Flexible Wavelength Selector

MONO

Ver 24-07

SLI
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1.1 FWS-Mono

Mono models are short-range wavelength versions of the Poly models, and feature tuning ranges ~100 nm depending on the specific model. The Mono provides simple software to control both center wavelength and bandwidth and adjust bandwidth uniformly across all wavelengths. It can be used with any collimated light source (Supercontinuum laser & broadband lamp) to produce a continuously tunable light source for spectroscopy and spectral imaging applications.

Model	CWL (nm)	FWHM (nm)
Mono-F00	255 - 290	3 - 15
Mono-F01	280 - 310	3 - 15
Mono-F02	310 - 350	3 - 15
Mono-F03	348 - 390	3 - 15
Mono-F04	385 - 435	3 - 15
Mono-F05	430 - 490	3 - 15
Mono-F06	485 - 550	3 - 15
Mono-F07	545 - 620	3 - 15
Mono-F08	615 - 700	3 - 15
Mono-F09	690 - 790	3 - 15
Mono-F10	775 - 890	3 - 15
Mono-F11	880 - 1015	5 - 15
Mono-F12	1000 - 1150	5 - 15
Mono-F13	1140 - 1310	5 - 15
Mono-F14	1300 - 1500	5 - 15
Mono-F15	1475 - 1700	7 - 13

Bandwidth adjustable 3 ~ 15 nm (nominal)

Broadband Spectral Range Coverage 255 ~ 1700 nm

* Center Wavelength tuning range can vary by a few nanometers depending on the product.
* Minimum step size of center wavelength : 1 nm
* Step size of bandwidth (FWHM) : 1 nm

Aperture size

Mono-A5	5 mm	Suitable for supercontinuum lasers
Mono-A10	10 mm	Suitable for light sources with large beam size (tungsten-halogen, plasma, LED)

* For optimal performance input light source must be collimated

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2.1 Software installation

Minimum PC Requirements : Any PC or Windows Based Tablet (Windows 7 or higher).
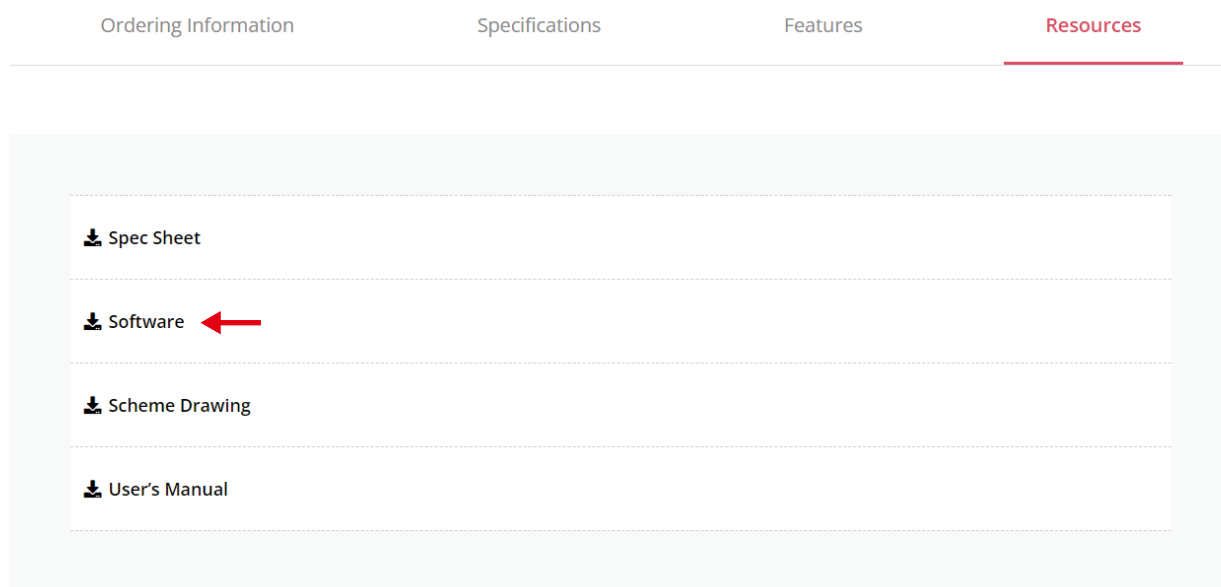If Windows is working properly, this software will also work properly.
– Please do not connect the device before installing the software.

