



Model 205 500-mm focal length Czerny Turner Monochromator / Spectrometer available in three versions to suit your experimental requirements.

- **f/3.2 with selected large gratings for maximum throughput, Model 205f**
- **f/4.3 with 4-grating turret for wide wavelength ranges, Model 205wr**
- **f/6.9 with 2-grating turret or single f/4.3 SNAP IN gratings, Model 205**

**Three versions of the Model 205 have been developed to meet diverse spectral analysis requirements.**

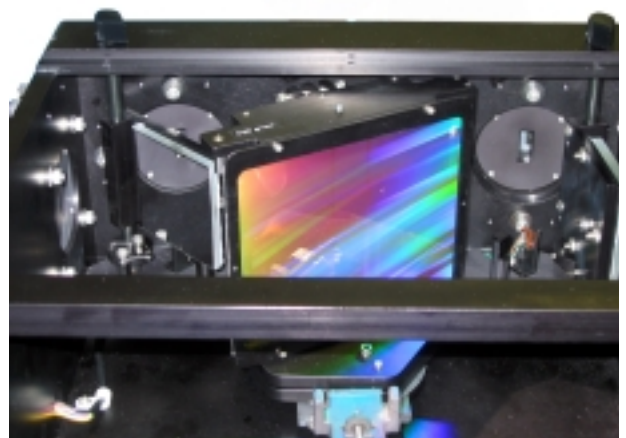
The half meter focal length is popular. It provides reasonable spectral resolution, throughput and package size. Every lab has room for a half meter monochromator! Each application is unique and the versions of the McPherson Model 205 will allow you to tailor the instrument to produce better data from every experiment. Wavelengths from 200nm to more than 20um can be covered within the scanning range and with appropriate gratings. All versions can be provided with the [789A-3 digital scan control](#) for scanning or with [corrected optics for imaging applications](#). All but the 205wr can be configured with multiple ports to do both.

All versions of this instrument feature: High Efficiency Broadband Al+MgF2 optical coatings, precision micrometer adjustable slits, gratings that rotate about their apex to maintain high throughput and prevent spectral 'wander' and rugged construction. Configurable options include: multiple slit locations, dual (2) or quad (4) grating turrets accepting "Snap-In" gratings, [and imaging optics](#) & large focal plane support.



**The Model 205wr uses a quad 4-grating turret** with 110 x 110mm SNAP IN gratings. This unit is most often integrated into scanning spectral calibration or very wide wavelength range Spectrophotometry applications. For example, with 4 gratings installed, work from the UV to the far or long wave infrared (LWIR) is simplified while maintaining high throughput.

**The Model 205f uses large 120 x 150-mm gratings to achieve phenomenal light gathering and throughput.** The fast aperture ratio is excellent for low light applications, like Raman and photoluminescence. Any time photons are at a premium the Model 205f can help. It can be equipped with the [789A-3 digital scan control](#) for scanning or with [corrected optics for imaging applications](#).



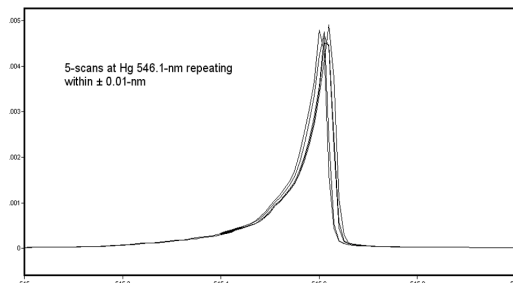
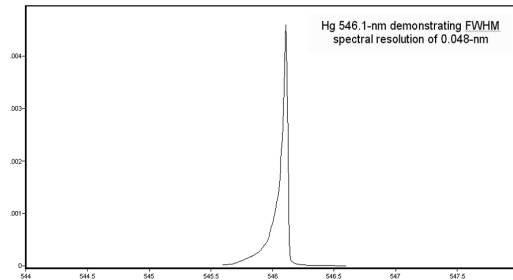
### DETAIL SPECIFICATION AND GRATING SELECTION

<b>Focal Length</b>	500mm, Czerny Turner design Spectrometer with Patented "Snap-In" gratings
<b>Slit Locations</b>	Axial and lateral with optional extra entrance and exit port selection mirrors depending on version
<b>f No.</b>	f/6.9, f/4.3, f/3.2 with turret or single grating holder depending on version
<b>Grating Size</b>	from 154*126mm to 68*68mm depending on version
<b>Accuracy</b>	+/- 0.1-nm (on counter, with 1200 G/mm grating)
<b>Reproducibility</b>	+/- 0.005 nm (with 1200 G/mm grating)
<b>Focal Plane</b>	25-mm, multiply dispersion by the width of your detector for range
<b>Wavelength Range</b>	refer to grating of interest for range

Grating Groove Density (g/mm)	3600	2400	1800	1200	600	300	150	75
Resolution** (nm)	0.016	0.02	0.03	0.04	0.08	0.16	0.32	0.64
Dispersion (nm/mm)	0.5	0.83	1.10	1.66	3.33	6.66	13.3	26.6
Wavelength Range	185 - 430nm	185 - 650nm	185 - 860nm	185 - 1300nm	185 - 2600nm	185nm - 5.2um	185nm - 10.4um	185nm - 20.8um
Available Grating Blazes	Holographic* 240	Holographic* 240 300	Holographic* 400 500	Holographic* 250 300 500 750 1um	Holographic* 300 500 750 1um 1.85um	300 500 750 1um 3um 4um	300 500 1.25um 2.5um 4um 6um 8um	2um 3um 8um 10um 12um

(\* Holographic gratings are available where noted.)

\*\* Resolution with Model 205 at 313.1nm  
Performance with faster 'wr' and 'f' models varies.  
All specifications are for single pass operation.



### Salient Features

- Outperforms and exceeds specifications of comparable monochromators in **throughput**, resolution, dispersion, wavelength accuracy, and wavelength reproducibility.
- Exit ports may be equipped with bilaterally adjustable slits, as used in scanning applications, or with adapters for selected CCD or PDA array detectors.
- Holds chosen ruled or holographic gratings. Grating selection for the fast aperture f/3.2 is limited.
- Available with a dual (2) or quad (4) grating turret. Single gratings feature kinematic mounts for ease of installation and exchange. Both types of grating holders permit simple and precise positioning. Additional gratings can easily be installed.
- Robust, high accuracy wavelength drive and mechanical wavelength readout insure easy use. The sine drive delivers a linear relationship between motor motion and wavelength of interest.
- The high precision drive may be actuated manually, via stepper motor controller or from the PC.
- The Models 205 and 205f may be supplied with side and/or front mounted slit assemblies. Side ports are accessed by 90-degree mirror assemblies which are optionally motor driven. The Model 205wr only offers side ports.
- Imaging optical system easily adapts to commercial PDA and CCD type detectors. The mechanical interface for uncommon detectors will be manufactured to order.
- Precision bilaterally adjustable slit assemblies. Width is variable by micrometer from 10-um to 4-mm. The micrometer is directly readable to 10-um. Slit height is adjusted by occulter from 2-mm to 20-mm. The slits may be optionally motor driven.
- The wide range of available accessories allows configuration of optimized systems and facilitates changing experimental needs.
- Heavy duty construction for high stability with respect to vibration and thermal effects.