



# Make and Move Goods at the Speed of Demand

How customers benefit from  
Zebra and Matrox Imaging  
automation

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# Acquisition

## Adaptive Vision

- Zebra acquired graphical machine vision software developer Adaptive Vision and released a new suite of machine vision smart cameras and fixed industrial scanners.







### SAM Expansion



### TAM Expansion



**Smart Cameras**

**Smart Cameras**

**Vision Controllers**

**3D Sensors**

COMPLEXITY

**Zebra Aurora™ Software**

**Adaptive Vision Studio**

**Matrox Imaging Design Assistant**

**Adaptive Vision MV Libraries  
Zebra Barcode Libraries**

**Matrox Imaging Library (MIL)**

**Future: Libraries Merged for Best Performance**

# New Family

## Machine Vision & Fixed Industrial Scanning

1 MP FS10  
1 MP FS/VS20 Mono  
2.3 MP FS/VS40 Mono/Color  
5 MP FS/VS70 Mono/Color

Offer both Fixed Industrial Scanning ("FIS") and Machine Vision ("MV") with one device

One hardware family with a shared software platform. Easily configure for FIS or MV, or repurpose for either, using the same software

Integrated Lighting and Liquid Lensing offers out-of-the-box functionality

Deliver proven track and trace performance and excellence in inspection



FS10



FS20 / VS20



FS40 / VS40



FS70 / VS70

# Definition of Portfolio

Barcode readers



FS10/20/40/70

Smart cameras



VS20/40/70

Vision cameras



FS/VS70

Vision Systems / PC based



CV60

Not released yet!

# Why Zebra?



- Direct Technical support from Zebra
  - Attractive price for provided performance
  - Custom improvement of FW for specific deals
  - Consolidate Jobs with a Single Shared Software Platform
    - Upgrade to Machine Vision Capabilities with the Same Hardware

# FS10 Fixed Industrial Scanner

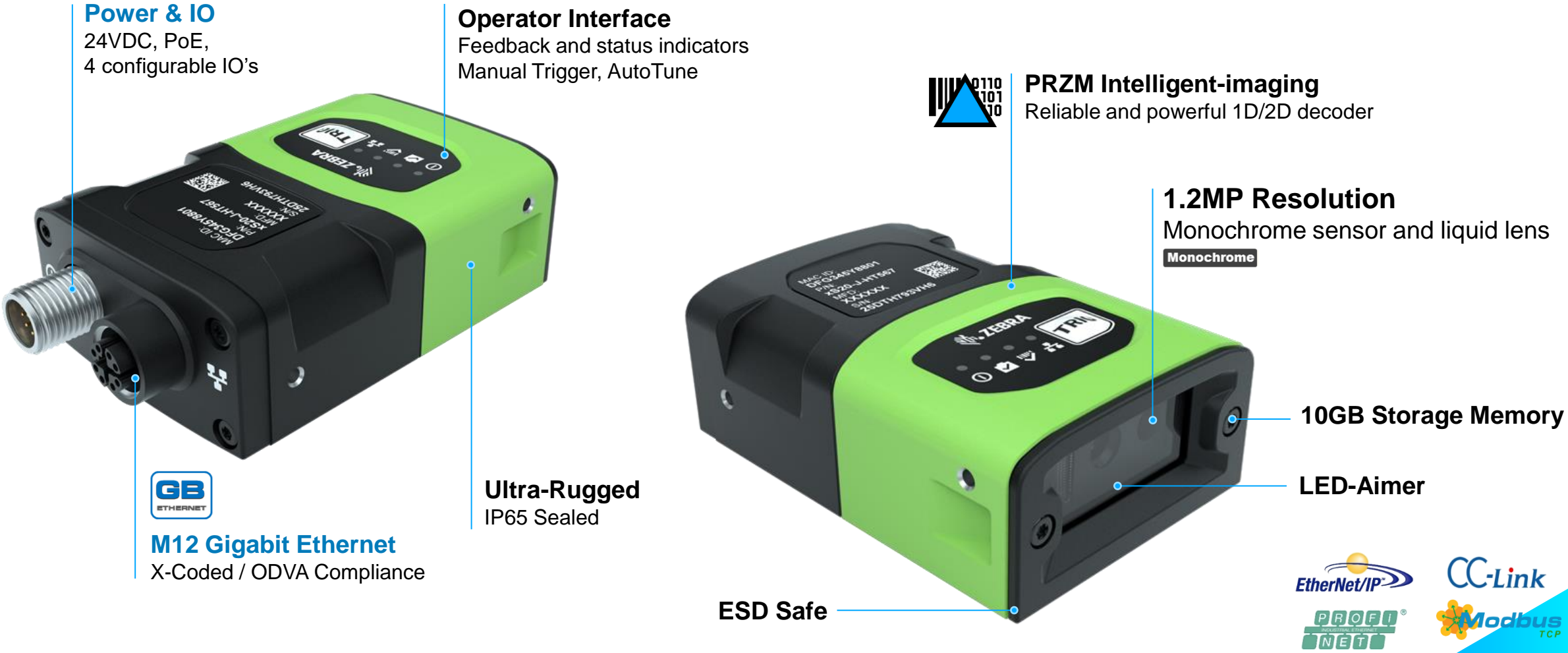
Achieve high-quality scanning anytime, anywhere with plug and play





