



## VS40

VS40-SR20M4-4B00W

- Rozlišení: 2,3 / 5,1 megapixelů
- Velikost pixelu: 3,0 / 2,2  $\mu\text{m}$
- Snímková frekvence: 60 / 30 snímků za sekundu
- Integrované ostření a osvětlení
- Krytí IP: IP65 a IP67



### POPIS PRODUKTU

Chytrá kamera Zebra VS40 pro strojové vidění představuje komplexní řešení pro automatizaci výrobních a logistických procesů, které integruje pokročilé funkce do jednoho odolného zařízení. Jednotná softwarová platforma Zebra Aurora™ zjednodušuje nastavení, nasazení a správu pro začátečníky i experty a snižuje tak náklady i čas potřebný na školení. Klíčové inovace, jako je ImagePerfect+ pro pořízení až 16 různých snímků na jedno spuštění a napájení přes Ethernet (PoE), eliminují potřebu externího příslušenství a zvyšují spolehlivost inspekcí, což vede k výraznému snížení zmetkovitosti a zvýšení efektivity výroby.

#### Klíčové body:

- Zebra VS40 je chytrá kamera pro strojové vidění, která zvyšuje automatizaci a kvalitu výrobních procesů.
- Softwarová platforma Zebra Aurora™ sjednocuje ovládání všech pevných skenerů a kamer Zebra v intuitivním rozhraní.
- Funkce ImagePerfect+ umožňuje na jedno spuštění pořídit až 16 různých snímků, každý s unikátním nastavením.
- Díky podpoře napájení přes Ethernet (PoE) se snižuje složitost instalace a související náklady.
- Univerzální port USB-C poskytuje flexibilitu pro připojení dalšího příslušenství, jako jsou tiskárny, tablety nebo externí úložiště.
- Odolné hliníkové pouzdro s krytím IP65 a IP67 zaručuje spolehlivý provoz v náročných průmyslových podmínkách.
- Funkcionalitu kamery lze kdykoliv rozšířit pomocí jednoduchého upgradu softwarové licence.
- Nástroj Golden Image Compare umožňuje rychlou diagnostiku problémů porovnáním aktuálního snímku s referenčním „dokonalým“ obrazem.

### SPECIFIKACE

|                      |                                                       |
|----------------------|-------------------------------------------------------|
| Focus                | Liquid lens                                           |
| Interface out        | Ethernet with POE, Serial, USB & Industrial Protocols |
| Lighting             | Modrá                                                 |
| Rozlišení            | 2.3 MP                                                |
| Size                 | 54.0 x 64.0 x 91.4                                    |
| Software performance | STANDARD MV TOOLSET                                   |
| Type of lens         | Standard                                              |
| Type of scanner      | Smart Camera                                          |

| Machine Vision (MV) Tools                                                                                                |                                                                       |        |          |          |
|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|--------|----------|----------|
| Tool                                                                                                                     | Description                                                           | Sensor | Standard | Advanced |
| Object Locate                                                                                                            | Find high-contrast features                                           | •      | •        | •        |
| Pixel Counter                                                                                                            | Count pixels with a setpoint gray level in a specific area            | •      | •        | •        |
| Brightness                                                                                                               | Provide the average brightness for an area                            | •      | •        | •        |
| Contrast                                                                                                                 | Provide the average contrast for an area                              | •      | •        | •        |
| Edge Test                                                                                                                | Find edges for feature and process alignment                          | •      | •        | •        |
| Distance Test                                                                                                            | Measure the distance between two existing tool results                | •      | •        | •        |
| Advanced Feature                                                                                                         | Find challenging features                                             | •      | •        | •        |
| Block                                                                                                                    | Find, sort and count areas of joined pixels with a similar gray level | •      | •        | •        |
| Optical Character Verification (OCV)                                                                                     | Inspect the quality of text or logos                                  | •      | •        | •        |
| Find Circle                                                                                                              | Find and measure circles                                              | •      | •        | •        |
| Caliper Tool                                                                                                             | Find and measure the distance between two edges                       | •      | •        | •        |
| Filters                                                                                                                  | Enhance image quality for more robust inspection                      | •      | •        | •        |
| SD/SDPM                                                                                                                  | Read 1D, 2D and DPM barcodes                                          | •      | •        | •        |
| Deep Learning OCR                                                                                                        | Deep learning based OCR                                               | •      | •        | •        |
| <b>Footnotes</b>                                                                                                         |                                                                       |        |          |          |
| 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 capabilities.                                                   |                                                                       |        |          |          |
| 3. Printing resolution, contrast, power source, illumination source, and ambient light dependent                         |                                                                       |        |          |          |
| Specifications subject to change without notice                                                                          |                                                                       |        |          |          |

