

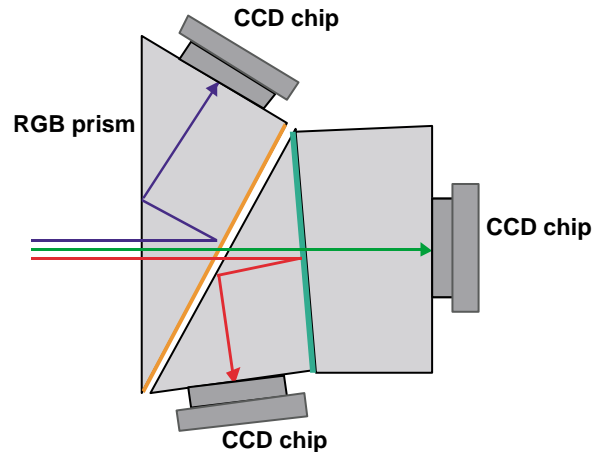
# HAMAMATSU

DATA SHEET

## 3 CCD Cooled Digital Color Camera C7780-10



### SENSOR STRUCTURE



The C7780-10 color camera provides very high fidelity 36 bit real color images in a single exposure, but with independent exposure times for each R,G, and B CCD. Shutter free interline transfer design and cooling of the CCDs to 0°C makes the camera useful for both brightfield color applications as well as high dynamic range multiple color fluorescence images.

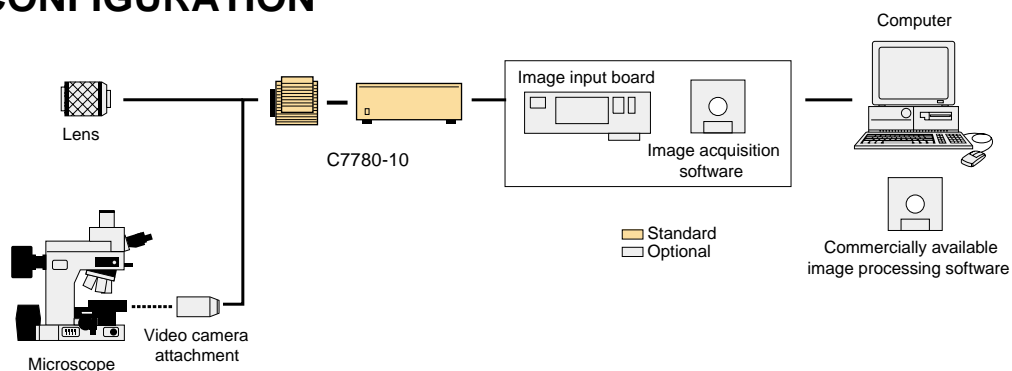
### APPLICATIONS

- Color digital time-lapses recording
- Fluorescence Resonance Energy Transfer studies
- Fluorescence In Situ Hybridization studies
- Histology, Pathology and Cytology

### FEATURES

- Total 4.13 million pixels
- Total 36 bit color resolution
- Cooling temperature of 0 °C
- Individual R,G,and B exposure settings
- 8 × 8 binning capability
- 9.1 Hz full speed display
- Low readout noise design (13 electrons r.m.s. typ.)

### SYSTEM CONFIGURATION



## SPECIFICATIONS

Type number	C7780-10
Sensor structure	3 chip CCD with RGB prism
Imaging device	Progressive scan interline CCD
Effective no. of pixels	1344 (H) × 1024 (V)
Cell size	6.45 μm × 6.45 μm (square format)
Effective area	8.67 mm × 6.60 mm (2/3-inch format)
Pixel clock rate	16 MHz/pixel
Frame rate	9.1 Hz
2 × 2 binning	17.9 Hz
4 × 4 binning	31.5 Hz
8 × 8 binning	49.2 Hz
Readout noise (r.m.s.)	13 electrons
Full well capacity	18,000 electrons
Dynamic range*	1,384 : 1
Cooling method	Peltier cooling with air radiation
Cooling temperature	0 °C at 20 °C ambient temperature
Dark current	0.5 electron/pixel/sec
A/D converter	12 bit
Output signal (digital output)	12-bit, 10 bit and 8 bit × 3 channels parallel output
Exposure time	128 μsec to 10 sec
External control	RS-232C (full remote for all camera functions)
Sub array	yes
External trigger	yes
Lens mount	2/3-inch bayonet mount (flange back 48mm)
Line voltage	100 / 117 / 220 / 240 V, 50/60 Hz
Power consumption	77 VA
Ambient storage temperature	-10 to + 50 °C
Ambient operating temperature	0 to + 40 °C
Ambient operating/storage humidity	70% max. (no condensation)

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

Image input board	<ul style="list-style-type: none"> <li>● PC-DIG</li> <li>● Phoenix 66M version</li> </ul>
Image acquisition software	<ul style="list-style-type: none"> <li>● AquaCosmos</li> <li>● Photo-shop plug-in</li> <li>● Image Pro Plus plug-in</li> <li>● Sample software</li> </ul>



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