# DS4600 Series for Electronics Manufacturing

## Improve productivity and quality control in electronics manufacturing

You rely on barcodes to track components and ensure product quality when manufacturing cell phones, computers, televisions, servers and other electronics products. Your workers need to capture barcodes of all sizes and on all surfaces—instantly and flawlessly. And with the DS4600 Series for Electronics Manufacturing, they can. Its extreme density focus offers superior decode performance and more intuitive scanning for tiny and dense barcodes compared to a general purpose scanner. It can handle virtually any barcode in electronics manufacturing, including poorly printed barcodes on virtually any surface, laser etched codes and codes of all sizes—from tiny and dense 2 mil barcodes on components to four-inch wide barcodes on box labels. A wide decode range enables the capture of tiny and dense barcodes, nearer and farther than any other scanner in this class for point-and-shoot simplicity. And our unique DataCapture DNA and industry-preferred management tools make it easier than ever to integrate, deploy and manage your scanners. The DS4600 Series for Electronics Manufacturing—purpose-built innovation for your electronics production line.



### Resets the bar for versatility and performance

**Capture it all—from tiny and dense to extra-wide barcodes**
No matter what type of barcodes are found in your electronics manufacturing operations, you can capture them all with the DS4608-XD. Its extreme density focus easily reads tiny and dense barcodes printed on plastic and metal electronic subcomponents, such as PCB's and memory chips. Even challenging low contrast ink, laser and chemical etched barcodes can be captured with ease. And the same imager can read 4-inch wide barcodes found on picklists, carton labels and packages, delivering outstanding value—you can use the same device for multiple applications in your operations.

**Great scanning performance keeps your production line moving**
What makes the DS4608-XD unique? Its patented rear engine design creates more room for a built-in diffuser—providing optimal illumination on a wide variety of surfaces. Indirect lighting enables the capture of codes printed on shiny and reflective surfaces, while direct light provides the bright light needed to successfully read low contrast barcodes and laser-etched codes. And the 800 MHz microprocessor, megapixel sensor and Zebra's exclusive PRZM Intelligent Imaging technology further improve performance on challenging barcodes. The result? High-confidence scanning for fewer exceptions and workflow disruptions.

**Capturing high density barcodes is easier than ever**
High density and tiny barcodes can be tough to scan, but not with the DS4608-XD. This intuitive imager has the widest decode range in its class—enabling workers to position it at a more natural distance to see the barcode they are scanning. The result is point and shoot simplicity for some of the most challenging barcodes.

**Haptic and visual feedback—ideal for noisy production lines**
On the production line, the traditional beep tone can be hard to hear. That's why the DS4608-XD offers multiple feedback modes: haptic/vibration, a good decode LED that's visible from any position, a traditional beep tone, plus Zebra's Direct Decode Indicator that projects the illumination on the barcode. No matter how noisy your environment might be, workers instantly know they are about to utilize the right component—there's no need to stop and verify that a scan was completed.

**Boost manufacturing capacity and error-proof the production line with the DS4608-XD—the high performance imager purpose-built for electronics manufacturing.**

For more information, visit **www.zebra.com/ds4600xd**

**Day-in, day-out dependability on the production line**
Your production line doesn't stop, and neither does the DS4608-XD. It's engineered for durability, inside and out. IP52 sealing protects against spills, while a patented double-sealed optical system protects the critical optical components from dust and liquid—ensuring that the 'eye' of the scanner always captures the sharpest possible barcode image for fast and reliable decoding. The recessed scan window protects against smudges, dirt and scratches, which can impact performance. And the scanner is built to survive multiple 6 ft./1.8 m drops to concrete and 2,000 tumbles in our punishing tumble test.

**On-the-fly switching between handheld and hands-free scanning**
Simply place the DS4608-XD in its presentation stand to automatically switch to hands-free mode—no change of settings is required.

**Capture multiple barcodes with one press of the scan trigger**
With Multi-Code Data Formatting (MDF), the DS4608-XD can scan multiple barcodes with a single trigger pull and transmit only the barcodes you need, in the order your application expects. You get superior versatility and value—the same imager that can read small dense codes on the production line can also read multiple paper codes on packages in the receiving area.

