SCIENCETECH
Making Light Work Better

Photonic Solutions Ltd
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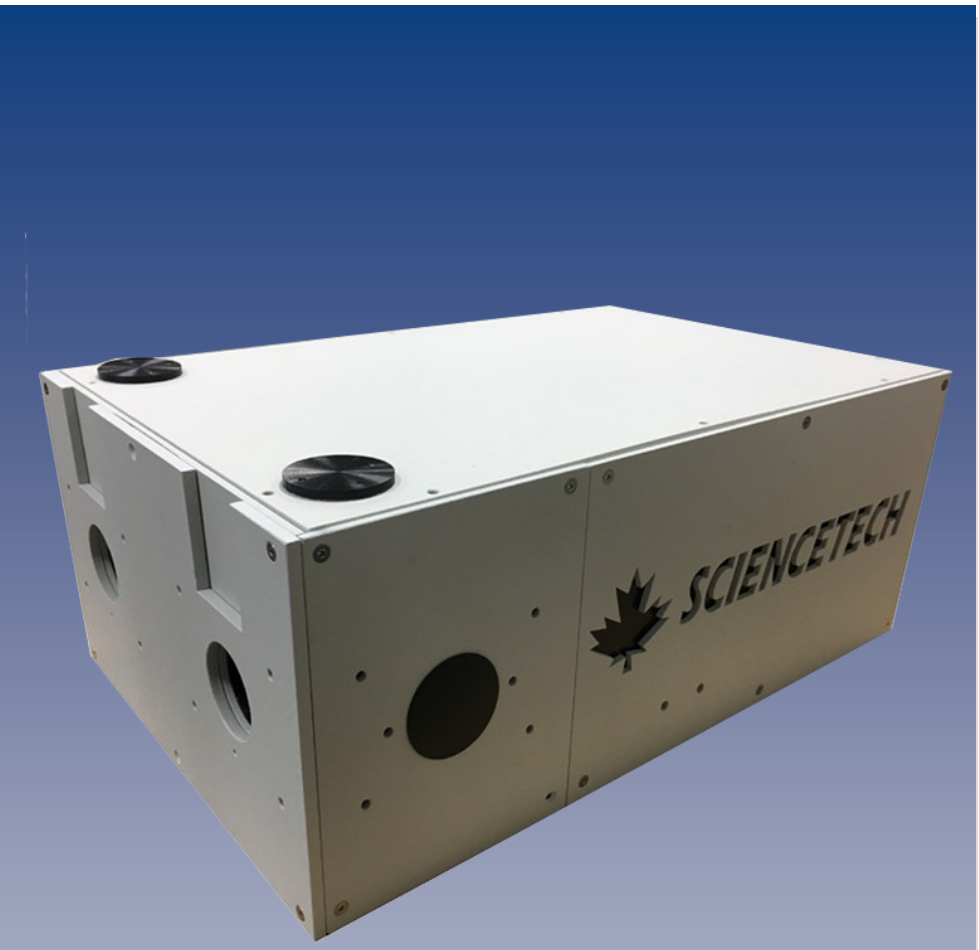
www.photonicsolutions.co.uk



Applications

- Tunable monochromatic light source
- Spectroscopic systems
- Emission and source characterization
- Absorbance, transmittance and reflectance measurement
- High dispersion or high power density spectral illumination system
- Electrochemical spectroscopy
- Fluorescence spectroscopy
- Scanning spectrophotometry
- Raman spectroscopy

Features

- Highly customizable modular design
- Two configurable input and output ports
- Interchangeable turret design to allow more than three grating options
- Configurable turret and grating options
- USB2.0 communication
- Fully integrated software and development libraries available
- Full line of input and output accessories
- CE compliant

Standard Series Monochromators
Models 9055, 9057

MADE IN CANADA
FABRIQUÉ AU CANADA

Version 3.8 2026-06-09

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Standard Series Monochromators

OVERVIEW

The Sciencetech standard series monochromators offer a flexible and customizable choice of monochromator with the full functionality afforded by motorized wavelength control and a multiple grating turret.

The design features asymmetric Czerny-Turner optical layout, using up to 3 plane-ruled gratings with an f/3.5 aperture. An adjustable slit is included for the input port. Additional slit options and several accessories are available. For applications requiring better signal to noise, reduced stray light and better resolution than the standard model, a double monochromator (9055DX) in double additive mode (9055DA) is available. For applications requiring a tunable bandpass or notch filter light source, the double subtractive mode (9055DS) is an ideal choice.

Specifications

Model	9055	9055F	9055DX		9057	9057F
			9055DA	9055DS		
Input Focal Length (mm)	200				457	
Output Focal Length (mm)	250				457	
Wavelength Selection	Motorized					
Communication	USB					
Readout Mechanics	Direct drive stepping motor					
Aperture	f/3.5	f/2.5	f/3.5		f/8	f/5.9
Maximum Grating Size (mm × mm)	50 × 50	64 × 64	50 × 50			64 × 64
Number of Gratings	3	2	6 (3 x 2)[1]		3	2
Optical Resolution (nm) [2]	0.2	0.4	0.09	0.2	0.1	0.2
Stray Light [3]	4×10^{-5}		1×10^{-5}		3×10^{-5}	
Dispersion (nm/mm)[2]	4		1.7	0	1.79	
Wavelength Accuracy (±nm) [2]	0.2	0.4	0.2	0.2	0.1	0.2
Wavelength Reproducibility (±nm) [2]	0.1	0.1	0.1	0.1	0.1	0.1
Flat Field Size (mm)	25	25	25	N/A	25	25
Flat Field Angle (°)	-1.69	-1.69	Call	Call	-1.4	-1.4
Optical Axis Height (mm)	76.2	86.4	76.2			
Dimensions (L × W × H, mm)	391 × 255 × 160	391 × 255 × 167	588 × 406 × 165		601 × 255 × 165	601 × 255 × 168
Weight (kg)	7.5	10	20		9	12.5

[1] While there are 6 gratings total, they are paired in two sets of three typically identical gratings

[2] With a 1200 l/mm grating and minimum slit height. Ranges vary with grating groove density

