



Brillouin HyperFine Spectrometer with “GREEN KILLER” pump suppression HF-8999-532

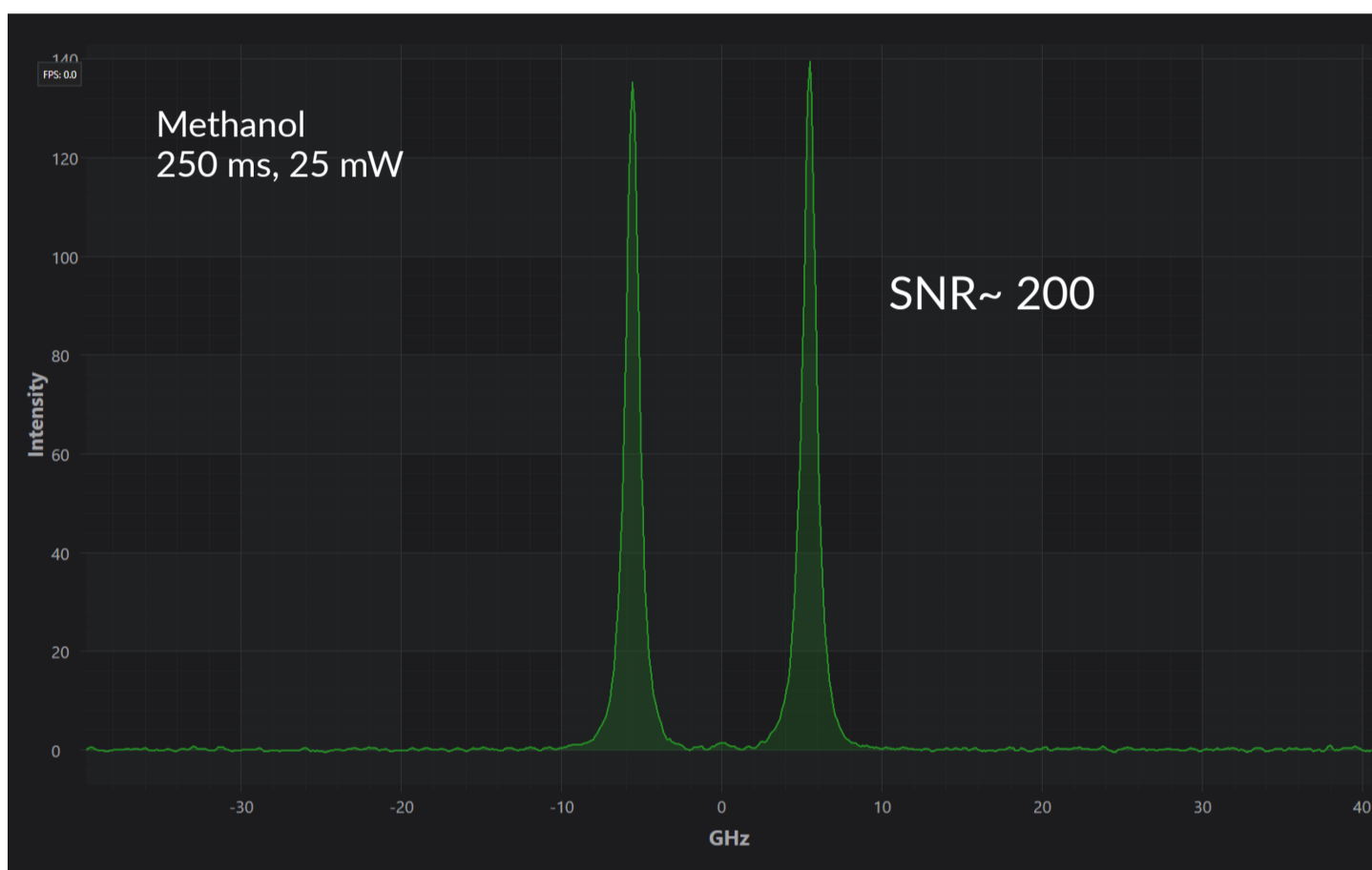
Massive Dynamic Range, Picometer Resolution

The great challenge with Brillouin spectroscopy is that the Rayleigh light from the pump laser can overwhelm the small Brillouin shifted return signal. So, we have combined our leading edge HyperFine spectrometer with a very narrow band tunable filter to suppress the bright un-shifted laser frequency. The tunable filter (the Green Killer) is easily adjusted to suppress the main laser peak and exposure gating is used by the HyperFine spectrometer to drastically increase the full dynamic range of the instrument. This combination achieves a dynamic ratio of 75 db with our standard CMOS camera.

