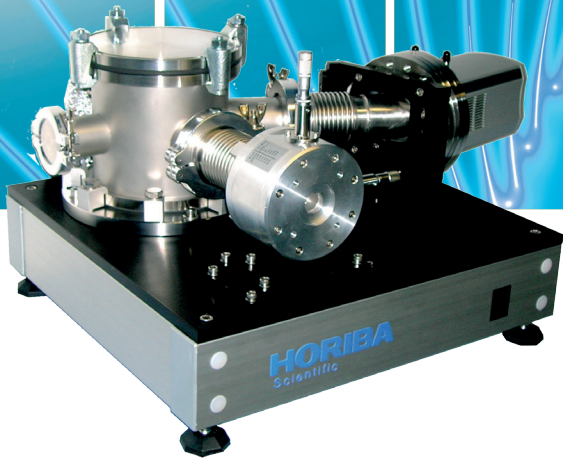


## H30-UVL Monograph for far and extreme ultraviolet



A Monochromator and  
a Spectrograph



# A monograph to explore the 50-300nm spectral range

## Applications

- Tunable light source
- FUV Reflectometry/ Absorption
- Plasma Physics Study
- High Harmonic Generation

The H30-UVL is especially designed for analyzing from high EUV to UV range in high vacuum environment and can be used as a monochromator (slit-slit) or spectrograph (slit-CCD).

The H30-UVL is built around a single toroidal aberration corrected grating using the holographic Variable Line Spacing, VLS technology. It has been calculated to reduce astigmatism not only on its optical axis but over a large exit plane in all directions (25 x 10 mm corrected plane) making it ideal for one inch arrays. Its single grating layout has the other advantage to reduce the number of optics in the instrument to the minimum, increasing its throughput in EUV and FUV regions.

## Features

- Single Toroidal Grating design
- Low astigmatism level
- Corrected imaging plane
- MgF<sub>2</sub> coating UV optimized
- Interchangeable exit port
- Automated drive
- Built-in USB2 interfaces
- High Vacuum compatible

## Benefits

- Optimized the throughput
- High S/N ratio measurement
- Flat field monograph
- Better efficiency in FUV range
- Choice of exit slit or CCD port
- Fast and easy to operate
- No additional controller and easy computer control
- A few 10<sup>-6</sup> mbar – optional a few 10<sup>-9</sup> mbar (UHV)

Compact  
Controller less  
Fast drive  
Versatile  
USB2  
High EUV-UV  
True flat field

## Variation of the dispersion with wavelengths

Wavelength (nm)	Dispersion (nm/mm)
50	2.3
175	2.5
300	2.6

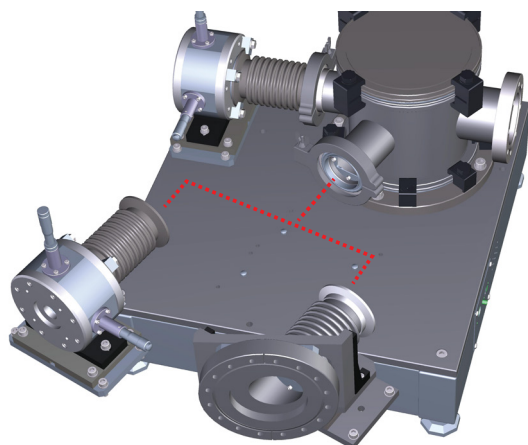
## Spectral range analyzed with 1 inch CCD in Spectrograph Mode

Central wavelength (nm)	Spectral range on the CCD	
	nm	eV
50	21 - 80	15 - 60
150	120 - 180	7 - 10
300	270 - 330	4 - 5

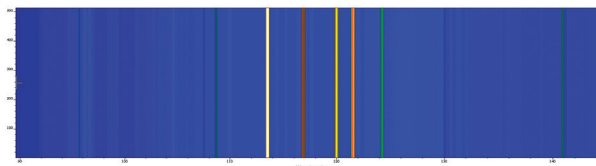
# Toroidal rotating grating providing a flat field spectrum

## A corrected grating for a compact and simple design

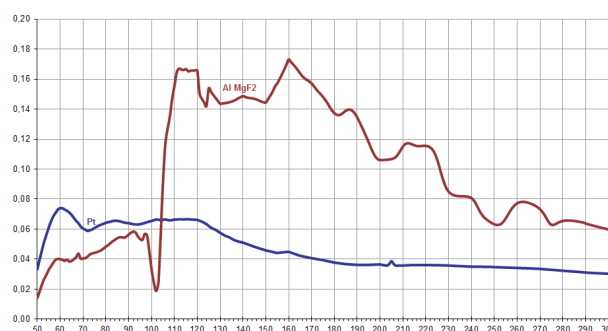
Thanks to the corrected grating that provides a true flat field spectrum whatever the selected wavelength, the exit port can be either a slit or a CCD port.



Exit port easily interchangeable by user from slit to CCD port



The spectrum recorded with a H30-UVL in spectrograph mode. VLS gratings make proper corrections to have the best image at the exit of instruments.



Theoretical absolute efficiency of H30-UVL with a Pt and AlMgF<sub>2</sub> coating

## Standard Configuration

<b>Optical design</b>	Toroidal VLS Grating (single optic)
<b>Focal length</b>	274 mm
<b>Aperture</b>	f/6
<b>Grating density</b>	1200 gr/mm
<b>Grating type</b>	Replica (Master in option)
<b>Optic coating</b>	AlMgF <sub>2</sub> optimized at 121 nm or Pt
<b>Deviation angle</b>	70°
<b>Dispersion</b>	2.3 nm/mm at 50 nm
<b>Drive</b>	Fast worm drive
<b>Resolution</b>	Better than 0.2nm (*)
<b>Vacuum</b>	A few 10 <sup>-6</sup> mbar

<b>Pumping flange</b>	DN63 CF
<b>Entrance port</b>	Micrometric slits (10 μm to 2 mm)
<b>Exit port</b>	Micrometric slits (10 μm to 2 mm) or adjustable CCD port
<b>Entrance flange</b>	DN40 KF
<b>Exit flange</b>	DN40 KF for slit version, DN100CF for CCD version
<b>Software</b>	HORIBA Scientific software
<b>PC Interface</b>	Built-in USB2 – No additional controller

\* using 10 micron slit and 2 mm slit height at 121 nm in monochromator mode

## Options

- Exit port can be CCD port. Easily interchangeable by user
- Removable entrance arm

## Accessories

- UV Light Sources
- Single channel detection
- CCD detectors
- Laser kit for easy alignment
- HM mirror chambers
- Sample compartment

# HORIBA Scientific, Your partner in VUV Spectroscopy

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