ZEBRA CAPTURE YOUR EDGE

Fixed Industrial Scanners and Machine Vision Smart Cameras

Enable performance. Inspire potential.
Experience the difference with Zebra.

When it comes to automating your supply chain, you want a leader you can count on...

When it comes to choosing a provider for your industrial automation solutions, you want the best.

You want a leader you can count on.

A leader who can support your operations no matter where in the world they are located.

A leader with proven technology — technology that companies all around the world count on every day to run their businesses, including the majority of the Fortune 500.

A leader that is constantly innovating, on the cutting edge of developing and delivering solutions that continually improve workforce productivity, process efficiency, the user experience — and profitability.

A leader whose technologies deliver a true performance edge.

Zebra delivers it all.

5,300+ patents and patents pending
Constantly innovating to bring you leading edge technology

50+ years of innovation
A company you can count on today...and tomorrow

$4.5 billion in sales[1]
Best-in-class solutions embraced globally

Global reach
Support in virtually every corner of the world...

100 offices
in over 45 countries

10,000 channel partners
in over 100 countries

- #1 Enterprise Mobile Computing
- #1 Barcode Scanning
- #1 RFID Reading/ Printing
- #1 Specialty Printing
- Global Indoor Location Services Leader[2]

1. 2019 Revenue
2. Gartner, Inc. "Magic Quadrant Indoor Location Services, Global", Tim Zimmerman, Annette Zimmermann, 15 February 2021 (A leader)

Introducing Zebra's Fixed Industrial Scanning and Machine Vision Systems

Easy to set up, deploy and run

Proven industry-leading technologies

Upgradeability — add features with a software license

One software platform to manage the entire portfolio

Enable performance. Inspire potential. Experience the Zebra difference.

Supply chain efficiencies have never been more integral to business success. Shoppers purchasing goods anywhere and anytime with ever-increasing expectations for faster delivery put tremendous pressure on your manufacturing and distribution operations to create and move more goods, faster than ever. And with Zebra's Fixed Industrial Scanners and Machine Vision solutions, you can.

Whether you are capturing images to automate the inspection of work-in-process on your production line, or reading barcodes to track and trace finished goods through your facility, our solutions instantly transform your data into actionable business information that enables error-free actions. Productivity and quality across your operations improve, from manufacturing through packaging and distribution. And the flawless movement of perfect products from the production line to the customer allows you to outperform your objectives — and exceed your potential.

Zebra's Portfolio of Fixed Industrial Scanners and Machine Vision Systems

Zebra's Fixed Industrial Scanners and Machine Vision Systems are ready to help automate key supply chain processes, from the creation of products on the production line through storage in the warehouse to fulfillment in the distribution center.

Fixed Industrial Scanners

Track and trace items traveling on the conveyor or through key portal transition points in manufacturing plants, distribution centers and warehouses with Zebra's Fixed Industrial Scanners. Whether you need simple and straightforward capture of barcodes on package labels to the complex capture of printed and direct part marked barcodes of varying sizes at varying distances, there is a model built to meet your needs.

FS10

Compact fits-anywhere plug and play scanning for basic offline track-and-trace apps

FS20

Compact networkable scanning for basic track-and-trace apps

FS40

Comprehensive features for sophisticated track-and-trace apps

FS70

Completely customizable to enable the most challenging track-and-trace apps

Machine Vision Systems

Inspections on your production line are key to product quality. Whether you need to determine simple absence and presence or require complex defect detection, there is a Zebra Machine Vision System designed to meet your needs.

VS20 Smart Sensor

Compact networkable scanning for basic inspection apps

VS40 Smart Camera

Comprehensive features for sophisticated inspection apps

VS70 Smart Camera

Completely customizable to enable the most challenging inspection apps

When it comes to improving operational efficiency and error-proofing everyday tasks in the supply chain that are crucial to business success, Zebra's machine automation portfolio delivers.

Buy the features you need today... upgrade to the features you need tomorrow.

Zebra's line of Fixed Industrial Scanners and Machine Vision Smart Cameras are built from the ground up to adapt to new business needs and changing customer demands. With this uniquely-Zebra device architecture, you can buy only what you need today, and upgrade to whatever technologies you need in the future. The result? A scalable path to new functionality as needs change — and maximum value out of the devices you purchase.

