

Product: Falcon X3

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Falcon X3 Depth of Field (DOF) Specifications

This document provides information on symbologies decoded, and depth of field specifications for the Falcon X3 Standard Range, Imager and XLR (Extra Long Range – Lorax) scan engines

The Falcon X3 and Falcon X3 Gun (Pistol Grip) Portable Data terminals decode the following symbologies:

STANDARD RANGE / XLR:

Codabar
Code 128
Code 32 (Pharmacode 39)
Code 39
Code 93
EAN128
EAN-13
EAN-8
GS1 Databar
I 2 of 5 codes
MSI
UPC-A
UPC-E

IMAGER:

Bookland EAN and ISSN
Codabar
Code 128
Code 32
Code 39
Code 93
DataMatrix
Ean128
EAN-13
EAN-8
GS1 Databar
Intelligent Mail
ISBT 128
Japan Post
KIX Code
MaxiCode
Micro QR
MSI
PDF417
Planet
Postnet
QR Code
Royal Mail
UPC-A
UPC-E
UPU FICS

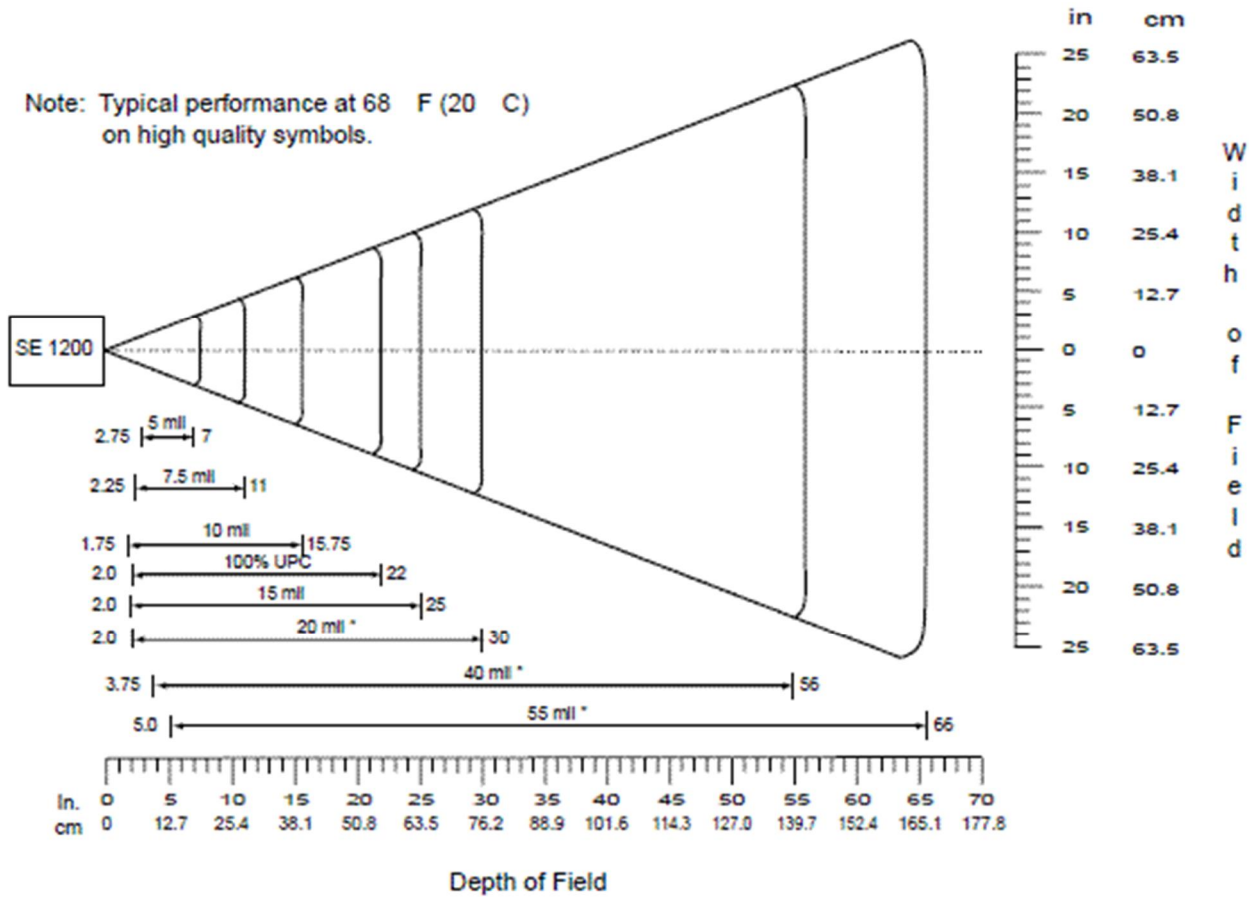
The **Falcon X3 Standard Range** decoder product line uses the SE-1200HP-110xA High Performance module for decoding. Use the charts below to match the MIL size of the symbology to the Minimum (Near) and Maximum (Far) distances away from the scanner for label decoding:

Symbol Density/ Bar Code Type/ W-N Ratio	Guaranteed Working Ranges		Typical Working Ranges	
	Near	Far	Near	Far
5.0 mil Code 39; 2.5:1	9.40 cm 3.7 in	12.70 cm 5.0 in	6.98 cm 2.75 in	17.78 cm 7.0 in
7.5 mil Code 39; 2.5:1	6.98 cm 2.75 in	22.86 cm 9.0 in	5.72 cm 2.25 in	27.94 cm 11.0 in
10 mil Code 39; 2.5:1	6.35 cm 2.5 in	33.02 cm 13.0 in	4.45 cm 1.75 in	40.00 cm 15.75 in
13 mil 100% UPC	6.35 cm 2.5 in	33.02 cm 13.0 in	5.08 cm 2.0 in	55.888 cm 22.0 in
15 mil Code 39; 2.5:1	6.35 cm 2.5 in	48.26 cm 19.0 in	5.08 cm 2.0 in	63.50 cm 25.0 in
20 mil Code 39; 2.2:1	7.62 cm 3.0 in (Note 2)	53.34 cm 21.0 in	5.08 cm 2.0 in (Note 2)	76.20 cm 30.0 in
40 mil Code 39; 2.2:1	12.70 cm 5.0 in (Note 2)	76.20 cm 30.0 in	9.53 cm 3.75 in (Note 2)	142.24 cm 56.0 in
55 mil Code 39; 2.2:1	15.24 cm 6.0 in (Note 2)	91.44 cm 36.0 in	12.70 cm 5.0 in (Note 2)	167.64 cm 66.0 in

Notes:

1. CONTRAST measured as Mean Reflective Difference (MRD) at 650 nm.
2. Near ranges on lower densities (not specified) are largely dependent upon the width of the bar code and the scan angle.
3. Working range specifications: Photographic quality symbols, pitch = 10°, skew = 0°, roll = 0°, ambient light < 150 ft. candles, and temperature = 23°C

Falcon X3 Standard Range:



*Minimum distance determined by symbol length and scan angle

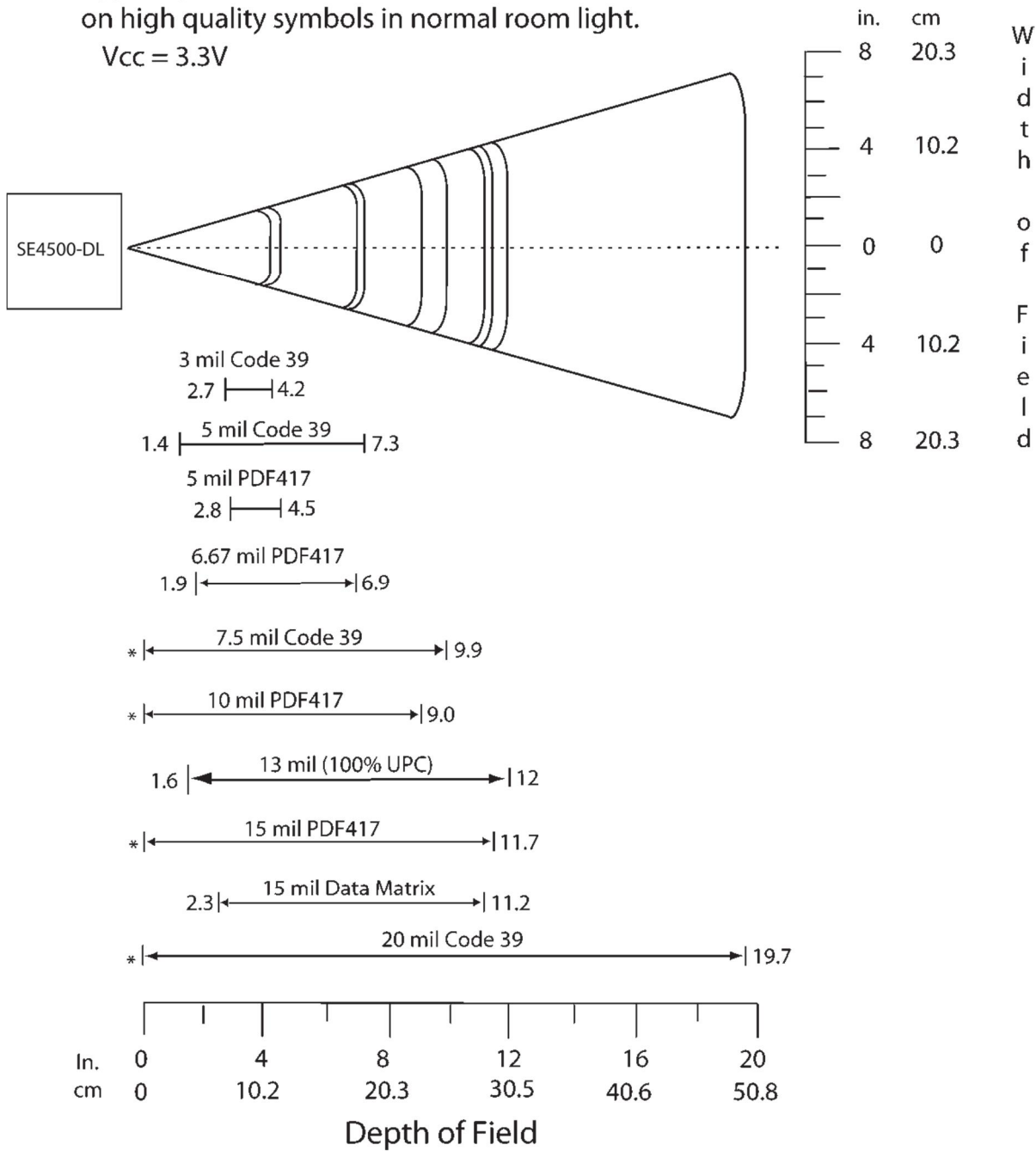
The **Falcon X3 Imager** product line uses the SE4500-DL (Driver's License Optimized) module for decoding. Use the charts below to match the MIL size of the symbology to the Minimum (Near) and Maximum (Far) distances away from the scanner for label decoding:

Symbol Density/ Bar Code Type	Guaranteed Working Ranges		Typical Working Ranges	
	Near	Far	Near	Far
3.0 mil Code 39	8.38 cm 3.3 in	9.40 cm 3.7 in	6.86 cm 2.7 in	10.67 cm 4.2 in
5.0 mil Code 39	4.32 cm 1.7 in	17.02 cm 6.7 in	3.56 cm 1.4 in	18.54 cm 7.3 in
5.0 mil PDF417	8.64 cm 3.4 in	9.91 cm 3.9 in	7.11 cm 2.8 in	11.43 cm 4.5 in
6.67 mil PDF417	6.35 cm 2.5 in	15.75 cm 6.2 in	4.83 cm 1.9 in	17.53 cm 6.9 in
7.5 mil Code 39	Note 1	22.35 cm 8.8 in	Note 1	25.15 cm 9.9 in
10 mil PDF417	Note 1	20.32 cm 8.0 in	Note 1	22.86 cm 9.0 in
13 mil UPC-A	5.08 cm 2.5 in	27.18 cm 10.7 in	5.08 cm 1.6 in	30.48 cm 12.0 in
15 mil PDF417	Note 1	26.67 cm 10.5 in	Note 1	29.72 cm 11.7 in
15 mil Data Matrix			5.84 cm 2.3 in	28.45 cm 11.2 in
20 mil Code 39	Note 1	43.43 cm 17.1 in	Note 1	50.04 cm 19.7 in

