# DS9900 Series for Labs

## Improve workflow efficiency and accuracy with the hybrid presentation imager built for the lab

2D barcodes and RFID help medical labs and pharmacies track critical items like medications, blood, tissue and other specimen samples to improve accuracy and efficiency. But barcodes found in the lab—from tiny barcodes on microscope slides to curved barcodes on medication bottles—can be challenging for a general purpose imager. Zebra's DS9900 Series is purpose-built for lab environments, offering unparalleled productivity and ease of use. Workers get first-time, every time capture of the many types of barcodes found in the lab including small, high density, curved and color-coded. A one-of-a-kind hybrid design offers both handheld and hands-free scanning, with seamless switching between modes. And an RFID model combines barcode scanning with RFID capabilities to read RFID tags on blood bags and other specimen samples. Improve workflow and accuracy with the hybrid imager built for the lab—the DS9900 Series.

### Industry-Best Performance

**Scan it All With Virtually No Exceptions**
The DS9900 Series combines a high-resolution megapixel sensor and Zebra's exclusive PRZM Intelligent Imaging technology for unparalleled performance on virtually any barcode found in pharmacies and labs—including poorly printed, shiny, faded, dirty and damaged, as well as electronic barcodes on dimly lit displays. Its high density focus easily reads smaller high density barcodes on microscope slides as well as curved barcodes on medicine bottles and blood vials. White illumination LEDs make it easy to scan barcodes on color-coded specimen trays and biopsy cassettes. The result? High-confidence scanning in the lab with first-time, every time capture of even the most challenging barcodes for fewer workflow disruptions.

**Rapid-Fire Scanning to Boost Productivity**
With an 800 MHz microprocessor, advanced illumination system and first-pass read rates up to 240 in./610 cm per second, the DS9900 Series provides near instant barcode capture. With the widest field of view in its class, the scanner requires less precision when positioning items—making hands-free scanning easier than ever.

**Optional RFID Model for Blood Bag Tracking and More**
An RFID model offers barcode scanning and UHF RFID reading/writing in a single platform—providing an ideal solution for tracking serial numbers, expiration dates and other critical data in blood processing. Workers can read multiple RFID-tagged samples in one pass without line of sight. The RFID model operates from a single USB port and does not require an external power supply. Complimentary RFID data conversion software reports RFID tag data as a standard barcode so you don't need to modify your existing application.

### Purpose-Built for Hybrid Scanning

**Dynamic Switching Between Hands-Free and Handheld Modes**
The DS9900 Series combines a patent-pending capacitive touch sensor for hand detection and accelerometer for motion detection to instantly switch modes when a worker picks up or puts down the scanner. There are no mechanical components to wear out for fail-proof switching throughout the scanner's life.

**Hybrid Ergonomics**
The ergonomic handle and a well-balanced design make the DS9900 Series remarkably easy to aim in handheld mode. And the integrated

adjustable stand offers a sturdy, compact solution that easily fits into crowded workspaces.

**Two Scanners in One**
Handheld and presentation applications have different scanning requirements. That's why the DS9900 Series is built for both. In presentation mode, the scan range is limited to prevent unintentional scanning of nearby items. When the scanner is picked up, an aim dot appears and the scan range is automatically extended to reach items on the table or cart.

## Built for Life in the Lab

**Day-In, Day-Out Dependability**
The DS9900 Series delivers the day-in, day-out dependable operation you need in your lab or pharmacy. Its proven single circuit board design eliminates a common point of failure, substantially increasing durability. Image quality is protected by a patented double-sealed optical scanning system, ensuring that the 'eye' of the DS9900 Series always captures the sharpest possible barcode for fast and reliable decoding. And the recessed scan window protects against smudges, dirt and scratches, which can impact performance.

**Designed to Survive Spills and Drops**
With IP52 sealing and elevated electronics, accidental spills and dust won't impact operation[1]. Inadvertent drops aren't a problem either—you can depend on reliable operation, even after multiple 5 ft./1.5 m drops to concrete and 2,000 consecutive 1.5 ft./0.5 m tumbles[2].

**Easily Read Color-Coded Labels**
Designed specifically for lab and medical environments, the DS9900 Series features white illumination LEDs that can easily read barcodes on color-coded specimen trays or biopsy cassettes. By contrast, red illumination found on some barcode scanners can cause color-coded barcodes to appear "washed out," making them difficult to decode.

## Boost Productivity With Zebra Innovations

**Doubles as a Document Scanner**
With a single press of the scan trigger, Zebra's Intelligent Document Capture can capture a high-resolution image of prescriptions, patient forms and other documents. Smart software automatically compensates for variations in lighting and squares up the image for optimum clarity.

