TITAN CAMERA LINE

PL-D7715

GENERAL DESCRIPTION

The Titan family of USB 3.0 cameras links together the benefits of high resolution CMOS technology with the high speed data throughput of USB 3.0 technology.   PL-D7715 color cameras provide low noise images for outstanding value in a broad range of industrial applications. The camera features a 15 megapixel (4608 x 3288) resolution imager capable of 13 fps at full resolution.

The PL-D7715 model is based on a Aptina CMOS Rolling shutter sensor with a 1/2.2" optical format. The extensive built-in image processing possibilities (image pre-processing) result in outstanding image quality, less load on the system and higher performance. These cameras provide the user choice of 8-bit or 12-bit digitization and a dynamic range of 60.5dB in 12-bit mode. The external hardware trigger and 2 general-purpose outputs ensure users have the flexibility to synchronize the camera with their processes and illumination.
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PixeLINK is the world's first industrial camera manufacturer to include an electronic, focus-controllable liquid lens in its cameras as an option. Enabling auto focus with no moving parts, our PL-D7715 camera model offers low power consumption, high shock resistance, and fast focus change.

PixeLINK's industry leading SDK uses a common API for all cameras regardless of the chosen interface. Software code developed for one camera is easily transferred to other PixeLINK models without the need to recompile. Overall system costs are reduced and camera integration is simplified.

The flexible Region of Interest (ROI) control allows users to operate at higher frame rates by placing a lower resolution "window" on the imager at any location.

Typical Applications

- High resolution imaging
- Document scanning
- Flat panel, PCB inspection
- Aerial photography

Customization - The products listed here are standard offerings. PixeLINK also provides an extensive list of customized cameras to OEM customers around the world. We may already have what you need. If not, we can certainly design and build it for you.

CAMERA FEATURES

- 15 MP (4608 x 3288) Resolution
- CMOS Rolling Shutter
- 13 fps at full resolution
- Auto Focus with VariOptic Lens
- USB 3.0
- Flexible Region of Interest
- 1 trigger input, 2 general purpose outputs (3.3V)
- Great image quality
- Compact size
- Board level and Enclosed Models
- One common API for all cameras
- Free professional technical assistance
- Tethered sensor head option 6"/12" (*Board Level version only)

- Improved Low Light Performance
- Auto & manual exposure
- Programmable LUT
- Auto & Manual White Balance
- Color Temperature
- Gain
- Saturation
- Gamma
- Binning and Decimation
- Image Flip & Rotate
- Callbacks (Image Filters)

OPTIONAL LENS FEATURES

- Variable focus from 10 cm to infinity
- Silent
- Manual Focus
- One Push Auto Focus
- Selectable Focal point

- Fully controllable through SDK and Capture OEM
- Effective Focal Length: 16 mm
- F-number: 2.8

Digital Imaging made simple

SENSOR

Sensor	Aptina CMOS MT9F002
Type	CMOS Rolling Shutter
Resolution	4608(H) x 3288(V) 15 MP Color
Pixel Pitch	1.4 µm x 1.4 µm
Active Area	6.451 mm(H) x 4.603mm(V), 7.87 mm diagonal
Max Datarate	220 MHz

PERFORMANCE SPECIFICATIONS

FPN	<1% of signal
PRNU	<2% of signal
Dynamic Range	60.5 db
Bit Depth	8 or 12-bit
Responsivity at 550 nm	0.724 V/lux-sec
Color Data Formats	Bayer 8, Bayer 16 and YUV422

MECHANICALS

Dimensions	38.5 x 55 x 30 mm (Standard enclosed version)
Weight	59.87 g (without optics)
Mounting	Holes for 0-80 hardware
Lens Mount	C-mount, *CS-mount and *S-mount

CS-Mount is only available on BL version
S-Mount available by adapter only

INTERFACES

Interface / Date rate	USB 3.0 / 5Gbps
Board Level Trigger Connector	8-pin Molex 1.25mm pitch
Enclosed Trigger Connector	Hirose round 8-pin
Trigger Modes	Software and hardware
Board Level Trigger Input	1 input, 3.3V (with internal pullup resistor)
Enclosed Trigger Input	1 optically Isolated, 5-12V DC at 4-11 mA
Board Level GPO/Strobe	2 outputs, 3.3V
Enclosed GPO/Strobe	2 outputs, 3.3V and 1 optically isolated
	max 40V DC, max 15mA

