

Instruction Manual for MOD LED light Sources:

The MOD LED line of LED light sources is designed to have intensity control in CW and modulation modes. The easy user interface allows selection of pulsed and continuous modes

1.0 Controls

The MOD Light source features two control knobs on the front. The knob on the right controls the input mode. The switch turned fully clockwise is the continuous mode, off is the middle position and fully counter-clockwise is pulsed mode. Remember that an external trigger is required for pulsing. This can be accomplished via a cable connected to your electronics, or through an optional USB controller.

The left knob controls intensity. Turn clockwise for maximum intensity. The intensity control will work in both pulsed and continuous modes.

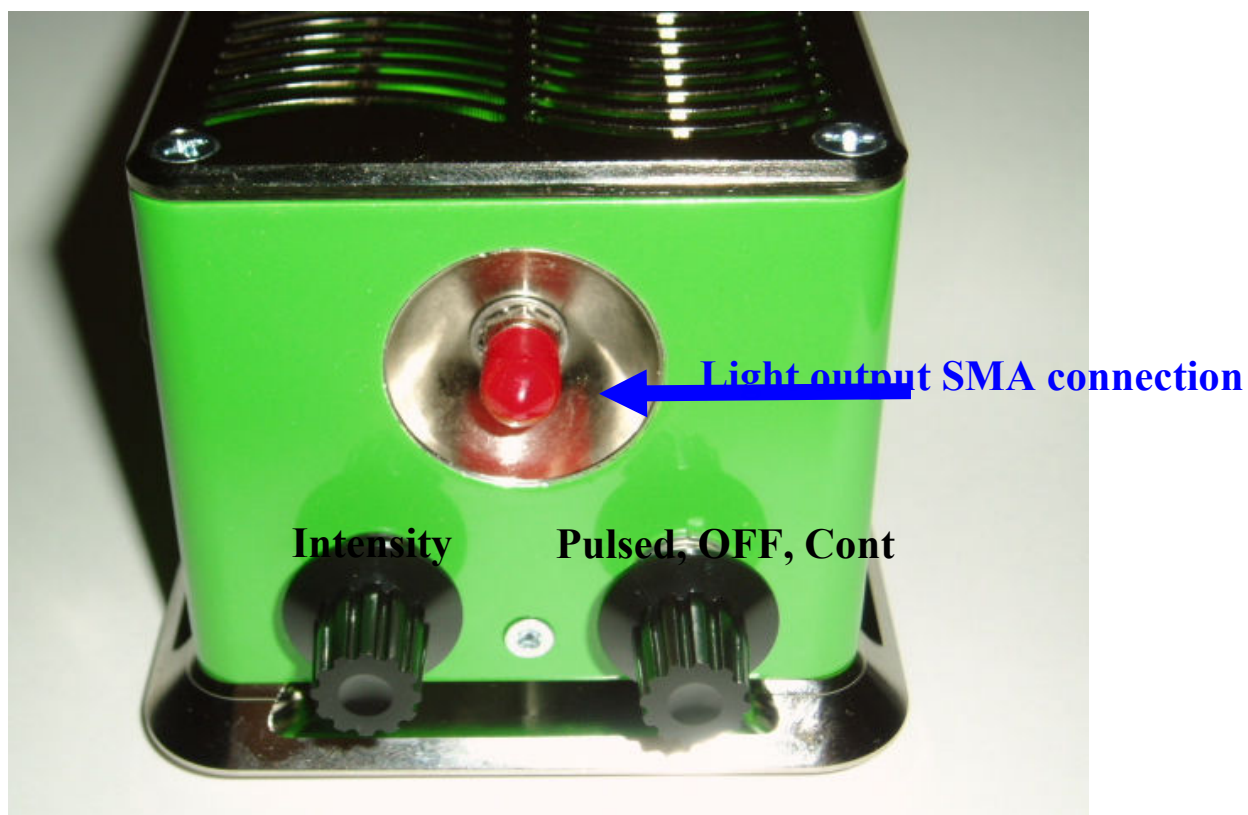


Figure 1.

2.0 External Interface

External interface is accomplished through a female High Density DB15 connector (Figure 2). All external signals are TTL compatible and will work with 3.3V or 5V logic. Please see Figure 3 for a pin map and Table 1 for a complete list of pins.

The lamp can be externally turned off when in continuous mode by controlling pin 3. The signal is internally pulled high and will return to “on” when no low level signal is present.

Pin 1 is the external trigger for pulsed mode. Please see section 3.0 External Triggering for more detailed information. Never modulate this pin with greater than 50% duty cycle as damage to the LED can result.

