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Find the *Hamamatsu C4742-96* at our website: *Click HERE*

HAMAMATSU

DATA SHEET

IEEE1394-Based Digital Camera ORCA-285

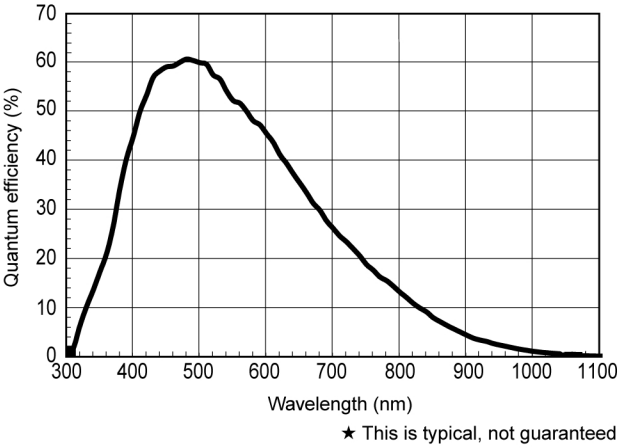


The ORCA-285 is a high resolution digital camera using a progressive scan interline CCD chip with no mechanical shutter. In addition to a high resolution of 1.37 million pixels, a wide dynamic range of 12 bit digital output and high sensitivity offers a wide application range down to low light level imaging. Peltier cooling drastically reduces dark noise and minimizes thermal drift, which makes camera an ideal choice for demanding scientific and industrial application.

A high performance serial bus IEEE 1394 is used as a computer interface. Furthermore, a standard C-mount lens coupling makes it easy to connect to optics such as optical microscopes.

The Driver circuit of a CRI filter builds in camera controller as a standard. The ORCA-285 and a CRI filter are controlled from DCAM-API. The ORCA-285 + CRI filter operates as one color camera.

SPECTRAL RESPONSE CHARACTERISTIC



★ This is typical, not guaranteed

FEATURES

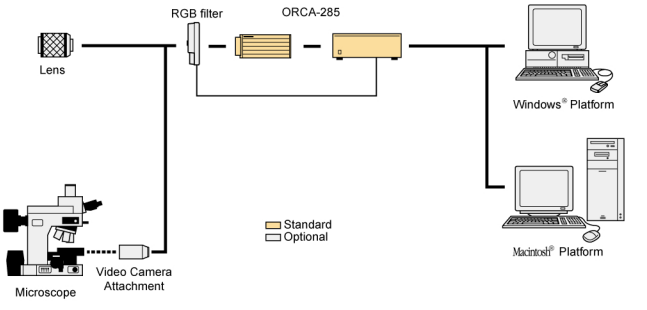
- **High resolution of 1.37 million pixels**
- **Progressive scan interline CCD chip with no mechanical shutter**
- **Operating as a color camera with a RGB filter (Micro*Color made by CRI Inc.)**
- **Approx. 10 μs electronic shutter to capture fast events**
- **Binning (2 × 2, 4 × 4, 8 × 8) function to improve sensitivity and achieve a frame rate up to 41 Hz**
- **Low dark noise with peltier cooling for a dynamic range of more than 60dB**
- **Compatible with IIDC 1394-based digital camera specification**
- **Full remote control from PC via IEEE 1394 bus**

CRI Inc. : Cambridge Reserch & Instrumentation, Inc (http://www.cri-inc.com/)
Micro*Color is trademark of CRI Inc.

APPLICATIONS

- **Routine Fluorescence Microscopy**
- **Green Fluorescent Protein applications**
- **DNA and Ploidy analysis**
- **Red and Near infrared fluorescent applications**
- **Fluorescence In Situ Hybirdization studies**
- **Motility and Motion analysis**
- **Combined DIC/Phase and Fluorescence**
- **Histology, Pathology and Cytology**
- **Metallurgical microscopy**
- **Failure analysis**
- **Semiconductor inspection**
- **X-ray scintillator readout**

SYSTEM CONFIGURATION



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Hamamatsu is a member of 1394 Trade Association

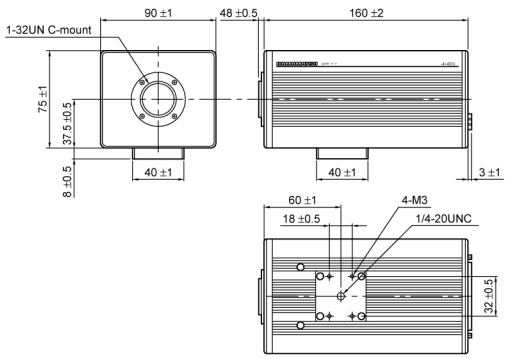
SPECIFICATIONS

Type number			C4742-96-12G04
Camera head type			Passive air-cooled head
Imaging device			ICX-285 progressive scan interline CCD
Effective number of pixels			1344 (H) × 1024 (V)
Cell size			6.45 µm (H) × 6.45 µm (V)
Effective area			8.67 mm (H) × 6.60 mm (V)
Pixel clock rate			14.75 MHz/pixel
Frame rate	1 × 1		8.8 frame/s
	binning	2 × 2	16 frame/s
		4 × 4	27 frame/s
		8 × 8	41 frame/s
Readout noise (r.m.s.) typ.			8 electrons
Full well capacity typ.			18 000 electrons
Dynamic range* typ.			2 250 : 1
Cooling method			Peltier cooling, air radiation system
Cooling temperature (+ 20˚C ambient temperature)			+ 5 ˚C (absolute value)
Dark current			0.8 electrons/pixel/s
A/D converter			12 bit
Exposure time			10 µs to 10 s
Sub-array			yes
Contrast enhancement			Analog gain (10times max.) and offset function
External trigger			yes
Lens mount			C-mount
Interface / Output signal (digital output)			IEEE1394-1995 / Non-compressed data (Mono 16)
External control			IIDC 1394-Based Digital Camera Specification Ver.1.30
Line voltage			AC 100 V / AC 117 V / AC 220 V/ AC 240 V, 50/60 Hz
Power comsumption			approx. 70VA
Ambient storage temperature			- 10 ˚C to + 50 ˚C
Ambient operating temperature			0 ˚C to + 40 ˚C
Ambient storage/operating humidity			70 % max. (no condensation)

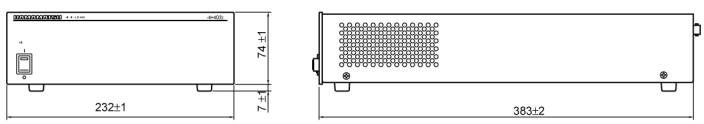
*Calculated from the ratio of the full well capacity and the readout noise

DIMENSIONAL OUTLINES (Unit: mm)

- **Camera head (approx. 1.3 kg)**



- **Camera controller (approx. 6.3 kg)**



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