

Preliminary

D a t a S h e e t

ITC1612D/15 Digital Camera

Narragansett **I**maging

www.nimaging.com

Applications

The **ITC1612D/15** digital camera is designed for applications in:

- **Traffic**
- **Microscopy**
- **Machine Vision**
- **Scientific**
- **Medical**



Description

The **ITC1612D/15** camera is a 1.6K x 1.2K digital camera designed for industrial digital imaging applications. The camera captures 2M pixel, high resolution images at 12 bits. Flexible acquisition modes allow continuous imaging at 15 frames per second. Triggered events can also be captured in integration control mode or edge triggered mode. The camera utilizes interline sensor technology to reduce smearing artifacts and also has built in anti blooming and electronic shutter features. Camera Link interfacing is also employed allowing off the shelf cabling from camera to frame grabber.

Features

The ITC1612D/15 has:

- KAI2000 monochrome or color progressive scan interline CCD
- 12 bit 2M pixel images at 15 frames per second
- Flexible readout modes to capture triggered or continuous events
- Single +12Vdc power supply operation
- Camera Link digital output and control interface
- Low readout noise
- Output Digital lookup table
- Anodized Extruded Aluminum Housing
- C mount lens interface

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Preliminary Data Sheet

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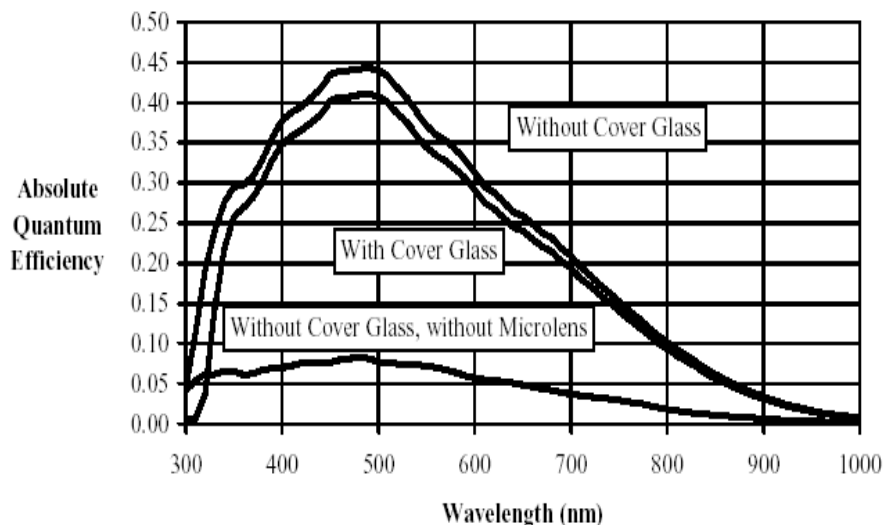
Camera Target Performance Summary:

AD Conversion 12 bit
Total RMS Dark Noise 4 DN +/- 1 DN (0db gain, $T_{int} \cong 100\mu$ Sec)
QMax 40 kel
Gain Range 0db - 24db (0.1db steps)
Pixel Frequency 32MHz
Frame Rate 15Hz
ADC input clamp 8 bits
Dynamic Range >56db
Power Requirements +12Vdc@0.54A

Sensor

The sensor is a 1600 x 1200 progressive scan interline CCD featuring an electronic shutter and antiblooming protection. The square pixels are 7.4 μ m x 7.4 μ m with an active image area of 11.8mm x 8.9mm and a image diagonal of 14.8 mm. The sensor has a Q max of 40Kel.

Figure 1. Quantum efficiency (monochrome)



