

Flexible Wavelength Selector

MONO

Operation Manual

Ver 1.0



SLI
SPECTROLIGHT

TABLE OF CONTENTS

1. Introduction

1.1 FWS-Mono

2. Installation

2.1 Software installation

2.2 Product installation

3. Operation (Wavelength mode)

3.1 Setting the center wavelength and bandwidth

3.2 Scanning across a certain wavelength range

3.3 Setting or editing the preset wavelength and bandwidth

3.4 When to use “BLANK”

4. Troubleshooting

4.1 Device connection error

5. Accessories guide

5.1 Accessories overview

5.2 Input accessories

5.3 Output accessories

6. Full specifications

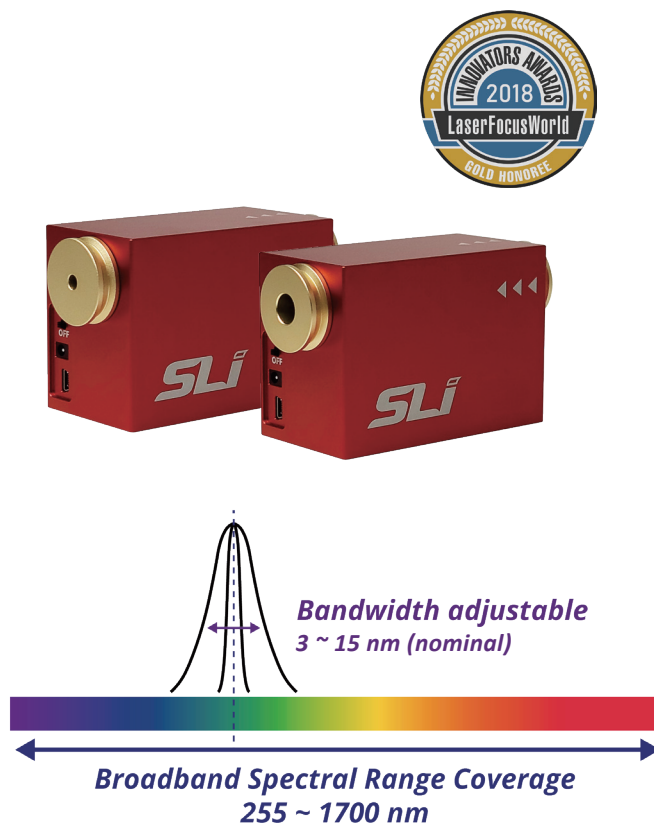
7. Scheme drawing

1. Introduction

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



* 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

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

* For optimal performance input light source must be collimated

2. Installation

2.1 Software installation

Minimum PC Requirements: Any PC or Windows Based Tablet (Windows 7 or higher).

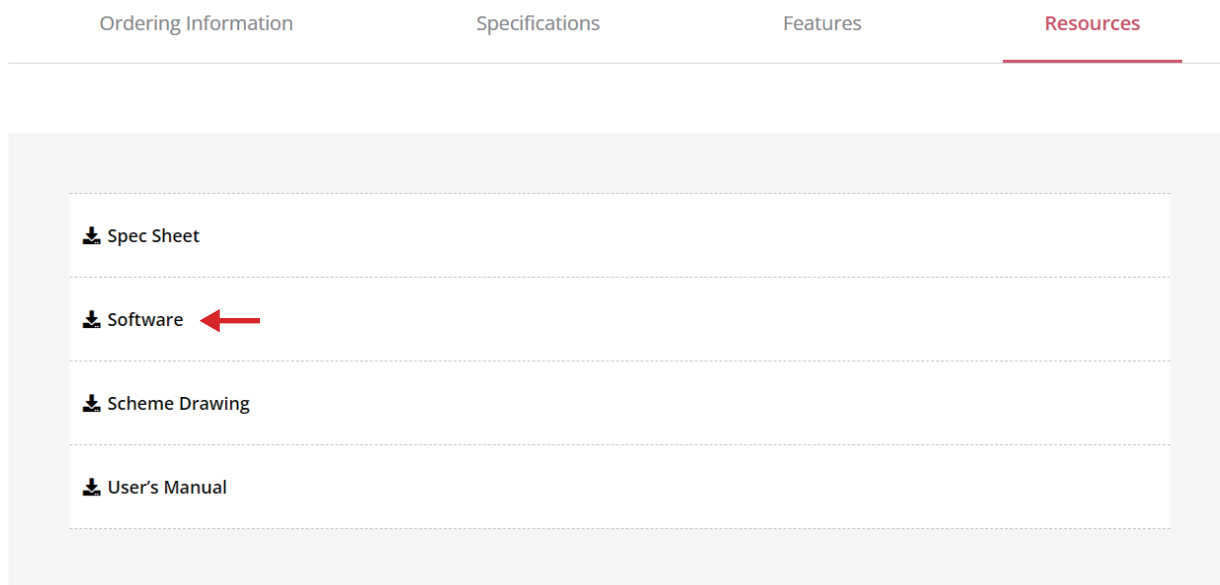
If Windows is working properly, this software will also work properly.

