



# Zebra **4Sight EV7** >>

Fanless industrial imaging computer

## Overview

### Built for the factory floor

Zebra® 4Sight EV7 is an industrial computer built for multi-camera machine vision applications on the factory floor. Part of a long and solid history, the Zebra 4Sight EV7 is an evolution of its immediate predecessor, integrating a twelfth-generation twelve-core Intel® Core™ processor that includes acceleration for deep learning inference or prediction. A fanless design with multiple ports for GigE Vision® and USB3 Vision® cameras makes the Zebra 4Sight EV7 right at home in any production facility, keeping an eye on a single line or many production lines.

Zebra 4Sight EV7 vision controllers are supported by three comprehensive software platforms: [Zebra Aurora Design Assistant®](#) (formerly Matrox Design Assistant), is a flowchart-based integrated development environment (IDE), [Zebra Aurora Vision Studio](#), is an intuitive graphical dataflow-based software, whereas [Zebra Aurora Imaging Library](#) (formerly Matrox Imaging Library), is a software development kit (SDK) for more traditional programmers. Engineers and technicians can quickly configure and deploy machine vision applications to Zebra 4Sight EV7 vision controllers using the range of included software tools for video capture, analysis, classification, location, measurement, reading, verification, communication, and I/O operations.

### Serve multi-camera installations with simplicity

With four 2.5 Gigabit Ethernet and four SuperSpeed USB ports, Zebra 4Sight EV7 vision controllers connect to the full range of available GigE Vision and USB3 Vision cameras. The 2.5 Gigabit Ethernet ports support PoE to further simplify cabling and thus reduce costs when opting for suitable GigE Vision cameras. Powered by a mobile-class embedded processor, Zebra 4Sight EV7 is ideal to handle typical multi-camera inspections.

### Connect to factory and enterprise equipment

Interfacing to other industrial equipment and communicating with enterprise systems is easy with Zebra 4Sight EV7 vision controllers. RS-232/RS-485 ports support connections to legacy automation devices, while two additional Gigabit Ethernet ports provide independent connections to industrial and enterprise networks. One of these networking ports includes a hardware-assisted mechanism for PROFINET® communication. This mechanism ensures timely response when the automation controller is set up for a short cycle-time or when the processor is too busy performing other tasks.

### Count on an industrial-strength design

Designed to reduce upkeep, the fanless Zebra 4Sight EV7 eliminates the need to clean or replace an air filter or a worn-out fan. A small footprint, rugged casing, and wide ambient operational temperature range allows the Zebra 4Sight EV7 to be mounted either horizontally or vertically in hostile, space-limited locations. Carefully selected components ensure consistent long-term availability of Zebra 4Sight EV7 vision controllers, thus maximizing return on the original investment.

### Zebra 4Sight EV7 at a glance

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**Reduce service stoppages** with a fanless design

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**Inspect multiple sites** through the support for four GigE Vision and four USB3 Vision cameras

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**Simplify cabling for GigE Vision installations** using Power-over-Ethernet (PoE)-enabled ports

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**Tackle deep learning and traditional machine vision applications** with a mobile-class embedded twelfth-generation Intel Core processor

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**Connect separately to the factory floor and enterprise networks** via two more Gigabit Ethernet ports

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**Synchronize with other equipment** using the integrated real-time digital I/Os with rotary encoder support and RS-232/RS-485 ports

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**Streamline application development** using the [Aurora Design Assistant](#) flowchart-based IDE, [Aurora Visual Studio](#) graphical dataflow-based software or the [Aurora Imaging Library](#) SDK

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**Tackle machine vision applications with utmost confidence** using field-proven tools for analyzing, locating, classifying, measuring, reading, and verifying

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### Manage discrete I/Os in real time

A dedicated hardware-assisted mechanism on the Zebra 4Sight EV7 supports discrete I/O management, enabling output events to occur at precise moments in time, based on elapsed time, or for specific input events. An input event can come directly from a discrete input—including from a rotary encoder—or be count-derived from a discrete input. Programmed output events are stored in a hardware list, which is traversed based on a clock or an input event. Carrying out an output event results in a state transition, pulse, or pulse train on a specific discrete output. Multiple cascable hardware timers are available to count or generate specific events. The Zebra 4Sight EV7 has what it takes to effectively synchronize a typical vision application with a manufacturing line.

## Software Environment

### Microsoft Windows 10 IoT Enterprise

Zebra 4Sight EV7 comes pre-installed with Microsoft® Windows® 10 IoT Enterprise 2021 (64-bit), which provides the familiarity, performance, and reliability of Windows 10—including the Unified Write Filter (UWF) to prevent corruptions caused by unanticipated power-downs—and multi-language support.

