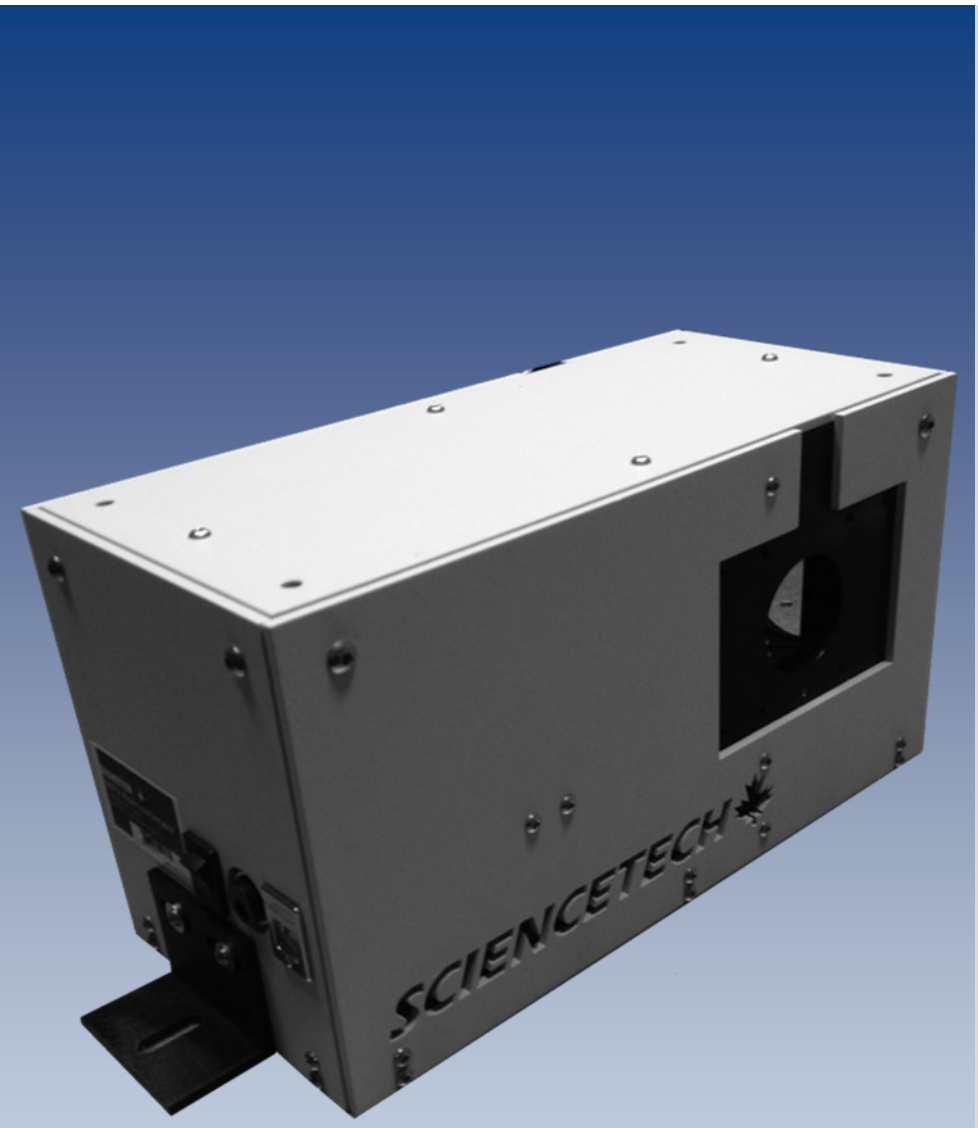
www.sciencetech-inc.com sales@sciencetech-inc.com +1(519) 644 0135

SCIENCETECH
Making Light Work Better



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 spectrophotometer system
- Raman spectroscopy

Features

- 3 grating turret
- Grating options covering the UV, VIS and NIR
- Scanning or multichannel configurations available
- USB2.0 Communication
- Fully integrated software and development libraries available

9072 monochromator. No input or output slit is shown.