FRAME RATES

Resolution	Free Running
4608 x 3288	13
1920 x 1080	76
1280 X 1024	80
1024 x 768	102

Frame rates will vary based on host system and configuration

POWER REQUIREMENTS

Voltage Req.	5V DC (from USB connector)

BOARD LEVEL GPIO INTERFACE PIN OUTPUT DESCRIPTION

Pin	Pin Name & Function
1	3.3V power output
2	TRIGGER, 3.3V HCMOS input
3	Ground
4	GPO1, 3.3V HCMOS output
5	GPO2, 3.3V HCMOS output
6	Clock, 3.3V (I2C access for OEM's)
7	Data, 3.3V (I2C access for OEM's)
8	No connection

Board connector: Molex 53398-0871 (8-pin, 1.25mm pitch, vertical)
Cable receptacle: Molex 51021-0800
Cable crimp terminals: Molex 50079-8100

ENCLOSED GPIO INTERFACE PIN OUTPUT DESCRIPTION

Pin	Pin Name & Function
1.	VBUS (Power output from USB3 cable)
2	TRIGGER + (optically isolated)
3	TRIGGER - (optically isolated)
4	GPO1 + (optically isolated)
5	GPO1 - (optically isolated)
6	GPO1, 3.3V HCMOS output
7	GPO2, 3.3V HCMOS output
8	Ground (logic and chassis ground)

MT9F002 Sensor does not support snapshot mode. Triggering needs to be in a controlled lighting environment

SOFTWARE

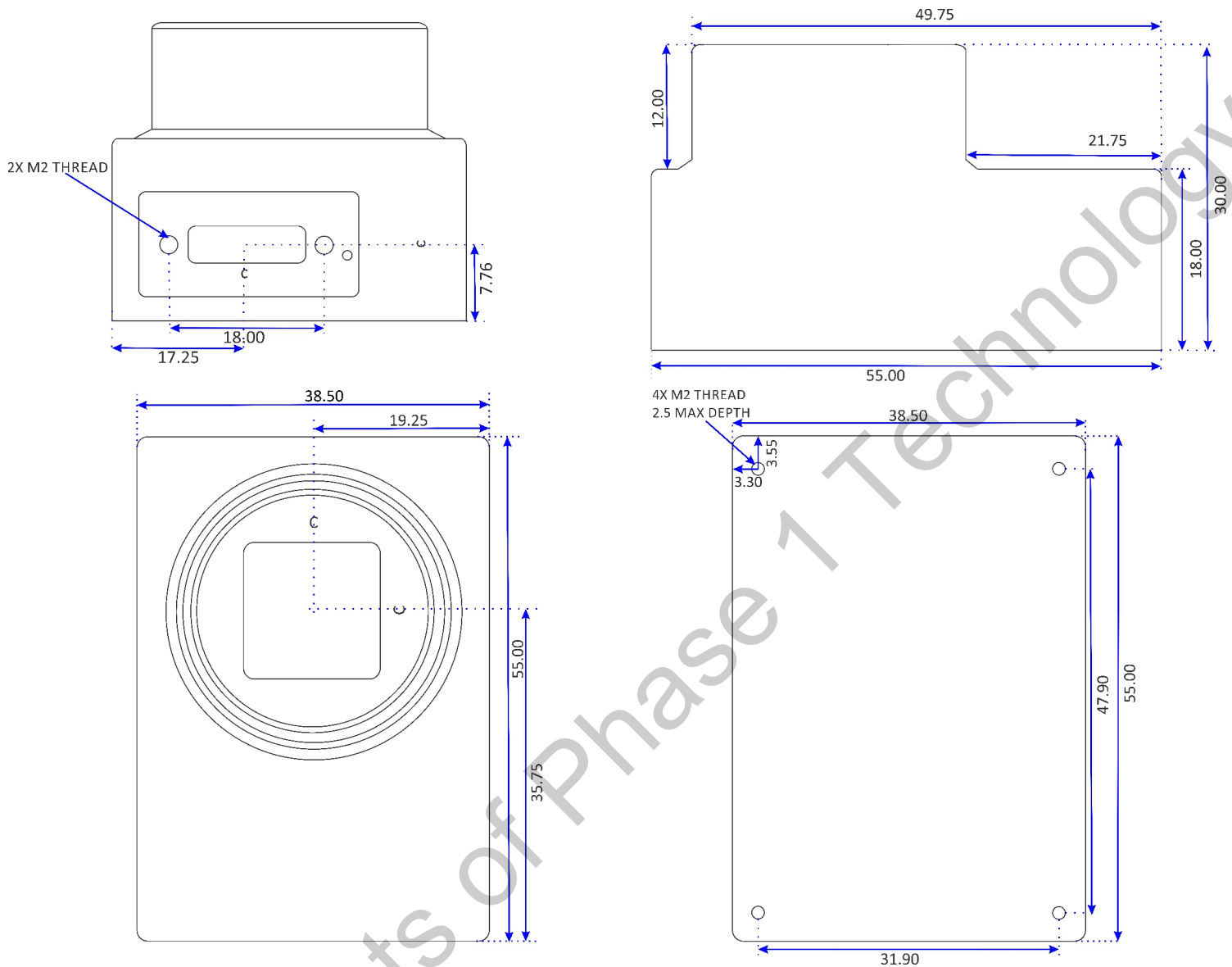|	
PixeLINK Capture OEM	Free Download (www.pixelink.com)
DirectShow	Bundled with PixeLINK Capture OEM
TWAIN	Bundled with PixeLINK Capture OEM
SDK	API, sample code and LabVIEW wrappers