– 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



- 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** (.ism extension file) provided by the distributor/manufacture to the default location

→ **C:\SLI**

If the calibration file is not provided to you, please contact us by email at **support@spectrolightinc.com**

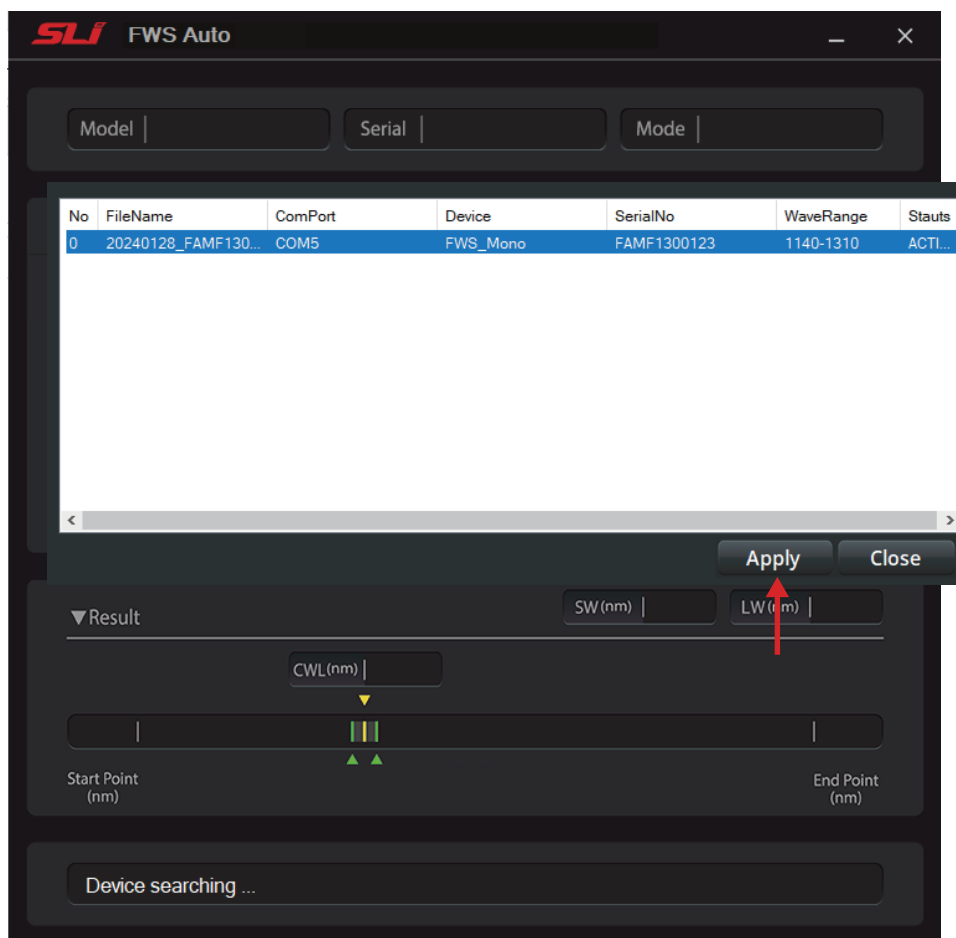
This file should be copied to your installation directory.

Please select this file and click on **Apply** after you run the Mono software.

