

# FS20 Fixed Industrial Scanner

Easily integrate high quality scanning into your network

The increasing demands of international commerce and its global supply chain are pressuring companies to deliver more — and to do it faster. From manufacturing to logistics to the end customer, success is driven by the ability to quickly move and track the products that drive your business.



Address it all with the compact Zebra FS20 Fixed Industrial Scanner.<sup>1</sup> With the FS20, it's easy to track and trace every item as it moves through production, storage and fulfillment. Scan barcodes on components moving through your assembly line to ensure the right part is used at the right time — and enable rapid targeted recalls of products that contain defective parts. Scan barcodes on items as they are placed on warehouse shelves to provide visibility into real time inventory. And scan barcodes when fulfilling orders to ensure the right items are sent to the right customer. Whatever you want to track and trace, the FS20 makes it easy.



Zebra's smallest networkable Fixed Industrial Scanner fits wherever you need to capture barcodes. And with the powerful and intuitive Zebra Aurora™ software platform, the FS20 is exceptionally easy to set up, deploy and run. Multiple connectivity options make it easy to integrate with your PLC or Host network. When it comes to capturing barcodes, Zebra-exclusive features like ImagePerfect and PRZM Intelligent Imaging deliver first-time, every-time capture of every barcode in virtually any condition. As your needs change, easily add support for new codes, increase scanning speed and upgrade to machine vision functionality — all through the simple purchase of software licenses that future-proof your investment. Take your success to the next level with extraordinary visibility into your operational processes — with the FS20, only from Zebra.

## Zebra Aurora™ Software

### A single unified platform across Zebra's fixed industrial scanner and machine vision portfolio

Zebra Aurora brings a new level of simplicity to controlling enterprise-wide manufacturing and logistics automation solutions. This powerful interface makes it easy to set up, deploy and run all of Zebra's Fixed Industrial Scanners and Machine Vision Smart Cameras, while eliminating the need for different tools.

### For experts and beginners

Experienced and first-time users can easily navigate the highly intuitive modern interface, reducing training and deployment time. Experienced users will appreciate easy access to all functions and streamlined processes, while first-time users are guided through all the steps in the proper order. And if users need a little help, Learn-As-You-Go offers built-in tutorials, walk-throughs and videos on all aspects of the software and its comprehensive management toolset.

The FS20 — Enable performance. Inspire potential. Experience the difference with Zebra.

For more information, visit [www.zebra.com/fs20](http://www.zebra.com/fs20)

## Easy to set up

### Automatic setup with Auto-Tune

Just Auto-Tune and run for consistent, reliable read rates — right out of the box. With the press of one button, Auto-Tune dials in the perfect image for faster and more accurate set up.

### IoT ready with Zebra Savanna™

The IoT-ready FS20 can send images to Zebra's subscription-based cloud service, Zebra Savanna™ — or any other cloud service — allowing you to meet industry regulations or store images for further analysis, all without the need to purchase and manage servers.

### Power it all over Ethernet

Reduce setup complexity and cost with support for Power-over-Ethernet (PoE). This standard feature powers the FS20 and attached accessories right over the network, eliminating the cost of power drops and power supplies. Don't have a PoE infrastructure? No problem. You can also power the FS20 with a standard 24V DC power supply.

## Easy to deploy

### Programmable input/output (I/O) ports

Get the ultimate in I/O flexibility. Four digital I/O ports can be individually controlled to expand application functionality and improve error-proofing. Support additional peripherals, activate lights or trigger an action to more fully automate your processes.

### Ultra-rugged and ready for industrial spaces

Rely on dependable operation in the most demanding environments with an ultra-rugged design. The aluminum housing is chemical and oil resistant and IP65-sealed.

### Operator feedback/status indicators

With four built-in camera status LEDs — Power, Decode, Online/Run and Ethernet Status — workers can see at a glance if a decode was successful or unsuccessful, protecting product quality and traceability — and whether cameras are operational or in need of attention. In addition, a beeper with adjustable volume provides an audible cue of a successful decode, so workers can keep their eyes on the job — instead of the device.

