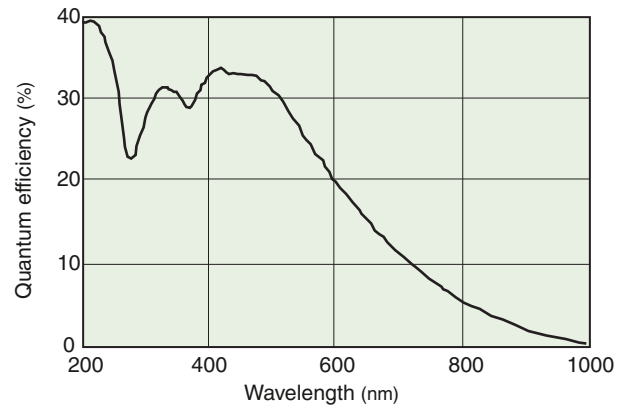


# High Performance UV Digital Camera C8484-16C



**SPECTRAL RESPONSE CHARACTERISTIC\***



\* This is typical, not guaranteed.

The C8484-16C is a new UV CCD digital camera using an advanced 1/2 inch progressive scan interline CCD chip with high sensitivity in the UV region while offering substantially better noise characteristics at high frame rates. The C8484-16C 1/2 inch format 1344 × 1024 resolution CCD with small(4.65 μm) pixels provides extremely high resolution.

A CameraLink digital output ensures compatibility with a large number of commercially available frame grabber boards.

Standard C-mount lens coupling makes it easy to connect to optical microscopes and lenses. Fast electronic shuttering, fast readout and low noise integration all combine to make this camera a great choice for both high and low level UV imaging applications.

Ultraviolet light has higher energy than visible light, so it can easily damage the sensors forming the CCD, causing a drop in sensitivity and rise dark current according to the total incident light energy. (Example: When the CCD is exposed to ultraviolet light having a wavelength of 196 nm and total radiation energy of 15 J/cm<sup>2</sup> for 625 minutes with an irradiance of 0.4 mW/cm<sup>2</sup>, sensitivity will drop by approximately 15 % and dark current will increase by approximately 10 %.)

When using in the ultraviolet range, take steps not to apply excessive ultraviolet light. (If apart of the effective area of the CCD is exposed to excessive ultraviolet light, such as by direct incidence of the ultraviolet light laser, then sensitivity may drop accordingly)

In addition, extended exposure may cause a drop in sensitivity, even if the intensity is not excessive. When not shot, take care to protect the CCD from ultraviolet light.

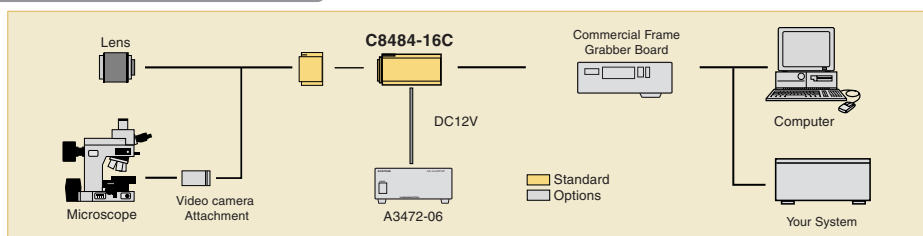
## APPLICATIONS

- Excimer KrF(248 nm), ArF(193 nm) laser beam diagnostics
- UV imaging with Excimer KrF, ArF laser
- Semiconductor mask alignment
- UV optics development
- General UV imaging
- UV Metrology
- Lithography

## FEATURES

- High sensitivity in UV region (Typically 20 % to 25 % at 250 nm)
- Extremely high resolution with 1344 × 1024 pixels/small pixel size (4.65 μm)
- Progressive scan interline readout with no mechanical shutter
- Low readout noise design (14 electrons typ.)
- Anti-Blooming function with vertical overflow drain structure
- 12 bit digitizer
- Analog contrast enhancement

