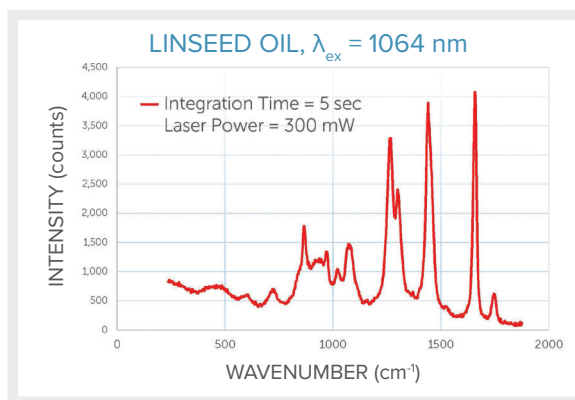
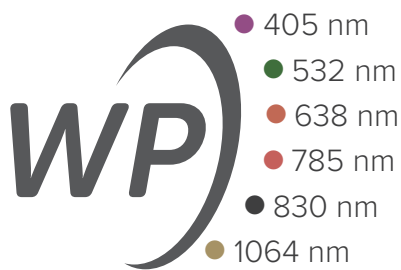


# RAMAN SPECTROSCOPY

## See more, faster than ever before

At Wasatch Photonics we design the kind of Raman spectroscopy products we want to use. As spectroscopists ourselves, we understand the difference that high sensitivity, low noise, and the ability to capture spectra quickly can make to a research project or OEM product design. With a superior optical bench, more configuration options, and greater spectroscopy expertise than you'll find anywhere else, we will help you see more, faster than ever before.



Our WP 1064 Raman spectrometer leads the market for low noise and short integration time.

### ADVANTAGES

- High sensitivity spectrometer design
- f/1.3 input to capture more light
- TEC cooling optional on all detectors
- Fast data sampling rates
- Perfectly matched accessories
- USB, Ethernet & Bluetooth connectivity
- Fully integrated or modular systems
- Compact, robust & configurable

### APPLICATIONS

- Trace level material identification
- SERS and taggant detection
- Industrial process control
- Gemstone, mineral, & art analysis
- Graphene & nanomaterials characterization
- Pharmaceutical inspection & ID
- Anti-counterfeit & authentication
- Food & beverage



## COLLECT MORE LIGHT. KEEP MORE LIGHT. DETECT MORE LIGHT.

This may sound simple, but it's the driving force behind all we do – because it makes for good spectroscopy. Starting with the proprietary volume holographic phase (VPH) gratings on which the company was founded, we've designed a spectrometer that maximizes efficiency at every step. By keeping more light in the optical path, we reduce stray light within the bench, thus increasing signal while reducing noise.

### HERE'S WHAT THIS MEANS FOR YOU:

#### Higher sensitivity

- ▶ Capture brief phenomena, even at low light levels
- ▶ Minimize laser exposure for delicate samples
- ▶ Significantly reduce your measurement time

