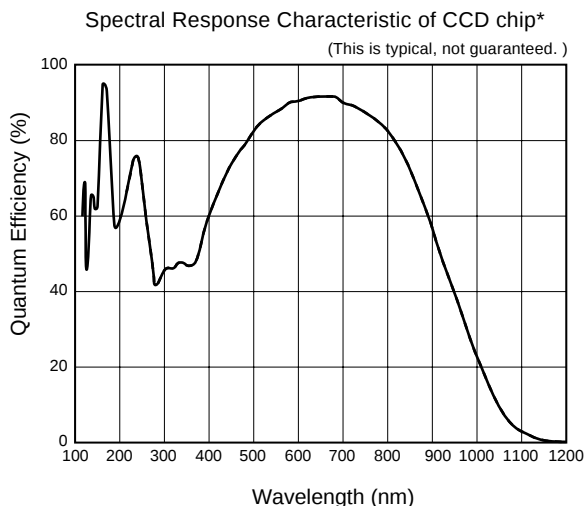


BT(Back-thinned)-CCD Digital Camera C8000-10



The C8000 camera series employs an ultra high sensitive back-thinned CCD sensor made by Hamamatsu. Especially in the UV, DUV and VUV wavelength ranges, the C8000 series offers extremely high sensitivity never before realized by other scientific CCDs.



* Without sapphire window. The spectral response with sapphire window is decrease by the transmittance.

FEATURES

- Extremely high UV, DUV and VUV sensitivity

- Quantum Efficiency of CCD chip

(This is typical, not guaranteed.) **Calculated value

Excimer Laser		F ₂	ArF	KrF
Wavelength (nm)		157	193	248
Quantum Efficiency(%)	Without sapphire window	84	57	69
	With sapphire window	34 **	42 **	55 **

- Low dark noise with peltier cooling
- Binning function / Sub-array function

APPLICATIONS

- Beam Diagnostics of Stepper Excimer Lasers: F₂ (157 nm), ArF (193 nm), KrF (248 nm)
- Development of UV optics

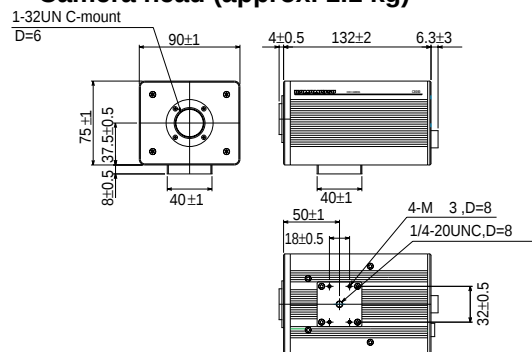
SPECIFICATIONS

Model		C8000-10
Imaging device		Back-thinned frame transfer CCD
Effective number of pixels		640 (H) × 480 (V)
Cell size		14 μm (H) × 14 μm (V)
Effective area		8.96 mm(H) × 6.72mm (V) / 2/3 inch format
Readout noise (r.m.s.)		approx. 100 electrons r.m.s.
Full well capacity		50,000 electrons (typical value)
Dynamic range*		500 : 1
Frame rate	Slow scan mode	7.7Hz, 14.7Hz(2 × 2 binning), 25.8Hz(4 × 4 binning), 40.0Hz(8 × 8binning)
	Middle scan mode	15.4Hz, 29.5Hz(2 × 2 binning), 51.5Hz(4 × 4 binning), 80.6Hz(8 × 8binning)
	High scan mode	30.9Hz, 55.0Hz(2 × 2 binning), 91.7Hz(4 × 4 binning), 131.6Hz(8 × 8binning)
Cooling method		Peltier cooling /natural air cooling
Cooling temperature		+5 °C (Cools the CCD element to 20°C less than the ambient temperature)
Dark current		approx. 135 electrons/pixels/ sec
Exposure time		1 sec max. (On chip integration)
A/D converter		12 bit
Lens mount		C-mount
Contrast enhancement gain		Approx. 1 to 5 times
Sub-array readout		1/1, 1/2, 1/4, 1/8 (H) × 8 pixel unit (V)
Super-pixel readout (Binning)		2 × 2, 4 × 4, 8 × 8,
External trigger input		Yes
Output signal (digital output)		16 bit RS-644 LVDS
External control		RS-232C
Ambient storage temperature		-10 to +50°C
Ambient operating temperature		0 to +40°C
Ambient storage/operating humidity		70% max. (with no condensation)
Line voltage		100 / 117 / 220 / 240 VAC 50/60Hz
Power consumption		70VA

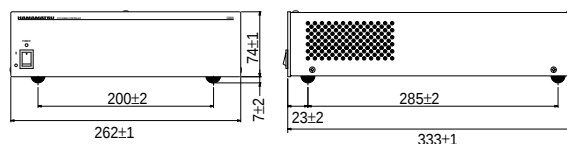
*Calculated from the ratio of the full well capacity and the readout noise.

DIMENSIONAL OUTLINES (UNIT: mm)

• Camera head (approx. 1.1 kg)



• Camera controller (approx. 5.0 kg)



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