



TGM300 MONOCHROMATOR

SYNCHROTRON Compatible

VUV Monochromator:

The Toroidal Grating Monochromator (TGM) series is designed to function as a Vacuum Ultraviolet (VUV) radiation analyzer or disperser. Coupled with a single channel detector, this device analyzes UV and Extended UV (EUV) radiations, such as those emitted from UV plasma sources. It can also be used as a stand alone, tunable light source when equipped with dedicated UV light source. Operating at up to 10^{-9} mbar vacuum pressure, the TGM300 is the definitive tool for 10 – 300 nm spectral range analysis.

An original HORIBA JobinYvon Concept:

Based on HORIBA Jobin Yvon's patented technology, the TGM series is built around a single toroidal holographic grating with 142° deviation angle (grazing incidence). This simple optical design dramatically reduces astigmatism and results in excellent luminosity and spectral purity, even at low wavelengths.

Three Platinum-coated Toroidal Master Gratings are available:

550 gr/mm	10 – 50 nm spectral range Max efficiency: 15 nm
550 gr/mm	15 – 150 nm spectral range Max efficiency: 35 nm
275 gr/mm	50 – 300 nm spectral range Max efficiency: 55 nm

APPLICATIONS:

- EUV Reflectivity
- UV tunable filter/Light source
- Laser Harmonic Filter
- Plasma Physics Studies

Specifications:

Optical design	HJY patent
Focal length	320 mm
Aperture	f/10
Resolution	0.4 nm (*)
Wavelength Drive	Manual
High Vacuum	10^{-6} mbar
Pumping flange	DN40 KF
Entrance/exit slits	Inserts

Options:

Wavelength drive	Motorized by stepper motor. USB2 interface
Slits	Micrometric or Motorized
Grating slide with manual feed through	Up to 2 gratings under vacuum
Ultra High Vacuum	10^{-9} mbar with DN63CF pumping flange

(*) using 550 gr/mm grating



TGM300 VUV Monochromator (Manual version)

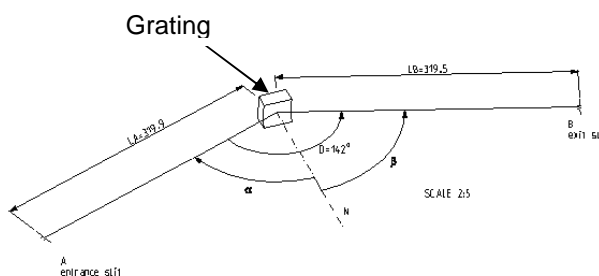
Features

- Single Master Grating design
- Low Astigmatism level
- High Vacuum compatible
- Dual Grating Option
- Fully automated operation Option
- Build-in RS232/IEEE interfaces
USB2 compatible
- HORIBA Jobin Yvon SynerJY and LabSpecV software compatible.
Labview VI available.

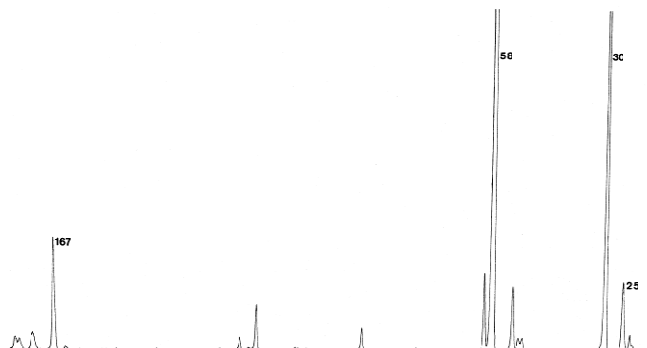
Benefits

- Optimized for Throughput
- High S/N ratio measurements
- HV (10^{-6} mbar) – Optional UHV (10^{-9} mbar) operation
- Versatility under vacuum
- Easy to operate
- Easily programmable with SDK
- Easy computer control

A grazing angle and a single toroid optic for the highest Efficiency



TGM300 Optical layout



Helium spectrum between 20 and 170 nm

ORDERING INFORMATION:

TGM300HV: TGM300 core, manual wavelength drive. High vacuum (10^{-6} mbar) vessel uses with DN40KF pumping flange. Requires two slits.

Grating selection:

54000900:	550 gr/mm grating 10-50 nm (25 – 124 ev) Exit dispersion: 1.6 to 1.8 nm/mm
54000910:	550 gr/mm grating 15-150 nm (8 – 82 ev) Exit dispersion: 1.2 to 1.8 nm/mm
54000920:	275 gr/mm grating 50-300 nm (4 – 25 ev) Exit dispersion: 2.3 to 3.5 nm/mm

OPTIONS:

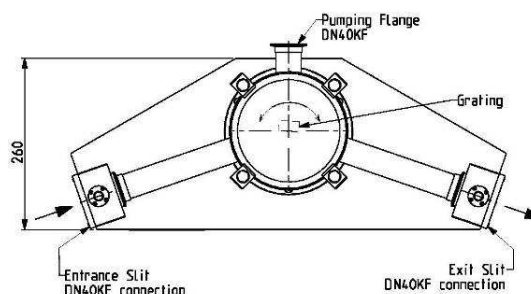
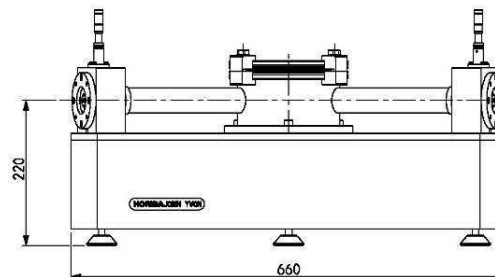
TGM-UPDRIVE: Motorized drive, USB2 interface

TGM-UPUHV: Ultra High Vacuum (10^{-9} mbar) vessel using DN63CF pumping flange.

TGM-UP2G: Dual grating slide

TGM-MIS: Micrometric slit (0-2 mm)

TGM-MOS: Motorized slit (0-2 mm)



TGM300 Monochromator

All our VUV packages do not include pump and gauges which are necessary for the use of this instrument.

Since more than 25 years, HORIBA Jobin Yvon has been supplying mirrors, diffraction gratings, beamline components, monochromators and spectrographs to the soft X-ray, EUV and VUV community. Our capabilities include excellent polishing, shape control and coating technologies applicable to a wide range of substrate materials. HORIBA Jobin Yvon toroid diffraction gratings are well known for their cost-effective solutions for designing high throughput VUV instruments. Do not hesitate to contact us for further information.

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