

Omni Spectrographs

Omni- λ Monochromators and Spectrographs



Omni- λ Series of imaging spectrographs and monochromators from Zolix Instruments are profession standard for researchers who demand the highest quality data. Zolix spectrographs and monochromators feature a very flexible design that can be configured for a wide range of applications & spectral range from UV to NIR.

- 200mm, 320 mm, 500 mm, 750 mm focal length
- Our rugged Czerny-Turner spectrographs come pre-aligned and pre-calibrated for ease of operation.
- Interchangeable triple grating turret– Different wavelength ranges and resolutions, Provide a simple, accurate and convenient way for the user to change gratings within the spectrograph unit
- These instruments can be integrated with single point detectors, InGaAs cameras and CCDs to offer a versatile, most sensitive modular solution for different applications ;
- Accessories including filter wheels, fiber adapters, shutters, motorized slits, sample chambers etc.
- Software can complete data acquisition for detectors including single point detectors and CCD.
- Labview driver for programming to operate Omni- λ Series spectrographs and monochromators.

Omni- λ Specifications(@1200g/mm*)

	Omni- λ 200i	Omni- λ 300i	Omni- λ 500i	Omni- λ 750i
Focal Length (mm)	200	320	500	750
Aperture Ratios	f/3.5	f/4.2	f/6.5	f/9.7
Resolution(nm)-PMT*	0.15	0.08	0.05	0.03
Resolution(nm)-CCD(26 μ m) *	0.27	0.173	0.11	0.077
Dispersion (nm/mm) *	3.58	2.29	1.49	1.02
Wavelength Accuracy(nm)	± 0.2	± 0.2	± 0.2	± 0.2
Wavelength Repeatability (nm)	± 0.1	± 0.025	± 0.025	± 0.025
Step (nm)	0.01	0.005	0.005	0.005
Stray Light	5×10^{-5}	1×10^{-5}	1×10^{-5}	1×10^{-5}
Focal Plane Size (mm)	30(w) \times 14(h)	30(w) \times 14(h)	30(w) \times 14(h)	30(w) \times 14(h)
Optical Axis Height(mm)	146	146	146	146
Slit	Width: 0.01-3mm(Motorised or manual slit), Height: 2, 4, 14 mm, height selectable			
Grating Size(mm)	50 \times 50	68 \times 68	68 \times 68	68 \times 68
Grating Mount	Dual grating turret	Interchangeable triple grating turret	Interchangeable triple grating turret	Interchangeable triple grating turret
Computer Interface	USB2.0	USB2.0 and RS232	USB2.0 and RS232	USB2.0 and RS232
Size (mm)	300 \times 216 \times 213	420 \times 295 \times 232	550 \times 288 \times 220	800 \times 338 \times 218
Weight (Kg)	14	16	22	32.5

- Dispersion measured with 1200g/mm grating @ 435.8nm
- PMT resolution measured with 1200g/mm @ 435.8nm, 10 μ m slit width and 4mm slit height
- CCD resolution measured with 1200g/mm @ 435.8nm, 10 μ m slit width and 26 μ m pixel

Omni-λ Spectrographs Named Views

Omni-λXX Y Z(i)

20: 200 mm focal length
 30: 320 mm focal length
 50: 500 mm focal length
 75: 750 mm focal length

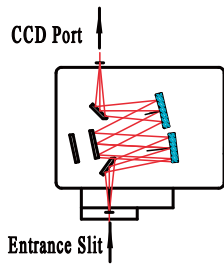
0: Standard (Side entrance, protected Al coated grating and mirror)
 1: IR (Protected gold coated)
 2: Dual slit entrances
 3: IR & Dual slit entrances
 4: UV
 5: UV & Dual slit entrances
 6: Protected silver coated
 7: Protected silver coated & Dual slit entrances

2: CCD side exit
 3: Slit front exit, CCD side exit
 4: Dual CCD exits
 5: Slit front exit
 6: CCD front exit
 7: Dual slit exits
 8: CCD front exit, slit side exit
 9: Slit side exit

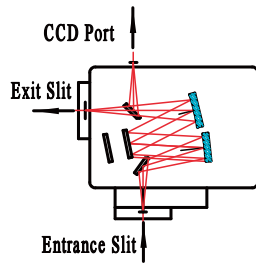
e.g Omni- λ 3047, side entrance, slit front exit, slit side exit, support 3 gratings simultaneously, UV monochromator.