**Capture Driver's License Data**
With optional driver's license parsing, the DS9900 Series can capture and parse data on driver's licenses to automatically populate patient admission forms.

**Streamline Data Collection With OCR**
Support for OCR transmits data from machine readable text to your application to expedite the collection of data from ID cards and more.

**Capture Multiple Barcodes With One Press of the Scan Trigger**
With Multi-Code Data Formatting (MDF), the DS9900 Series can scan multiple barcodes with a single trigger pull and transmit only the barcodes you need, in the order your application expects.

**Identify Poor-Performing Barcodes**
Zebra's ScanSpeed Analytics provides detailed performance metrics on each barcode captured—enabling you to identify and eliminate poor performing labels and barcodes that slow down your workflows.

**Single Out One Barcode From Many**
With Zebra's Preferred Symbol, the DS9900 Series can capture and output only the preferred barcode, so workers no longer have to physically cover nearby barcodes before scanning.

**Read securPharm Medications**
The DS9900 Series can read securPharm labels used to protect patients from receiving counterfeit medications.

## Industry-Preferred Management Tools

**Easily Manage All of Your Scanners With Powerful Complimentary Tools**
With 123Scan, you can easily create configuration barcodes to program scanners. If your scanners are in multiple locations across the country or around the world, with Scanner Management Service (SMS), you can configure and update the firmware for any DS9900 Series device that is plugged into the host—no depot staging or user action is required—such as the scanning of a configuration barcode.

**Easy Application Development**
Get everything you need to easily integrate scanning into your business applications with our Scanner Software Development Kits (SDKs) for Windows®, Android™, iOS® and Linux®. These SDKs provide documentation, drivers, test utilities and sample source code. And the RFID model comes with Zebra's SDK and a sample application that enables it to read data from a barcode and write that data to an RFID tag—lowering the cost and complexity of implementing RFID.

# Specifications

| Physical Characteristics | |
|---|---|
| **Dimensions** | DS9908: 8.0 in. H x 3.7 in. W x 5.2 in. D<br>20.3 cm H x 9.4 cm W x 13.2 cm D<br>DS9908R: 8.0 in. H x 3.9 in. W x 5.75 in. D<br>20.3 cm H x 9.9 cm W x 14.6 cm D |
| **Weight** | DS9908: 11.6 oz./330.0 g<br>DS9908R: 14.8 oz./420.0 g |
| **Input Voltage Range** | 4.5 to 5.5 VDC Host Powered; 4.5 to 5.5 VDC External Power Supply |
| **Current** | Operating current at nominal voltage (5.0V):<br>DS9908: 321 mA (typical)<br>DS9908R: 400 mA (typical)<br>Standby current (idle) at nominal voltage (5.0V):<br>DS9908: 70 mA (typical)<br>DS9908R: 135 mA (typical) |
| **Color** | Alpine White |
| **Supported Host Interfaces** | USB Certified[3], RS232, Keyboard Wedge, TGCS (IBM) 46XX over RS485 |
| **Keyboard Support** | Supports over 90 international keyboards |
| **TAA Compliance** | Trade Agreement Act Compliant |
| **User Indicators** | Direct Decode Indicator, Good Decode LEDs, Speaker (adjustable tone and volume) |
| **Performance Characteristics** | |
| **Swipe Speed (Hands-Free)** | Up to 240 in./610 cm per second for 13 mil UPC in optimized mode |
| **Light Source** | Aiming Pattern: Circular 528nm green LED |
| **Illumination** | (2) warm white LEDs |
| **Imager Field of View** | 48° H x 30.6° V nominal |
| **Image Sensor** | 1280 x 800 pixels |
| **Minimum Print Contrast** | 16% minimum reflective difference |
| **Skew Tolerance** | +/- 60° |
| **Pitch Tolerance** | +/- 60° |
| **Roll Tolerance** | 0°–360° |
| **RFID (DS9908R)** | |
| **Standards Supported** | EPC Class 1 Gen2; EPC Gen2 V2; ISO-18000-63 |
| **RFID Engine** | Zebra Proprietary Radio Technology |
| **Nominal Read Range** | ~18 in./~45.7 cm |
| **RFID Power Output** | 3 dBm to 22 dBm |
| **Frequency Range** | US: 902–928 MHz<br>EU: 865–868 MHz<br>Japan: 916–923 MHz |
| **Imaging Characteristics** | |
| **Graphics Format Support** | Images can be exported as Bitmap, JPEG or TIFF |
| **Image Quality (A4 Document)** | 116 PPI on an 8.3 x 11.7 in./21.0 x 29.7 cm document at 8.0 in./20.3 cm |
| **Environmental** | |
| **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** | DS9908: Designed to withstand multiple drops at 5.0 ft./1.5 m to concrete<br>DS9908R: Designed to withstand multiple drops at 4.0 ft./1.2 m to concrete |
| **Tumble Specification** | Designed to withstand 2,000 tumbles in 1.5 ft./0.5 m tumbler[4] |
| **Environmental Sealing** | DS9908: IP52<br>DS9908R: IP42 |
| **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** | EN 50581:2012 |
| **Electrical Safety** | IEC 62368-1 (ed.2)<br>EN 62368-1:2014/AC:2015 |
| **LED Safety** | IEC 62471:2006 (Ed.1.0)<br>EN 62471:2008 (LED) |
| **EMI/RFI** | EN 55032:2012/AC:2013 (Class B)<br>EN 55032:2015/AC:2016 (Class B)<br>EN 55024:2010<br>EN 55024:2010/A1:2015<br>EN 55035:2017<br>EN 61000-3-2:2014 (Class A)<br>EN 61000-3-3:2013<br>47 CFR Part 15, Subpart B, Class B<br>ICES-003 Issue 6, Class B |
| **Accessories** | |
| Multi-Mount Bracket (non RFID model only) | |
| **Symbol Decode Capability[6]** | |
| **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, MaxiCode, QR Code, Micro QR, Han Xin, Postal Codes |
| **OCR** | OCR-A, OCR-B, MICR, US Currency |
| **Minimum Element Resolution** | Code 39–3.0 mil<br>Code 128–3.0 mil*<br>DataMatrix–5.0 mil<br>QR Code–5.0 mil<br>*With Decode Range Limit feature disabled. |
| **Warranty** | |
| Subject to the terms of Zebra's hardware warranty statement, the DS9900 Series 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™ | |
| **Utilities And Management** | |
| **123Scan** | Programs scanner parameters, upgrades firmware, provides scanned barcode data and prints reports. www.zebra.com/123Scan |

