

ORCA-03G,-05G

Digital CCD Camera

For Biomedical Systems, Industrial Inspection and Machine Vision



▲ORCA-03G

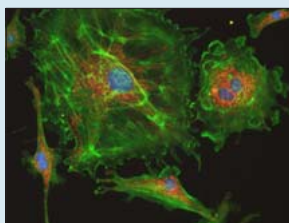
The ORCA-03G,ORCA-05G is a high-resolution digital camera using a progressive scan interline CCD with no mechanical shutter. In addition to a high-resolution of 1.37 million pixels, a wide dynamic range of 12 bit digital output and high-sensitivity in the VIS-NIR region offers a wide application range down to low-light level imaging.

The ORCA-03G employs a hermetic vacuum-sealed head which can be cooled to -10 °C. The outputs data is transmitted via an IEEE 1394 interface.

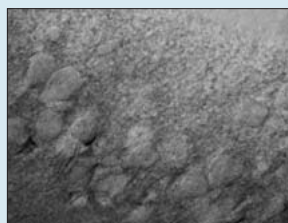
FEATURES

- High sensitivity in VIS-NIR region
- Progressive scan interline CCD chip with no mechanical shutter
- Anti-blooming function
- Wide dynamic range
- Small readout noise of 6 to 8 electrons (ORCA-03G)
- Low dark current with peltier cooling (0.01 electrons/s/pixel) (ORCA-03G)
- High frame rate of 43 frames/s (8×8 binning)

SAMPLE IMAGES

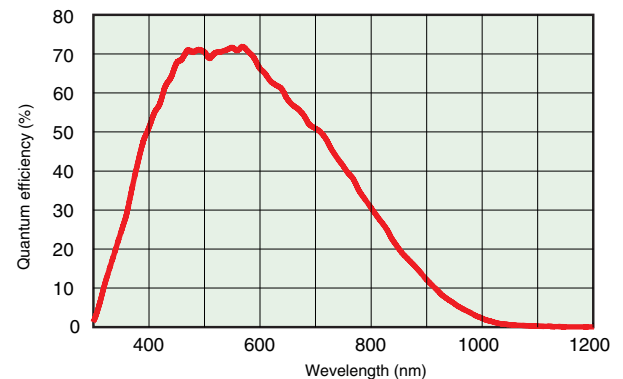


▲ Superimposed image of triple staining sample (ORCA-03G)



▲ IR-DIC image of rat brain slice (ORCA-05G)

SPECTRAL RESPONSE



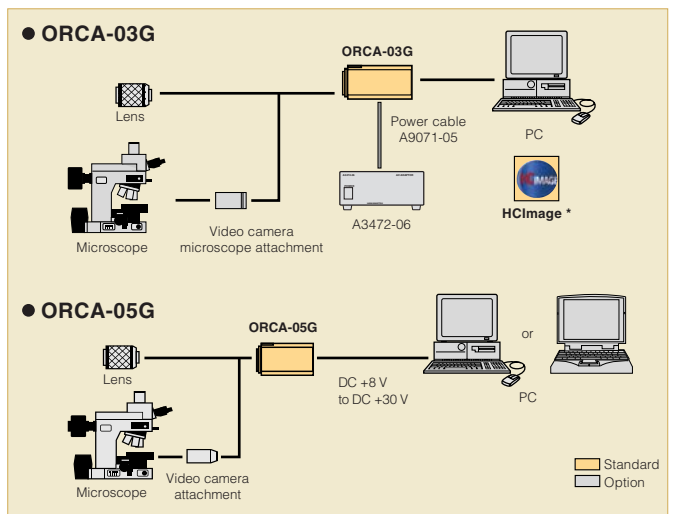
* This is typical, not guaranteed.

APPLICATIONS

- Routine fluorescence microscopy
- Green fluorescent protein applications
- DNA and ploidy analysis
- Red and near infrared fluorescent applications
- Fluorescence In-situ hybridization studies
- Motility and motion analysis
- Combined DIC / phase and fluorescence microscopy
- Histology, pathology and cytology
- Metallurgical microscopy
- Failure analysis
- Semiconductor inspection
- X-ray scintillator readout



SYSTEM CONFIGURATION



*HClmage software provides standard image measurements functions. Upgrades to more feature-rich versions are available.

