Megapixel 3D-Cameras
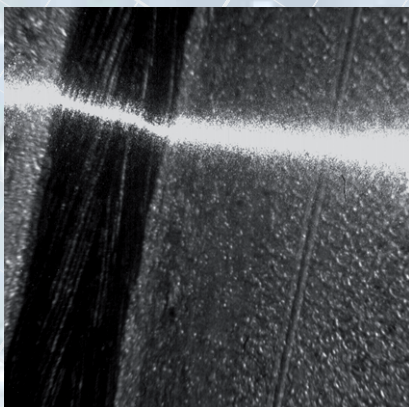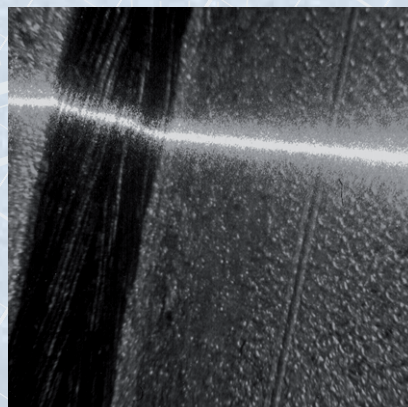
MV-D1024E-3D01

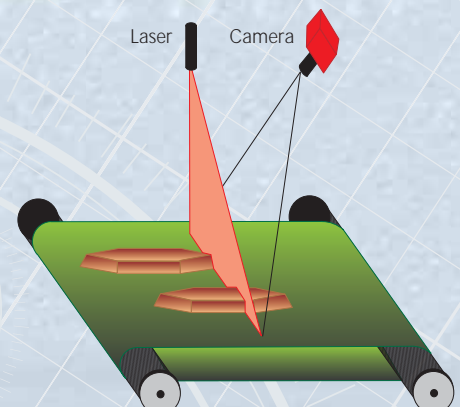## 3D camera for laser triangulation applications

Features

– 1024 x 1024 pixel resolution
– Global shutter
– LinLog® functionality
– High dynamic range up to 120 dB via LinLog®
– Flexible ROI and MROI
– CameraLink® interface
– Accurate and robust Peak Detector algorithm
– Simultaneous 2D and 3D inspections possible
– Fast sampling of profiles through horizontal and vertical windowing
– Subpixel accuracy with new Peak Detector algorithm
– No additional calculations or PC are needed to obtain height profile

Standard camera
with linear response (< 60 dB)

Photonfocus CMOS camera
with LinLog® response (120 dB)

Conveyor belt with objects

Laser   Camera

MV-D1024E-3D01-160-CL

Image Sensor

Technology	CMOS active pixel
Scanning system	Progressive scan
Optical format / diagonal	1″ / 15.42 mm
Resolution	1024 x 1024 pixels
Pixel size	10.6 µm x 10.6 µm
Active optical area	10.9 mm x 10.9 mm
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/m²) @ 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
Read out mode	Sequential read out or simultaneous read out (read out during exposure)

Camera

Exposure time	10 µs ... 0.41 s / 25 ns steps
Frame rate	110 fps
Pixel clock	80 MHz
Camera taps	2
Greyscale resolution	12 bit / 10 bit / 8 bit
Analogue gain	1
Digital gain	1 or 2 or 4
Configuration interface	CL SERIAL (9600 baud or 57600 baud, user selectable)
Trigger modes	• Free running (non triggered) • Interface trigger • I/0 trigger
Features	• (Multiple) Regions of interest (ROI/MROI) • On-camera shading correction • Decimation in y direction • Look-up Table • Image information • Enhanced trigger features • Skimming • LinLog® • Trigger input • Strobe output
Interfaces	CameraLink® base configuration
Operating temperature	0 °C – +50 °C
Power supply	+12 V DC (+/-10 %)
Power consumption	3.7 W
Lens mount	C-Mount (CS-Mount optional)
Dimensions (C-Mount)	55 x 55 x 41 mm³
Mass	210 g
Conformity	CE / RoHS / WEEE
Special	Adjustable backfocus

Software

Camera control	PFRemote™ graphical user interface (GUI) and PFLib (SDK)