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

HAMAMATSU

DATA SHEET

Digital CCD Camera
C4880-21



Hermetic vacuum sealed air-cooled head type



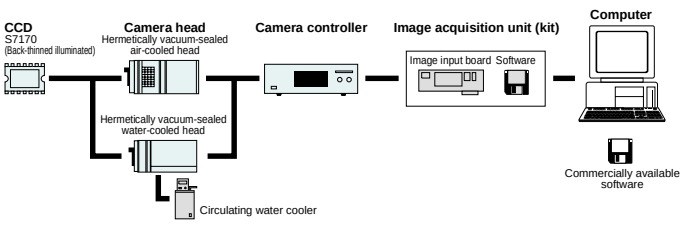
Hermetic vacuum sealed water-cooled head type

This camera system is equipped with a CCD S7170 manufactured by Hamamatsu. In addition to outstanding quantum efficiency in the ultra violet to near infrared region, which is a feature of the back-thinned illumination type, this system offers high quantum efficiency in the ultraviolet region as well, drawing on original technology developed independently by HAMAMATSU. It offers a wide dynamic range, due to the large cell size (24 m 24 m) and the extremely large full well capacity. Furthermore, the use of the MPP (Multi-Pinned Phase) low dark current drive method has reduced the dark current.

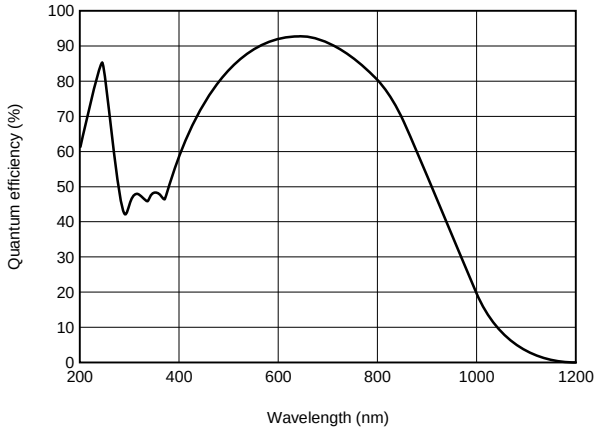
APPLICATIONS

- **X-ray scintillator readout**
- **Readout of various fluorescences**
- **X-ray diffraction readout**
- **Neutron radiography**

SYSTEM CONFIGURATION



SPECTRAL RESPONSE CHARACTERISTICS



FEATURES

- **High quantum efficiency in the ultra violet to near infrared region.**
- **Wide dynamic range of 28,750 : 1 (typ.)**
- **Extremely large full well capacity of 230,000 electrons (typ.)**
- **Low readout noise of 8 electrons r.m.s. (typ.)**
- **Low dark current**
- **Large effective area of 12.29 (H) 12.29 (V) mm**
- **High resolution of 512 (H) 512 (V) pixels**

TYPE NO.

C4880-21-□□ □

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
26: Fast scan mode 12-bit
High precision scan mode 16-bit

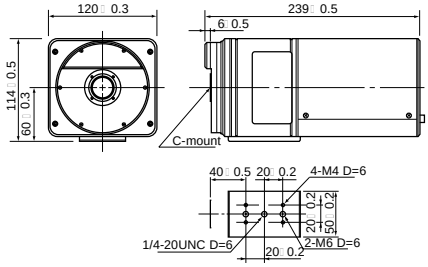
Cooling method
A: Air-cooling
W: Water-cooling

SPECIFICATIONS

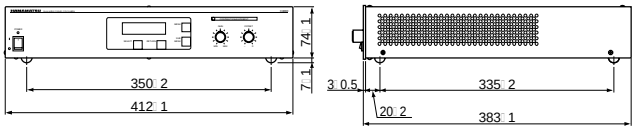
Model name		C4880-21-□□-A	C4880-21-□□-W
Camera head type		Hermetically vacuum-sealed air-cooled head	Hermetically vacuum-sealed water-cooled head
Circulating water cooler (sold separately)		–	Required
Vacuum pump (sold separately)		–	–
Imaging device		S7170 Model 1 full-frame transfer CCD	
Effective no. of pixels		512 (H) × 512 (V)	
Cell size		24 (H) × 24 (V) μm	
Effective area		12.29 (H) × 12.29 (V) mm	
Readout noise (High-precision scan mode)	Min.	6 electrons r.m.s.	
	Typ.	8 electrons r.m.s.	
Full well capacity		230,000 electrons	
Dynamic range (High-precision scan mode)	Typ.	28,750 : 1	
	Max.	38,333 : 1	
Frame rate	High-precision scan mode	0.5 frames/sec (156 kHz/pixel)	
	Fast scan mode	7 frames/sec (2.5 MHz/pixel)	
Cooling method		Peltier cooling / forced-air cooling + hermetic sealing	Peltier cooling / water cooling + hermetic sealing
Cooling temperature		-45°C to -55°C	-60°C 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		0.8 electrons/pixel/sec	0.3 electrons/pixel/sec
Exposure time		20 ms or more	
A/D converter		12 / 14 / 16 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

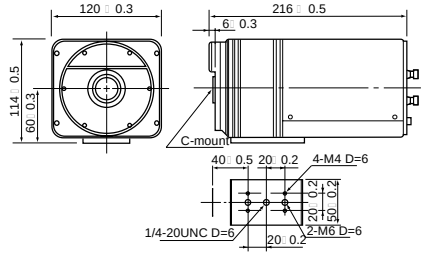
Hermetic vacuum sealed air-cooled head (approx. 2.5 kg)



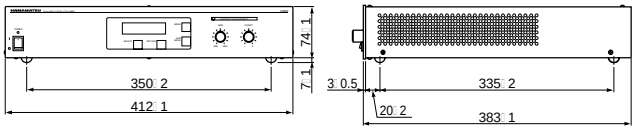
Camera controller (approx. 8.5 kg)



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



Camera controller (approx. 8.5 kg)



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HAMAMATSU

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