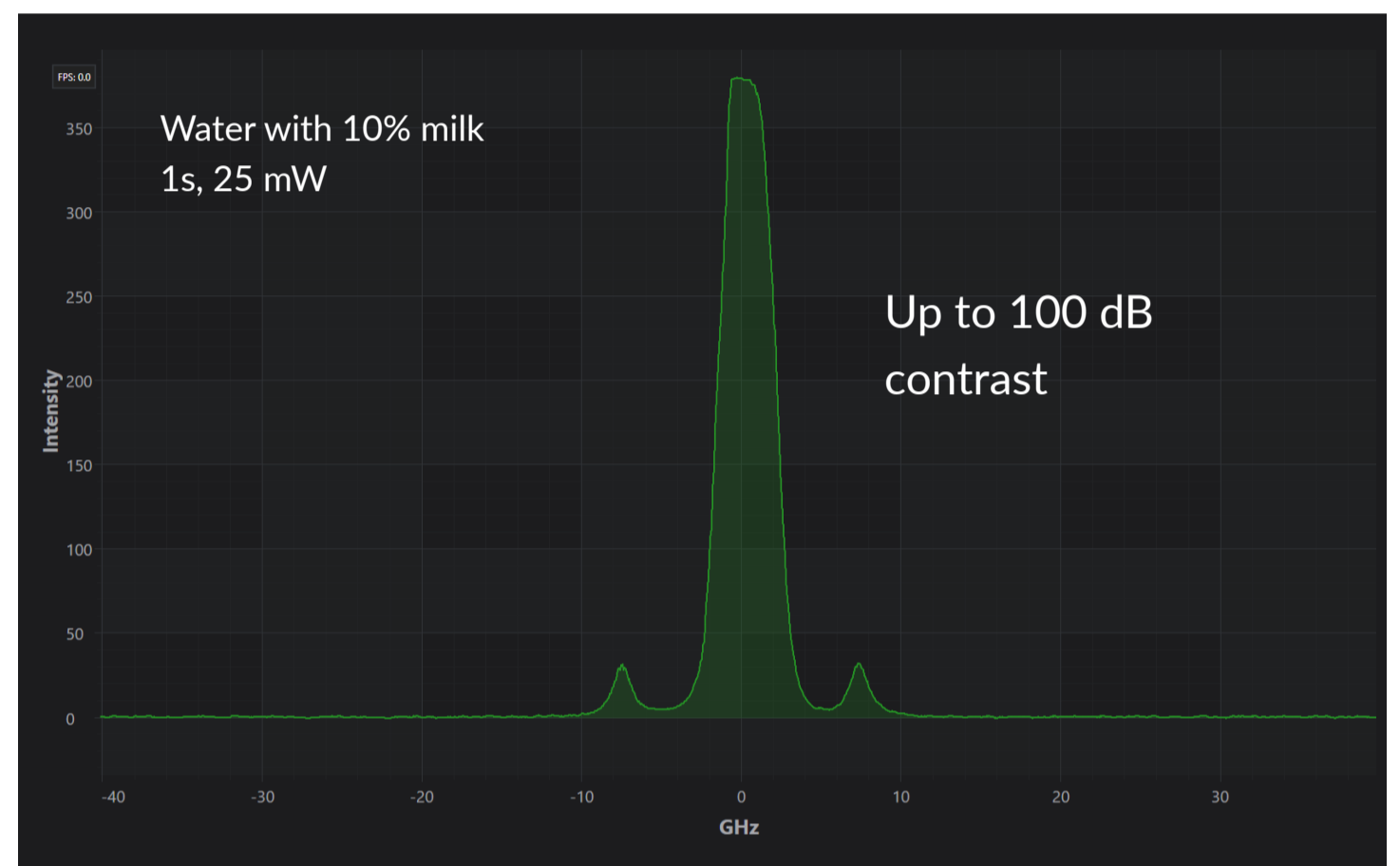
The tunable filter is comprised of a double passed air spaced etalon. LightMachinery’s proprietary fluid jet polishing process is utilized to create both the tunable etalon filter and the main VIPA etalon in the spectrometer. Together, these high finesse elements provide unparalleled sensitivity in a relatively compact size, perfect for Brillouin scattering.