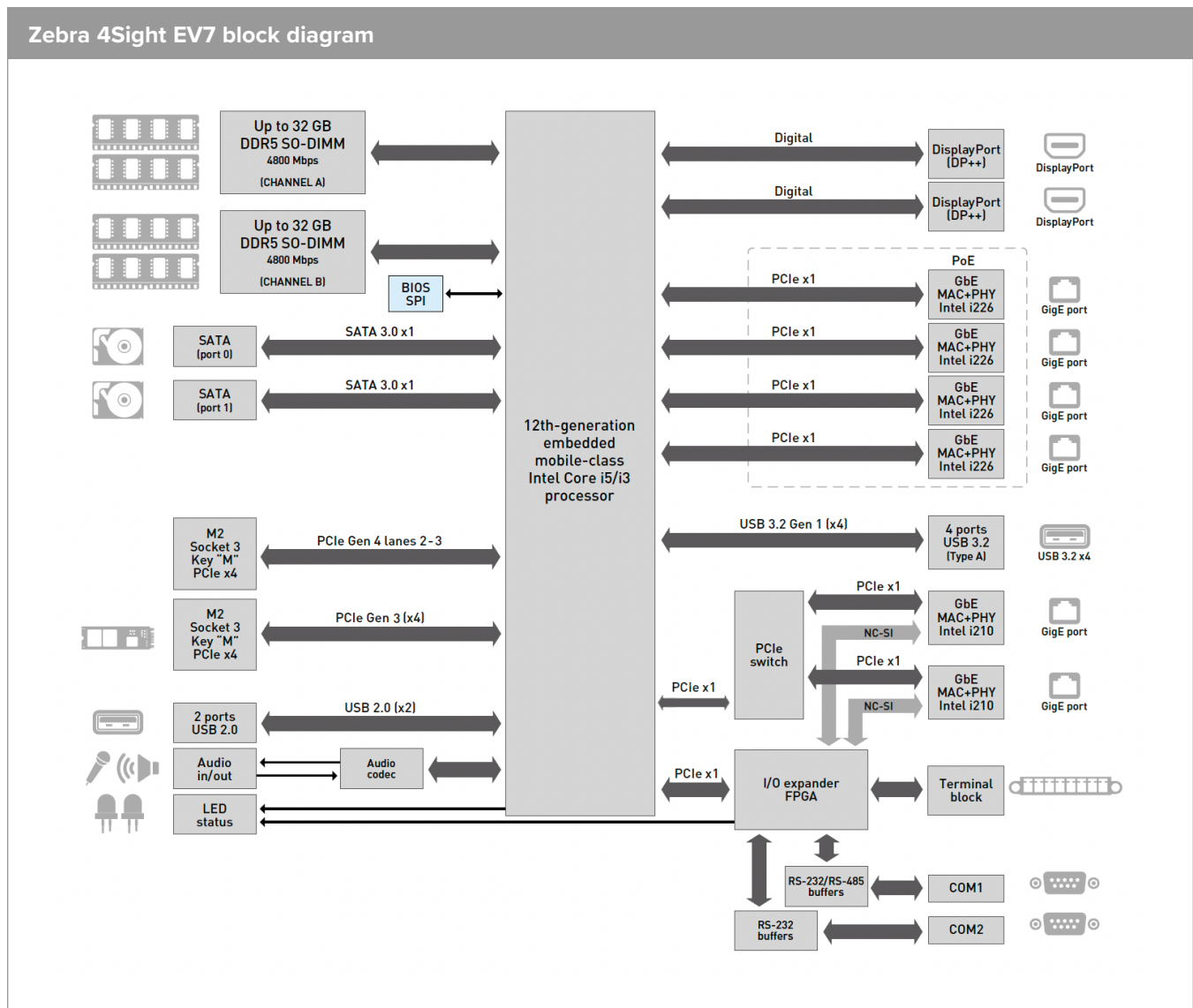
### Field-proven application development software

Zebra 4Sight EV7 is supported by Aurora Imaging Library<sup>1</sup> software—a comprehensive SDK with a 25-year history of reliable performance. This toolkit features interactive software and programming functions for image capture, processing, analysis, annotation, display, and archiving operations, with the accuracy and robustness needed to tackle the most demanding machine vision applications. Refer to the Aurora Imaging Library datasheet for more information.