Small Series- 9072, 9072 DA/DS Monochromators

Monochromatorsand Spec-trographs

MADE IN CANADA
FABRIQUÉ AU CANADA

Version 4.2 2026-05-28

Monochromators and Spectrographs

SPECIFICATIONS

The Sciencetech 9072 series monochromators are an economical and compact choice with the full functionality afforded by motorized wavelength control and a multiple grating turret.
The compact 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 additive model (9072DA) is available. For applications requiring a tunable bandpass or notch filter light source, the double subtractive model (9072DS) is an ideal choice.

Model	9072[1]	9072DA[1]	9072DS
Part Number	120-9125	120-9126	120-9127
Input Focal Length (mm)	100	100 × 2	100 × 2
Output Focal Length (mm)	125	125 × 2	125 × 2
Wavelength Selection	Motorized	Motorized	Motorized
Communication	USB 2.0	USB 2.0	USB 2.0
Readout Mechanics	Direct Drive	Direct Drive	Direct Drive
Spectral Range (nm)[2]	180-20000	180-20000	180-20000
Aperture	f/3.5	f/3.5	f/3.5
Maximum Grating Size[3] (mm)	30 × 30	30 × 30	30 × 30
Number of Gratings	3	3 × 2	3 × 2
Grating Types	Plane Ruled	Plane Ruled	Plane Ruled
Optical Resolution (nm)[2]	0.5	0.25	0.5
Stray Light	4.00E-04	4.00E-06	4.00E-06
Dispersion[2] (nm/mm)	7	3.5	N/A
Wavelength Accuracy[2] (± nm)	0.3	0.3	0.3
Wavelength Reproducibility[2] (± nm)	0.1	0.1	0.1
Optical Axis Height (mm)	76.2	76.2	76.2
Compatible Detector Types	Single- or Multi-channel	Single- or Multi-channel	Single- or Multi-channel
Dimensions (mm)	254 × 127 × 139	254 × 254 × 160	254 × 254 × 160
Dimensions (in)	10 × 5 × 5.5	10 × 10 × 6.3	10 × 10 × 6.3
Weight (kg)	4.5	10	10

1. Imaging option available - see ordering information.
2. Grating dependent.
3. Substrate size. Active area is 27 × 27 mm.

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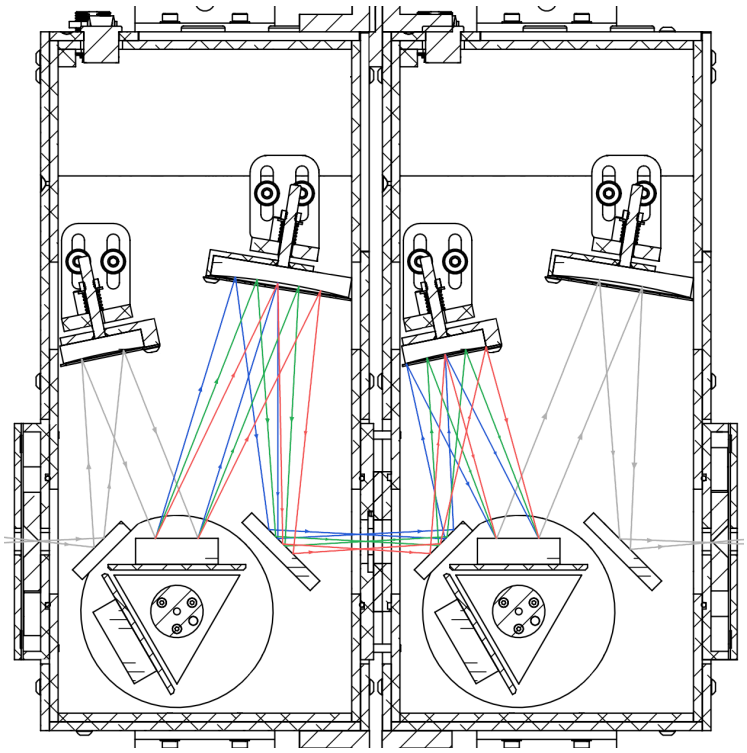
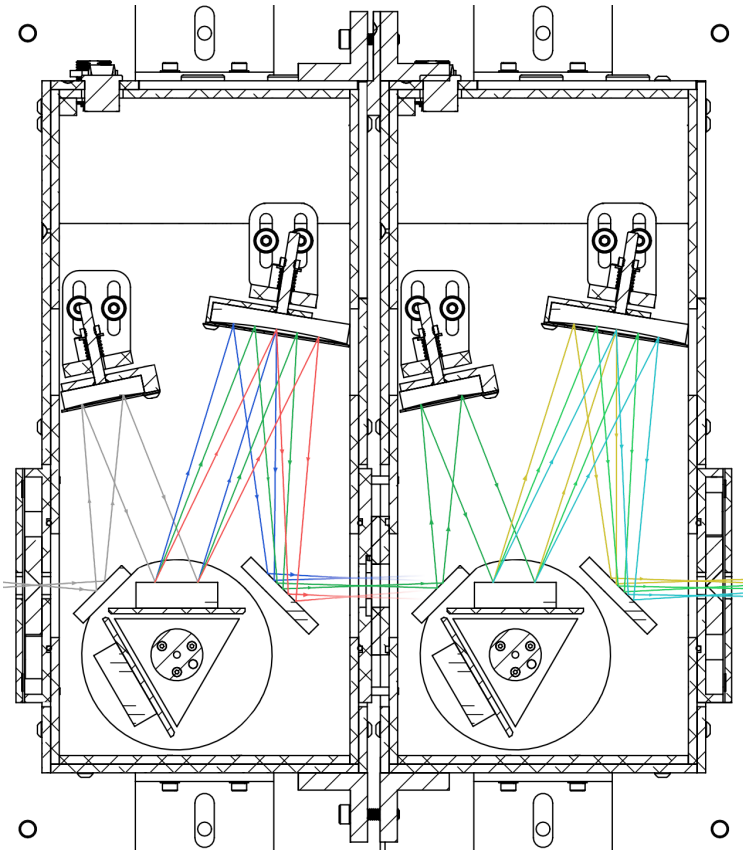
Monochromators and Spectrographs

