

CMOS Cameras

HURRICANE/THUNDER SERIES

High-Dynamic CMOS Cameras

Benefits

- Image tag with main acquisition parameters
- 12 bit digital output resolution
- Superior SNR (Signal to Noise Ratio)
- Opto isolated trigger and strobe I/Os
- Multiple Regions of Interest (MROI)
- CameraLink™ and USB2.0 interfaces
- Ultra low trigger delay and jitter
- Shading and gamma corrections
- LinLog™ functionality
- Up to 120 dB dynamic range
- Look-up table (LUT)



HURRICANE-40

Application examples

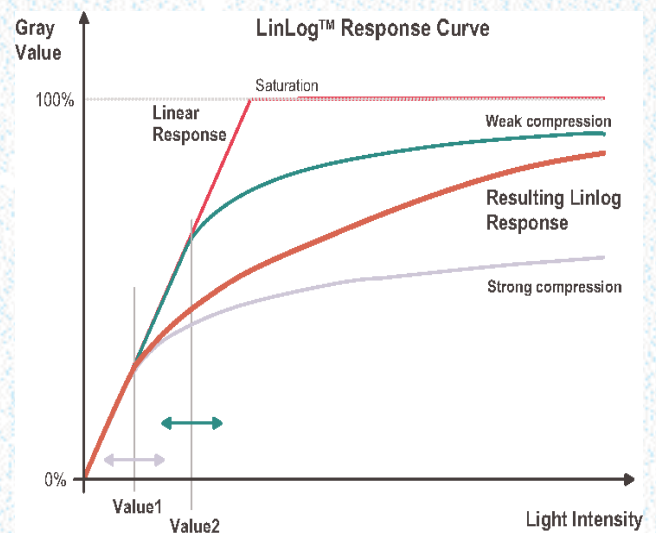
Machine vision

- Standard vision applications
- PCB inspection
- Welding & soldering
- Laser triangulation
- Packaging inspection
- Quality control
- Keyhole analysis

Motion analysis

- Slow-motion sequences
- Biomedical applications

Visit our website www.photonfocus.com for application reports.



HURRICANE / THUNDER

High-Dynamic CMOS Cameras

- Digital monochrome CMOS cameras with 1024 x 1024 or 752 x 582 pixels
- Up to 87 frames per second with full resolution
- Up to 120 dB dynamic range with LinLog™ technology
- Up to 12 bit digital output
- User defined shading and gamma corrections
- Look-up table (LUT) and image information line
- Up to 17 selectable windows (MROI)
- CameraLink™ or USB2.0 interfaces
- Unique trigger and strobe control
- Opto-isolated trigger and strobe I/Os

	HURRICANE-40		THUNDER-90	
Image Sensor				
Technology	CMOS active pixel			
Scanning system	Progressive scan			
Optical format / diagonal	1" / 15.42 mm		3/4" / 10.12 mm	
Resolution	1024 x 1024 pixels		752 x 582 pixels	
Pixel size	10.6 x 10.6 µm ²			
Active optical area	10.9 x 10.9 mm ²		8.0 x 6.2 mm ²	
Random noise	< 0.5 DN RMS @ 8 bit / gain = 1			
Fixed pattern noise (FPN)	< 1.0 DN RMS @ 8 bit / gain = 1 / offset correction on			
Dark current	2 fA/pixel @ 30 °C			
Full well capacity	200 ke ⁻			
Spectral range	400 nm ... 900 nm			
Responsivity	120 x 10 ³ DN / (J/m ²) @ 610 nm / 8 bit / gain = 1 (approximately 350 DN / (lux s) @ 610 nm / 8 bit / gain = 1)			
Optical fill factor	35%			
Dynamic range	Up to 120 dB with LinLog™			
Colour format	Monochrome			
Characteristic curve	Linear, LinLog™, Skimming			
Shutter mode	Global shutter			
Readout mode	Sequential integration and readout			
Camera				
Exposure time	10 µs ... 0.41 s / 25 ns steps			
Frame rate CL	37 fps		87 fps	
Frame rate USB2.0	Up to 37 fps (mode & bitdepth dependent)		Up to 87 fps (mode & bitdepth dependent)	
Pixel clock	40 MHz			
Camera taps	1			
Greyscale resolution	12 bit / 10 bit / 8 bit			
Analogue gain	1			
Digital gain	1 or 2 or 4			
Configuration interface	CL SERIAL (9600 baud)			
Trigger modes	• Free running (non triggered) • Interface trigger • I/O trigger			
Features	• (Multiple) Regions of interest (ROI/MROI) • On camera shading correction • Decimation in x / y direction • Look-up table • Image information • Enhanced trigger features • Skimming • LinLog™ • Trigger input • Strobe output			
Interfaces	CameraLink™ base configuration	USB 2.0	CameraLink™ base configuration	USB 2.0
Operating temperature	0 °C ... + 60 °C			
Power supply	+ 12 V DC +/- 10%			
Power consumption	1.6 W	3.0 W	1.6 W	3.0 W
Lens mount	C-Mount (CS-Mount optional)			
Dimensions (C-Mount)	55 x 55 x 39 mm ³	55 x 55 x 49 mm ³	55 x 55 x 39 mm ³	55 x 55 x 49 mm ³
Mass	200 g	210 g	200 g	210 g
Conformity	CE / UL			
Special	Adjustable backfocus			
Software				
Camera control	PFRemote™ graphical user interface (GUI) and PFLib (SDK); for USB: MicroDisplay GUI + SDK			

For more information about our worldwide distributors please visit our website.
Photonfocus cannot be held responsible for any technical or typographical errors.

