PL-D755

GENERAL DESCRIPTION

The PL-D family of USB 3.0 cameras links together the benefits of high frame rate CMOS technology with the high speed data throughput of USB 3.0 technology. PL-D755 color and monochrome cameras provide low noise images for outstanding value in a broad range of industrial applications. The camera features a 5 megapixel (2448 x 2048) resolution imager capable of 75 fps at full resolution in 8-bit mode and 68 fps in 12-bit mode.

The PL-D755 model of cameras are based on a Sony IMX250 CMOS global shutter sensor with a 2/3" 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 have a dynamic range of up to 69.5db with the 12-bit version. The external hardware trigger and 2 general-purpose outputs ensure users have the flexibility to synchronize the camera with their processes and illumination.

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
- Medical Imaging
- Parts inspection
- Metrology
- Biometrics
- PCB and flat panel display inspection.
- Microscopy

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.
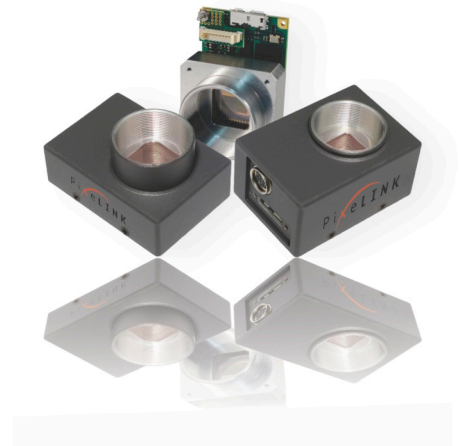
CAMERA FEATURES

- 5.01 MP (2448 x 2048) Resolution
- CMOS Global Shutter
- Monochrome and Color
- 75 fps at full resolution in 8-bit mode
- USB 3.0
- Flexible Region of Interest (8 pixel H x 32 pixel W granularity)
- 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

- Tethered sensor head option 6"/12" (*Board Level version only)
- Auto & manual exposure
- Programmable LUT
- Auto & Manual White Balance
- Gain
- Gamma
- Saturation
- Binning and Decimation
- Image Flip & Rotate
- Callbacks (Image Filters)

AUTO-FOCUS LENS FEATURES

16MM LIQUID LENS

- 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

25MM LIQUID LENS

- Variable focus from 12 cm to infinity
- Silent
- Manual Focus
- One Push Auto Focus
- Selectable Focal point
- Fully controllable through SDK and Capture OEM
- Effective Focal Length: 25 mm
- F-number: 4-22

Digital Imaging made simple

SENSOR

Sensor	Sony IMX250
Type	CMOS Global Shutter
Resolution	2448(H) x 2048(V) 5.01 MP Color & Mono
Pixel Pitch	3.45 μm x 3.45 μm
Active Area	11.1 mm diagonal
Peak QE	66% @ 525nm

PERFORMANCE SPECIFICATIONS

FPN	0.03%
PRNU	0.4
Dynamic Range	Up to 69.5db with the 12-bit version
Bit Depth	8 or 12-bit
Color Data Formats	Bayer 8, Bayer 12 packed and Bayer 16
Mono Data Formats	Mono 8, Mono 12 packed and Mono 16

MECHANICALS

Dimensions	32 x 48 x 11 mm (without lens mount)
Weight	35.8 g (without optics)
Mounting	Holes for 0-80 hardware
Lens Mount	C-mount and CS-mount

INTERFACES

Interface / Date 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 RATE

Resolution	Free Running
2448 x 2048	75 fps
1280 x 1024	159 fps
640 x 480	325 fps

*Above calculations based on fixed frame rate mode

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)

SOFTWARE

PixeLINK Capture OEM	Free Download (www.pixelink.com)
DirectShow	Bundled with PixeLINK Capture OEM
TWAIN	Bundled with PixeLINK Capture OEM
SDK (Sold Separately)	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

	Windows	Linux x86	Linux Armv7
Processor	Intel i5 or better	Intel i5 or better	Arm7 (32 bit)
Memory	4 GB recommended	4 GB recommended	2 GB
Hard Drive Space	150 MB	150 MB	50 MB
Operating System	Windows 7/8/10	Ubuntu 14.04 Desktop	Ubuntu 14.04 Desktop

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