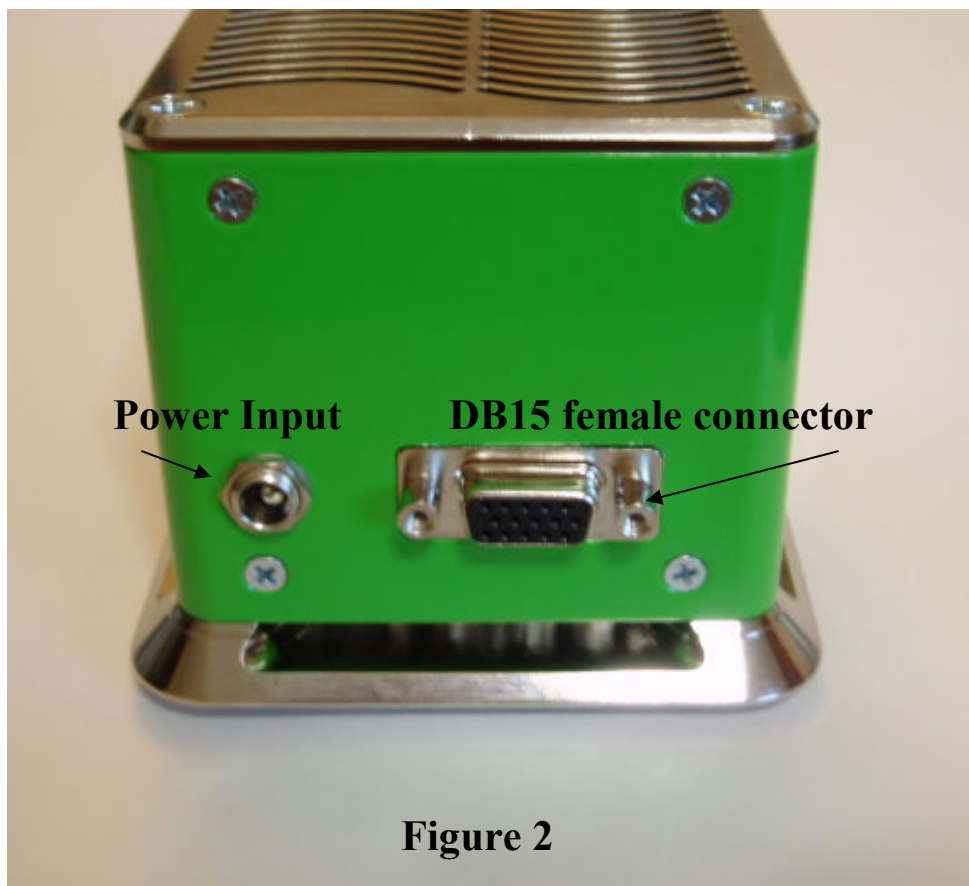


Figure 2

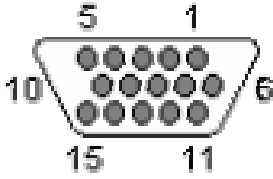


Figure 3

Table 1.

DB15 connector Interface

PIN	Function
1	Pulsed Input (rising edge)
2	N/C
3	External On (For CW only)
4	5 Volt out
5	Address line A1 (for onboard EEPROM) 24LC64
6	Address line A2 (for onboard EEPROM) 24LC64
7	I2C SCL
8	I2C SDA
9	Ground
10	Ground
11	3.3.V in (Only required for accessing memory)
12	Analog Control Input (Channel 1)
13	Analog Control Input (Channel 2)
14	Analog Control Input (Channel 3)
15	Analog Control Input (Channel 4)

The LED light source has internal EEPROM memory. This can be used for storing calibration files and recognizing general information by OEM systems

Complete specifications for the onboard 24LC256 memory can be viewed on Microchips website at:

<http://ww1.microchip.com/downloads/en/DeviceDoc/21203P.pdf>

External Power requirements

Power Requirements

Wavelengths 250nm - 355nm	12 Volts 500mA
Wavelengths 365nm - 627nm and Visible	9 Volts, 2000mA

Power Plug

2.1mm ID, 5.5mm OD

3.0 External Triggering and Control

There are two sets of internal jumpers located on the main PCB board. These are accessible by removing the four screws located on the top of the light source. J5 controls the modulation mode and switches the control from single trigger to direct modulation. J6 selects the source of the analog control voltage.

Internal/External Control (J5): When in the EXT position, as shown in Figure 4, modulation will follow the external TTL input control directly. When in the INT position it will switch to a 1 ms pulse which triggers on a rising edge. This feature is extremely important when modulating deep UV LEDs (250nm-355nm). The circuit for these UV LEDs is pre-configured to deliver a 200mA maximum pulse current. When purchased with these LEDs, the light source comes pre-configured to work in this mode. These LEDs should not be modulated faster than 150Hz. All other LEDs can be modulated up to 1 kHz.

