

ORCA[®]-03G,-05G

Digital CCD Camera

For Biomedical Systems, Industrial Inspection and Machine Vision



▲ ORCA-03G

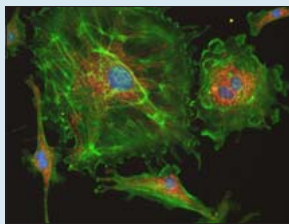
The ORCA-03G, ORCA-05G is a high-resolution digital camera using a progressive scan interline CCD with no mechanical shutter. In addition to a high-resolution of 1.37 million pixels, a wide dynamic range of 12 bit digital output and high-sensitivity in the VIS-NIR region offers a wide application range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

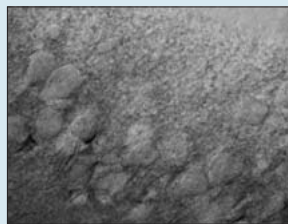
FEATURES

- 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 rms (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

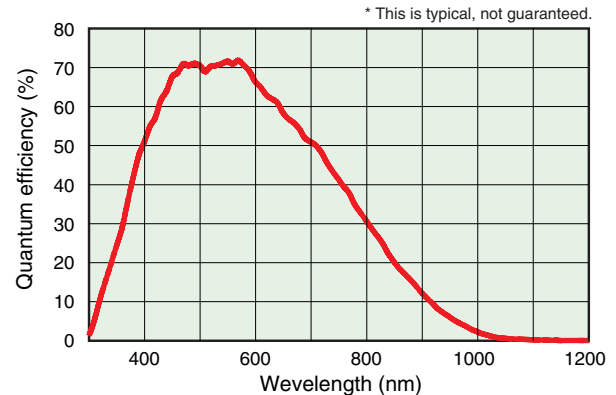


▲ Superimposed image of triple staining sample (ORCA-03G)



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

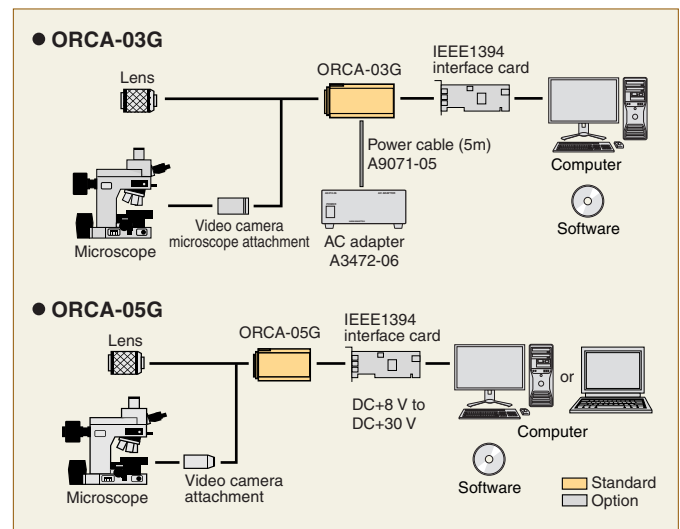
SPECTRAL RESPONSE



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



SPECIFICATIONS

Model Name		ORCA-03G	ORCA-05G
Type number		C8484-03G02	C8484-05G02
Imaging device		Progressive scan interline CCD with micro-lens	
Pixels number		1344 (H) × 1024 (V)	
Cell size		6.45 mm (H) × 6.45 mm (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 (rms)		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	Non-cooled
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 VA	8 VA
Ambient storage temperature		- 10 °C to + 50 °C	
Ambient operating temperature		0 °C to + 40 °C	
Ambient operating humidity		70 % max. (with no condensation)	

OPTIONS

[ORCA-03G]

- AC adapter : A3472-06
 - Line voltage : AC 100 V to 240 V input
 - Output voltage : DC +12 V
- Power cable (5m) : A9071-05

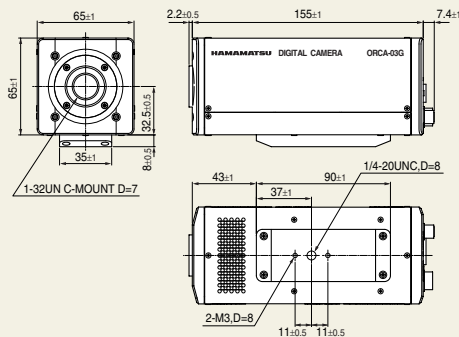
[ORCA-03G, ORCA-05G]

- External trigger cable : A10385-05

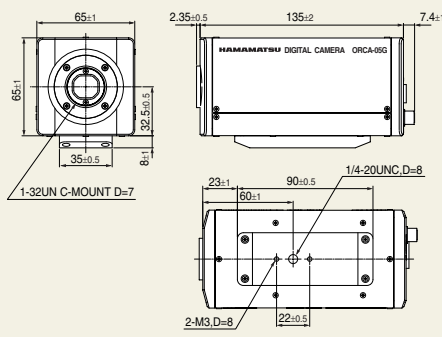
DIMENSIONAL OUTLINES

(Unit : mm)

● ORCA-03G (Weight : approx. 0.84 kg)

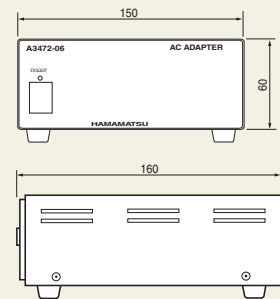


● ORCA-05G (Weight : approx. 0.6 kg)



● AC adapter A3472-06

(Weight : approx. 0.8 kg) Option



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