LightMachinery's HyperFine Brillouin spectrometer with integrated Green Killer

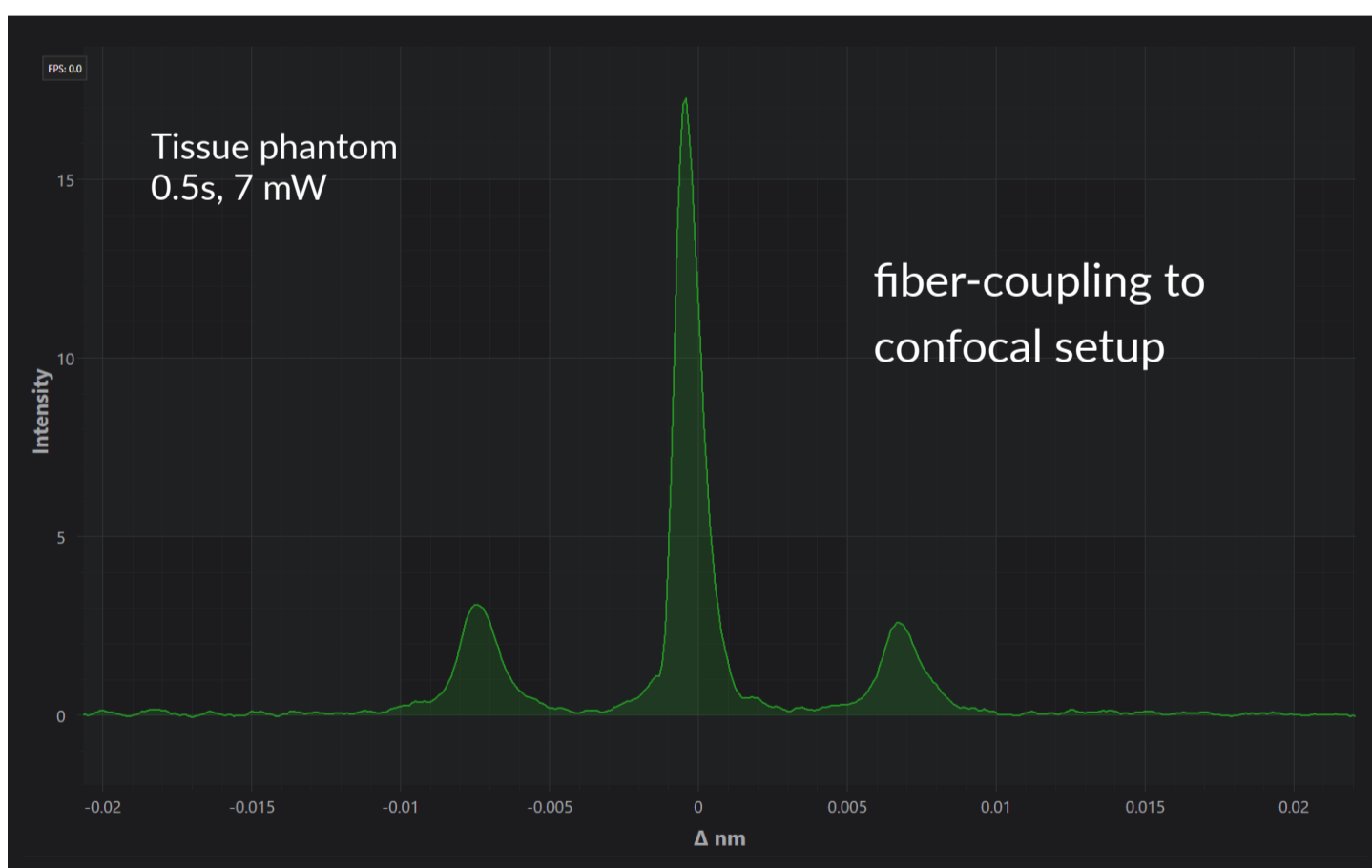
- Minimal alignment required
- High throughput enabling fast acquisition
- High resolution and high precision
- High contrast and high pump suppression
- Large spectral range covered in a single shot
- Simple integration - Compact Size
- An affordable device that comes ready to use out of the box.