CONFIGURATION



Upper: 9072DS double subtractive monochromator. Lower: 9072DA double additive monochromator. No intermediate slits shown.



9072DS Double Subtractive Monochromator Configuration

The 9072DS is made of 2 single monochromators in a subtractive mode: the dispersion of the second monochromator is in the opposite direction of that of the first one. The two gratings are mechanically connected and accurately motorized together. This leads to a spectrally homogenized beam at the output port of the second monochromator and greatly reduced stray light, ideal for spectroradiometry, Raman or UV measurements of solar radiation.

The arrangement of the 9072DS allows it to act either as a tunable bandpass filter or a tunable notch filter. As a tunable bandpass filter the bandpass of the device is determined by the width of an intermediate slit. As a tunable notch filter the width of the notch is determined by the physical width of an opaque notch placed at the intermediate slit position.

The 9072DS can also be used to pass or filter out several elected wavelengths by using a custom intermediate multi-slit mask instead of a single width intermediate slit.

Please contact a Sciencetech Applications Specialist to tell us about your custom requirements. Standalone software is provided by Sciencetech.

9072DA Double Additive Monochromator Configuration

The 9072DA is made of 2 single monochromators in a additive mode: the dispersion of the second monochromator adds to that of the first one.

The inbound light is dispersed by the first grating then passed through an intermediate slit where stray light is rejected and then spectrally dispersed again by the second grating. The two gratings are mechanically connected and calibrated for accurate wavelength tracking.
The double dispersion of 9072DA results in a better optical resolution compared to a single 9072 monochromator while the bandpass is half that of a single 9072.

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Monochromators and Spectrographs

