AVANTES
MEMBER OF THE NYNOMIC GROUP

AVALIGHT-LED
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-LED-(CON). This light source will provide outstanding performance. To get the best of its performance it perfectly matches all Avantes AvaSpec spectrometers.

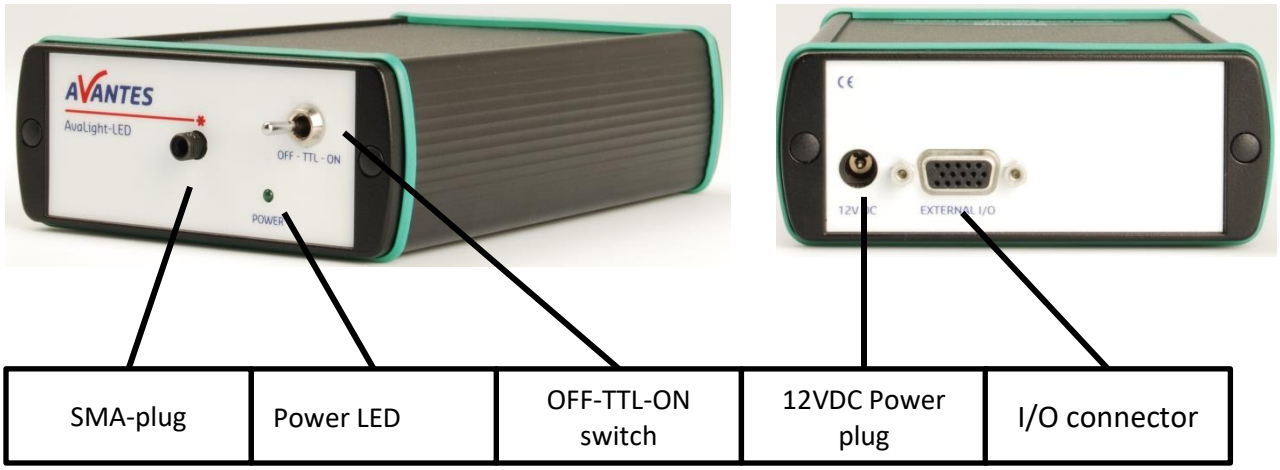
The AvaLight-LED works from the UV light to the near infrared, it depends on the choice of the wavelength for the LED.

The AvaLight-LED-CON is a LED control unit with a connector to a LED. The AvaLight-LED-CON works in combination with the CUV-LED-XXX, where XXX represents the wavelength of the LED.
The AvaLight-LED-CON in combination with the CUV-LED-XXX makes it possible to place the LED directly into your application, to avoid the transmission losses from the optical fiber.

The AvaLight-LED-(CON) can operate in a continuous mode or in a pulse width mode.

2. AvaLight-LED

2.1 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	PWM signal	Light source	LED
OFF	X	OFF	OFF
TTL	Not connected	ON	OFF
	High	ON	ON
	Low	ON	OFF
ON	X	ON	ON

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

I/O connector
For PWM mode to be controlled by software it is needed to connect an AvaSpec spectrometer to the AvaLight-LED 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
2	PWM	Input	Input, used the PWM
10	GND		Ground

Below the electrical characteristics for the input signals.

Electrical characteristics

Name	Low level detection	High level detection	Maximum voltage
PWM	< 0.7V	> 0.7V	5.0V

2.2 12VDC Power plug

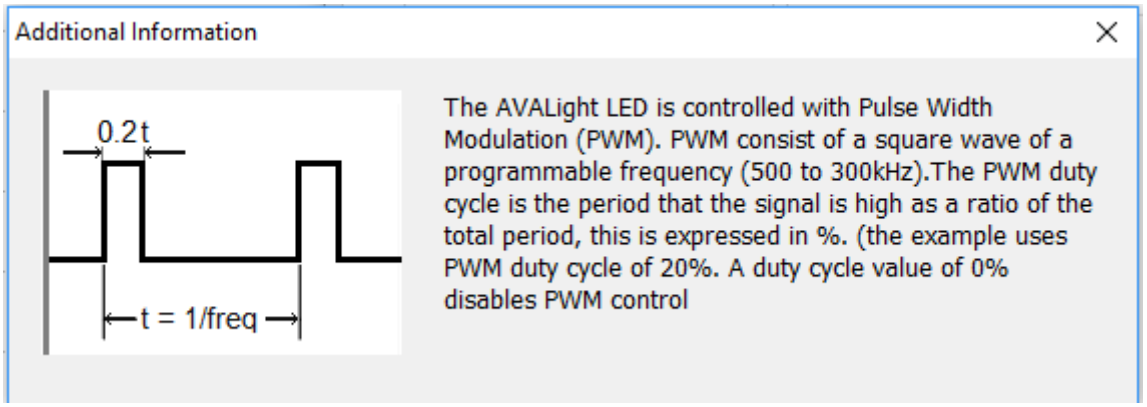
The power supply specifications are mentioned in the table below

