



# CCD Monochrome Video Camera Specifications

CS8420i (EIA)

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**TOSHIBA TELI CORPORATION**

## **1. PRODUCT DESCRIPTION**

Model CS8420i is a miniature camera featuring compact and light weight. The CS8420i camera is designed mainly for factory automation, machine vision, and image measurement application.

## **2. FEATURES**

- \* Compact and light weight
- \* Available External sync-operation
- \* Equipped with an electronic shutter for fast moving subjects for better definition picture.

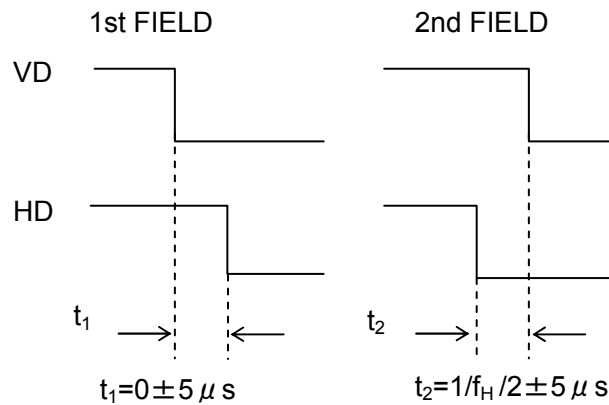
## **3. CONFIGURATION**

- (1) Camera body ..... 1
- (2) Accessory
  - Operation Manual (English) ..... 1
  - Operation Manual (Japanese) ..... 1

## **4.SPECIFICATION**

(1) TV system	Based on EIA standard
(2) Image sensor	Interline CCD
Active pixel	768(H) × 494(V)
Chip size	8.4 μ m × 9.8 μ m
Active image area	6.5mm(H) × 4.85mm(V) (equivalent to 1/2" normal optical image size respectively)
(3) Number of scanning lines	525 lines
(4) Scanning system	2:1 interlace
(5) Sync system	Internal/External(Automatic change over)
(6) Scanning frequencies	
Horizontal drive(H)	15.734 kHz
Vertical drive(V)	59.94Hz
(7) Aspect ratio	4 : 3
(8) Sensitivity	Standard : 100 lx at F5.6, 3200K, Gain : FIX, Gamma=1.0 50% Output : 0.4 lx at F1.4, Gain : max Minimum : 0.2 lx at F1.4, Gain : max, Gamma=1.0,Output:25%
(9) Video output	VS(Video + SYNC) : 1.0V(p-p)/75 Ω
(10) Resolution	Horizontal direction : 570 TV lines Vertical direction : 485 TV lines (350 TV lines)
(11) S/N(luminance)	56dB(p-p)/rms or more(Gain : FIX, Gamma=1.0)
(12) Gamma correction	1.0
(13) Sensitivity setting	The following modes can be set using the internal switch. (Factory setting: MANU) FIX(FIX Gain) : Standard sensitivity setting. MGC(Manual Gain Control) : Sensitivity can be set manually.
(14) White clip	Clip level should be set for 1.0V at factory, excluding SYNC tip.
(15) Input signal	
*External sync pulses	
HD,VD and SYNC	4.0 ± 2.0 V(p-p)
VS	1.0 V(p-p)(SYNC 0.3V(p-p))
Input impedance	75 Ω /HIGH selection can be made using the internal switch. (Factory setting: HIGH)
Pulse polarity	Negative polarity
Pulse width	HD : 6.4 ± 3 μ sec VD : 150 to 800 μ sec
Frequency	Horizontal( $f_H$ ) : 15.734 kHz ± 2% Vertical( $f_V$ ) : 2 $f_H$ /525
Number of scanning lines	525 lines

Phase between HD/VD The phase relation between HD and VD should be as shown below.



(16) Output signal

\*HD/VD pulses

Pulse level 4.5V(p-p) / not impedance

Interlace 2:1

Polarity Negative

Pulse width HD :  $6.36 \pm 0.1 \mu sec$   
VD :  $572 \pm 1 \mu sec$

Frequency Horizontal( $f_H$ ) :  $15.73426 kHz \pm 100ppm$   
Vertical( $f_V$ ) :  $2f_H/525$

Number of scanning lines 525 lines

(17) Electronic shutter

ON/OFF selectable Shutter speed

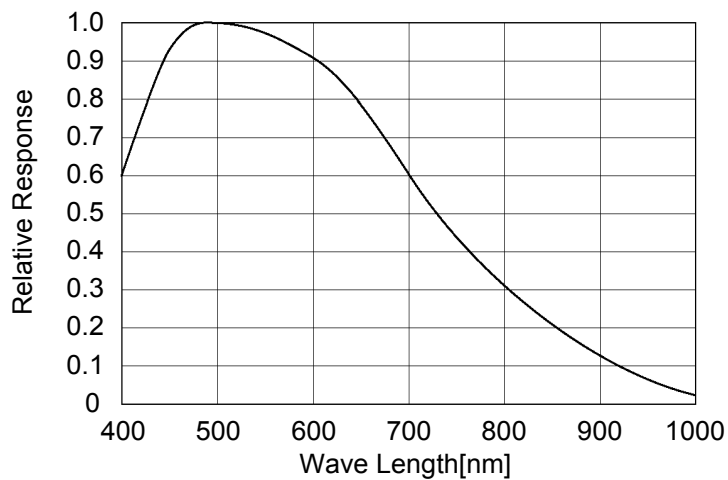
$1/60, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 sec.$

(18) CCD operation mode

Field or frame store mode can be selected as necessary. (initially preset frame mode in factory)

(19) Spectral response

Refer below.



