AVANTES
MEMBER OF THE NYNOMIC GROUP

AVALIGHT-HAL-MINI

LIGHT SOURCES

Operation and Installation Manual

NEED TECHNICAL SUPPORT?

Scan the **QR-code** or visit **www.avantes.com/support**

We are happy to help you!

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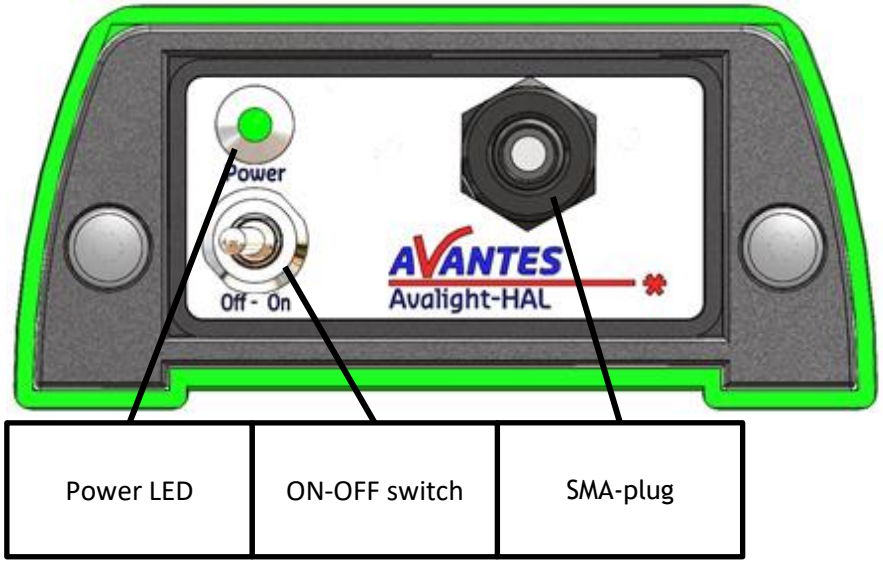
1. Introduction

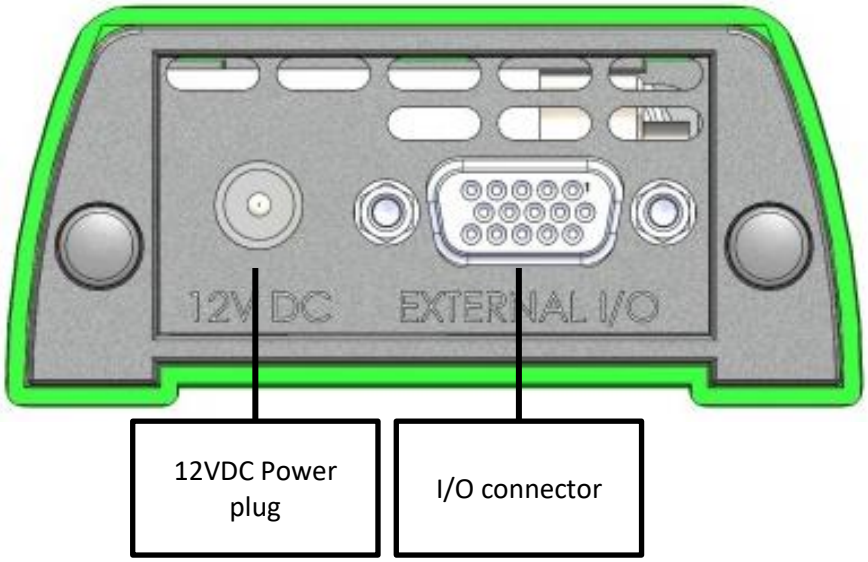
Thank you for purchasing the Avantes AvaLight-Hal-(S)-Mini. This light source will provide outstanding performance. To get the best of its performance it perfectly matches all Avantes AvaSpec spectrometers.

The AvaLight-HAL-(S)-Mini works from visible light to near infrared. It's a compact, stabilized halogen light source, with adjustable focusing of the fiber connection, maximizing output power at the desired wavelength. The light source also has adjustable output setting to provide extra power or longer bulb life. This output can set with a hardware dongle or, when connected with an AvaSpec, controlled by software (AvaSoft).
With the Disable function the bulb and shutter are turned off to safe power.

