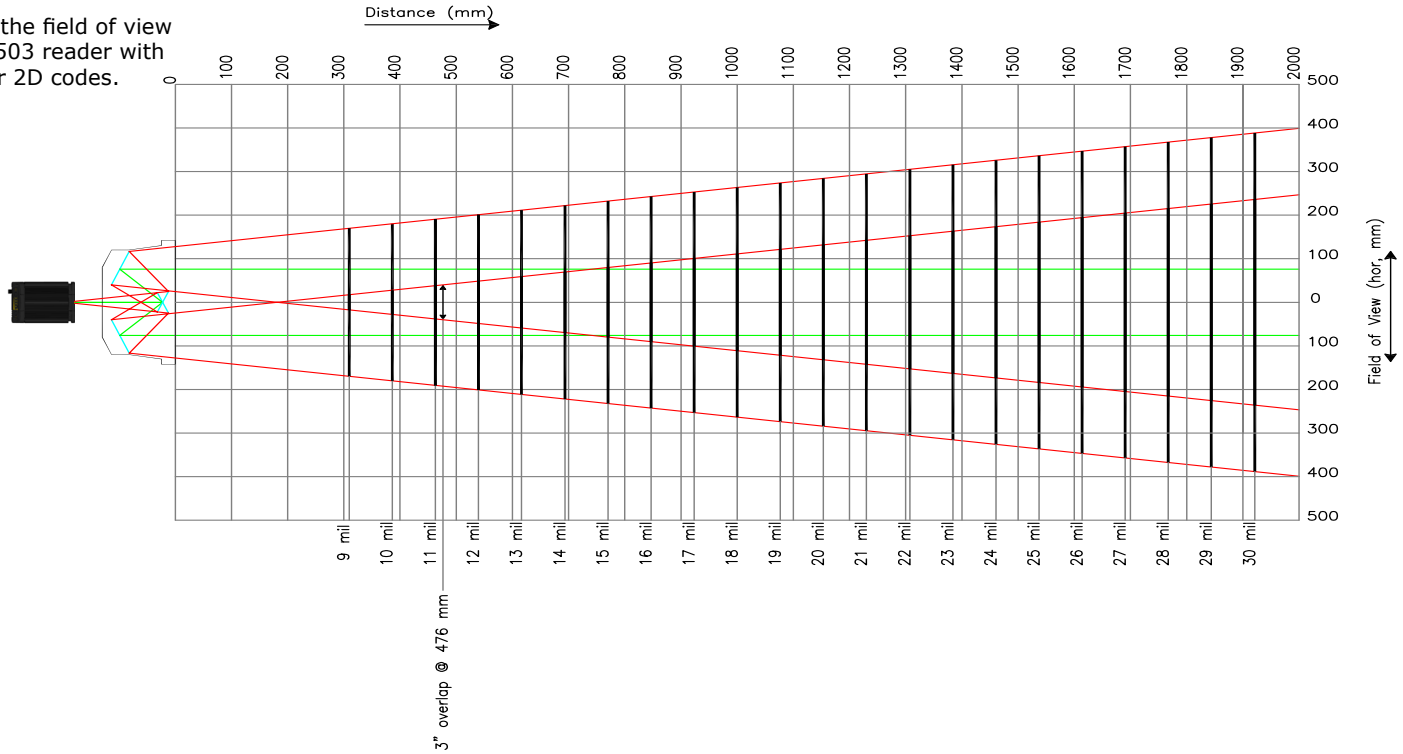
Field of View for Xpand 15 (DataMan 503 with 40 mm lens)

This map shows the field of view of the DataMan 503 reader with a 40 mm lens for 1D codes.



Field of View for Xpand 15 (DataMan 503 with 40 mm lens)

This map shows the field of view of the DataMan 503 reader with a 25 mm lens for 2D codes.



Xpand 15 Specifications

Weight	2000 g
Operating Temperature	0ºC — 45ºC (32ºF — 113ºF)
Storage Temperature	-50ºC — 85ºC (-40ºF — 185ºF)
Maximum Humidity	95% (non-condensing)
Environmental	IP65 (with sliding lens cover closed and secured)
Vibration	EN61373 including IEC 60068-2-6
Field of View	380 mm
	Overlap: 76 mm

Warnings and Notices

Handle with care as Xpand 15 subassembly houses mirrors inside the unit.

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

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.

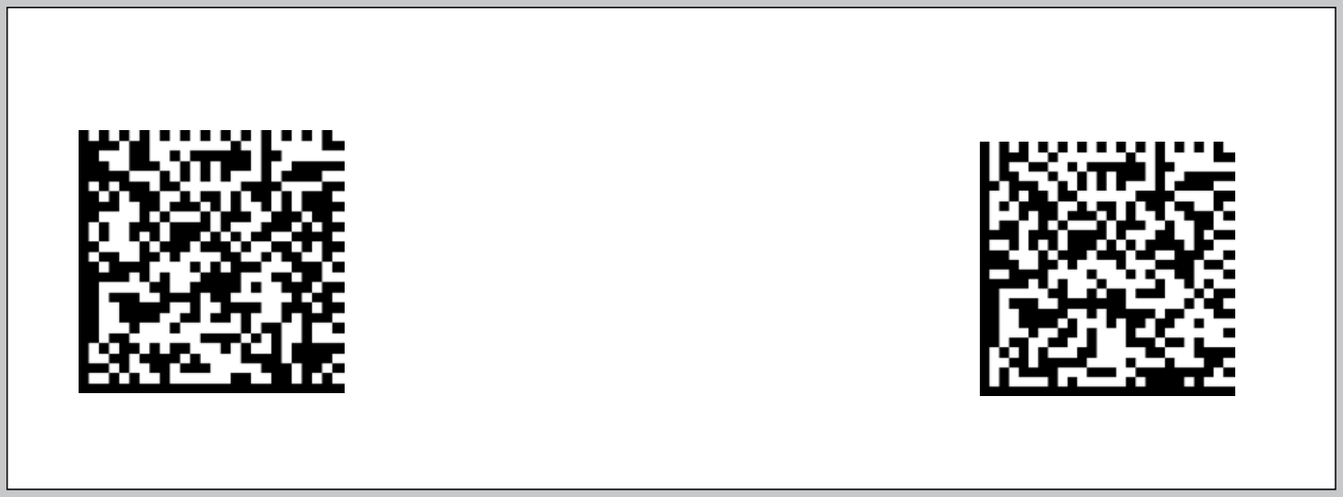
The crossed out wheeled bin symbol informs you that the product should not be disposed of along with municipal waste and invites you to use the appropriate separate take-back systems for product disposal.

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.

NOTE: For product support, contact http://support.cognex.com

Reader Programming Codes



Reset Scanner to
Factory Defaults

Reboot Scanner