For example, today you may only need to capture 1D and 2D barcodes with a Fixed Industrial Scanner, but tomorrow you might need to capture Direct Part Marks or OCR text-based information. You may have plans to deploy Machine Vision Smart Cameras in a year or two, but you don't need them now. Or maybe you purchased a Machine Vision Smart Camera with basic tools — and now you're ready for advanced features. Address it all with the simple purchase of a software license.

With this superior architecture, you'll never need to retire devices early due to lack of functionality. The devices you purchase will always have the features your business needs to maintain a performance edge, delivering an unsurpassed return on investment.

FS10

Upgrade your Decoder Package to add support for new symbologies and faster frame rates to accommodate faster conveyor speeds

FS20/FS40/FS70

Upgrade your Decoder Package to add support for new symbologies and faster frame rates to accommodate faster conveyor speeds

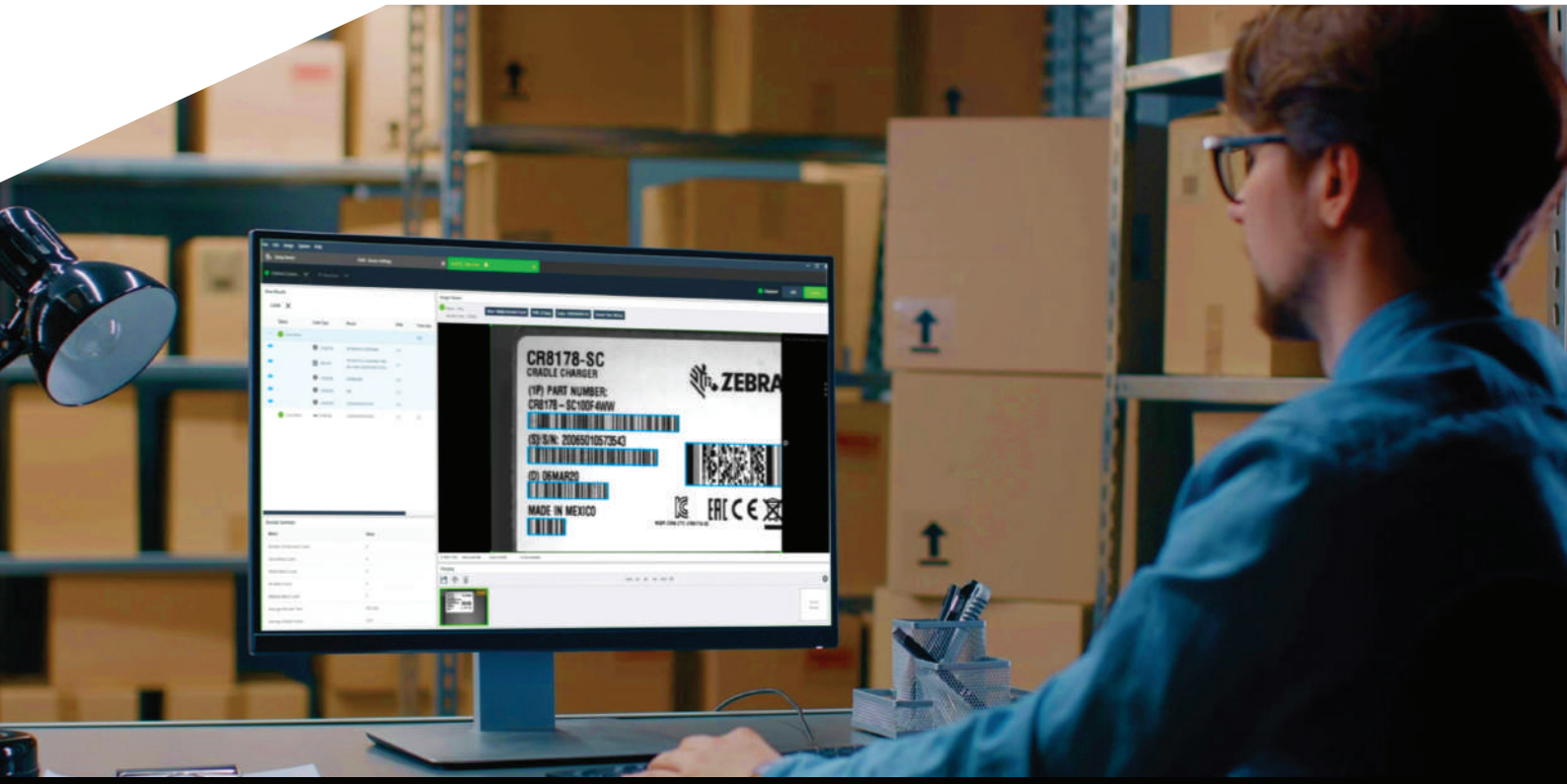
Upgrade to any Machine Vision (MV) toolset to turn your Fixed Industrial Scanner into a Machine Vision Smart Camera

