

# 12.6 MP Color USB3.0 Industrial Area Scan Camera

## PMS-CCU120P2ACSC\_USB3\_Camera

Compact global-shutter camera for machine vision systems



### KEY FEATURES

#### 12.6 MP

4096 x 3072 color imaging

#### Global Shutter

CMOS sensor for motion-stable capture

#### USB3.0

Up to 440 MByte/s communication bandwidth

#### 1 Gbit Buffer

Large onboard frame buffer for stable real-time transfer

#### Compact Body

29 x 29 x 42 mm, approx. 66 g

#### Open Standards

USB3 Vision and GenICam protocol support

Color model | C-mount | USB 5 V power | CE & RoHS

## Performance Specifications

PMS-CCU120P2ACSC\_USB3\_Camera

| Parameter             | Specification                                                       |
|-----------------------|---------------------------------------------------------------------|
| Sensor Type           | CMOS, Global Shutter                                                |
| Pixel Size            | 3.4 $\mu\text{m}$ x 3.4 $\mu\text{m}$                               |
| Sensor Format         | 1.1 in optical format, 17.4 mm diagonal                             |
| Resolution            | 4096 x 3072                                                         |
| Mono / Color          | Color                                                               |
| Maximum Frame Rate    | 31.9 fps @ 4096 x 3072                                              |
| Dynamic Range         | 67.6 dB                                                             |
| Signal-to-Noise Ratio | 39.3 dB                                                             |
| Gain                  | 1x - 12x, step 0.125x                                               |
| Exposure Time         | 7 $\mu\text{s}$ - 10 s, 1 $\mu\text{s}$ step                        |
| Exposure Mode         | Auto exposure / manual exposure / one-shot exposure                 |
| Output Image Format   | Bayer 8, Bayer 12, Mono 8, Mono 12                                  |
| Pixel Combination     | Skip2 supported                                                     |
| Trigger Mode          | Hardware trigger / software trigger                                 |
| Image Buffer          | 1 Gbit                                                              |
| ISP Functions         | Contrast, LUT, Gamma, noise reduction, horizontal / vertical mirror |

### Data Transfer & Compatibility

- USB3.0 high-speed communication protocol; maximum speed up to 440 MByte/s.
- Supports USB3 Vision and GenICam protocols.
- Compatible with LabVIEW 2018, HALCON 2017, MV Viewer, MVS, eBUS, VM and related vision software.
- Camera-side hardware graphics accelerator supports image preprocessing.