Optical Configuration

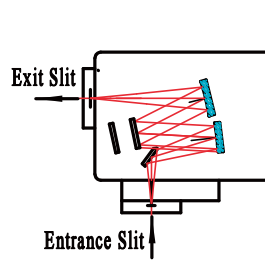
Omni- λ 200i Monochromator/Spectrograph



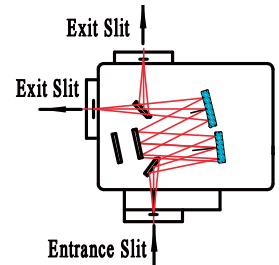
Omni- λ 2002i



Omni- λ 2003i

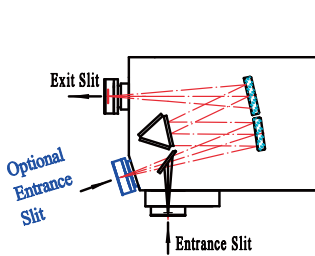


Omni- λ 2005i

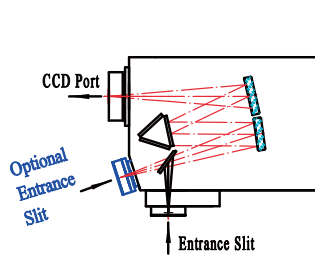


Omni- λ 2007i

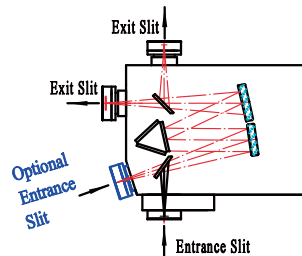
Omni- λ 300i Monochromator/Spectrograph



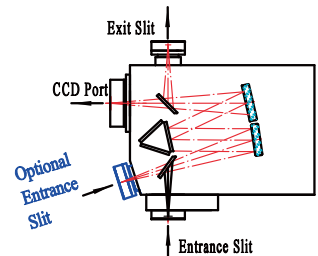
Omni- λ 3005i



Omni- λ 3006i

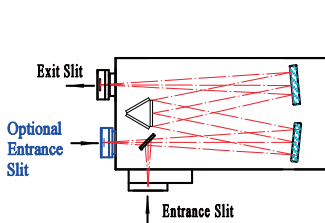


Omni- λ 3007i

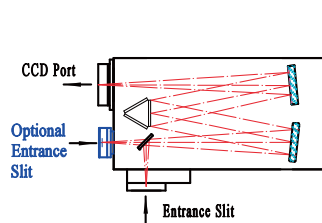


Omni- λ 3008i

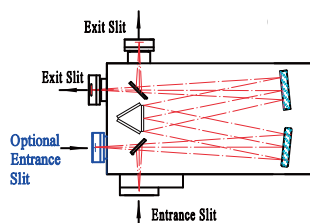
Omni- λ 500i Monochromator/Spectrograph



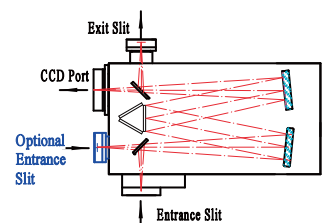
Omni- λ 5005i



Omni- λ 5006i

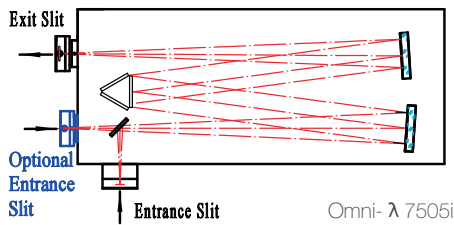


Omni- λ 5007i

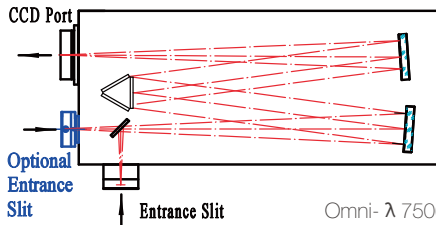


Omni- λ 5008i

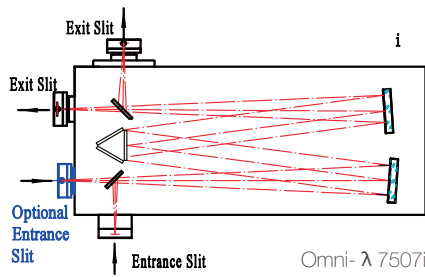
Omni- λ 750i Monochromator/ Spectrograph



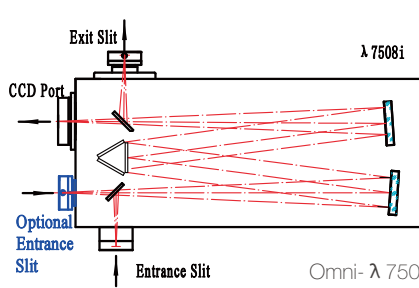
Omni- λ 7505i



Omni- λ 7506i



Omni- λ 7507i



Omni- λ 7508i

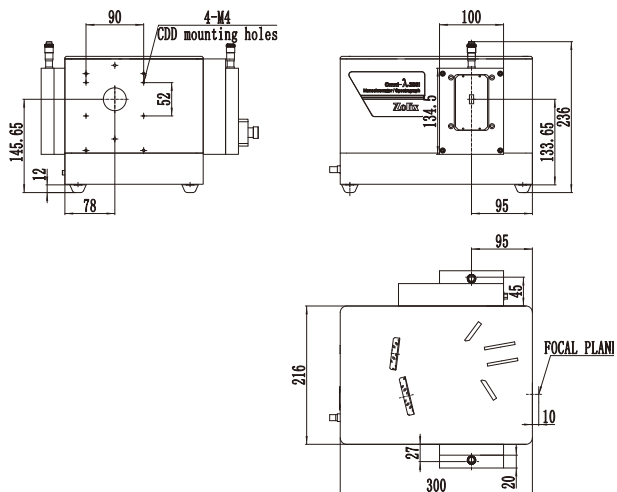
Note: the second entrance is the optional (blue).

