

High Resolution Digital Camera ORCA-HR C4742-95-12HR



The ORCA-HR is a high resolution digital camera using a large format interline CCD chip with no mechanical shutter. In addition to a high resolution of 10 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 the camera an ideal choice for demanding scientific and industrial applications.

FEATURES

- High resolution of 10 million pixels
- Large format interline CCD chip with no mechanical shutter
- Vertical overflow drain structure
- Anti-blooming function
- Low dark noise with peltier cooling
- Binning (2×2 , 4×4) function to improve sensitivity
- Shortest exposure time : 330 μ s capture fast events
- Lens coupling : F-mount, ENG (optional)
- Full remote control from PC via RS-232C

SPECIFICATIONS

Imaging device		Large format Interline CCD (HR-1000)	
Effective no. of pixels		4000 (H) × 2624 (V)	
Cell size		5.9 μm × 5.9 μm (square format)	
Effective area		23.6 mm × 15.5 mm	
Pixel clock rate		20.0 MHz/pixel	
Frame rate (No. of pixels)	Interlace scan	1.7 frame/sec (4000 (H) × 2624 (V))	
	Binning scan	2 × 2	3.4 frame/sec (2000 (H) × 1312 (V))
		4 × 4	6.4 frame/sec (1000 (H) × 656 (V))
	Outline scan	8.9 frame/sec (664 (H) × 422 (V))	
Readout noise		13 electrons r.m.s. typ.	
Full well capacity		13,300 electrons	
Dynamic range ^①		1000 : 1	
Cooling method		Peltier cooling, Air radiation system	
Cooling temperature		+5 °C to +7 °C	
Dark current		0.5 electron/pixel/sec typ.	
A/D converter		12 bit	
Output signal (digital output)		TIA/EIA-644(LVDS) parallel output 12 bit	
Exposure time		330 μs to 10s	
External control		RS-232C (full remote for all camera functions)	
Sub array ^②		yes	
External trigger		Level or Edge trigger (available only at binning mode)	
Contrast enhancement		Analog gain (10 times max.) and Offset functions	
Lens mount		F-mount	
Line voltage		100 V/117 V/220 V/240 V AC, 50 Hz/60 Hz	
Power consumption		Approx. 90 V·A	
Ambient storage temperature		-10 °C to +50 °C	
Ambient operating temperature		0 °C to +40 °C	
Ambient storage/operating humidity		70 % max. (no condensation)	

① Calculated from the ratio of the full well capacity and average readout noise

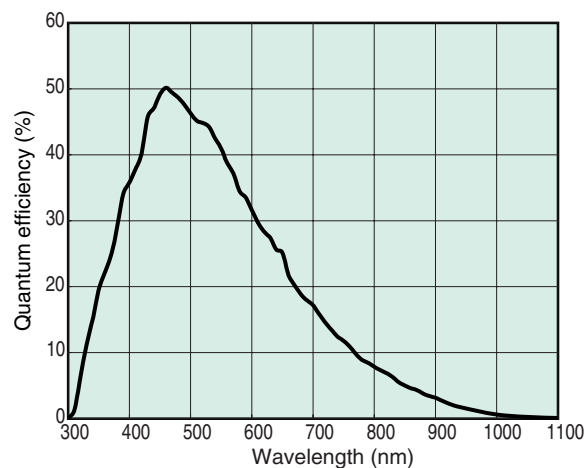
② The sub-array setting is available only with binning mode.

	Horizontal width	Horizontal offset	Vertical width	Vertical offset
2 × 2 binning	8 × n	8 × n	8 × n	8 × n
4 × 4 binning	8 × n	8 × n	8 × n	8 × n
n	0 ≤ n ≤ 500	0 ≤ n ≤ 499	0 ≤ n ≤ 328	0 ≤ n ≤ 327

• Software development kit

- Platform ----- Windows95 / 98 / NT
- Language ----- Visual C++
- Frame grabber board ----- Coreco PC-DIG
- Functions ----- Image data capture
ORCA-HR camera control

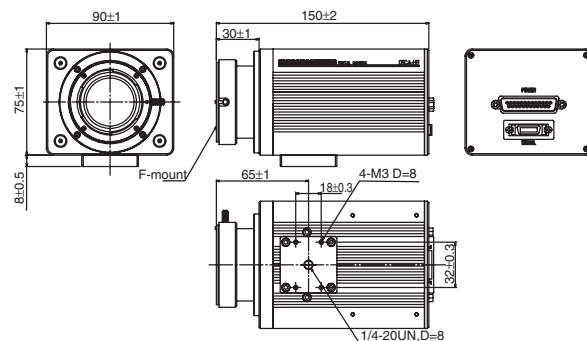
• Spectral response characteristics



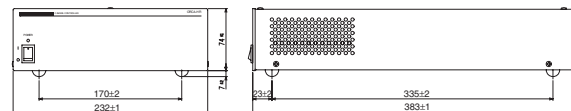
★ This is typical, not guaranteed

DIMENSIONAL OUTLINE (Unit : mm)

• Camera head (approx. 1.2 kg)



• Control unit (approx. 5.9 kg)



★ Product and software package names noted in this documentation are trademarks or registered trademarks of their respective manufacturers.

- 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.

© 2005 Hamamatsu Photonics K.K.

HAMAMATSU

<http://www.hamamatsu.com>

HAMAMATSU PHOTONICS K.K., Systems Division

812 Joko-cho, Higashi-ku, Hamamatsu City, 431-3196, Japan, Telephone: (81)53-431-0124, Fax: (81)53-435-1574, E-mail: export@sys.hpk.co.jp

U.S.A. and Canada: Hamamatsu Corporation, 360 Foothill Road, Bridgewater, N.J. 08807-0910, U.S.A., Telephone: (1) 908-231-0960, Fax: (1) 908-231-0852, E-mail: usa@hamamatsu.com

Germany: Hamamatsu Photonics Deutschland GmbH, Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49)8152-375-0, Fax: (49)8152-2658, E-mail: info@hamamatsu.de

France: Hamamatsu Photonics France S.A.R.L.: 19, Rue du Saule Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: (33)1 69 53 71 00, Fax: (33)1 69 53 71 00, E-mail: infos@hamamatsu.fr

United Kingdom: Hamamatsu Photonics UK Limited, 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire, AL7 1BW, U.K., Telephone: (44) 1707-294888, Fax: (44) 1707-325777, E-mail: info@hamamatsu.co.uk

North Europe: Hamamatsu Photonics Norden AB, Smidesvägen 12, SE-171-41 Solna, Sweden, Telephone: (46)8-509-031-00, Fax: (46)8-509-031-01, E-mail: info@hamamatsu.se

Italy: Hamamatsu Photonics Italia S.R.L.: Strada della Moia, 1/E 20020 Arese (Milano), Italy, Telephone: (39)02-935 81 733, Fax: (39)02-935 81 741, E-mail: info@hamamatsu.it

Cat. No. SICS1081E04
APR/2009 (2005.4)HPK
Created in Japan (PDF)