# FS20/VS20 Fixed Industrial Scanning and Machine Vision

Easily integrate industrial scanning and machine vision into your network



**Power & IO**  
24VDC, PoE,  
4 configurable IO's

**Operator Interface**  
Feedback and status indicators  
Manual Trigger, AutoTune

**PRZM Intelligent-imaging**  
Reliable and powerful 1D/2D decoder

**1.2MP Resolution**  
Monochrome sensor and liquid lens  
**Monochrome**

**10GB Storage Memory**

**LED-Aimer**

**ESD Safe**

**Ultra-Rugged**  
IP65 Sealed

**M12 Gigabit Ethernet**  
X-Coded / ODVA Compliance

**GB**  
ETHERNET

MAC ID: DF0548F1880A  
FAN: FS20-1HT1567  
XXXXXX  
S250HTF251H6

MAC ID: DF0548F1880A  
FAN: FS20-1HT1567  
XXXXXX  
S250HTF251H6

**EtherNet/IP**

**PROFINET**

**CC-Link**

**Modbus TCP**



# FS40/VS40 Fixed Industrial Scanning and Machine Vision

## Expand capabilities with comprehensive features and flexibility

**Liquid Lens**  
Standard 30 degree and Wide Angle 46 degree

**Power & IO**  
24VDC, PoE, USB-C, 6x configurable IO



USB-C



**Dual M12 Gigabit Ethernet**  
X-Coded / ODVA Compliance

**External Light Power**  
Power and intensity control for external lights or additional 3x GPIO

**Integrated Lighting**  
Replaceable LED-Ring and Filter, LED-Aimer

**Ultra-Rugged**  
IP65 & IP67 Sealed

**Filter Options**

**ESD Safe**



**Operator Interface**  
Feedback and status indicators  
Manual Trigger, AutoTune



**PRZM Intelligent-imaging**  
Reliable and powerful 1D/2D decoder

**2.3MP/5MP Resolution**  
Monochrome, Color

**10GB Storage Memory**

**360 Degree**  
Decode/Job Status LEDs





# FS70/VS70 Fixed Industrial Scanning and Machine Vision

## Customize to meet your scanning and inspection demands

### Adaptable Mounting

Options on three sides of the unit

### Configurable Optics and Lighting

Support any external C-mount lens, filters and external lighting

### Operator Interface

Feedback and status indicators  
Manual Trigger, AutoTune



### PRZM Intelligent-imaging

Reliable and powerful 1D/2D decoder

### 2.3MP or 5.1MP Resolution

Monochrome, Color



### 360 Degree

Decode/Job Status LEDs2

### 10GB Storage Memory

### Ultra-Rugged

IP65 & IP67 Sealed

### ESD Safe

### Dual M12 Gigabit Ethernet

X-Coded / ODVA Compliance



### External Light Power

Power and intensity control for external lights or additional 3x GPIO

### Power & IO

24VDC, PoE, USB Power, 6x configurable IO

### USB-C







# Decode packages for fixed industrial scanners

Choose one of four decode packages to meet your customer's barcode scanning needs:



## Decode Performance Packages for the FS10, FS20, FS40 and FS70

### Physical characteristics

Physical characteristics	
<b>1D/2D Standard</b>	5 FPS (High Contrast Barcode Reading); Barcode grading
<b>1D/2D Fast</b>	60 FPS (High Contrast Barcode Reading); Barcode grading, OCR-A/B, MICR, US Currency
<b>DPM Lite</b>	5 FPS 1D/2D and DPM codes; Barcode grading; OCR-A/B, MICR, US Currency
<b>Full DPM</b>	60 FPS 1D/2D and DPM codes; Barcode grading; OCR-A/B, MICR, US Currency

# Machine vision tools

- Decode (barcode) packages are included as indicated with the various Machine Vision Toolsets.
- Machine Vision Toolsets can be added to FS20, FS40 and FS70 Fixed Industrial Scanners via a simple software license.