1. Please go to our website **www.spectrolightinc.com** to download the installer file.
   Software location -
   Products » Tunable bandpass filters » Mono » Resources » Software

Ordering Information	Specifications	Features	**Resources**

⬇ Spec Sheet

⬇ Software ⬅

⬇ Scheme Drawing

⬇ User's Manual

a.   Download the software file from the website.
b.   Unzip the zip file.
c.   Double click Setup.exe
d.   Follow the guidelines

2. Install the FWS software on a PC/Tablet running Microsoft Windows (7 or later).

3. Copy the **calibration file** (**.ism2** extension file) provided by the distributor/manufacturer to the default location

→ **C:\SLI**

If the calibration file is not provided to you, please contact us by email at **support@spectrolightinc.com**
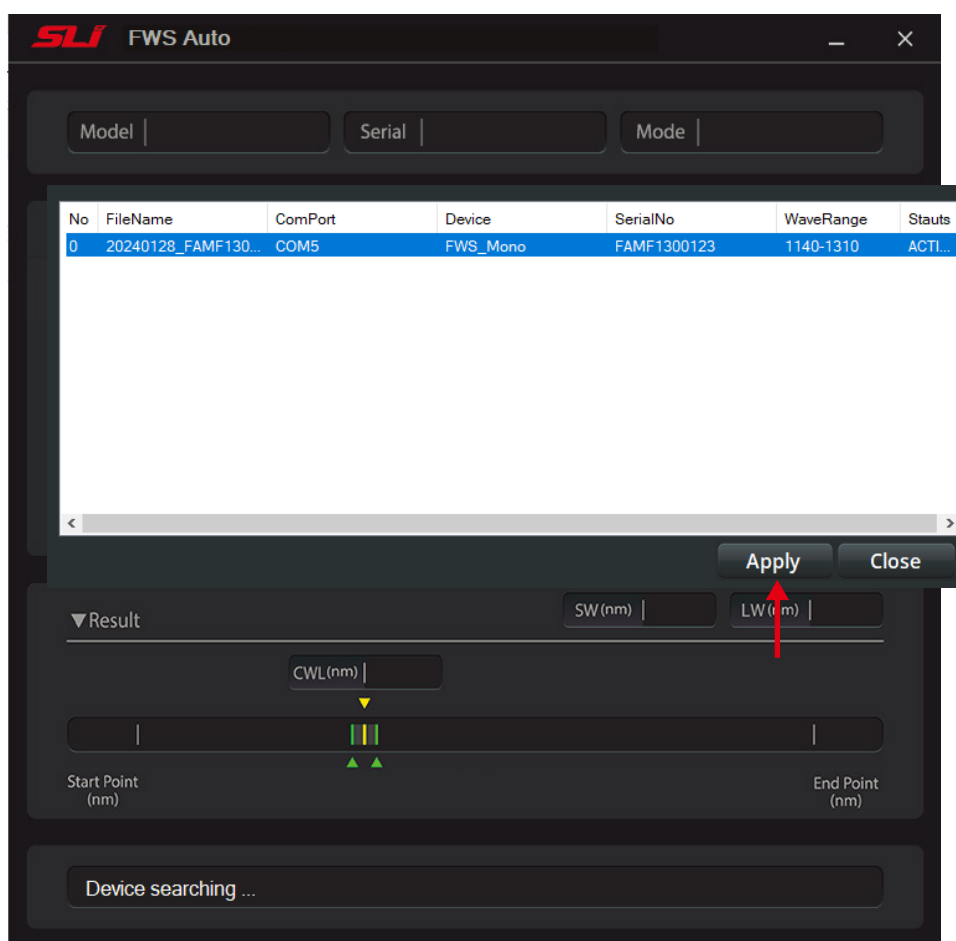This file should be copied to your installation directory.
Please select this file and click on **Apply** after you run the Mono software.
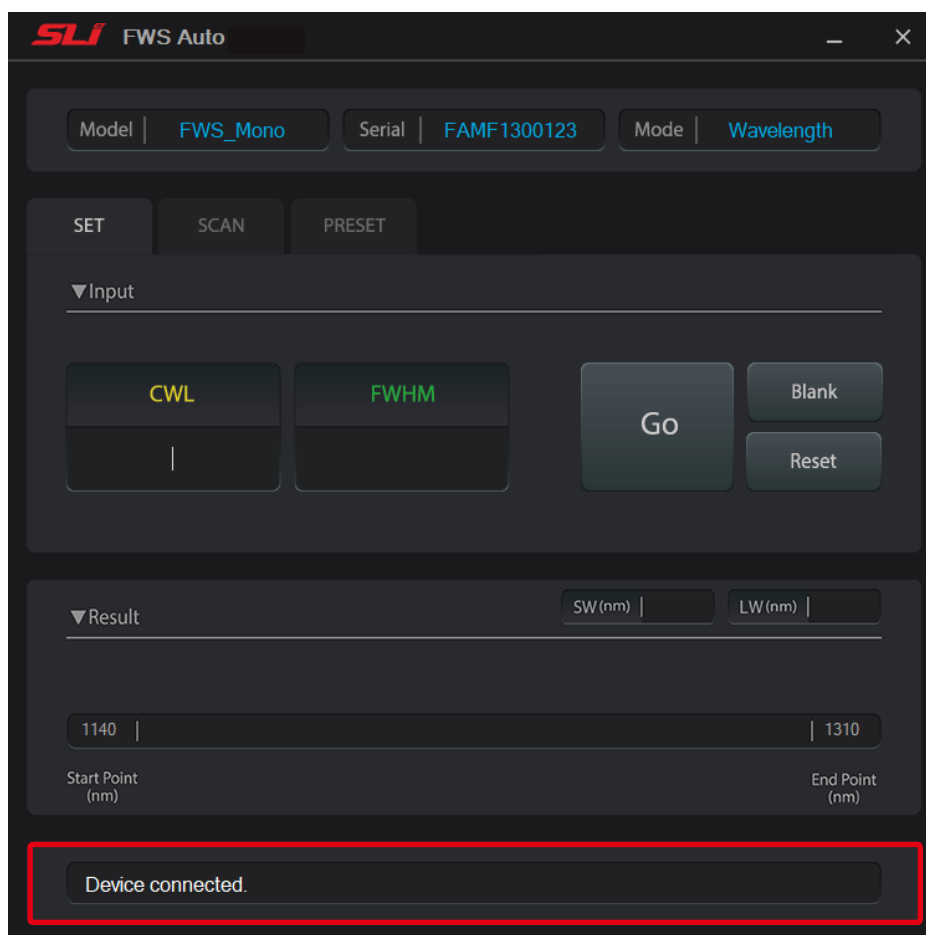
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2.2 Product installation

1. Plug the USB cable into Mono, then connect the other end to the operating Computer/Tablet.

2. Plug the power supply cable into the power port of Mono, located just beside the USB port.
Connect the power supply to a properly grounded outlet.

3. Find the power switch just beside the power port. Turn **ON** the device.

4. To start operating the device, locate the software icon on your Desktop, then execute the installed software.
The software will ask for a calibration file appropriate for your device.
Select the calibration file that matches the device serial number and click the '**Apply**' button.
(calibration file must be in the same folder as the software file)

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5. If there are no problems with the instrument and calibration file, the software and device should connect promptly. If the connection is successful, the software interface should display the message 'Device connected' at the bottom of the screen. The device is now ready to use.

