

**TMS300**  
**Triple Grating Monochromator**  
**with Internal Motorised Slits**



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# TMS300 Monochromator

**The TMS300 monochromator offers the same excellent optical performance as the popular TMc300 monochromator– including flexibility of configuration and the ability to cover a wide spectral range in a single scan– adding the significant advantage of internal motorised slits.**

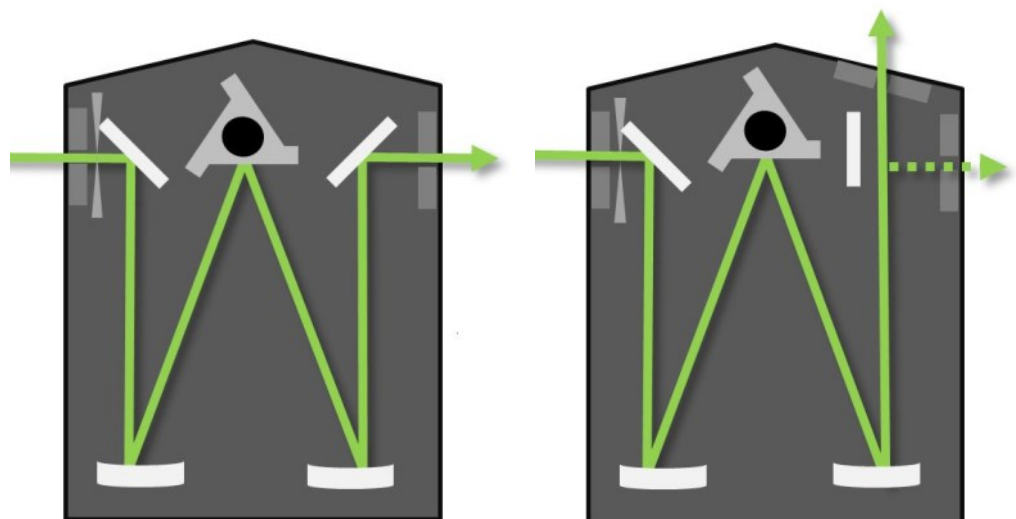
In its simplest form, motorised slits allow maintaining system bandwidth during migration between diffraction gratings through the scan range. More powerfully still, it is possible to vary system bandwidth and measurement step size throughout the spectral range of use.

Compatible with the full range of sources, detectors and accessories of the Bentham portfolio, the TMS300 monochromator provides supreme flexibility throughout the UV, visible and IR.

## Key features include:

- 300mm focal length single monochromator in Czerny-Turner configuration
- Up to three diffraction gratings allow single-scan measurement over wide spectral range
- May be configured over ranges included in 200nm-50 $\mu$ m, below 300nm typically only where stray light not desired
- One entrance port and two exit ports with automated mirror-based port selection for use of multiple input/ output/ detector configurations
- Internal motorised entrance and exit slits
- Internal order-sorting filter wheel
- Large rectangular gratings enhance light throughput whilst optical layout minimises scattered light
- Fast wavelength acquisition with zero backlash
- Fully automated through USB 2.0 interface

## Configurations

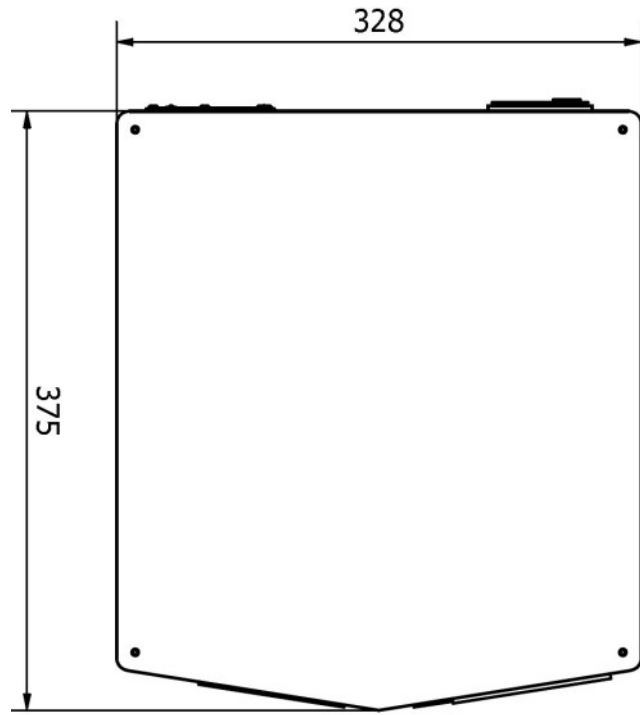


## Specification

<b>Optical Layout</b>	
Configuration	Symmetrical Czerny Turner
Focal length	300mm
Grating mount	Triple grating turret
Number of gratings	1-3
Grating size	68 x 84mm
Aperture ratio	f/4.1 (at all grating angles)
Number of entrance/exit ports	1/2 or 2/1
<b>Opto-Mechanical</b>	
Mechanical resolution grating drive (°/ step)	0.00072°/ step
Slit type	Internal motorised variable
Slit width & height (mm)	10µm-10mm (W) x 20 (H)
Order sorting	6-position filter wheel
Filter diameter	25mm (see separate Order Sorting Filter datasheet for full range)
<b>Optical Performance (quoted for 1200 g/mm gratings)</b>	
Spectral range	Within range 200nm-50µm
Linear dispersion	2.7nm/mm
Wavelength accuracy	± 0.2nm
Wavelength repeatability	± 0.05nm
Resolution full/reduced slit height (nm)	0.3/0.1nm
Stray light rejection at 2.5x FWHM	10 <sup>-5</sup>
Wavelength acquisition speed	1000nm/s
<b>Automation</b>	
Computer interface	USB 2.0
Software control	BenWin+/SDK
<b>Electrical/Mechanical</b>	
Overall dimensions	328w x 375d x 263h mm
Optical height	178mm
Weight	Approx. 15kg
Power supply	Mains input 110/220V 50/60Hz
<b>Options</b>	
Diffraction gratings	See separate Diffraction Gratings datasheet
Order sorting filters	See separate Order Sorting Filters datasheet
Filter wheel	252-6 (6-position filter wheel, includes shutter)

**TMS300**  
**Dimensions (mm)**

**Top view**



**Side view**