**Single out one barcode from many**
With Zebra's Preferred Symbol, the DS4608-XD can capture and output only the preferred barcode, so workers no longer have to waste time physically covering nearby barcodes before scanning.

## Industry-preferred management tools

**Effortless deployment**
The DS4608-XD couldn't be easier to setup. Right out of the box, the imager is configured for the most common applications, while auto-host detect cables automatically select the right host interface—just plug in the DS4608-XD and you're ready to go.

**Easily deploy and manage all of your imagers**
123Scan—a complimentary DataCapture DNA tool—is intuitive enough for first-time users. You can easily create configuration barcodes to program imagers, update firmware or stage a large number of devices. If your imagers are in multiple locations across the country or around the world, you can use the complimentary Scanner Management Service (SMS) to configure and update the firmware for any DS4600 Series device that is plugged into a host. No depot staging or user action is required—such as the scanning of a configuration barcode.

## DataCapture DNA—transforming scanners from the inside

**Simplify the entire scanning experience**
Hardware is just the start of what you need to maximize the value of your scanners. The DS4600 Series is powered by DataCapture DNA, a set of unique development, management, visibility and productivity tools. Leveraging Zebra's 50 years of innovation, DataCapture DNA turns Zebra scanners into powerful tools that lower your TCO and help workers get more done each day. Decrease development cycles with development tools. Dramatically simplify scanner deployments of any size with management tools. Get the remote analytics you need to keep scanners up and running with visibility tools. And reach new levels of productivity with innovations that streamline tasks.

# DS4608-XD Specifications

## Physical Characteristics

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|---|---|
| Dimensions | 6.5 in. H x 2.6 in. W x 3.9 in. D<br>16.5 cm H x 6.7 cm W x 9.8 cm D |
| Weight | 5.7 oz. / 161.9 g |
| Input Voltage Range | 4.5 to 5.5 VDC Host Powered; 4.5 to 5.5 VDC External Power Supply |
| Operating Current at Nominal Voltage (5.0V) | 375 mA (typical) |
| Standby Current (Idle) at Nominal Voltage (5.0V) | 150 mA (typical) |
| Color | Twilight Black |
| Supported Host Interfaces | USB, RS232, TGCS (IBM) 46XX over RS485 |
| Keyboard Support | Supports over 90 international keyboards |
| User Indicators | Direct Decode Indicator, Good Decode LEDs, rear view LEDs, beeper (adjustable tone and volume), haptic/vibration |

## Performance Characteristics

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|---|---|
| Light Source | Aiming Pattern: circular 528nm true green LED |
| Illumination | (2) warm white LEDs |
| Imager Field of View | 34° H x 21.6° V nominal |
| Image Sensor | 1280 x 800 pixels |
| Minimum Print Contrast | 15% minimum reflective difference |
| Skew Tolerance | +/- 60° |
| Pitch Tolerance | +/- 60° |
| Roll Tolerance | 0° - 360° |

## Imaging Characteristics

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|---|---|
| Graphics Format Support | Images can be exported as Bitmap, JPEG or TIFF |

## Environmental

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|---|---|
| Operating Temperature | 32.0° to 122.0° F / 0.0° to 50.0° C |
| Storage Temperature | -40.0° to 158.0° F / -40.0° to 70.0° C |
| Humidity | 5% to 95% RH, non-condensing |
| Drop Specification | Designed to withstand multiple drops at 6.0 ft./1.8 m to concrete |
| Tumble Specification | Designed to withstand 2,000 tumbles in 1.5 ft./0 .5 m tumbler |
| Environmental Sealing | IP52 |
| Electrostatic Discharge (ESD) | ESD per EN61000-4-2, +/-15 KV Air, +/-8 KV Direct, +/-8 KV Indirect |
| Ambient Light Immunity | 0 to 10,000 Foot Candles / 0 to 107,600 Lux |