2. Installation

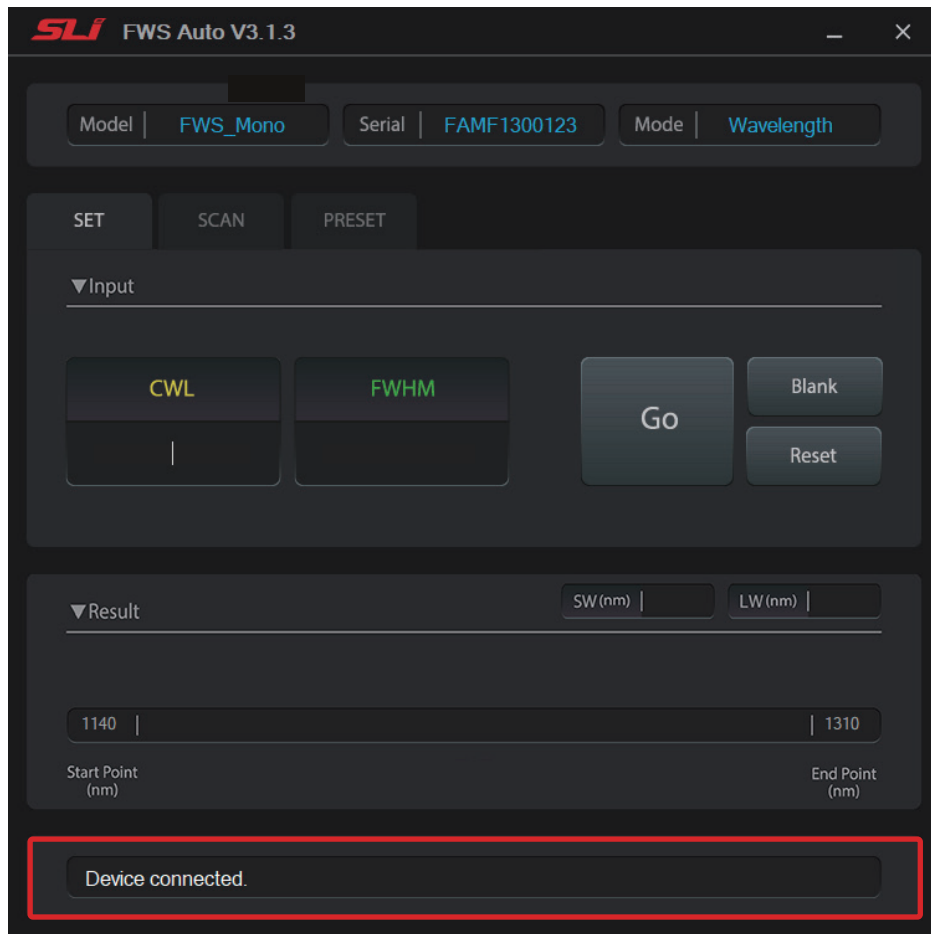
2.2 Product installation

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)



2. Installation

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.

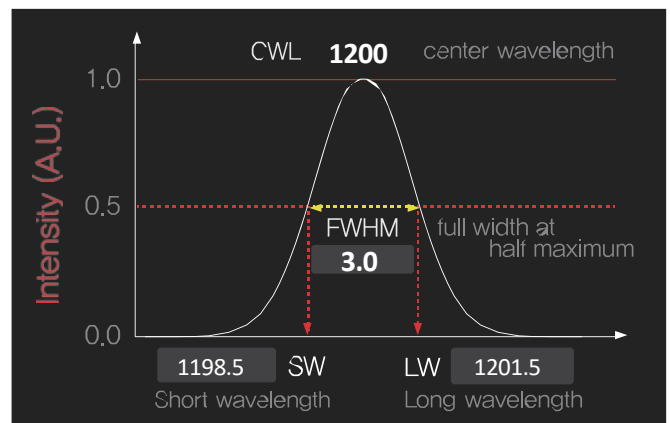
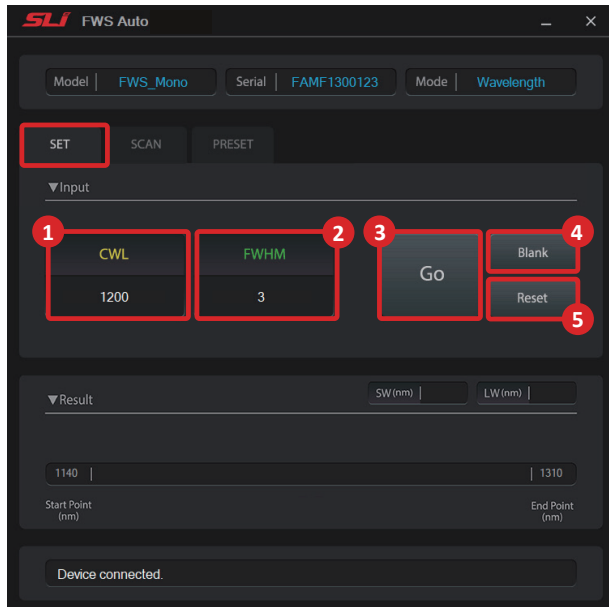
You can also refer to our website and YouTube channel for details about these adapters.

