



Monochrome VGA 1/3" Type CCD Camera with
Double-Speed Scan for Faster Data Processing

CS8660D



Key Features

DOUBLE-SPEED IMAGE PROCESSING: The CS8660D has twice the driving frequency of conventional cameras for faster data processing in high-speed machine vision applications

ALL-PIXEL READOUT mode permits all pixel signals in the effective area to be output for greater accuracy, and in partial scan (1/4 or 1/2 screen) image readout is even faster

SQUARE GRID PIXEL ARRAY facilitates computation for faster image processing without blurring

HIGH VERTICAL RESOLUTION even under RTS mode (in 1/60 sec), images experience no deterioration in vertical resolution

ULTRA-COMPACT & LIGHTWEIGHT camera design solves space restriction problems, plus has excellent shock/vibration resistance

RESTART/RESET function, when set on, enables the camera to capture images at an arbitrary timing cued by external VD signal

SPECIFICATIONS

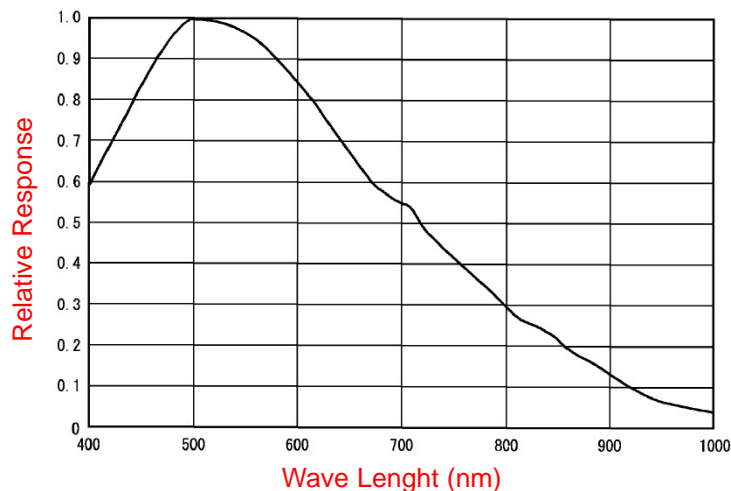
Image sensor	All Pixel's Data Read-out Interline CCD
Total pixels	692(H) x 504(V)
Active pixel	659(H) x 494(V)
Video output pixels	648(H) x 494(V) (Under non-interlace)
Scanning area	4.8(H) x 3.66(V) mm (Equivalent to 1/3 type CCD size)
Unit cell size	7.4(H) x 7.4(V) micro m (Square-grid array)
TV system	Special format (Non-conforming to EIA)
Scanning lines	525 lines
Interlace	1/60s Non-interlace mode 1/120s 2:1 Interlace mode Switching via rear-panel DIP SW
Sync system	Internal/External automatic switch-over
Aspect ratio	4:3
Video output	VS 1.0V(p-p) / 75, DC coupled, 1 line (AC as [Option])
Resolution	485 TV lines(H) 485 lines (350 TV lines)(V)
S/N	Standard: 52dB(p-p)/rms (Initial factory setting)
Illumination	Standard 400 lx (F5.6) Minimum 4 lx (F1.4) (GAIN MAX, Approx. 50% video output)
Gain	FIX (Fixed) gain: Factory-shipped preset level MANU (Manual) gain: Setting through GAIN VR FIX / MANU switching via rear-panel DIP SW
Gamma correction	Gamma = 1 (Fixed)
White-clip level	Approx. 840mV(p-p) (Excluding SYNC)
Power source	DC12V \pm 10% Ripple voltage: 50mV(p-p) or less
Power consumption	Approx. 1.5W
Internal sync	
Base clock frequency	24.545MHz (1CLK) \pm 200ppm
H sync frequency	31.468kHz (1H = 780CLK)
V sync frequency	59.94Hz (Under non-interlace) 119.88Hz (Under 2:1 interlace)
External sync	
Ext. sync input signal	HD/VD
Input level	From 2 through 5V (p-p) under high impedance From 2 through 4V (p-p) under 75-ohm input
Input impedance	75-ohm / High impedance 10k-ohm (switching via rear-panel SW)
Interlace	1/60s non-interlace or 1/120s 2:1 interlace
Polarity	Negative
Pulse width	HD: 3.2 +/- 1 micro s (LOW) VD: From 125 through 400 micro s (LOW)
Repeating frequency	fH = 31.468kHz +/- 1% fV = fH/262.5 or fH/525
Phase difference	HD/VD: 0 +/- 5.0 micro s, 1/fH/2 +/- 5.0 micro s
Electronic shutter	8 steps (OFF, 1/200s, 1/500s, 1/1000s, 1/2000s, 1/4000s, 1/8000s, 1/20000s)
External dimension	29 x 29 x 39.5(D) mm
Weight	Approximately 42g
Lens mount	C mount
Operating Condition	0 through 40 degrees C, 10 to 90% Humidity

