

# Gratings & OEM

## MINIATURE CCD SPECTROMETER & PDA SPECTROMETER MODULES SMA FIBER OPTIC SPECTROMETERS INCLUDING ELECTRONICS

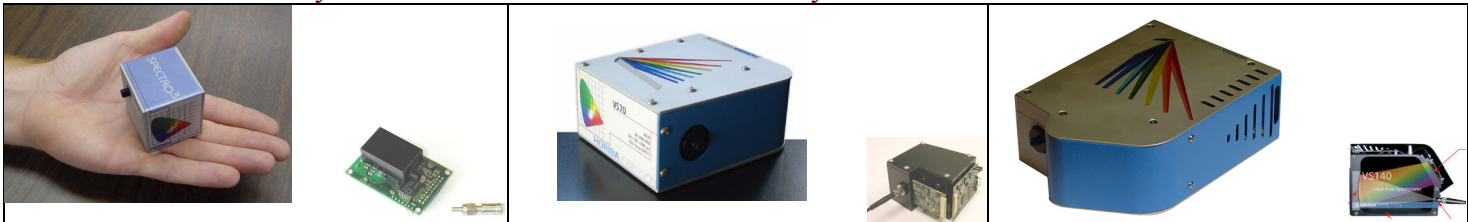
### SUPERIOR THROUGHPUT – SUPERIOR STRAY LIGHT REJECTION OEM product with a trusted name: Horiba Jobin Yvon

For fiber optic spectrographs without detector electronics, please request our Compact Spectrographs Brochure.

20 mm Focal Length  
OEM Only

70 mm Focal Length  
OEM Only

140 mm Focal Length  
OEM & RETAIL



**Spectro3 miniature PDA USB Fiber Optic Spectrometer in an Amazing 2"x2"x2" Package!**

Aperture: F/2.7  
A/D: 14 bit  
PC interface: USB and RS232 (call for Ethernet)

**Linear sensor arrays**  
**Hamamatsu photodiode array (PDA)**  
**CMOS 128 or 256 pixels**  
S8377-128 / S8378-256  
**Spectral window: 380-760 nm**  
Pixel: 25x500 & 50x500 mic  
Linear dynamic range\*: 2500:1 (S/N)

**Basic photodiode arrays**  
**CMOS 128 pixels**  
**Spectral window: 350-900 nm**  
Pixel: 55.5 x 63.5 mic  
Linear dynamic range\*: 300:1 (S/N)

Dimensions: An amazing 50x50x50mm!  
**Perfect OEM module for HAND-HELD instruments.**

**VS70-M miniature CCD-PDA Fiber Spectrometer – High Throughput (F/2)**

Aperture: F/2  
A/D: 16 bit  
PC interface: USB and RS232 (call for Ethernet)

**Linear CCD UV enhanced: 3648 pixels**  
**Toshiba TCD 1304AP**  
**Spectral window: 190-1100 nm**  
Pixel: 8 x 200 mic  
Linear dynamic range\*: 1400:1 (S/N)

**PDA (NMOS): 512 or 1024 pixels**  
Hamamatsu S3902  
**Spectral window: 190-1000 nm**  
Pixel: 25x500 & 50x2500 mic  
Linear dynamic range\*: 6000:1 (S/N)

**PDA (CMOS): 512 or 1024 pixels**  
Hamamatsu S8377-512 / S8378-1024  
**Spectral window: 190-1000 nm**  
Pixel: 50x500 & 25x500 mic  
Linear dynamic range\*: 3500:1 (S/N)

Other high end PDA & CCD detectors:  
See \*\* and \*\*\* below

Dimensions: 90x100x49 mm  
Fiber Connector: SMA(or custom ferrule)

**VS140-M compact CCD-PDA Fiber Spectrometer – UV, VIS & NIR configurations.**

Aperture: F/2.4  
A/D: 16 bit  
PC interface: USB and RS232 (call for Ethernet)

**Linear CCD UV enhanced: 3648 pixels**  
**Toshiba TCD 1304AP**  
**Spectral window: 190-800 nm**  
Pixel: 8 x 200 mic  
Linear dynamic range\*: 1400:1 (S/N)

**PDA (NMOS): 512 or 1024 pixels**  
Hamamatsu S3902  
**Spectral window: 380-780 nm**  
Pixel: 25x500 & 50x2500 mic  
Linear dynamic range\*: 6000:1 (S/N)

**PDA (CMOS): 512 or 1024 pixels**  
Hamamatsu S8377-512 / S8378-1024  
**Spectral window: 400-1100 nm**  
Pixel: 50x500 & 25x500 mic  
Linear dynamic range\*: 3500:1 (S/N)

Other high end PDA & CCD detectors:  
See \*\* and \*\*\* below

Dimensions: 123x178x58 mm  
Fiber Connector: SMA(or custom ferrule)

(\* **Typical Linear dynamic range:** Because the A/D dynamic range (14 bits, 16 bits...) of the converter alone is not necessarily representative of the full detector system dynamic range, we measure this typical signal to noise ratio as the linear full well capacity (full dynamic) divided by the readout noise, where the linearity is better than 1%.

