

Near-infrared Single Photon Detector



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Near-infrared Single Photon Detector

Near-infrared single photon detector is an extremely weak light detector operating in gating mode. It has one or two independent channels, which can detect single photon light pulses with 10%/20% detection efficiency, low dark counting rate and low post-pulse probability. The gating frequency can be up to 100MHz in either internal or external trigger mode. The trigger delay and trigger level is adjustable in external trigger mode.

The instrument integrates control panel and a 7"IPS touch screen which could show counts, waveform, and counting statistics. It has intelligent delay scanning for quickly matching the gate to the light pulse.

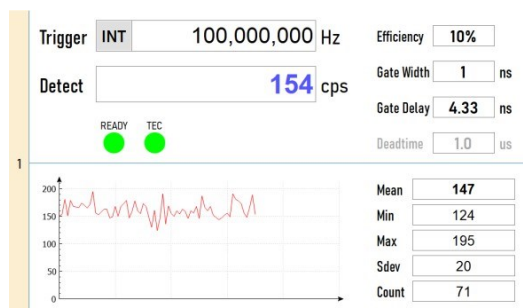
Features

- Gating frequency up to 100MHz
- Internal trigger or external trigger mode
- 10% or 20% single photon detect efficiency [1]
- Adjustable trigger delay
- Intelligent delay scanning
- Adjustable trigger level, any level input
- Gate synced output
- Adjustable dead time
- Low DCR and after pulse probability
- 7"IPS touch screen

Applications

- Quantum optics
- Quantum key distribution
- Quantum imaging
- SPAD test
- Laser ranger
- Fluorescent life

7"IPS touch screen software interface



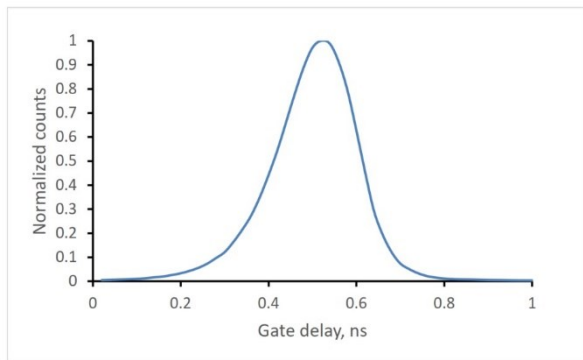
Product Specifications

General Specification	
Detection Wavelength	900~1700nm
External Trigger Freq.	0.1-100MHz
Internal Trigger Freq.	1-100MHz any integer
Trigger Delay Adjustment	0~20ns, 10ps step
Internal Trigger Phase Adjustment	0~1us, 0.2ns step
Gating Width	1ns typ.
Single Photon Detect Efficiency [1]	10%,20% for option
Dark Count Rate	≤2e-6/gate @10% SPDE
After Pulse Probability	≤3% @10% SPDE
Dead Time Adjustment	0-100us, 10ns step
Cooling Time	≤5min
Operating Temperature	0~35 °C
Power Supply	100-240VAC 50/60Hz
Power Dissipation	<75W
Dimensions (WxDxH)	300 x 388.2 x 146.3 mm
Net Weight	8.5Kg

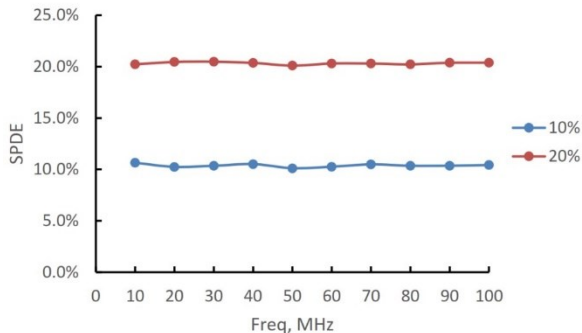
Note:

[1] SPDE calibrated at room temperature 25°C and 1550nm wavelength

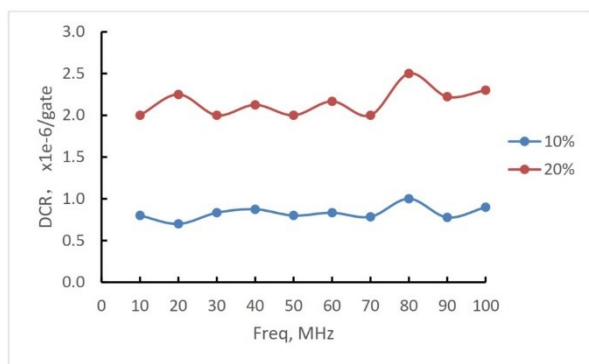
Typical Measurements



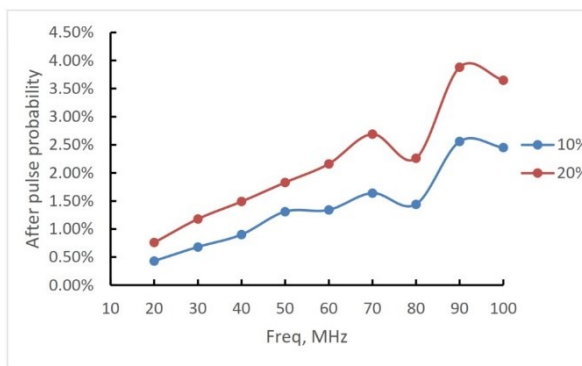
Active Gate Width
(Gate width = 1 ns)



SPDE vs Gate Frequency
(SPDE=10%, 20% @1550nm)

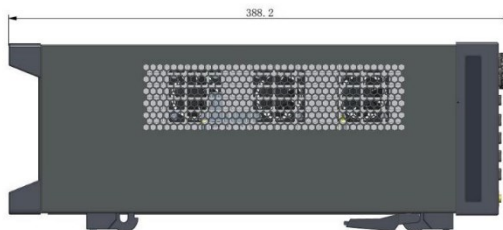


DCR vs Gate Frequency
(SPDE=10%, 20% @1550nm)



After Pulse Probability vs Gate Frequency
(SPDE=10%, 20% @1550nm)

Dimensions (Unit: mm)



Ordering Information

SPD-303 Near-infrared Single Photon Detector 900 – 1700 nm

SPD-304 Near-infrared Dual-channel Single Photon Detector 900 – 1700 nm