2. AvaLight-HAL-MINI

2.1 Quick start





Power LED
The green LED act as status LED for the light source when the power is turned on.

ON-OFF Switch
Choose operating mode with the ON-OFF-switch:

Switch position	Light source
OFF	OFF
ON	ON

SMA-plug
Connect the SMA connector of the fiber to the SMA-plug of the Light Source.

I/O connector
For automatic disable control and long-life or high-power to be controlled by software it is needed to connect an AvaSpec spectrometer to the AvaLight-HAL-Mini with the interface cable IC-DB26-2. Now it is possible to control the output operation mode by software (AvaSoft).

The signals on the I/O connector are described below.

Pin configuration

Pin	Name		Description
5	High power	Input	Input, used to increase the power output with 10% (reduced life time of the bulb)
8	Vout	Output	Nominal 12VDC output (minimum 10.8V, maximum 13.2V)
10	GND		Ground
11	Disable	Input	Input, used to disable/shut down the output
12	Long-life	Input	Input, used to decrease the power output with 10% (increased life time of the bulb)

Below the electrical characteristics for the input signals.

Electrical characteristics

Name	Low level detection	High level detection	Maximum voltage
Disable	< 1.0V	> 2.0V	13.2V
Long life	< 1.0V	> 2.0V	13.2V
High power	< 1.0V	> 2.0V	13.2V

Note: If high-power and long-life are both high, the output power is not specified

2.2 12VDC Power plug

The power supply specifications are mentioned in the table below

Name	Minimum	Typical	Maximum
Voltage	10V	12V	15V
Power	18Watt		

2.3 Settings for high power, long life or disable

The AvaLight-HAL-MINI factory settings are for normal power output. The optical energy can be changed to Long-Life or High-Power modes by setting the correct I/O pin to High-level on the external I/O connector.

With the disable function that is present on the I/O connector the user can disable the optical output of the light source by setting this signal to high-level.

When the light source is used in combination with an AvaSpec spectrometer, interface cable IC-DB26-2 and AvaSoft, the optical output can be changed by AvaSoft. It is also possible to disable and enable the light source by AvaSoft. See appendix A.

When the light source is not connected with an interface cable, the DONGLE-MINI-H for high power or the DONGLE-MINI-L for long life can be placed on the I/O connector to change the optical output. See appendix B.