Zebra 4Sight EV7 is also available with, and licensed for, Aurora Design Assistant<sup>1</sup> software, a versatile and extendable IDE. Vision applications are created by constructing an intuitive flowchart instead of writing traditional programming code. A custom, web-based operator interface to the application is created through an integrated HTML visual editor. Refer to the Aurora Design Assistant datasheet for more information.

Zebra 4Sight EV7 can also have Aurora Vision Studio preinstalled and licensed. Using a graphical dataflow-based environment, sophisticated vision applications can be created without the need to write a single line of code.

## Connectivity



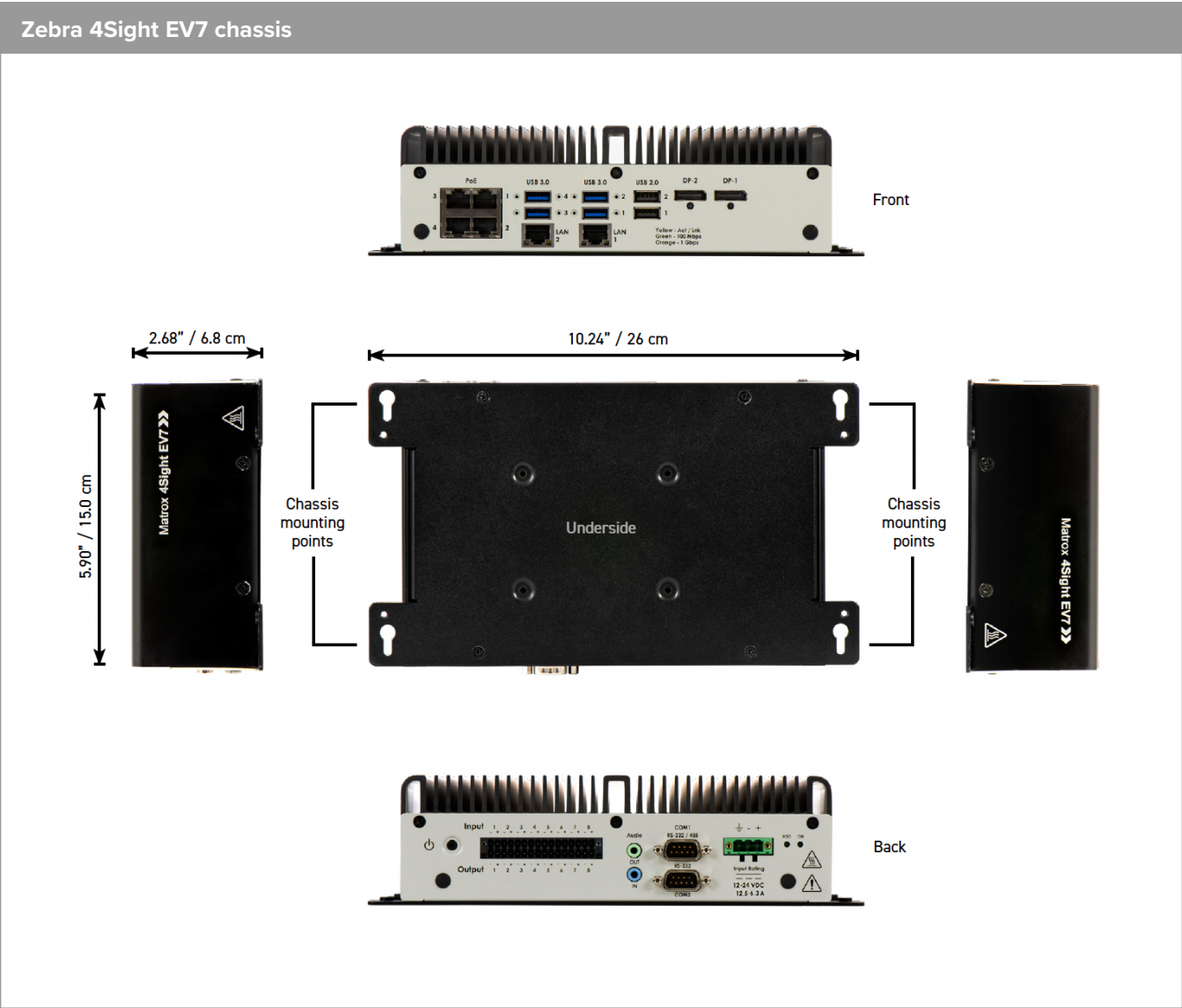
## Connectivity (cont.)