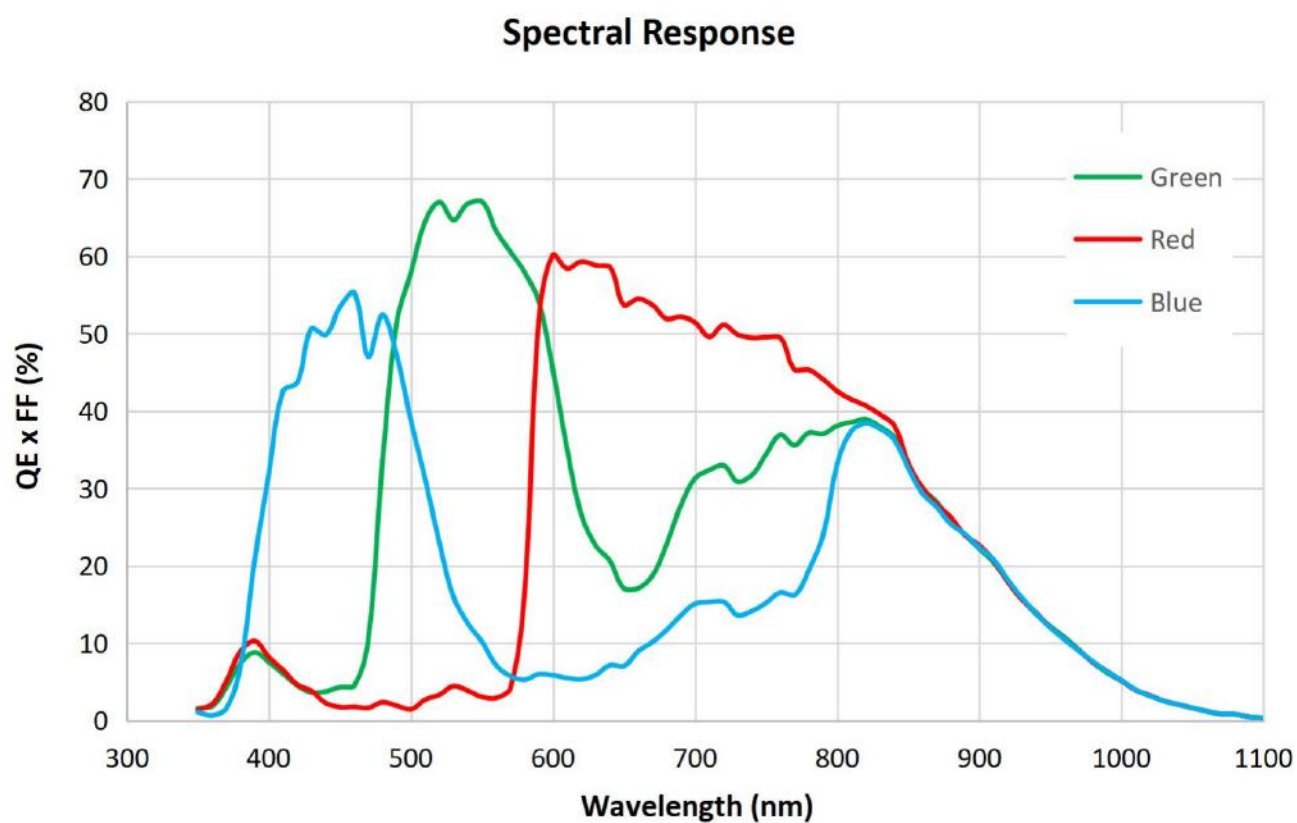
## Electrical, Mechanical & Software Specifications

| ELECTRICAL CHARACTERISTICS |                                                                 |
|----------------------------|-----------------------------------------------------------------|
| Data Interface             | USB3.0; Micro USB3.0 connector with locking screw holes         |
| I/O Interface              | 1 opto-isolated input, 2 opto-isolated outputs                  |
| Power Supply               | USB 5 V                                                         |
| Typical Power Consumption  | 3.3 W @ USB 5 V                                                 |
| STRUCTURE & ENVIRONMENT    |                                                                 |
| Lens Mount                 | C-mount                                                         |
| I/O & Power Connector      | 6-pin industrial circular connector                             |
| Optical Filter             | 380 nm - 650 nm band-pass filter                                |
| Dimensions                 | 29 x 29 x 42 mm (excluding lens interface)                      |
| Weight                     | Approx. 66 g                                                    |
| IP Rating                  | IP40 with lens and cables correctly installed                   |
| Temperature                | Operating: -10 C to 50 C; Storage: -20 C to 70 C                |
| Humidity                   | 5% - 90% RH, non-condensing                                     |
| SOFTWARE & PROTOCOLS       |                                                                 |
| Software                   | SDK development package and related demo / calibration software |
| Operating System           | Windows 7 / 10, 32/64-bit; PC Linux, 32/64-bit                  |
| Protocols / Standards      | USB3 Vision, GenICam                                            |
| Compatible Software        | LabVIEW 2018, HALCON 2017, MV Viewer, MVS, eBUS, VM             |
| Certifications             | CE, RoHS                                                        |