VS20/VS40/VS70

Upgrade your Machine Vision toolset to add more advanced machine vision tools to tackle more complex inspections

Zebra Aurora™ Software

One single software platform to manage it all



Zebra Aurora brings a new level of simplicity to controlling enterprise-wide manufacturing and logistics automation solutions — this one unified platform controls all Zebra Fixed Industrial Scanners and Machine Vision Smart Cameras.

Simplified management — easy to setup, deploy and run

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.

Designed for beginners and experts

First-time users can easily navigate through the well-designed management platform, which guides them through all the steps in the proper order. Experienced users will appreciate easy access to all functions and streamlined processes that substantially reduce the time and number of clicks it takes to perform tasks.

Built-in help every step of the way

If users have questions, chances are that Learn-As-You-Go has the answers, offering built-in tutorials, walk-throughs and videos on all aspects of the software and its comprehensive management toolset.

Single tool simplicity for reduced ramp up and training time

The architecture of your industrial automation solutions is simpler — your workers only need to learn one tool, minimizing training time and effort.

Zebra Aurora in action

Make complex functionality simple

Setting up a job can be a tedious and time consuming task, but with Aurora's intuitive and user-friendly interface, it's easy. With all the controls you need exposed at the right level, you're never more than a click or two away from what you need to complete the task at hand.

1

The workflow

Organized into 3 easy and logical steps:

Capture
Configure to achieve the best images for your job. Set the exposure, gain, focus, Illumination control and more.

Build
Create your jobs — quickly add and configure the tools you need to get it done.

Connect
Interface with your systems. Setup and customize PLC communications, GPIO behaviors and define the key data you want to send out.

2

Tool menu

Tools are organized by tool category and are easy to find.

Click on the Tool Category to reveal the drop-down box of tools for that category.

Type the tool you are looking for in the search box.

3

FlowBuilder

Create the required Tool Cards for your job.

View all the Tool Cards at-a-glance to see the entire flow for a job.

Drag and drop to move a Tool Card.

Copy/paste to create a quick starting point. for a similar tool.

4

Tool Card

Allows users to adjust settings and quickly configure tools to solve their application. With slider bars, check boxes,and radio buttons, tool configuration is easy — no need to program and no intimidating user-interface.

5

QuickDraw

Adding tools has never been so easy and fast. Just draw a box around the area you want to inspect, right on the image, then choose and configure your tool.

6

Filmstrip

Images you capture and save during the build or deploy state appear here for easy access.