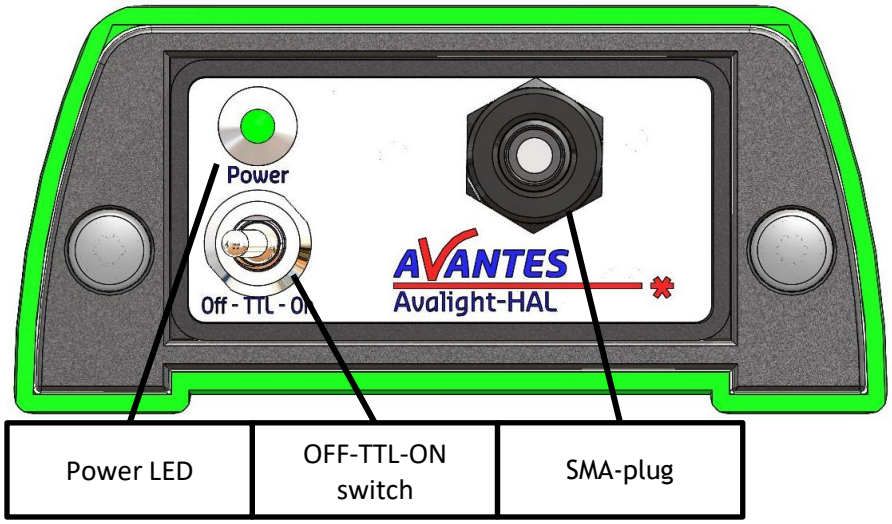
2.4 Adjustment of focusing in SMA fiber

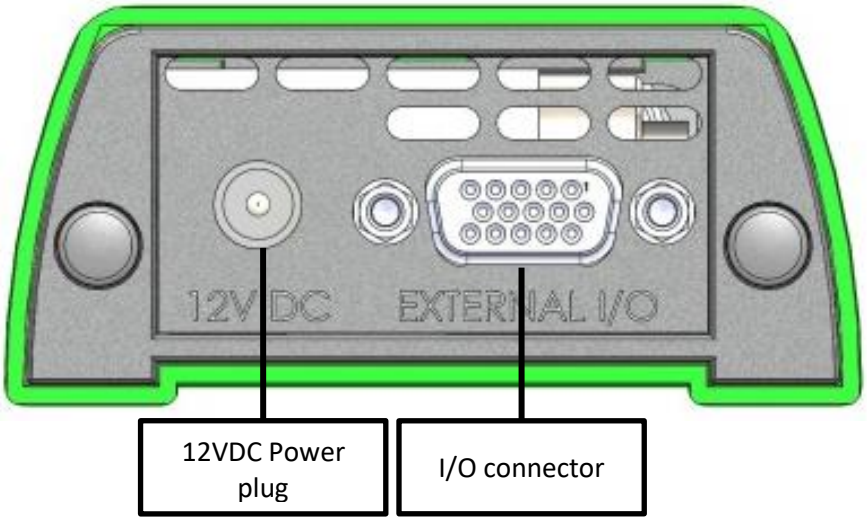
The AvaLight-HAL-MINI factory settings are adjusted to the optimal focus of the output into a 200µm fiber. If a different optical power is needed or a different fiber (bundle) diameter is used, the focusing of the light source on the fiber can be adjusted as described below.

1. Connect your fiber optic spectrometer (or your optical power meter) to a fiber onto the AvaLight-HAL-MINI SMA connector.
2. Unscrew locking-screw, of the collimating lens, with delivered Allen key (1.3mm).
3. By shifting the SMA socket optical power can be optimized.
4. Secure position by tightening the locking screw.

3. AvaLight-HAL-S-MINI

3.1 Quick start





Power LED
The green LED act as status LED for the light source when the power is turned on.

OFF-TTL-ON Switch
Choose operating mode with the mode-switch:

Switch position	Shutter signal	Light source	Shutter
OFF	X	OFF	Closed
TTL	Not connected	ON	Closed
	High	ON	Open
	Low	ON	Closed
ON	X	ON	Open

SMA-plug
Connect the SMA connector of the fiber to the SMA-plug of the Light Source.

I/O connector
For automatic shutter control, automatic disable control and long-life or high-power to be controlled by software it is needed to connect an AvaSpec spectrometer to the AvaLight-HAL-S-Mini with the interface cable IC-DB26-2. Now it is possible to control the output operation mode by software (AvaSoft).

The signals on the I/O connector are described below.

Pin configuration

Pin	Name	Description
5	High power	Input, used to increase the power output with 10% (reduced life time of the bulb)
8	Vout	Nominal 12VDC output (minimum 10.8V, maximum 13.2V)
10	GND	Ground
11	Disable	Input, used to disable/shut down the output
12	Long-life	Input, used to decrease the power output with 10% (increased life time of the bulb)
13	shutter	Input, used to close/open the shutter

Below the electrical characteristics for the input signals.

Electrical characteristics

Name	Low level detection	High level detection	Maximum voltage
Disable	< 1.0V	> 2.0V	13.2V
Long life	< 1.0V	> 2.0V	13.2V
High power	< 1.0V	> 2.0V	13.2V
Shutter	< 1.0V	> 2.0V	13.2V

Note: If high-power and long-life are both high, the output power is not specified

3.2 12VDC Power plug

The power supply specifications are mentioned in the table below

Name	Minimum	Typical	Maximum
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When the light source is used in combination with an AvaSpec spectrometer, interface cable IC-DB26-2 and AvaSoft, the optical output can be changed by AvaSoft. It is also possible to disable and enable the light source by AvaSoft. See appendix A.

When the light source is not connected with an interface cable, the DONGLE-MINI-H for high power or the DONGLE-MINI-L for long life can be placed on the I/O connector to change the optical output. See appendix B.