Name	Minimum	Typical	Maximum
Voltage	10V	12V	15V
Power	0.5Watt		

2.3 Settings for the PWM Mode

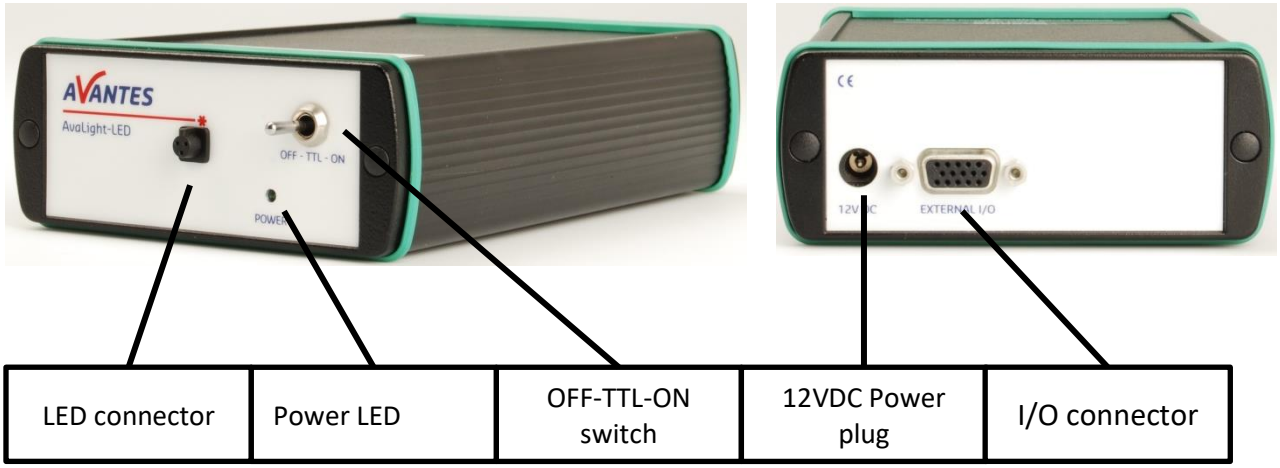
When the light source is used in combination with an AvaSpec spectrometer, interface cable IC-DB26-2 and AvaSoft, the optical output can be changed by using the PWM function in AvaSoft. See appendix A for how to set the PWM signal in AvaSoft.

The PWM can be set in a range from 500 Hz – 300 KHz with a 0 – 100% duty cycle.



3. AvaLight-LED-CON

3.1 Quick start



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Switch position	PWM signal	Light source	LED
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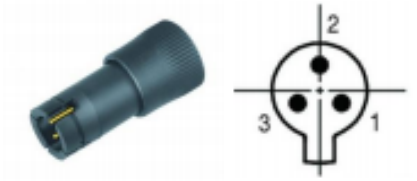
TTL	Not connected	ON	OFF
	High	ON	ON
	Low	ON	OFF
ON	X	ON	ON

LED connector
Connect the CUV-LED-XXX to this connector or place your own made LED cable based on the information below:

Connector type: Binder 719, 3 pole (09 9747 70 03)



Pin number	Function
1	Cathode
2	N/C
3	Anode

I/O connector
For PWM mode to be controlled by software it is needed to connect an AvaSpec spectrometer to the AvaLight-LED 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.

