

**DTMc300**  
Double Monochromator

# DTMc300 Monochromator

For those applications where the scattered light performance of a single monochromator is not sufficient, the excellent optical performance as the TMc300 may still be experienced with two of such used in tandem constituting thereby the DTMc300 double monochromator.

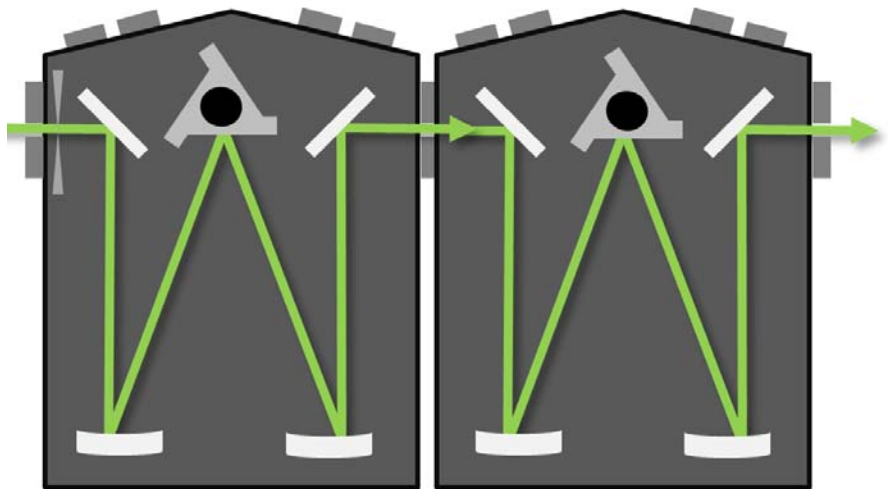
The DTMc300 maintains the flexibility of configuration and ability to cover a wide spectral range of the TMc300, within a single scan.

Compatible with the full range of sources, detectors and accessories of the Bentham portfolio, in the additive dispersion mode, the DTMc300 monochromator is at the heart of many of our light measurement solutions, particularly those incorporating a UV component, whilst the subtractive dispersion mode is sought by high level laboratories seeking minimum measurement uncertainty due to the resulting lack of dispersion at the exit slit.

### Key features:

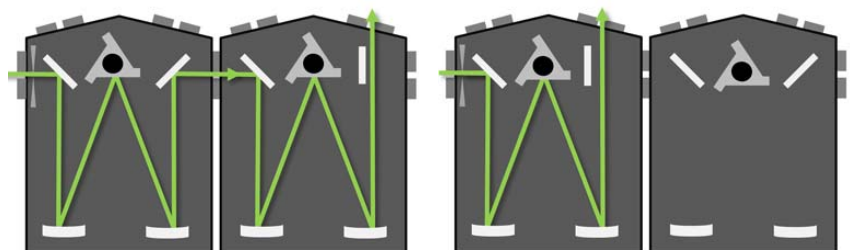
- Double monochromator composed of two 300mm focal length monochromators in Czerny-Turner configuration arranged for either additive or subtractive dispersion
- Each single monochromator accommodates up to three diffraction gratings permitting single-scan measurement over wide spectral range included in range 200nm-50µm
- Up to two entrance ports, one exit port on first monochromator (single mode) and up to two exits on second monochromator (double mode) with automated mirror-based port selection for use of multiple input/ output/ detector configurations
- Fully automated through USB 2.0 interface