### Added flexibility with Zebra Aurora HMI dashboard

Give workers actionable intelligence right where they need it — at their station. Operators can see and interact with the Zebra Aurora Human Machine Interface (HMI) dashboard via any web browser. The need to install a PC at every workstation is eliminated, reducing hardware requirements and installation costs.

### Simple, easy and fast integration with your network infrastructure

Built-in Ethernet/IP, PROFINET and other network protocols enable painless integration with any common PLC or host system. Network architecture is simplified and deployment time and cost are reduced.

## Easy to run

### First-time every-time data capture

Superior optics and Zebra's exclusive PRZM Intelligent Imaging technology work together to deliver the reliable data capture you need to keep your operations running at peak capacity. The optical system enables the simultaneous capture of multiple barcodes, extends read ranges and focal distances and allows a larger field of view to capture more information with less equipment. PRZM Intelligent Imaging is designed for the data capture demands of your environment, enabling the first-time capture of virtually any barcode in practically any condition.

### Achieve high read rates with ImagePerfect

Uneven lighting and the need to read barcodes at various distances can create the need for additional cameras, external lights or complex costly custom code — additions that can substantially increase overall costs as well as the total cost of ownership. Address it all with a groundbreaking new feature — ImagePerfect. This Zebra-exclusive feature captures up to 3 different images of a single item, each with its own unique setting for focus, exposure, gain, illumination control and more. The result? High quality images that enable high read rates. A significant reduction in solution complexity. And a lower total cost of ownership.

## Key Differentiators

The FS20 is loaded with class-leading features, including:

### ImagePerfect

#### Achieve high read rates with ImagePerfect

Capture up to three different images of a single item, each with its own unique setting for focus, exposure, gain, illumination control and more.

### PRZM Intelligent Imaging

#### First-time every-time barcode capture

Capture virtually any barcode in practically any condition — from 1D and 2D barcodes on a fast-moving conveyor belt, to DPM codes that are printed on challenging curved and reflective surfaces and more.

### Software upgradeable

#### Add what you need, whenever you need it

Add support for new barcode symbologies, faster barcode capture and all the machine vision tools you need through simple software licensing.

### PoE

#### Power it all over Ethernet

Power the FS20 right over your Ethernet cable — no more costly power drops and no more power supplies to purchase and manage.

**Introducing the Zebra Fixed Industrial Scanner and Machine Vision Portfolio**



FS10



FS20/VS20



FS40/VS40



FS70/VS70

**Capture all the data that drives your business**

Do it all with the FS20 — 1D, 2D and DPM barcodes, plus OCR human readable characters. Choose the configuration that supports the codes that drive your business processes today, knowing you can add functionality to meet the data capture needs of tomorrow. Easily add support for new barcode symbologies and increased scanning speed to meet new business needs. And turn your FS20 into a Machine Vision Smart Camera by adding a machine vision toolset through a simple license upgrade — maximizing quality control on the production line and ensuring every product meets specification.

**Rapid troubleshooting with Golden Image Compare**

If any barcode reads fail, this Zebra-only tool allows you to quickly identify and resolve the issue by comparing any image to a golden 'perfect' image created at setup. The source of any image degradation can be immediately diagnosed, enabling the rapid correction needed to minimize downtime — from a dirty lens or a lighting problem to misalignment of the camera.

**Identify and correct setting changes with Job Compare**

This unique tool compares current settings in the job and the camera to all initial settings, allowing users to revert back to the original settings with one click.

**Scan all barcodes simultaneously with ManyCode**

Need to read multiple barcodes on an item? With one click in Zebra Aurora, you can enable ManyCode mode to capture all barcodes simultaneously, regardless of quantity, symbology or barcode data.

