FWS Mono

Operation Manual

Ver 2.0 [20200319]

DISCLAIMER

The Flexible Wavelength Selector Mono is designed for selecting center wavelength and bandwidth of input light.

This device is designed for use in laboratory environment. This is not a medical device so it should not be used or applied to humans in any way.

WARNINGS AND PRECAUTIONS

- Operate the device using 100-240 V A.C., 50/60 Hz, 1.0 A / Output 12V D.C., 3.5 A.
- Always use grounded power supply cord set provided to connect the system to a grounded outlet.
- Do not expose the device to rain or moisture.
- Never look into the optical pathway of the light sources used.
- Do not connect or disconnect the cables while the power of the device is ON.
- Always allow free flow of fresh air on all sides.
- Operating / Strorage condition

  Indoor use only
  Temperature: 10 - 40 °C, 50 - 104 °F
  Humidity: 20 - 85 %
  Pressure: 700 - 1060 hPa

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1. Introduction

Flexible Wavelength Selector (FWS) Mono is a unique opto-mechanical tunable filter that combines the wavelength tuning and bandwidth adjustment of a grating monochromator with the imaging advantages of a large aperture filter. With both high (>10^6) out of band extinction and excellent (>75%) transmission, the FWS is a simple, turnkey solution for any imaging applications that require wavelength control, throughout the extended visible spectrum. Plus the in-line configuration, together with no wavelength associated displacement (neither deflection nor walk-off), means the FWS is simple to integrate with cameras, microscopes and other instruments.
Each Mono model can cover a maximum spectral range of around ~100 nm depending on the model. The bandwidth can be adjusted from 2 to around 16 nm depending on the center wavelength. Please refer to the table below for more details on tuning range. All models are also available as laser versions with smaller aperture (~ 3 mm).

Model No.	Spectral Range (nm)	Bandwidth Range (nm)
FWS-Mono-380	358-400 (393)	2-16
FWS-Mono-425	395-447 (440)	2-15
FWS-Mono-475	447-501 (494)	2-15
FWS-Mono-530	496-561 (555)	2-14
FWS-Mono-595	555-628 (622)	2-14
FWS-Mono-665	621-703 (700)	3-13
FWS-Mono-745	700-790 (785)	3-12
FWS-Mono-845	784-900 (897)	4-11

* Spectral range is based on maximum bandwidth,
* When using minimum bandwidth, the tuning wavelength changes
   to the value in the parentheses.
* All values are nominal.

2. Installation

Please follow the quick guide at the beginning of this manual before installing the software.

● Software
  – in order to control FWS Auto Poly, you have to download and install the
    control software. Please do not connect the device before installing the software.

Installation Steps

▶ Download and install the software
  a. Go to https://www.spectrolightinc.com/product/flexible-wavelength-selector-mono/
  b. Download the software package named "FWS Mono Software"
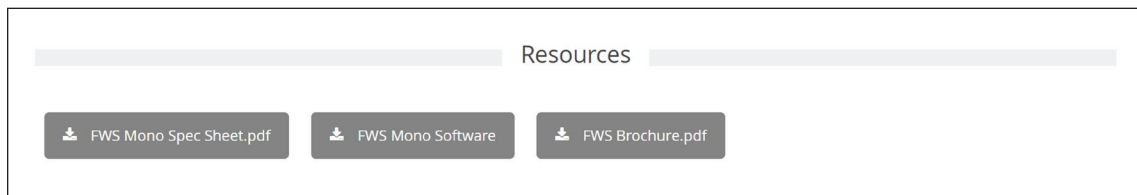
  c. Unzip the downloaded zip file.
  d. Double-click Setup.exe
  e. Follow the guidelines

Please note that our devices will work only with Microsoft Windows 7 or higher.

▶ How to copy the calibration file
  The calibration file will be provided to you by our Support team or by your distributor.
  Please refer to our YouTube video for details. https://youtu.be/cTuyWKnv9nU on how
  to use the calibration file.

- Hardware
  - ▶ Beam path direction – the direction of the input beam should follow the arrowhead located at the side of the device.


- ▶ Plugging of the power and USB cable.
  - a. Plug in the USB cable and connect to the USB port of the computer.
  - b. Plug in the power adapter to the device then plug to an electrical outlet.

