

Digital CCD Camera ORCA-03G,-05G

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.

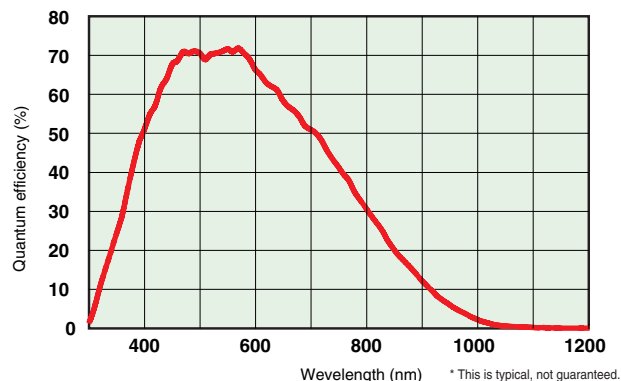
The ORCA-03G employs a hermetic vacuum-sealed head which can be cooled to -10°C . The outputs data is transmitted via an IEEE 1394 interface.

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 (0.1 electrons/s/pixel) (ORCA-03G)
- High frame rate of 43 frame/s (8×8 binning)



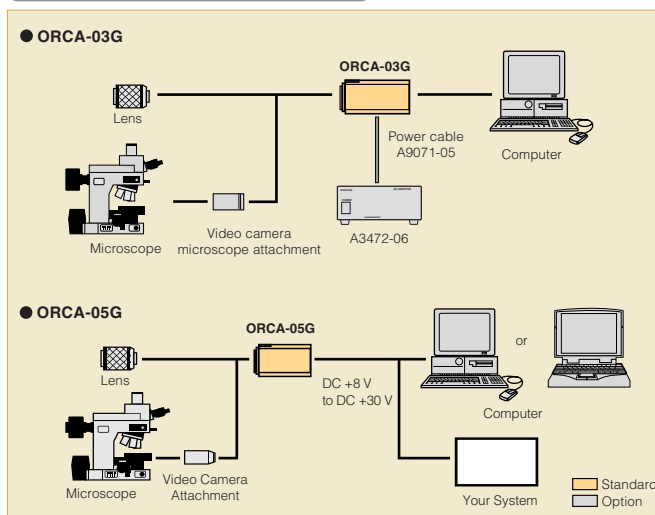
SPECTRAL RESPONSE



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



HAMAMATSU

SYSTEM SPECIFICATIONS

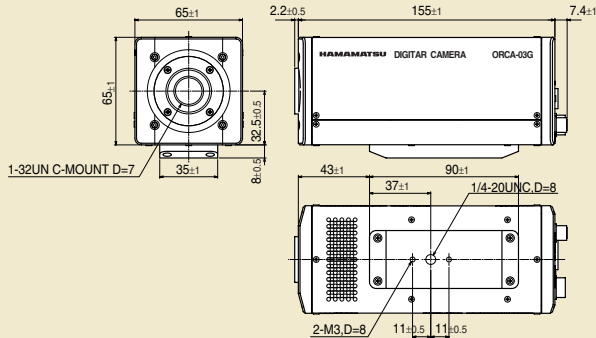
Model Name	ORCA-03G	ORCA-05G	
Type number	C8484-03G02	C8484-05G02	
Imaging device	Progressive scan interline CCD with micro-lens		
Pixels number	1344 (H) × 1024 (V)		
Cell size	6.45 μm (H) × 6.45 μm (V) (square format)		
Effective area	8.67 mm (H) × 6.60 mm (V) (2/3-inch format)		
Pixel clock rate	14.7 MHz/pixel		
Frame rate	1 × 1	8.9 frame/s	
	binning	2 × 2	16.3 frame/s
		4 × 4	27.8 frame/s
		8 × 8	43.0 frame/s
Readout noise(r.m.s.)	6 electrons r.m.s to 8 electrons r.m.s (typ.)	10 electrons r.m.s (typ.)	
Full well capacity	15 000 electrons		
Dynamic range*	2142 : 1	1500 : 1	
Dark current	0.1 electrons/s/pixel (typ.)	-	
Cooling temperature	- 10 °C	-	
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	I1DC1394-Based Digital Camera Specification Ver.1.30		
Power requirements	DC+12 V	DC+8 V or 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.

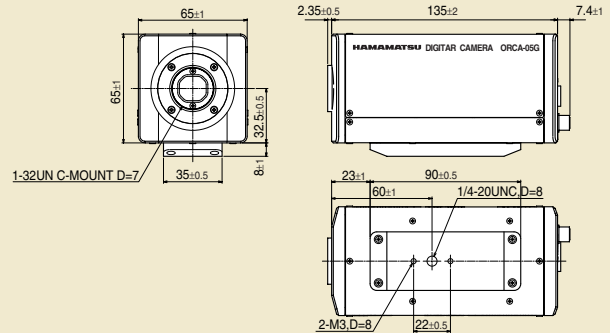
DIMENSIONAL OUTLINES

(Unit : mm)

● ORCA-03G (Weight : approx. 0.85 kg)

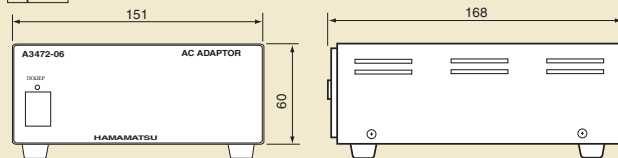


● ORCA-05G (Weight : approx. 0.6 kg)



● 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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