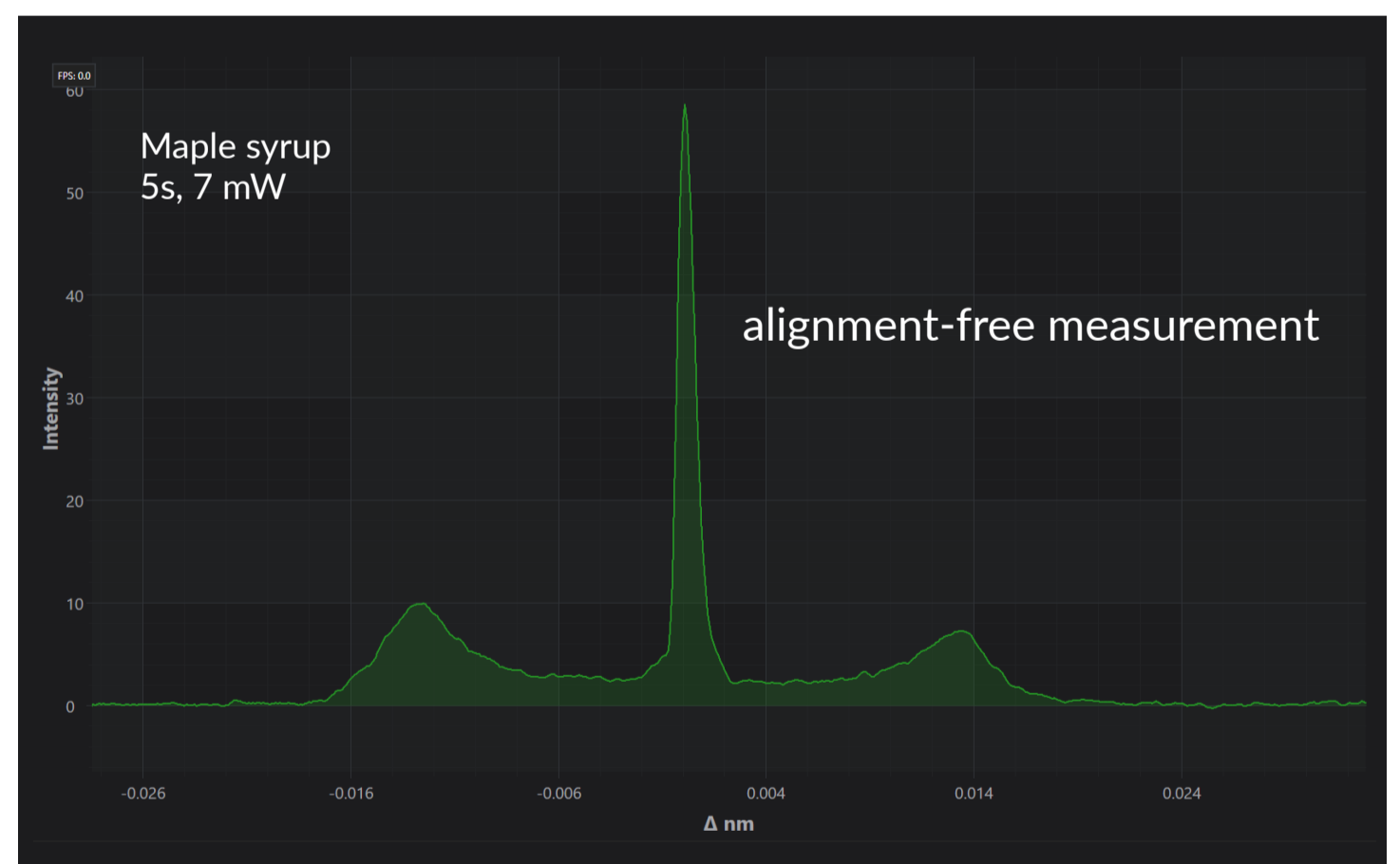
Fast and **effectively noiseless** Brillouin spectra with **minimal-to-no regular alignment** required



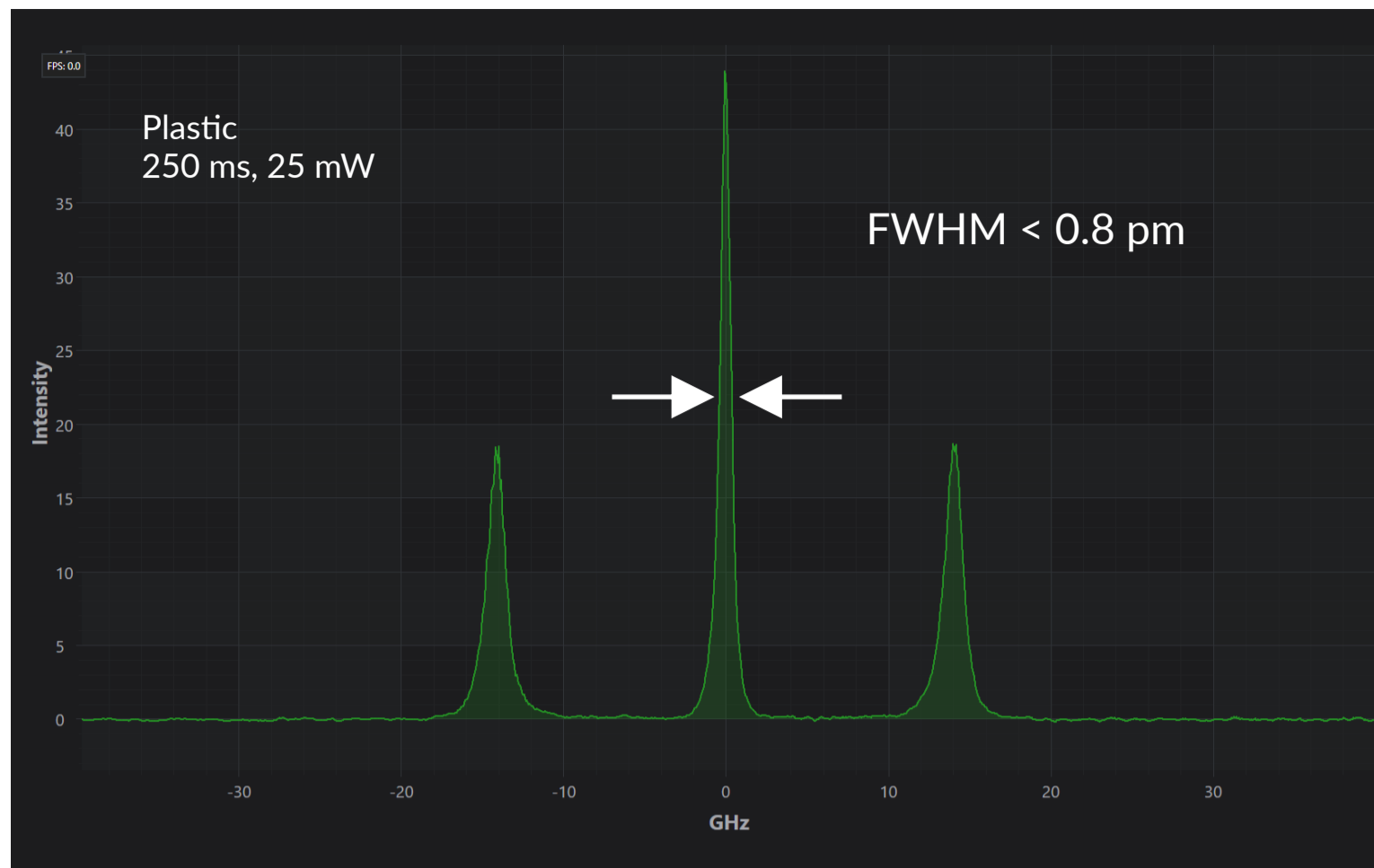
Pump suppression and high contrast (up to 100 dB): even highly turbid (opaque) samples can be measured