You can contact our support team at support@spectrolightinc.com

3. Operation (Wavelength mode)

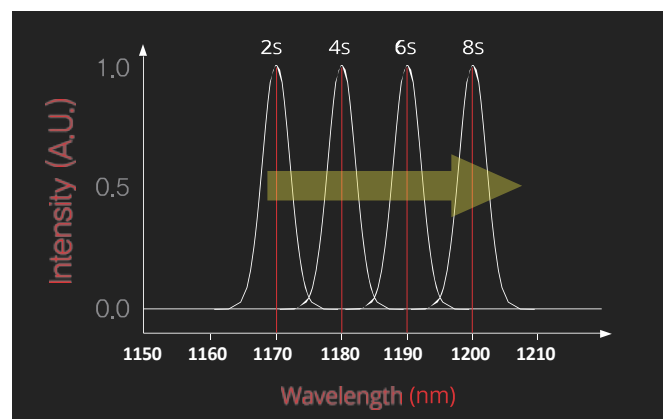
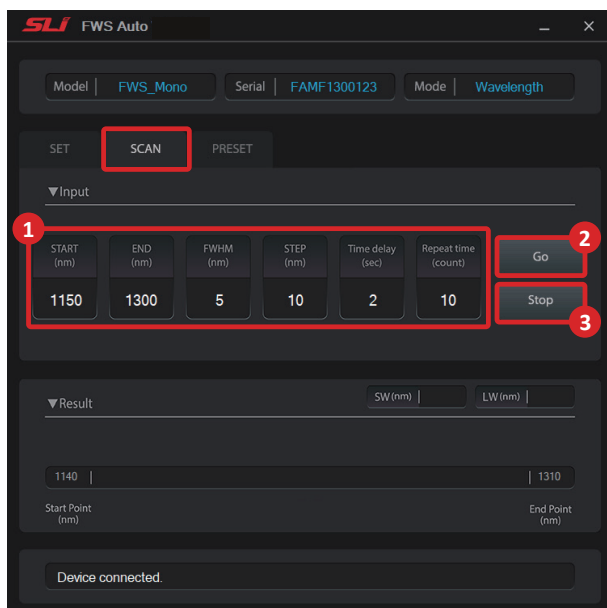
3.1 Setting the center wavelength and bandwidth