3. Operation

- Software
  - ▶ Setting the center wavelength and bandwidth - In the set tab of the software, you can enter the CWL (center wavelength) and FWHM (full-width at half maximum). Smallest step size for CWL is 0.2 nm while for FWHM it's 1 nm.
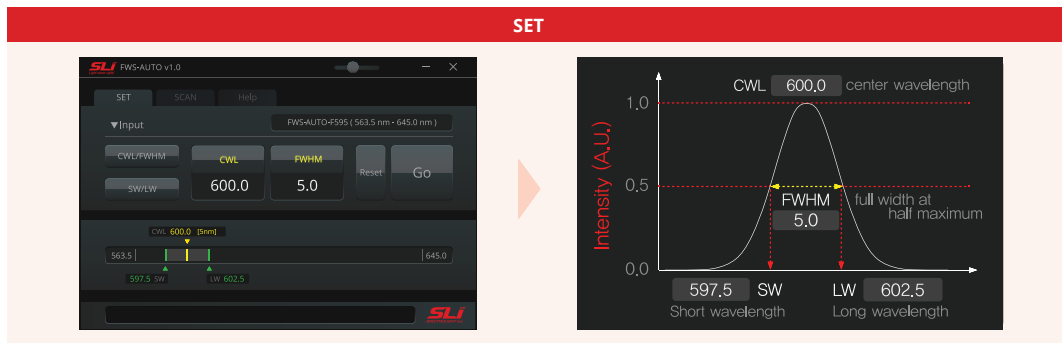
  - ▶ Scanning across a certain wavelength range. In the scan tab of the software you can enter the following:
    - a. START: wavelength to start scanning.
    - b. END: wavelength to end scanning.
    - c. FWHM: the bandwidth during the scanning.
    - d. STEP: this is the step size of the scan in nm.
    - e. Time Delay: this is the time the device remains in one step during the scanning (wavelength). Minimum step for time delay is 0.1 sec.
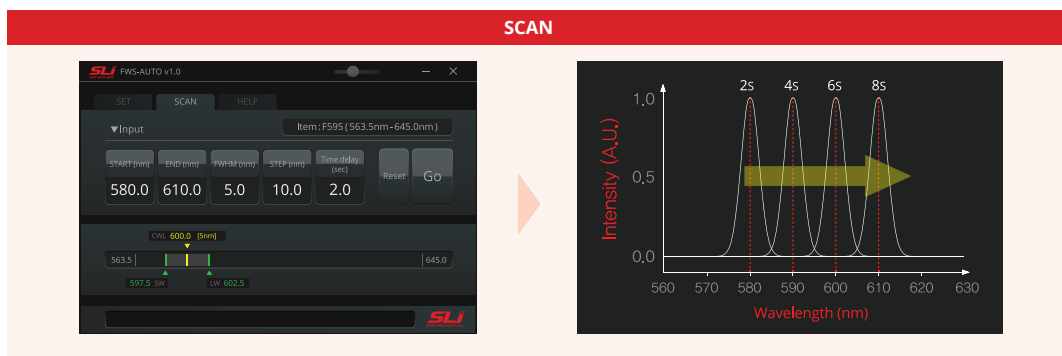
- Hardware
  - ▶ How to turn ON/OFF the device
    - To switch ON the device, first make sure that the power cords are properly plugged in Then, connect the USB cable to the computer. Then turn ON switch.
    - To turn OFF the device, use the power button.

4. Application

- How to connect with Mighty Light
  We recommend using Mighty Light with the collimator to bolt on to the input port of the device.

- How to connect with a fiber of a light source
  Fiber output must be collimated in order to achieve the best performance of our device.
  We recommend using our adapters (WS-SMA1) with Fixed Focus Collimation Packages from other brands. In this way, the maximum performance of the device can be achieved in terms of precision and accuracy.

- How to connect with a supercontinuum light source
  Depending on the supercontinuum light source, we can provide different adapters to fit into our device. Please contact our support team for more details. support@spectrolightinc.com

- How to connect with a microscope for spectral imaging
  We can provide compatible adapters for different brands of microscopes. Please contact our support team for more details. support@spectrolightinc.com

5. Specifications and Minimum Requirements.

- OS: Microsoft Windows 7 or higher
- Intel Pentium Dual Core or higher.
- Hard drive free space of 1GB or higher.

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