[3] Stray light values are reported using holographic gratings, ruled gratings produce worse stray light

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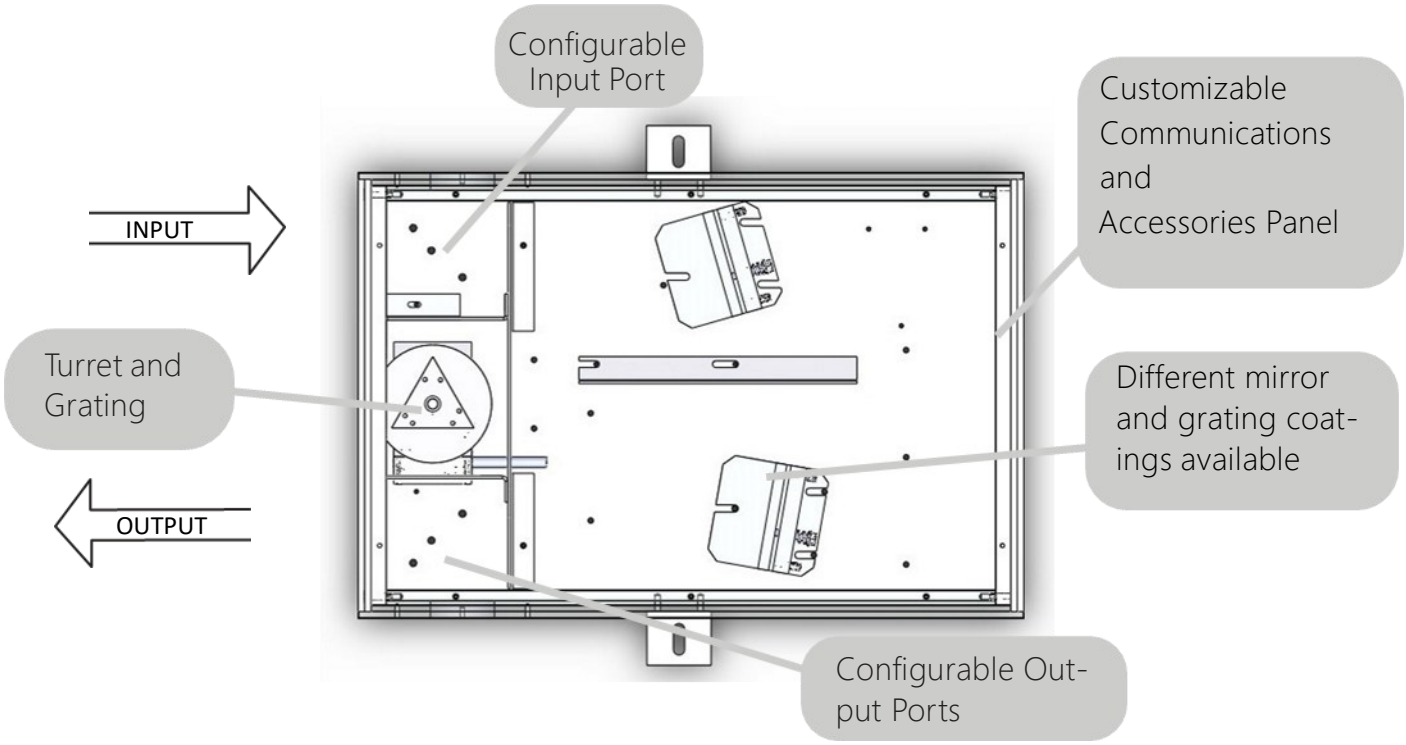
CONFIGURATION



Step 1: Choose Chassis and F/#				
Part #	Model	F/#	Focal Length	Turret Configuration
120-9018	9055	F/3.5	200/250	Triple Grating
120-9023	9055F	F/2.5	200/250	Double Grating
120-9008	9057	F/8	500	Triple Grating
120-9042	9057F	F/5.9	500	Double Grating
120-9041	9055DX	F/3.5	200/250	Triple Grating

Step 2: Choose Input Port Configuration		
Part #	Model	Description
120-8042	9000-ST-IN	Side input port
120-8030	DPIN-ST-MAN	Dual input port
120-8072	DPIN-ST-MOT	Motorized input port

Step 3: Choose Output Port Configuration		
Part #	Model	Description
120-8043	9000-ST-OUT	Side output port
120-8031	DPOUT-ST- MAN	Dual output port
120-8073	DPOUT-ST- MOT	Motorized output port

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Standard Series Monochromators

CONFIGURATION

Step 4: Grating Selection

There are three basic parameters to consider when choosing a grating for your standard series monochromator:

Required Wavelength Range
The wavelength range available to you is determined by the grating groove density chosen and the angular mechanical limitation of the monochromator.

Grating Efficiency
Ruled gratings may be blazed to increase their efficiency over a specific wavelength band. Holographic gratings can be modulated such that they are more efficient at some wavelengths then at others. Grating efficiency curves are the best tool for determining the most efficient grating available for your application. It is important to note that grating efficiency curves do not represent the exact efficiency that should be expected when the grating is used in a monochromator as grating efficiency curves are taken at Littrow angle.

Required Resolution and Bandwidth
Resolution is a measure of an instrument's ability to separate adjacent spectral lines. Resolution is generally given in nm. The bandwidth (or bandpass) is the wavelength range that falls on the output port at any one time and is also given in nm. This is an important parameter when integrating a camera, such as a linear array or CCD, on the output port of the monochromator.

Application Note: *For Raman systems and when using a laser, ensure you choose a holographic grating.*

Grating Selection Table for 200/250mm Focal Length Monochromators							
Grating (l/mm)	75	150	300	600	1200	1800	2400
Dispersion (nm/mm)	66.6	33.3	16.7	8.3	4	2.8	2.1
Resolution (nm)[1]	3.75	1.6	0.8	0.4	0.2	0.134	0.1
Bandwidth (nm)[2]	1650	840	420	210	105	73	52
Maximum Suggested Wavelength (nm)[3]	13900	6950	3475	1737	868	579	434
Maximum Realistic Wavelength (nm)[3]	19200	9600	4800	2400	1200	800	600

[1] With 50 µm wide input slit.
[2] Bandwidth based on: Dispersion * 25.4 mm wide array (important if using a LDA or CCD)
[3] At the maximum suggested and realistic wavelengths the approximate throughput corresponding to these wavelengths is >50% and ~0% of the maximum throughput, respectively.