7

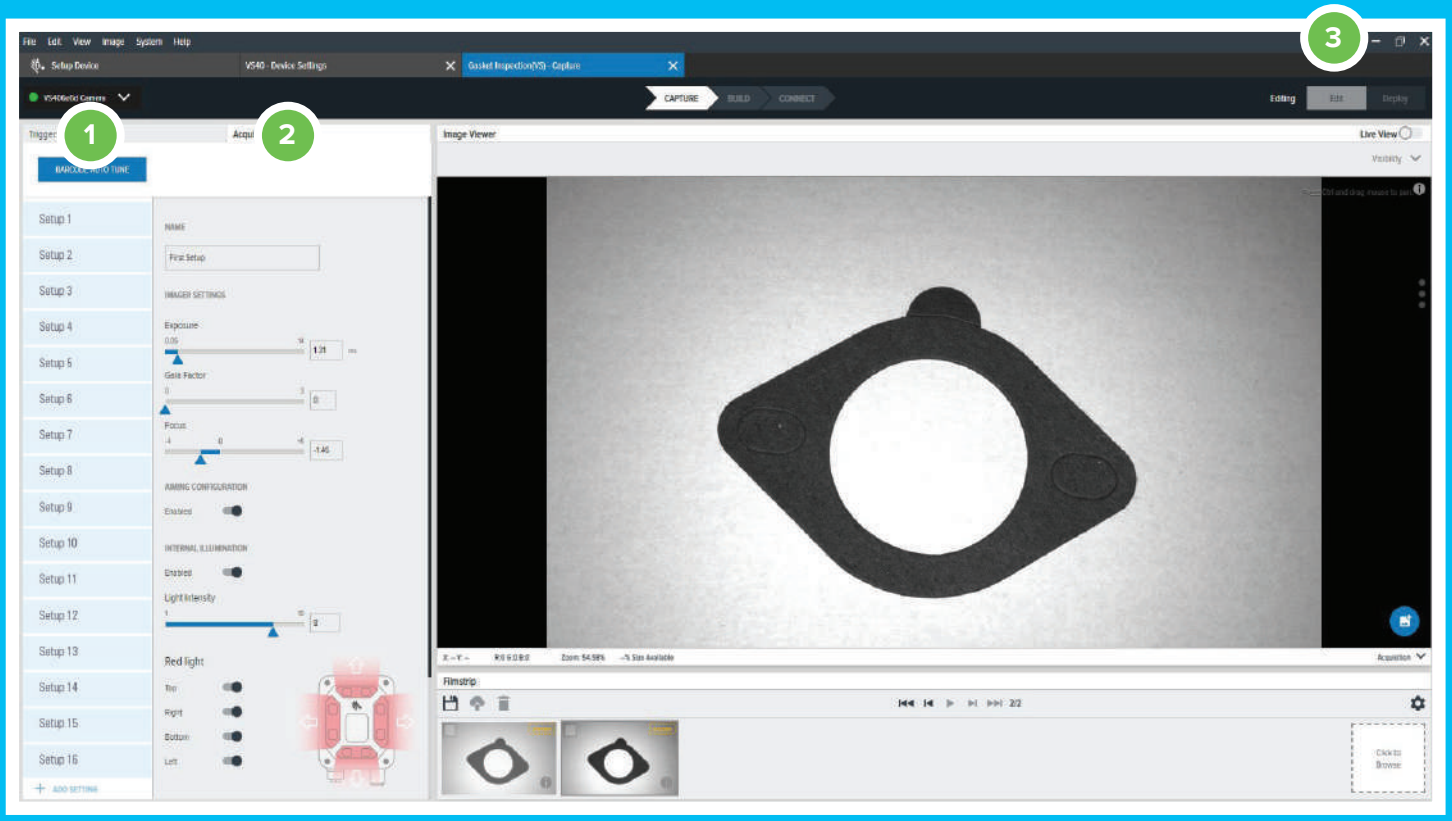
Deploy

Just click to push your job to the camera and start running the job.

Zebra Aurora in action

Achieve image perfection with ImagePerfect+

Want your system to work perfectly? Unleash Zebra's ImagePerfect technology. Automatically create up to 16 images in one trigger event to create the perfect result. Handle lighting, part variation, inspections with different focal depths and more with ease. The result? The need for multiple cameras, external lights and complex custom code is eliminated, replacing solution complexity with solution success — and a lower total cost of ownership.



1

ImagePerfect+

This groundbreaking feature allows the capture of up to 16 images per trigger event. Each of the images can have its own unique settings for exposure, gain, illumination control and more.

2

Image settings

It's easy to configure the right settings for image capture — simply adjust the sliders and click radio buttons to adjust exposure, gain, focus and lighting to get the perfect image.