**Complete support service — everything's covered**

Get the constant peak performance and device uptime today's businesses demand with Zebra OneCare™ Essential and Select Support Services. Unexpected disruptions and unbudgeted repair expenses are eliminated. Everything is covered — including normal wear and tear and accidental damage. You can customize your support plan with numerous options to get the service level your business needs, including next-day delivery of a replacement device, on-site support, cloud-based visibility into your contracts, repair data, tech support cases — and more.

## Specifications

| Device Characteristics      |  |
|-----------------------------|--|
| Dimensions                  | 1.1 in. H x 3.7 D in. x 2.1 in. W<br>28.3 mm H x 94.2 mm D 54.6 mm W                 |
| Weight                      | 7.76 oz./195 g   |
| Power                       | External power supply: 10-30 VDC, 313 mA max @ 24 VDC (7.5 W)<br>PoE supply: Class 2 |
| Configurable IO             | Two opto-isolated inputs: IN 1,2<br>Two opto-isolated outputs: OUT 1,2               |
| Color and Material          | Industrial green aluminum housing  |
| Interface Ports             | One M12 X-Coded 1000/100/10 Mbps Ethernet<br>One M12 12-pin Power/GPIO/RS-232        |
| Communication Protocols     | Ethernet/IP, PROFINET, Modbus TCP, TCP/IP, RS-232                                    |
| User Indicators             | Decode Status LEDs, Power LED, Online/Run LED, Ethernet Status LED; Beeper           |
| Performance Characteristics |  |
| Image Sensor                | 1/4 inch CMOS, global shutter<br>1280 x 800, 3.0 um square pixels<br>Monochrome      |
| Acquisition Rate            | Up to 60 frames/second   |
| Aimer                       | Amber LED; circular pattern  |
| Illumination                | Two 660nm Red LEDs or two 2700K White LEDs   |
| Imager Field of View        | 6.0mm Liquid Lens: 35° H x 26° V Nominal   |

| User Environment                   |   |
|------------------------------------|---|
| Operating Temp.                    | 32° F to 113° F/0° C to 45° C (10-30VDC external power supply, duty cycle-dependent)<br>32° F to 113° F/0° C to 40° C (PoE, duty cycle-dependent) |
| 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)  |

# Specifications

| 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   |
| LED Safety  | IEC 62471:2006 (Ed.1); EN 62471:2008   |
| EMI/EMS   | EN 55032:2015/A11:2020 (Class B)<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 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   |  |
| Brackets, cables, power supplies  |  |
| Warranty  |  |
| Subject to the terms of Zebra's hardware warranty statement, the FS20 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: <a href="http://www.zebra.com/warranty">www.zebra.com/warranty</a> |  |
| Recommended Services  |  |
| Zebra OneCare Select; Zebra OneCare Essential   |  |

| Decode Ranges (Typical Working Ranges) <sup>3</sup>  |                 |                  |
|--|-----------------|------------------|
| FS20-SR — 35° FOV Lens   |                 |                  |
| Symbology/Resolution   | Near            | Far              |
| 5 mil Code 128   | 2 in./5.08 cm   | 10 in./25.4 cm   |
| 10 mil Code 128  | 2 in./5.08 cm   | 15 in./38.1 cm   |
| 15 mil Code 128  | 2 in./5.08 cm   | 20 in./50.8 cm   |
| 20 mil Code 128  | 2 in./5.08 cm   | 24 in./61.0 cm   |
| 5 mil DataMatrix   | 2.5 in./6.35 cm | 7.7 in./19.56 cm |
| 10 mil DataMatrix  | 2 in./5.08 cm   | 15 in./38.1 cm   |
| 15 mil DataMatrix  | 2 in./5.08 cm   | 20 in./50.8 cm   |
| Footnotes  |                 |                  |
| <ol style="list-style-type: none"> <li>Some features available in a future release. Contact your Zebra Partner or sales representative for more information.</li> <li>Refer to Product Reference Guide for complete list of symbologies.</li> <li>Printing resolution, contrast, illumination source, and ambient light dependent.</li> </ol> Specifications subject to change without notice. |                 |                  |



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