6. Properly align the light source with the specified input port to direct the emitted light towards the designated output port. Ensure that the orientation of the input beam follows the indicated arrow direction.
*For optimal performance of the product, it is recommended that the incident light be collimated.
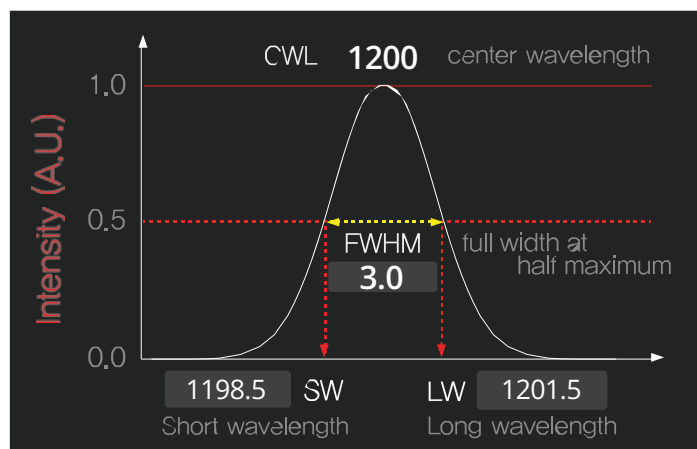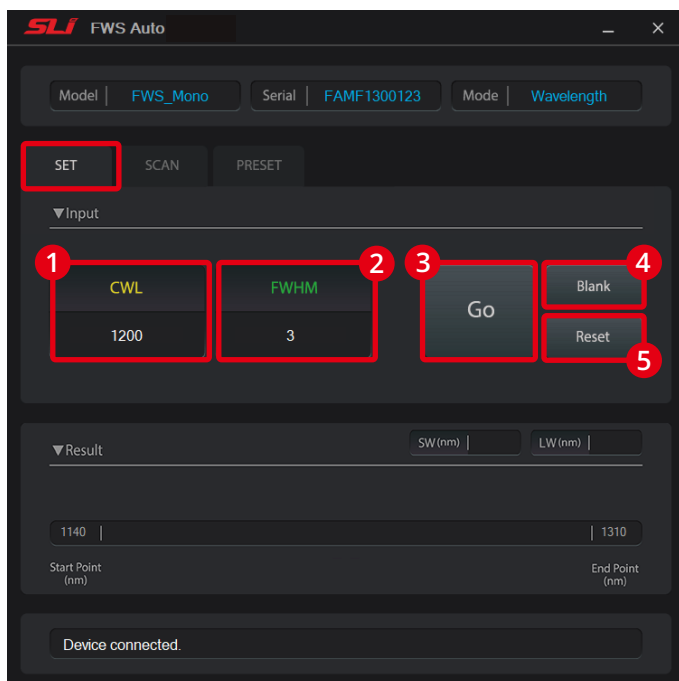
It is possible to couple Mono with different types of broadband sources, such as supercontinuum lasers, laser driven light sources, and fiber output broadband lamp sources. We provide connecting adapters for each type. You can also refer to our website and YouTube channel for details about these adapters.
You can contact our support team at **support@spectrolightinc.com**

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3.1 Setting the center wavelength and bandwidth

