

# NEW

# X-CUBE COMPACT X-RAY CCD CAMERAS

## H8480 Series

### SAMPLE X-RAY IMAGES

Sample: Digital camera memory media

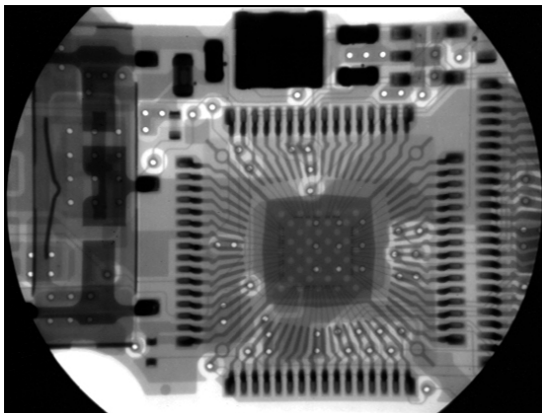
X-ray tube voltage: 80 kV p

X-ray tube current: 100  $\mu$ A

#### H8480

Effective area:  $\phi$  25 mm Min.

Resolution : 8 Lp/mm



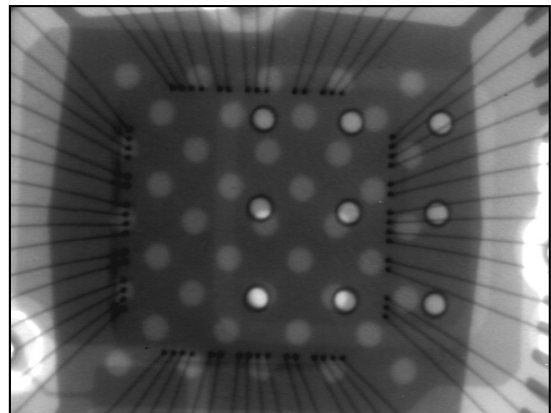
Sample: MEMORY STICK®

#### H8481

(High Resolution Type)

Effective area: 8.8 mm  $\times$  6.6 mm

Resolution : 13 Lp/mm

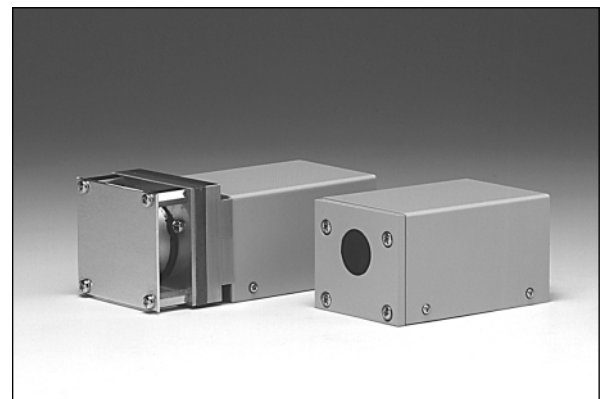


## OVER VIEW

X-CUBE is a compact X-ray CCD camera designed for non-destructive inspection. Using a general-purpose CCD chip mounted in a rugged but lightweight camera head, X-CUBE makes X-ray imaging as easy as handling ordinary CCD cameras.

There are two different models in the X-CUBE family - the H8480 and H8481. The H8480 uses a 2/3-inch CCD coupled to a large-diameter tapered FOP. This FOP is coated with CsI, the next generation of X-ray scintillators, and offers a large effective area of 25 mm diameter and a resolution of 8 Lp/mm. The H8481 uses a straight type FOP instead of the large FOP, achieving a high resolution of 13 Lp/mm.

This easy-to-use, compact and lightweight X-ray CCD camera will let you create totally new types of non-destructive inspections.



▲Left: H8480, Right: H8481

## FEATURES

- Effective area:  $\phi$  25 mm Min. (H8480)
- High resolution: 13 Lp/mm (H8481)
- High sensitivity: CsI scintillator
- Compact
- Low power consumption

# HAMAMATSU

# SAMPLE X-RAY IMAGES

## H8480

(Effective area:  $\phi 25$  mm Min.)

