



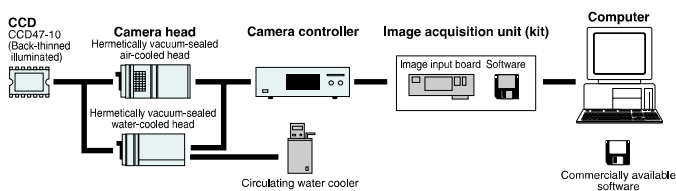
▲ Hermetic vacuum sealed air-cooled head type

This camera system employs a back thinned CCD chip which realizes high resolution and high sensitivity characteristics. 1024 x 1024 pixels with 13 μ m square format realize very high resolution images. And its high quantum efficiency greater than 80% and a MPP (Multi-Pinned Phase) low dark current drive realize high sensitivity, proving clear images for low light imaging applications.

APPLICATIONS

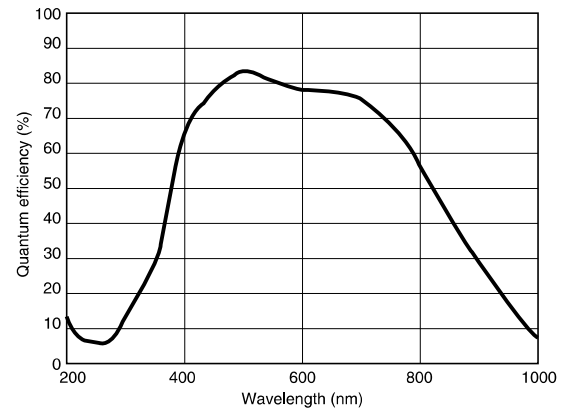
- Faint light observation with microscope (biological, semiconductor studies)
- X-ray scintillator readout
- Readout of various fluorescence
- X-ray direct image acquisition

SYSTEM CONFIGURATION



▲ Hermetic vacuum sealed water-cooled head type

SPECTRAL RESPONSE CHARACTERISTICS



FEATURES

- High resolution of 1024 (H) × 1024 (V) pixels
- Low readout noise of 6 electrons r.m.s. (typ.)
- Wide dynamic range of 13,300 : 1 (typ.)
- Large full well capacity of 80,000 electrons

TYPE NO.

C4880-50-□□□

Bit number on A/D converter

- 22: Fast scan mode 12-bit
High precision scan mode 12-bit
- 24: Fast scan mode 12-bit
High precision scan mode 14-bit

Cooling method

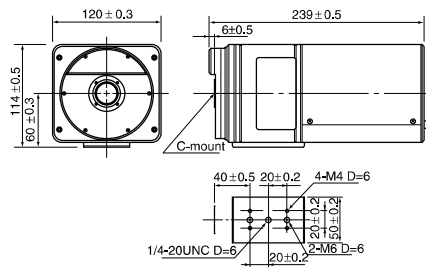
- A: Air-cooling
- W: Water-cooling

SPECIFICATIONS

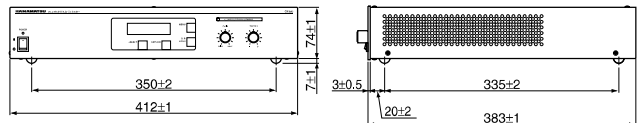
Model name	C4880-50-□□-A-□	C4880-50-□□-W-□
Camera head type	Hermetically vacuum-sealed air-cooled head	Hermetically vacuum-sealed water-cooled head
Circulating water cooler (sold separately)	-	Required
Vacuum pump (sold separately)	-	-
Imaging device	CCD47-10 Model 1 full-frame transfer back-thinned illuminated CCD	
Effective no. of pixels	1024 (H) × 1024 (V)	
Cell size	13 (H) × 13 (V) μm	
Effective area	13.3 (H) × 13.3 (V) mm	
Readout noise (High-precision scan mode)	Min.	4 electrons r.m.s.
	Typ.	6 electrons r.m.s.
Full well capacity	80,000 electrons	
Dynamic range (High-precision scan mode)	Typ.	13,300 : 1
	Max.	20,000 : 1
Frame rate	High-precision scan mode	0.8 frames/sec (1.25 MHz/pixel)
	Fast scan mode	2.7 frames/sec (5 MHz/pixel)
Cooling method	Peltier cooling / forced-air cooling + hermetic sealing	Peltier cooling / water cooling + hermetic sealing
Cooling temperature	-45 to -55 °C	-60 to -70 °C
CCD cooling control	Cooling ON/OFF control, cooling temperature setting function	
Dark current	Front panel dial / software-controlled switching; Temperature displayed on front panel LCD	
Exposure time	0.03 electrons/pixel/sec	0.01 electrons/pixel/sec
A/D converter	20 ms or more	
Lens mount	12 / 14 bits	
Mechanical shutter	C-mount	
Variable analog gain	Built-in (Control: OPEN / CLOSE / AUTO)	
Variable offset	Front panel dial / software-controlled switching, 1 - 6 times (high-speed scan)	
Amp gain	Front panel dial / software-controlled switching (fast scan)	
Binning scan	2 steps (fast scan), 3 steps (precision scan)	
Sub-array scan	Yes	
Super-pixel scan	1/1, 1/2, 1/4, 1/8 (H) × any desired number (V)	
External trigger input	2 × 2, 4 × 4, 8 × 8	
Output signal (digital output)	Yes	
External control	Parallel digital output (conforms to RS-422)	
Ambient storage temperature	RS-232C	
Ambient operating temperature	-10 to +50 °C	
Ambient operating/storage humidity	0 °C to +40 °C	
Line voltage	70% max. (with no condensation)	
Power consumption	100 / 117 / 220 / 240 VAC, 50/60 Hz	
	Approx. 220 VA	

DIMENSIONAL OUTLINES

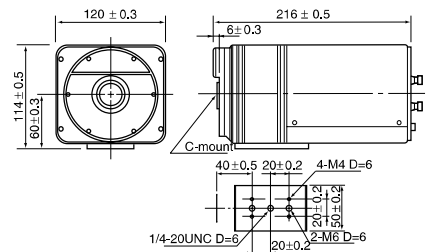
- Hermetic vacuum sealed air-cooled head (approx. 2.5 kg)



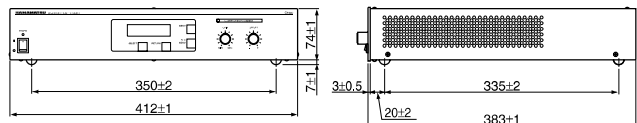
- Camera controller (approx. 8.5 kg)



- Hermetic vacuum sealed water-cooled head (approx. 2.5kg)



- Camera controller (approx. 8.5 kg)



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