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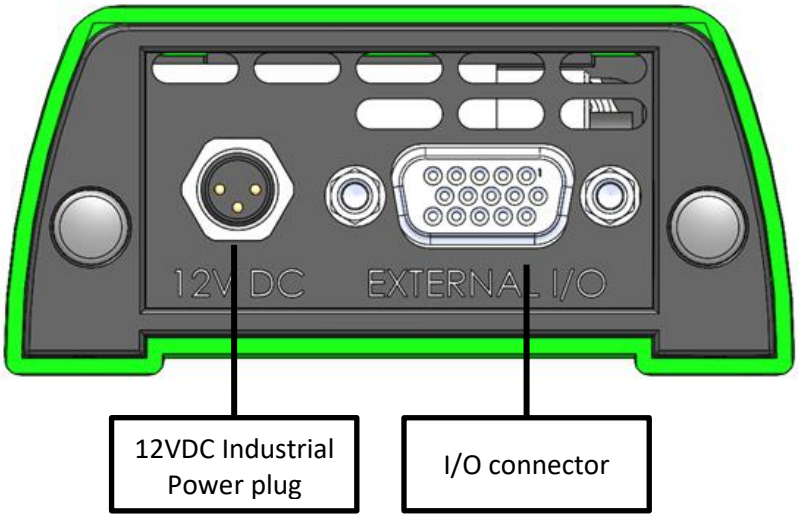
1. Connect your fiber optic spectrometer (or your optical power meter) to a fiber onto the AvaLight-HAL-S-MINI SMA connector.
2. Unscrew locking-screw, of the collimating lens, with delivered Allen key (1.3mm).
3. By shifting the SMA socket you can optimize you optical power.
4. Secure position by tightening the locking screw.

4. AvaLight-HAL-S-MINI-IND

4.1 Quick start

The AvaLight-HAL-S-Mini-IND is almost the same product as the AvaLight-HAL-S-Mini. The only difference is the power entry connector.

