



1.5 Megapixel CCD Monochrome Camera with Camera Link™ Output

CS3960DEL



Key Features

HIGH RESOLUTION 2/3-type high pixel density CCD has 1.5 megapixel count for 1392 (H) x 1040 (V) resolution

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

CAMERA LINK™ enables fast, cost-effective set-ups plus sends images to a PC, while allowing operator to control camera functions from the PC

ALL PIXEL READOUT MODE permits all pixel signals in the effective area to be output at 1/30 second

PARTIAL SCAN MODE scans 400 lines in the center of the screen

RANDOM TRIGGER SHUTTER grabs the shot image at arbitrary timing

HIGH SPEED DRAFT READOUT reads 2 lines out of every 8 so that all signals are output in 1/100 second

SPECIFICATIONS

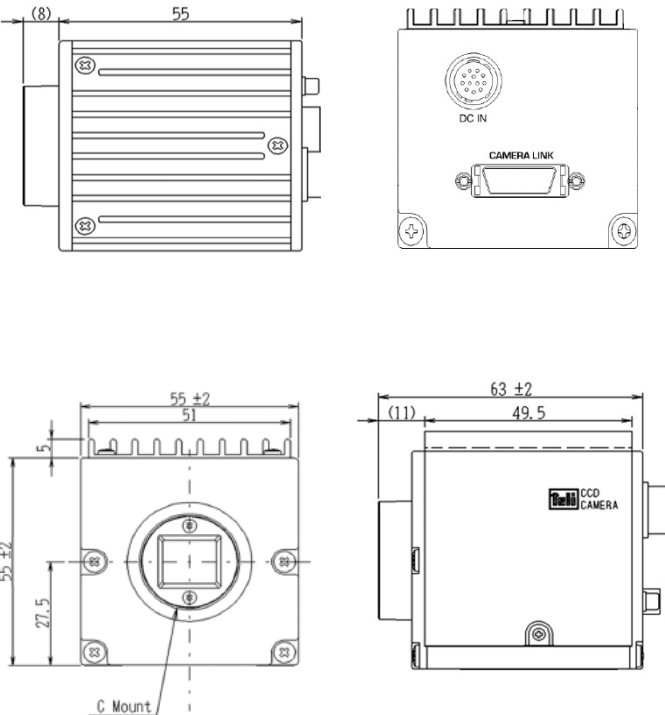
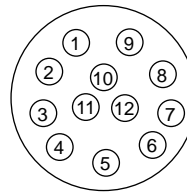
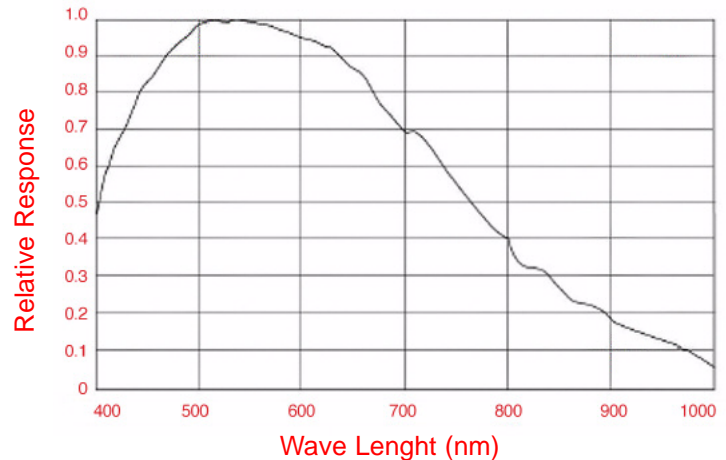
Image Sensor	2/3-type Interline CCD
Scanning System	Progressive Scan
Total Pixels	1434(H) x 1050(V)
Active Pixels	1392(H) x 1040(V)
Pixel Size	6.45(H) x 6.45(V) micron m
Frame Rate	
All Pixel Readout	30 FPS, 1392(H) x 1040(V)
Partial Scan	60 FPS, 1392(H) x 400(V)
High-Speed Draft	100 FPS, 1392(H) x 260(V)
Sync System	Internal Synch
Driving Frequency	57.28 MHz
Aspect Ratio	4:3
Subject Illumination	400 lux@F5.6, 3000K
Minimum Subject Illumination	4 lux
Video Output	Camera Link™ Compliant
Communication Speed	9600 bps
Sensitivity Setting (Gain)	0 to +12 dB (256 levels)
Gamma Correction	OFF ($\gamma=1.0$) Fixed
Electronic Shutter	1/30s to 10,000s
Multiple Shutter	ON/OFF switching
Random Trigger Shutter	ON/OFF switching (fixed, pulse width)
Power Supply Voltage	DC12V±10% (ripple 50mV(p-p) or less)
Power Consumption	3.6W
Performance Guaranteed	0 to 40°C
Operation Guaranteed	-5 to 45°C
Lens Mount	C-Mount
Flange Back	17.526 mm
Dimensions	55mm(W) x 60mm(H) x 63mm(D)
Weight	190g

Typical Applications

Video image capture applications for the CS3960DCL include machine vision, factory automation, inspection, quality control, positioning and many others.

Typical Spectral Response

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



Power Supply & Sync Signal Input/Output DC IN

Pin Number	I/O	Signal Name
1	-	GND
2	I	+12V
3	-	GND
4	-	N.C.
5	-	GND
6	-	N.C.
7	-	N.C.
8	-	GND
9	-	N.C.
10	O	WEN
11	I	TRIG
12	-	GND

Video Output/Controlling Connector (Camera Link™) MDR 26-PIN

Pin Number	I/O	Signal Name
1	-	GND
2	O	TxOUT0-
3	O	TxOUT1-
4	O	TxOUT2-
5	O	Tx CLK OUT-
6	O	Tx OUT3-
7	I	Ser TC(RxD) +
8	O	Ser TFG (TxD) -
9	I	CC1(TRIG) -
10	I	CC2 (MULTI) +
11	I	CC3-
12	I	CC4+
13	-	GND
14	-	GND
15	O	Tx OUT0+
16	O	Tx OUT1+
17	O	Tx OUT2+
18	O	Tx CLK OUT+
19	O	Tx OUT3+
20	I	Ser TFG (Rx D) -
21	O	Ser TFG (Tx D) +
22	I	CC1(TRIG) +
23	I	CC2 (MULTI) -
24	I	CC3+
25	I	CC4-
26	-	GND



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