

PROMETHEUS CAMERA LINE

PL-D725

GENERAL DESCRIPTION

The Prometheus family of USB 3.0 cameras link together the benefits of high frame rate CMOS technology with the high speed data throughput of USB 3.0 technology. PL-D725 color and monochrome cameras provide low noise images for outstanding value in a broad range of industrial applications. The camera features a 5.3 megapixel (2592 x 2048) resolution imager capable of 75 fps at full resolution.

The PL-D725 model of cameras are based on a ON Semiconductor CMOS global shutter sensor with a 1" 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 10-bit digitization and a dynamic range of 53dB in 10-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.

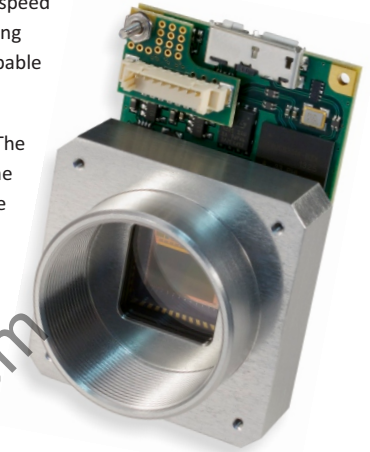
Pixeline's industry leading SDK uses a common API for all cameras regardless of the chosen interface. Software code developed for one camera is easily transferred to other Pixeline models without the need to recompile. Overall system costs are reduced and camera integration is simplified.

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

- Medical
- High performance security & surveillance applications
- Parts inspection
- Metrology and biometrics
- Welding inspection
- PCB and flat panel display inspection.

Customization - The products listed here are standard offerings. Pixeline 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

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| <ul style="list-style-type: none"> • 5.3MP (2592 x 2048) Resolution • CMOS Global Shutter • Monochrome and Color • 75 fps at full resolution • 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 <u>all</u> cameras • Free professional technical assistance • Tethered sensor head option 6"/12" (*Board Level version only) | <ul style="list-style-type: none"> • High Dynamic Range (HDR) • Auto & manual exposure • Programmable LUT • Auto & Manual White Balance • Color Temperature • Gain • Gamma • Saturation • Histogram • Binning and Decimation • Image Flip & Rotate • Callbacks (Image Filters) |
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Digital Imaging made simple

SENSOR

Sensor	ON Semiconductor CMOS
Type	CMOS Global Shutter
Resolution	2592(H) x 2048(V) 5.3 MP Color & Mono
Pixel Pitch	4.8 μm x 4.8 μm
Active Area	TBA
Peak QE	53 % at 550 nm
Max Datarate	496 MHz

PERFORMANCE SPECIFICATIONS

FPN	<1 % of signal
PRNU	<2% of signal
Dynamic Range	53 dB
Bit Depth	8 or 10-bit
Responsivity at 550 nm	24 LSB10 /nJ/cm ² , 4.6 V/lux.s
Color Data Formats	Bayer 8, Bayer 16 and YUV422
Mono Data Formats	Mono 8 and Mono 16

MECHANICALS

Dimensions	32 x 48 x 11 mm (without lens mount)
Weight	38.1 g (without optics)
Mounting	Holes for 0-80 hardware
Lens Mount	C-mount, CS-mount and S-mount

INTERFACES

Interface / Data rate	USB 3.0/ Micro-B / 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
2592 x 2048	75
1980 X 1020	183
1280 X 1024	250
640 X 480	746

Frame rates will vary based on host system and configuration

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)

POWER REQUIREMENTS

Voltage Req.	5V DC (from USB connector)
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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

