

## SM2-D1312-TI6455-160-GB

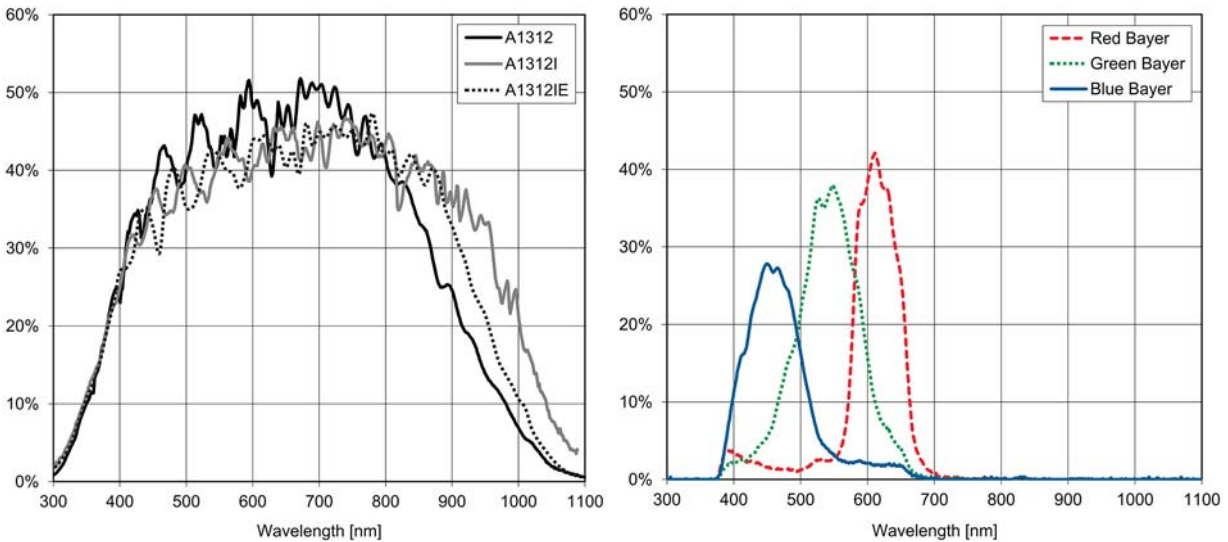
The smart camera series SM2-D1312(IE)-TI6455 is based on the Photonfocus A1312 and A1312IE CMOS image sensors with LinLog® technology. High performance 1.2GHz DSP (C6455) from Texas Instruments is implemented

### Features

- High performance 1.2GHz DSP TMS320C6455
- Eight 32-Bit instructions/cycle
- 9600MIPS
- 512MB SDRAM
- 2GB microSD card
- Photonfocus A1312 CMOS image sensor
- 1312 x 1082 pixel resolution
- Very good NIR spectral response
- Exceptional SNR up to 300: 1
- Dynamic range up to 120dB via LinLog®
- Up to 108fps @ full resolution
- Available in monochrome, enhanced NIR
- Extended sensor and camera features



## Quantum Efficiency Image Sensor



## Image Sensor Specifications

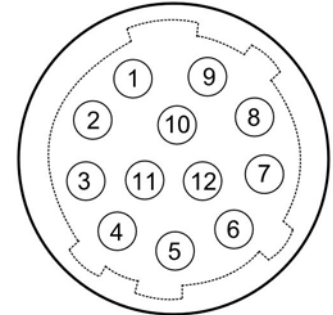
Manufacturer / Type	Photonfocus / A1312	
Technology	CMOS	
Optical format	1"	
Optical diagonal	13.6mm	
Resolution	1312 x 1082	
Pixel size	8µm x 8µm	
Active optical area	10.48mm x 8.64mm	
Dark current	4000e <sup>-</sup> /s	
Read out noise	110e <sup>-</sup>	
Full well capacity / SNR	90ke <sup>-</sup> / 300: 1	
Spectral range	Monochrome:	< 350 to 980nm (to 10% of peak responsivity)
	NIR Enhanced:	< 320 to 1000nm (to 10% of peak responsivity)
Responsivity	Monochrome:	295 x 10 <sup>3</sup> DN / (J/m <sup>2</sup> ) @ 670nm / 8bit
	NIR Enhanced:	305 x 10 <sup>3</sup> DN / (J/m <sup>2</sup> ) @ 850nm / 8bit
Quantum Efficiency	Monochrome:	> 50%
	NIR Enhanced:	> 50%
Optical fill factor	> 60%	
Dynamic range	60dB in linear mode; 120dB with LinLog®	
Characteristic curve	Linear, LinLog®	
Shutter mode	Global shutter	