## Regulatory

| | |
|---|---|
| Environmental | 2011/65/EU and EN 50581:2012 and EN IEC 63000:2018 |
| Electrical Safety | UL 60950-1, second edition, CAN/CSA-C22.2 No. 60950-1-07. EN 60950-1:2006/A2:2013 IEC 60950-1:2005/A2:2013 IEC 62368-1 (ed.2); EN 62368-1:2014 |
| LED Safety | IEC 62471:2006 (Ed.1.0); EN 62471:2008 |
| EMI/RFI | FCC: 47 CFR Part 15, Subpart B, Class B ICES-003 Issue 6, Class B EN 55032, Class B EN 55024 EN 55035 EN 60601-1-2:2015, IEC 60601-1-2:2014 |

## Accessories

Gooseneck Intellistand, Cup

## Symbol Decode Capability

| | |
|---|---|
| 1D | Code 39, Code 128, Code 93, Codabar/NW7, Code 11, MSI Plessey, UPC/EAN, I 2 of 5, Korean 3 of 5, GS1 DataBar, Base 32 (Italian Pharma) |
| 2D | PDF417, Micro PDF417, Composite Codes, TLC-39, Aztec, DataMatrix, DotCode, Dotted DataMatrix, MaxiCode, QR Code, Micro QR, Han Xin, Postal Codes, SecurPharm |

Refer to Product Reference Guide for complete list of symbologies.

| | |
|---|---|
| Minimum Element Resolution | Code 39 - 2.0 mil DataMatrix - 4.0 mil |

## Decode Ranges (Typical)[1]

| Symbology/Resolution | Near/Far |
|---|---|
| Code 128: 2 mil | 0.3 in./0.8 cm to 2.3 in./5.8 cm |
| Code 128: 3 mil | 0 in./0 cm to 3.5 in./8.8 cm |
| Code 128: 15 mil | 4.2 in./10.7 cm to 8.6 in./21.8 cm |
| Code 39: 2 mil | 0.2 in./0.5 cm to 3.0 in./7.6 cm |
| Code 39: 3 mil | 0 in./0 cm to 3.8 in./9.6 cm |
| Code 39: 5 mil | 0 in./0 cm to 5.2 in./13.2 cm |
| PDF 417: 4 mil | 0 in./0 cm to 3.3 in./8.4 cm |
| PDF 417: 5 mil | 0 in./0 cm to 3.8 in./9.6 cm |
| PDF 417: 6.6 mil | 0 in./0 cm to 4.5 in./11.4 cm |
| UPC: 13 mil (100%) | 0 in./0 cm to 8.5 in./21.5 cm |
| Data Matrix: 4 mil | 0.2 in./0.5 cm to 2.8 in./7.1 cm |
| Data Matrix: 5 mil | 0 in./0 cm to 3.4 in./8.6 cm |
| Data Matrix: 10 mil | 0 in./0 cm to 4.8 in./12.2 cm |
| QR Code: 10 mil | 0 in./0 cm to 4.5 in./11.4 cm |

## Ideal for these applications

### Electronics Manufacturing

- Product assembly
- Traceability
- Quality assurance
- Inventory and materials management
- Replenishment
- Picking

# DS4608-XD Specifications (continued)

### Warranty

Subject to the terms of Zebra's hardware warranty statement, the DS4608, is warranted against defects in workmanship and materials for a period of Five Years from the date of shipment. For the complete Zebra hardware product warranty statement, please visit: www.zebra.com/warranty

### Recommended Services

Zebra OneCare® Select; Zebra OneCare Essential

### Footnotes

1. Printing resolution, contrast and ambient light dependent

### DataCapture DNA

DataCapture DNA is a suite of highly intelligent firmware, software, utilities and apps exclusively engineered to add functionality and simplify the deployment and management of Zebra scanners. For more information about DataCapture DNA and its applications, please visit www.zebra.com/datacapturedna

| 123Scan | Intelligent Document Capture | Multi-Code Data Formatting | Preferred Symbol |
| --- | --- | --- | --- |

| PRZM intelligent Imaging | Remote Diagnostics | Remote Management | Scanner Control Application | Software Development Kit (SDK) |
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