Notes:
 1. Near distances are FOV limited.
 2. Contrast is measured as Mean Reflective Difference (MRD) at 670 nm.
 3. Working range specifications at temperature = 23°C, pitch = 18°, roll = 0°, skew = 0°, photographic quality, ambient light ~30 ft-c, humidity 45-70%RH.

Falcon X3 Imager:

Note: Typical performance at 73°F (23°C)
on high quality symbols in normal room light.
Vcc = 3.3V



* Minimum distance determined by symbol length and scan angle.

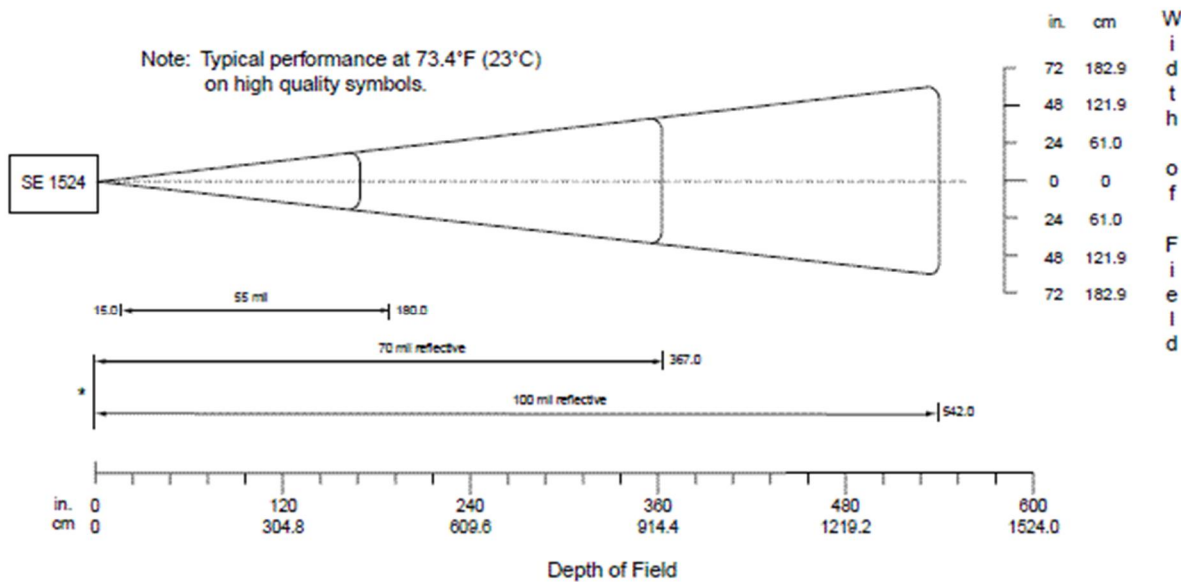
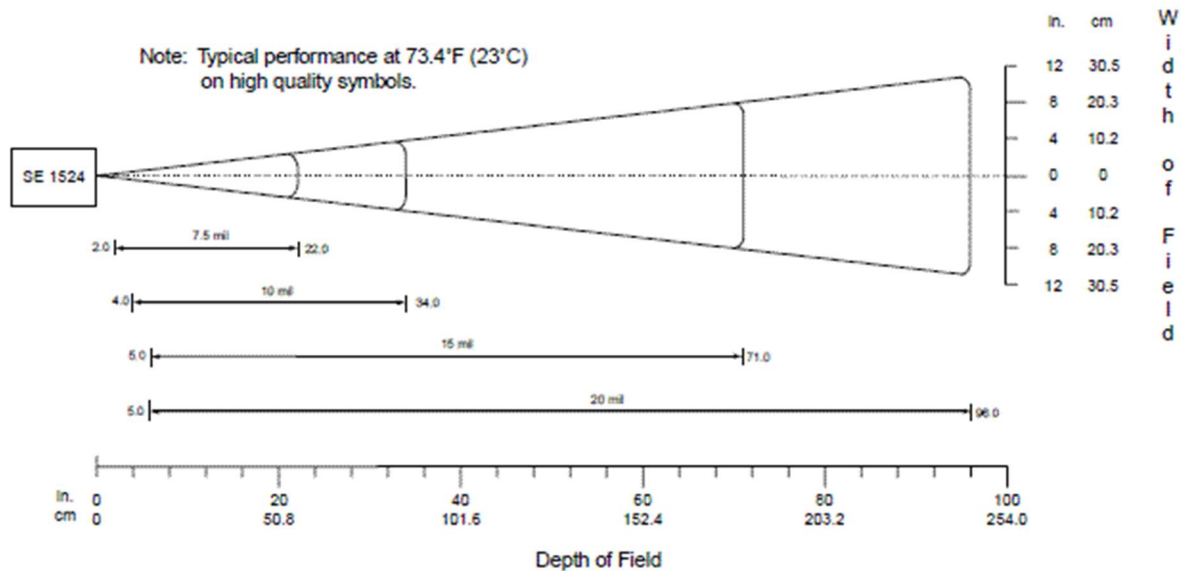
The **Falcon X3 XLR (Extra Long Range – Lorax)** product line uses the SE1524ER module for decoding. Use the charts below to match the MIL size of the symbology to the Minimum (Near) and Maximum (Far) distances away from the scanner for label decoding:

Symbol Density/ Symbol p/n/ Bar Code Type/ W-N Ratio	Guaranteed Working Ranges		Typical Working Ranges	
	Near	Far	Near	Far
7.5 mil 64-17452-01 Code 39; 2.5:1	15.24 cm 6.0 in	38.10 cm 15.0 in	5.08 cm 2.0 in	55.88 cm 22.0 in
10 mil 64-17454-01 Code 39; 2.5:1	15.24 cm 6.0 in	76.20 cm 30.0 in	10.16 cm 4.0 in	86.36 cm 34.0 in
15 mil 64-17417-01 Code 39; 2.5:1	17.78 cm 7.0 in	127.00 cm 50.0 in	12.70 cm 5.0 in	180.34 cm 71.0 in
20 mil 64-17456-01 Code 39; 2.2:1	17.78 cm 7.0 in	177.80 cm 70.0 in	12.70 cm 5.0 in	243.84 cm 96.0 in
55 mil 64-17458-01 Code 39; 2.2:1	43.18 cm 17.0 in	393.70 cm 155.0 in	38.10 cm 15.0 in	457.20 cm 180.0 in
70 mil reflective 64-08780-01 Code 39; 3.0:1	Note 4	825.50 cm 325.0 in	Note 4	932.18 cm 367.0 in
100 mil reflective 64-16990-01 Code 39; 3.0:1	Note 4	1219.20 cm 480.0 in	Note 4	1376.68 cm 542.0 in

Notes:

1. CONTRAST measured as Mean Reflective Difference (MRD) at 670 nm.
2. Near ranges are largely dependent upon the width of the bar code.
3. Working range specifications at temperature 23°C.
4. Near range on reflective bar codes determined by degree of reflectivity and width of bar code.

Falcon X3 XLR (Extra Long Range – Lorax):



* Near range determined by degree of reflectivity and width of bar code.

References

1. [Falcon X3 Win CE User's Manual](#)
2. [Falcon X3 Win Mobile User's Manual](#)
3. [Falcon X3 English Data Sheet](#)
4. [Datalogic Mobile Falcon X3 Web Link](#)

For additional assistance, please contact your local [Technical Support](#).

Additional information is available on www.adc.datalogic.com.