Step 5 (Optional): Imaging Option

Standard Czerny-Turner type monochromators suffer from astigmatism in the output beam due to the use of off-axis spherical mirrors. Often the astigmatism is not an issue. For imaging applications, a toroidal mirror is used to compensate for the inherent astigmatism in the optical system, producing a direct image of the input slit at the output port. This is an important option for studying phenomena such as fast kinetics.

Imaging Option	Code
9055i	120-9060
9057i	120-9061
9055DXi	120-9062

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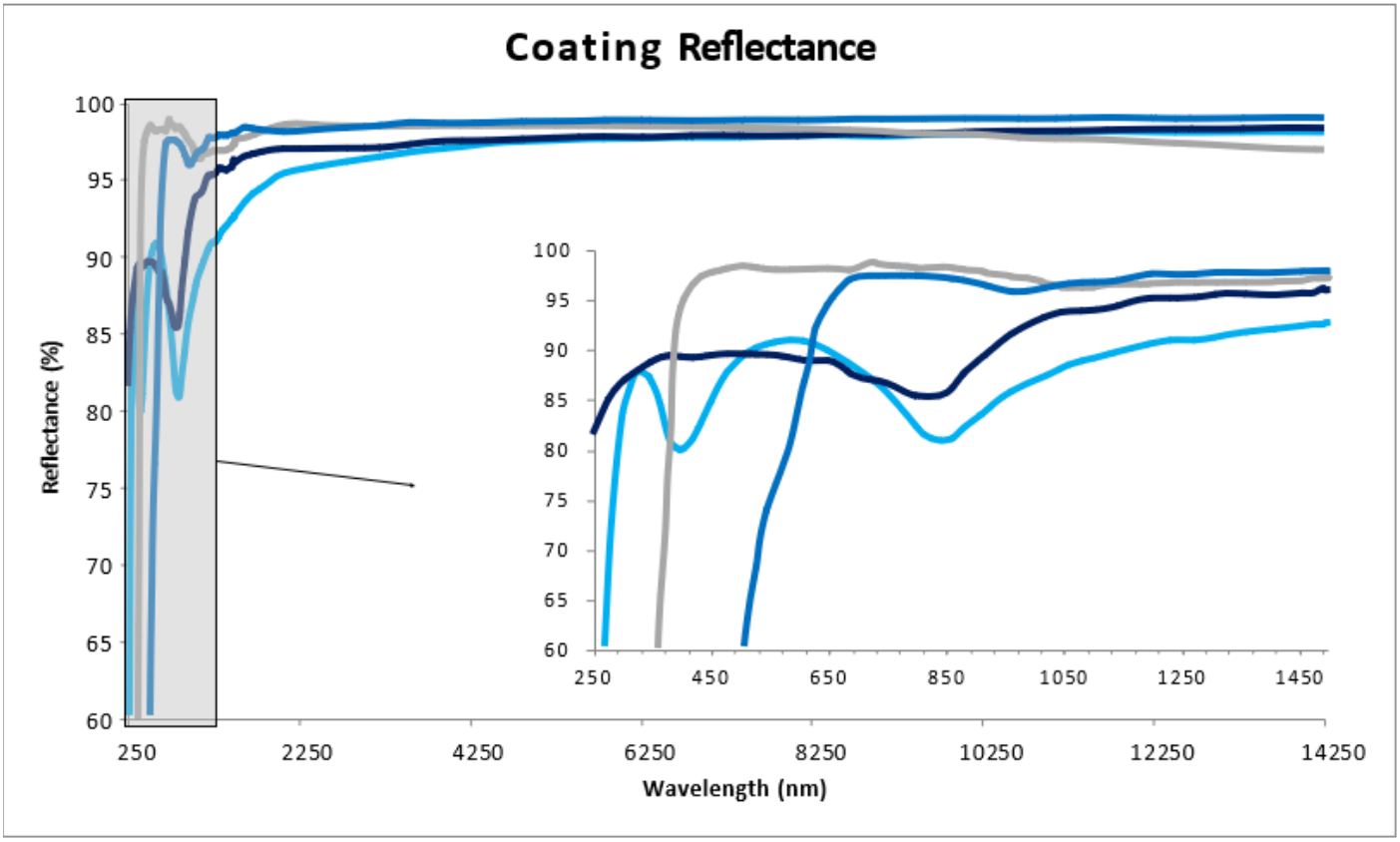
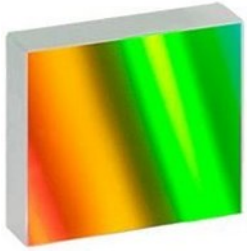


Mirror or Grating Coating		Useful Range	Code
Aluminum (MgF_2)		350 nm+	-
UV-enhanced Aluminum		250 nm+	-UV
Silver		400 nm+	-S
Gold		600 nm+	-G
VUV Aluminum	Not Shown	190nm+	- VUV

Standard mirror coatings are aluminum with a MgF_2 protective layer. Standard gratings have an aluminum coating. If your application would benefit from different mirror or grating coatings please refer to the codes above at the time of order.



Need something you don't see here?

Sciencetech has built a reputation on custom solutions. Whether you need a small modification to an existing system, or a completely novel design built from the ground up to meet your technical specifications, Sciencetech's engineering and optical design teams are ready to help.