Omni- λ Selections

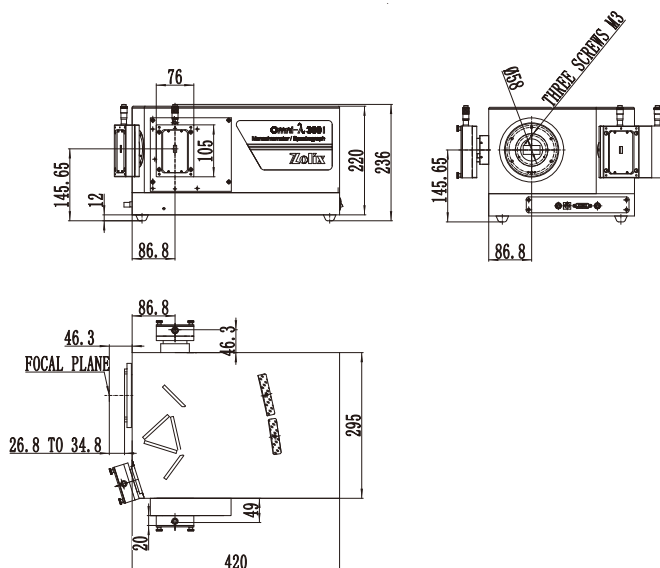
Model	Description
Omni-λ200i series Monochromator(200 mm focal length, support 2 gratings simultaneously)	
Omni- λ 2003i	side entrance, slit front exit, CCD side exit, support 2 gratings simultaneously
Omni- λ 2002i	side entrance, CCD side exit, support 2 gratings simultaneously
Omni- λ 2005i	side entrance, slit front exit, support 2 gratings simultaneously
Omni- λ 2007i	side entrance, slit front exit, slit side exit, support 2 gratings simultaneously
Omni-λ300i series Monochromator/ spectrograph(320 mm focal length, support 3 gratings simultaneously)	
Omni- λ 3005i	side entrance, slit front exit, support 3 gratings simultaneously
Omni- λ 3007i	side entrance, slit front exit, slit side exit, support 3 gratings simultaneously
Omni- λ 3008i	side entrance, CCD front exit, slit side exit, support 3 gratings simultaneously
Omni- λ 3004i	side entrance, CCD front exit, CCD side exit, support 3 gratings simultaneously
Omni- λ 3015i	side entrance, slit front exit, support 3 gratings simultaneously, IR monochromator,
Omni- λ 3017i	side entrance, slit front exit, slit side exit, support 3 gratings simultaneously, IR monochromator
Omni- λ 3027i	Dual entrances, slit front exit, slit side exit, support 3 gratings simultaneously
Omni- λ 3028i	Dual entrances, CCD front exit, slit side exit, support 3 gratings simultaneously
Omni- λ 3024i	Dual entrances, CCD front exit, CCD side exit, support 3 gratings simultaneously
Omni- λ 3047i	side entrance, slit front exit, slit side exit, support 3 gratings simultaneously, UV monochromator
Omni- λ 3048i	side entrance, CCD front exit, slit side exit, support 3 gratings simultaneously, UV monochromator
Omni- λ 3044i	side entrance, CCD front exit, CCD side exit, support 3 gratings simultaneously, UV monochromator
Omni-λ500i series Monochromator/ spectrograph (500 mm focal length, support 3 gratings simultaneously)	
Omni- λ 5005i	side entrance, slit front exit, support 3 gratings simultaneously
Omni- λ 5007i	side entrance, slit front exit, slit side exit, support 3 gratings simultaneously
Omni- λ 5008i	side entrance, CCD front exit, slit side exit, support 3 gratings simultaneously
Omni- λ 5004i	side entrance, CCD front exit, CCD side exit, support 3 gratings simultaneously
Omni- λ 5015i	side entrance, slit front exit, support 3 gratings simultaneously, IR monochromator,
Omni- λ 5017i	side entrance, slit front exit, slit side exit, support 3 gratings simultaneously, IR monochromator
Omni- λ 5027i	Dual entrances, slit front exit, slit side exit, support 3 gratings simultaneously
Omni- λ 5028i	Dual entrances, CCD front exit, slit side exit, support 3 gratings simultaneously
Omni- λ 5024i	Dual entrances, CCD front exit, CCD side exit, support 3 gratings simultaneously
Omni- λ 5047i	side entrance, slit front exit, slit side exit, support 3 gratings simultaneously, UV monochromator
Omni- λ 5048i	side entrance, CCD front exit, slit side exit, support 3 gratings simultaneously, UV monochromator
Omni- λ 5044i	side entrance, CCD front exit, CCD side exit, support 3 gratings simultaneously, UV monochromator
Omni-λ750 series Monochromator/ spectrograph (750 mm focal length, support 3 gratings simultaneously)	
Omni- λ 7505i	side entrance, slit front exit, support 3 gratings simultaneously
Omni- λ 7507i	side entrance, slit front exit, slit side exit, support 3 gratings simultaneously
Omni- λ 7508i	side entrance, CCD front exit, slit side exit, support 3 gratings simultaneously
Omni- λ 7504i	side entrance, CCD front exit, CCD side exit, support 3 gratings simultaneously
Omni- λ 7515i	side entrance, slit front exit, support 3 gratings simultaneously, IR monochromator,
Omni- λ 7517i	side entrance, slit front exit, slit side exit, support 3 gratings simultaneously, IR monochromator