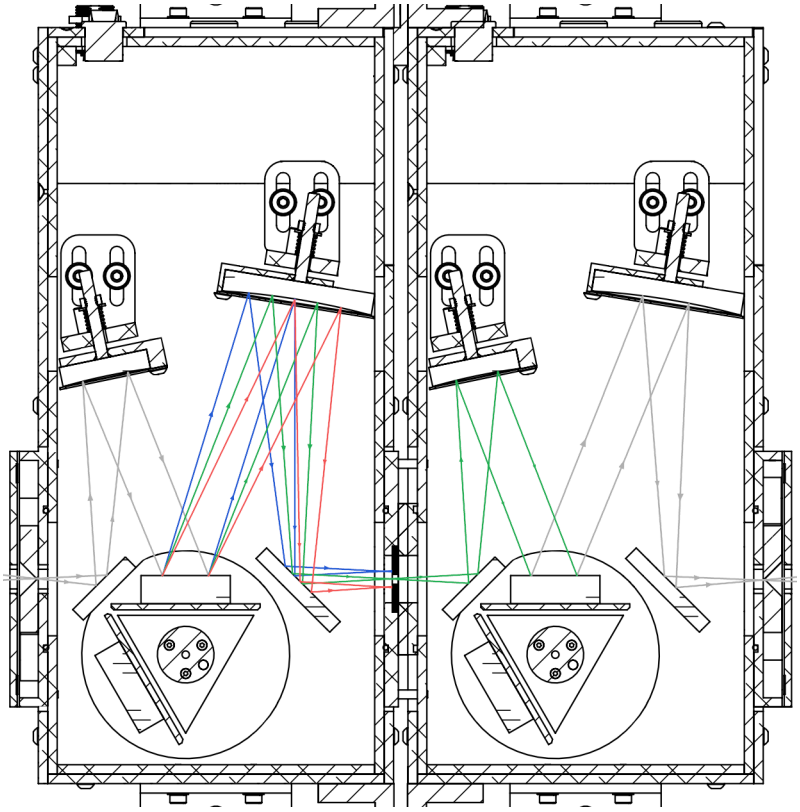
CONFIGURATION

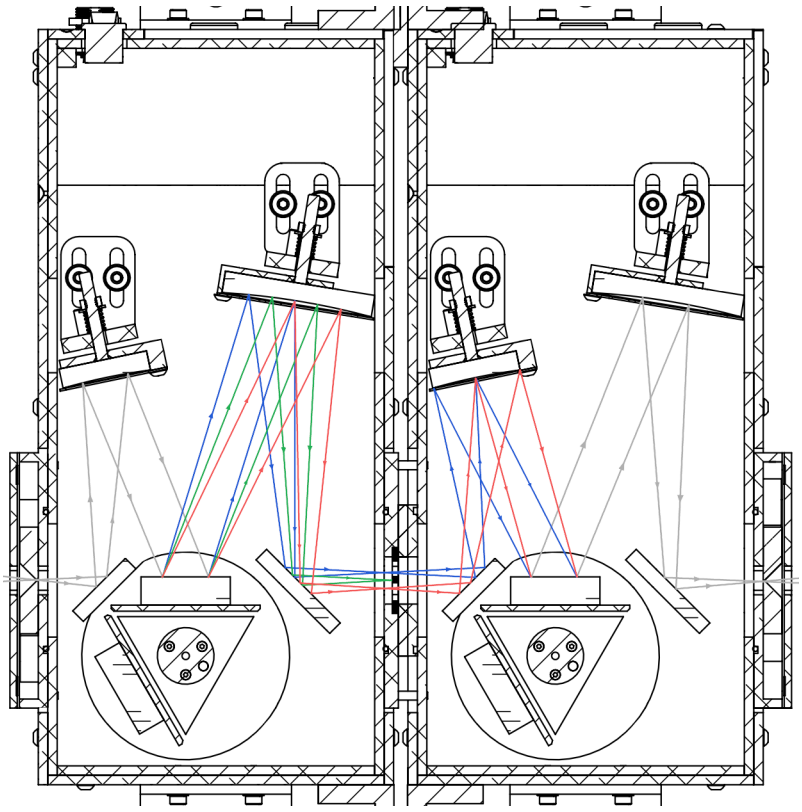
Intermediate Slits and Notches

The 9072DS double subtractive and the 9072DA double additive monochromators can accommodate a fixed slit or a notch filter in their intermediate position. This slit or notch is not included and must be added to the order.

An intermediate slit allows the monochromator to function as a tunable bandpass filter, allowing selected wavelengths through and spectrally homogenizing the light that emerges from the exit port.

And intermediate notch filter allows a specific wavelength to be rejected, while allowing the remaining wavelengths are though and spectrally homogenizing the light that emerges from the exit port. Please contact a Sciencetech sales representative for notch options.





Above: 9072DS double subtractive monochromator with intermediate slit.