3

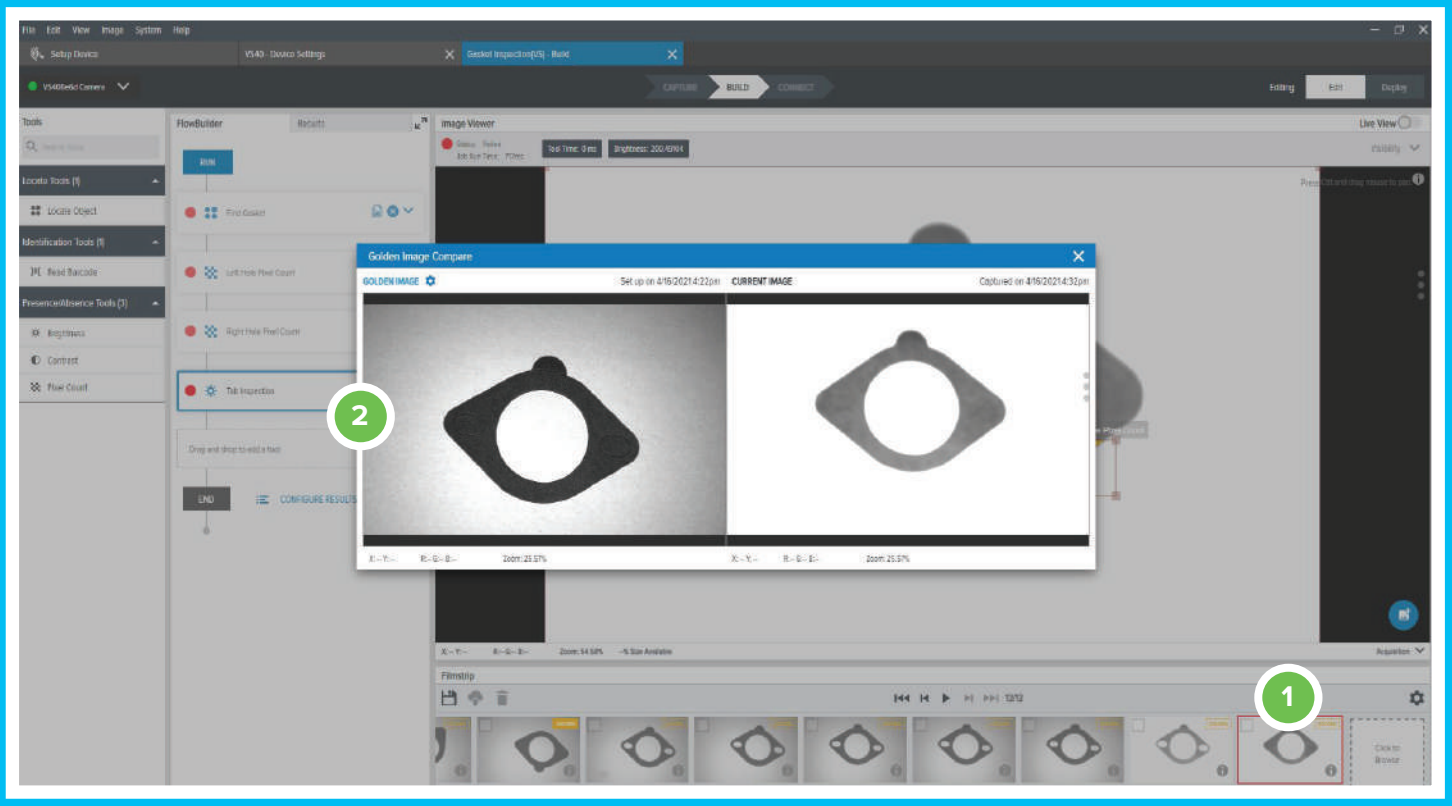
Real-time Live View

Just click to turn on Live View so you can see what the camera sees in real time, making it easy to define the perfect settings.

Zebra Aurora in action

Easy troubleshooting with Golden Image Compare

When barcodes or jobs fail, this unique Zebra-only tool enables rapid troubleshooting and issue resolution, minimizing downtime. In just two clicks, you can view the image that failed and a golden image created at setup, side by side, revealing the source of the issue — from a dirty lens or a lighting problem to misalignment of the camera.



1 Select the current image

To start the side-by-side comparison, just click to select the current image from the live camera.