### Ethernet Connector

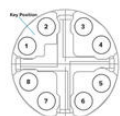


Table: Ethernet Connector Pinout Diagram

| Pin   | Description |
|-------|-------------|
| 1     | TP1+        |
| 2     | TP1-        |
| 3     | TP2+        |
| 4     | TP2-        |
| 5     | TP4+        |
| 6     | TP4-        |
| 7     | TP3+        |
| 8     | TP3-        |
| SHELL | SHIELD      |

### Specifications

| VS40-5B-30° FOV Lens |            |               | VS40-WA-48° FOV Lens |            |               |
|----------------------|------------|---------------|----------------------|------------|---------------|
| Symbology/Resolution | Near       | Far           | Symbology/Resolution | Near       | Far           |
| 5 mil Code 128       | 3 in./8 cm | 24 in./61 cm  | 5 mil Code 128       | 3 in./8 cm | 36 in./91 cm  |
| 10 mil Code 128      | 3 in./8 cm | 49 in./124 cm | 10 mil Code 128      | 3 in./8 cm | 30 in./76 cm  |
| 15 mil Code 128      | 3 in./8 cm | 55 in./139 cm | 15 mil Code 128      | 3 in./8 cm | 42 in./107 cm |
| 20 mil Code 128      | 3 in./8 cm | 59 in./150 cm | 20 mil Code 128      | 3 in./8 cm | 56 in./142 cm |
| 5 mil DataMatrix     | 3 in./8 cm | 13 in./33 cm  | 5 mil DataMatrix     | 3 in./8 cm | 8 in./20 cm   |
| 10 mil DataMatrix    | 3 in./8 cm | 28 in./71 cm  | 10 mil DataMatrix    | 3 in./8 cm | 18 in./46 cm  |
| 15 mil DataMatrix    | 3 in./8 cm | 40 in./102 cm | 15 mil DataMatrix    | 3 in./8 cm | 27 in./69 cm  |
| 20 mil DataMatrix    | 3 in./8 cm | 55 in./139 cm | 20 mil DataMatrix    | 3 in./8 cm | 52 in./132 cm |

### xS40 Connections

The xS40 supports connections for USB-C with DisplayPort, power serial and GPIO, e-coded Ethernet, and external lighting.

Figure: xS40 Connections



- Power Serial and GPIO
- USB-C (with DisplayPort)
- External Lighting
- X-Coded Ethernet Port

### External Light Connector

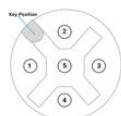


Table: External Light Connector Pinout Diagram

| Pin   | Color | Description    |
|-------|-------|----------------|
| 1     | Brown | DC_OUT / GPIOB |
| 2     | White | GPIO7          |
| 3     | Blue  | GND            |
| 4     | Black | GPIO6          |
| 5     | Grey  | ANALOG_OUT     |
| SHELL | Bare  | SHIELD         |

### Power and IO Connector

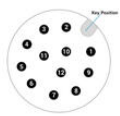


Table: Power and IO Connector Pinout Diagram

| Pin   | Color        | Description |
|-------|--------------|-------------|
| 1     | Yellow       | GPIO2       |
| 2     | White/Yellow | TXD         |
| 3     | Brown        | RXD         |
| 4     | White/Brown  | GPIO4       |
| 5     | Violet       | GPIO5       |
| 6     | White/Violet | COMMON_IN   |
| 7     | Red          | DC_IN       |
| 8     | Black        | GND         |
| 9     | Green        | COMMON_OUT  |
| 10    | Orange       | GPIO8       |
| 11    | Blue         | GPIO1       |
| 12    | Grey         | GPIO3       |
| SHELL | Bare         | SHIELD      |

