NIRQUEST

Specifications

	NIRQuest512	NIRQuest512-2.2	NIRQuest256-2.1	NIRQuest256-2.5
Physical				
Dimensions (mm):	182 x 110 x 47	182 x 110 x 47	182 x 110 x 47	182 x 110 x 47
Weight (kg):	1.18 (w/o power supply)	1.18 (w/o power supply)	1.18 (w/o power supply)	1.18 (w/o power supply)
Detector				
Detector:	Hamamatsu G9204-512 InGaAs linear array	Hamamatsu G9206-512W InGaAs linear array	Hamamatsu G9206-256 W InGaAs linear array	Hamamatsu G9208-256 W InGaAs linear array
Detector range:	850-1700 nm	900-2200 nm	900-2100 nm	900-2550 nm
Useable range:	900-1700 nm	900-2200 nm	900-2050 nm	900-2500 nm
Pixels:	512	512	256	256
Pixel size:	25 µm x 500 µm	25 µm x 500 µm	50 µm x 500 µm	50 µm x 500 µm
Saturation charge:	188 Me- electrons	188 Me- electrons	188 Me- electrons	188 Me- electrons
Defective pixels:	0%	0%	5%	5%
Optical Bench				
Design:	-- f/4, symmetrical crossed Czerny-Turner --			
Entrance aperture (standard):	-- 25 µm --			
Entrance aperture (custom):	-- 10 µm, 50 µm, 100 µm and 200 µm (or no slit) --			
Grating options (standard):	Grating NIR3, 150 l/mm, 900-1700 nm	Grating NIR2, 100 l/mm, 900-2050 nm	Grating NIR2, 100 l/mm, 900-2050 nm	Grating NIR1, 150 l/mm, 1075-2500 nm
Grating options (custom):	Gratings NIR10, NIR11, NIR12, NIR13 and NIR14	Gratings NIR2, NIR3, NIT10, NIR11, NIR12 and NIR13	Gratings NIR2, NIR3, NIR10, NIR11, NIR12 and NIR13	Gratings NIR2, NIR3, NIR10, NIR11, NIR12 and NIR13
Longpass filter:	-- OF1-RG830 longpass NIR filter (optional) --			
Collimating and focusing mirrors:	-- Gold-coated for enhanced NIR reflectivity --			
Fiber optic connector:	-- SMA 905 to 0.22 numerical aperture single-strand optical fiber --			
Spectroscopic				
Wavelength range:	900-1700 nm w/Grating NIR3	900-2200 nm w/Grating NIR2	900-2050 nm w/Grating NIR2	900-2500 nm w/Grating NIR1
Optical resolution (FWHM)	~3.1 nm w/25 µm slit	~4.6 nm w/25 µm slit	~7.6 nm w/25 µm slit	~ 9.5 nm w/25 µm slit
Signal-to-noise ratio at full signal:	>15000:1 @ 100 ms integration >13000:1 @ 1000 ms integration	10000:1 @ 100 ms integration	10000:1 @ 100 ms integration	7500:1 @ 10 ms integration
A/D resolution:	16-bit	16-bit	16-bit	16-bit
Dark noise:	6 RMS counts @ 100 ms 13 RMS counts @ 1000 ms	6 RMS counts @ 100 ms 12 RMS counts @ 250 ms	6 RMS counts @ 100 ms 12 RMS counts @ 250 ms	8 RMS counts @ 10 ms 13 RMS counts @ 30 ms
Dynamic range:	15 x 10^6 (system); 5000:1 for a single acquisition	15 x 10^6 (system); 5000:1 for a single acquisition	5 x 10^6 (system); 5000:1 for a single acquisition	3 x 10^5 (system); 5000:1 for a single acquisition
Integration time:	1 ms - 120 second	1 ms - 2000 m	1 ms - 2000 m	1 ms - 60 ms
Corrected linearity:	>99.8%	>99.8%	>99.8%	>99.8%
Electronics				
Power consumption:	-- USB power +5V, 0.5 A maximum; DC input jack +5V, 3 A maximum --			
Data transfer speed:	-- Full scan to memory every 5 ms with USB 2.0 port --			
Inputs/Outputs:	-- External trigger input + single strobe output --			
Breakout box compatibility:	Yes	Yes	Yes	Yes
Trigger modes:	-- 2 modes (Normal/Free Run + 1-ms External Hardware Trigger) --			
Strobe functions:	Yes	Yes	Yes	Yes
Gated delay:	-- Yes, w/external hardware trigger delay --			

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Connector:	30-pin connector	30-pin connector	30-pin connector	30-pin connector
Temperature and Thermoelectric Cooling				
Temperature limits (environmental):	-- 10-35 ºC (0-90% non-condensing) --			
TEC set point (software controlled):	Control at -5 ºC (up to 30 ºC below ambient)	Control at -20 ºC (up to 45 ºC below ambient)	Control at -20 ºC (up to 45 ºC below ambient)	Control at -20 ºC (up to 45 ºC below ambient)
TEC stability:	-- +/-0.5 ºC of set temperature in <1 minute; typical long-term stability +/-0.1 ºC --			
Computer				
Operating systems:	-- Windows 2000/XP and Vista (32-bit only); Mac OS X and Linux w/USB port; any 32-bit Windows OS with serial port --			
Computer interfaces:	-- USB 2.0 @ 480 Mbps; RS-232 (2-wire) @ 115.2 K baud --			
Peripheral interfaces:	-- I2C inter-integrated circuit; SPI (3-wire) --			
Wireless/Ethernet Interface (optional)				
Wireless (Wi-Fi) interface:	-- Yes, with Remora adapter --			
Wi-Fi range:	-- 25 meters in free space --			
Wired Ethernet interface:	-- Yes, with Remora adapter --			