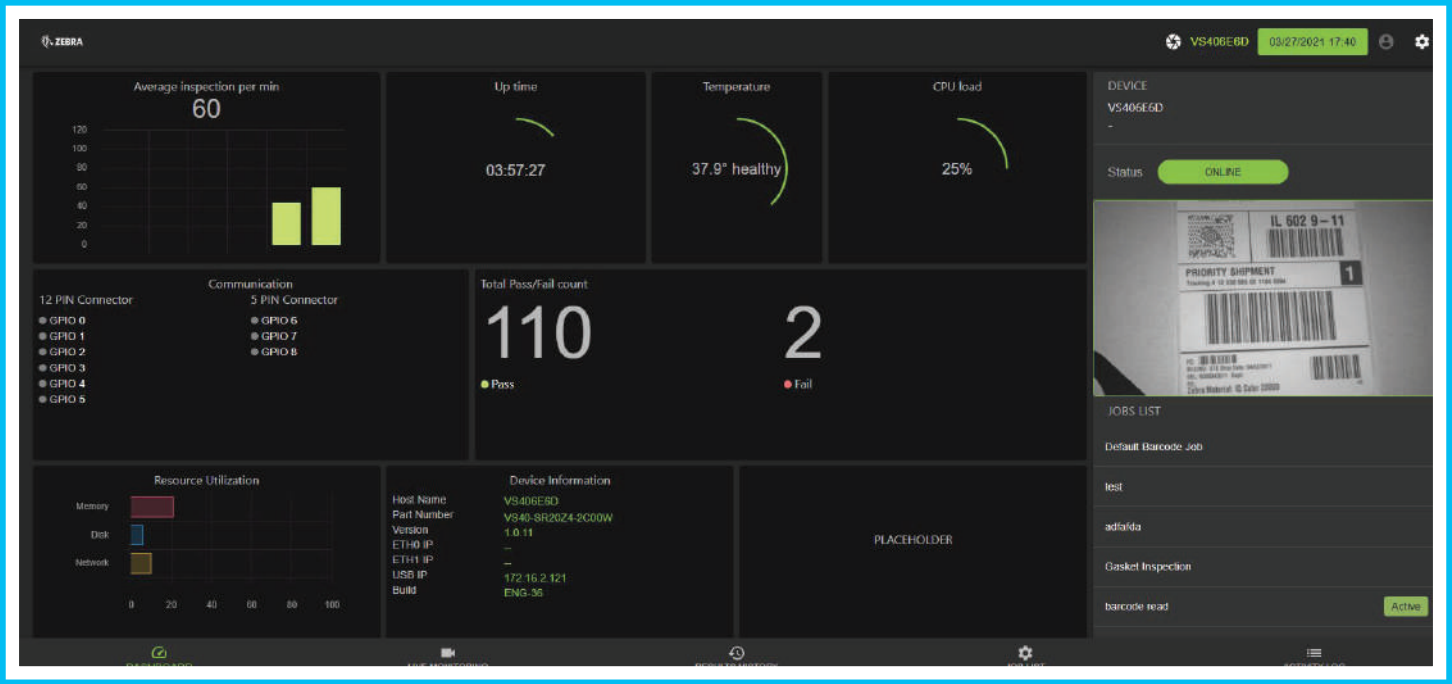
2 Select the Golden Image

Select the Golden Image captured during setup. The images appear side-by-side, enabling a rapid diagnosis of the root cause of the issue.

Zebra Aurora in action

Easy monitoring with the Aurora HMI Dashboard

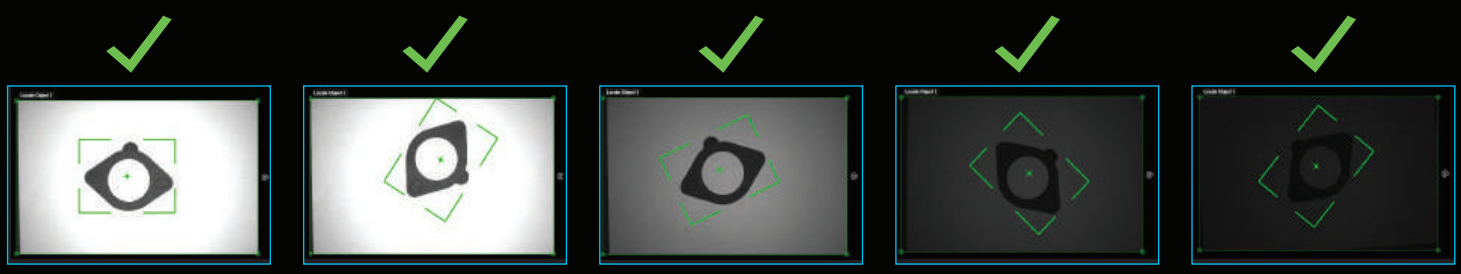
Put actionable intelligence at the fingertips of your operators without the need to buy and install a PC at every station, simplifying and reducing the cost of your automation solution architecture. The dashboard enables operators to see and interact with the data. And the dashboard can be viewed via any web browser or by directly connecting a monitor to the Fixed Industrial Scanner or Machine Vision Smart Camera.