Left: 9072DS double subtractive monochromator with intermediate notch.

FWHM bandpass for 9072 system with 3 slits of same width, 1200l/mm grating			
Slit Model	Slit Width (µm)	9072DS	9072DA
FWS-010	100	0.70	0.35
FWS-025	250	1.75	0.88
FWS-050	500	3.50	1.75
FWS-100	1000	7.00	3.50
FWS-200	2000	14.00	7.00
FWS-300	3000	21.00	10.50

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Monochromators and Spectrographs

ACCESSORIES

1) Grating selection

There are three basic parameters to consider when choosing a grating for your 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 than 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.

9072 Grating selection

Grating Selection Guide for 9072 Series[1]					
Grating Model [4]	[120-9025] G-9055-R-30-####/####				
Grating SKU	120-9205-C31	120-9205-C32	120-9205-C35	120-9205-C36	120-9205-C38
Grating (l/mm)	1200	1200	1200	830	600
Blaze Wavelength (nm)	250	300	500	800	1250
Dispersion (nm/mm)	7	7	7	10	14
Resolution (nm)	0.5	0.5	0.5	0.7	1.0
Grating Efficiency Range (nm)	200-400	250-650	400-1300	500-1500	900-2700
Maximum Suggested Wavelength[2] (mm)	700			1100	1500
Maximum Wavelength Attainable [3] (mm)	1200			1800	2400

G-9055-R-30-1200-500 grating installed in holder.

1. Several additional gratings are available. Please contact a Sciencetech Application Scientist to find alternative gratings to suit your application.
2. <30% of a properly F matched input beam will be incident on the grating at this wavelength due to the monochromator geometry
3. At this wavelength the grating is perpendicular to the input radiation and therefore the throughput is 0.
4. Each grating requires and includes its own holder to protect it during handling.

Monochromators and Spectrographs

ACCESSORIES

2) Slit assembly options

All 9072 series monochromators come standard with one adjustable slit (compatible with entrance or exit port) and more options are available separately as shown below. An intermediate slit or notch is not included. Please note that the intermediate position can only accommodate a fixed-type (not adjustable-type) slit.

Sciencetech can manufacture custom slits. Please talk to a technical support representative about your custom requirements.

Fixed Slit Options				
Part Number	Model	Slit width (µm)	FWHM bandpass (1200l/mm grating, one 9072 unit)	Description
120-9046	SS-FWS	-	-	Fixed Width Slit Holder (One holder is required per port, different slits can be exchanged.)
120-9033	FWS-010	100	0.70	Removable 100 µm (0.1 mm) Fixed Width Slit
120-9013	FWS-025	250	1.75	Removable 250 µm (0.25 mm) Fixed Width Slit
120-9012	FWS-050	500	3.50	Removable 500 µm (0.5 mm) Fixed Width Slit
120-9011	FWS-100	1000	7.00	Removable 1 mm Fixed Width Slit
120-9010	FWS-200	2000	14.00	Removable 2 mm Fixed Width Slit
120-9034	FWS-300	3000	21.00	Removable 3 mm Fixed Width Slit
120-9101	NF-200	200*	1.40*	Removable 200 µm notch filter
120-9102	NF-350	350*	2.45*	Removable 350 µm notch filter

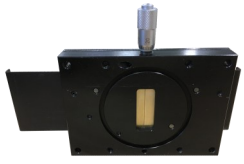
*** width of notch filter, bandpass that is blocked by notch**

Adjustable Slit Options		
Part Number	Model	Description
120-9004	SS-80	Bilaterally Adjustable Slit – Manual Control with Height Adjustment Sliders 0-10 mm, 10- 20 mm, 20-30 mm
120-9053	SS-80-M	Bilaterally Adjustable Slit – Motorized Control with Height Adjustment Sliders 0-10 mm, 10- 20 mm, 20-30 mm
120-9048	SS-84	High Resolution Slit – Manual Control 0-6 mm Wide with Height Adjustment Sliders 0-10 mm, 10-20 mm, 20-30 mm
120-9054	SS-84-M	High Resolution Slit – Motorized Control 0-6 mm Wide with Height Adjustment Sliders 0-10 mm, 10-20 mm, 20-30 mm

Can't find what you are looking for?

