

# VCI-AR0822-SL

**TechNexion**  
INNOVATORS OF TECHNOLOGY

- onsemi AR0822 8MP Rolling Shutter Sensor
- 4K HDR Imaging Capabilities
- Near Infra-Red Enhancement for Outdoor Applications
- Designed for Low Light Applications
- S-Mount for Interchangeable Lenses
- UVC USB Type-C 5 Gbps Connector
- Plug & Play with Windows & Linux OS
- VizionViewer™ configuration utility
- VizionSDK for custom development



## Camera Information

|                                  |                                                                                                                   |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------|
| CMOS Sensor                      | onsemi AR0822                                                                                                     |
| Active Pixels                    | 3848 (H) x 2160 (V) = 8MP                                                                                         |
| Pixel Size                       | 2.0 $\mu\text{m}$ x 2.0 $\mu\text{m}$                                                                             |
| Illuminated Type                 | Back Side Illuminated (BSI)                                                                                       |
| Maximum S/N Ratio                | 40.5 dB                                                                                                           |
| Optical Format                   | 1/1.8" (Diagonal 8.81 mm)                                                                                         |
| Shutter Type                     | Rolling Shutter                                                                                                   |
| Chromaticity                     | Color                                                                                                             |
| HDR Support                      | Yes                                                                                                               |
| Maximum Frame Rate (YUV422-UYYV) | 3840 x 2160 @ 15 fps<br>2560 x 1440 @ 30 fps<br>1920 x 1080 @ 60 fps<br>1280 x 720 @ 60 fps<br>640 x 480 @ 60 fps |
| Maximum Frame Rate (MJPEG)       | 3840 x 2160 @ 30 fps<br>2560 x 1440 @ 60 fps<br>1920 x 1080 @ 60 fps<br>1280 x 720 @ 60 fps<br>640 x 480 @ 60 fps |
| Output Format                    | YUV422-UYYV<br>MJPEG (JPG)                                                                                        |

## Camera Interface

|           |                   |
|-----------|-------------------|
| Connector | USB Type-C 5 Gbps |
|-----------|-------------------|

## Power

|                   |                                  |
|-------------------|----------------------------------|
| Supply Voltage    | 5V $\pm$ 5%                      |
| Power Consumption | 3840 x 2160 @ 15 fps $\leq$ 1.3W |
| Standby Power     | $\leq$ 0.1W Standby              |

## Software Support

|                  |                                                      |
|------------------|------------------------------------------------------|
| Operation System | UVC Plug-and-play<br>Windows 10/11<br>Linux<br>Yocto |
| Software         | VizionViewer™                                        |
| Development SDK  | VizionSDK                                            |

## Environmental and Mechanical

|                       |                                |
|-----------------------|--------------------------------|
| Dimensions            | 29.5(W) x 29.5(H) x 28.5(D) mm |
| Weight                | $\leq$ 44 grams                |
| MTBF                  | 50,000 Hours                   |
| Shock                 | 15G half-sine 11 ms duration   |
| Vibration             | 1 Grms random 5-500Hz hr/axis  |
| Relative Humidity     | 10 to 90 %                     |
| Operating Temperature | - 30°C to + 70°C               |

## Certification and Compliance

|               |                                                   |
|---------------|---------------------------------------------------|
| Certification | Compliant with CE / FCC / RoHS / REACH directives |
|---------------|---------------------------------------------------|

