VISIBLE SINGLE-PHOTON COUNTER

ID120 HIGH QUANTUM EFFICIENCY AT 650NM AND AT 800NM LARGE ACTIVE AREA 500UM

IDQ's ID120 series consists of compact and affordable single-photon detector modules based on a reliable silicon avalanche photodiode sensitive in the visible spectral range. Up to now, the ID100 series was limited to detectors with high efficiency values in the green region (around 500nm). The two new detectors of the ID100 series have high efficiency values in the red region of the visible spectrum and a ultra high active area. These new detectors come as :

- free-space module, passive quenching, maximal efficiency value around 650nm
- free-space module, passive quenching, maximal efficiency value around 800nm

Those two detection modules are highly versatile thanks to an USB connection and a Labview interface allowing the user to change the bias voltage and the temperature of the diode. The modules are equipped with a dual universal output signal port which can be set through the software interface. The modules are compatible with C-mount, SM1 and cage technologies from Thorlabs. This allows an easy coupling of the light beam onto the active area of the detectors.

KEY FEATURES

- 60% Quantum Efficiency at 650nm
- 80% Quantum Efficiency at 800nm
- Tunable quantum efficiency
- Tunable temperature of the diode
- Adjustable deadtime
- Universal dual output
- Labview interface
- C-mount, SM1, cage compatible
- Integrated electronic counter (optional)

APPLICATIONS

- Time correlated single photon counting (TCSPC)
- Fluorescence and luminescence detection
- Single molecule detection, DNA sequencing
- Fluorescence correlation spectroscopy
- Spectrophotometry
- Laser scanning microscopy

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IDQ
FROM VISION TO TECHNOLOGY

Best-in-Class Performance

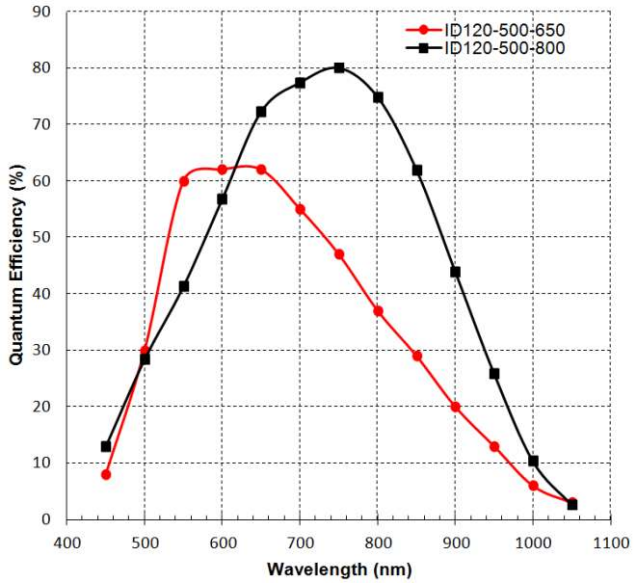
VISIBLE SINGLE-PHOTON COUNTER

SPECIFICATIONS

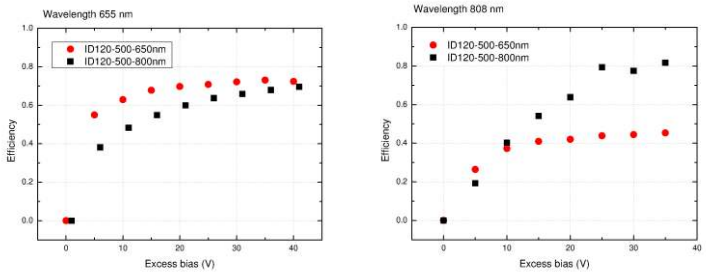
The ID120 is a versatile device allowing you to adjust the excess bias, the deadtime and the temperature. Please note that the values in the specification table are dependent on the user-defined parameters. To have a fair overview of the specifications, it is recommended to carefully review the curves «Efficiency vs excess bias» and «Dark count rate vs temperature».

	ID120-500-650nm			ID120-500-800nm			
Parameter	Min	Typical	Max	Min	Typical	Max	Units
Wavelength range	350		1000	350		1000	nm
Active area		500		500		um	
Single-photon detection probability (SPDE)							
at 650nm (at max. excess bias)			60			55	%
at 800nm (at max. excess bias)			40			80	%
Dark Count Rate							
Down to		500				200	Hz
Timing resolution [FWHM]	200	400	1000	200	400	1000	ps
Deadtime		1			1		us
Output pulse		NIM & LVTTL & Variable			NIM & LVTTL & Variable		
Output pulse width		100			100		ns
Storage temperature	-40		70	-40		70	°C

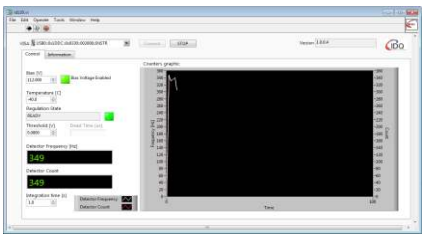
1 Quantum efficiency vs lambda



2 Efficiency vs excess bias at 655nm and 808nm



3 Software



Delivered with software to:
- display count rate
- control quantum efficiency
- control deadtime
- control temperature

ORDERING INFORMATION

ID120-500-650nm	Photon counter with 500mm active area. for 650nm
ID120-500-800nm-STD	Photon counter with 500mm active area for 800nm with DCR < 3000Hz
ID120-500-800nm-ULN	Photon counter with 500mm active area for 800nm with DCR < 200Hz

Supplied accessories: USB cable, power supply, USB memory stick including software, adapter to mount Thorlabs components.