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Standard Series Monochromators

SOFTWARE

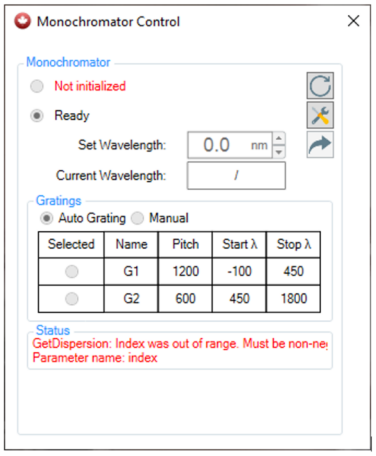
Sci-Mono Software

A Windows based software module with a simple graphical user interface for controlling Sciencetech stepping monochromator wavelength selection. SciMono is provided free of charge with a Sciencetech motorized monochromator when SciSpec software has not been purchased.

For a fully featured desktop application see SciSpec.

For embedded applications in LabView see SciAX control modules

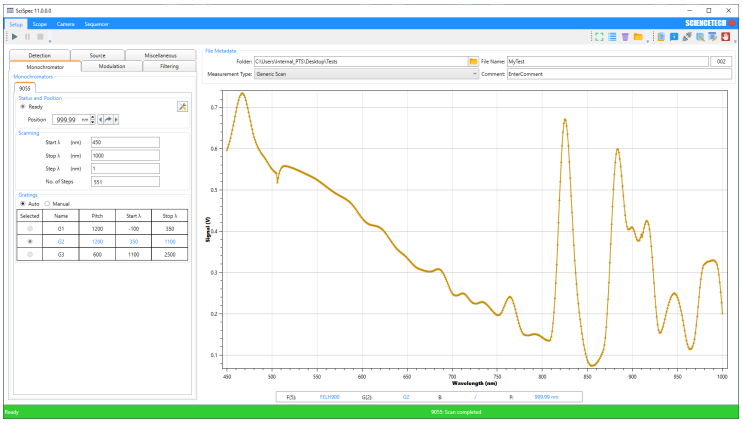
For C++ and Python API's see SciencetechCOM software



Sci-Spec Software

SciSpec is a fully featured Windows application specifically designed to control Sciencetech stepping monochromators. SciSpec is designed to control and coordinate the operation of Sciencetech modular spectroscopy components. These include:

- Stepping monochromators
- Motorized filter wheels for long pass, bandpass, short pass or neutral density filtering
- Motorized beam path selection mirrors
- Beam line modulators such as motorized iris or chopper
- Detectors and data acquisition components such as A/D boards, lock-in amplifiers and source meters.
- Linear diode arrays
- Sources such as research arc lamp, LED and incandescent light sources



Generally, all the components in a modular spectroscopy system must be configured by wavelength to optimize the system operation. SciSpec stores and reads system configurations to provide an optimized system operation and user experience.

SciSpec can operate in sequencer/scanning mode as a stepping monochromator. In this mode a wavelength range is selected and detection and data acquisition parameters are specified to perform a step by step measurement sequence. This mode is usually used to measure relative or absolute intensity of light entering the monochromator. In this mode the modular spectroscopy system components move to their optimal locations as each new wavelength position is reached. If the system is equipped with detectors and data acquisition components SciSpec can plot the resultant data and perform some basic analysis.

SciSpec can be operated in manual mode to statically set the systems emitted wavelength. In this mode SciSpec can turn modular spectroscopy instruments into tunable light sources.

SciSpec can be operated in camera mode to control diode array cameras (if equipped). In camera mode SciSpec turns the modular spectroscopy instrument into a spectrograph.

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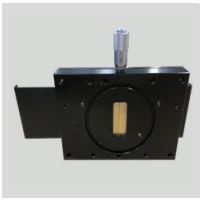
Standard Series Monochromators

ACCESSORIES

Sciencetech manufactures and integrates a full line of input and output couplings as well as a selection of beam line connections. We offer a selection below, but visit our website or talk to a sales representative to explore all the possibilities!



Bilaterally-Adjustable Slit (SS-80) **120-9004**

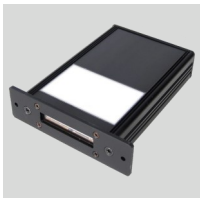
A manually-controlled, bilaterally-adjustable slit for the input or output ports of monochromators. Sciencetech offers many options for manual, motorized, and fixed width slit assemblies for use with monochromators.

Multialkaline High-Sensitivity Photomultiplier Tube (PMT-01) **589-0001**

A multialkali high-sensitivity side-on PMT with a spectral range of 185-900 nm.

Analog PMT Housing (PMH-02) **125-9005**

A housing compatible with PMT-01. Includes manually adjustable gain and time constants and a BNC output.



Advanced Digital CCD Line Camera (CCD-S3600-D-UV) **124-9045**

A linear CCD with 3175 usable pixels in 1” (25.4 mm) of sensor.

Adjustable Mount for CCD-S3600-D-UV (CAM-MT-A) **125-8019**

An adjustable mount for CCD-S3600-D-UV compatible with Sciencetech standard and high-resolution monochromators.

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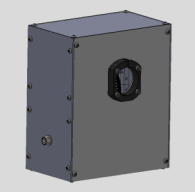
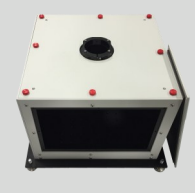


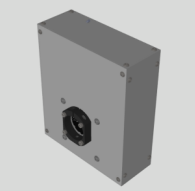
Rotating-Blade Chopper in Enclosure (CH-MC-E-1D1D) **170-9020**

A rotating-blade chopper including a 2 slot blade for a frequency range of 4-200Hz that accepts up to a 1” diameter collimated beam at the chopper port.



General-Purpose Light-Tight Sample Chamber (SC-12) **130-9011**

A general purpose light-tight sample chamber with 4 optical ports (on three of the sides and one on the top) as well as a side door for easy access to the sample area. The base of the sample chamber is an imperial optical breadboard with 1/4-20 tapped holes. For the metric version see model SC-12-M [130-9014].



6 Position Computer Controlled Filter Wheel, 1" Filters (SFW-6-1) **189-9013**

A motorized 6 position filter wheel capable of holding 25mm (1") filters (either square or circular). Connects via USB 2.0 to a computer (USB cable included).

