



**NEUROBOT**  
**FS40 Fixed**  
**Industrial Scanner**  
**MICROSCOPE**

# SPECIFICATION

## Device Characteristics

Dimensions	2.1 in. H x 2.5 in. W x 3.6 in. D 54.0 mm H x 64.0 mm W x 91.4 mm D
Weight	14.1 oz./400.0 g
Power	External power supply: 10-30 VDC, 1.5 A max @ 24 VDC (36 W max) PoE+ supply: Class 4, 25.5 W max PoE supply: Class 3, 13 W max USB-C host: 5 VDC, 3 A max (15 W max)
Configurable IO	Four opto-isolated GPIO: GPIO0,1,2,3 Five non-isolated GPIO: GPIO4,5,6*,7*,8* *Unavailable when External Light Mode is enabled
Color and Material	Industrial green aluminum housing
Interface Ports	One M12 X-Coded 1000/100/10 Mbps Ethernet* One M12 12-pin Power/GPIO/RS-232 One M12 5-pin External Light Power & Control/GPIO One USB 3.0 SuperSpeed Type-C with DisplayPort Alt Mode *Available with one or two Ethernet ports; PoE is only supported by the primary Ethernet port
Communication Protocols	Ethernet/IP, PROFINET, Modbus TCP, TCP/IP, RS-232
Keyboard Support	Supports over 90 international keyboards
User Indicators	360 Degree Decode/Job Status LEDs, Power LED, Online/Run LED, Focus Warning LED, Error LED, Ethernet Status LED; Beeper (adjustable volume)

## Performance Characteristics

Image Sensor	2.3MP: 1/2.3 inch CMOS, global shutter 1920 x 1200 3.0 um square pixels Monochrome  5.1MP: 1/2.5 inch CMOS, rolling shutter 2592 x 1952 2.2 um square pixels Monochrome
Acquisition Rate	2.3MP: Up to 60 frames/second 5.1MP: Up to 30 frames/second
Aimer	Red Class II Laser; 8-point sunburst pattern
Illumination	Field replaceable modules: <ul style="list-style-type: none"><li>Eight 660nm Red LEDs</li><li>Eight 470nm Blue LEDs</li><li>Eight 850nm IR LEDs</li><li>Eight 2700K (Color Temperature) White LEDs</li><li>Four 660nm Red LEDs + Eight 850nm IR LEDs + Four 470nm Blue LEDs + Eight 2700K (Color Temperature) White LEDs</li></ul>
Imager Field of View	SR (Standard Range): 10.8mm Liquid Lens 30° H x 19° V Nominal WA (Wide Angle): 6.8mm Liquid Lens 46° H x 29° V Nominal

## User Environment

Operating Temp.	32° F to 113° F/0° C to 45° C (10-30VDC external power supply, duty cycle-dependent) 32° F to 113° F/0° C to 40° C (POE, duty cycle-dependent)
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## User Environment (continued)

Storage Temp.	-40° F to 158° F/-40° C to 70° C
Environmental Sealing	IP65 and IP67
Humidity	5% to 90% RH, non-condensing
Shock Resistance	EN 60068-2-27, 30 g; 11 ms; 3 shocks on each axis
Vibration Resistance	EN 60068-2-6, 14 mm @ 2 to 10 Hz, 1.5 mm @ 13 to 55 Hz; 2 g @ 70 to 500 Hz; 2 hours on each axis

## Supported Symbologies<sup>2</sup>

1D	Code 39, Code 93, Code 128, I 2 of 5, MSI Plessey, UPC/EAN
2D	Aztec, Data Matrix, DotCode, MaxiCode, PDF417, Micro PDF417, QR Code, Micro QR
OCR	OCR-A, OCR-B, MICR, US Currency, Trainable OCR (available on select models or via an add-on OCR license)

## Software

Management	Zebra Aurora™
Decoder Packages	1D/2D Standard (5 FPS); 1D/2D Fast and OCR (60 FPS); 1D/2D DPM Full and OCR (60 FPS); Trainable OCR (standalone license) (Decoder packages vary by SKU; software Decoder Package upgrades available via an upgrade license.)
Machine Vision (MV) Toolsets	Sensor, Standard, Advanced (Available via an upgrade license)

## Regulatory

Environmental	EN 50581:2012; EN IEC 63000:2018
Electrical Safety	IEC 62368-1 (Ed.2); EN 62368-1:2014/A11:2017
Laser Safety	21CFR1040.10 & 21CFR1040.11 IEC/EN 60825-1:2014 (Ed.3)
LED Safety	IEC 62471:2006 (Ed.1); EN 62471:2008
EMI/EMS	EN 55032:2015/A11:2020 (Class B) EN 55035:2017 EN 61000-3-2:2014 (Class A) EN 61000-3-3:2013 47 CFR Part 15, Subpart B, Class B ICES-003, Issue 7, Class B
EU Declaration of Conformity	2014/30/EU; 2014/35/EU; 2011/65/EU. For more information visit: <a href="http://www.zebra.com/doc">www.zebra.com/doc</a>

## Accessories

Internal illumination, external illumination, internal filters, brackets, cables, power supplies

## Warranty

Subject to the terms of Zebra's hardware warranty statement, the FS40 is warranted against defects in workmanship and materials for a period of Two (2) Years from the date of shipment. Complete Zebra hardware product warranty statement: [www.zebra.com/warranty](http://www.zebra.com/warranty)

# SPECIFICATION

## Recommended Services

Zebra OneCare Select; Zebra OneCare Essential

## Decode Ranges (Typical Working Ranges)<sup>3</sup>

### FS40-SR — 30° FOV Lens

Symbology/Resolution	Near	Far
5 mil Code 128	3 in./8 cm	24 in./61 cm
10 mil Code 128	3 in./8 cm	49 in./124 cm
15 mil Code 128	3 in./8 cm	70 in./178 cm
20 mil Code 128	3 in./8 cm	92 in./234 cm
5 mil DataMatrix	3 in./8 cm	13 in./33 cm
10 mil DataMatrix	3 in./8 cm	28 in./71 cm
15 mil DataMatrix	3 in./8 cm	40 in./102 cm
30 mil DataMatrix	3 in./8 cm	78 in./198 cm

### FS40-WA — 46° FOV Lens

Symbology/Resolution	Near	Far
5 mil Code 128	3 in./8 cm	14 in./36 cm
10 mil Code 128	3 in./8 cm	30 in./76 cm
15 mil Code 128	3 in./8 cm	42 in./107 cm
20 mil Code 128	3 in./8 cm	56 in./142 cm
5 mil DataMatrix	3 in./8 cm	8 in./20 cm
10 mil DataMatrix	3 in./8 cm	18 in./46 cm
15 mil DataMatrix	3 in./8 cm	27 in./69 cm
30 mil DataMatrix	3 in./8 cm	52 in./132 cm

## Footnotes

1. Some features available in a future release. Contact your Zebra Partner or sales representative for more information.
2. Refer to Product Reference Guide for complete list of symbologies.
3. Printing resolution, contrast, power source, illumination source, and ambient light dependent.

Specifications subject to change without notice.

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