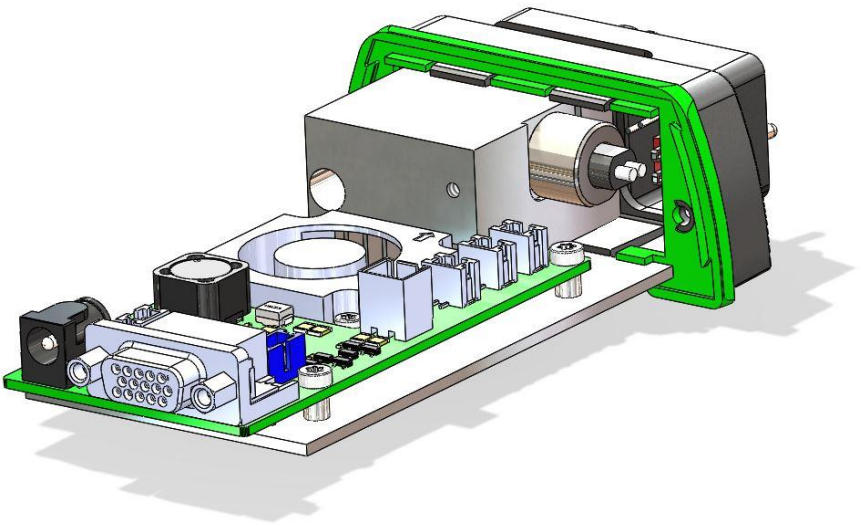


4.2 12VDC Industrial Power plug

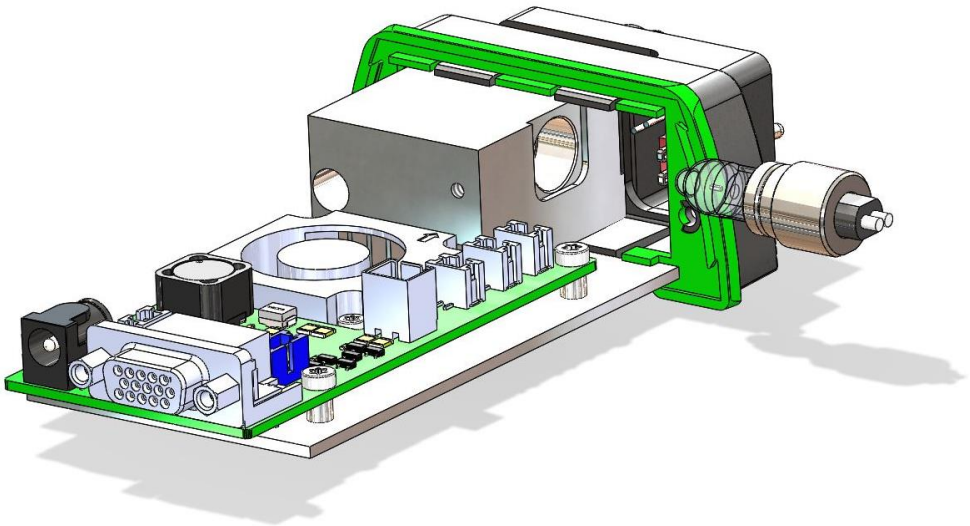
Connect the included power supply to the 12VDC power plug.
The main benefit of an industrial power connector is that the contra connector gets locked.

5. Changing the light source bulb

1. Disconnect the power connector from the socket.
2. Remove the screw protection caps on the front side.
3. Remove the screws with the torx screwdriver (Torx T10) (delivered with AvaLight).
4. Take out the front plate with mount plate (lamp house with PCB are attached to it).



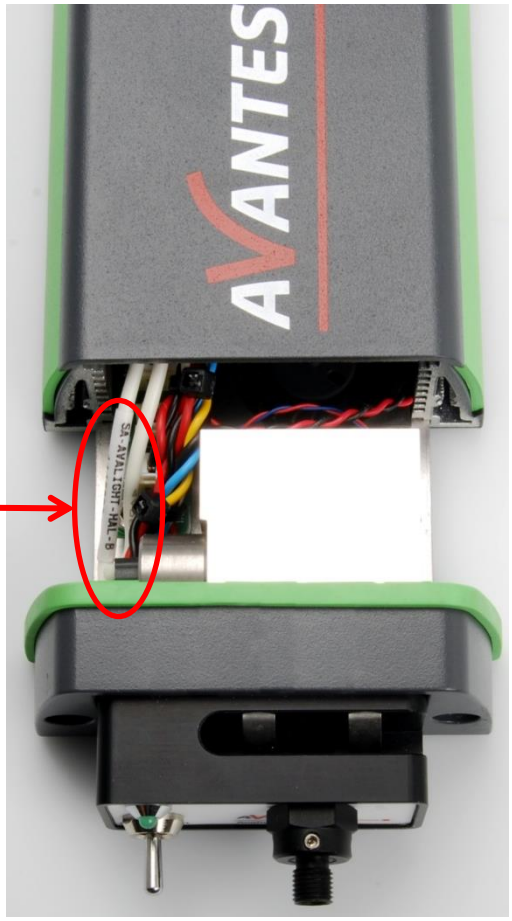
5. Remove the lamp socket:



6. Disconnect the connector of the lamp socket.
7. Replace the lamp socket; WARNING: do not touch the glass with your fingers.
8. Put back the lamp socket into the lamp house.
9. Reconnect the connector of the lamp socket into the connector of the PCB.

10. Slide back the front plate with mount plate (lamp house with PCB) into the housing of the light source. Be careful not to pinch the electrical wires.

Please be careful not to pinch the electrical wires



11. Put back the 2 screws in the front and protection caps.

6. Technical support

6.1 Getting Help

If you have any questions, comments or requests concerning your AvaLight-HAL-(S)-MINI or the AvaSoft software, please go to: http://www.avantes.com

In case you have any questions or need support, please send us an email via support@avantes.com

6.2 AvaSoft Updates

To check for updates, you can choose “Check for Updates” from the Help menu or go to the “Support” section on our website www.avantes.com.