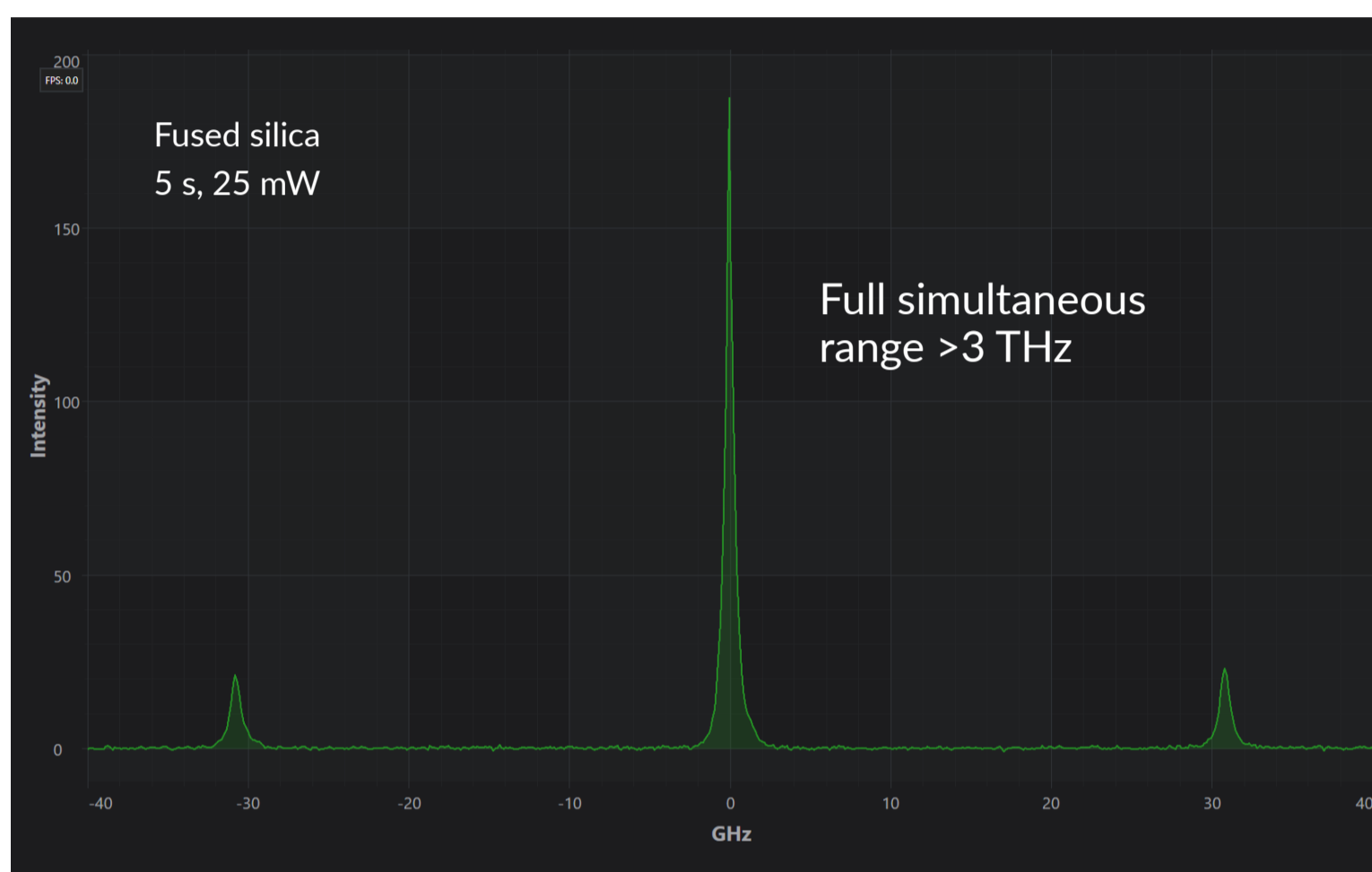
Simple integration via fiber coupling to confocal systems: perfect for characterizing mechanical properties of **biological samples**