- (20) Power source DC12V  $\pm$  10% within 10mV(p-p) ripple
- (21) Power consumption approx. 210mA
- (22) Ambient condition
- Temperature 0°C to + 40°C
- Humidity less than 90%
- (23) Lens mount C-mount
- (24) Dimensions 31(W)  $\times$  29(H)  $\times$  70(D) mm refer to page 5
- (25) Weight approx. 80 g
- (26) DC IN/SYNC connector pin assignment

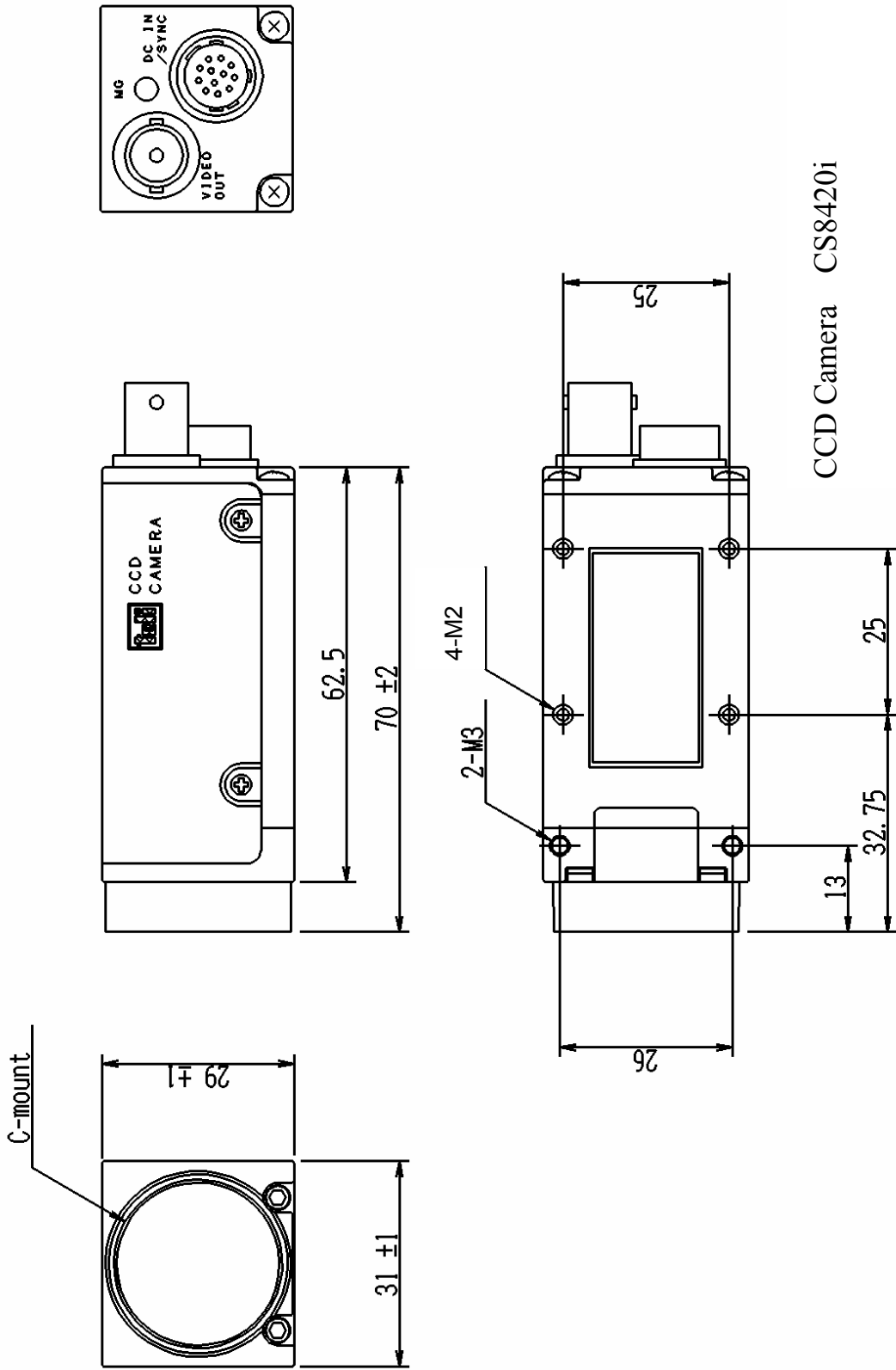
Camera connector : HR10A-10P-12P (Maker : Hirose denki)

Pin No.	External synchronization		Internal synchronization
	HD and VD	VS/SYNC	
1	GND	GND	GND
2	+12V	+12V	+12V
3	Video output (GND)	Video output (GND)	Video output (GND)
4	Video output (signal)	Video output (signal)	Video output(signal)
5	HD input (GND)		HD output (GND)
6	HD input (signal)		HD output (signal)
7	VD input (signal)	VS/SYNC input (signal)	VD output (signal)
8			
9			
10	GND	GND	GND
11	+12V	+12V	+12V
12	VD input (GND)	VS/SYNC (GND)	VD output (GND)

\* HD, VD output is available for internal switch selection.

\* Design and specifications are subject to change without notice.

# 5. APPEARANCES





## **TOSHIBA TELI CORPORATION**

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**Head Office:** 7-1, 4 chome, Asahigaoka, Hino-shi, Tokyo, 191-0065, Japan  
(Overseas Sales Department)

Phone : +81-42-589-8771

Fax : +81-42-589-8774

URL : <http://www.toshiba-teli.co.jp>

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**Distributor**

- This product must be classified for disposal according to the laws of each country and municipal laws.
  - Information contained in this document is subject to change without prior notice.
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