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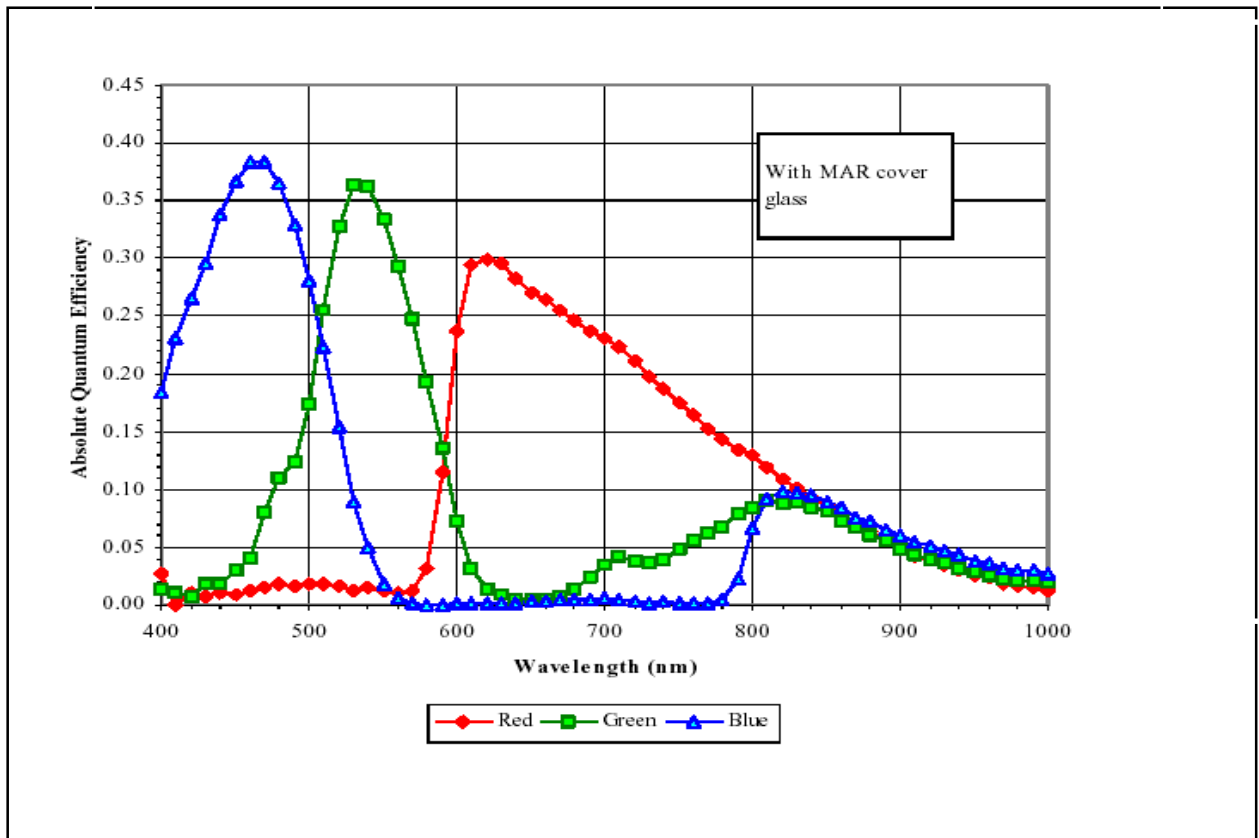
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Figure 2. Quantum efficiency (color)



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Blemish Specification:

Temperature: 40° C
Integration Time: 33 ms (40 MHz HCCD frequency, no binning, 30 fps frame rate)
Light Source: Continuous green illumination centered at 550 nm
Operation: Nominal voltages and timing

Blemish Definitions:

Name:	Definition:	Maximum Number
Major Defective Pixel	A pixel whose signal deviates by more than 25mV from the mean value of all active pixels under dark field condition or by more than 15% from the mean value of all active pixels under uniform illumination of 80% saturation.	20
Minor Defective Pixel	A pixel whose signal deviates by more than 8mV from the mean value of all active pixels under dark field conditions.	200
Cluster Defect	A group of 2 to 10 contiguous major defective pixels with a width no wider than 2 defective pixels	8
Column Defect	A group of more than 10 contiguous major defective pixels along a single column	0

Note: There will be at least two non-defective pixels separating any two major defective pixels.

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Mechanical Information:

Operating Temperature Range	0 - 55° C
Optical Interface	C-Mount with optional IR filter
Dimensions	2.72”H x 4.246”W x 4.96”L (69.1mm x 107.8mm x 126mm)
Weight	<2lbs (900g)

Digital Camera Link Connector Pin Out:

<u>P i n N u m b e r</u>	<u>S i g n a l</u>	<u>N o t e s</u>	<u>P i n N u m b e r</u>	<u>S i g n a l</u>	<u>N o t e s</u>
1	G N D		1 4	G N D	
2	T x o u t 0 -	O u t p u t L V D S	1 5	T x o u t 0 +	O u t p u t L V D S
3	T x o u t 1 -	O u t p u t L V D S	1 6	T x o u t 1 +	O u t p u t L V D S
4	T x o u t 2 -	O u t p u t L V D S	1 7	T x o u t 2 +	O u t p u t L V D S
5	T x c l k o - u t -	O u t p u t L V D S	1 8	T x c l k o u - t +	O u t p u t L V D S
6	T x o u t 3 -	O u t p u t L V D S	1 9	T x o u t 3 +	O u t p u t L V D S
7	S e r t c +	I n p u t L V D S	2 0	S e r t c +	I n p u t L V D S
8	S e r t f g -	O u t p u t L V D S	2 1	S e r t f g +	O u t p u t L V D S
9	C C 1 -	I n p u t L V D S	2 2	C C 1 +	I n p u t L V D S
1 0			2 3		

