

FS42 Fixed Industrial Scanner

An unbeatable combination of features, flexibility and power

In today's business landscape, the escalating demands of global commerce and its intricate supply chain exert greater pressure on companies to enhance productivity and accelerate delivery timelines. Whether in manufacturing, logistics or reaching the end consumer, the key to success lies in managing and tracking the essential products fueling your enterprise.



Introducing the Zebra FS42 Fixed Industrial Scanner, a powerful new solution crafted to meet the demanding needs of modern production and delivery processes. Engineered to seamlessly integrate into high-volume scanning operations that require robust processing power, the FS42 ensures efficient track-and-trace capabilities by effortlessly decoding information from every component and package as they move through the manufacturing, storage and fulfillment phases. Even the most challenging barcodes are captured quickly, enabling top-tier performance across production, warehousing, distribution and logistics sectors, empowering businesses to unleash their full potential.



At the core of the FS42 is Zebra Aurora Focus, an intuitive software platform tailored for easy setup, deployment and operation of all Zebra Fixed Industrial Scanners. With exclusive features such as ImagePerfect+ and Golden Image Compare, expect unmatched data capture precision from the get-go. As your needs progress beyond scanning, the FS42 has the processing power and increased memory capacity to take on resource-intensive applications like deep learning-based OCR and advanced machine vision inspection jobs. New tools can be added through the simple purchase of a software license to secure your investment for the future. Enhance your operational visibility and propel success to unprecedented levels with the FS42—exclusively from Zebra.

Zebra Aurora Focus™ Software

Zebra's Aurora Focus introduces a seamless, consolidated platform for managing both Zebra's Fixed Industrial Scanners and Machine Vision Portfolio. This innovative solution elevates the control of manufacturing and logistics automation across the enterprise with its refined simplicity and efficiency. With Aurora Focus, users can effortlessly set up, deploy, and operate all Zebra Fixed Industrial Scanners and Machine Vision Smart Cameras, streamlining operations by eliminating the requirement for multiple tools.

Simple from day one

Both seasoned users and newcomers can effortlessly navigate through the remarkably user-friendly modern interface, slashing training and deployment times. Experienced users will enjoy seamless access to all features and streamlined procedures, while beginners are walked through each step in a logical sequence. Moreover, should users require assistance, the Learn-As-You-Go feature provides built-in tutorials, walkthroughs, and videos covering every facet of the software and its extensive management toolkit.

The FS42—Elevate capabilities. Unlock possibilities. Experience the difference with Zebra.
For more information, visit www.zebra.com/fs42

Easy to Set Up

Get Power & Data from Ethernet

Power the FS42 and attached accessories using the network, with support for Power-over-Ethernet (PoE). This reduces setup complexity and avoids the cost of power drops and power supplies. You can also power the FS42 with a standard 24V DC power supply or standard USB-C port in environments without PoE.

One Button Setup with Auto-Tune

Simply activate Auto-Tune and achieve consistent, dependable read rates effortlessly. With just one button press, Auto-Tune dials in the perfect image, facilitating quicker and more precise setup.

Limitless Connectivity with USB-C

Are you looking for enhanced flexibility? USB-C lets you power your camera using a single cable and unlocks a myriad of accessory possibilities. Effortlessly integrate the scanner with various Zebra devices like printers or tablets. Additionally, you can back up your system or store images for later analysis by connecting external storage devices to the FS42.

Quickly Access Device and Job Settings

The highly intuitive modern interface presents logical workflows. No need to hunt for needed features and functions — they are just a click or two away. And even complicated settings are easy to execute, presented as sliders and radio buttons.

Easy to Deploy

Reliable Built in Lighting

No need for expensive, external lighting. With Zebra's FS42, you can do more for less via the powerful integrated illumination system. Choose the lighting that's best suited for the types of codes you scan—red, white, blue, infrared, or a single model that includes them all. The result? High quality images for highly reliable barcode reading.

Programmable Input/Output (I/O)

Individually control up to nine digital I/O ports to increase application functionality and improve error-proofing. You can add peripherals, activate lights, or trigger an action to more fully automate your processes.

Status Indicators / Operator Feedback

Your operators can instantly see decode statuses with 360° LED lights. Workers can see at a glance if a decode was successful or unsuccessful—preserving product quality and traceability. Make it easy to verify whether cameras are fully operational or in need of attention with five built-in camera status LEDs—Power, Online/Run, Focus Warning, Error and Ethernet Status. For added safety, 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.

Tough and Reliable

The ultra-rugged design ensures dependable operation in even the most demanding environments. The aluminum housing is chemical and oil resistant. IP65 and IP67 sealing ratings means the device is dust tight and able to withstand high-power wash downs—or even total immersion in water.

Real-time Performance Insights with the Web HMI Dashboard

Empower workers with actionable intelligence where they require it—their workstation. Operators have access to key metrics for every camera from your web browser including device health, resource utilization, decode results and scan performance metrics. This eliminates the necessity of installing a PC at each workstation, reducing hardware needs and installation expenses.

Simple Aiming

A unique 8-point sunburst pattern with sharp, laser-generated lines makes it easy to ensure that barcodes are in the field of view for foolproof, reliable aiming—and faster deployment.