## H8481

(High Resolution Type)

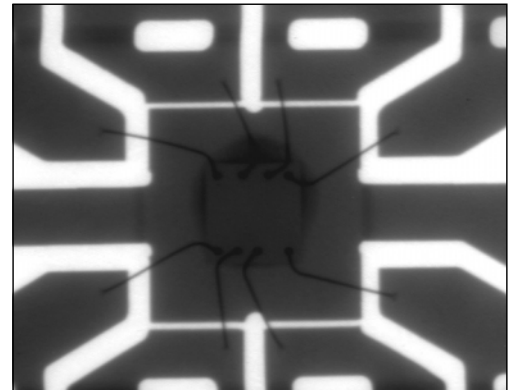
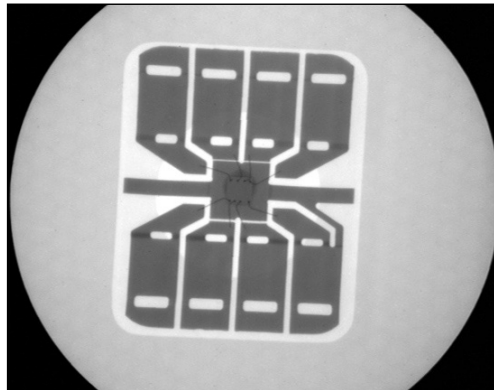
(Effective area: 8.8 mm  $\times$  6.6 mm)

### ●IC telephone card

X-ray tube voltage: 75 kV p

X-ray tube current: 100  $\mu$ A

Visible image

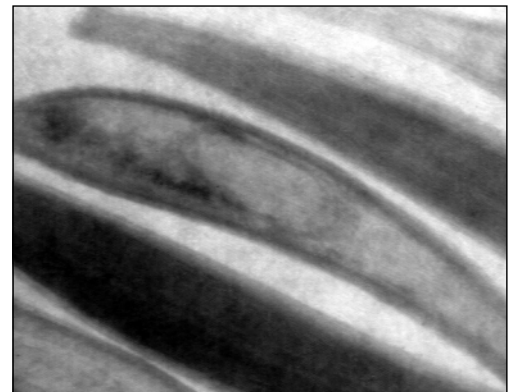
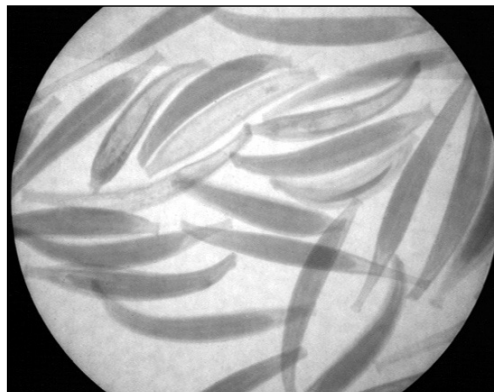


### ●Seeds

X-ray tube voltage: 40 kV p

X-ray tube current: 100  $\mu$ A

Visible image



# X-RAY IMAGE COMPARISON (with GOS sheet)

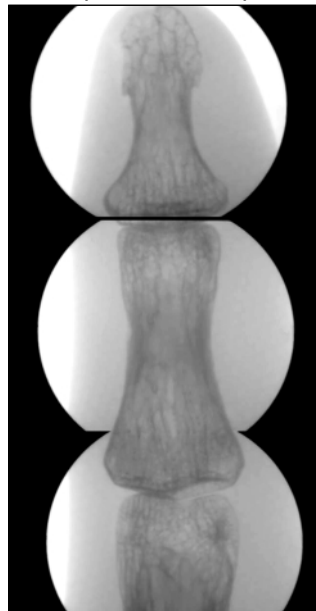
### ●A phantom of a finger

X-ray tube voltage: 70 kV p

X-ray tube current: 100  $\mu$ A

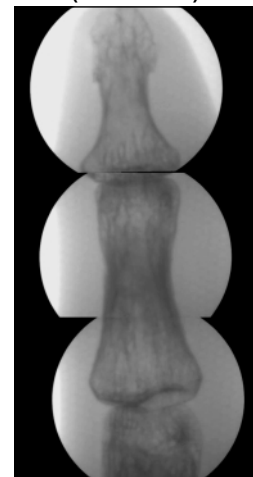
#### X-CUBE

(CsI scintillator)