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

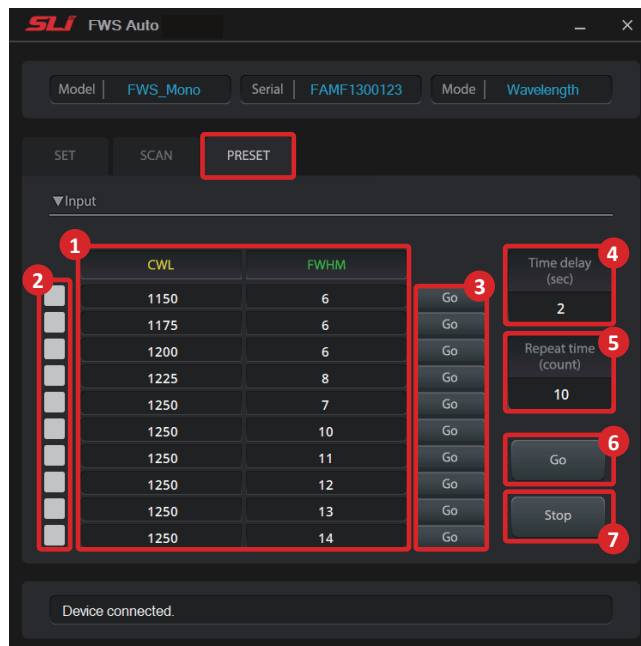


3. Operation (Wavelength mode)

3.3 Setting or editing the preset wavelength and bandwidth

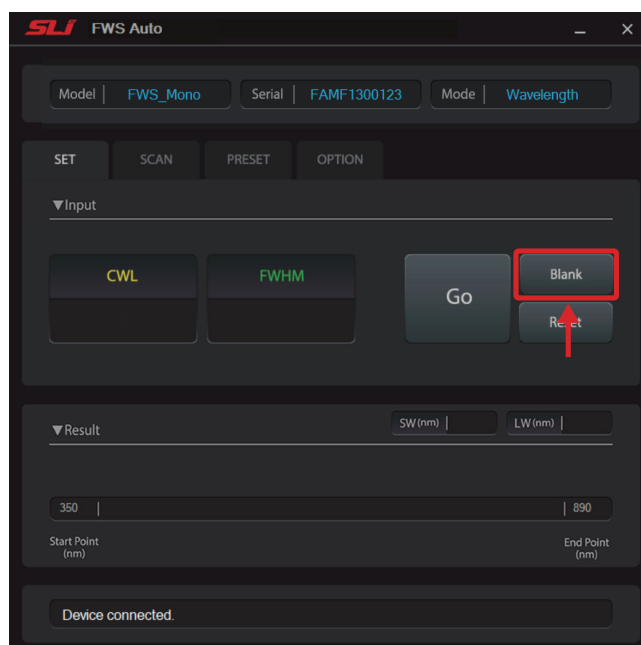
- In the PRESET tab, you can set your frequently used wavelength and bandwidth for easy access.

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

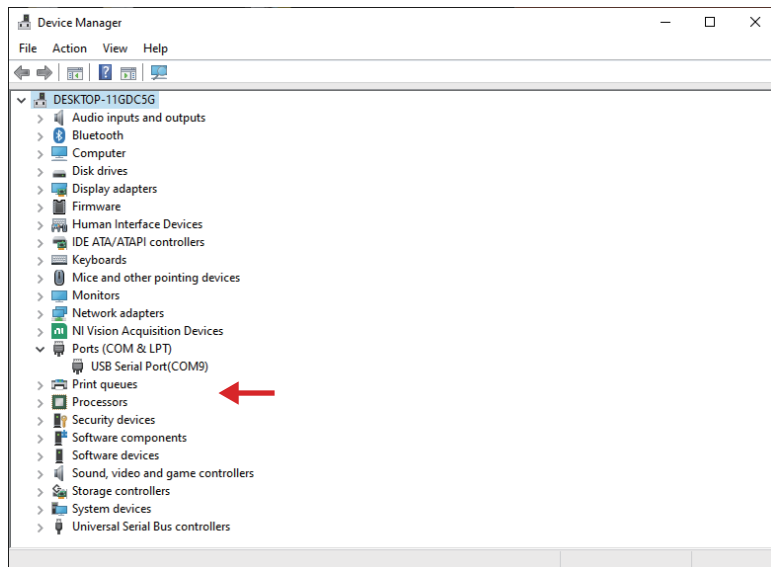
- Blank mode is the state wherein no filters are positioned in the pathway of the input light source. This way, it is possible to check the alignment of the input light source.



