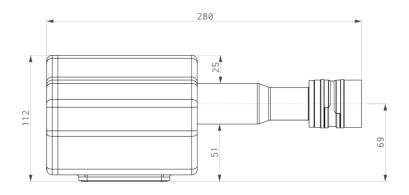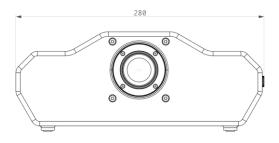# MUSES9-HS   TECHNICAL DATASHEET

MUSES9-HS is a full frame, tunable filter-based hyperspectral imager, offering ultrafast spectral scanning of up to 140 spectral bands, in the range 370-1000nm

- Acquires the spectral cube through spectral scanning (30s), no spatial scanning is required
- Displays spectral images in real time for spectroscopy-based contrast enhancement
- Acquires 6 megapixel spectral images band and 6 million spatially resolved spectra
- Adapts to all kinds of lenses/microscopes through a universal C-mount thread
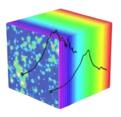
Detailed Specifications

Spectral Filtering Technology	Electro-optic tunable filter (ETF)	
	Tunability Range	370-1000nm
	Light Throughput	94%. Out of band blocking 4 OD (T=0.00001%)
	Tunning Step	Variable, 5-15 nm
	Tuning Time	30-50s (depending on shutter speed)
Imaging Sensor	CMOS	
	Spatial Resolution	3096 (H) × 2080 (V) approx. 6.44M pixels
	Format	1/1.8 inch
	Pixel Size	H: 2.4 µm, V: 2.4 µm
	Dynamic range	12 bit
	Dark current	0.39 e- / s
	Shutter	20 µs to 5 s
Camera Interface	USB3.1	
Lens Thread	C-mount with internal autofocusing	Adapts to all types of lenses/microscopes/telescopes
Environmental	Temperature (Operating)	-5 °C to 45 °C
	Temperature (Storage)	-20 °C to 60 °C
	Humidity (Operating)	20 % to 80 % (non-condensing)
	Humidity (Storage)	20 % to 95 % (non-condensing)
Weight	2,1 Kg	
Software	Computer Control	Fully automated operation, shutter & gain control, auto calibration, ETF control and image capturing synchronization, light source control
	Image/Data viewer	On demand video rate display of spectral images, display of full spectra on mouse hovering over the displayed spectral image, spectra comparison window, color (reference) imaging, image enhancing tools, vegetation index mapping etc.
		Subject to change

Accessories

Advanced Machine learning Software platform	The λambda³⁺ software suite, incorporating machine learning/AI tools. These tools allow for the development of a trained data structure, where the acquired spectra have been labelled with the structural information of reference materials. The output of this process is artificial color-coded composition maps of target materials, obtained in situ and non destructively.
Light sources	A two-branch halogen/LED multiplexed light source with emission covering the entire camera's spectral range, plus 365nm, 405nm and 450nm LEDs for fluorescence excitation. It is controlled from the camera's SW for synchronization and calibration

SPECTRICON empowers researchers and professionals with themost advanced hyper-/multi- spectral camera systems

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