Omni-λ Drawings

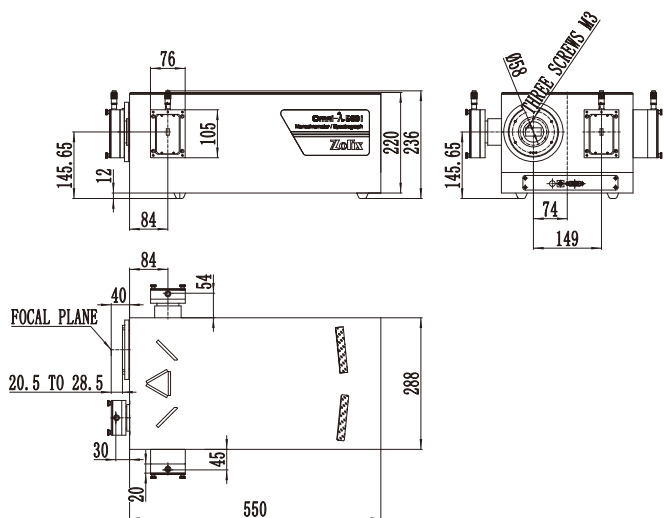
Omni-λ 200i Monochromator/Spectrograph



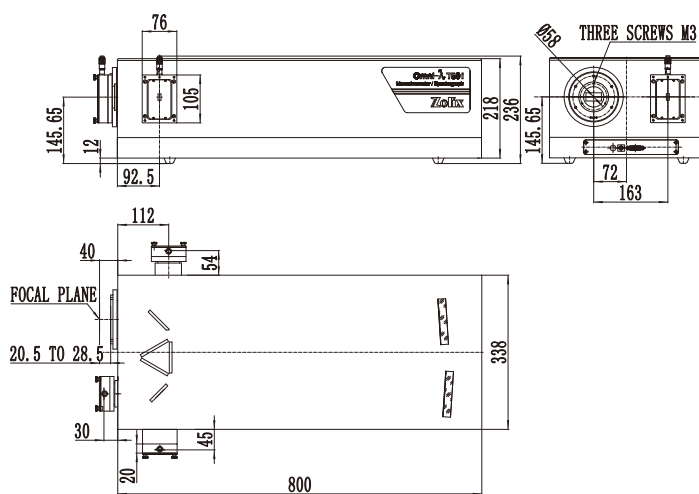
Omni-λ 300i Monochromator/Spectrograph



Omni-λ 500i Monochromator/Spectrograph

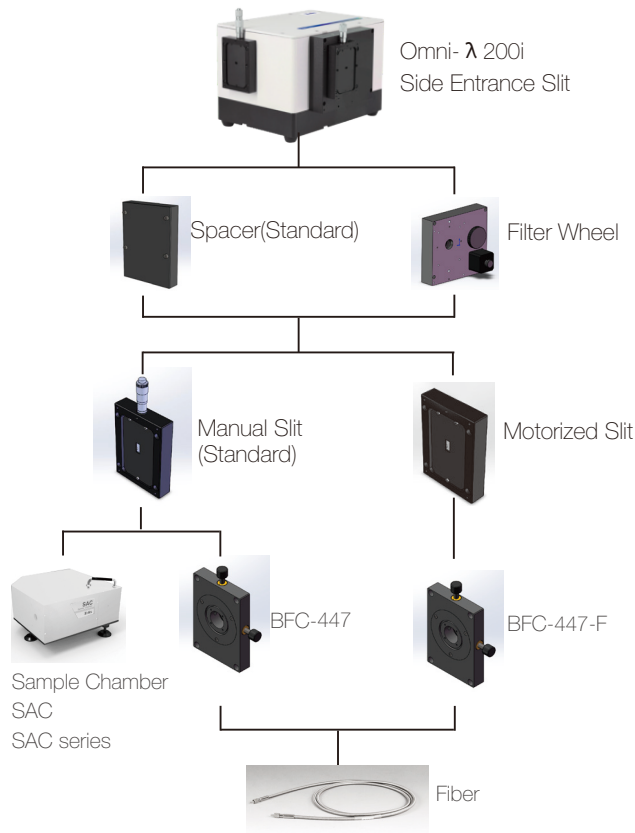


Omni-λ 750i Monochromator/Spectrograph

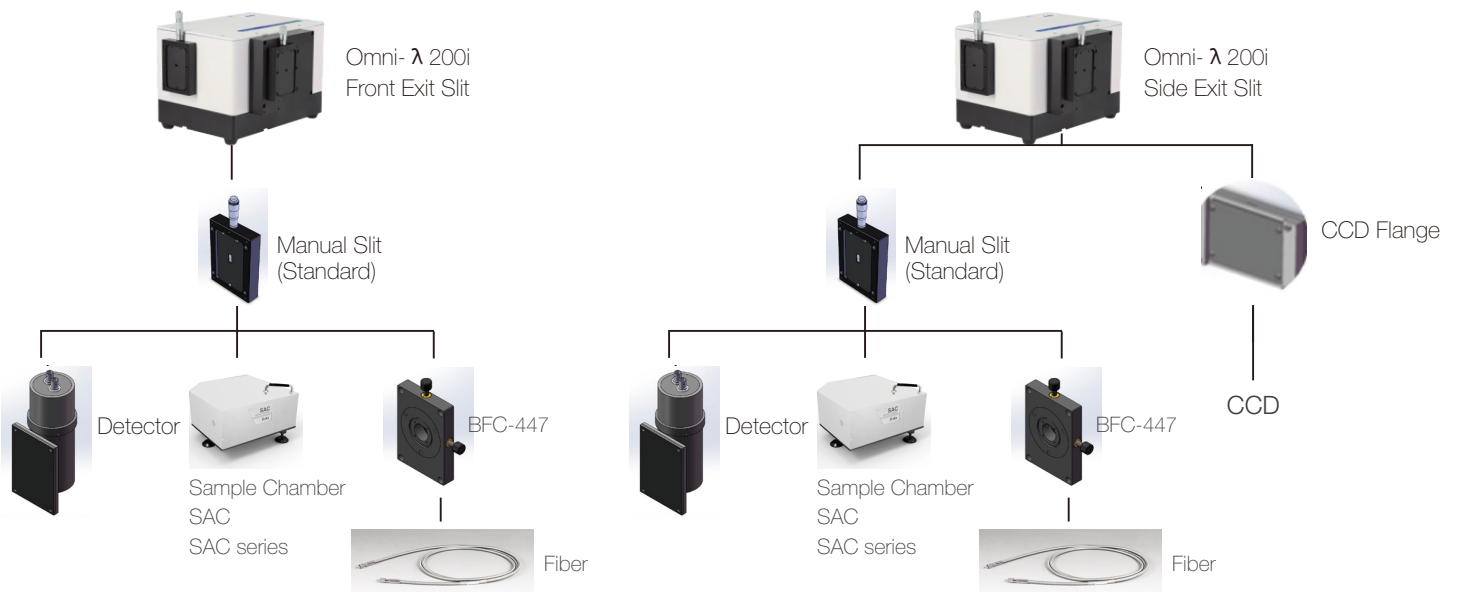


Spectroscopy Instruments

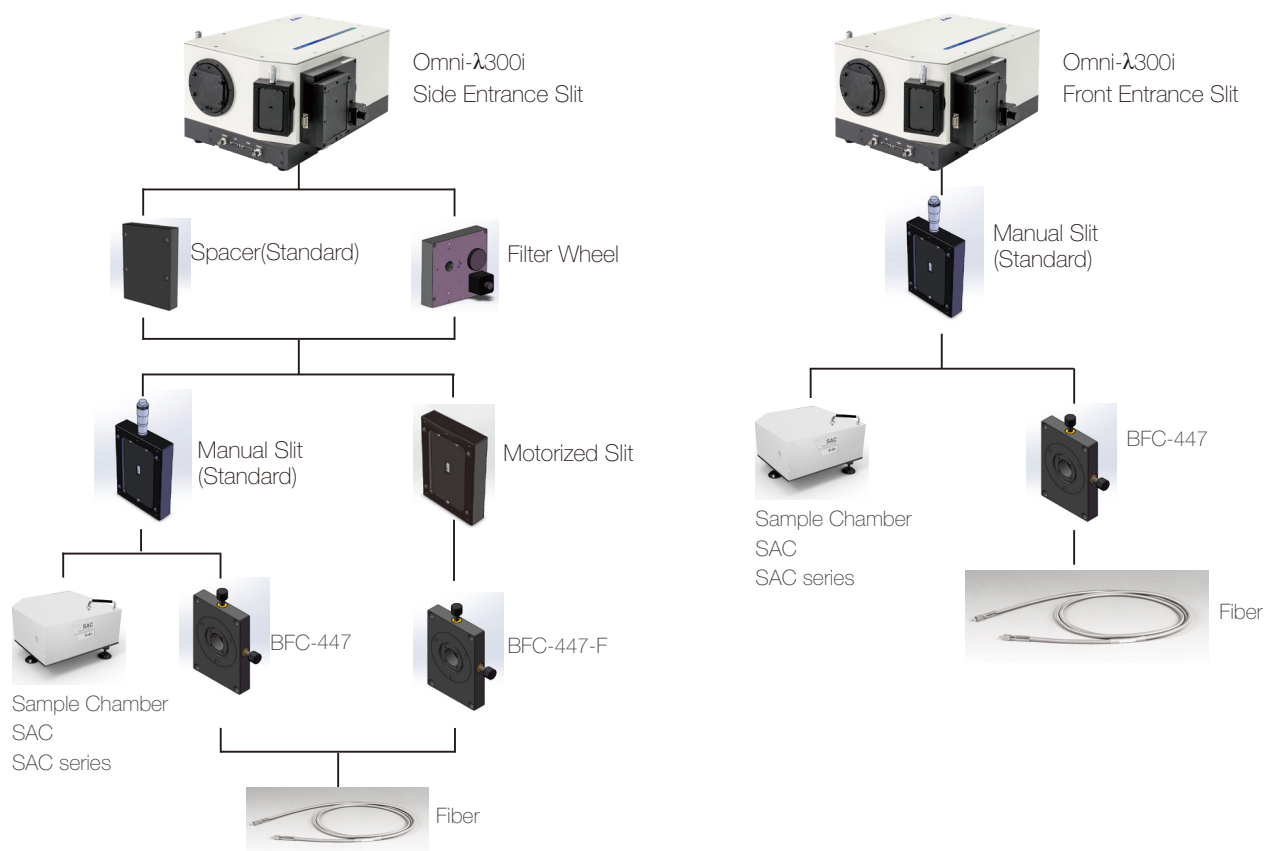
Omni-λ200i Input Port



Omni-λ200i Output Port

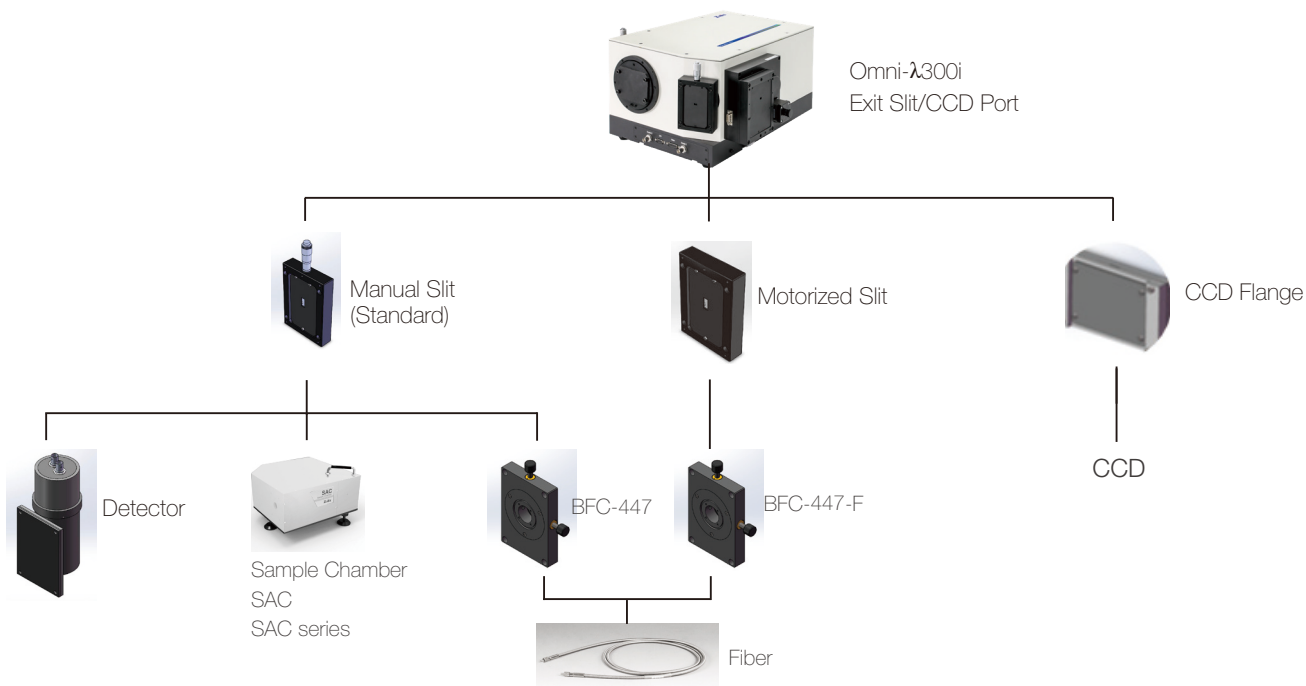


Omni-λ300i Input Port

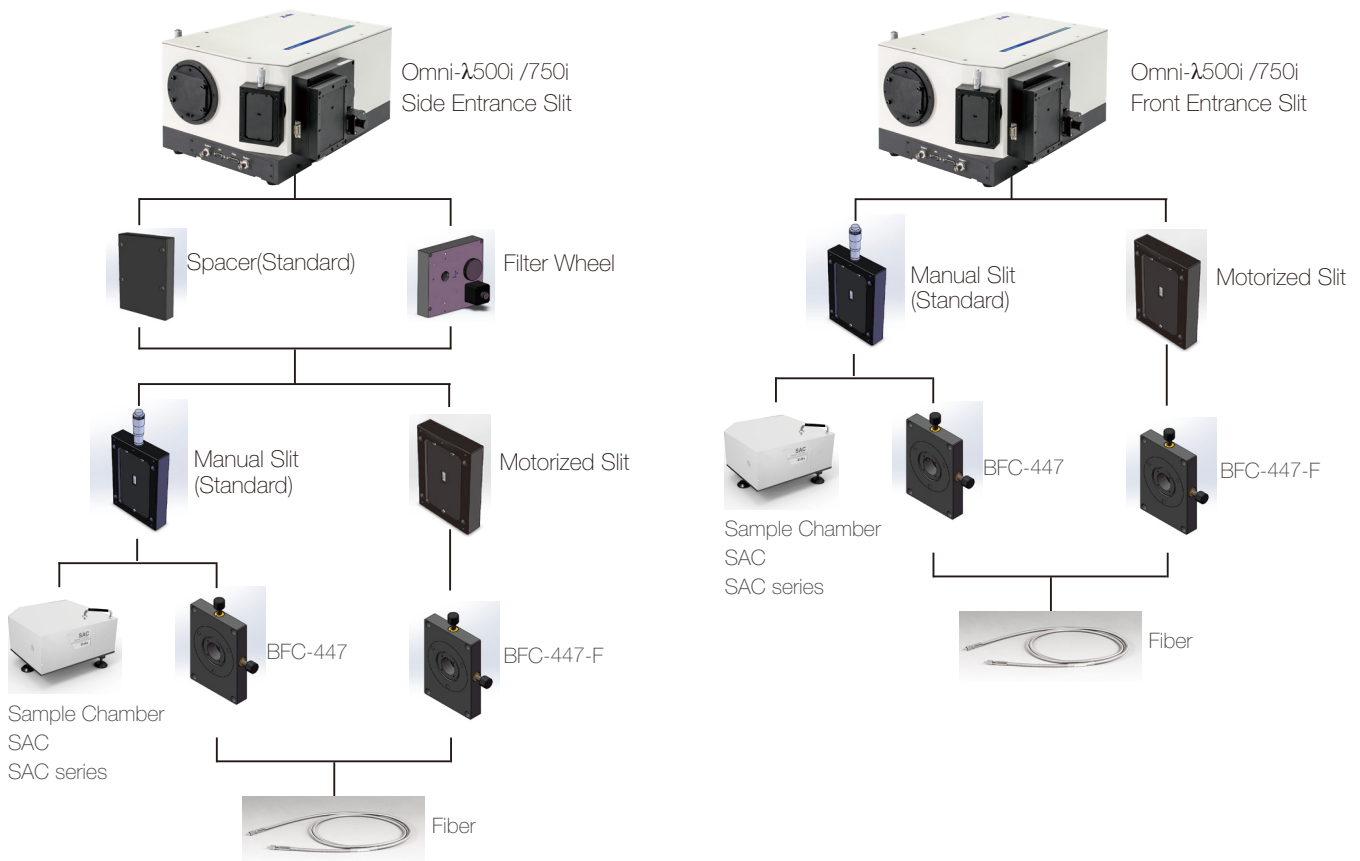


Spectroscopy Instruments

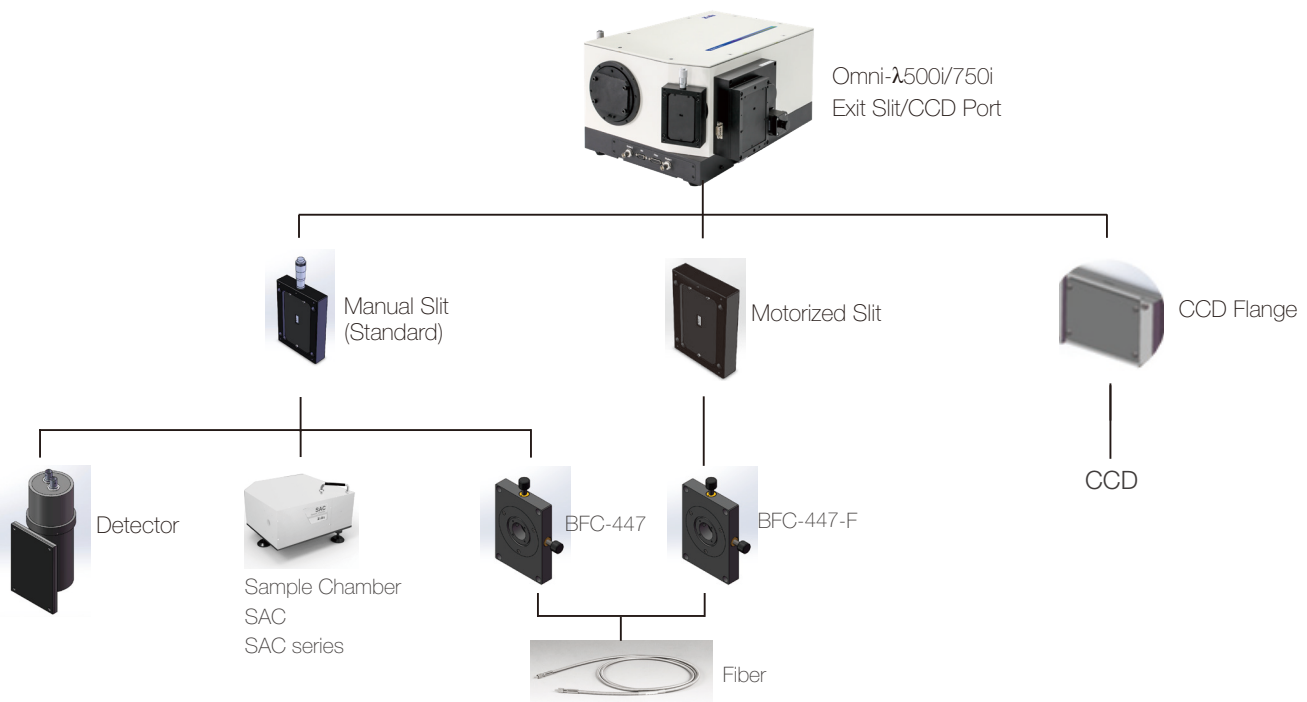
Omni-λ300i Output Port



Omni-λ500i/750i Input Port

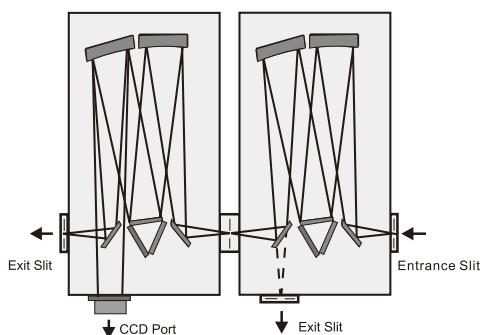


Omni-λ500i/750i Output Port



Omni-λxx x x Di(MS)-(A) Double Monochromators/Spectrographs

