

OEM Spectrometer: AvaBench Optical Bench

AvaSpec optical benches are available with or without one of our electronics boards for integration into customer's systems. Avantes has developed different types of UV/VIS optical benches, especially for OEM customers. The optical benches AvaBench-75-ULS (used in both StarLine and SensLine), AvaBench-75-MN (CompactLine), AvaBench-75-ULSTEC (SensLine), AvaBench-37.5-HS (SensLine) and AvaBench-100-HSC (SensLine) are Czerny-Turner designs with fiber-optic entrance connectors (standard SMA, others possible), collimating and focusing mirrors and a diffraction grating. A choice of different gratings with different dispersions and blaze angles enable applications in the 200-1160 nm range.

Our new miniature bench is perfect for OEM integration in existing systems and handheld devices. The high numerical aperture AvaBench-37.5-HS has full mechanical compatibility for mounting holes with the AvaBench-75-ULS, which makes it easy for OEM customers to upgrade to a higher-throughput optical bench.

AvaBench-75-ULS



Wavelength ranges, resolution tables, detector specifications and AvaBench options can be found in the instrument page corresponding to each spectrometer type.

In the table below the detailed key specifications can be found. All AvaBench optical benches are fully compatible with Avantes' electronics boards or may be interfaced to customer specific electronics. Video output is handled through a separate mini-coax cable.

	AvaBench-75-ULS	AvaBench-75-MN	AvaBench-75-ULSTEC	AvaBench-37.5-HS	AvaBench-100-HSC
Implemented in	AvaSpec-ULS2048/3648/2048L/2048CL/4096CL/2048XL/2048x64	AvaSpec-Mini2048CL/4096CL	AvaSpec-ULS2048LTEC	AvaSpec-HS1024x58/2048XL	AvaSpec-HERO
Focal length	75 mm	75 mm	75 mm	37.5 mm asym.	100 mm
Numerical aperture	0.07	0.07	0.07	0.22	0.13
Wavelength range	200-1160 nm	200-1100 nm	200-1100 nm	200-1160 nm	200-1160 nm
Resolution (FWHM)	0.05 – 20 nm	0.05 – 20 nm	0.05 – 20 nm	1.2 – 20 nm	0.18 – 5.50 nm
Stray-light	0.04-0.1%	0.2-1%	0.04-0.1%	<1%	<1%
Gratings	Different	Different	Different	Different	Different
Slits	10, 25, 50, 100, 250, 500 μm	10, 25, 50, 100, 250, 500 μm	10, 25, 50, 100, 250, 500 μm	25, 50, 100, 200, 500 μm	25, 50, 100, 250, 500 μm
Detector	SONY 2048(L) / TOSHIBA 3648/HAM 2048CL/4096CL/2048XL/2048x64	HAM 2048CL/4096CL	SONY 2048L	HAM 2048XL	HAM 1024x58
Detector lens	UV/VIS	UV/VIS-200	UV/VIS-200	N.A.	N.A.
Order-sorting filter	See options	See options	See options	See options	See options
Dimensions, weight	120 x 91 x 21 mm, 350 g	95 x 68 x 20 mm, 175 g	120 x 91 x 62 mm, 760 g	95 x 152 x 42 mm, 722 g	120 x 125 x 109 mm, 1500 g

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Ordering Information

AvaBench-75-ULS2048-U2	<ul style="list-style-type: none"> • OEM ultra-low stray-light optical bench, 75 mm focal length, 2048 pixel CCD detector. Specify grating, wavelength range and options.
AvaBench-75-ULS3648-U2	<ul style="list-style-type: none"> • OEM ultra-low stray-light optical bench, 75 mm focal length, 3648 pixel CCD detector. Specify grating, wavelength range and options.
AvaBench-75-ULS2048L-U2/U3	<ul style="list-style-type: none"> • OEM ultra-low stray-light optical bench, 75 mm focal length, 2048 pixel CCD detector. Specify grating, wavelength range and options.
AvaBench-75-ULS2048CL-U2/U3	<ul style="list-style-type: none"> • OEM ultra-low stray-light optical bench, 75 mm focal length, 2048 pixel CMOS detector. Specify grating, wavelength range and options.
AvaBench-75-ULS4096CL-U3	<ul style="list-style-type: none"> • OEM ultra-low stray-light optical bench, 75 mm focal length, 4096 pixel CMOS detector. Specify grating, wavelength range and options.
AvaBench-75-ULS2048XL-U2/U3	<ul style="list-style-type: none"> • OEM ultra-low stray-light optical bench, 75 mm focal length, 2048XL pixel back-thinned CCD detector. Specify grating, wavelength range and options.
AvaBench-75-ULS2048x64-U2	<ul style="list-style-type: none"> • OEM ultra-low stray-light optical bench, 75 mm focal length, 2048x64 pixel back-thinned CCD detector. Specify grating, wavelength range and options.
AvaBench-75-MN2048CL-U3	<ul style="list-style-type: none"> • OEM miniature optical bench, 75 mm focal length, 2048 pixel CMOS detector. Specify grating, wavelength range* and options.
AvaBench-75-MN4096CL-U3	<ul style="list-style-type: none"> • OEM miniature optical bench, 75 mm focal length, 4096 pixel CMOS detector. Specify grating, wavelength range* and options.
AvaBench-75-ULS2048LTEC-U2	<ul style="list-style-type: none"> • OEM ultra-low stray-light optical bench, 75 mm focal length, TE-cooled 2048 large pixel detector. Specify grating, wavelength range and options.
AvaBench-37.5-HS2048XL-U2/U3	<ul style="list-style-type: none"> • OEM High-sensitivity optical bench, 37.5 mm focal length, 2048XL pixel back-thinned CCD detector. Specify grating, wavelength range and options.
AvaBench-100-HSC 1024x58TEC-U3	<ul style="list-style-type: none"> • OEM High-sensitivity optical bench, 100 mm focal length, 1024x58 pixel TE-cooled back-thinned CCD detector. Specify grating, wavelength range and options.

*A set of defined ranges applies, contact us for assistance



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The grating can only be changed by Avantes.
Therefore, choose your grating wisely.
Our application specialists are available to support you with your choice.
In general, a higher resolution means a lower bandwidth.
By combining multiple spectrometers
in our AvaSpec-Dual or rack-mountable versions,
you can create one virtual spectrometer with high-resolution
and high bandwidth.