Sciencetech has built our 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 optical design team is ready to help.

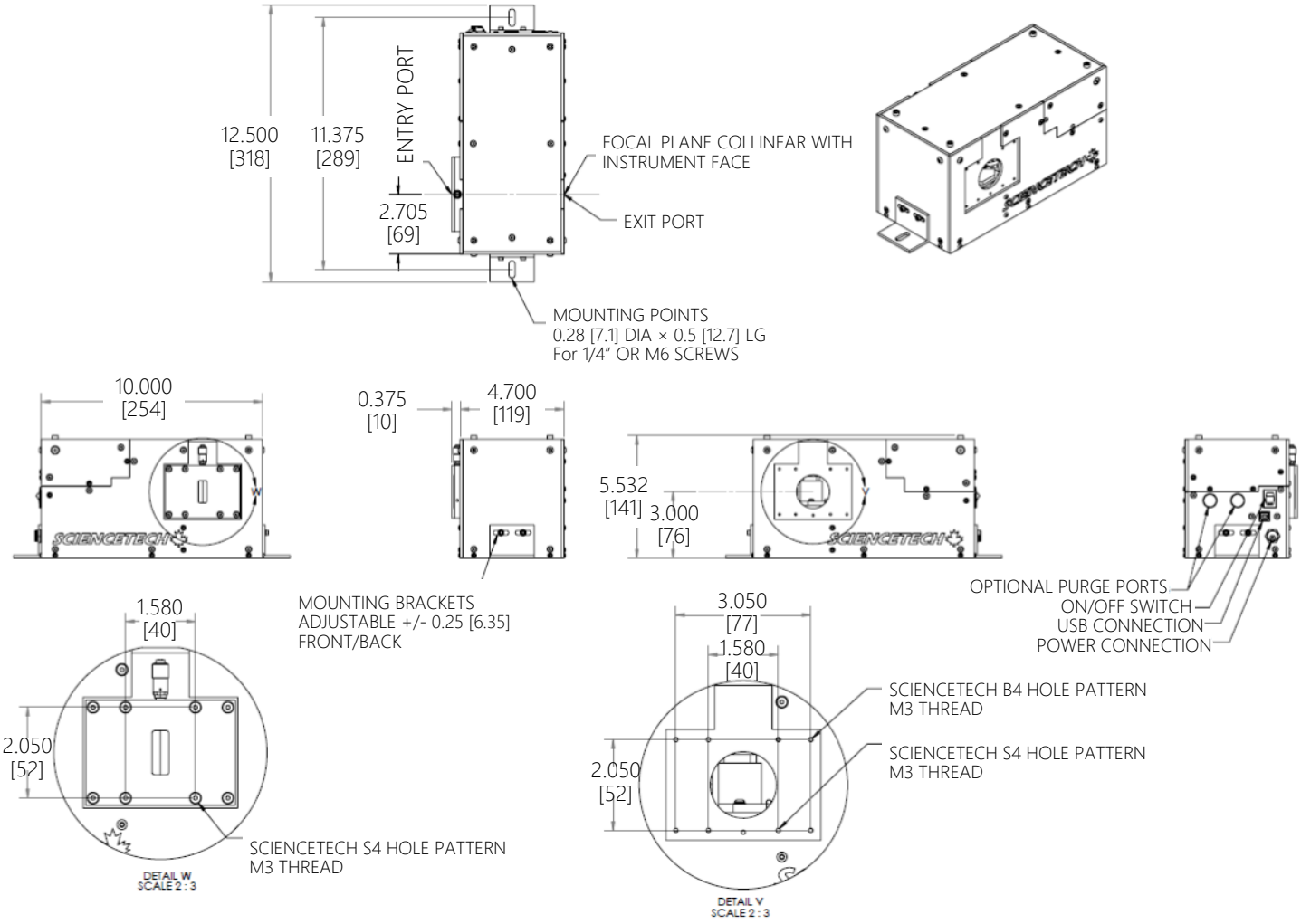
Browse Slit Assemblies on the Sciencetech Website



Monochromators and Spectrographs

DIMENSIONS

Dimensions of 9072 are in inches [mm].



The dimension of 9072DA/DS is double the single unit dimension.