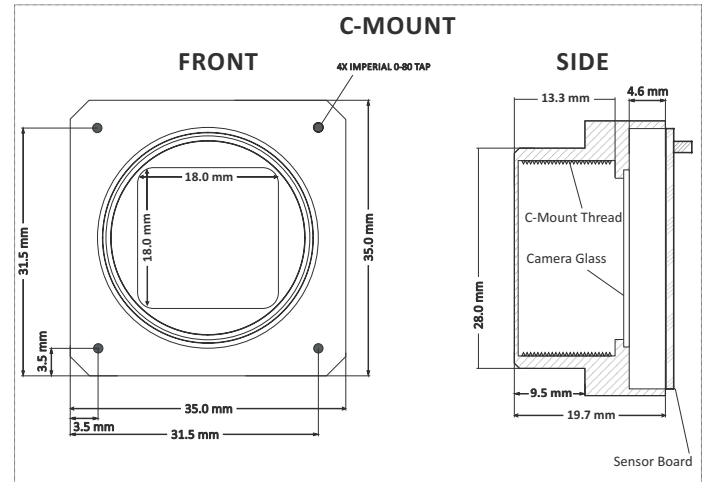
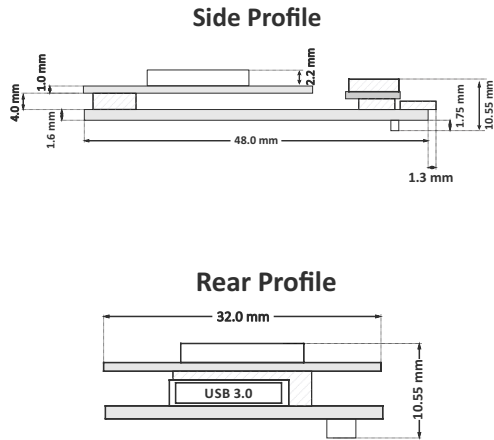
Compliance	RoHS
Shock & Vibration	300 G & 20 G (10Hz - 2KHz)
Operating Temp.	0°C to 50°C (non-condensing)
Storage Temp.	-45°C to 85°C

COMPUTER & OPERATING SYSTEM

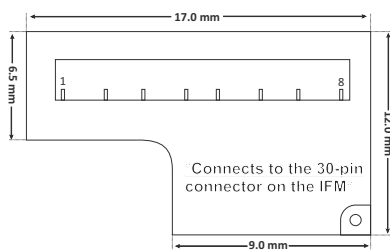
Processor	Intel i5 or better
Memory	4 GB recommended
Operating System	Windows 7 / Windows 8
Hard Drive Space	75 MB



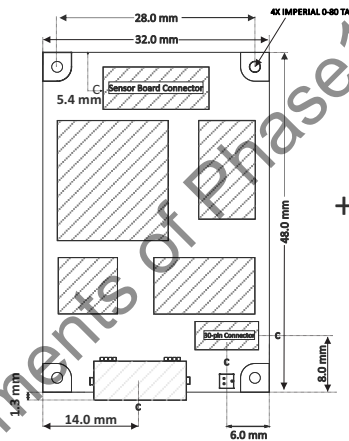
MECHANICAL DRAWINGS



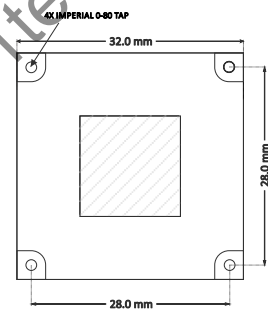
Trigger/GPO Connector Adapter



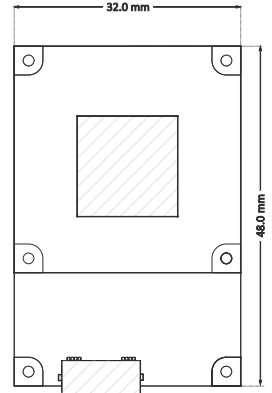
Interface Board



Sensor Board

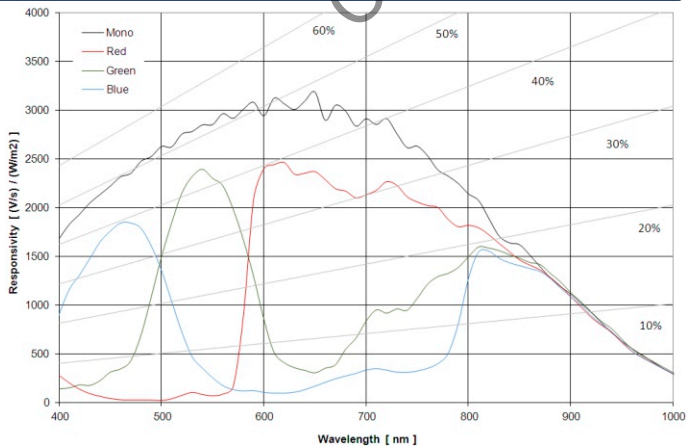


Stacked Boards



Drawing is not to scale

RESPONSIVITY CURVE



ORDERING GUIDE

Board Level Model

PL-D725CU-BL

PL-D725MU-BL

Enclosed Model

PL-D725CU

PL-D725MU