Machine Vision Toolsets				
Tool	Description	Sensor	Standard	Advanced
<b>Decoding Tools</b>				
Decoder Package	Read 1D, 2D, and DPM Codes		•	•
Predefined OCR	Read Text: OCR A, OCR B, US Currency, MICR		•	•
Trainable OCR	Create your own text library			•
<b>Machine Vision Tools</b>				
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	•	•	•

## Machine Vision Toolsets (continued)

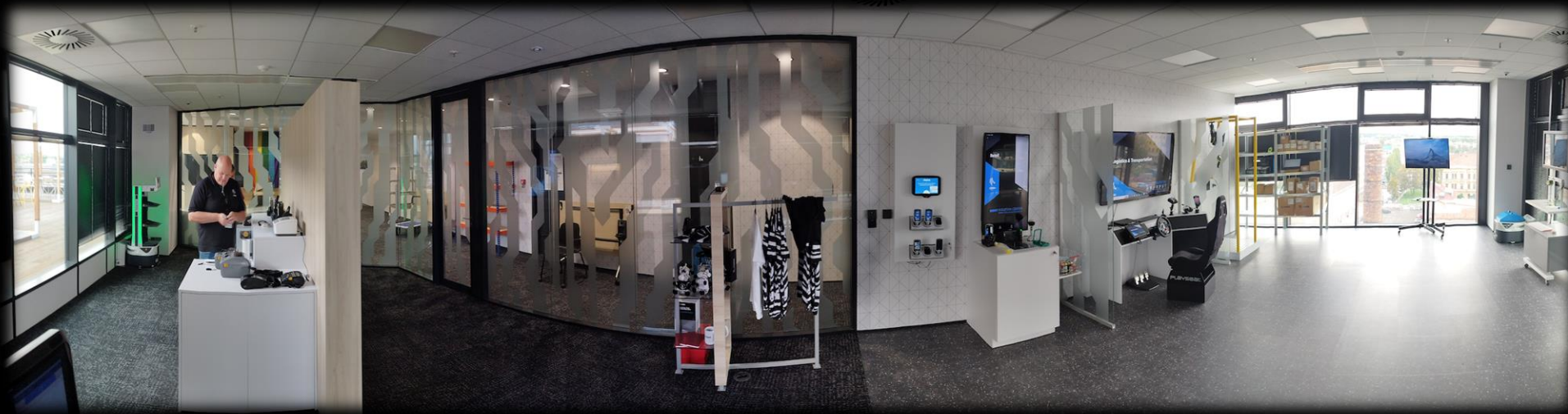
Tool	Description	Sensor	Standard	Advanced
<b>Machine Vision Tools (continued)</b>				
<b>Edge Tool</b>	Find edges for fixturing and presence absence	•	•	•
<b>Distance Tool</b>	Measure the distance from two tools previously created	•	•	•
<b>Advanced Pattern</b>	Find challenging features with variant lights, scaling, occlusions, etc.		•	•
<b>Blob</b>	Find, sort, and count areas of similar pixels		•	•
<b>Find Circle</b>	Find and measure circles		•	•
<b>Caliper Tool</b>	Measure the distance by finding two edges		•	•
<b>Filters</b>	Enhance image quality for robust inspections		•	•
<b>OCV/Flaw</b>	Find residual or missing pixels from a trained shape		•	•
<b>Flaw Detection</b>	Find complex defects like mouse bites or flashing			•
<b>Metrology</b>	Advanced and more accurate measurement tools			•

# Which model is right for your application?

Model	FS10	FS20/VS20	FS40/VS40	FS70/VS70
<b>Connectivity</b>	Plug and play USB	Built-in network support	Built-in network support Dual Ethernet option	Built-in network support Dual Ethernet option
<b>Sensor/Lens</b>	1.2 MP	1.2 MP	2.3 MP or 5.1 MP colour/monochrome	2.3 MP or 5.1 MP External C-mount lens colour/monochrome
<b>Lighting</b>	Powerful integrated lighting (red and white LED)	Powerful integrated lighting (red and white LED)	Extensive options — internal and external	Any external lighting solution
<b>Rugged</b>	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
<b>I/O Ports</b>	4 programmable	4 programmable	9 programmable	9 programmable
<b>Power</b>	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
<b>Indicators</b>	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
<b>USB-C for Expansion</b>	Yes	No	Yes	Yes
<b>Mounting</b>	Standard	Standard	Adaptable	Adaptable
<b>Aiming</b>	Amber LED for easy aiming	Amber LED for easy aiming	Laser starburst for aiming simplicity	Not applicable
<b>Other Shared Features</b>	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



# Thank You



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