Please call or email us to discuss your signal to noise requirements in your application.

(\*\*) **Need High Dynamic Range?** Our spectrometers can be fitted with other Photo Diode Arrays, such as the Hamamatsu PDA S3904-1024 for a linear dynamic range of up to 12,000:1 for example.

**(\*\*\*) Need High Sensitivity for Fluorescence or Raman Applications?** We can design custom electronics for these spectroscopy CCD detectors: Hamamatsu S9840 high UV sensitivity front- illuminated CCD, Hamamatsu back thinned CCD S7031-1006 and E2V high end CCD chips (front- illuminated, lumogen coated, back thinned, open electrode...).

### Applications:

Colorimeters, Spectrophotometers, Analytical chemistry, Process monitoring, Medical instruments, Telecommunications, Semiconductors...

Design customizations for OEM volume customers are possible for each part of the spectrometer: Spectrograph, CCD or PDA chip selection and electronics. Exclusivity on a design can also be contracted.

#### *Unhappy with your current stray light rejection or low throughput fiber spectrometer?*

Horiba Jobin Yvon offers an affordable and high performance replacement solution in its compact spectrographs which:

- Integrate concave holographic diffraction gratings that cut losses due to astigmatism.
- Feature high collection optics (F/#2 optics) for superior throughput.
- Eliminate extra mirrors found in other optical spectrometer designs.

#### *Need to monitor a reference signal?*

Horiba Jobin Yvon realizes that OEM customers wish to use lower cost lasers or light sources which may not feature optimum stability. Its line of imaging spectrographs allows you to use 2-D CCD detectors which can simultaneously record your light source drifts or spikes for correction purposes during the same exposure.

#### *Need to monitor multiple spectra at once?*

A high performance imaging spectrograph can also record 5-10 spectra coming from 10 different fiber optics channels, without crosstalk between the various signals. Horiba Jobin Yvon even designed a spectrograph that could separate 100 channels along the vertical axis of a CCD. Our imaging spectrographs can be fitted with 2D CCD chips such as the Sony ICX 285 CCD sensor or the lower cost Sony ICX 414 CCD sensor (imaging spectroscopy, reference monitoring) or with the EEV 2-D high performance Charge Coupled Devices. Consult us about special designs.

**Considering a CCD chip which we don't list?** Our electronics team will be happy to meet your engineering team to discuss your specification requirements for volume orders. We have developed full OEM CCD electronics sets in 3 months. We transfer our knowledge of high end spectroscopy CCD electronics with high signal to noise into OEM compact modules with customer specified dimensions and shape factors. We, the OEM division, are specialists of **COST REDUCTION** combined with **PERFORMANCE MAINTAINING**. Note: Non disclosure agreements are of course put in place when we start OEM projects.

## CONTACT OUR OEM SALES DEPT TO SPEAK WITH AN ENGINEER.



**CONTACT US: Miniature OEM spectrometers ranging from 20mm to 140 mm focal length as well as OEM CCD/PDA Detectors or GRATINGS, Call us or click here to contact our OEM Division products.**  
(USA) Email: [OEM@Jobinyvon.com](mailto:OEM@Jobinyvon.com) Ph: 1-732-494-8660 Ext 232  
(France) Email [Oem.Sales@jobinyvon.fr](mailto:Oem.Sales@jobinyvon.fr) Ph: 00-33-1-64-54-13-38



**HORIBA**JOBIN YVON

Find us at [www.jobinyvon.com](http://www.jobinyvon.com) or telephone:

**USA:** +1-732-494-8660    **France:** +33 (0) 1 64 54 13 00    **Japan:** +81 (0) 3 3861 8231  
**Germany:** +49 (0) 89 462317-0    **UK:** +44 (0) 20 8204 8142    **Italy:** +39 0 2 57603050  
**China:** +86 (0) 10 6849 2216    **Other Countries:** +33 (0) 1 64 54 13 00

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