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Find the *Hamamatsu C4880-AMDIG-2* at our website: *Click HERE*

HAMAMATSU

DATA SHEET

Digital CCD Camera
C4880-50



▲ Hermetic vacuum sealed air-cooled head type



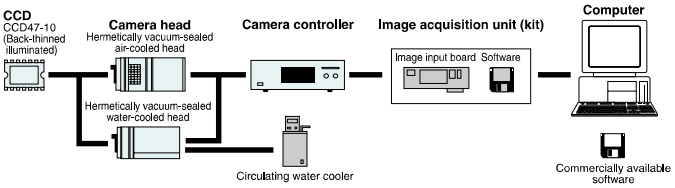
▲ Hermetic vacuum sealed water-cooled head type

This camera system employs a back thinned CCD chip which realizes high resolution and high sensitivity characteristics. 1024 x 1024 pixels with 13µm 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.

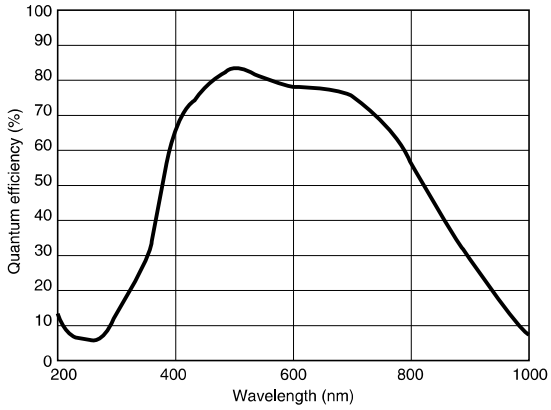
APPLICATIONS

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

SYSTEM CONFIGURATION



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

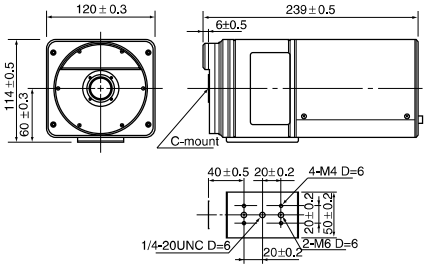
Cooling method
A: Air-cooling
W: Water-cooling

SPECIFICATIONS

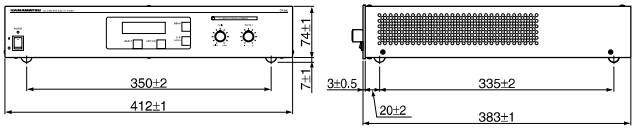
Model name		C4880-50-□□-A-□	C4880-50-□□-W-□
Camera head type		Hermetically vacuum-sealed air-cooled head	Hermetically vacuum-sealed water-cooled head
Circulating water cooler (sold separately)		–	Required
Vacuum pump (sold separately)		–	–
Imaging device		CCD47-10 Model 1 full-frame transfer back-thinned 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 Front panel dial / software-controlled switching; Temperature displayed on front panel LCD	
Dark current		0.03 electrons/pixel/sec	0.01 electrons/pixel/sec
Exposure time		20 ms or more	
A/D converter		12 / 14 bits	
Lens mount		C-mount	
Mechanical shutter		Built-in (Control: OPEN / CLOSE / AUTO)	
Variable analog gain		Front panel dial / software-controlled switching, 1 - 6 times (high-speed scan)	
Variable offset		Front panel dial / software-controlled switching (fast scan)	
Amp gain		2 steps (fast scan), 3 steps (precision scan)	
Binning scan		Yes	
Sub-array scan		1/1, 1/2, 1/4, 1/8 (H) × any desired number (V)	
Super-pixel scan		2 × 2, 4 × 4, 8 × 8	
External trigger input		Yes	
Output signal (digital output)		Parallel digital output (conforms to RS-422)	
External control		RS-232C	
Ambient storage temperature		-10 to +50 ˚C	
Ambient operating temperature		0 ˚C to +40 ˚C	
Ambient operating/storage humidity		70% max. (with no condensation)	
Line voltage		100 / 117 / 220 / 240 VAC, 50/60 Hz	
Power consumption		Approx. 220 VA	

DIMENSIONAL OUTLINES

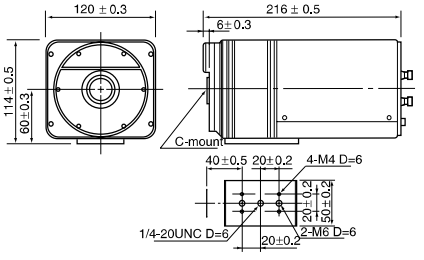
- **Hermetic vacuum sealed air-cooled head (approx. 2.5 kg)**



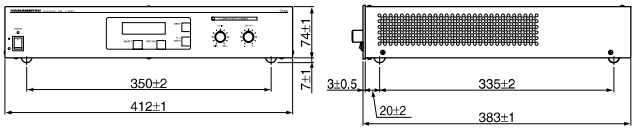
- **Camera controller (approx. 8.5 kg)**



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



- **Camera controller (approx. 8.5 kg)**



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Cat. No. SICS1077E01
NOV/2000 HPK
Created in Japan (PDF)

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