In Table 5 the specifications for the NIR spectrometers are given.

Sensitivity

For NIR detectors 2 different modes are available, the default setting is for high-sensitivity mode (HS), this means more signal at a shorter integration time.

The other mode of operation is low-noise (LN), this means a better S/N performance. Sensitivity, S/N, dark noise and Dynamic Range are given as HS and LN values.

Table 5 Detector Specifications (AvaSpec-NIR Models)

	NIRLine					
Detector	HAM-256-1.7	HAM-512-1.7	SU-256-1.7	SU-512-1.7	HAM-256-2.5	HAM-512-2.5
Type	Linear InGaAs array	Linear InGaAs array	Linear InGaAs array with 1-stage TE cooling	Linear InGaAs array with 1-stage TE cooling	Linear InGaAs array with 2-stage TE cooling	Linear InGaAs array with 2-stage TE cooling
# Pixels, pitch	256, 50 µm	512, 25 µm	256, 50 µm	512, 25 µm	256, 50 µm	512, 25 µm
pixel width x height (µm)	50 x 500	25 x 500	50 x 500	25 x 500	50 x 250	25 x 250
Sensitivity HS in counts/µW per ms	8,200,000 (integral 1000-1750 nm)	3,880,000 (integral 1000-170 nm)	4.800,000 (integral 1000-1750 nm)	2.500,000 (integral 1000-1750 nm)	990,000 (integral 1000-2500 nm)	480,000 (integral 1000-2500 nm)
Signal/Noise (HS)	1900:1	1900:1	1900:1	1900:1	1800:1	1900:1
Dark noise HS (counts RMS)	16	16	16	16	16	15
Dynamic Range HS	6000	6000	4900	4900	3500	4300
Sensitivity LN in counts/µW per ms	469,000 (integral 1000-1750 nm)	222,000 (integral 1000-1750 nm)	160,000 (integral 1000-1750 nm)	83,000 (integral 1000-1750 nm)	55,000 (integral 1000-2500 nm)	26,600 (integral 1000-2500 nm)
Signal/Noise (LN)	5000:1	5000:1	5000:1	5000:1	4000:1	3700:1
Dark noise LN (counts RMS)	12	12	12	12	12	13
Dynamic Range LN	9000	9000	7600	7600	4500	5100
Peak wavelength	1550 nm	1550 nm	1500 nm	1500 nm	2300 nm	2300 nm
QE (%) @ peak	90%	90%	70%	70%	65%	65%
PNRU**	±5%	±5%	10%	10%	±5%	±5%
Defective pixels (max)	0	0	0	0	12	26
Wavelength range (nm)	900-1750	900-1750	900-1750	900-1750	1000-2500	1000-2500
Frequency	500 kHz	500 kHz	1.2 MHz	1.2 MHz	500 kHz	500 kHz

*** Photo-Response Non-Uniformity*

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