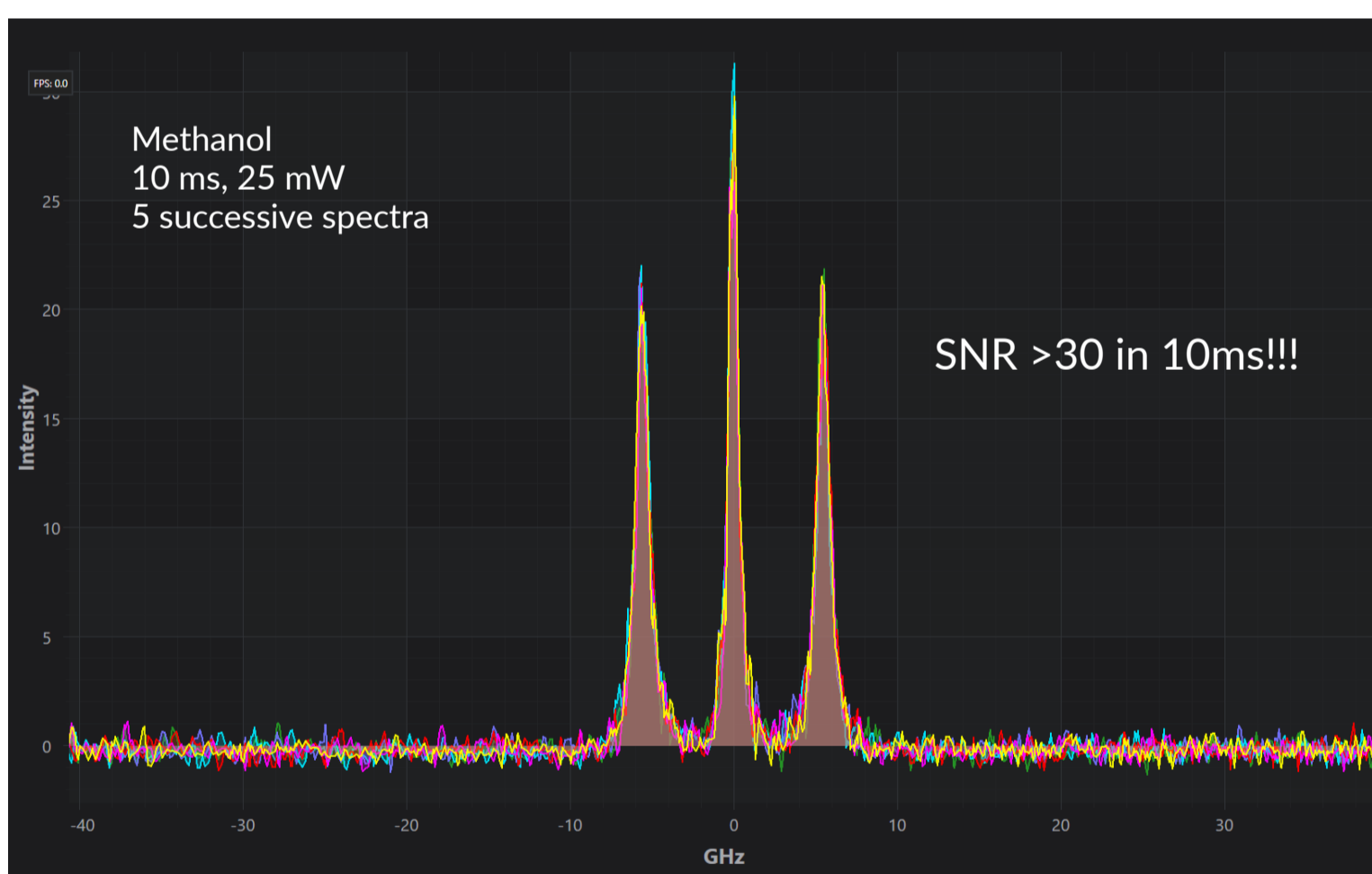
Affordable instrument essentially ready to use as soon as it is out-of-the-box