### Compact Industrial Form Factor

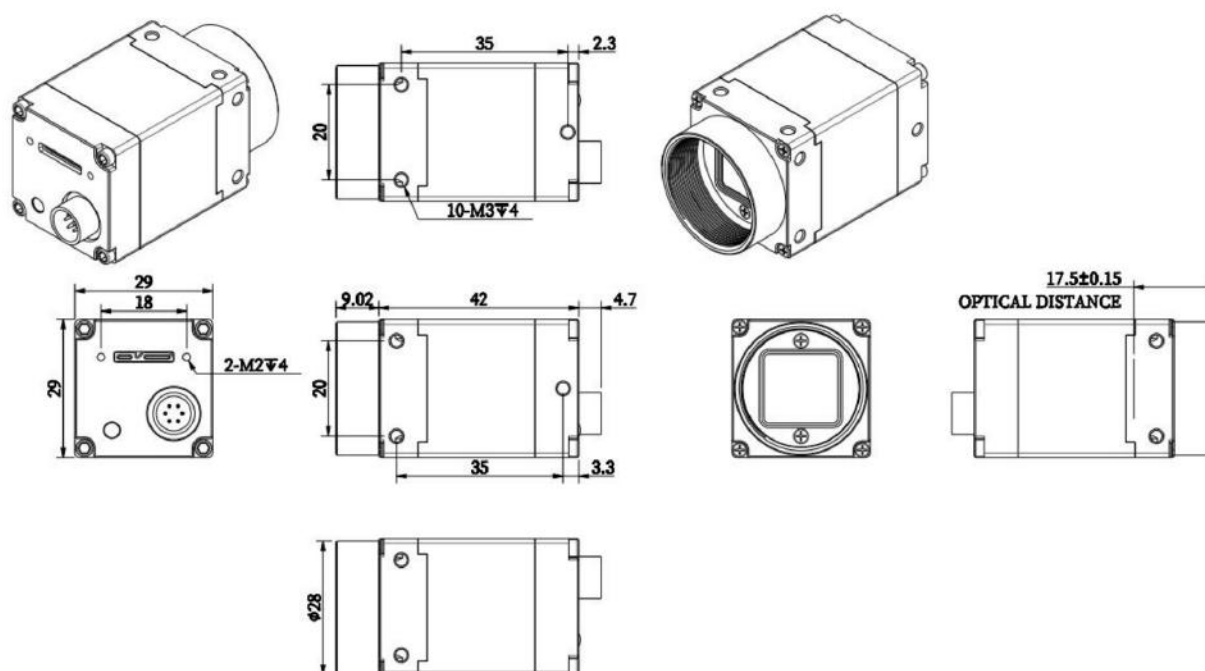
Small 29 x 29 mm cross-section with common industrial mounting holes for easy system integration.

### Spectral Response



### Mechanical Dimensions

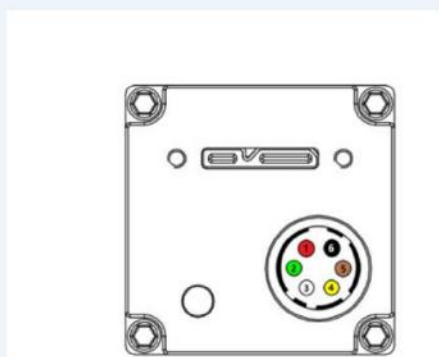
Unit: mm



## I/O Pin Definition

| Pin | Wire Color  | Definition | Signal Source | Description               | Isolation       | I/O Parameter                                              |
|-----|-------------|------------|---------------|---------------------------|-----------------|------------------------------------------------------------|
| 1   | Red         | GPO+       | Line 3+       | General output +          | Isolated output | Optocoupler limit: 20 mA; polarity-sensitive               |
| 6   | Black       | GPO-       | Line 3-       | General output -          | Isolated output | Optocoupler limit: 20 mA; polarity-sensitive               |
| 2   | Green       | TRIG+      | Line 1+       | Trigger input +           | Isolated input  | Low active: 0-1 V; High active: 5-24 V; polarity-sensitive |
| 3   | White       | TRIG-      | Line 1-       | Trigger input -           | Isolated input  | Low active: 0-1 V; High active: 5-24 V; polarity-sensitive |
| 4   | Yellow      | Flash_out+ | Line 2+       | Flash output +            | Isolated output | Optocoupler limit: 20 mA; polarity-sensitive               |
| 5   | Brown       | Flash_out- | Line 2-       | Flash output -            | Isolated output | Optocoupler limit: 20 mA; polarity-sensitive               |
| -   | Transparent | Shield     | -             | Connect to camera housing | -               | Shield wire covered with transparent heat-shrink sleeve    |

## Trigger Connector



### 6-pin circular I/O connector

- 1 / 6: General-purpose isolated output
- 2 / 3: Isolated trigger input
- 4 / 5: Isolated flash output
- Shield: Connect to camera housing

Specifications are based on the supplied source datasheet. Product specifications may be subject to revision.