SPECIFICATIONS

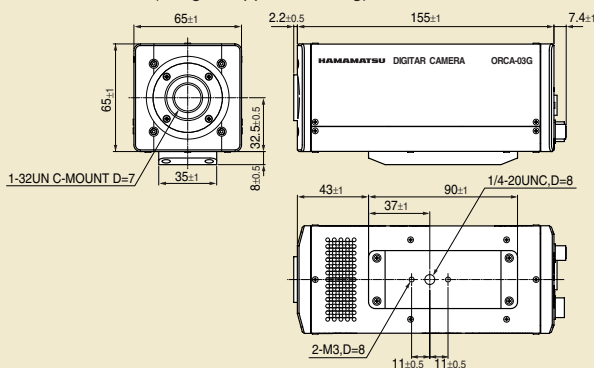
Model Name		ORCA-03G	ORCA-05G
Type number		C8484-03G02	C8484-05G02
Camera head type		Hermetic vacuum-sealed air-cooled head	Passive air-cooled head
Imaging device		Progressive scan interline CCD with micro-lens	
Pixels number		1344 (H) × 1024 (V)	
Cell size		6.45 μm (H) × 6.45 μm (V) (square format)	
Effective area		8.67 mm (H) × 6.60 mm (V) (2/3-inch format)	
Pixel clock rate		14.7 MHz/pixel	
Frame rate	binning	1 × 1	8.9 frames/s
		2 × 2	16.3 frames/s
		4 × 4	27.8 frames/s
		8 × 8	43.0 frames/s
Readout noise(r.m.s.)		6 electrons to 8 electrons (typ.)	10 electrons (typ.)
Full well capacity		15 000 electrons	
Dynamic range*		2142 : 1	1500 : 1
Cooling method		Forced air peltier cooling, with hermetic sealing	-
Cooling temperature		- 10 °C	-
Dark current		0.01 electrons/s/pixel (typ.)	-
A/D converter		12 bit	
Exposure time		10 μs to 10 s	10 μs to 1 s
Sub-array		Yes	
Analog gain		1 ×, 5 ×	
External trigger		Edge trigger, Level trigger	
Lens mount		C-mount	
Digital output		IEEE 1394-1995	
External control		IIC1394-Based Digital Camera Specification Ver.1.30	
Power requirements		DC+12 V	DC+8 V to DC+30 V
Power consumption		24 V·A	8 V·A
Ambient storage temperature		- 10 °C to + 50 °C	
Ambient operating temperature		0 °C to + 40 °C	
Ambient operating/storage humidity		70 % max. (with no condensation)	

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

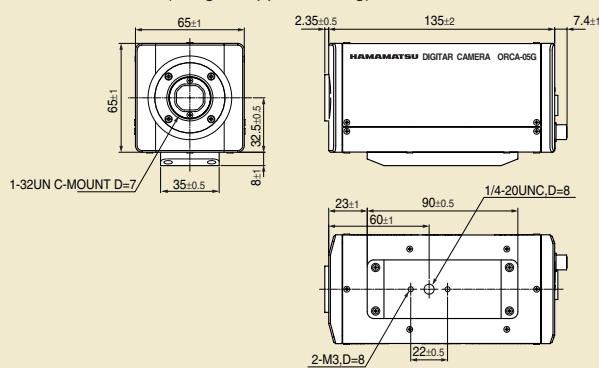
DIMENSIONAL OUTLINES

(Unit : mm)

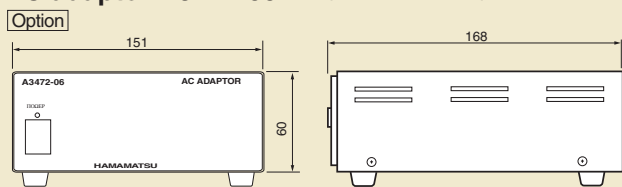
● ORCA-03G (Weight : approx. 0.84 kg)



● ORCA-05G (Weight : approx. 0.6 kg)



● AC adaptor A3472-06 (Weight : approx. 0.8 kg)



OPTIONS (ORCA-03G)

- **AC adaptor** : **A3472-06**
 - Line voltage : AC 100 V to 240 V input
 - Output voltage : DC +12 V
- **Power cable** : **A9071-05**
 - Cable length : 5 m

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Homepage Address <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 10, 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: Smidsvågen 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 int.6-20020 Arese (Milano), Italy, Telephone: (39)02-935 81 733, Fax: (39)02-935 81 741, E-mail: info@hamamatsu.it

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