The Double Monochromators/Spectrographs include two monochromators which are with fine alignment. Double Monochromator can operate as either an additive or subtractive dispersion mode. As the additive dispersion mode, the double monochromator/spectrograph spectral resolution double boost, suitable for high resolution measurement. As the subtractive dispersion mode, the double monochromator/spectrograph stray light can be reduced effectively, suitable for weaker signal detection, such as Raman spectra measurement.



Omni-λxx x x Di(MS)-(A)

- A: Additive Dispersion Mode
Null: Subtractive Dispersion Mode
- MS: Motorized Slit Null: Manual Slit
- 2: CCD Side Exit
- 3: CCD Side Exit, Slit Front Exit
- 4: Dual CCD Exits
- 5: Slit Front Exit
- 6: CCD Front Exit
- 7: Dual Slit Exits
- 8: CCD Front Exit, Slit Side Exit
- 9: Slit Side Exit

- 0: Standard (Side Entrance, Protected Al Coated Grating and Mirror)
- 1: IR (Side Entrance, Protected Gold Coated)
- 2: Dual Slit Entrances
- 3: IR & Dual Slit Entrances
- 4: UV
- 5: UV & Dual Slit Entrances
- 6: Protected Silver Coated
- 7: Protected Silver Coated & Dual Slit Entrances

- 18: 180 mm Focal Length
- 30: 320 mm Focal Length
- 50: 500 mm Focal Length

Spectroscopy Instruments

Omni-λ180Di double monochromator

Omni-λ 180Di is a all-in-one subtractive dispersion mode double monochromator. With the design and optical path adjustment, only the dispersion light converge at the exit slit for output, effectively reducing stray light. Obtaining purer monochromatic light, Omni-λ 180Di is used to meet the needs of week signal testing, such as Raman spectroscopy and photodetector spectral responsivity calibration.