## Markets and Applications

**Healthcare**

- Blood verification/ Phlebotomy
- Blood, tissue and specimen tracking
- Patient admission
- Inventory tracking
- Medication tracking

# Specifications

| | |
|---|---|
| **Symbol Scanner SDK** | Generates a fully-featured scanner application, including documentation, drivers, test utilities and sample source code. www.zebra.com/windowsSDK |
| **Scanner Management Service (SMS)** | Remotely manages your Zebra scanner and queries its asset information. www.zebra.com/sms |

**DS9908-HD Handheld Decode Ranges (Typical)[5]**

| Symbology/ Resolution | Near/Far |
|---|---|
| **Code 39: 3 mil** | 1.3 in./3.3 cm to 3.7 in./9.4 cm |
| **Code 128: 3 mil** | 1.4 in./3.6 cm to 4.2 in./10.7 cm |
| **Code 128: 5 mil** | 0.8 in./2 cm to 7.5 in./19 cm |
| **PDF 417: 6.7 mil** | 0.8 in./2 cm to 8 in./20 cm |
| **UPC: 13 mil (100%)** | 0.2 in./0.5 cm to 19.1 in./48.5 cm |
| **Data Matrix: 10 mil** | 0.5 in./1.3 cm to 9.3 in./23.6 cm |
| **QR: 20 mil** | 0 in./0 cm to 13.7 in./34.8 cm |

**DS9908-HD Hands-Free Decode Ranges (Typical)[5]**

| Symbology/ Resolution | Near/Far |
|---|---|
| **Code 39: 3 mil** | 1.1 in./2.8 cm to 3.7 in./9.4 cm |
| **Code 128: 5 mil** | 0.6 in./1.5 cm to 2.5 in./6.4 cm |
| **PDF 417: 6.7 mil** | 0.8 in./2.0 cm to 8.0 in./20.3 cm |
| **UPC: 13 mil (100%)** | 0 in./0 cm to 9.5 in./24.1 cm |
| **Data Matrix: 10 mil** | 0 in./0 cm to 9.3 in./23.6 cm |
| **QR: 20 mil** | 0 in./0 cm to 9.5 in./24.1 cm |

**Footnotes**

1. DS9908R RFID model: IP42 sealing
2. DS9908R RFID model: Multiple drops at 4.0 ft./1.2 m to concrete
3. USB connectivity supported on all DS9900 Series models. DS9900 Series non-RFID models are USB-IF Certified; certification is planned for DS9900 Series RFID models in H1 2019.
4. Note: 1 tumble = 0.5 cycles
5. Printing resolution, contrast, and ambient light dependent.
6. Refer to Product Reference Guide for a complete list of symbologies.

Features are subject to availability.
Specifications are subject to change without notice.

**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


atlasRFIDstore

+1 205-383-2244
info@atlasRFIDstore.com
https://www.atlasRFIDstore.com
112 28th Street South, Birmingham, Alabama, 35233, United States