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Power Supply and I/O Connector Pin Out:

<u>C o n n e c t - o r P i n #</u>	<u>S i g n a l N a m e</u>	<u>F u n c t i o n</u>	<u>N o t e s</u>
1	+ 1 2 _ I n - p u t	P o w e r I n p u t	+ 1 2 V D C @ - < 6 0 0 m A
2	C _ G r o u - n d	P o w e r R e t u r n	+ 1 2 V R e t u r n
3	N C	S p a r e	N o c o n n e c t i o n
4	T r i g g e r	I n p u t	7 5 o h m T T L / C M O S
5	N C	S p a r e	N o c o n n e c t i o n
6	S t r o b e	O u t p u t	T T L / C M O S
7	C _ G r o u - n d	P o w e r R e t u r n	+ 1 2 V R e t u r n
8	R X _ R S	R e c e i v e c o n t r o l	R S 2 3 2 i n p u t
9	+ 1 2 _ I n - p u t	P o w e r I n p u t	+ 1 2 V D C
1 0	C _ G r o u - n d	P o w e r R e t u r n	+ 1 2 V R e t u r n
1 1	R T S	R e a d y t o s e n d	R S 2 3 2 i n p u t
1 2	N C	S p a r e	N o c o n n e c t i o n
1 3	C T S	C l e a r t o s e n d	R S 2 3 2 o u t p u t
1 4	N C	S p a r e	N o c o n n e c t i o n

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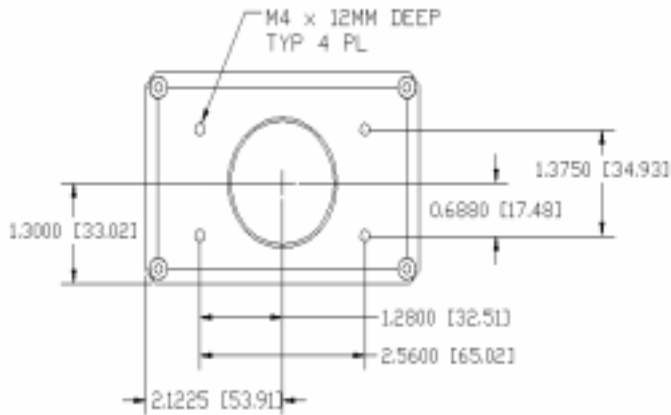
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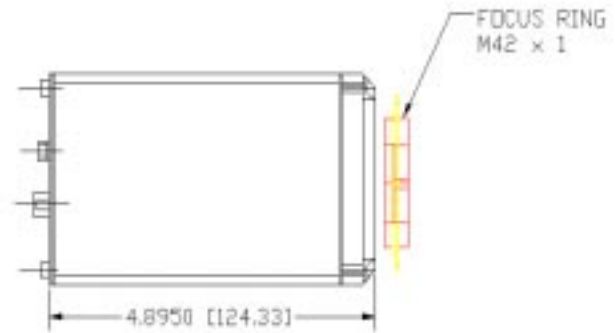
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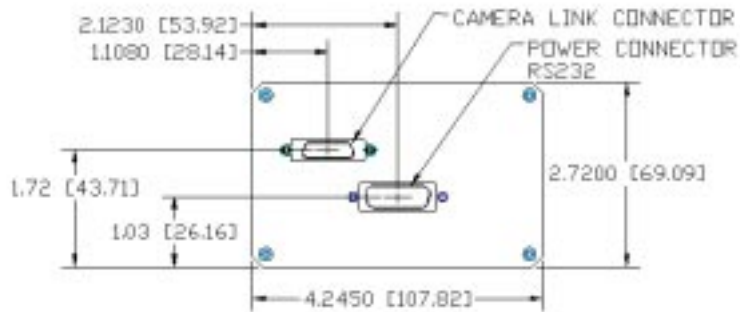
Mechanical Dimensions:



Front View



Side View



Back View

Preliminary Data Sheet

Nnarragansett**I**mapping

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