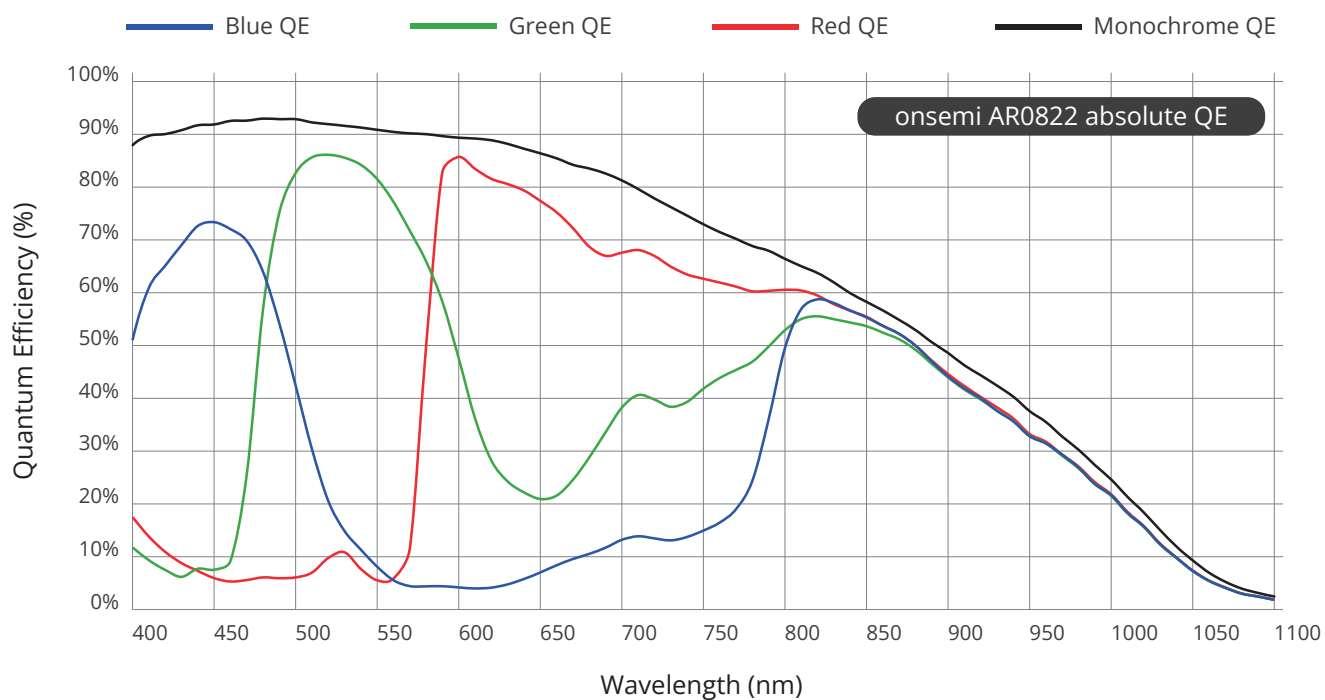


VizionSDK

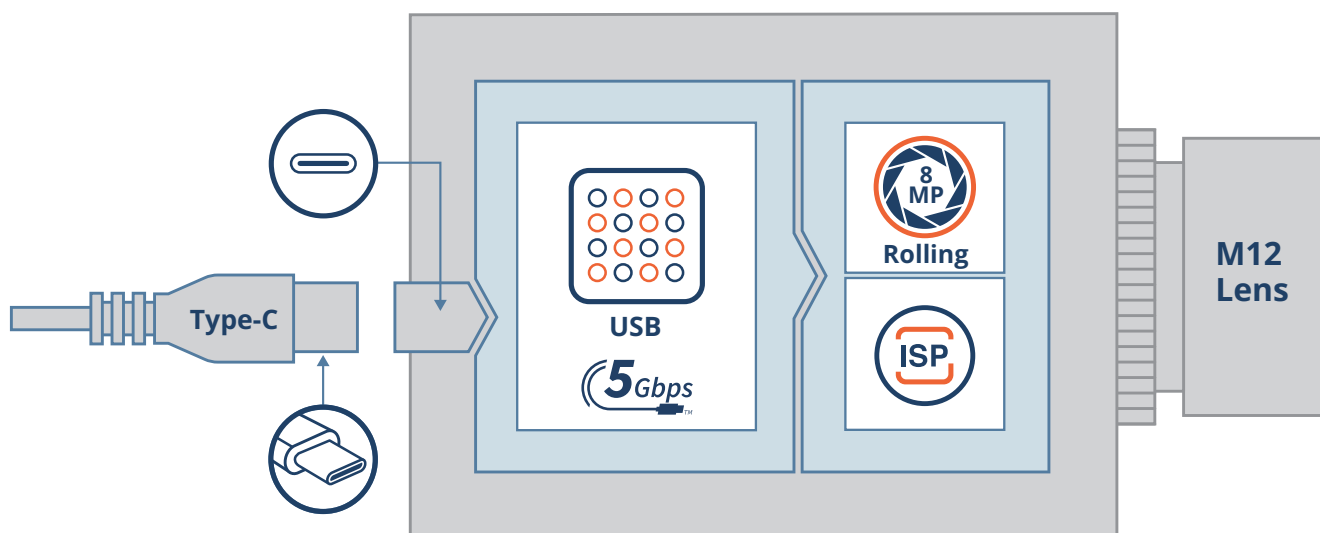


VizionViewer™

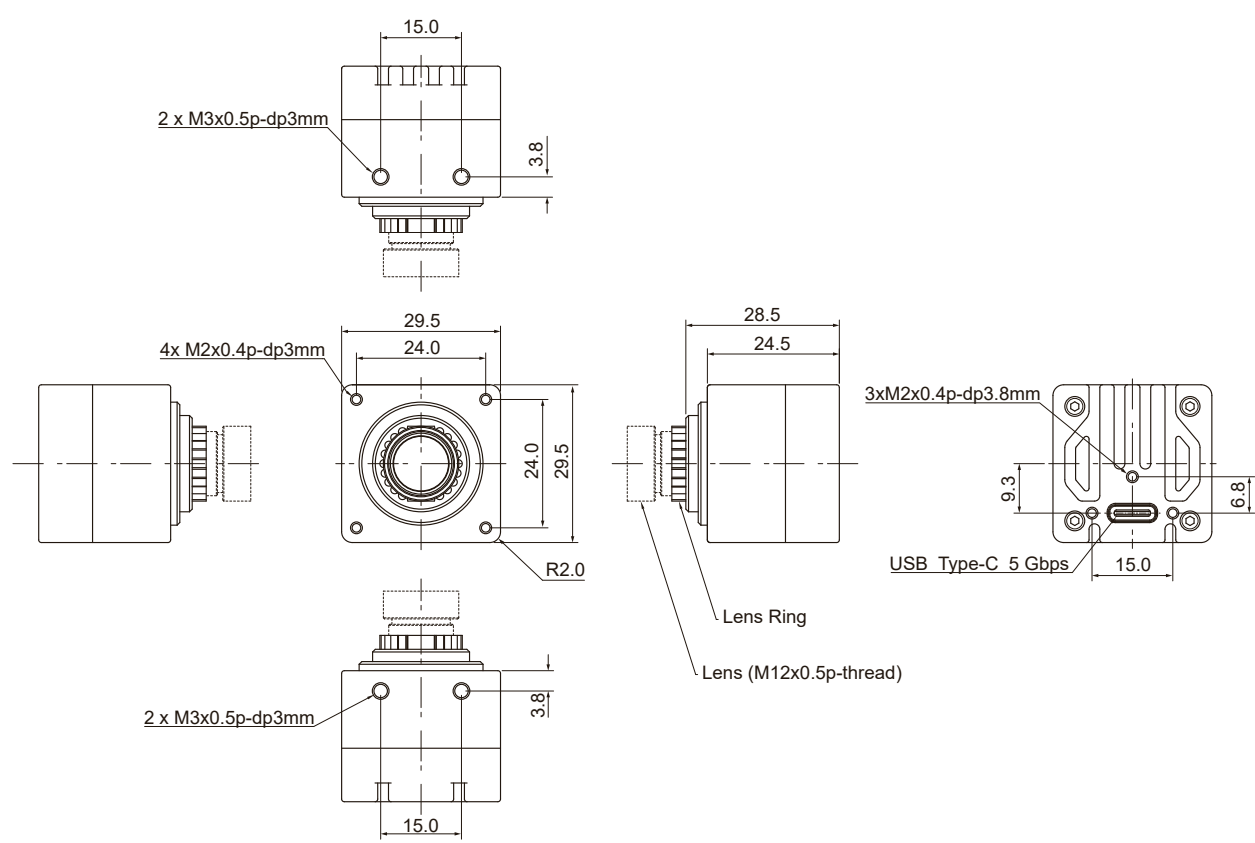
## Spectral Characteristics



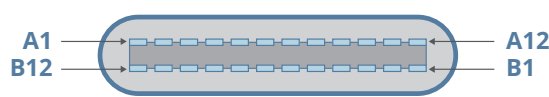
## Block Diagram



## Dimensions (units in mm)



## Connector Pin Definition



| No. | Pin Define | No. | Pin Define |
|-----|------------|-----|------------|
| A1  | GND        | B12 | GND        |
| A2  | TXP1       | B11 | RXP1       |
| A3  | TXN1       | B10 | RXN1       |
| A4  | VBUS1      | B9  | VBUS3      |
| A5  | CC1        | B8  | SBU2       |
| A6  | DP1        | B7  | DN2        |
| A7  | DN1        | B6  | DP2        |
| A8  | SBU1       | B5  | CC2        |
| A9  | VBUS2      | B4  | VBUS4      |
| A10 | RXN2       | B3  | TXN2       |
| A11 | RXP2       | B2  | TXP2       |
| A12 | GND        | B1  | GND        |

## Lens Information

|                      |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                      | VCI-AR0822-C-S42-IR                                                               | VCI-AR0822-C-S72-IR                                                               | VCI-AR0822-C-S108-IR                                                               | VCI-AR0822-C-S150-IR                                                                |
| Focus Type           | Fixed Focus                                                                       | Fixed Focus                                                                       | Fixed Focus                                                                        | Fixed Focus                                                                         |
| Focal Length         | 12 mm                                                                             | 6 mm                                                                              | 3 mm                                                                               | 3.2 mm                                                                              |
| Aperture             | F2.0                                                                              | F2.8                                                                              | F2.0                                                                               | F2.0                                                                                |