4. Troubleshooting

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/>

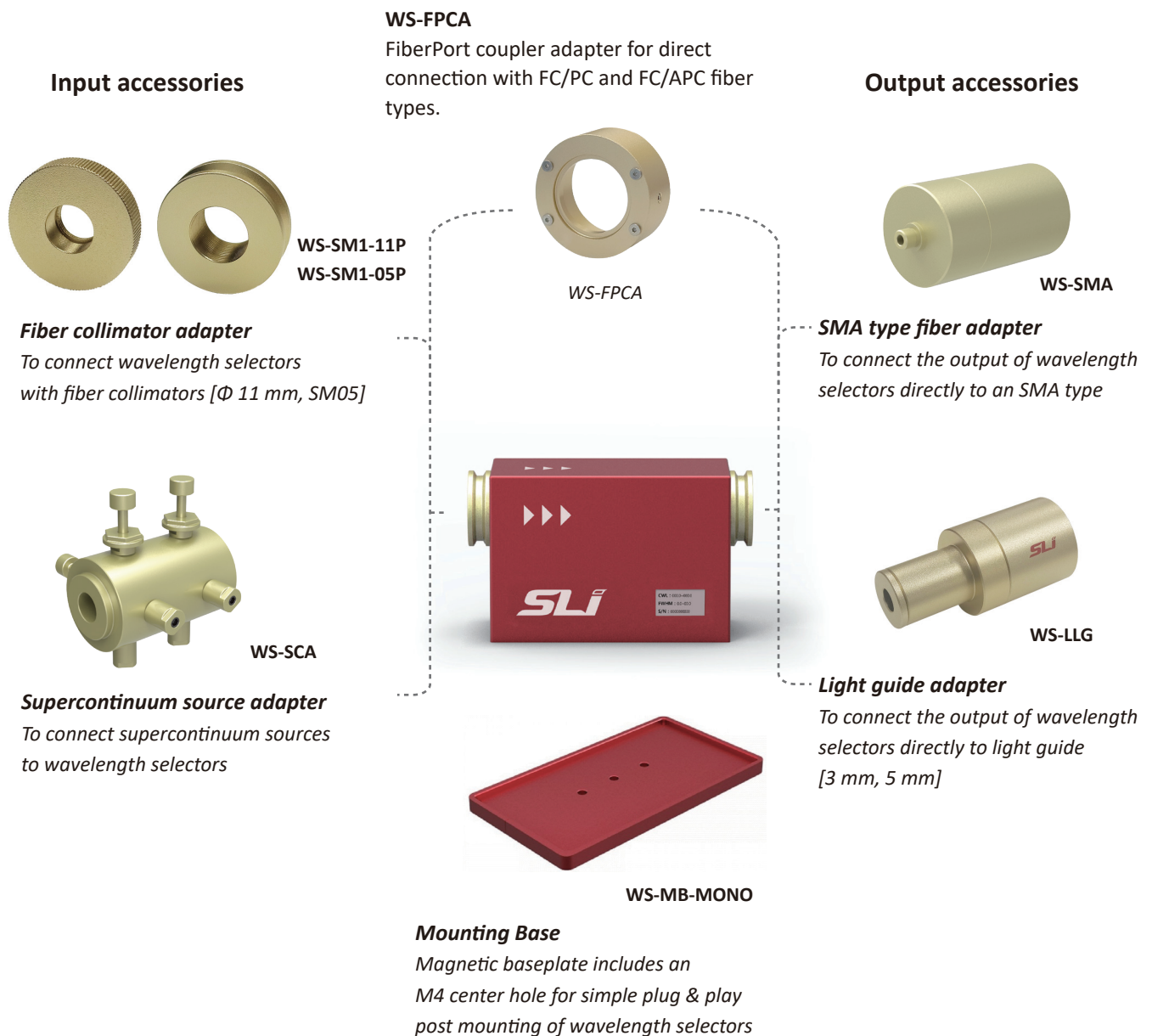


- Please contact our support team for other trouble shootings. support@spectrolightinc.com

5. Accessories guide

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.



5. Accessories guide

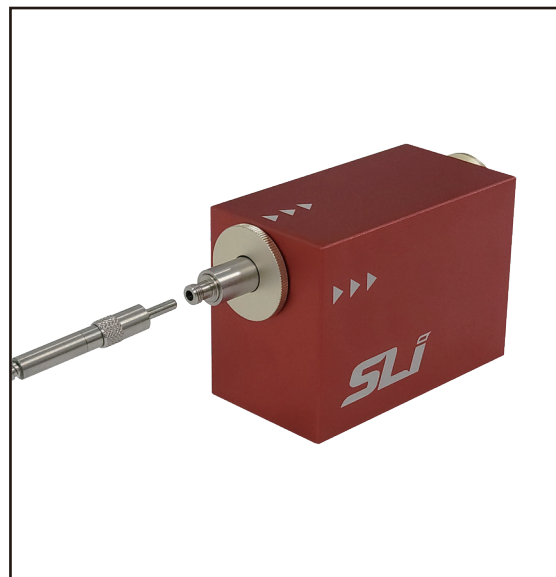
5.2 Input accessories

WS-SM1-11P

Input accessory for connecting commercial fiber collimators with a housing outer diameter of 11 mm to the FWS.