16-bit ADC Data Acquisition (SCI-DAS-16USB) **170-9004**

The data acquisition board is 16-bit and can measure a single channel up to 50 kS/s. An additional BNC connector for a multi-purpose digital input/output can be used to time measurements and/or send signals to external hardware such as a high speed shutter.

Grating for 9055 and 9057 Monochromators (G-9055) **120-9205**

50 x 50 mm gratings for use with 9055 or 9057 monochromators (including imaging, single, and double monochromator configurations). A grating holder is included with each grating, compatible with the grating mount.

Grating for 9055F and 9057F Monochromators (G-9055F) **120-9207**

50 x 50 mm gratings for use with 9055F or 9057F monochromators (including imaging, single, and double monochromator configurations). A grating holder is included with each grating, compatible with the grating mount.

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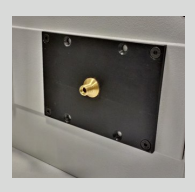
ACCESSORIES



SMA Adapter for Sciencetech Monochromators (FIB1-9055) **120-8020**

An SMA fiber coupler (FC style also available) with an interface flange mount to the input port of a Sciencetech monochromator or spectrograph (fiber not included).

Software, SciSpec **SOFT-0103**

SciSpec is a fully featured Windows application specifically designed to control Sciencetech stepping monochromators.

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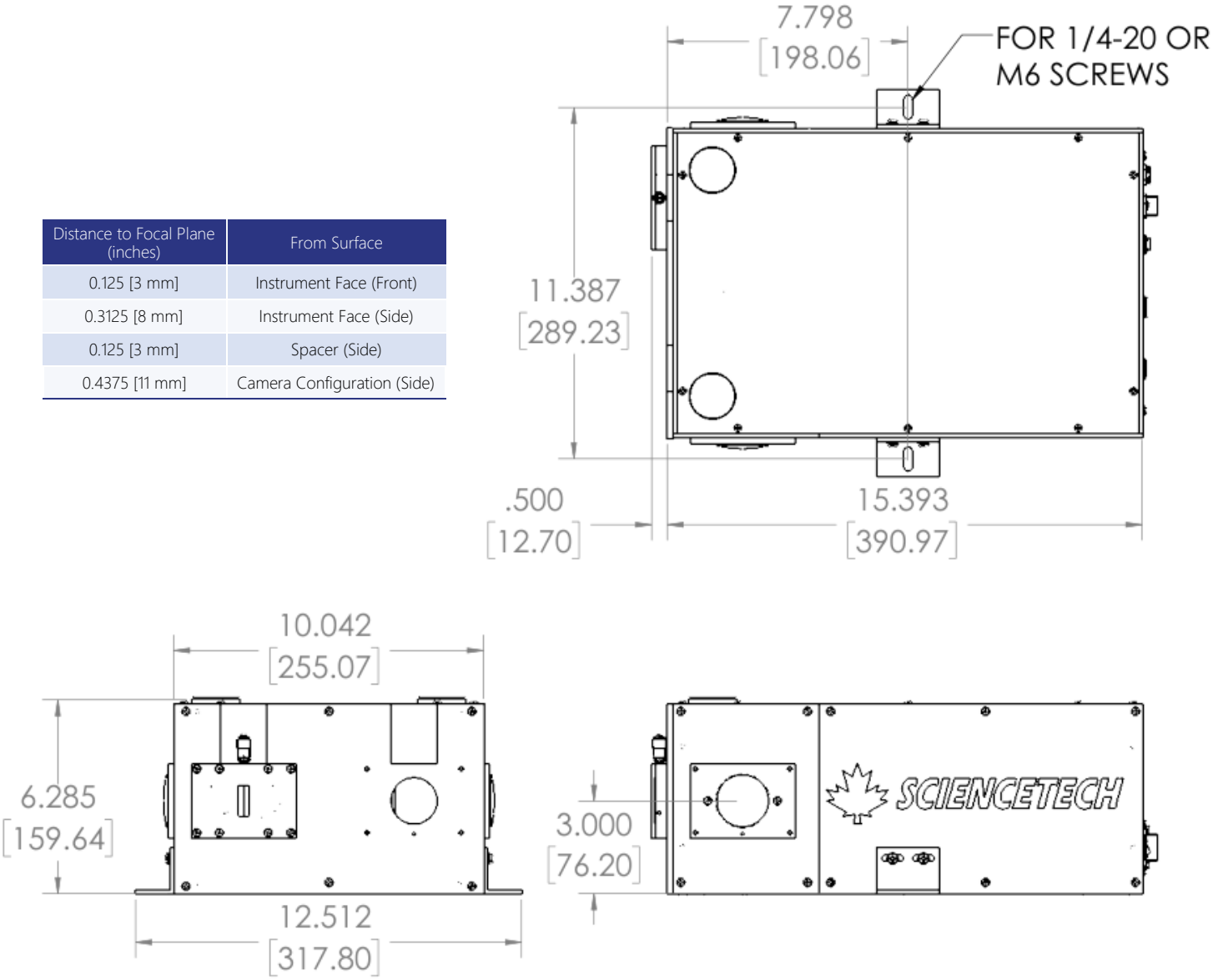
Standard Series Monochromators

DIMENSIONS

Dimensions - 9055/9055i Single Monochromator

Dimensions are in inches [mm].