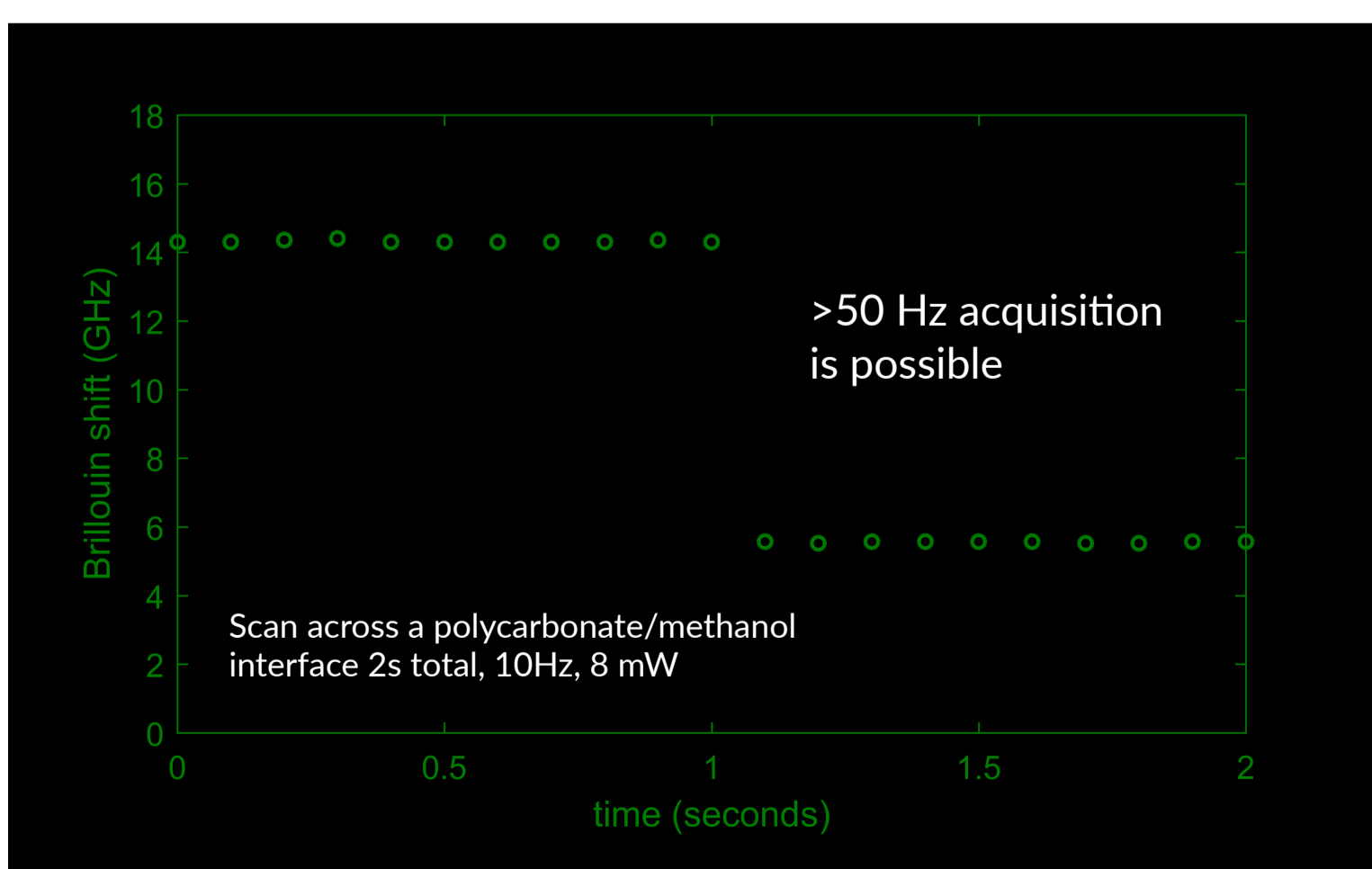
High resolution: $< 1 \text{ pm}$ FWHM instrument response & $\ll 0.05 \text{ pm}$ precision on Brillouin shift measurement



Large spectral range in a single snapshot ($> 1 \text{ THz}$): can measure hard materials and even ultra-low frequency Raman spectra



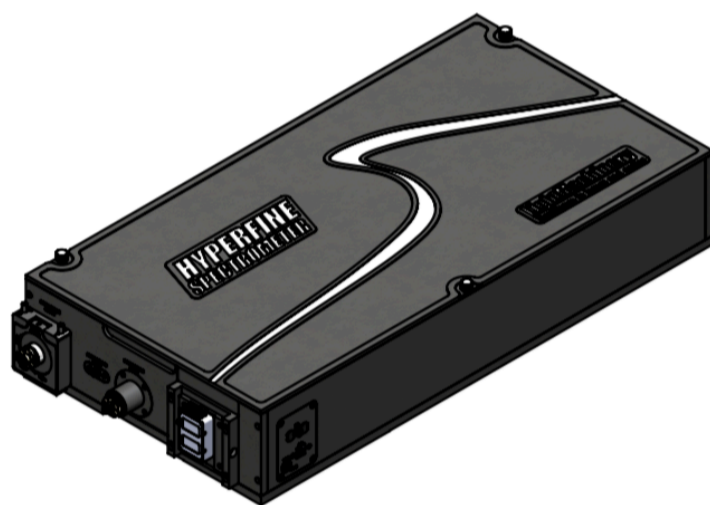
Ultra-high throughput: high signal-to-noise Brillouin signal in milliseconds is possible