1. CWL (nm) : enter the desired CWL (center wavelength)
2. FWHM (nm) : enter the desired FWHM (full-width at half maximum)
3. Go : click to start wavelength tuning
4. Blank : click to set blank mode
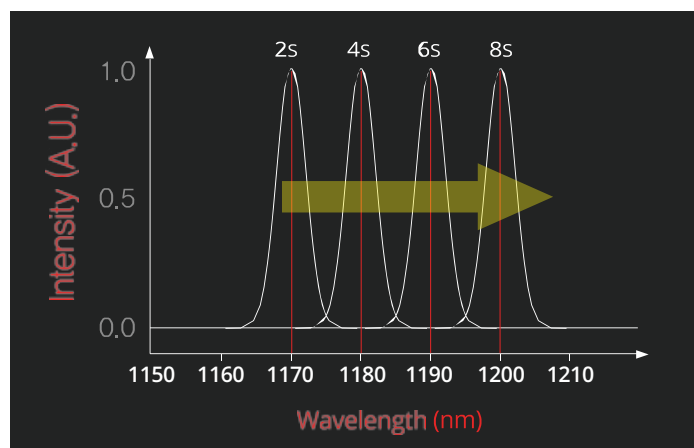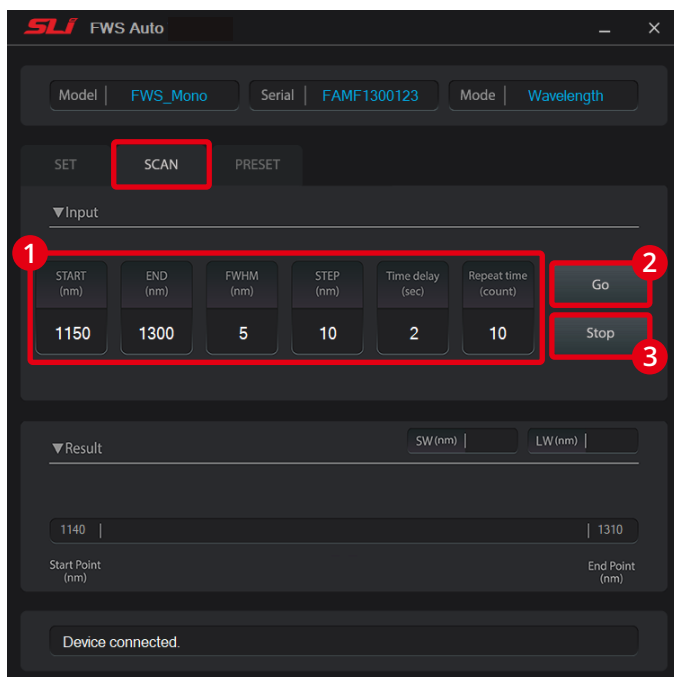**5. Reset** : click to reset filter

3.2 Scanning across a certain wavelength range

1. Enter the following values
- **START (nm)** : wavelength to start scanning
- **END (nm)** : wavelength to end scanning
- **FWHM (nm)** : bandwidth during the scanning
- **STEP (nm)** : step size of the scan in nm
- **Time delay (sec)** : set the time delay between each individual wavelength steps
- **Repeat time (count)** : number of full scans
2. Go : click to start scanning
3. Stop : click to stop scanning

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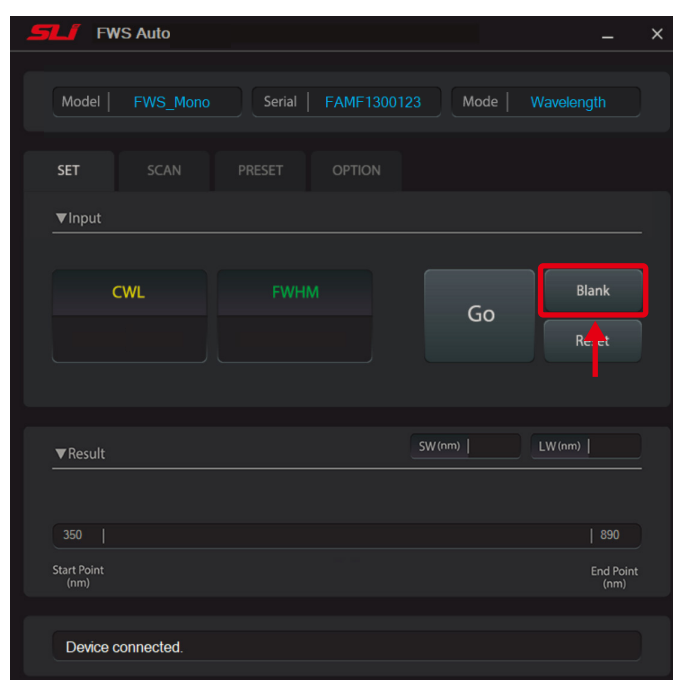## 3.3 Setting or editing the preset wavelength and bandwidth