Zebra Aurora in action

Find every object with Object Locate

Get game-changing Object Locate technology in all Machine Vision toolsets — Sensor, Standard and Advanced. Optimized algorithms and carefully crafted default settings enable aggressive object location functionality. Objects can rotate 360° and lighting can vary tremendously from light to dark, and Zebra Aurora will still find the part. The result? Painfree deployment of this tool in record time, with record results.



Just a few of the many Zebra-only unique Aurora features that drive unsurpassed performance into our products — and your organization.

Advanced features, available only from Zebra.

ImagePerfect+

Capture up to 16 images with a single trigger event, each with its own unique settings to ensure the capture of the perfect image

Golden Image Compare

When a barcode or image capture fails, quickly identify and resolve the issue

Job Compare

Determine if settings have been changed and revert back to original settings with one click

Web browser-based HMI Dashboard

Display live operation of the camera from a web browser or direct connection to a monitor through USB-C — no need to run or install Zebra Aurora software

Object Locate

Rapidly and accurately locate objects right out of the box with optimized settings, regardless of orientation, position or other variances

QuickDraw

Draw a box around the area you want to inspect, right on the image, then choose and configure your tool

Statistical Triggering

Instantly identify process issues before processes and productivity are impacted

Feasibility Setup Assistant

This patent-pending feature compares images captured from a job to best practice metrics to ensure your jobs work right from the start

Advanced Pattern Matching

Builds on Object Locate to find the most challenging objects in the most sophisticated applications

The Anatomy of the FS40/VS40

A look at the hardware advantages

The FS40 Fixed Industrial Scanner and VS40 Machine Vision Smart Camera are packed with hardware features that make these devices easy to setup, deploy and run in industrial environments.

Modular and powerful illumination

White, Red, Blue, IR or combined LED boards. Band-pass, wavelength, and polarizing filters

Liquid Lens

Standard 30 degree and wide angle 46 degree

User Interface

Trigger, Auto-Tune, Status-LEDs

PRZM Intelligent-Imaging

First-time every-time data capture

Power and I/O

24VDC, PoE, USB Power, 9 configurable I/O ports

Sensor Resolution

2.3 MP

USB-C

Power and peripheral support

10 GB Storage Memory

External Light Connector

Power and intensity control for external lights

M12 Gigabit Ethernet

X-Coded/ODVA Compliance; EthernetIP, PROFINET, Modbus, CC-Link, TCP/IP

360° LED Indicator

Pass/Fail

Accessories

No matter which model or models you use in your facility, our accessory family has you covered. From power supplies and external lights for every model to model specific accessories, such as internal lighting for the FS40/VS40 and C-mount lenses for the FS70/VS70.

For more details, see the Fixed Industrial Scanners and Machine Vision Smart Camera Accessory Catalog, available on Zebra.com

Zebra OneCare® Support Services

Complete support for your mission critical devices — everything is covered

Your Fixed Industrial Scanners and Machine Vision solutions play a critical role in your business operations. Get the constant peak performance and device uptime your businesses demands 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 get service from the source — the experts who built your product — and we're committed to the long-term performance of your Zebra products. And you can customize your support plan with numerous options to get the service level that's right for 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.

Service features at-a-glance

Zebra OneCare Essential

Basic Assurance

- Comprehensive coverage, including normal wear and tear and accidental damage
- 3 business-day turnaround time
- Live agent technical support: Monday to Friday, 8-5 local time
- Includes software updates and patches
- VisibilityIQ OneCare cloud-based insights into open repair cases
- Ground shipping included
- 3-year or 5-year coverage

Zebra OneCare Select

Maximum Protection

Includes all Zebra OneCare Essential features, plus:

- 24x7 Level 1 support
- Advance device replacement
- Next-business day shipping
- 3-year or 5-year coverage

Zebra Fixed Industrial Scanner Decoder Performance Packages and Machine Vision (MV) Toolsets

The following charts list the available upgrade options. Barcode Packages are for Fixed Industrial Scanners. Note that MV Toolsets include the Barcode Packages. The Standard MV Toolset includes 1D/2D/DPM and Predefined OCR, while the Advanced MV Toolset includes Trainable OCR.