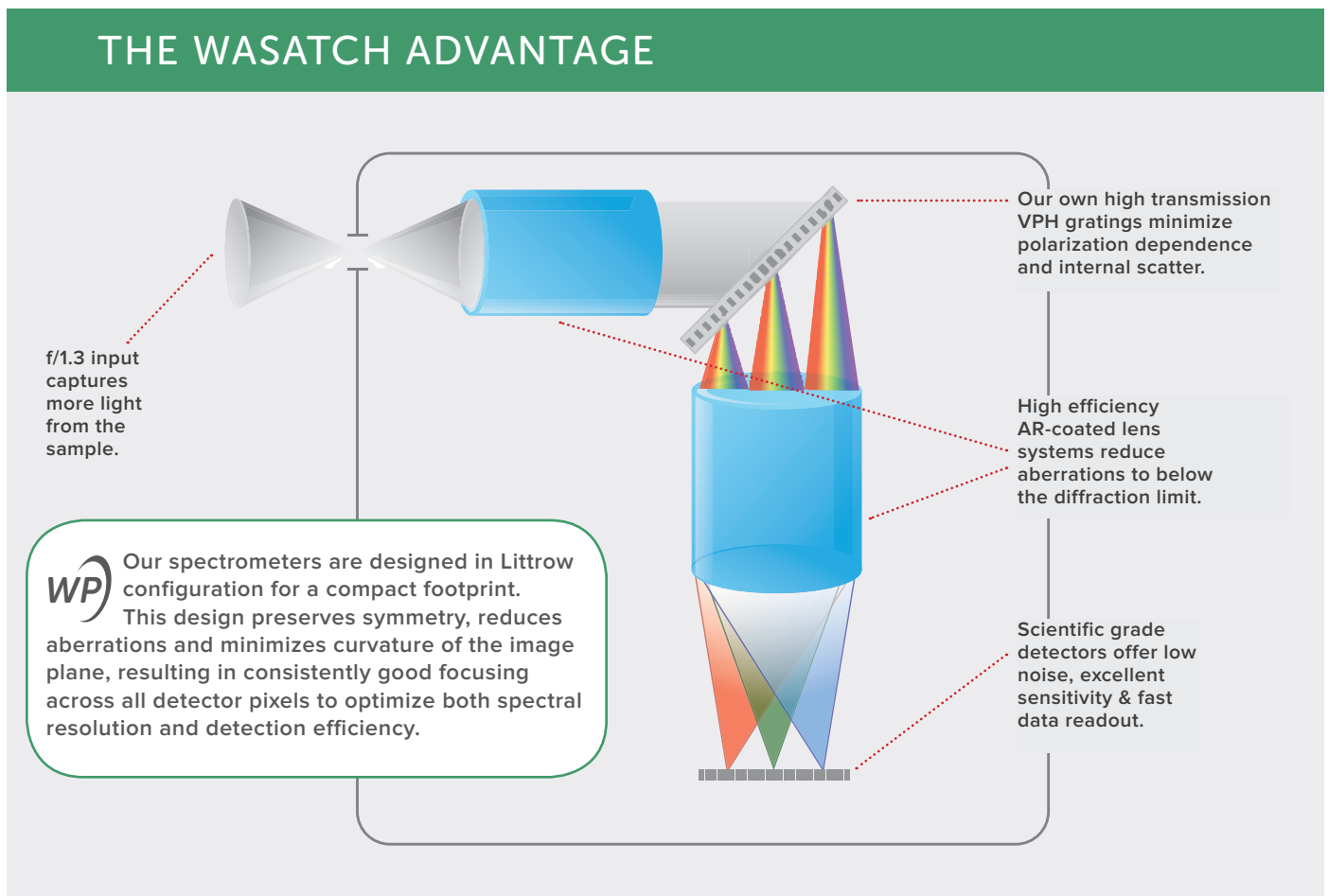
#### Faster acquisition rates

- ▶ Better spatial resolution in 2D scanning applications
- ▶ Ideal for rapid process monitoring, product scanning
- ▶ Allows increased averaging to maximize S:N

#### Lower limit of detection

- ▶ Detect illicit materials at trace levels in surface residues
- ▶ Identify banned substances & contaminants on or in foods
- ▶ Develop quantitative models down to low concentration

## THE WASATCH ADVANTAGE



## WASATCH PHOTONICS OFFERS YOU MORE

We believe you should have full control and maximum flexibility when designing a Raman spectroscopy system. That's why we offer so many build-to-print options for range, resolution, detector cooling, and sample coupling – backing each with our advice and experience. Start with the excitation wavelength best suited to your sample, then create the system best suited to your needs.