Distance to Focal Plane (inches)	From Surface
0.125 [3 mm]	Instrument Face (Front)
0.3125 [8 mm]	Instrument Face (Side)
0.125 [3 mm]	Spacer (Side)
0.4375 [11 mm]	Camera Configuration (Side)



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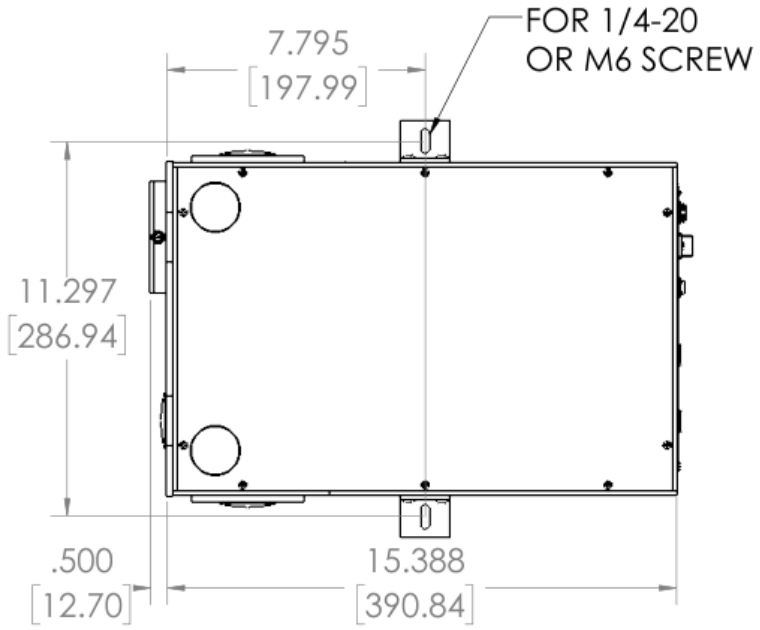
Standard Series Monochromators

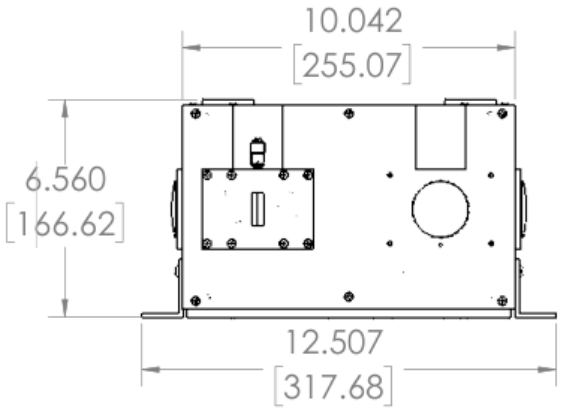
DIMENSIONS

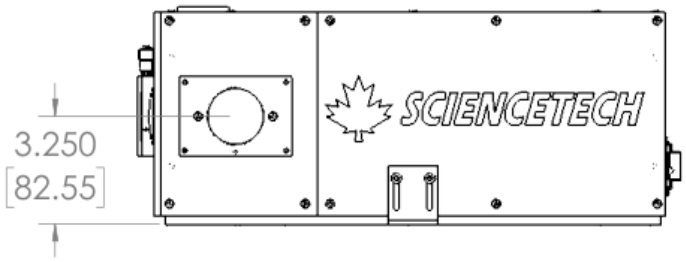
Dimensions - 9055F Single Monochromator

Dimensions are in inches [mm].

Distance to Focal Plane (inches)	From Surface
0.125 [3 mm]	Instrument Face (Front)
0.3125 [8 mm]	Instrument Face (Side)
0.125 [3 mm]	Spacer (Side)
0.4375 [11 mm]	Camera Configuration (Side)







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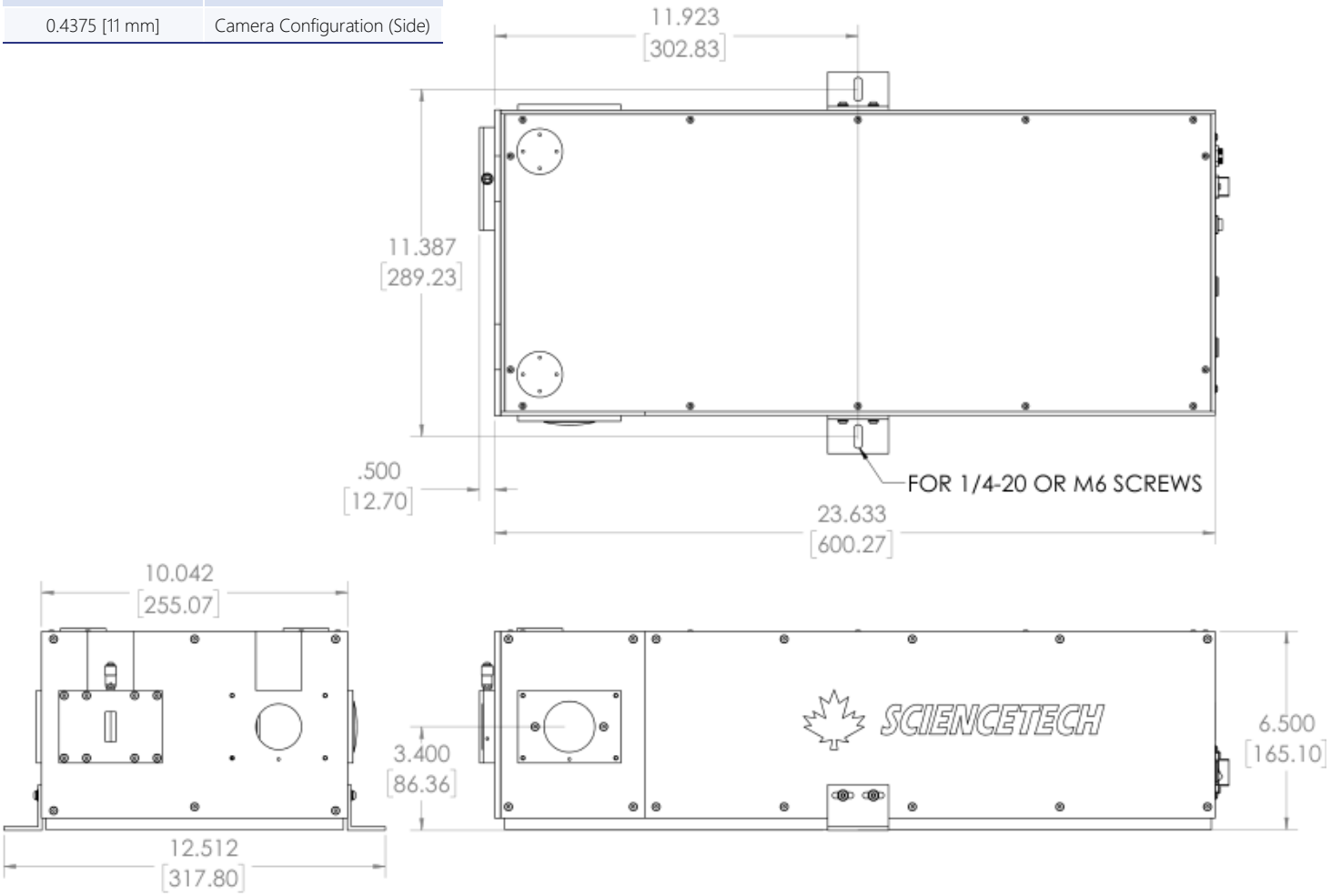
Standard Series Monochromators

DIMENSIONS

Dimensions - 9057/9057i Single Monochromator

Dimensions are in inches [mm].

