

# High Speed Digital CCD Camera C7770



▲ Lens is optional

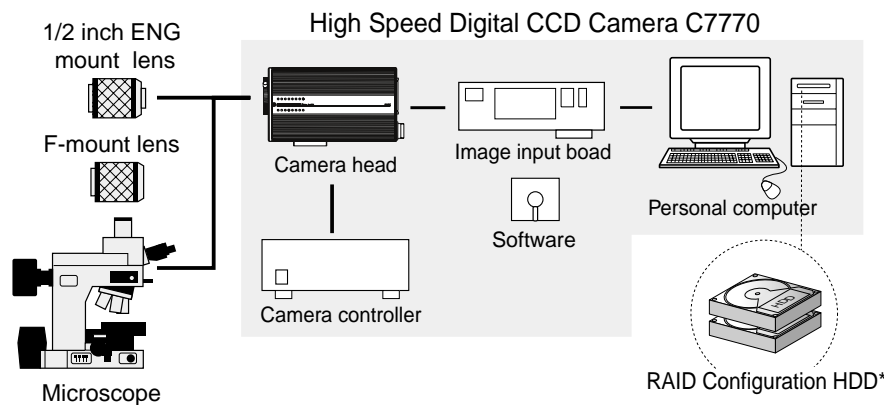
The C7770 is the High Speed Digital CCD camera which can achieve 291 Hz frame rate while keeping very low readout (20 electrons r.m.s.typ.) noise performance. In the combination of binning readout, the fastest frame rate can increase up to 1400 Hz. The lower readout noise with such fast frame makes this camera an ideal choice for fast phenomenon measurement even w/o strong illumination tool or image intensifier. In order to achieve both high speed and a low readout noise characteristic at the same time, the C7770 employs a special progressive interline CCD chip which eliminates the need for a mechanical shutter. This means that problem such as vibration caused by mechanical shutter at fast frame rate, and the lifetime of the mechanical shutter, have been completely eliminated.

## MEASUREMENT EXAMPLE



▲ Milk crown

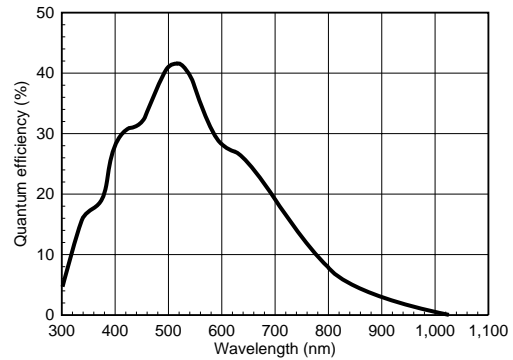
## SYSTEM CONFIGURATION



Standard Configuration

\* **Optional**  
Hamamatsu recommends the RAID configuration HDD. About details, please consult with our sales office.

## SPECTRAL RESPONSE CHARACTERISTIC



\* This is typical, not guaranteed.

## FEATURES

- 291 frames/sec with 640 × 480 resolution
- Maximum frame rate of up to approximately 1,400 frames/sec
- Fast scan readout with low noise (20 electrons r.m.s. Typ.)
- 10 bit digital output

## APPLICATIONS

- High speed microscopic imaging
- Continuous imaging of high-speed moving objects
- Kinetic changes in light intensity
- Analysis of objects or material destructive process

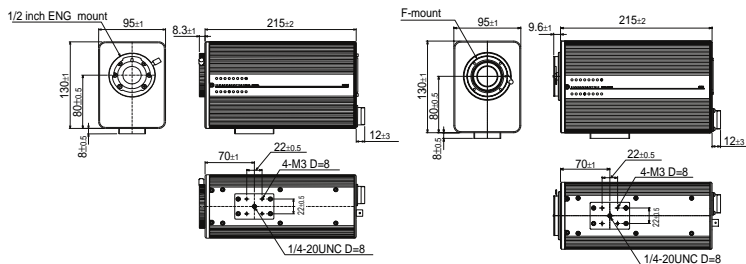
## MAIN SPECIFICATIONS

Type number	C7770-01	C7770-02
Camera head type	Naturally air-cooled head	
Circulating water cooler (sold separately)	-	
Vacuum pump (sold separately)	-	
Imaging device	1/2 full-pixel scanning interline CCD	
Effective no. of pixels	640 (H) × 480 (V)	
Cell size	9.9 μm (H) × 9.9 μm(V)	
Effective area	6.49 mm (H) × 4.89 mm(V)	
Readout noise	20 electrons r.m.s	
Full well capacity	24,000 electrons	
Dynamic range*	1,200 : 1	
Frame rate	1 × 1	291 Hz (640(H) × 480(V))
	2 × 2	531 Hz (320(H) × 240(V))
	4 × 4	904 Hz (160(H) × 120(V))
	8 × 8	1377 Hz (80(H) × 60(V))
Cooling method	-	
Cooling temperature	-	
Dark current	-	
Exposure time	40.8 μs to 3.38 ms	
A/D converter	10 bits	
Lens mount	1/2 inch bayonet mount flange back 35.74 mm	F-mount
External trigger input	yes	
Maximum recording time	approx. 8 s	
Camera control	Exposure time, Binning size	
Image acquisition control	Record, Play, Save	
Image analysis function	Profile, Histogram	
Saving file format	TIFF (16 bit)	
Ambient storage temperature	-10 to +50 °C	
Ambient operating temperature	0 °C to +40 °C	
Ambient operating/storage humidity	70% max. (with no condensation)	

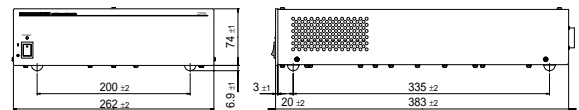
\*Calculated from the ratio of the full well capacity and readout noise.

## DIMENSIONAL OUTLINES

### ● Camera head (approx. 2.0 kg)



### ● Camera controller (approx. 3.5 kg)



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- Subject to local technical requirements and regulations, availability of products included in this promotional material may vary. Please consult with our sales office.
- Information furnished by HAMAMATSU is believed to be reliable. However, no responsibility is assumed for possible inaccuracies or omissions.

Specifications and external appearance are subject to change without notice.

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