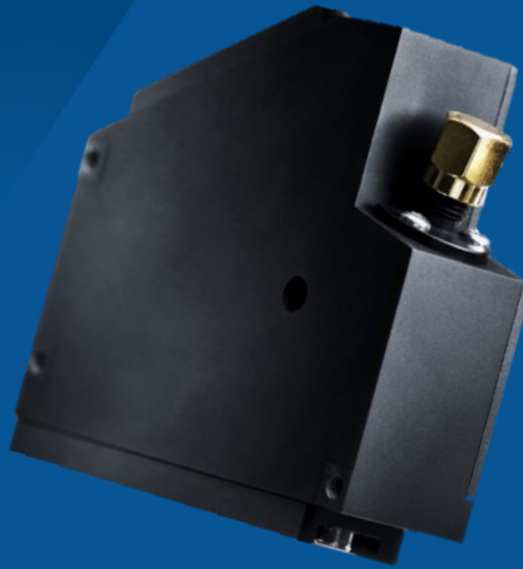


**Compact and cost efficient
Ideal for high resolution portable
solutions**

l b s e n 
p h o t o n i c s

Ibsen's FREEDOM HR-VIS spectrometers combine compactness and low cost with high performance and are the ideal OEM solution for all those handheld and portable system applications where performance cannot be sacrificed.

The FREEDOM HR-VIS series comprises the FHV-101 for low cost, FHV-315 for low noise, and FHU-380 for fast integration time. Furthermore, if the specifications do not match your requirements, Ibsen can customize an OEM spectrometer to meet your exact needs.



FREEDOM HR-VIS

360 – 830 nm OEM Spectrometer

FREEDOM HR-VIS 360 – 830 nm OEM Spectrometer

Key Benefits



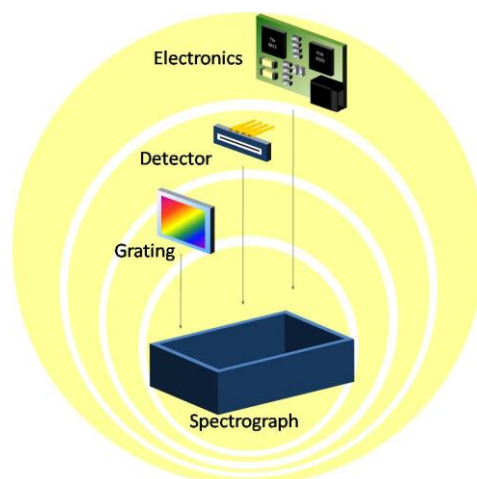
- **High resolution**
- **Compact size**
- **Flexible detector and electronics**
- **Robust and athermal design**

Specifications

Parameter	FHV-101	FHV-315	FHV-380
Wavelength range	360 - 830 nm	360 - 830 nm	360 - 830 nm
Numerical aperture	0.11	0.11	0.11
Typical resolution	0.4 nm/FWHM	0.5 nm/FWHM	0.5 nm/FWHM
Stray light	<0.03%	<0.03%	<0.03%
Detector	Hamamatsu S11639 CMOS	Hamamatsu S10420 BT-CCD	Hamamatsu S11156 BT-CCD
Interface	Direct interface to detector pins (optional electronics available)		
Temperature drift	<0.02 nm/Degree C		
Operating temperature range. Non-condensing	-10 to +45 Degree C		
Dimensions	61 mm x 65 mm x 19 mm		

Modular Approach

Ibsen's OEM spectrometers are based on a modular design, whereby customers can choose to buy a complete spectrometer, a spectrograph or simply a spectrometer grating, depending on the approach that they prefer. Furthermore, our spectrometers can be fitted to almost any detector and electronics.



Specifications are subject to change without notice.