| Machine Vision (MV) Tools                                                                                                |                                                                       |        |          |          |
|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|--------|----------|----------|
| Tool                                                                                                                     | Description                                                           | Sensor | Standard | Advanced |
| Object Locate                                                                                                            | Find high-contrast features                                           | •      | •        | •        |
| Pixel Counter                                                                                                            | Count pixels with a setpoint gray level in a specific area            | •      | •        | •        |
| Brightness                                                                                                               | Provide the average brightness for an area                            | •      | •        | •        |
| Contrast                                                                                                                 | Provide the average contrast for an area                              | •      | •        | •        |
| Edge Test                                                                                                                | Find edges for feature and process alignment                          | •      | •        | •        |
| Distance Test                                                                                                            | Measure the distance between two existing tool results                | •      | •        | •        |
| Advanced Feature                                                                                                         | Find challenging features                                             | •      | •        | •        |
| Block                                                                                                                    | Find, sort and count areas of joined pixels with a similar gray level | •      | •        | •        |
| Optical Character Verification (OCV)                                                                                     | Inspect the quality of text or logos                                  | •      | •        | •        |
| Find Circle                                                                                                              | Find and measure circles                                              | •      | •        | •        |
| Caliper Tool                                                                                                             | Find and measure the distance between two edges                       | •      | •        | •        |
| Filters                                                                                                                  | Enhance image quality for more robust inspection                      | •      | •        | •        |
| SD/SDPM                                                                                                                  | Read 1D, 2D and DPM barcodes                                          | •      | •        | •        |
| Deep Learning OCR                                                                                                        | Deep learning based OCR                                               | •      | •        | •        |
| <b>Footnotes</b>                                                                                                         |                                                                       |        |          |          |
| 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 capabilities.                                                   |                                                                       |        |          |          |
| 3. Printing resolution, contrast, power source, illumination source, and ambient light dependent                         |                                                                       |        |          |          |
| Specifications subject to change without notice                                                                          |                                                                       |        |          |          |

### Specifications

| VS40-5B-30° FOV Lens |            |               | VS40-WA-48° FOV Lens |            |               |
|----------------------|------------|---------------|----------------------|------------|---------------|
| Symbology/Resolution | Near       | Far           | Symbology/Resolution | Near       | Far           |
| 5 mil Code 128       | 3 in./8 cm | 24 in./61 cm  | 5 mil Code 128       | 3 in./8 cm | 36 in./91 cm  |
| 10 mil Code 128      | 3 in./8 cm | 49 in./124 cm | 10 mil Code 128      | 3 in./8 cm | 30 in./76 cm  |
| 15 mil Code 128      | 3 in./8 cm | 55 in./139 cm | 15 mil Code 128      | 3 in./8 cm | 42 in./107 cm |
| 20 mil Code 128      | 3 in./8 cm | 59 in./150 cm | 20 mil Code 128      | 3 in./8 cm | 56 in./142 cm |
| 5 mil DataMatrix     | 3 in./8 cm | 13 in./33 cm  | 5 mil DataMatrix     | 3 in./8 cm | 8 in./20 cm   |
| 10 mil DataMatrix    | 3 in./8 cm | 28 in./71 cm  | 10 mil DataMatrix    | 3 in./8 cm | 18 in./46 cm  |
| 15 mil DataMatrix    | 3 in./8 cm | 40 in./102 cm | 15 mil DataMatrix    | 3 in./8 cm | 27 in./69 cm  |
| 20 mil DataMatrix    | 3 in./8 cm | 55 in./139 cm | 20 mil DataMatrix    | 3 in./8 cm | 52 in./132 cm |

### xS40 Connections

The xS40 supports connections for USB-C with DisplayPort, power serial and GPIO, e-coded Ethernet, and external lighting.

Figure: xS40 Connections



- Power Serial and GPIO
- USB-C (with DisplayPort)
- External Lighting
- X-Coded Ethernet Port

### Ethernet Connector

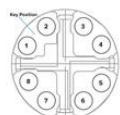


Table: Ethernet Connector Pinout Diagram

| Pin   | Description |
|-------|-------------|
| 1     | TP1+        |
| 2     | TP1-        |
| 3     | TP2+        |
| 4     | TP2-        |
| 5     | TP4+        |
| 6     | TP4-        |
| 7     | TP3+        |
| 8     | TP3-        |
| SHELL | SHIELD      |

### External Light Connector

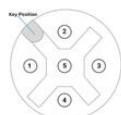


Table: External Light Connector Pinout Diagram

| Pin   | Color | Description    |
|-------|-------|----------------|
| 1     | Brown | DC_OUT / GPIOB |
| 2     | White | GPIO7          |
| 3     | Blue  | GND            |
| 4     | Black | GPIO6          |
| 5     | Grey  | ANALOG_OUT     |
| SHELL | Bare  | SHIELD         |

### Power and IO Connector

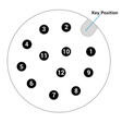


Table: Power and IO Connector Pinout Diagram

| Pin   | Color        | Description |
|-------|--------------|-------------|
| 1     | Yellow       | GPIO2       |
| 2     | White/Yellow | TXD         |
| 3     | Brown        | RXD         |
| 4     | White/Brown  | GPIO4       |
| 5     | Violet       | GPIO5       |
| 6     | White/Violet | COMMON_IN   |
| 7     | Red          | DC_IN       |
| 8     | Black        | GND         |
| 9     | Green        | COMMON_OUT  |
| 10    | Orange       | GPIO8       |
| 11    | Blue         | GPIO1       |
| 12    | Grey         | GPIO3       |
| SHELL | Bare         | SHIELD      |