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ORCA-03G,-05G

Digital CCD Camera

For Biomedical Systems, Industrial Inspection and Machine Vision



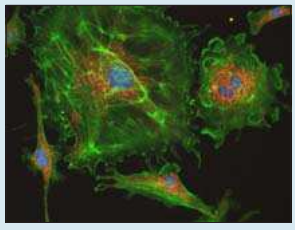
▲ORCA-03G

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.

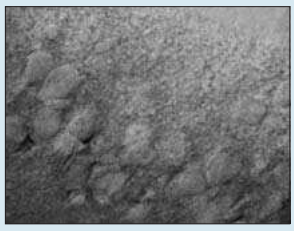
FEATURES

- **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

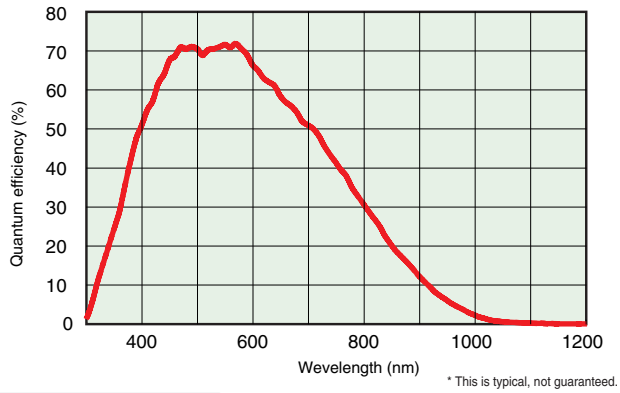


▲ Superimposed image of triple stainning sample (ORCA-03G)



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

SPECTRAL RESPONSE



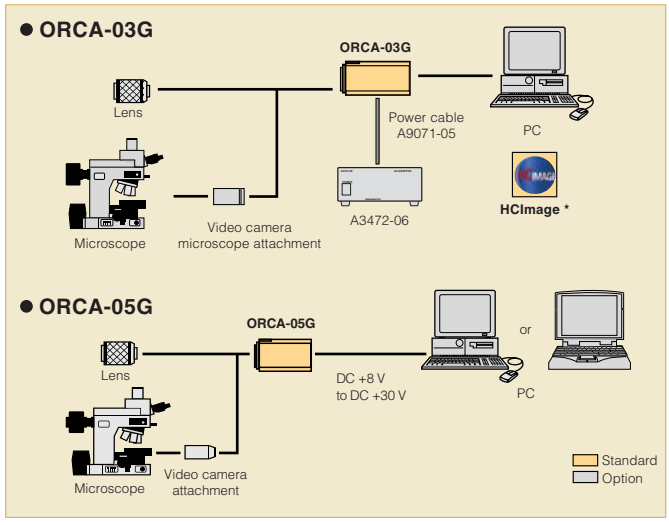
* This is typical, not guaranteed.

APPLICATIONS

- **Routine fluorescence microscopy**
- **Green fluorescent protein applications**
- **DNA and ploidy analysis**
- **Red and near infrared fluorescent applications**
- **Fluorescence In-situ hybirdization 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**

1394 TRADE ASSOCIATION

SYSTEM CONFIGURATION



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

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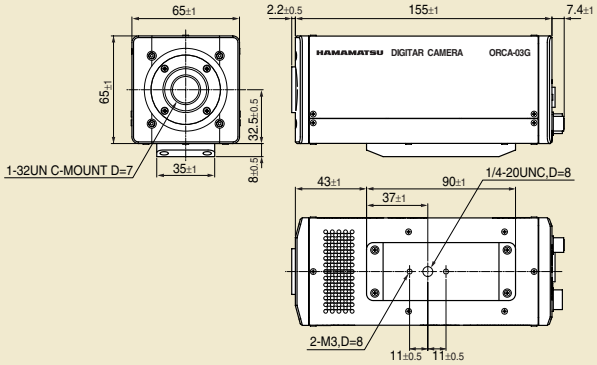
SPECIFICATIONS

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	1×1		8.9 frames/s	
	binning	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			IIDC1394-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)	

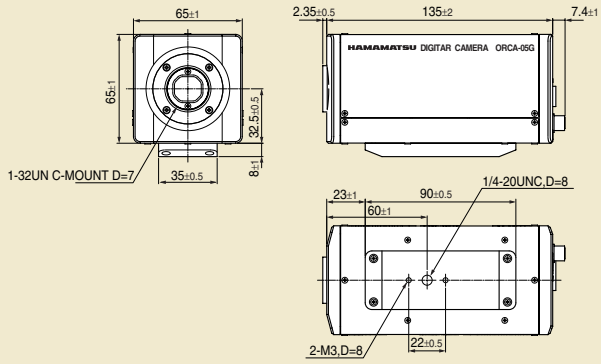
*Calculated from the ratio of the full well capacity and the average readout noise.

DIMENSIONAL OUTLINES (Unit : mm)

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

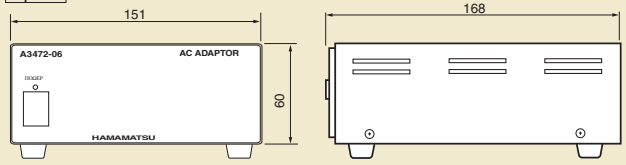


● **ORCA-05G** (Weight : approx. 0.6 kg)



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

Option



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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