PhotoniQ Data Acquisition System Selection Guide

PhotoniQ






	IQSP418	IQSP480	IQSP482	IQSP518	IQSP580	IQSP582
Channels	2, expandable to 8 with option XCH401	32	64	2, expandable to 8 with option XCH501	32	64
Resolution	16 bits	16 bits	16 bits	14 bits	14 bits	14 bits
Dynamic Range	96 dB	96 dB	96 dB	84 dB	84 dB	84 dB
Maximum Charge	2 x 10^{-9} coulomb	2 x 10^{-9} coulomb	2 x 10^{-9} coulomb	500 x 10^{-12} coulomb	500 x 10^{-12} coulomb	500 x 10^{-12} coulomb
Maximum Equivalent Photons (with PMT Gain of 10^6)	12,484 photons	12,484 photons	12,484 photons	3,121 photons	3,121 photons	3,121 photons
Input Noise Charge (RMS)	30 X 10^{-15} coulomb	30 X 10^{-15} coulomb	30 X 10^{-15} coulomb	55 X 10^{-15} coulomb	55 X 10^{-15} coulomb	55 X 10^{-15} coulomb
Equivalent Input Noise Photons (with PMT Gain of 10^6)	0.19 photons	0.19 photons	0.19 photons	0.34 photons	0.34 photons	0.34 photons
Maximum Trigger Rate (Image Mode)	150 KHz	150 KHz	120 KHz	390 KHz	390 KHz	250 KHz
Maximum Continuous Events* (Image Mode)	4,000,000 (with option MEM064)	1,000,000 (with option MEM064)	500,000 (with option MEM064)	4,000,000 (with option MEM064)	1,000,000 (with option MEM064)	500,000 (with option MEM064)
Event Pair Resolution†	6.0 usec	6.0 usec	7.0 usec	2.5 usec	2.5 usec	3.2 usec
Sustained Average Event Rate‡	150,000 events / sec	65,000 events / sec	35,000 events / sec	250,000 events / sec	65,000 events / sec	35,000 events / sec
USB Transfer Rate	5.3 MB/sec	5.3 MB/sec	5.3 MB/sec	5.3 MB/sec	5.3 MB/sec	5.3 MB/sec
Included Software	Graphical user interface, data logging software, Windows XP USB drivers	Graphical user interface, data logging software, Windows XP USB drivers	Graphical user interface, data logging software, Windows XP USB drivers	Graphical user interface, data logging software, Windows XP USB drivers	Graphical user interface, data logging software, Windows XP USB drivers	Graphical user interface, data logging software, Windows XP USB drivers
High Voltage Supply Options	None	HVPS001: -1000V or HVPS002: -1500V or HVPS701: -100V	HVPS001: -1000V and/or HVPS002: -1500V and/or HVPS701: -100V (up to two supplies maximum)	None	HVPS001: -1000V or HVPS002: -1500V or HVPS701: -100V	HVPS001: -1000V and/or HVPS002: -1500V and/or HVPS701: -100V (up to two supplies maximum)
Memory Buffer Options§	MEM032: 2M events MEM064: 4M events	MEM032: 500K events MEM064: 1M events	MEM032: 250K events MEM064: 500K events	MEM032: 2M events MEM064: 4M events	MEM032: 500K events MEM064: 1M events	MEM032: 250K events MEM064: 500K events

* Specification is the maximum number of events that can be captured at the maximum trigger rate with no loss of data. Events consist of all available channels.

† The minimum time resolution between two consecutive events in *particle mode*.

‡ Effectively equal to the USB transfer rate to the PC where an event (with overhead) includes all 8 channels for the IQSP418 / IQSP518, 32 channels for the IQSP480 / IQSP580, and 64 channels for the IQSP482 / IQSP582 in *particle mode*.

§ Events includes all available channels for the unit (i.e. 8 channels for the IQSP418 / IQSP518, 32 channels for the IQSP480 / IQSP580, 64 channels for the IQSP482 / IQSP582

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