Distance to Focal Plane (inches)	From Surface
0.125 [3 mm]	Instrument Face (Front)
0.3125 [8 mm]	Instrument Face (Side)
0.125 [3 mm]	Spacer (Side)
0.4375 [11 mm]	Camera Configuration (Side)



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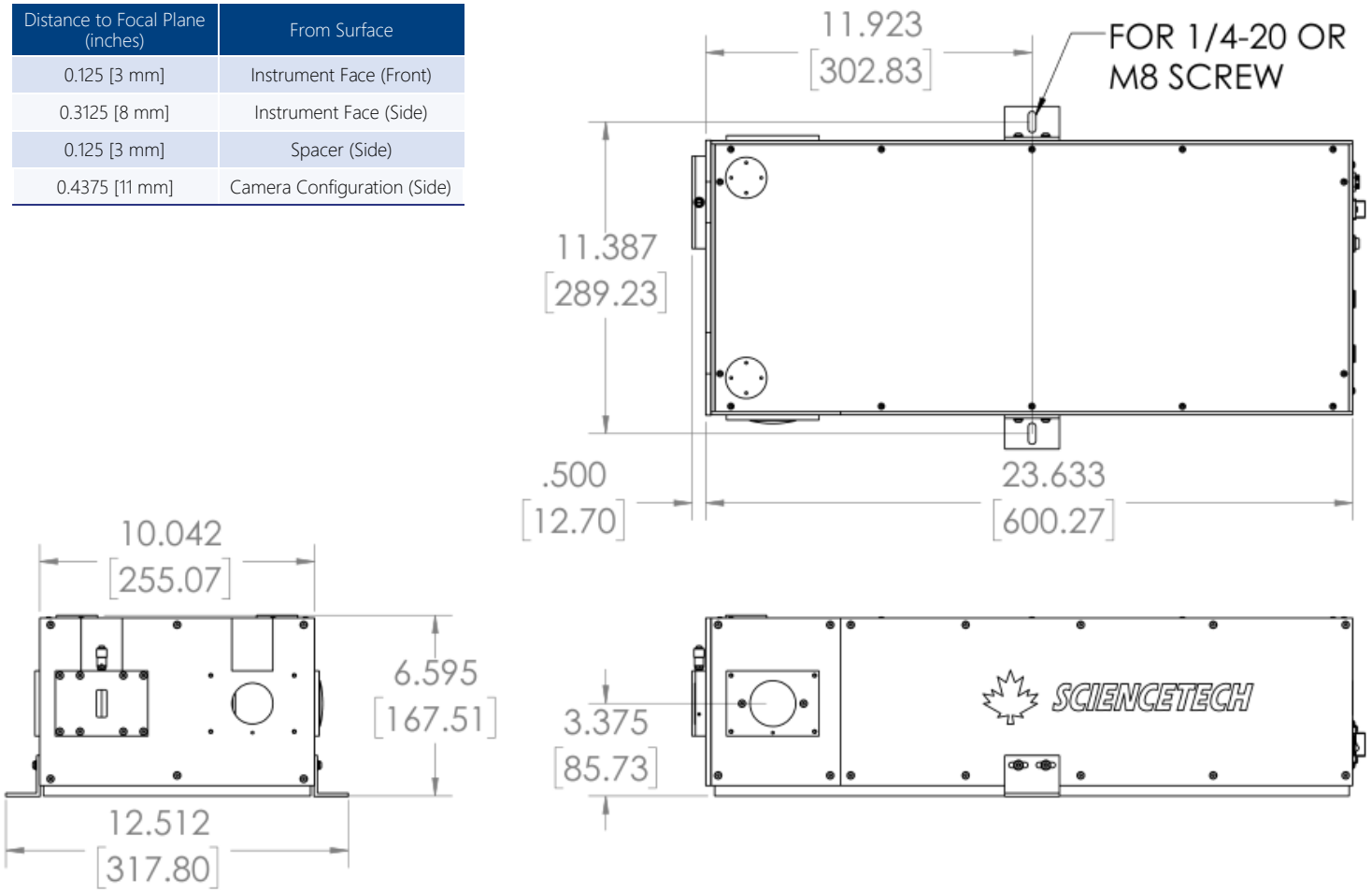
DIMENSIONS

Dimensions - 9057F Single Monochromator

Dimensions are in inches [mm].

Distance to Focal Plane (inches)	From Surface
0.125 [3 mm]	Instrument Face (Front)
0.3125 [8 mm]	Instrument Face (Side)
0.125 [3 mm]	Spacer (Side)
0.4375 [11 mm]	Camera Configuration (Side)