Application

- Tunable light source: Integrated with broad band light source, Omni-λ180Di can output purer monochromatic light for more accurate test.
- Raman spectra measurement: When collecting the Raman scattering light, Omni-λ180Di can be used as a narrow band filter to eliminate the excitation laser's effect efficiently for measuring the low shift Raman spectra.
- Professional detector spectral responsivity calibration: Omni-λ180Di can reduce calibration errors, especially in ultraviolet wavelength.

Specification

Omni-λ180Di	
Focal Length(mm)	180
Aperture Ratios	F/3.9
Optical Structure	C-T, subtractive dispersion mode
Resolution(nm)	0.25
Dispersion(nm/mm)	3.6
Wavelength Accuracy(nm)	± 0.2
Wavelength Repeatability (nm)	± 0.1
Step(nm)	0.01
Stray Light	1×10^{-9}
Optical Axis Height(mm)	146
Grating Size(mm)	40 × 40
Turret	Dual grating turret
Slit	Width: 0.01-3mm(Motorised or manual slit), Height: 2、4、14 mm, height selectable; 24mm width motorized middle slit
Size (mm)	559 × 326.5 × 232
Weight(kg)	31.5
Interface	USB 2.0

Dispersion measured with 1200g/mm grating @ 435.8nm

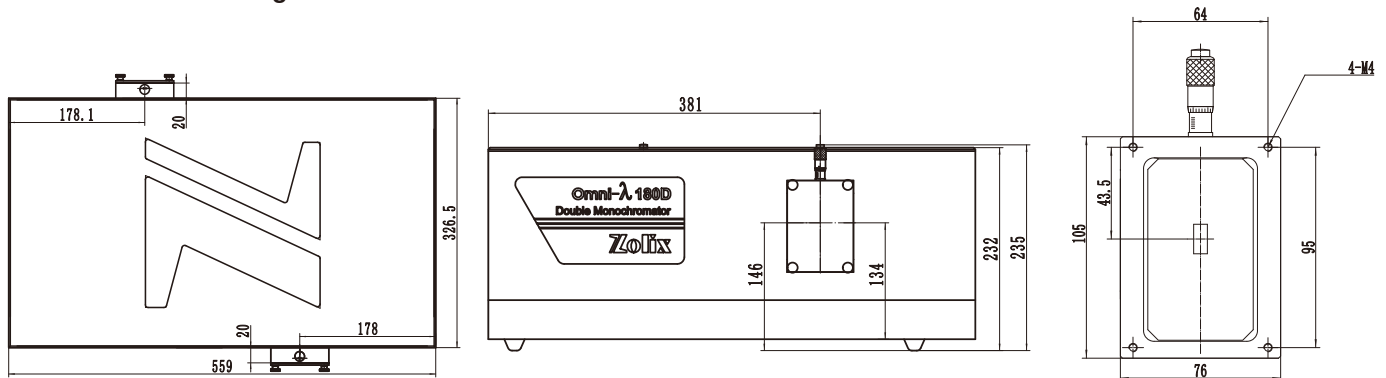
Resolution measured with 1200g/mm @ 435.8nm, 10um slit width and 4mm slit height



Features

- Subtractive dispersion mode double monochromator.
- Outstanding stray light rejection, less 10^{-9}
- All-in-one design, convenient for transportation and installation.
- USB 2.0 interface, controlled by software
- UV-VIS-NIR wide spectral range

Omni- λ 1809Di Drawing

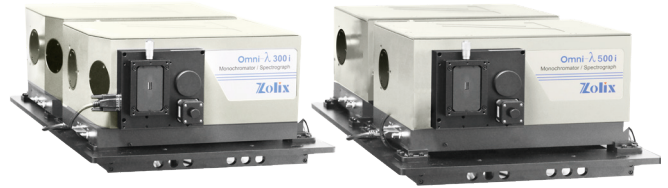


Manual slit dimension

Omni-λ300Di and Omni-λ500Di series double monochromator / spectrometer

Function and Features

- Two modes are optional, subtractive or additive dispersion mode
- All-in-one design, convenient for transportation and installation
- Subtractive dispersion mode is suitable for ultra low stray light applications, Additive dispersion mode is suitable for high resolution applications;
- USB 2.0 interface, controlled by software
- Triple grating turret, spanning UV-VIS-NIR spectral range.



Specification

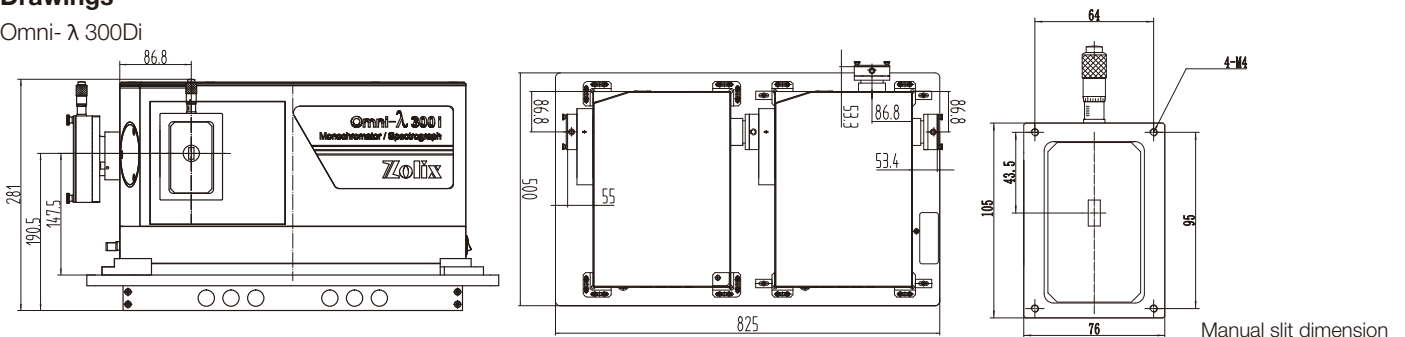
	Omni-λ300Di		Omni-λ500Di	
Dispersion mode	Additive	Subtractive	Additive	Subtractive
Focal length(mm)	640	320	1000	500
Aperture Ratios	F/4.2		F/6.5	
Resolution(nm)	0.04	0.08	0.025	0.05
Dispersion(nm/mm)	1.15	2.29	0.75	1.49
Wavelength Accuracy(nm)	± 0.2		± 0.2	
Wavelength Repeatability (nm)	± 0.025		± 0.025	
Step(nm)	0.005		0.005	
Stray light	1×10^{-7}	1×10^{-9}	1×10^{-7}	1×10^{-9}
Optical Axis Height(mm)	146		146	
Grating Size(mm)	68×68		68×68	
Turret	Triple grating turret		Triple grating turret	
Slit	Width: 0.01-3mm (Motorized or manual slit), Height: 2、4、14 mm, height selectable; 24mm width motorized middle slit		Width: 0.01-3mm (Motorized or manual slit), Height: 2、4、14 mm, height selectable; 24mm width motorized middle slit	
Size (mm)	825×500×281		825×600×281	
Interface	USB 2.0		USB 2.0	