Decoder Performance Packages for Fixed Industrial Scanners	
Tool	**Description**
1D/2D Standard	5 FPS (High Contrast Barcode Reading); Barcode grading
1D/2D Fast	60 FPS (High Contrast Barcode Reading); Barcode grading, OCR-A/B, MICR, US Currency
DPM Lite	5 FPS 1D/2D and DPM codes; Barcode grading; OCR-A/B, MICR, US Currency
Full DPM	60 FPS 1D/2D and DPM codes; Barcode grading; OCR-A/B, MICR, US Currency

Machine Vision (MV) Toolsets (Decoder Package Included in Standard and Advanced Toolsets)				
Tool	**Description**	**Sensor**	**Standard**	**Advanced**
Object Locate	Find high contrast features	•	•	•
Pixel Counter	Count the number of pixels in your designated range	•	•	•
Brightness	Return the average brightness of an area	•	•	•
Contrast	Return the average contrast of an area	•	•	•
Edge Tool	Find edges for fixturing and presence absence	•	•	•
Distance Tool	Measure the distance from two tools previously created	•	•	•
Advanced Pattern	Find challenging features with variant lights, scaling, occlusions, etc.		•	•
Blob	Find, sort, and count areas of similar pixels		•	•
1D/2D/DPM	Read 1D, 2D, and DPM Codes		•	•
Predefined OCR	Read Text: OCR A, OCR B, US Currency, MICR		•	•
Find Circle	Find and measure circles		•	•
Caliper Tool	Measure the distance by finding two edges		•	•
Filters	Enhance image quality for robust inspections		•	•
OCV/Flaw	Find residual or missing pixels from a trained shape		•	•
Trainable OCR	Create your own text library			•
Flaw Detection	Find complex defects like mouse bites of flashing			•
Metrology	Advanced and more accurate measurement tools			•

Which model is right for your application?

Model	**FS10**	**FS20/VS20**	**FS40/VS40**	**FS70/VS70**
General Description	**Compact fits-anywhere plug-and-play scanning**	**Easily integrates into your network**	**Comprehensive features for extraordinary flexibility**	**Completely customizable to meet unique scanning needs**
Applications	**Basic track and trace offline applications**	**Basic track and trace (FS20)/inspection (VS20) networked applications**	**Sophisticated track and trace (FS40)/inspection (VS40) applications**	**Challenging requirements for track and trace (FS70) and inspection (VS70)**
HARDWARE FEATURES				
Connectivity	Plug and play USB	Built-in network support	Built-in network support Dual Ethernet option	Built-in network support Dual Ethernet option
Sensor/Lens	1.2 MP	1.2 MP	2.3 MP	2.3 MP or 5.1 MP Any external C-mount lens
Lighting	Powerful integrated lighting (red and white LED)	Powerful integrated lighting (red and white LED)	Extensive options — internal and external	Any external lighting solution
Rugged	Ultra-rugged, IP65, chemical and oil resistant aluminum housing	Ultra-rugged, IP65, chemical and oil resistant aluminum housing	Ultra-rugged, IP65/IP67, chemical and oil resistant aluminum housing	Ultra-rugged, IP65/IP67, chemical and oil resistant aluminum housing
I/O Ports	4 programmable	4 programmable	9 programmable	9 programmable
Power	4.4 to 5.5 VDC host powered	Standard PoE, 24 VDC power supply	PoE+, 24 VDC power supply, USB-C	PoE+, 24 VDC power supply, USB-C
Indicators	3 status LEDs: Decode, Power, Online/Run + beeper	4 status LEDs: Decode, Power, Online/Run, Ethernet + beeper	5 status LEDs: Decode, Power, Online/Run, Ethernet, Focus Warning, Error + beeper 360° Decode status lights — visibility on all sides	5 status LEDs: Decode, Power, Online/Run, Ethernet, Focus Warning, Error + beeper 360° Decode status lights — visibility on all sides
USB-C for Expansion	Yes	No	Yes	Yes
Mounting	Standard	Standard	Adaptable	Adaptable
Aiming	Amber LED for easy aiming	Amber LED for easy aiming	Laser starburst for fail-proof aiming simplicity	Not applicable
Other Shared Features	Automatic setup with Auto-Tune First-time every-time data capture Hardware trigger	Automatic setup with Auto-Tune First-time every-time data capture Hardware trigger	Automatic setup with Auto-Tune First-time every-time data capture Hardware trigger	Automatic setup with Auto-Tune First-time every-time data capture Hardware trigger

For more information about Zebra's Fixed Industrial Scanners and Machine Vision solutions, visit **www.zebra.com/industrial-machine-vision-fixed-scanners**

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