#### Conventional device

(GOS sheet)



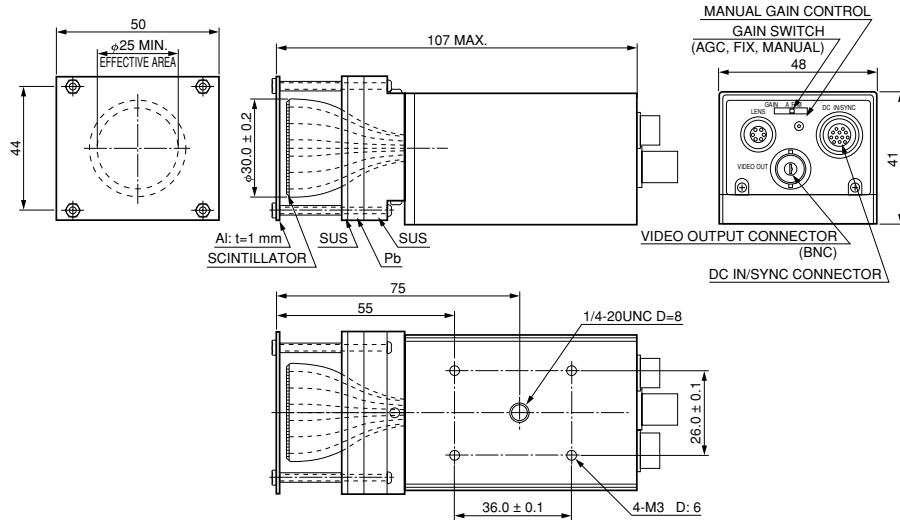
# SPECIFICATIONS

## GENERAL RATINGS

Parameter	H8480-03	H8480-04	H8481-05	H8481-06
Effective area	φ25 mm Min.		8.8 mm × 6.6 mm	
Resolution	8 Lp/mm		13 Lp/mm	
TV method	EIA	CCIR	EIA	CCIR
Imaging sensor	Interline transfer 2/3-inch CCD image sensor			
Number of pixels	768 (H) × 494 (V)	752 (H) × 582 (V)	768 (H) × 494 (V)	752 (H) × 582 (V)
Scanning method	Interlace/ Non-interlace			
Sync. method	Auto selection by the input signal			
External sync. signal input	S. VS (SYNC level 0.3 V), HD/VD (2 V to 5 V)			
Video signal output	1.0 V p-p (negative sync., 75 Ω, unbalanced)			
Power supply voltage (DC)	+12.0 V ± 3.0 V			
Power consumption	Approx. 1.6 W			
γ correction	0.45/1.0 (internal switching)			
Gain	AGC/FIX/MANUAL (selection from rear panel)			
Shutter speed	1/60 s to 1/10 000 s (7-step internal switching)			
Operating temperature	-5 °C to 45 °C			
Storage temperature	-10 °C to 60 °C			
Operating humidity	Below 80 % (non condensation)			