## SYSTEM CONFIGURATION



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## SPECIFICATIONS

|                                    |   |       |              |
|------------------------------------|---|-------|--------------|
| Type number                        | C8484-16C   |       |              |
| Camera head type                   | Passively cooled head                                 |       |              |
| Imaging device                     | Progressive scan interline CCD chip with micro-lenses |       |              |
| Effective no. of pixels            | 1344 (H) × 1024 (V)                                   |       |              |
| Cell size                          | 4.65 (H) μm × 4.65 (V) μm                             |       |              |
| Effective area                     | 6.25 (H) mm × 4.76(V) mm / 1/2 inch format            |       |              |
| Pixel clock rate                   | 20 MHz/pixel  |       |              |
| Frame rate                         | Binning   | 1 × 1 | 11.9 frame/s |
|                                    |   | 2 × 2 | 21.3 frame/s |
|                                    |   | 4 × 4 | 35.7 frame/s |
| Readout noise(r.m.s.)              | 14 electrons(typ.)                                    |       |              |
| Full well capacity                 | 10 900 electrons                                      |       |              |
| Dynamic range*1                    | 778:1   |       |              |
| Cooling method / temperature       | -   |       |              |
| Dark current                       | -   |       |              |
| A/D converter                      | 12 bit  |       |              |
| Output signal (digital output)     | Camera Link   |       |              |
| Exposure time                      | 12.4 μs to 1 s  |       |              |
| External control                   | RS-232C   |       |              |
| Sub-array                          | 1344 (H) × 8 to 1024 (V) (in 8 line increments)*2     |       |              |
| External trigger                   | YES   |       |              |
| Analog gain                        | 1 × , 5 × times gain                                  |       |              |
| Lens mount                         | C-mount   |       |              |
| Power requirements                 | DC +12 V  |       |              |
| Power consumption                  | approx. 8 V·A   |       |              |
| Ambient storage temperature        | -10 °C to +50 °C                                      |       |              |
| Ambient operating temperature      | 0 °C to +40 °C  |       |              |
| Ambient operating/storage humidity | 70 % max. (with no condensation)                      |       |              |

\*1 Calculated from the ratio of the full well capacity and average readout noise.

\*2 Image area

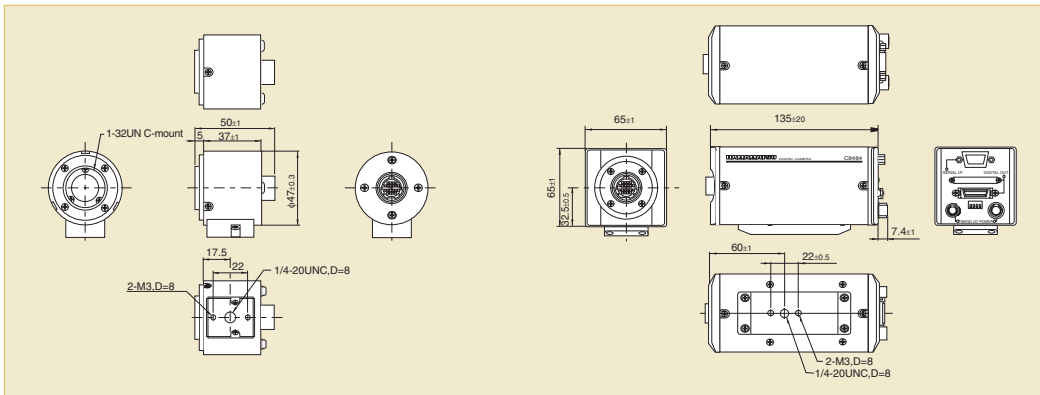


## OPTIONS

- **AC adapter** : **A3472-06**
  - Line voltage : 100 V to 240 V AC input
  - Output voltage : DC +12 V
- **Power cable** : **A3194-01**
  - Cable type : 12 pin connector cable
  - Cable length : 5 m

## DIMENSIONAL OUTLINES

(Unit : mm)



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