7. Specifications

	AvaLight-HAL-Mini standard setting	AvaLight-HAL-Mini long life setting	AvaLight-HAL-Mini high power setting
Wavelength range	360-2500		
Temperature stability	< 0,1% / ºC		
Time to stabilize to +/- 1% of final output	10 min.		
Output to bulb	12 V	10,8 V	13,5 V
Bulb life	4000	13000	1000
Optical power 200µm fiber *	0,5 mWatt	0,35 mWatt	0,7 mWatt
Optical power 600µm fiber *	4,5 mWatt	3,2 mWatt	6 mWatt
Optical power 1000µm fiber *	10 mWatt	7 mWatt	14 mWatt
Bulb color temperature	2850 K	2730 K	3000 K
Power requirement	12VDC / 2,5A		
Dimensions (mm)	150 x 78 x 37 mm		
Weight (gr)	510 gram		

* Optical power measured from 350-1100nm

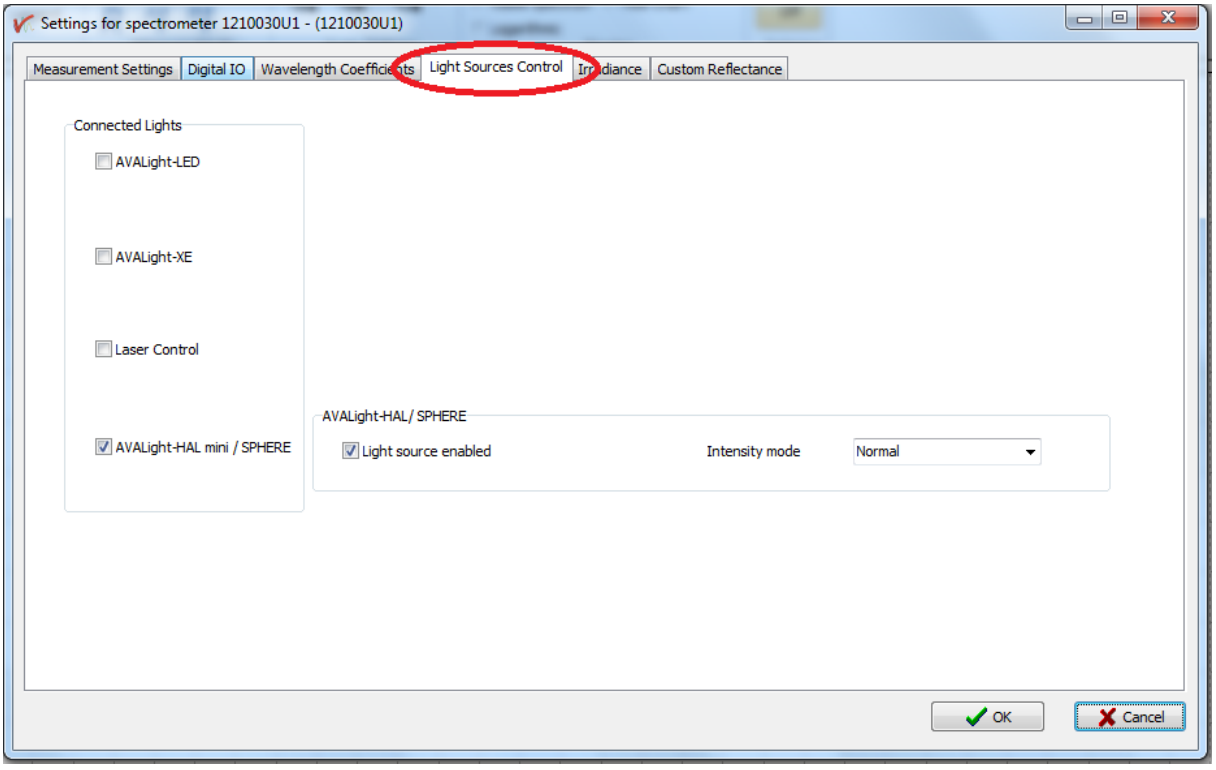
7.1 Ordering Information

AvaLight-HAL-Mini	10W Tungsten Halogen Lamp, fan-cooled, needs extra PS-12V/2.08A power supply
AvaLight-HAL-S-Mini	As AvaLight-HAL-Mini, incl. TTL shutter, needs extra PS-12V/2.08A power supply