Allows SMA, FC/PC and FC/APC type fiber compatibility

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

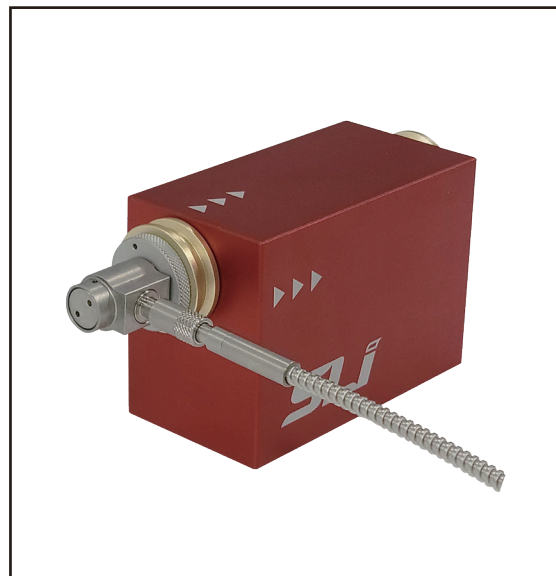


WS-SM1-05P

Input accessory for connecting commercial fiber collimators with SM05 external threads(0.535"-40) to the FWS.

Allows SMA, FC/PC and FC/APC 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.



5. Accessories guide

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.)