| Module D-FOV         | 41.7° ± 5%                                                                        | 72.0° ± 5%                                                                        | 108.6° ± 5%                                                                        | 150.0° ± 5%                                                                         |
| Module H-FOV         | 36.3° ± 5%                                                                        | 64.7° ± 5%                                                                        | 104.0° ± 5%                                                                        | 132.6° ± 5%                                                                         |
| Module V-FOV         | 20.5° ± 5%                                                                        | 39.0° ± 5%                                                                        | 72.2° ± 5%                                                                         | 77.6° ± 5%                                                                          |
| TTL                  | 23.09 mm                                                                          | 28.6 mm                                                                           | 29.56 mm                                                                           | 44.98 mm                                                                            |
| BFL                  | 5.06 mm                                                                           | 8.8 mm                                                                            | 4.85 mm                                                                            | 6.14 mm                                                                             |
| MOD                  | 0.15 m                                                                            | 0.1 m                                                                             | 0.3 m                                                                              | 0.3 m                                                                               |
| Distortion           | <0.2%                                                                             | <0.5%                                                                             | <-5%                                                                               | <-32%                                                                               |
| IR-Filter            | 650 nm                                                                            | 650 nm                                                                            | 650 nm                                                                             | 650 nm                                                                              |
| Lens Structure       | 5G + IR                                                                           | 7G + IR                                                                           | 2G + 3P + IR                                                                       | 8G + IR                                                                             |
| First layer material | Glass                                                                             | -                                                                                 | Glass                                                                              | Glass                                                                               |

## Order Information

### VCI-AR0822-x-Sxx-xx-xxxx

| Option       | Code | Description               |
|--------------|------|---------------------------|
| Chromaticity | C    | Color                     |
| Lens         | S42  | S-Mount Module D-FOV 42°  |
|              | S72  | S-Mount Module D-FOV 72°  |
|              | S108 | S-Mount Module D-FOV 108° |
|              | S150 | S-Mount Module D-FOV 150° |
| Filter       | -    | -                         |
|              | IR   | IR Cut Filter 650nm       |
| Custom ID    | XXXX | Custom Part number ID     |

For customization, please contact your TechNexion sales representative.

## Optional Accessories

An easy to attach A-Mount bracket for TechNexion 30mm enclosed cameras.



300-MOUNT-BRACKET



300-MOUNT-BRACKET on tripod  
(tripod not included)