

AvaSpec SensLine

This is a selection of our AvaSpec SensLine spectrometers

Specification	AvaSpec-HERO: HSC1024x58TEC- EVO	AvaSpec- ULS2048XL-EVO	AvaSpec- HS2048XL- EVO	AvaSpec- ULS2048- LTEC-USB2	AvaSpec- HS1024x58- TEC-USB2	AvaSpec- ULS2048x16- USB2
Optical bench	High-sensitivity symmetrical design 100 mm focal length; NA - 0.13	Ultra-low Stray light, Symmetrical Czerny-Turner, 75 mm focal length	High Sensitivity, asymmetrical design, 37.5 mm focal length N.A. 0.22	Triple Stage TE cooled, Ultra Low Straylight Symmetrical Czerny-Turner, 75 mm focal length	High Sensitivity, asymmetrical design, 37.5 mm focal length N.A. 0.22	Ultra-low Stray light, Symmetrical Czerny-Turner, 75 mm focal length
Wavelength	200-1160 nm					
Resolution (Slit & grating dependent)	0.2 - 7 nm,	0.09-20 nm	1-20 nm	0.06-20 nm	1-20 nm	0.06-20 nm
Stray Light (Grating dependent)	0.5%,	< 0.5 %	< 1%	0.04-0.1%	< 1%	< 0.2%
Sensitivity (Counts/ μ W.ms)	445,000	400,000	1,250,000	470,000	850,000	250,000
Detector	CCD array image sensor with one stage TE Cooled, 1024 pixels	Back-thinned CCD image sensor 2048 pixels	Back-thinned CCD image sensor 2048 pixels	TE cooled CCD linear array, 2048 pixels	Back-thinned CCD image sensor 1024x58 pixels	Back-thinned CCD image sensor 2048x16 pixels
Effective Pixel size (μ m)	24x1.392	14x500	14x500	14x200	24x1.392	14x224
# Pixels	1024x58	2048	2048	2048	1024x58	2048 x 16
Signal/Noise	1200:1	525:1	525:1	300:1	1000:1	500:1
Minimum Integration Time	5.2ms	0.002 ms	0.002 ms	1.11 ms	5,22 ms	1.82 ms
Electronics	AS7010 USB3 / ETH	AS7010 USB3 / ETH	AS7010 USB3 / ETH	AS5216 USB2	AS5216 USB2	AS5216 USB2

AVANTES
enlightening spectroscopy

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AvaSpec SensLine

The AvaSpec SensLine family of products is Avantes' response to customers who require higher performance for demanding spectroscopy applications such as fluorescence, luminescence and Raman. The AvaSpec Sens product line includes several high sensitivity, low noise spectrometers. Most of the instruments are based on back-thinned detector technology, of which some feature high performance thermo-electrically cooled detectors. The other models are based on standard CCD's, upgraded to high-performing instruments as a result of Avantes' unique and improved detector cooling technology. The back-thinned CCD detectors featured in the AvaSpec SensLine product family are high quantum efficiency detectors with excellent response in the UV, VIS and NIR from 200-1160 nm.



AvaSpec SensLine instruments are fully integrated with Avantes' modular platform, allowing them to function standalone, or as multi-channel instruments. These products are fully compatible with other AvaSpec instruments in our AvaSpec StarLine and AvaSpec NIRLine product families. The entire AvaSpec SensLine is available as a lab instrument or an OEM module for integration into a customers' existing system.

Avantes' innovative ultra-low stray light (ULS) and revolutionary new High-Sensitivity -Compact(HSC) optical benches are the core optical technologies in the AvaSpec SensLine. These highly stable optical benches combined with our high performance electronics boards deliver high performance instruments at affordable prices.

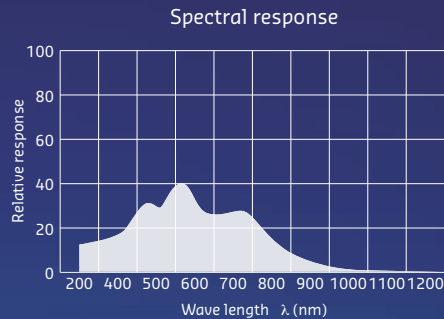
All members of the AvaSpec SensLine are designed to provide performance features such as:

- ▶ High stability
- ▶ High sensitivity
- ▶ High speed acquisition
- ▶ Low noise

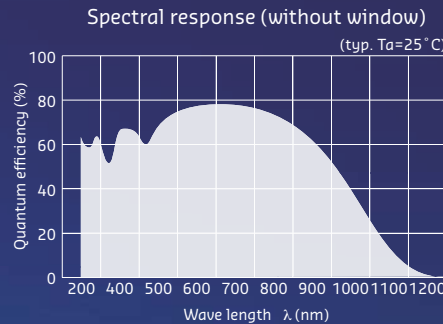


AvaSpec SensLine Products

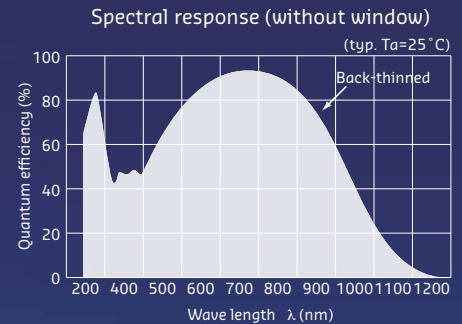
**Standard CCD,
thermo-electrically cooled**



**Highly sensitive,
back-thinned CCD**



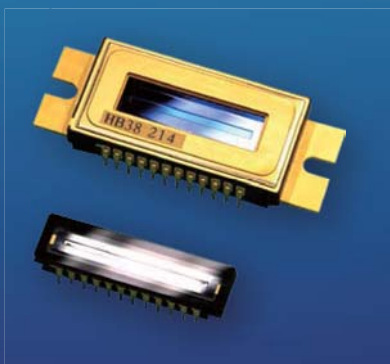
**Highly sensitive,
back-thinned, thermo-
electrically cooled CCD**



- ▶ Improved compact design
- ▶ Thermo-electrically regulated, triple stage Peltier cooling down to 30°C under ambient temperature
- ▶ Dynamic range improved by a factor of >10 vs. standard CCD
- ▶ Enables longer integration times up to 60 sec.
- ▶ Fast and precise triggering capabilities (2048L)
- ▶ High resolution

- ▶ Back-thinned detectors, high Quantum efficiency
- ▶ Ultra Low stray light optical bench with high thermal and mechanical stability
- ▶ Increased well depth capacity for improved signal to noise
- ▶ High-speed readout
- ▶ Supports fast integration times
- ▶ Reduced etaloning and dark current
- ▶ Strong anti-blooming function

- ▶ Avantes' **top performing instrument** for highly demanding applications
- ▶ Revolutionary high sensitivity optical bench design with higher numerical apertures
- ▶ High performance back-thinned, thermo-electrically cooled CCD detector
- ▶ High UV sensitivity
- ▶ High stability temperature controller able to cool up to -35°C to ambient, depending on type
- ▶ Widest dynamic range and best signal-to-noise performance



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**PHOTO
TECHNICA**

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