- In the PRESET tab, you can set your frequently used wavelength and bandwidth for easy access.
1. CWL, FWHM (nm) : enter the desired CWL and FWHM value
2. Preset Selection : select the presets that is to be scanned
3. Go (individual) : click to scan individual presets
4. Time delay (sec) : set the time delay between each individual presets
5. Repeat time (count) : number of full scans
6. Go : click to scan all selected presets
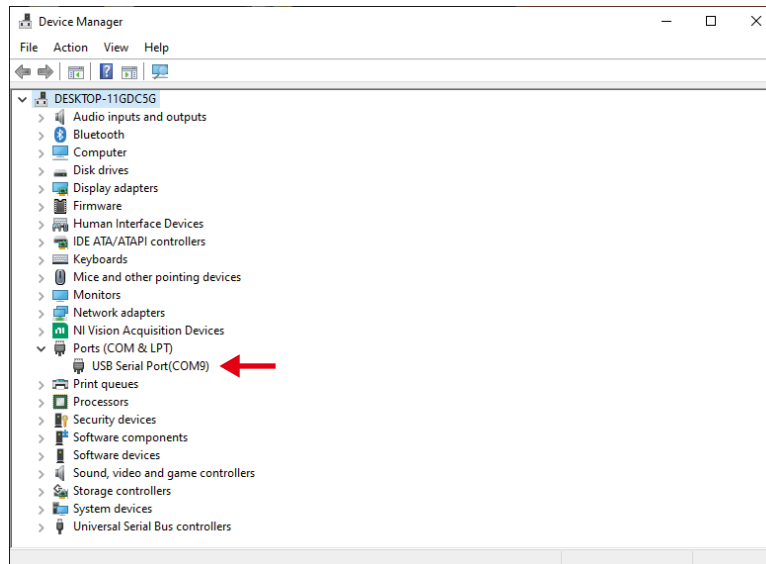**7. Stop** : click to stop scanning

3.4 When to use blank mode

- Blank mode is the state wherein no filters are positioned in the pathway of the input light source.
This way, it is possible to check the alignment of the input light source.

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4.1 Device connection error

- If the device and software cannot be properly connected, check whether the communication driver appears properly in Device Manager. If it is a problem with the communication driver, install the latest FTDI USB driver suitable for your OS from the following website - **https://ftdichip.com/drivers/**

- Please contact our support team for other trouble shootings. **support@spectrolightinc.com**

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5.1 Accessories overview

FWS can function as a tunable light source through combination with various broadband light sources such as supercontinuum laser and lamp. For this purpose, an input accessory is prepared that allows combining various light sources and FWS. A variety of output accessories are also available so that the selected wavelength can be applied to light delivery methods such as liquid light guide or fiber.
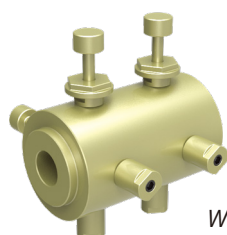
Input accessories

WS-FPCA
FiberPort coupler adapter for direct connection with FC/PC and FC/APC fiber types.

