

PicoStar UF 12

intensified, gated, CCD camera
system with exposure times
down to 50 ps

LaVision's **PicoStar UF 12** is an intensified, gated, camera system featuring exposure times down to 50 ps; 12 bit CCD camera, excellent signal to noise ratio; pixel readout rate 16 MHz. It is suitable for applications in time-resolved imaging and spectroscopy in conjunction with pulsed lasers. Image intensifiers with different photocathode types (S20, S25) are available. The camera system consists of an image intensifier coupled to the CCD camera via a relay lens, intensifier control unit, high precision delay unit and a system computer with TTL I/O board. All intensifier and CCD camera functions, peripheral devices as well as image acquisition and processing are controlled via LaVision's proprietary Windows compatible DaVis software.

General System Specifications:

Gate widths	triggered: 50, 100, 150, 200 ps, 1..3 ns gated: 10 ns -1 ms
System dynamic	> 2000:1
Spatial resolution	< 15 lp/mm
Spectral range	S20,S25 or S20G
Sensitivity	> 100 counts/photoelectron @ max. gain
Lens connector	Nikon-F or optional C-mount

CCD Camera

Sensor	Interline Progressive Scan with „lens-on-chip“
Average dark current	< 0.1 e-/pixel.sec
Digitization/readout rate	12 bit @ 16 MHz
Readout noise	4...5 e- (high gain); 5...6 e- (low gain)
Frame rate	10 frames/s
Binning	Horizontal (1...8), Vertical (1...32), ROI (min. 32x32 pixel)
Active image array	1370 (H) x 1040 (V)
Pixel size	6.45 µm x 6.45 µm
Max. quantum efficiency	65% @ 550 nm
A/D conversion factor	2 e-/count (high gain); 4 e-/count (low gain)
Antiblooming	Standard: > 1000; Low Light: > 4
Cooling	2-stage Peltier with forced air regulated to -12°C
Exposure control	var. exposure time (1 ms-1000 s),
Camera interface	PCI, data transfer (coax; FOL optional), control output, trigger input

LA VISION GMBH

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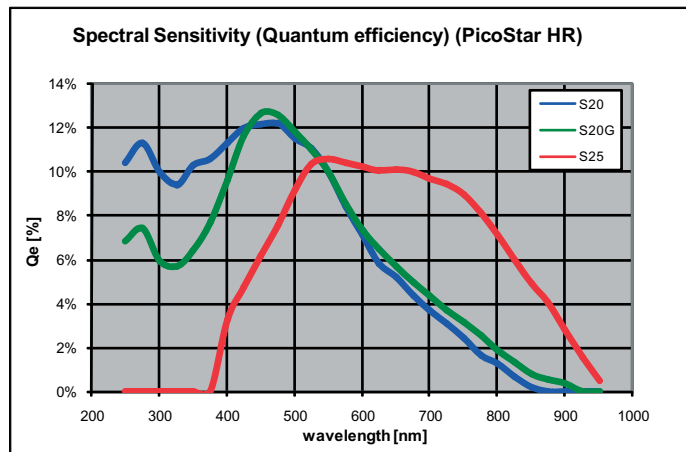
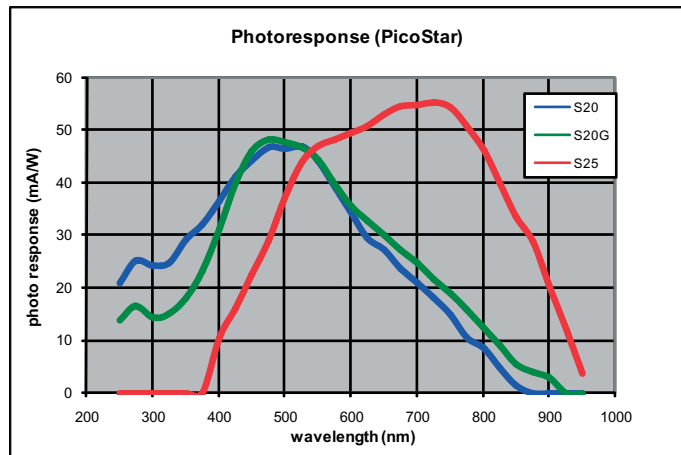
WE COUNT ON PHOTONS

Image Intensifier Head and Electronics

Design	18 mm, gen. II single stage MCP
Open aperture diameter	>12 mm
Phosphor	P43 (1% decay time: 3 ms)
Coupling to CCD	lens coupling ($\eta > 12\%$; 1:2.17)
Vignetting	< 3%

Gate widths:

Fast gate mode (triggered)	50, 100, 150, 200 ps; 1, 2, 3 ns
Slave gate mode	slave to TTL (10 ns...1 ms)
Gating repetition rate	up to 10 kHz
Jitter (fast gate mode)	< 10 ps
Trigger	TTL (rise time < 5 ns)
Intrinsic delay	< 20 ns (typ.)



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LaVision's DaVis software

High performance Windows compatible software featuring camera control, single and continuous image grabbing, burst mode, powerful image and data processing tools, 3D on-screen graphics, process control via macro programs, binning, skipping and windowing, TTL synchronisation and control of peripheral devices such as laser, spectrograph, stepper motor, shutter, oscilloscope and other devices. Communication: RS232.

Ordering Information

part number	Description
1101104	PicoStar UF 12, S 20 photocathode
on request	PicoStar UF 12, S 20G photocathode
on request	PicoStar UF 12, S 25 photocathode
1108055	Sync. Board type PTU basic
1108029	Picosecond Delay Generator 0-20 MHz

Data provided by LaVision is believed to be true. However, no responsibility is assumed for possible inaccuracies or omissions. All data are subject to change without notice.

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