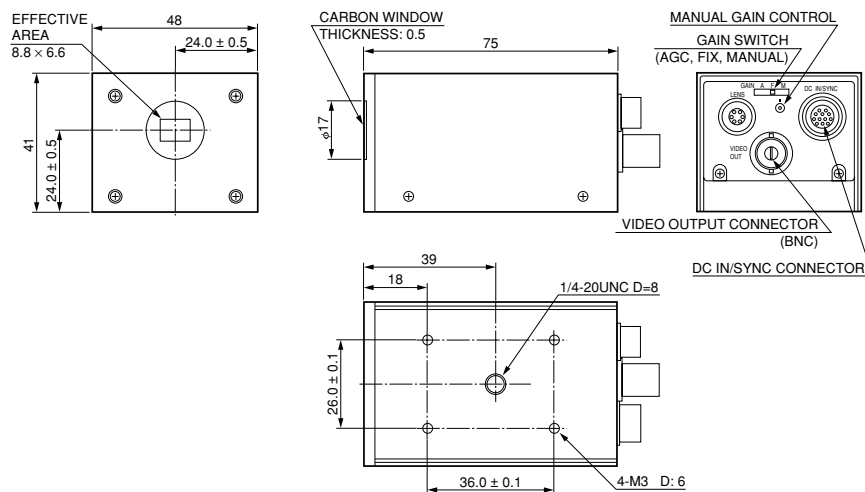
## DIMENSIONAL OUTLINE (Unit: mm)

H8480



TMCPA0051EA

H8481



TMCPA0052EA

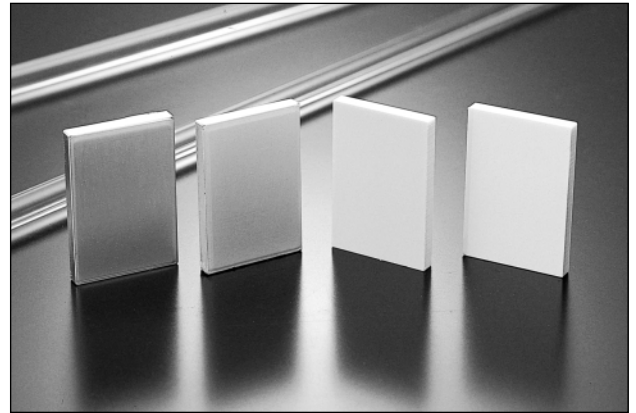
## OPTIONS (sold separately)

- CCD camera power supply
- Camera cable
- AC adapter

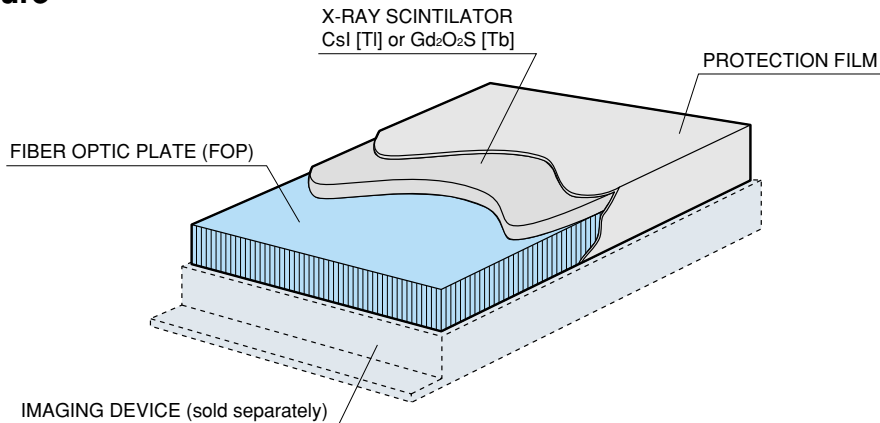
# RELATED PRODUCTS

## ●FOS (Fiber optic plate coated with X-ray scintillator)

The FOS is an optical device for X-ray imaging, fabricated by coating an X-ray scintillator material over a fiber optic plate consisting of tens of million glass fibers each a few micrometers in diameter. The FOS provides higher sensitivity and resolution than currently used sensitized paper films and also allows real-time digital radiography when directly coupled to a commercially available CCD. The fiber optic plate used in the FOS has excellent X-ray absorption characteristics, so that X-rays penetrating the X-ray scintillator and directly entering the CCD are minimized to less than 1 %. This protects the CCD from the deterioration and increased noise caused by X-ray irradiation, assuring a long service life and maintaining high image quality. Various sizes and shapes of FOS are available to meet your particular needs, including tapered FOP types.



### ■Structure



★ "MEMORY STICK" is trademark of Sony Corporation.

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