AvaLight-HAL-S-Mini-IND	10W Tungsten Halogen Lamp, fan-cooled, incl. TTL shutter, with industrial connector for the power supply. Includes extra PS-12V/2.08A power supply.
AvaLight-HAL-S-RM	Rack-mounted version of AvaLight-HAL-S-Mini
IC-DB26-2	Interface cable AvaSpec-USB2 platform to AvaLight-HAL-(S)-Mini
AvaLight-HAL-B-Mini	10W Tungsten Halogen Replacement bulb for AvaLight-HAL-(S)-Mini
PS-12V/2.08A	Power supply 100-240VAC/12VDC, 2.08A, necessary for AvaLight-HAL-(S)-Mini
DONGLE-MINI-H	Dongle for high power setting
DONGLE-MINI-L	Dongle for long life setting

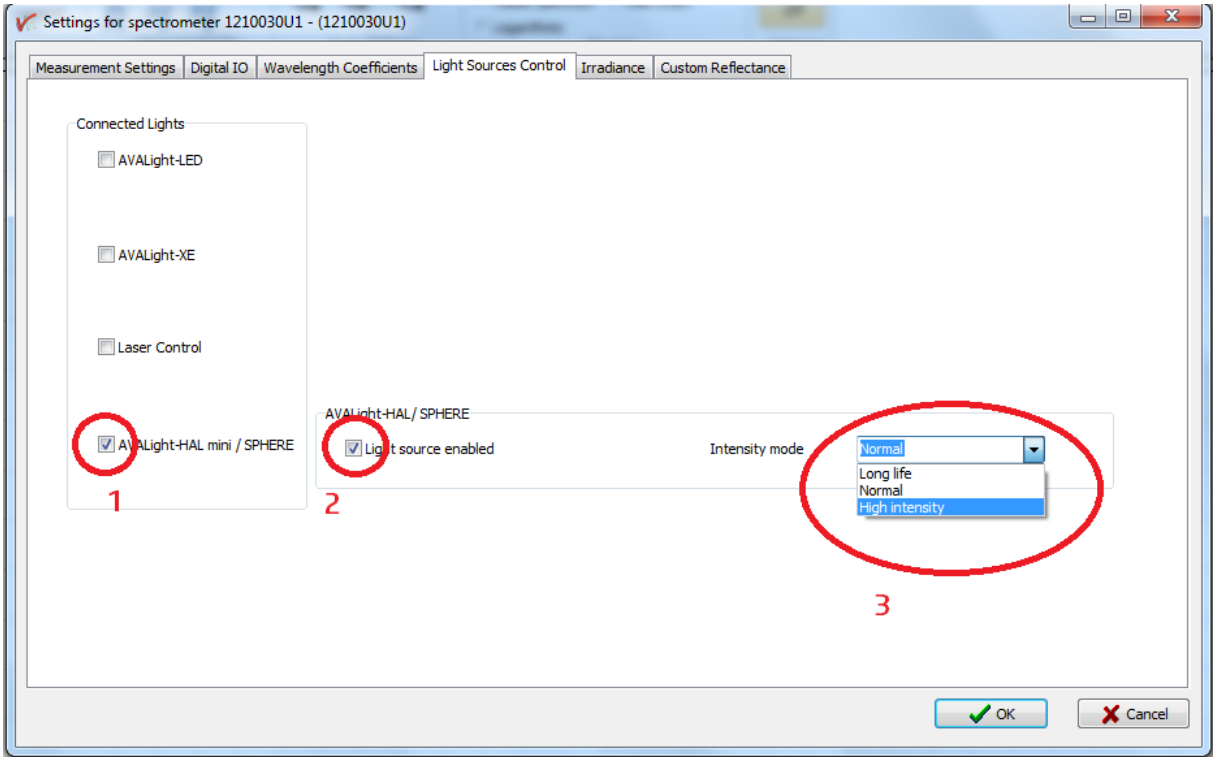
Appendix A

Start AvaSoft and press the settings button (see below).

The menu as shown below wills pop-up. Press the light source control tab.



Please execute the following steps 1, 2 and 3.
In the pull-down menu you can choose what mode is required.
Than press ok.



Appendix B

High-Power dongle

Long-Life dongle