Zebra 4Sight EV7 front and back views

The image shows the front and back views of the Zebra 4Sight EV7 device. The front view (top) features a power button (7), a digital display (8), and digital input/output ports (9, 10). The back view (bottom) features PoE ports (1, 3), USB 3.0 ports (2, 4), USB 2.0 ports (5), DisplayPort ports (6), RS-232/RS-485 ports (12, 13), an audio port (11), a power input (14), an HDD LED (15), and a power-on LED (16).

|                                    |                  |                    |                        |                  |
|------------------------------------|------------------|--------------------|------------------------|------------------|
| 1. Gigabit Ethernet ports with PoE | 4. USB 2.0 ports | 7. Power button    | 11. Audio in           | 14. Power input  |
| 2. USB 3.2 ports                   | 5. DisplayPort   | 8. Digital inputs  | 12. RS-232/RS-485 port | 15. HDD LED      |
| 3. Gigabit Ethernet ports          | 6. DisplayPort   | 9. Digital outputs | 13. RS-232 port        | 16. Power-on LED |
|                                    |                  | 10. Audio out      |                        |                  |

Connectivity (cont.)



# Specifications

| Zebra 4Sight EV7                                                                         |  |
|------------------------------------------------------------------------------------------|--|
| System                                                                                   |  |
| Intel Core i5-1250PE / Intel Core i3-1220PE                                              |  |
| Two (2) DDR5-4800 SODIMM slots                                                           |  |
| Dual-head graphics support                                                               |  |
| Two (2) DisplayPort Dual-Mode (DP++) outputs                                             |  |
| Up to 4096x2304 @ 60 Hz                                                                  |  |
| Six (6) Ethernet ports                                                                   |  |
| Four (4) 2.5 Gigabit Ethernet ports with PoE (up to 15.4 W per port)                     |  |
| Two (2) standard Gigabit Ethernet ports                                                  |  |
| Four (4) USB 3.2 ports                                                                   |  |
| Two (2) USB 2.0 ports                                                                    |  |
| Two (2) SATA 3.0 ports (internal)                                                        |  |
| One (1) M.2 connector socket 3 Key 'M' (used by supplied 256GB NVMe M.2 2280 SSD)        |  |
| One (1) M.2 connector socket 3 Key 'M' 2280                                              |  |
| One (1) 24-bit stereo audio input and 24-bit stereo output                               |  |
| One (1) RS-232 port                                                                      |  |
| One (1) RS-232/RS-485 port                                                               |  |
| Sixteen (16) digital I/Os                                                                |  |
| Eight (8) inputs                                                                         |  |
| Up to 24 V                                                                               |  |
| Eight (8) outputs (open collector)                                                       |  |
| 100 mA maximum @ 24 VDC                                                                  |  |
| 256 GB NVMe M.2 2280 SSD                                                                 |  |
| Power input: 12-24 VDC 12.5-6.3A                                                         |  |
| Chassis                                                                                  |  |
| Dimensions (L x W x H): 22.5 x 15.0 x 6.8 cm (8.86 x 5.90 x 2.68 in)                     |  |
| Four (4) mounting slots                                                                  |  |
| Fanless enclosure                                                                        |  |
| Power switch                                                                             |  |
| Power and HDD notification LEDs                                                          |  |
| Mounting                                                                                 |  |
| Horizontal or vertical mounting                                                          |  |
| Certifications                                                                           |  |
| FCC Class A                                                                              |  |
| ICES-003 Class A                                                                         |  |
| CE Class A                                                                               |  |
| RCM Class A                                                                              |  |
| KC Class A                                                                               |  |
| CSA 61010-1-12                                                                           |  |
| Environmental                                                                            |  |
| Operating temperature: 0° to 45° C (32° to 113°F)                                        |  |
| Storage temperature: -40°C to 85°C (-40°F to 185°F)                                      |  |
| Relative humidity: Up to 90% (non-condensing)                                            |  |
| Software                                                                                 |  |
| Pre-loaded with Microsoft Windows 10 IoT Enterprise 2021 (64-bit)                        |  |
| Pre-loaded with Aurora Imaging Library and Aurora Design Assistant run-time environments |  |
| Optionally pre-loaded with Aurora Design Assistant development and run-time environments |  |