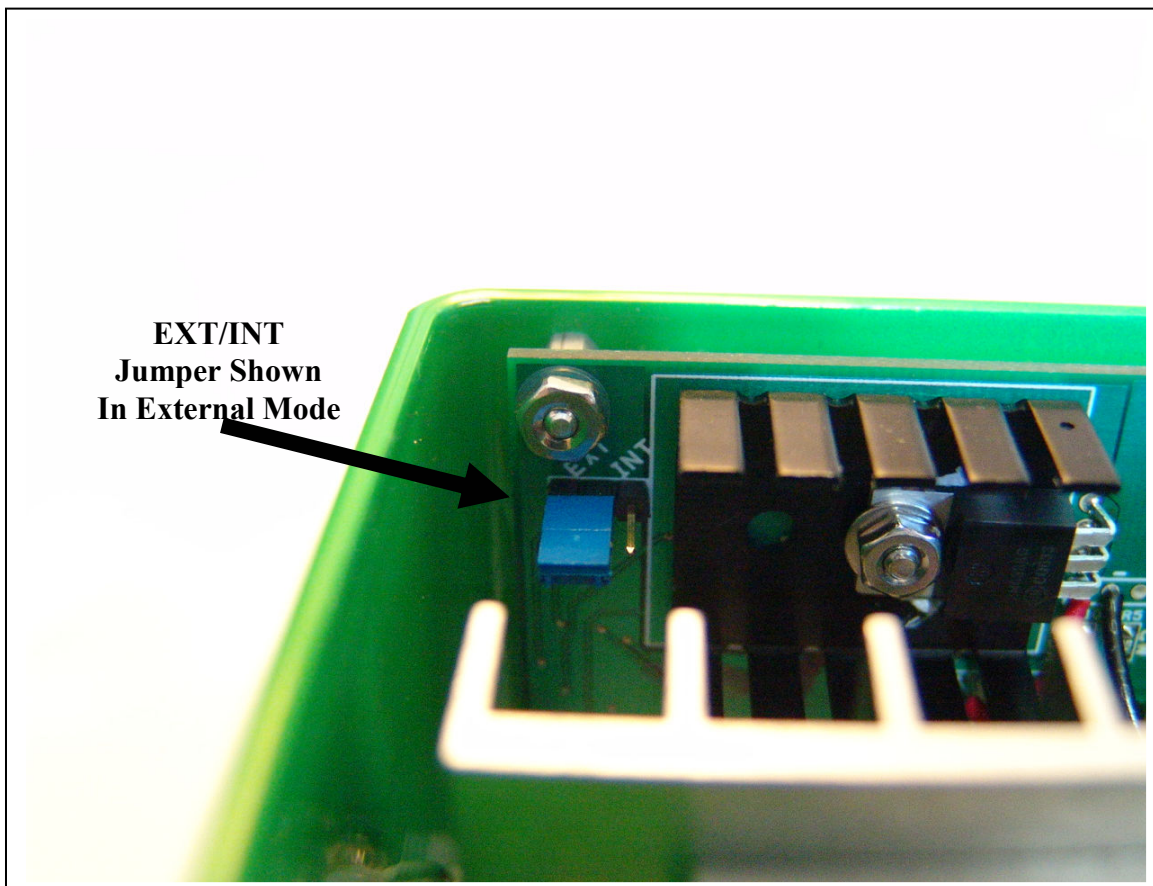


Figure 4.

Intensity Control Jumper (J6)

When externally controlling the intensity, the control input channel must be set via the external control jumper to coordinate with the desired input channel. The control input voltage is from 0 to 2.5 Volts. The drive current will proportionally follow this voltage. For example, if the control voltage is 1.25 Volts, the LED will be driven 1.25/2.5 Volts or 50% of the maximum current. Therefore if the LED circuit is configured for 1500mA maximum, the drive current will be 750mA. (See Table 2 for current drive specifications). Do not drive this voltage with more than 2.5 Volts as damage to LEDs may occur. This control will work for both Pulsed and CW modes.

The jumpers are located by removing the four screws at the top of the light source and accessing J6 on the bottom of the light source. The five settings are internal control, and Analog Control Input Channels 1-4 corresponding with pins 12, 13, 14 and 15 on the DB15 connector.