Dispersion measured with 1200g/mm grating @ 435.8nm

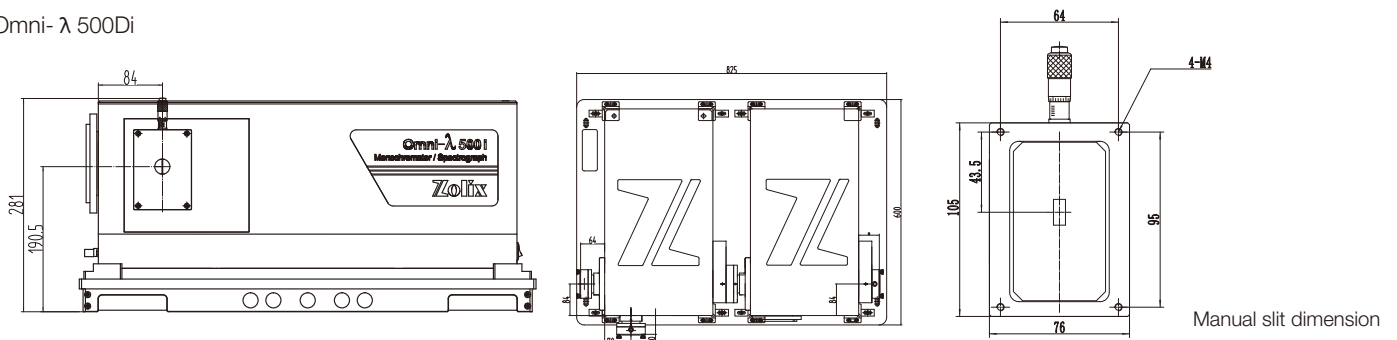
Resolution measured with 1200g/mm @ 435.8nm, 10um slit width and 4mm slit height

Drawings

Omni- λ 300Di

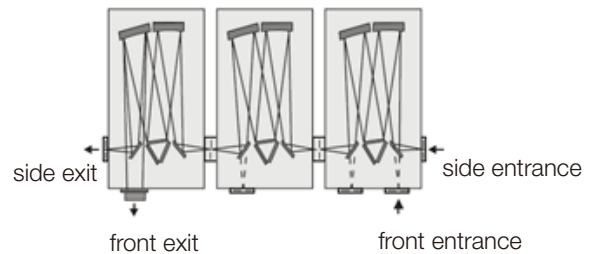
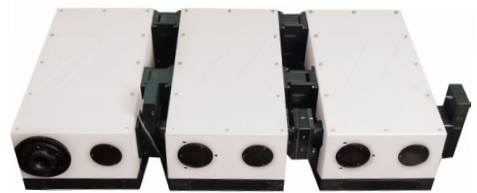


Omni- λ 500Di

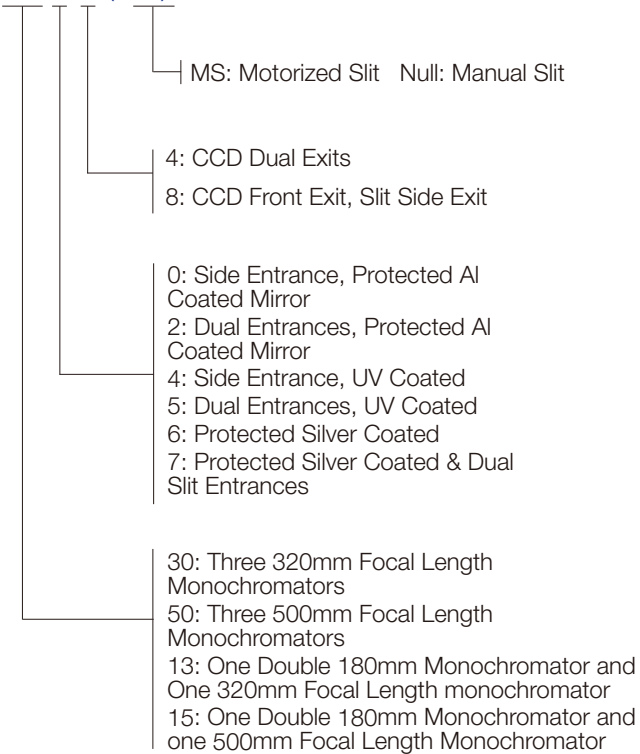


Triple Monochromator

The triple monochromator is consisted of three image calibration monochromators by fine adjustments. The first two monochromators connected in subtractive dispersion mode to reduce stray light; the last two monochromators connected in additive dispersion mode to improve the resolution. The triple spectrometer is flexible for use in single, double and triple monochromator operation. Thanks to its tunable wavelength and adjustable notch, the triple spectrometer is mainly used for high-end Raman spectrum measurements, such as ultraviolet excitation Raman spectrum and low wavenumber Raman spectrum.



Omni-λXX X XTi(MS)



Specification

	Omni- λ 5008Ti
Aperture Ratios	F/6.5
Resolution(cm^{-1})	<1 @ 585.25nm
Low wave number (cm^{-1})	<15
Dispersion(nm/mm)	0.91
Wavelength Accuracy(nm)	± 0.14
Wavelength Repeatability (nm)	± 0.02
Step(nm)	0.0035
Stray light	1×10^{-9}
Optical Axis Height(mm)	190.5
Grating Size(mm)	68 × 68
Turret	Triple grating turret
Slit	Width: 0.01-3mm(Motorised or manual slit), Height: 2、4、14 mm, height selectable; 24mm width motorized middle slit
Interface	USB 2.0

Drawings