# Ordering Information

| Part number                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hardware</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| EV7I3M8                                  | <p>Zebra 4Sight EV7 integrated unit with Intel Core i3-1220PE, 8 GB DDR5 RAM, 256 GB M.2 MLC SSD, and Microsoft Windows 10 IoT Enterprise 2021 (64-bit). Pre-loaded with Aurora Imaging Library and Aurora Design Assistant run-time environments. Partially licensed for Aurora Design Assistant and Aurora Imaging Library.</p> <p>Note: The use of this product is governed by <a href="#">Microsoft Software License Terms</a>, among others.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| EV7I5M16                                 | <p>Zebra 4Sight EV7 integrated unit with Intel Core i5-1250PE, 16 GB DDR5 RAM, 256 GB M.2 MLC SSD, and Microsoft Windows 10 IoT Enterprise 2021 (64-bit). Pre-loaded with Aurora Imaging Library and Aurora Imaging Library and Aurora Design Assistant run-time environments. Partially licensed for Aurora Design Assistant and Aurora Imaging Library.</p> <p>Note: The use of this product is governed by <a href="#">Microsoft Software License Terms</a>, among others.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| EV7I5M16DA                               | <p>Zebra 4Sight EV7 integrated unit with Intel Core i5-1250PE, 16 GB DDR5 RAM, 256 GB M.2 MLC SSD, and Microsoft Windows 10 IoT Enterprise 2021 (64-bit). Pre-loaded with Aurora Design Assistant design-time and run-time environments. Partially licensed for Aurora Design Assistant and Aurora Imaging Library.</p> <p>Note: The use of this product is governed by <a href="#">Microsoft Software License Terms</a>, among others.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| EV7I5M16DAP                              | <p>Zebra 4Sight EV7 integrated unit with Intel Core i5-1250PE, 16 GB DDR5 RAM, 256 GB M.2 MLC SSD, and Microsoft Windows 10 IoT Enterprise 2021 (64-bit). Pre-loaded with Aurora Design Assistant design-time and run-time environments. Fully licensed for Aurora Design Assistant and Aurora Imaging Library.</p> <p>Note: The use of this product is governed by <a href="#">Microsoft Software License Terms</a>, among others.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| EV7I5M16AVS                              | <p>Zebra 4Sight EV7 integrated unit with Intel Core i5-1250PE, 16 GB DDR5 RAM, 256 GB M.2 MLC SSD, and Microsoft Windows 10 IoT Enterprise 2021 (64-bit). Pre-loaded with Aurora Vision Studio Professional and Runtime software. Licensed for all Aurora Vision Studio Professional and Runtime packages and for multi-threaded development and runtime (equivalent to AS-10250-01 and AS-04050-01).</p> <p>Note: The use of this product is governed by <a href="#">Microsoft Software License Terms</a>, among others.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| EVPS                                     | 150 W AC/DC power adapter (100–240 VAC input/24 VDC output) for Zebra 4Sight EV7.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Software</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Included with EV7I3M8 and EV7I5M16       | Licensed for the Aurora Design Assistant / Aurora Imaging Library Interface, Distributed Aurora Imaging Library and Industrial and Robot Communications run-time packages. See Aurora Design Assistant and Aurora Imaging Library datasheets for more information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Included with EV7I5M16DA and EV7I5M16DAP | <p>Separate installation media with the Aurora Design Assistant IDE and on-line documentation as well as a Aurora Design Assistant Maintenance registration number. Pre-loaded with the Aurora Design Assistant design-time and run-time environment. Allow the Aurora Design Assistant IDE to run when it is connected to them. EV7I5M16DA is licensed for the Aurora Design Assistant / Aurora Imaging Library Machine Vision, Identification, Image Compression, Interface, Distributed Aurora Imaging Library, Metrology, Color Analysis, and Industrial and Robot Communications run-time packages. The String Reader and SureDotOCR, Geometric Model Finder, Registration, 3D Calibration and Supplemental and Classification packages need to be licensed separately. See Aurora Design Assistant and Aurora Imaging Library datasheets for more information. EV7I5M16DAP is licensed for all Aurora Design Assistant and Aurora Imaging Library run-time packages.</p> |
| Included with EV7I5M16AVS                | Pre-loaded with the Aurora Vision Studio development and run-time environment. Licensed for all Aurora Vision Studio development and run-time packages, for multi-threaded development and run-time. The Library and Deep Learning Add-ons need to be licensed separately. See Aurora Vision Studio datasheets for more information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| EV7I5M16V2W                              | <p>Zebra 4Sight EV7 integrated unit with Intel Core i5-1250PE, 16GB DDR5 RAM, 256 GB M.2 SSD, and Microsoft Windows 10 IoT Enterprise 2021 (64-bit). Pre-loaded with Aurora VGR Assistant and Aurora Design Assistant design-time and run-time environments. Fully licensed for Aurora VGR Assistant, Aurora Design Assistant and Aurora Imaging Library.</p> <p>Note: The use of this product is governed by Microsoft Software License Terms, among others.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

Endnotes:

1. The software may be protected by one or more patents; see [Patents](#) for more information.



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