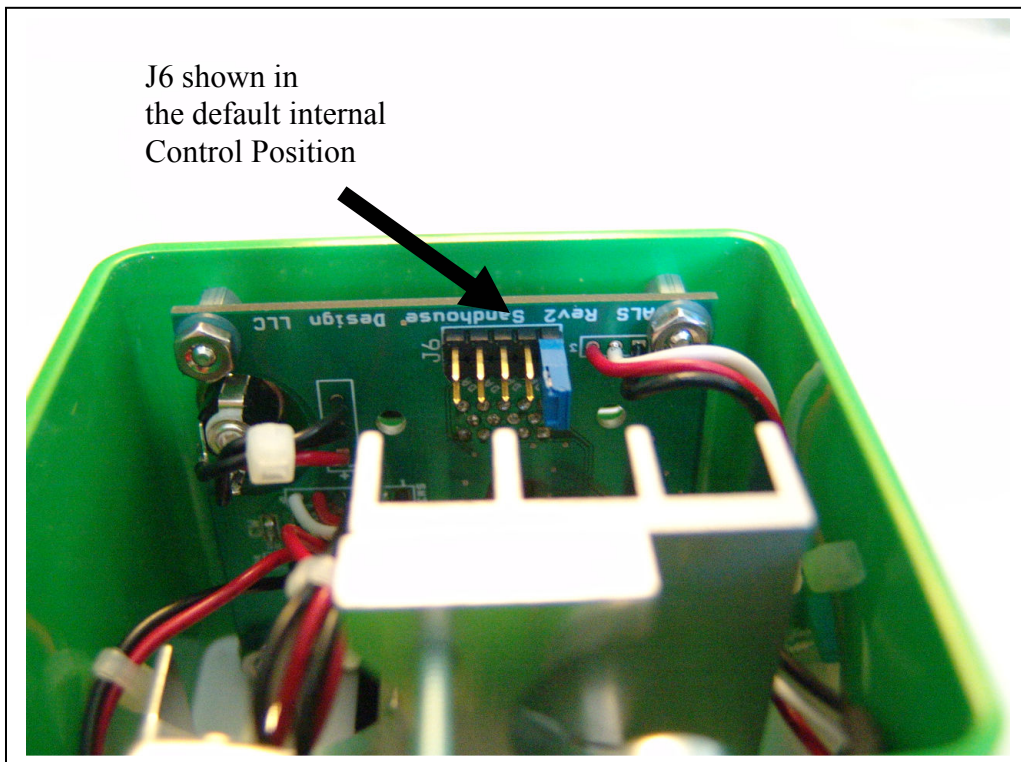


Figure 5.

Part #	Wavelength	FWHM	Min Power (600um .22na Fiber)	MAX Drive Current CW	MAX Drive Current Pulsed	MAX Duty Cycle Pulsed
MOD-240	240	10nm	2uw	20mA	200mA	1%
MOD-245	245	10nm	2uw	20mA	200mA	1%
MOD-250	250	12nm	5uw	20mA	200mA	1%
MOD-255	255	12nm	5uw	20mA	200mA	1%
MOD-260	260	12nm	15uw	20mA	200mA	1%
MOD-265	265	12nm	15uw	20mA	200mA	1%
MOD-270	270	12nm	15uw	20mA	200mA	1%
MOD-275	275	12nm	15uw	20mA	200mA	1%
MOD-280	280	12nm	15uw	20mA	200mA	1%
MOD-285	285	12nm	15uw	20mA	200mA	1%
MOD-290	290	12nm	15uw	20mA	200mA	1%
MOD-295	295	12nm	15uw	20mA	200mA	1%
MOD-300	300	12nm	15uw	20mA	200mA	1%
MOD-305	305	12nm	15uw	20mA	200mA	1%
MOD-310	310	10nm	15uw	20mA	200mA	1%
MOD-315	315	10nm	15uw	20mA	200mA	1%
MOD-325	325	12nm	15uw	20mA	200mA	1%
MOD-335	335	15nm	20uw	20mA	200mA	1%
MOD-345	345	15nm	20uw	20mA	200mA	1%
MOD-355	355	15nm	1mw	500mA	1000mA	50%
MOD-365	365	10nm	750uw	500mA	1000mA	50%
MOD-375	375	12nm	1mw	500mA	1000mA	50%
MOD-385	385	10nm	200uw	30mA	60mA	50%
MOD-395	395	15nm	750uw	500mA	1000mA	50%
MOD-405	405	15nm	200uw	30mA	60mA	50%
MOD-415	415	15nm	200uw	30mA	60mA	50%
MOD-430	430	15nm	1mw	1000mA	2000mA	50%
MOD-455	455	18nm	1mw	1000mA	2000mA	50%
MOD-470	470	18nm	1mw	1000mA	2000mA	50%
MOD-490	490	20nm	1mw	1000mA	2000mA	50%
MOD-505	505	20nm	1mw	1000mA	2000mA	50%
MOD-530	530	30nm	750uw	700mA	1500mA	50%
MOD-590	590	20nm	750uw	700mA	1500mA	50%
MOD-617	617	20nm	750uw	700mA	1500mA	50%
MOD-627	627	20nm	750uw	700mA	1500mA	50%
MOD-680	680	20nm	200uw	50mA	100mA	50%