

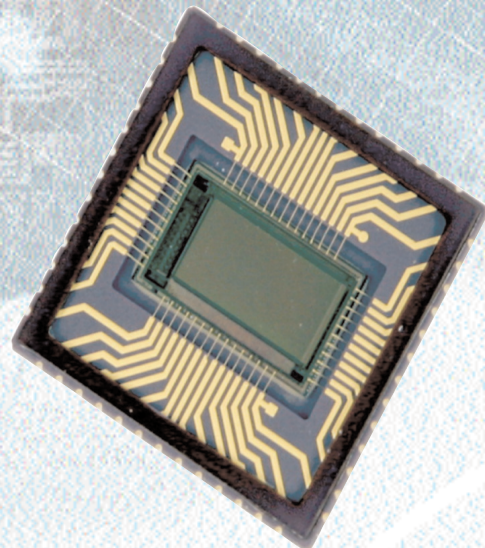
CMOS Imagers

EMPHIS-300

The Tailored System-on-a-Chip

Benefits

- Wide temperature range
- System-on-Chip (SoC)
- Image tag with main acquisition parameters
- Integrated UART interface
- General purpose outputs
- Low power consumption
- Region of Interest (ROI)
- LinLog™ functionality
- 10 bit digital output
- Hard and soft trigger



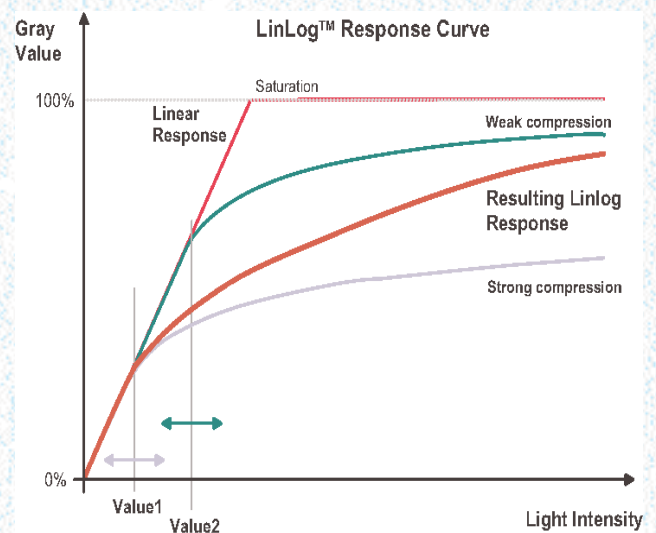
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Application examples

Machine vision

- Standard vision applications
- Cost-sensitive applications
- Suitable for smart sensors & cameras
- Welding & soldering
- Laser triangulation
- Pick and place applications
- Line scan applications
- Chip-on-board applications
- Quality control
- Process control

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



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The Tailored System-on-a-Chip

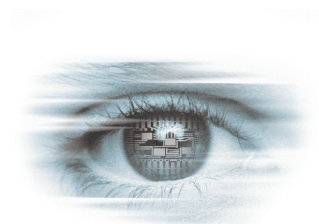
- Digital $\frac{2}{3}$ " CMOS imager with 750 x 400 pixels resolution
- Up to 60 frames per second with full resolution
- Up to 120 dB dynamic range with LinLog™ technology
- No motion artefacts due to global shutter
- No image lags, no smear, no blooming
- Wide temperature range: - 40 ... + 105 °C
- Region of Interest (ROI)
- 10 bit digital output
- Low power consumption
- Evaluation kit with USB2.0 interface available

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Image Sensor

Technology	CMOS active pixel
Scanning system	Progressive scan
Optical format / diagonal	$\frac{2}{3}$ " / 9.0 mm
Resolution	750 x 400 pixels (active 748 x 400)
Pixel size	10.6 x 10.6 μm^2
Active optical area	7.95 x 4.3 mm ²
Colour format	Monochrome
Frame rate	60 fps
Shutter mode	Global shutter
Shutter efficiency	> 99.5%
Dynamic range	Up to 120 dB (with LinLog™)
Spectral range	380 nm ... 950 nm
Programmable Gain	1 ... 8
Responsivity	480 x 10 ³ DN / (J/m ² @ 610 nm / 10 bit / gain = 1) (approximately 1400 DN / (lux s) @ 610 nm / 8 bit / gain = 1)
Readout mode	Sequential integration and readout
Characteristic curve	Linear, LinLog™, Skimming
Random noise	< 1.5 DN RMS @ 10 bit / gain = 1
Fixed pattern noise (FPN)	< 15 DN RMS @ 10 bit / gain = 1
Dark current saturation time	2 s @ 20 °C
Optical fill factor	35%
Full well capacity	200 ke ⁻
Exposure time	10 μs ... 52 ms
Pixel clock	20 MHz
Greyscale resolution	10 bit
Minimum ROI	16 x 1 pixel
Features	• Region of Interest (ROI) • General purpose outputs (2) • Integrated UART interface • LinLog™ • Trigger input
Operation temperature	- 40 °C ... + 105 °C
Power supply	+ 3.3 V DC + / - 10% and + 4.2 V DC + / - 5%
Power consumption	< 300 mW
Package	CLCC52 or die
Conformity	refer to user manual

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THE PERFECT EYE