

## ZEBRA VS40 SMART CAMERA

VS40-SR20M4-2C00W

VS40, SR, 2.3 MP, SR MV TOOLS, RED

- **Ease of Setup with Auto-Tune:** The VS40 offers a one-button Auto-Tune feature that simplifies setup, optimizing image quality for reliable inspections straight out of the box
- **IoT and Cloud-Ready:** Equipped to send data to Zebra's Savanna™ cloud service, the VS40 supports compliance and image storage without requiring local server infrastructure
- **Power Over Ethernet (PoE):** The device can be powered via Ethernet, reducing setup complexity and removing the need for additional power supplies
- **Integrated with Zebra Aurora:** Managed by Zebra Aurora software, the VS40 allows users to control multiple machine vision and industrial scanner devices through a single platform, offering tools for experts and guidance for beginners
- **Advanced Lighting and Optics:** Featuring integrated, customizable lighting options (such as red, blue, and infrared LEDs) and a rugged, industrial-grade design, the VS40 achieves high-quality imaging suitable for challenging environments



### PRODUCT DESCRIPTION

The VS40 can be used in almost any inspection application on a production line, thanks to its wide range of Machine Vision tools. Tailor the device to your application with a wide range of lenses, lighting, I/Os and filters. In addition, you can upgrade to more advanced features by simply purchasing a software license. With Zebra Aurora's powerful software platform, you can easily set up, deploy and run your VS40 smart cameras.

### TECHNICAL DATA

|       |             |
|-------|-------------|
| Focus | Liquid lens |
|-------|-------------|

|                             |                                                       |
|-----------------------------|-------------------------------------------------------|
| <b>Interface out</b>        | Ethernet with POE, Serial, USB & Industrial Protocols |
| <b>Lighting</b>             | Red                                                   |
| <b>Size</b>                 | 54.0 x 64.0 x 91.4                                    |
| <b>Software performance</b> | STANDARD MV TOOLSET                                   |
| <b>Type of lens</b>         | Standard                                              |
| <b>Type of scanner</b>      | Smart Camera                                          |

| Test                                        | Description                                                           | Sensor | Standard | Advanced |
|---------------------------------------------|-----------------------------------------------------------------------|--------|----------|----------|
| <b>Object Locate</b>                        | Find high-contrast features                                           | •      | •        | •        |
| <b>Pixel Counter</b>                        | Count pixels with a brightness gray level in a specific area          | •      | •        | •        |
| <b>Brightness</b>                           | Provide the average brightness for an area                            | •      | •        | •        |
| <b>Contrast</b>                             | Provide the average contrast for an area                              | •      | •        | •        |
| <b>Edge Test</b>                            | Find edges for feature and process validation                         | •      | •        | •        |
| <b>Distance Test</b>                        | Measure the distance between two existing test results                | •      | •        | •        |
| <b>Advanced Pattern</b>                     | Find challenging features                                             | •      | •        | •        |
| <b>Blob</b>                                 | Find, sort and count areas of joined pixels with a similar gray level | •      | •        | •        |
| <b>Optical Character Verification (OCV)</b> | Inquire the quality of text or signs                                  | •      | •        | •        |
| <b>Find Code</b>                            | Find and measure codes                                                | •      | •        | •        |
| <b>Caliper Test</b>                         | Find and measure the distance between two edges                       | •      | •        | •        |
| <b>Filters</b>                              | Enhance image quality for more robust inspection                      | •      | •        | •        |
| <b>1D/2D SPM</b>                            | Read 1D, 2D and SPM barcodes                                          | •      | •        | •        |
| <b>Deep Learning OCR</b>                    | Deep Learning based OCR                                               | •      | •        | •        |

**Footnotes**

- Some features available in a future release. Contact your Zebra Partner or sales representative for more information.
- Refer to Product Reference Guide for complete list of symbologies.
- Printing resolution, contrast, power source, illumination source, and ambient light dependent.

Specifications subject to change without notice.