### DETECTOR COOLING OPTIONS

**Ambient:**  $T_{\text{detector}} \approx 25^{\circ}\text{C}$

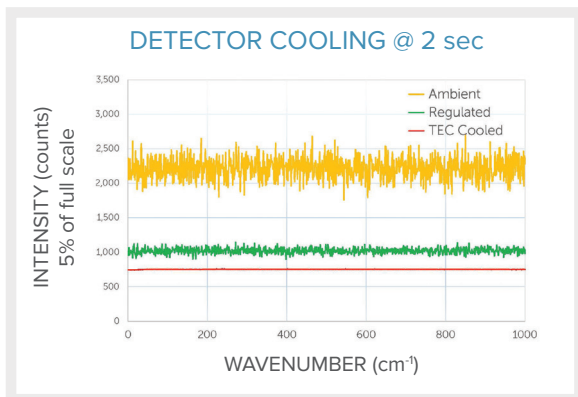
- ▶ Most cost effective option
- ▶ Good S:N high throughput detector
- ▶ Best for teaching and lab environments

**Regulated:**  $T_{\text{detector}} = 10^{\circ}\text{C}$

- ▶ Fixed dark noise (better spectral reproducibility)
- ▶ Improved S:N compared to ambient detector
- ▶ Great for variable environments & handheld use

**TEC cooled:**  $T_{\text{detector}} = -15^{\circ}\text{C}$

- ▶ Lowest dark noise option – highly consistent
- ▶ Best S:N for lowest limits of detection
- ▶ Ideal for long integration time measurements



### SAMPLE COUPLING OPTIONS

**Fiber coupled spectrometer with probe**



Our f/1.3 design delivers superior signal and ultra low background when used with our matched NA probes. Simplifies sample alignment in the lab or field.

**Free-space coupling to spectrometer**



This 0.36 NA input offers superior signal & freedom in the design of your own sampling optics, from spot size to working distance. Ideal for research & OEMs.

**Integrated laser & free-space coupling**



Our compact design integrates laser control and optimized coupling optics for best signal to noise. For turnkey lab use & OEM integration.

**WP)RAMAN**

## Your One Stop Raman Shop

Quickly design an optimized Raman system for your application using our plug & play components. Need help choosing the right wavelength or options for your sample? Contact us for advice or testing.

### BUILD-TO-PRINT SPECTROMETERS

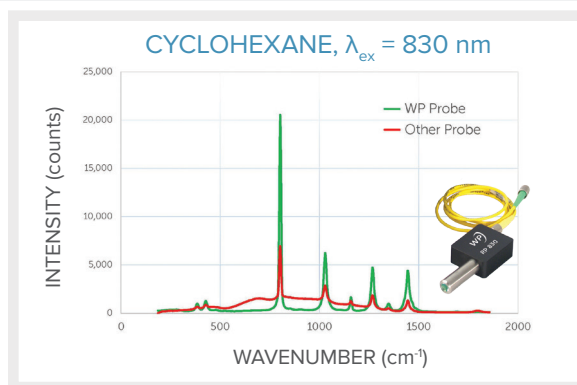


We offer more options for excitation wavelength, range, detector cooling, and sample coupling than anywhere else. Our f/1.3 design offers high throughput and S:N for fast, high-quality spectra.

### RAMAN LASERS

Our off the shelf and integrated lasers offer high wavelength & power stability for the cleanest, most reproducible Raman spectra.

### RAMAN PROBES

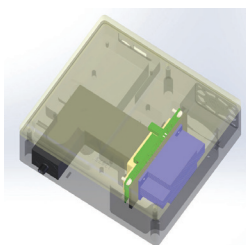


We've designed our own compact, flexible fiber optic probes to be perfectly matched to our f/1.3 spectrometers. Maximize your sensitivity & S:N and reduce your data acquisition times.

### ENLIGHTEN™ SOFTWARE

We've simplified the process of acquiring Raman spectra with our intuitive new interface for desktop, laptop or mobile – provided at no charge.

### OEM DEVELOPMENT & SUPPORT



When you're designing a new product, you don't just need a partner, you need a collaborator - one that understands spectroscopy & system design just as well as they understand manufacturing. At Wasatch Photonics, we apply our core strength as innovators to further your product designs and our expertise as scientists to troubleshoot problems along the way. From concept to solution to volume, we can give you more.