Typical Applications

Video image capture applications for the CS8560D include extremely high-speed machine vision, factory automation, inspection, quality control, positioning and many others.

Typical Spectral Response

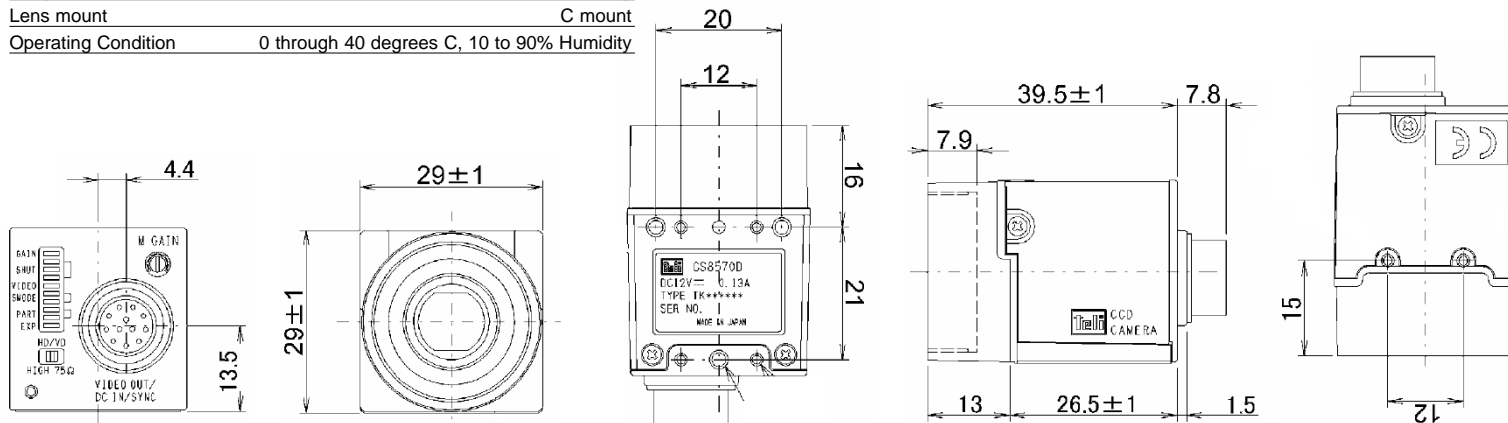
(lens characteristics and light source is not reflected in table)



DC IN/SYNC CONNECTOR ASSIGNMENT

Camera Connector: HR10A-10P-12S (Hirose Elec.)

PIN	SIGNAL		
	(STANDARD)	(OPTION)	
1	DC12V GND		
2	DC12V		
3	VIDEO GND		
4	VIDEO OUT		
5	HD GND		
6	HD IN		
7	VD IN		
8	TRIG GND	NC	
9	NC	TRIG IN	
10	WEN OUT	GND	
11	TRIG IN	DC12V	NC
12	VD GND	PARTIAL	



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