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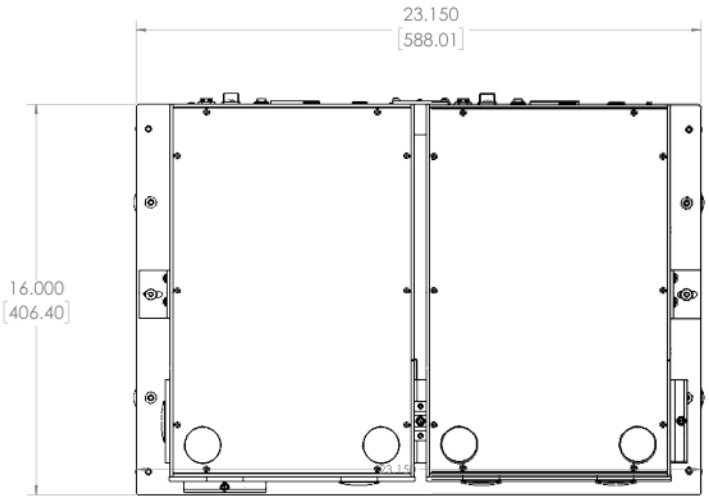
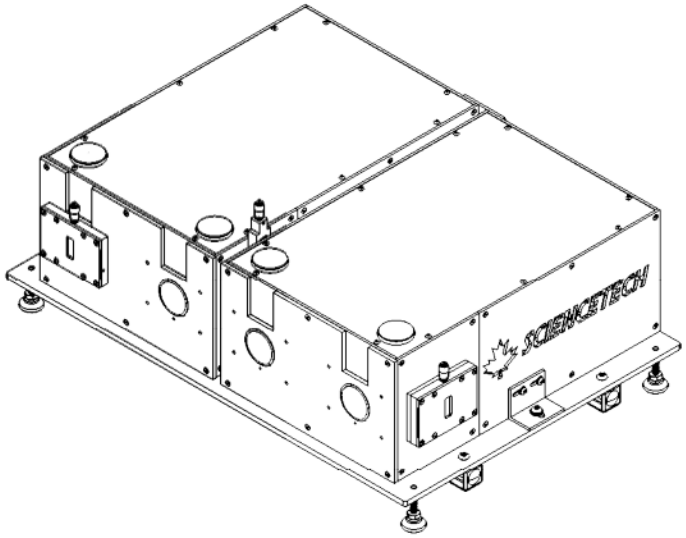
Standard Series Monochromators

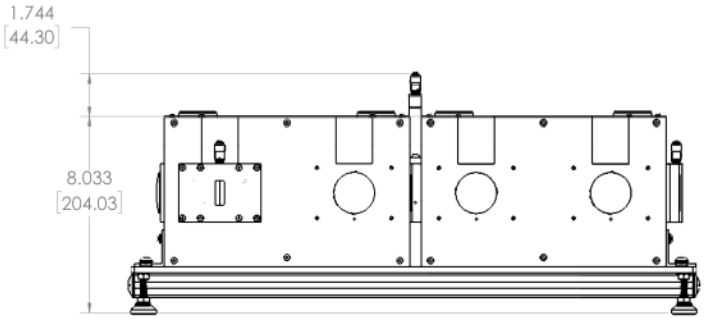
DIMENSIONS

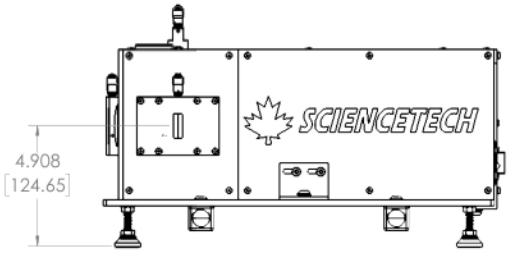
Dimensions - 9055DX/9055DXi Double Monochromator

Dimensions are in millimeters [inches].









Distance to Focal Plane (inches)	From Surface
0.125 [3 mm]	Instrument Face (Front)
0.3125 [8 mm]	Instrument Face (Side)
0.125 [3 mm]	Spacer (Side)
0.4375 [11 mm]	Camera Configuration (Side)

SCIENCETECH

Standard Series Monochromators

ORDERING INFORMATION

Ordering Information

Model	SKU	Description
Monochromators		
9055	120-9018	F/3.5 200/250 mm focal length Czerny-Turner triple-grating monochromator
9055F	120-9023	F/2.5 200/250 mm focal length Czerny-Turner dual-grating monochromator
9055i	120-9060	F/3.5 200/250 mm focal length Czerny-Turner dual-grating monochromator, imaging option
9057	120-9008	F/8 500 mm focal length Czerny-Turner triple-grating monochromator
9057F	120-9042	F/5.9 500 mm focal length Czerny-Turner dual-grating monochromator
9057i	120-9061	F/8 500 mm focal length Czerny-Turner dual-grating monochromator, imaging option
9055DX	120-9041	F/3.5 200/250 mm Czerny-Turner triple-grating dual monochromator
9055DXi	120-9062	F/3.5 200/250 mm Czerny-Turner triple-grating dual monochromator, imaging option
Accessories		
9000-ST-IN	120-8042	Side input port for 9055/9055F/9057/9057F monochromator
DPIN-ST-MAN	120-8030	Dual input port for 9055/9055F/9057/9057F monochromator
DPIN-ST-MOT	120-8072	Motorized input port for 9055/9055F/9057/9057F monochromator
9000-ST-OUT	120-8043	Side output port for 9055/9055F/9057/9057F monochromator
DPOUT-ST- MAN	120-8031	Dual output port for 9055/9055F/9057/9057F monochromator
DPOUT-ST- MOT	120-8073	Motorized output port for 9055/9055F/9057/9057F monochromator
G-9055	120-9205	Grating for use with 9055 or 9057 monochromators
G-9055F	120-9207	Grating for use with 9055F or 9057F monochromators
SS-80	120-9004	Bilaterally-adjustable slit for monochromators
PMT-01	589-0001	Multialkaline high-sensitivity photomultiplier tube
PMH-02	125-9005	Analog PMT housing
CCD-S3600-D-UV	124-9045	Advanced digital CCD line camera
CAM-MT-A	125-8019	Adjustable mount for CCD-S3600-D-UV
CH-MC-E-1D1D	170-9020	Rotating-blade chopper in enclosure, 1" and 1" interfaces, 4-200 Hz
SC-12	130-9011	General-purpose light-tight sample chamber
SFW-6-1	189-9013	6 position computer controlled filter wheel, 1" filters
SCI-DAS-16USB	170-9004	16-bit ADC data acquisition
FIB1-9055	120-8020	SMA adapter for Sciencetech monochromators
SciSpec	SOFT-0103	Fully featured Windows application specifically designed to control Sciencetech monochromators