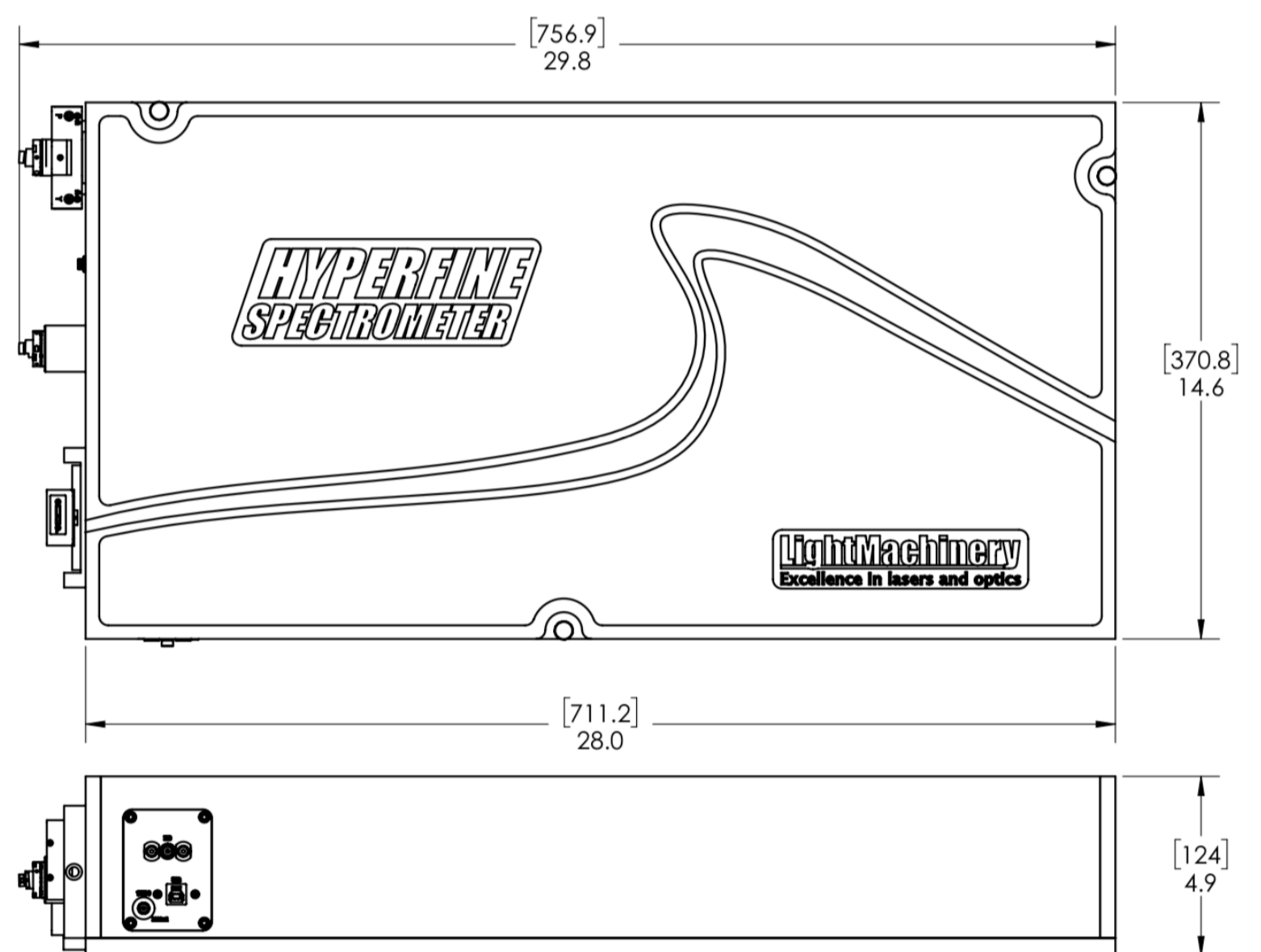
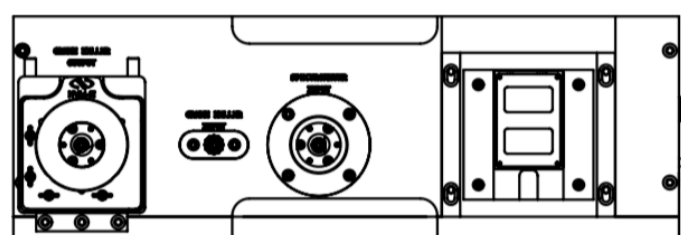
Fast acquisition: rapid scanning or monitoring of fast reactions ($> 50 \text{ Hz}$ on demand)

Specifications

Wavelength range	530.5nm - 533.5nm
Spectral resolution	1pm
Pump wavelength filter suppression	> 30 dB
Pump suppression filter tunability	+/- 1nm
Pump suppression filter width	0.5pm
Dynamic range (at 6GHz from pump)	>75 dB
Filter input	SMF only
USB 3.1	>1A required
Dimensions	71 x 37 x 15 cm
Weight	25 kg



SCALE 1:8



Note: Dimensions in [] are millimeters

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