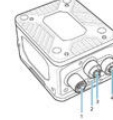
### Specifications

| VS40 58~30° FOV Lens |            |               | VS40 WA~46° 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 | 14 in./36 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 | 70 in./178 cm | 15 mil Code 128      | 3 in./8 cm | 42 in./107 cm |
| 20 mil Code 128      | 3 in./8 cm | 92 in./234 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 | 58 in./148 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, x-coded Ethernet, and external lighting.

Figure: xS40 Connections



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

### Ethernet Connector

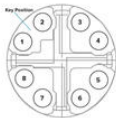


Table: Ethernet Connector Pinout Diagram

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

### External Light Connector

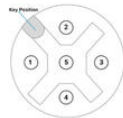


Table: External Light Connector Pinout Diagram

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

### Power and IO Connector

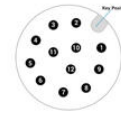


Table: Power and IO Connector Pinout Diagram

| 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       | GPIO0       |
| 11    | Blue         | GPIO1       |
| 12    | Grey         | GPIO3       |
| SHELL | Bare         | SHIELD      |

| Test                                        | Description                                                           | Sensor | Standard | Advanced |
|---------------------------------------------|-----------------------------------------------------------------------|--------|----------|----------|
| <b>Object Locate</b>                        | Find high-contrast features                                           | •      | •        | •        |
| <b>Pixel Counter</b>                        | Count pixels with a brightness gray level in a specific area          | •      | •        | •        |
| <b>Brightness</b>                           | Provide the average brightness for an area                            | •      | •        | •        |
| <b>Contrast</b>                             | Provide the average contrast for an area                              | •      | •        | •        |
| <b>Edge Test</b>                            | Find edges for feature and process validation                         | •      | •        | •        |
| <b>Distance Test</b>                        | Measure the distance between two existing test results                | •      | •        | •        |
| <b>Advanced Pattern</b>                     | Find challenging features                                             | •      | •        | •        |
| <b>Blob</b>                                 | Find, sort and count areas of joined pixels with a similar gray level | •      | •        | •        |
| <b>Optical Character Verification (OCV)</b> | Inquire the quality of text or signs                                  | •      | •        | •        |
| <b>Find Code</b>                            | Find and measure codes                                                | •      | •        | •        |
| <b>Caliper Test</b>                         | Find and measure the distance between two edges                       | •      | •        | •        |
| <b>Filters</b>                              | Enhance image quality for more robust inspection                      | •      | •        | •        |
| <b>1D/2D SPM</b>                            | Read 1D, 2D and SPM barcodes                                          | •      | •        | •        |
| <b>Deep Learning OCR</b>                    | Deep Learning based OCR                                               | •      | •        | •        |

**Footnotes**

- Some features available in a future release. Contact your Zebra Partner or sales representative for more information.
- Refer to Product Reference Guide for complete list of symbologies.
- Printing resolution, contrast, power source, illumination source, and ambient light dependent.

Specifications subject to change without notice.

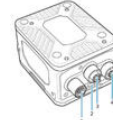
### Specifications

| VS40 58~30° FOV Lens |            |               | VS40 WA~46° 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 | 14 in./36 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 | 70 in./178 cm | 15 mil Code 128      | 3 in./8 cm | 42 in./107 cm |
| 20 mil Code 128      | 3 in./8 cm | 92 in./234 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 | 58 in./148 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, x-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   | Color  | Description |
|-------|--------|-------------|
| 1     | TP1+   |             |
| 2     | TP1-   |             |
| 3     | TP2+   |             |
| 4     | TP2-   |             |
| 5     | TP4+   |             |
| 6     | TP4-   |             |
| 7     | TP3-   |             |
| 8     | TP3+   |             |
| SHELL | SHIELD |             |

### External Light Connector

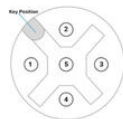


Table: External Light Connector Pinout Diagram

| 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

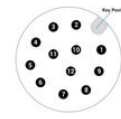


Table: Power and IO Connector Pinout Diagram

| 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       | GPIO0       |
| 11    | Blue         | GPIO1       |
| 12    | Grey         | GPIO3       |
| SHELL | Bare         | SHIELD      |