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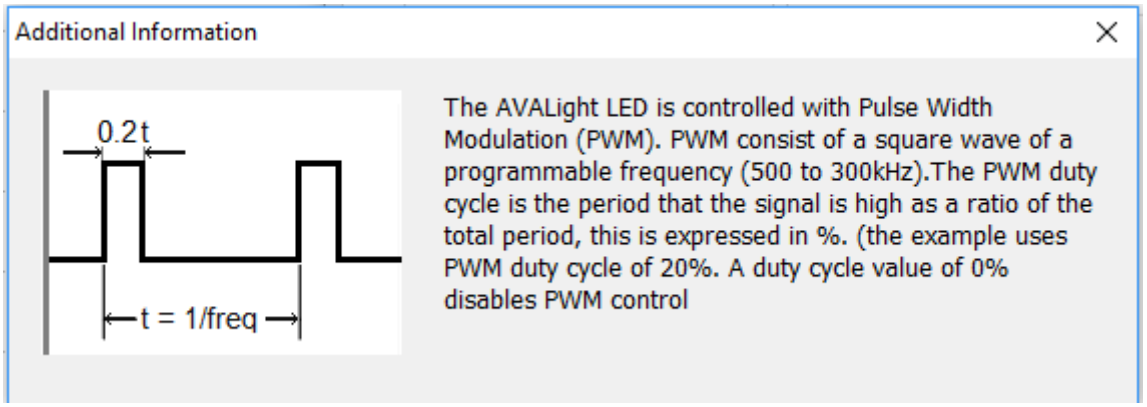
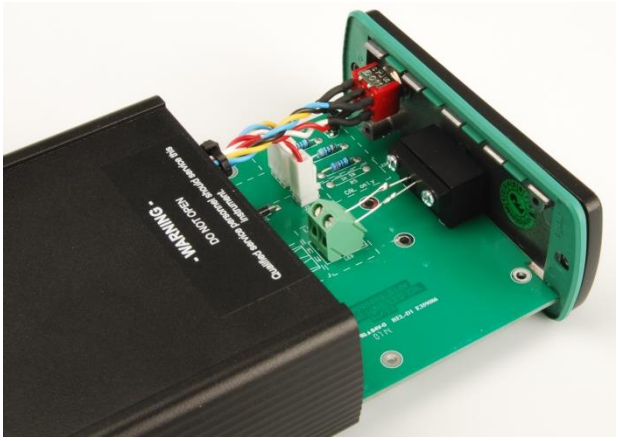
When the light source is used in combination with an AvaSpec spectrometer, interface cable IC-DB26-2 and AvaSoft, the optical output can be changed by using the PWM function in AvaSoft. See appendix A for how to set the PWM signal in AvaSoft.

The PWM can be set in a range from 500 Hz – 300 KHz with a 0 – 100% duty cycle.

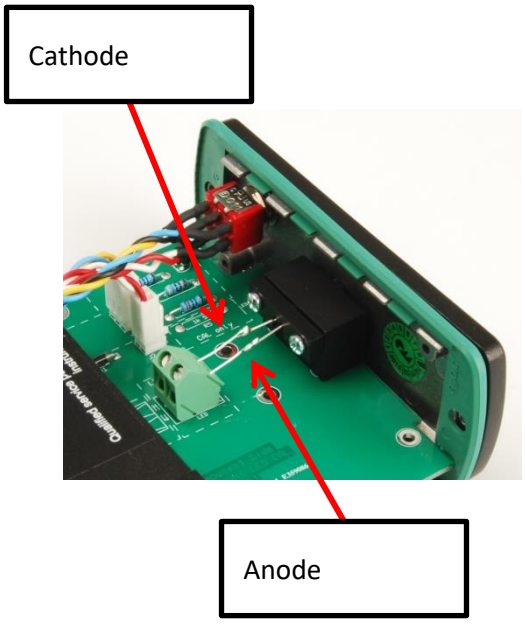


4. Changing the LED of the AvaLight-LED

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)
4. Remove the Hex UNC screws of the DB15 connector from the back side.
5. Take out the front plate and electronics board.



6. Untighten the screws from the LED holder and LED connector.
7. Slightly bend the electrical wires out of the LED connector.
8. Take out the LED from the LED holder.
9. Replace the LED, make sure the Anode and Cathode are connected in the same way and LED legs make no short circuit. Extension of the legs may be needed depending on the LED type.



10. Tighten the screws from the LED holder and LED connector.
11. Put back the electronics board and front plate back into the housing.
12. Put back the hex UNC screws and the screws in the front plate.
13. Put back the protection caps on the front side.
14. Apply power to see if the LED is illuminating.

5. Technical support

5.1 Getting Help

If you have any questions, comments or requests concerning your AvaLight-LED-(CON) 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

5.2 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.

6. Specifications

	AvaLight-LED355/380	AvaLight-LED400/410/430	AvaLight-LED450/470/490	AvaLight-LED530/590/780
Spectral Range*	355/380 nm	400/410/430 nm	450/470/490 nm	530/590/780 nm
FWHM (nm)	15 nm	11 nm	30 nm	30 nm
Optical power 600 µm fiber	10 µWatt	25 µWatt	25 µWatt	25 µWatt
Connector	SMA 905			
Power supply	12 VDC, 40 mA			
Dimensions, weight	175 x 110 x 44 mm, 480 grams			