## Configuration (typical)



Standard configuration A

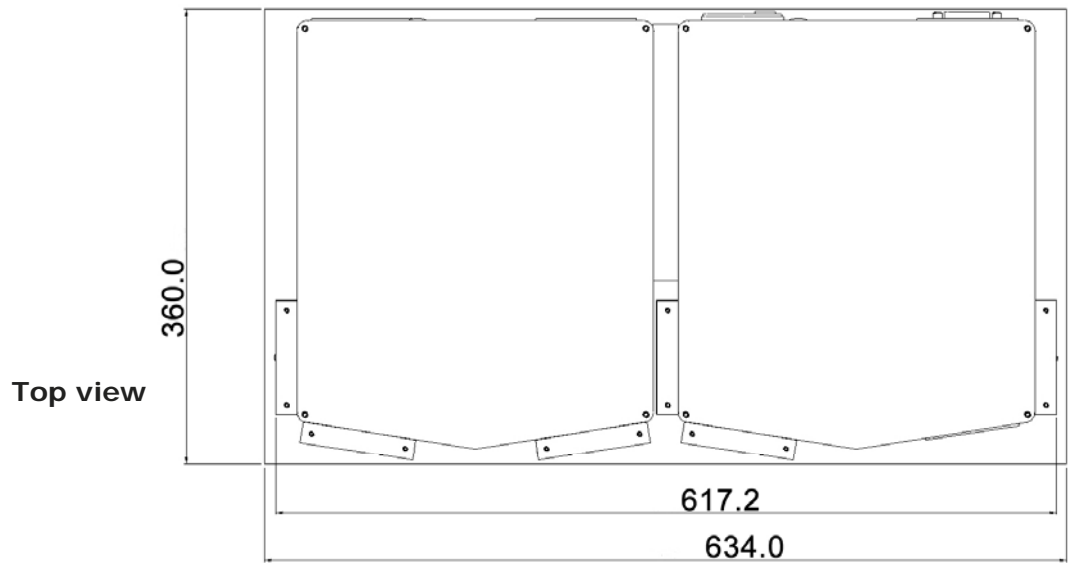
Alternative configurations B & C:



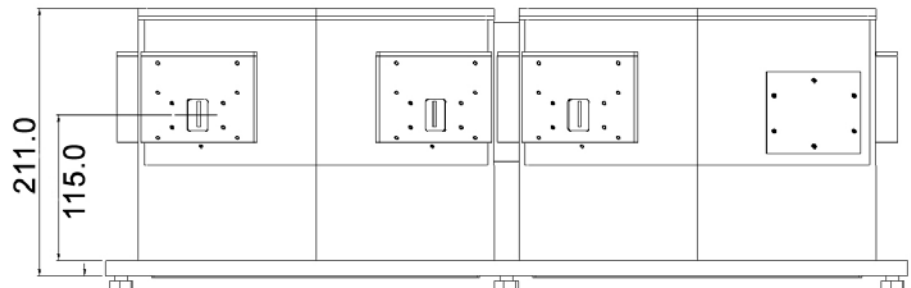
## Specification

<b>Optical Layout</b>	
Configuration	Pair symmetrical Czerny Turner monochromators arranged for either additive or subtractive dispersion
Focal length	Total focal length: 600mm (additive) Individual Units: 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 or 2 in both monochromators
<b>Opto-Mechanical</b>	
Grating drive	Worm and wheel driven turret
Mechanical resolution drive	0.000072° / step
Slit type	Fixed, micrometer or motorised variable
Slit width & height	10µm-10mm (W) x 20mm (H)
Order sorting	6/8-position filter wheel (includes shutter)
Filter size	25mm diameter
<b>Optical Performance (quoted for 1200 g/mm gratings)</b>	
Spectral range	Within range 200nm-50µm
Linear dispersion	1.35nm/mm (additive)
Wavelength accuracy	± 0.2nm
Wavelength reproducibility	± 0.05nm
Resolution full/reduced slit height	0.3/0.1nm
Stray light rejection at 2.5 FWHM	10 <sup>-8</sup>
Wavelength acquisition speed	1000nm/s
<b>Automation</b>	
Computer interface	USB, IEEE as option
Software control	BenWin+/SDK
<b>Electrical/Mechanical</b>	
Overall dimensions (mm)	634W x 360D x 211H
Optical height (mm)	115mm
Construction	Single machined casting
Weight	14 kg
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

# DTMc300 Dimensions



Side view



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