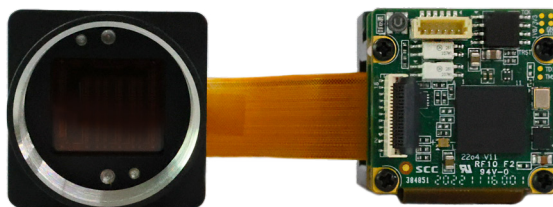


# VE2S-301-125U3M/C-S J150

## VENUS Super Series 3MP CMOS USB3.0 Area Scan Camera



GEN*i*CAM



VE2S-301-125U3M/C-S J150 is DAHENG IMAGING's industry camera of VENUS family. The camera uses design of "Acquisition board + FPC cable + Imaging board", which provides more flexibility for embedded visual applications.

VE2S-301-125U3M/C-S J150 camera is a monochrome/color USB3.0 Vision camera with the Sony IMX252 CMOS sensor, featuring outstanding performance, ease of installation and use.

### Applications

Suitable for machine vision applications such as industrial inspection, medical, scientific research, education and so on.

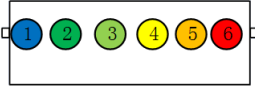
### Features

- FPC cable: 5cm / 10cm / 20cm optional
- Support ROI, Gain, auto gain, exposure, auto exposure
- Two exposure time modes: standard exposure time mode / UltraShort exposure time mode
- Support Decimation, Gamma, Binning, Black Level, Auto Black Level, Digital Shift
- Color models support Light source preset, Color Transformation Control and Saturation
- Monochrome models support Sharpness and Noise Reduction
- Timer, Counter, LUTs and User Set Control
- Support Remove Parameter Limit to expand the range of exposure, gain, white balance, and so on
- 16KB and 512KB data storage area

## Specifications

| Model              | VE2S-301-125U3C-S J150                                                                                            | VE2S-301-125U3M-S J150  |
|--------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------|
| Resolution         | 2048(H) × 1536(V)                                                                                                 |                         |
| Sensor             | Sony IMX252 Global shutter CMOS                                                                                   |                         |
| Sensor Format      | 1/1.8"                                                                                                            |                         |
| Pixel Size         | 3.45μm × 3.45μm                                                                                                   |                         |
| Frame Rate         | 125 fps                                                                                                           |                         |
| ADC                | 8 bit, 10 bit, 12 bit                                                                                             |                         |
| Pixel Bit Depth    | 8 bit, 10 bit, 12 bit                                                                                             |                         |
| Mono/Color         | Color                                                                                                             | Mono                    |
| Pixel Formats      | Bayer RG8 / Bayer RG10 / Bayer RG12                                                                               | Mono8 / Mono10 / Mono12 |
| SNR                | 41 dB                                                                                                             | 40.8 dB                 |
| Exposure Time      | UltraShort: 1μs~100μs, Actual Steps: 1μs<br>Standard: 20μs~1s, Actual Steps: 1 row period                         |                         |
| Gain               | 0dB~24dB, Default: 0dB, Step: 0.1dB                                                                               |                         |
| Binning            | FPGA: 1×1, 1×2, 1×4, 2×1, 2×2, 2×4, 4×1, 4×2, 4×4                                                                 |                         |
| Decimation         | Sensor: 1×1, 2×2                                                                                                  |                         |
| Synchronization    | Hardware trigger, software trigger                                                                                |                         |
| Acquisition Mode   | Single frame, Continuous, Software trigger, Hardware trigger                                                      |                         |
| Reverse X/Y        | Reverse X/Y                                                                                                       |                         |
| I/O Interface      | 1 optical isolation input, 1 optical isolation output<br>2 bidirectional GPIOs, 1 UART (multiplexing GPIO signal) |                         |
| Data Interface     | USB3.0 (vertical FPC)                                                                                             |                         |
| Power Supply       | USB 3.0 bus                                                                                                       |                         |
| Typical Power      | 2.48 W @ 5 VDC                                                                                                    |                         |
| Operating Temp.    | 0° C ~ +45° C                                                                                                     |                         |
| Storage Temp.      | -20° C ~ +70° C                                                                                                   |                         |
| Operating Humidity | 10% ~ 80%                                                                                                         |                         |
| Lens Mount         | C                                                                                                                 |                         |
| Dimensions         | C-mount: 31(W) × 29(H) × 22.4(L) mm<br>Acquisition Board: 29(W) × 30(H) × 29.4(L) mm                              |                         |
| Weight             | 30 g                                                                                                              |                         |
| Software           | 3rd-party software such as HALCON, MERLIC and LabVIEW                                                             |                         |
| OS                 | 32bit / 64bit Windows, Linux, Android, ARMv7, ARMv8                                                               |                         |
| Conformity         | CE, RoHS, USB3 Vision®, GenICam®                                                                                  |                         |