ENVIRONMENTAL & REGULATORY

Compliance	FCC Class B, CE & RoHS
Shock & Vibration	300 G & 20 G (10Hz - 2KHz)
Operating Temp.	0°C to 50°C (non-condensing)
Storage Temp.	-45°C to 85°C

COMPUTER & OPERATING SYSTEM

Processor	Intel i5 or better
Memory	4 GB recommended
Operating System	Windows 7 / Windows 8
Hard Drive Space	75 MB

PixeLINK®

2X M2 THREAD

17.25
18.00
7.76

49.75
12.00
21.75
30.00
18.00
55.00

4X M2 THREAD
2.5 MAX DEPTH
3.55
3.30

38.50
19.25
55.00
35.75

38.50
47.90
55.00
31.90

Drawing is not to scale

RESPONSIVITY CURVE

R
G
B

Quantum Efficiency (%)
Wavelength (nm)

ORDERING GUIDE
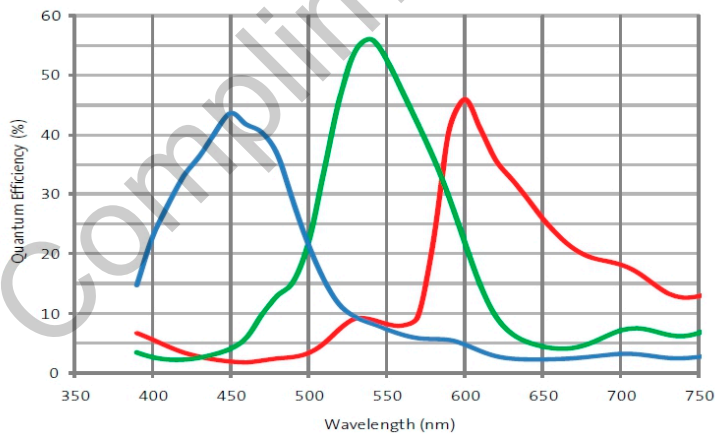
	Color
Board Level	PL-D7715CU-BL
Enclosed Model	PL-D7715CU
GPIO Enclosed Model	PL-D7715CU-T
Board Level Auto Focus	PL-D7715CU-AF-BL
Enclosed Auto Focus	PL-D7715CU-AF

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