Power your Performance

The FS42 is loaded with class-leading features, including:

Ultra-Fast Processor

The FS42's i.MX 8M Plus Neural Processing Unit has the power to accelerate scanning throughput and is optimized to accelerate artificial intelligence and machine vision-based applications.

Increased Memory Capacity

As your application needs expand, the FS42 has the memory to handle it. Featuring twice the memory of other FS models at 8 GB, the FS42 can handle more complex scanning and machine vision use cases without sacrificing performance.

Software Licensing

Add what you need, whenever you need it.

Add support for new barcode symbologies, faster barcode capture and machine vision tools through a software license upgrade.

Deep Learning-based OCR

Leverage AI-derived tools to easily capture text information from parts on the production line or labels on boxes with no font training required — just draw a box around the text you want to read.

Good Image Anomaly Detection¹

Automate part of the QA process by using machine vision to compare images of products against a “golden standard” reference image. Any deviations are flagged for inspection, saving you time and resources.

Easy to Run

With ManyCode, Read All Barcodes Simultaneously

Need to read multiple barcodes on an item? Enable ManyCode mode to capture all barcodes simultaneously, regardless of quantity, symbology or barcode data.

Worry Free Coverage with Complete Support Service

Achieve the consistent peak performance and device uptime that modern businesses require with Zebra OneCare™ Essential and Select Support Services. Say goodbye to unexpected disruptions and unplanned repair costs. With comprehensive coverage, everything is taken care of—including normal wear and tear and accidental damage. Tailor your support plan with a range of options to match your business needs, such as next-day delivery of replacement devices, on-site support, cloud-based access to your contracts, repair data, tech support cases and beyond.

Don't Lose Any of the Data That Drives Your Business

The FS42 does it all—1D, 2D and DPM barcodes, plus deep learning-based OCR. Select the setup that accommodates the codes essential for your current business operations, with the assurance that you can enhance functionality to adapt to future data capture requirements. Simply acquire licenses to accommodate additional barcode symbologies or enhanced scanning speeds. Alternatively, upgrade to a machine vision toolset to transform your FS42 into a smart camera, equipped with comprehensive machine vision capabilities.

ImagePerfect+ Ensures Highest Read Rates

Uneven lighting and the need to read barcodes at various distances can create the need for additional cameras, external lights or complex custom code—additions that can substantially increase the total cost of ownership. Address it all with a groundbreaking new feature - ImagePerfect+. This Zebra-exclusive feature captures up to 16 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, significant reduction in solution complexity and lower total cost.

Zebra Exclusive Imaging Technology

Zebra's exclusive PRZM Intelligent Imaging technology and the FS42's superior optics work together to deliver the reliable data capture that enables your operations to keep running at peak capacity. The optical system allows the simultaneous capture of multiple barcodes, extends read ranges and focal distances and gives a larger field of view to capture more information with less equipment. PRZM Intelligent Imaging is tailored to meet the data capture requirements of your environment, facilitating the initial capture of nearly any barcode under almost any condition. This includes damaged or poorly printed 1D and 2D barcodes on swiftly moving conveyor belts, as well as challenging under or over-marked DPM codes printed on curved and reflective surfaces.

Introducing the Zebra Fixed Industrial Scanner Portfolio



FS10



FS20



FS40



FS42



FS70



GS20

Specifications

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* Voltage GPIO: 10-30 VDC *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 Ethernet port; PoE is only supported by the primary Ethernet port
Communication Protocols	Ethernet/IP, PROFINET, Modbus TCP, TCP/IP, RS-232
Keyboard Support	USB HID
User Indicators	360 Degree Decode/Job Status LEDs, Power LED, Device Status LED, Focus Status LED, Warning LED, Ethernet Status LED; Beeper (adjustable volume)
Performance Characteristics	
Image Sensor	2.3MP: 1/2.6 inch CMOS, global shutter 1920 x 1200 3.0 um square pixels Monochrome
Acquisition Rate	2.3MP: Up to 60 frames/second
Aimer	Red Class II Laser; 8-point sunburst pattern
Illumination	Field replaceable modules: • Eight 660nm Red LEDs • Eight 850nm IR LEDs • Eight 2700K (Color Temperature) White LEDs • Four 660nm Red LEDs + Eight 850nm IR LEDs + Eight 2700K (Color Temperature) White LEDs
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 104° 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 ²	
1D	Codabar, 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	Deep Learning-based OCR via an add-on license. Supports Latin Letters (A-Z, a-z, digits or any of: !#\$%&()*+,-./:;<=>?@[]^_`{ }~"'"€£¥)
Software	
Management	Zebra Aurora Focus
Decoder Packages	1D/2D Standard (5 FPS); 1D/2D Fast (60 FPS); 1D/2D DPM Full (60 FPS) Connectivity Gateway Solution License (Decoder packages vary by SKU; software Decoder Package upgrades available via an upgrade license.)
Machine Vision (MV) Toolsets	Sensor, Standard (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: www.zebra.com/doc
Accessories	
Internal illumination, external illumination, internal filters, brackets, cables, power supplies	
Warranty	
Subject to the terms of Zebra's hardware warranty statement, the FS42 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	
Recommended Services	
Zebra OneCare Select™; Zebra OneCare Essential™	

Specifications

Decode Ranges (Typical Working Ranges)³

FS42-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

FS42-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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