Output accessories

WS-SM1-11P
WS-SM1-05P

WS-FPCA

WS-SMA

Fiber collimator adapter
To connect wavelength selectors with fiber collimators [Φ 11 mm, SM05]

SMA type fiber adapter
To connect the output of wavelength selectors directly to an SMA type

WS-SCA

WS-LLG

Supercontinuum source adapter
To connect supercontinuum sources to wavelength selectors

Light guide adapter
To connect the output of wavelength selectors directly to light guide [3 mm, 5 mm]

WS-MB-MONO

Mounting Base
Magnetic baseplate includes an M4 center hole for simple plug & play post mounting of wavelength selectors

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5.2 Input accessories

WS-SM1-05P

Input accessory for connecting commercial fiber collimators
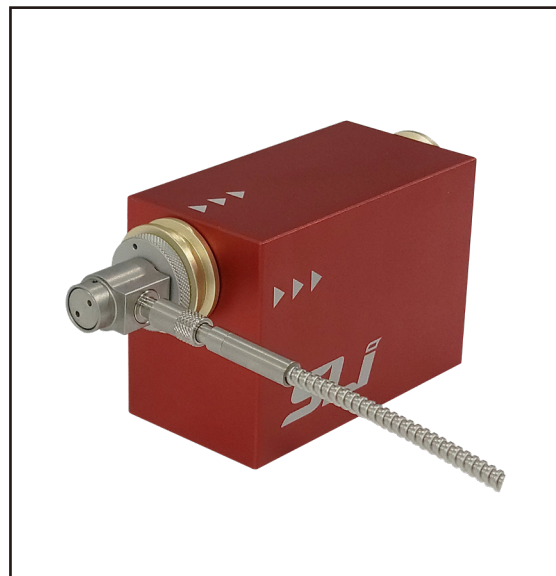(5 mm diameter) to the FWS. Allows SMA type fiber compatibility.

For collimator suggestions please contact us at -
support@spectrolightinc.com

WS-SM1-11P

Input accessory for connecting commercial fiber collimators
(11 mm diameter) to the FWS. Allows SMA type fiber compatibility.

For collimator suggestions please contact us at -
support@spectrolightinc.com

WS-SCA

Input accessory for connecting supercontinuum laser light sources.
SCAY model is for connection with supercontinuum laser of SLi.
SCAN model is for connection with supercontinuum laser of NKT.

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5.3 Output accessories

WS-SMA
Output accessory for connecting SMA type fiber as an output.

WS-LLG
Output accessory for connecting liquid light guide (LLG) as an output.

Comes in 3 mm and 5 mm models.

WS-FPCA
FiberPort coupler adapter for direct connection with FC/PC and FC/APC fiber types.
(Can be used for both input and output of FWS.)

* Recommended for use with lasers

6. Full Specifications

	Mono-A5	Mono-A10
Spectral range (nm)	255 - 1700	255 - 1700
Bandwidth (FWHM) (nm)	3 - 15 (nominal)	3 - 15 (nominal)
Aperture size (mm)	5	10
Out of band blocking	OD 10 in tuning range, OD 5 in spectral range up to 1700 nm	
Step size of center wavelength (nm)	1.0	
Step size of bandwidth (FWHM) (nm)	1.0	
Wavelength accuracy (nm) : CWL, FWHM	< 1 nm	
Damage threshold	Peak Fluence < 1.75 Joules/cm² (~70 spot diam., 10 ns pulse, 10 Hz repetition rate, 532 nm LASER) CW (Continuous wave) Intensity < 2 MW/cm² (1064 nm, ~ 90 μm spot diam.)	
Transmission efficiency (%)	≥ 75 % (in proportion to the input light power / FWHM . 10 nm)	
Scanning speed (ms)	20 - 200 ms (depending on step size)	
Software version	FWS-Auto ver 3.1	
Dimension (L x W x H, mm)	48 x 92 x 64	
Input power	DC 12 V, 2 A	
Electrical requirement	AC 100 - 240 V, 50/60 Hz	
Data interface	USB 2.0	
Weight (kg)	0.4	

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NO.	DESCRIPTION	Q'TY	MATERIAL	REMARK
1	FWS-Auto	1	Al	RED ANODIZING

| UNIT | mm |
| TOLERANCE | ±0.05 |

TITLE: FWS-Auto

SCALE: N : S

SHEET 1 / 1 A3

< ISO VIEW >

3-M4.0

⌀29

109.2

91.5

64

48