## Camera Specifications

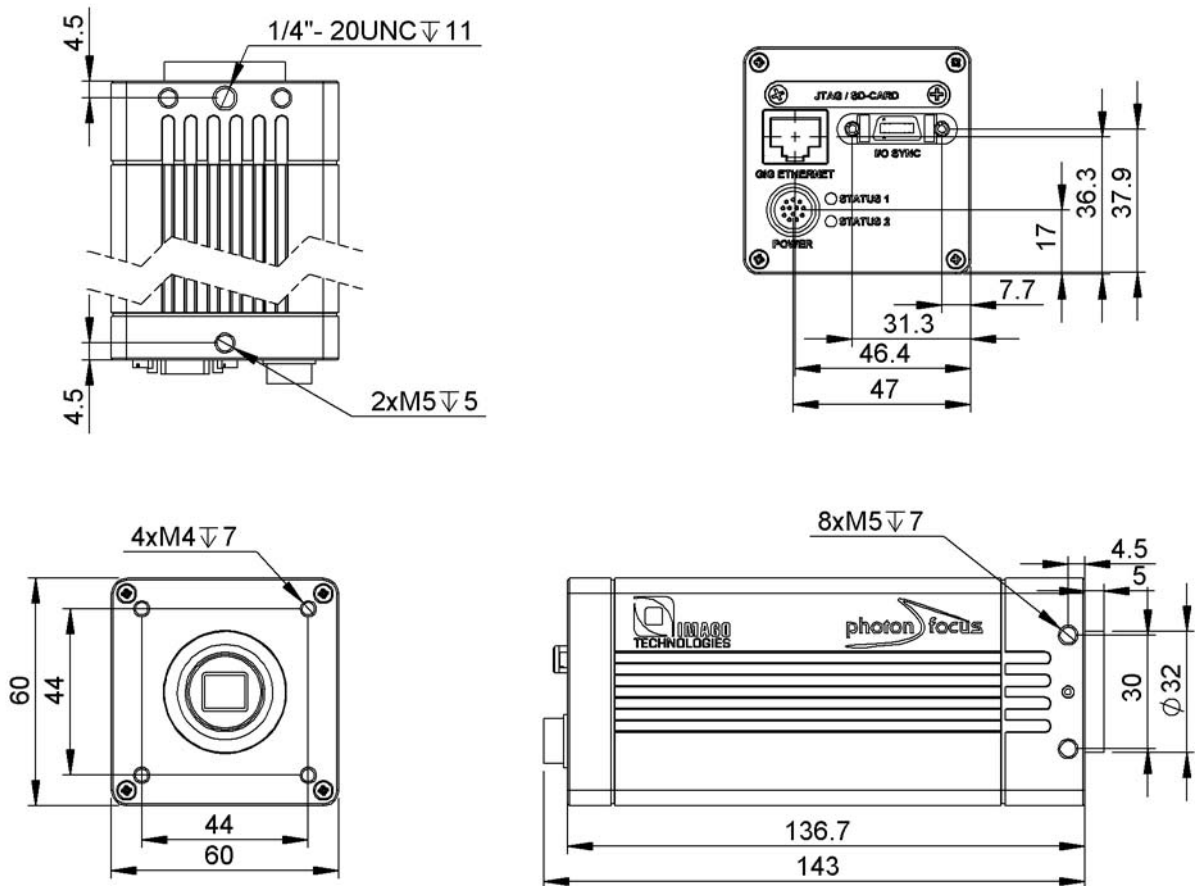
Interface	GigE
Frame rate	108fps
Pixel clock	80MHz
Camera taps	2
Greyscale resolution	8Bit / 10Bit / 12Bit
Fixed pattern noise (FPN)	< 1DN RMS @ 8bit
Exposure time range	10 $\mu$ s - 419ms
Analog gain	n/a
Digital gain	0.1 to 15.99 (FineGain)
Trigger Modes	Free running (non triggered), external Trigger, SWTrigger, RS-422
Features	Configurable region of interest (ROI), Up to 512 regions of interest (MROI), Decimation in y-direction, Image correction, 2 look-up tables (12-to-8Bit) on user-defined image region (Region-LUT), Constant frame rate independent of exposure time, Crosshairs overlay on the image, 3x3 convolver for image preprocessing, Temperature monitoring of sensor and camera, Camera informations readable over SDK, Ultra low trigger delay and low trigger jitter, Extended trigger input and strobe output functionality, Status line in picture, High performance 1.2GHz DSP TMS320C6455, Eight 32-Bit instructions/cycle, 9600MIPS, 512MB SDRAM, 2GB microSD card
Operation temperature / moisture	0°C ... + 50°C / 20% ... 80%
Storage temperature / moisture	-25°C ... 60°C / 20% ... 95%
Power supply	+12VDC (-10%) ... +12VDC (+10%)
Power consumption	< 8.8W
Lens mount	C-Mount (CS-Mount optional)
I/O Inputs	3x Opto-isolated 3x RS-422 Opto-isolated
I/O Outputs	3x Opto-isolated 3x RS-422 Opto-isolated
Dimensions	60 x 60 x 135mm <sup>3</sup>
Mass	600g
Connector I/O (Power)	Hirose 12-pole (mating plug HR10A-10P-12S)
Connector Interface	RJ-45
Conformity	CE / RoHS / WEEE
IP Code	IP20

## Connectors

Pin	I/O Type	Name	Description
1	PWR	CAMERA_GND	Camera GND 0V
2	PWR	CAMERA_PWR	Camera Power 12VDC ( $\pm 10\%$ )
3	O	OPTO_OUT0 (Strobe)	Strobe control (opto-isolated)
4	O	OPTO_OUT1 (Strobe)	Strobe control (opto-isolated)
5	O	OPTO_OUT2 (Strobe)	Strobe control (opto-isolated)
6	PWR	OUT_VCC	Power supply +5 .. +15VDC for output signals
7	O	RS232-TX	Serial interface
8	I	RS232-RX	Serial interface
9	I	OPTO_IN0	External trigger (opto-isolated), +12 .. +24VDC
10	I	OPTO_IN1	External trigger (opto-isolated), +12 .. +24VDC
11	I	OPTO_IN2	External trigger (opto-isolated), +12 .. +24VDC
12	PWR	IN_GND	GND



## Dimensions



## Explanation

DN	DigitalNumber (equals to LSB)
e <sup>-</sup>	Electrons
MIPS	Million Instructions Per Second

## Order Information

SM2-D1312-TI6455-160-GB-12	BW model
SM2-D1312IE-TI6455-160-GB-12	NIR-Enhanced model

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