

# HAMAMATSU

DATA SHEET

## Digital CCD Camera C4880-91,-92 (Manufactured to order)



□ Intensified head: C4880-91, -92

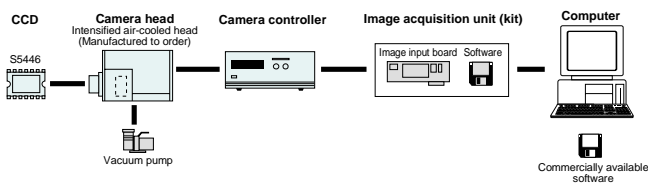
This camera system has an image intensifier (  $\phi$  18 mm dia.) coupled through a fiber optics to Hamamatsu's CCD S5466. This provides ultra-high sensitivity.

Under a low light level region that requires a long time exposure time, this camera can acquire equivalent S/N images within a shorter period of time. Furthermore, the ultra high speed gating function (shortest gate time: 5 ns) and gate repetition function (maximum rate: 10 kHz) have been implemented. Acquisition of images in synchronization with repetitive phenomenon enables image accumulation by the CCD. This provides images with a higher S/N ratio compared to accumulation using memory.

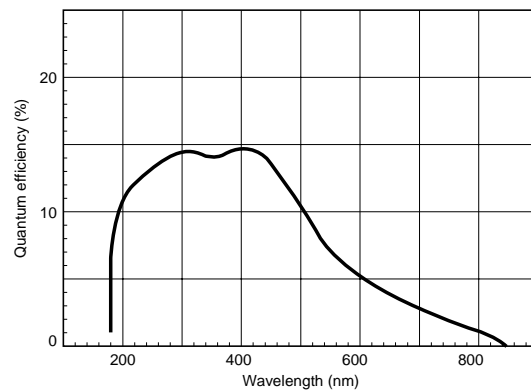
### APPLICATIONS

- Analysis of engine combustion
- Analysis of flames
- Ozone layer measurements
- All-sky camera
- Repetitive phenomenon in extremely faint light regions

### SYSTEM CONFIGURATION



### SPECTRAL RESPONSE CHARACTERISTICS



\* This is typical, not guaranteed.

### FEATURES

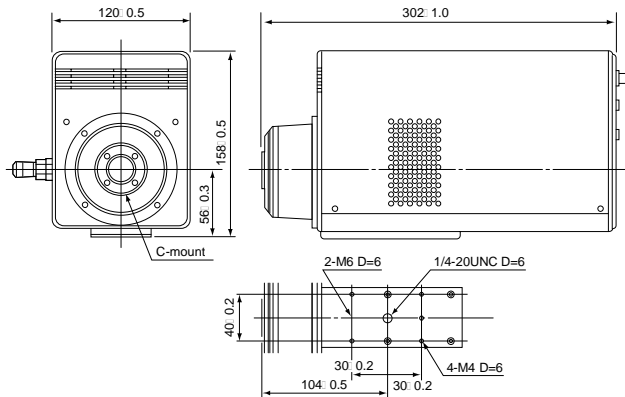
- Ultra fast gate time 5 ns
- Ultra high sensitivity
- Wide dynamic range
- On-chip integration
- Computer-controlled

## SPECIFICATIONS

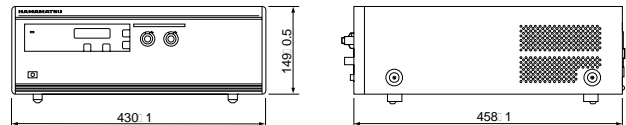
Model name	C4880-91 <small>Manufactured to order</small>	C4880-92 <small>Manufactured to order</small>
Camera head type	Intensified air-cooled head:	
Circulating water cooler (sold separately)	-	
Vacuum pump (sold separately)	Required	
Image intensifier type	Proximity type image intensifier	
Photocathode	S-20	
Photocathode size	φ 18mm	
MCP	1 stage	
Gate time	100 ns to DC	5 ns to DC
Gate repetition rate	Max. 10 kHz	
Imaging device	S5466 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	
Frame rate	High-precision scan mode Fast scan mode	0.5 frames/sec (156 kHz/pixel) 7 frames/sec (2.5 MHz/pixel)
Cooling method	Peltier cooling / forced-air cooling	
Cooling temperature	-30 °C	
CCD cooling control	Cooling ON/OFF control, cooling temperature setting function Front panel dial / software-controlled switching; Temperature displayed on front panel LCD	
A/D converter	12 bits	
Lens mount	C-mount	
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)	
Gate time control	Yes	
MCP gain control	Yes	
Trigger mode	INTERNAL TRIGGER MODE, EXTERNAL TRIGGER MODE, EXTERNAL TIME MODE	
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 (Unit: mm)

### Intensified head (approx. 4 kg)



### Camera controller (approx. 14 kg)



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  - Subject to local technical requirements and regulations, availability of products included in this promotional material may vary. Please consult with our sales office.
  - Information furnished by HAMAMATSU is believed to be reliable. However, no responsibility is assumed for possible inaccuracies or omissions.
- Specifications and external appearance are subject to change without notice.

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