I/O Connector

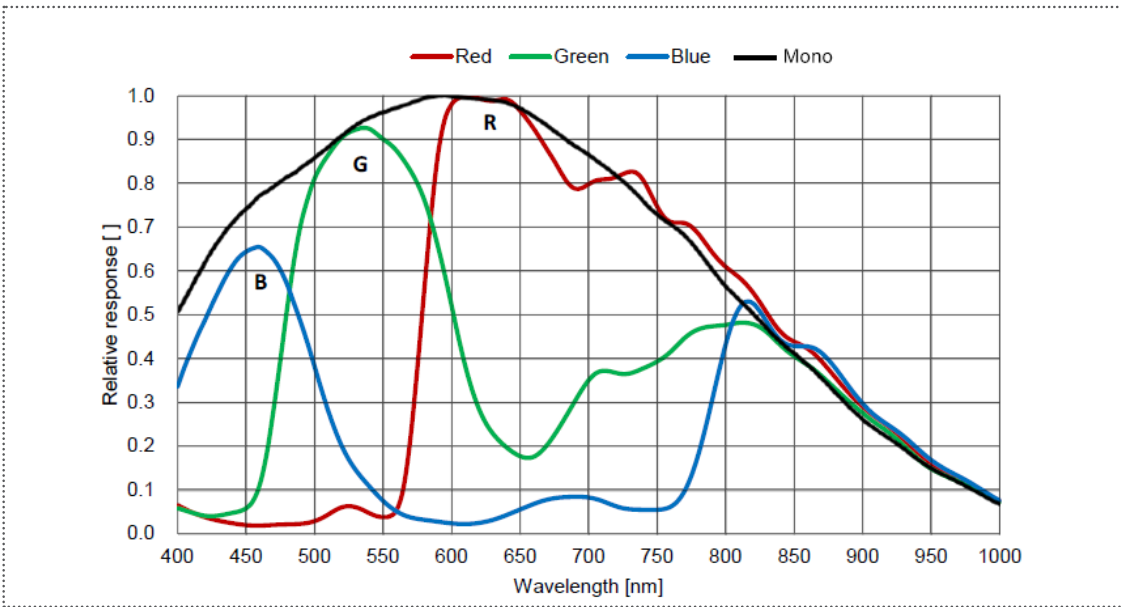
|  | Pin | Definition | Description                     |
|-----------------------------------------------------------------------------------|-----|------------|---------------------------------|
|                                                                                   | 1   | Line3      | GPIO Input/Output    UART Tx/Rx |
|                                                                                   | 2   | Line0+     | Opto-isolated input +           |
|                                                                                   | 3   | Line2      | GPIO Input/Output    UART Tx/Rx |
|                                                                                   | 4   | Line1+     | Opto-isolated output +          |
|                                                                                   | 5   | Line0/1-   | Opto-isolated input/output -    |
|                                                                                   | 6   | GND        | GPIO Ground                     |