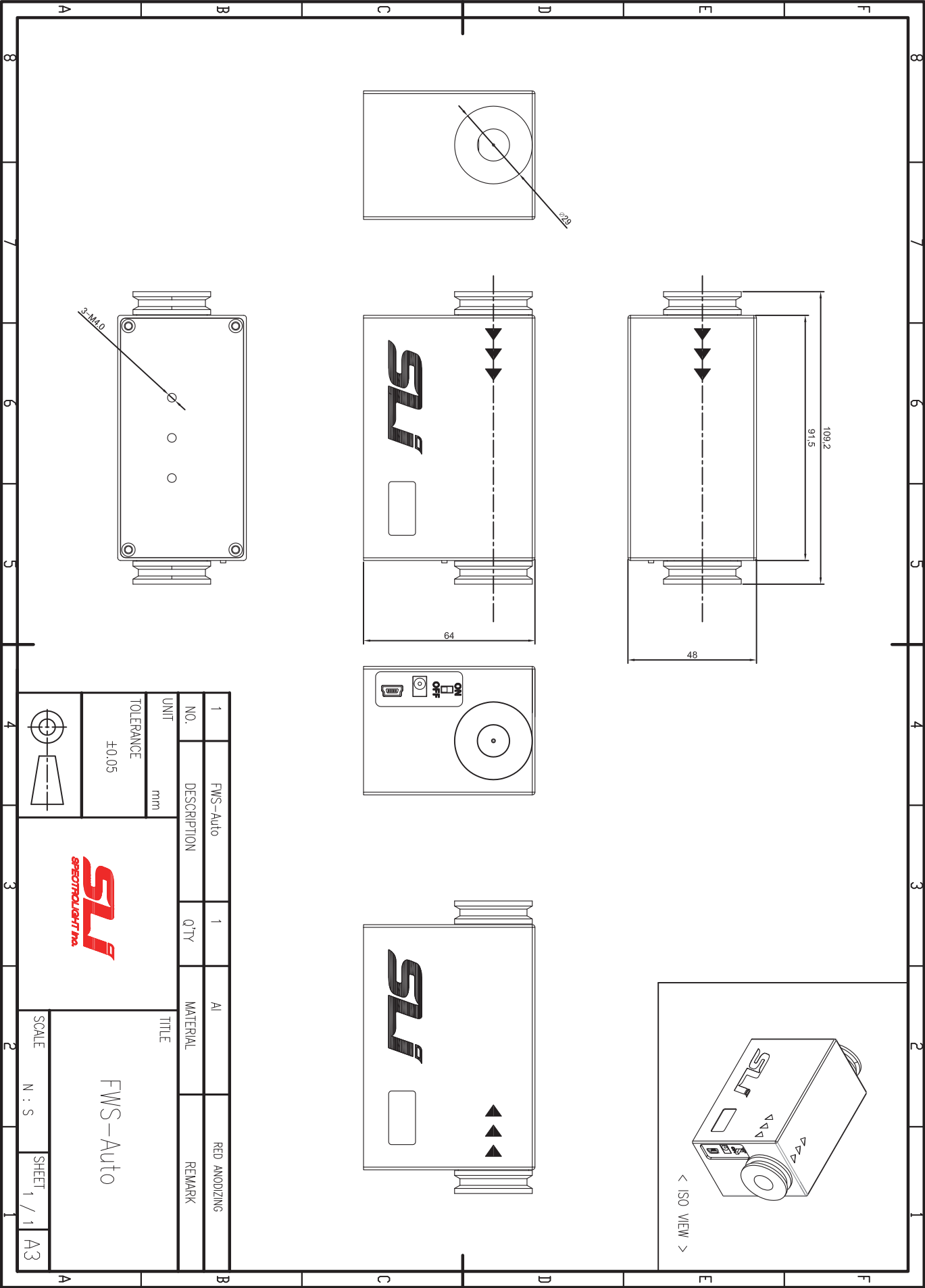
* Recommended for use with lasers

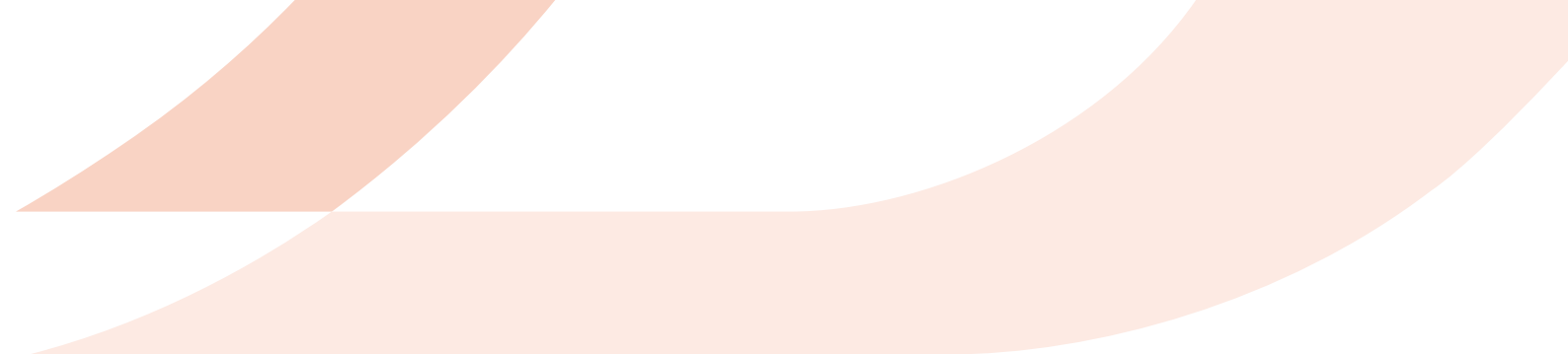


6. Full Specifications

	Mono-A5	Mono-A10
Spectral range (nm)	255–1700	255–1700
Bandwidth (FWHM) (nm)	3–15 (nominal)	3–15 (nominal)
Aperture size (mm)	5 mm	10 mm
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 nm	
Step size of bandwidth (FWHM) (nm)	1 nm	
Wavelength accuracy (nm): CWL, FWHM	< 1 nm	
Damage threshold	Pulse : Peak Fluence < 1.75 joules/cm ² (~70 µm spot diam., 10 ns, 10 Hz, 532 nm LASER) CW (Continuous wave) : Intensity < 2 MW/cm ² (1064 nm, ~90 µm spot diam.)	
Transmission efficiency (% , nominal)	≥ 75 % (avg.)	
Scanning speed (ms)	30–300 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	

7. Scheme drawing





SPECTROLIGHT

Headquarters	iiSM Inc. 402, 7-16, Naseongnam-ro, Sejong-si, 30129, Republic of Korea
	Website: www.spectrolightinc.com
	E-mail: info@spectrolightinc.com
Sales	Phone: +82.44.863.9852
	E-mail: sales@spectrolightinc.com
Technical Support	Phone: +82.10.6538.9852
	E-mail: support@spectrolightinc.com