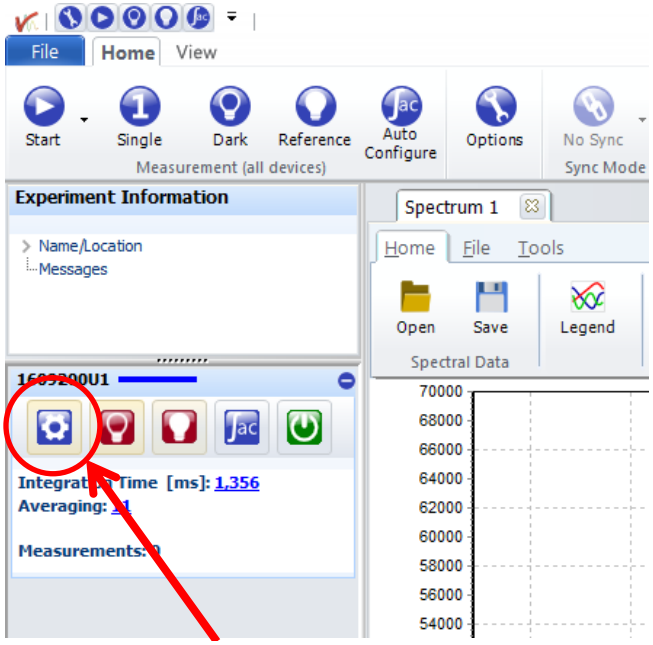
** Other wavelengths available on request*

6.1 Ordering Information

AvaLight-LED-XXX	Light Emitting Diode Light source, specify wavelength XXX
AvaLight-LED-XXX-RM	Rackmount version of the Light Emitting Diode Light source, specify wavelength XXX
AvaLight-LED-CON	LED light source control unit with electrical connector to LED, needs extra PS-12V/1.0A and interface cable.
CUV-LED-XXX	LED holder for Cuvette, specify LED wavelength XXX
CUV-DA	Direct-attach cuvette holder for AvLight-DHc/XE/LED
IC-DB26-2	Interface cable AvaSpec-USB2 platform to AvaLight-LED for PWM
PS-12V/1.0A	Power supply 100-240 VAC/12VDC, 1.0 A for AvaLight-LED

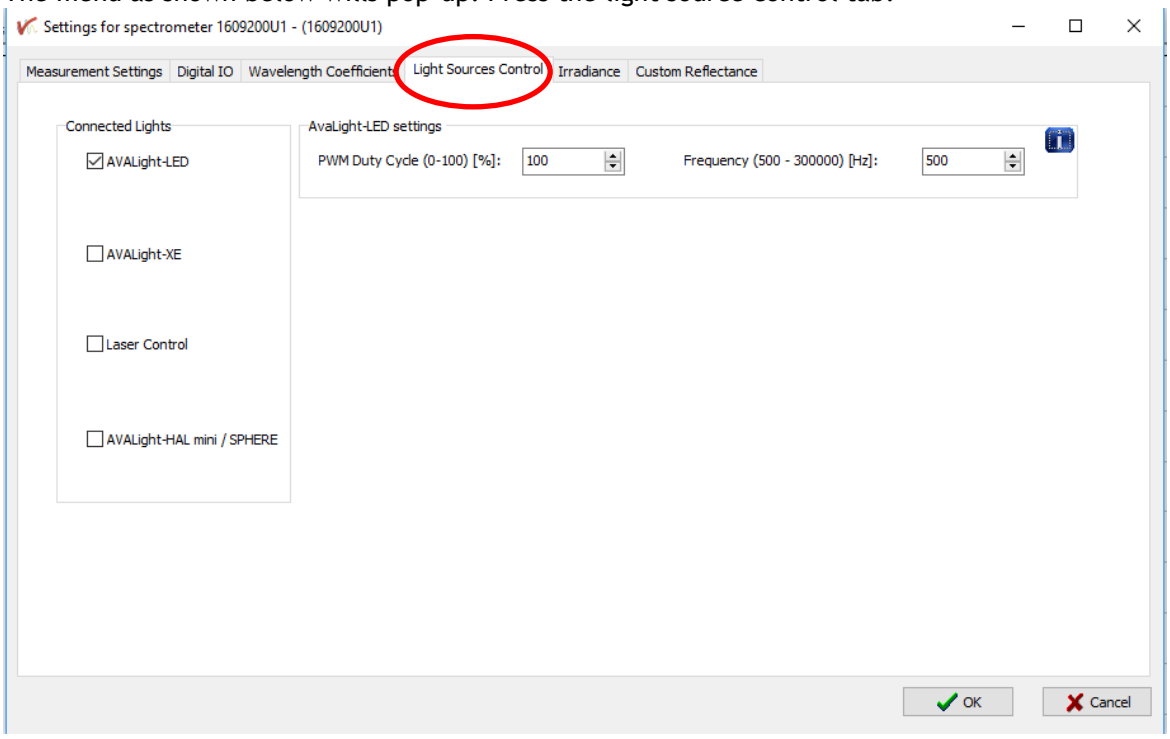
7. Appendix A

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



First press settings

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.