FPC Connector

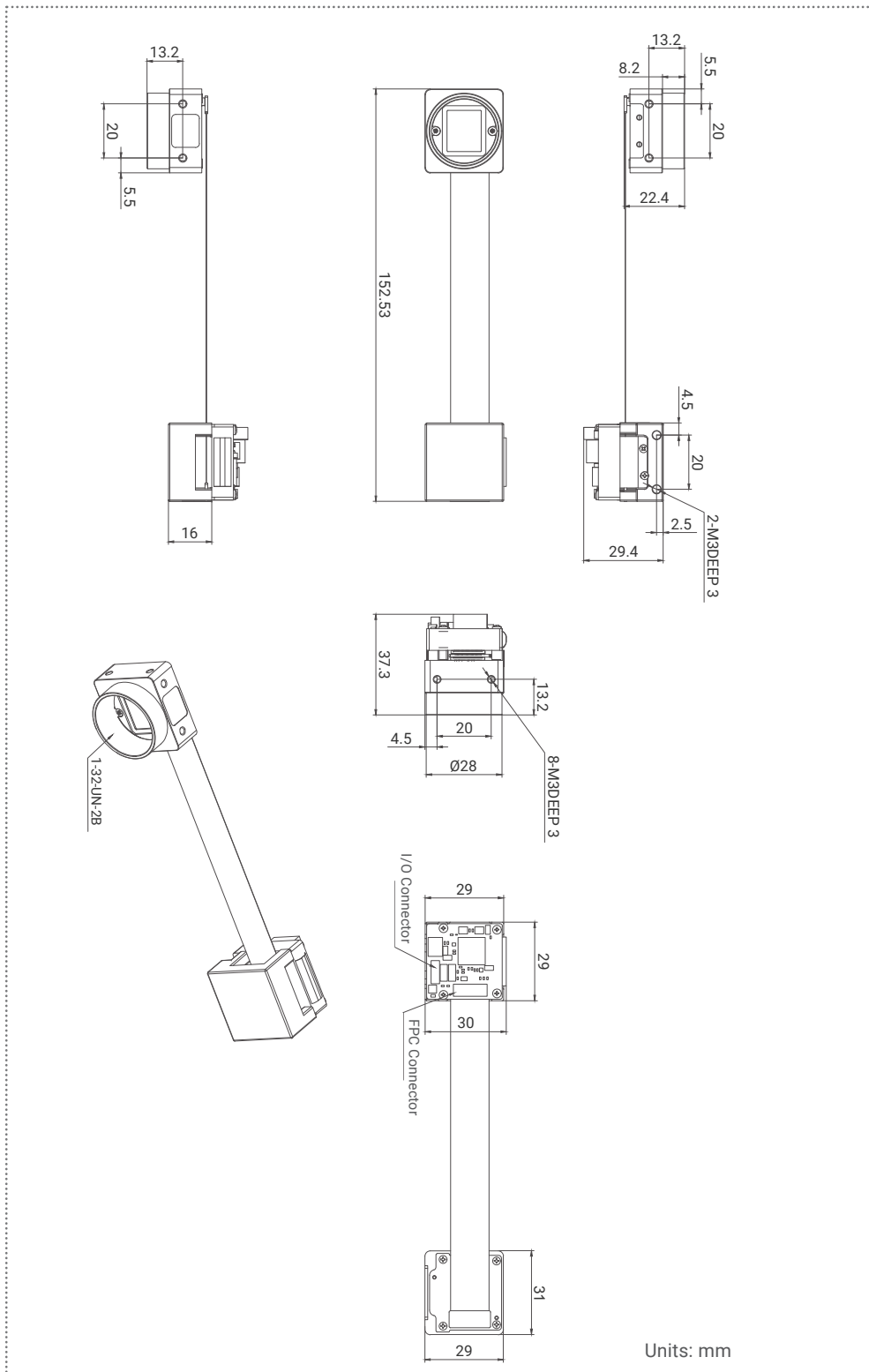
Connector model: TF38-18S-0.5SV

| Pin | Definition | Description              | Pin | Definition | Description              |
|-----|------------|--------------------------|-----|------------|--------------------------|
| 1   | GND        | Ground                   | 10  | NC         | NC                       |
| 2   | SSRX_P     | USB3.0 Differential data | 11  | GND        | Ground                   |
| 3   | GND        | Ground                   | 12  | USB2D_P    | USB2.0 Differential data |
| 4   | SSRX_N     | USB3.0 Differential data | 13  | GND        | Ground                   |
| 5   | GND        | Ground                   | 14  | USB2D_N    | USB2.0 Differential data |
| 6   | SSTX_P     | USB3.0 Differential data | 15  | GND        | Ground                   |
| 7   | GND        | Ground                   | 16  | GND        | Ground                   |
| 8   | SSTX_N     | USB3.0 Differential data | 17  | Vbus       | VBUS Power               |
| 9   | GND        | Ground                   | 18  | Vbus       | VBUS Power               |

Spectral Response



## Technical Drawing



China Daheng Group, Inc. Beijing Image Vision Technology Branch

12F Daheng Science &amp; Technology Tower, No.3 Suzhou Street, Haidian District, Beijing China, 100080

Tel: +86 10 82828878

E-mail: isales@daheng-imaging.com