MOD
Fiber Coupled High Power LEDs

The MOD series of High Power Fiber Coupled LEDs are complete turn key non laser fiber coupled light sources. These compact, economical light sources come in a wide range of wavelengths. They produce a minimum of 10mw output from a 1m long, 600um, .22na fiber throughout the visiable spectrum*.

A standard MOD comes with a female SMA fiber connection, front mounted controls for on/off, intensity and modulation. Input for TTL control of on/off, intensity and modulation is also standard (located in the rear). Other connector options are available.

The MOD offers end users and OEMs an appealing alternative to classic light sources for spectroscopy, particle measuring, machine vision and other applications. Please note all of our products can be modified to meet our customers individual requirements.

*See back for minimum output for other MOD wavelengths.

JT Ingram Sales and Marketing
23 Alafaya Woods Blvd Unit 213 Oviedo, FL 32765
800 335 5582 (561 573 6533) Jim@JTIngram.com
www.jtingram.com

MOD

Fiber Coupled High Power LEDs

A compact, economical appealing alternative to classic light sources for Spectroscopy, Fluorescence, Machine Vision and other applications.

PN	Wavelength	Peak Wavelength	Spectral HW	Power (600um fiber)
MOD250	250nm	+/-10nm	12-20nm	20uw
MOD270	270nm	+/-10nm	12-20nm	20uw
MOD290	290nm	+/-10nm	12-20nm	20uw
MOD310	310nm	+/-10nm	12-20nm	20uw
MOD325	325nm	+/-10nm	12-20nm	20uw
MOD345	345nm	+/-10nm	12-20nm	20uw
MOD365	365nm	+/-10nm	12-20nm	2.5mw
MOD455	455nm	+/-10nm	12-20nm	1.5mw
MOD470	470nm	+/-10nm	12-20nm	1.5mw
MOD505	505nm	+/-10nm	12-20nm	1.5mw
MOD530	530nm	+/-10nm	12-20nm	1.5mw
MOD590	590nm	+/-10nm	12-20nm	1.5mw
MOD614	614nm	+/-10nm	12-20nm	1.5mw
MOD617	617nm	+/-10nm	12-20nm	1.5mw
MOD627	627nm	+/-10nm	12-20nm	1.5mw
MODVIS	Visable	N/A	N/A	1.5mw

Maximum Duty Cycle in pulsed mode is 1%, pre set with a 1ms Pulse for MOD250, MOD270, MOD290, MOD310, MOD325, MOD345.

Maximum Duty Cycle in pulsed mode is 50% for MOD365, MOD455, MOD470, MOD505, MOD530, MOD590, MOD617, MOD614, MOD627

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.

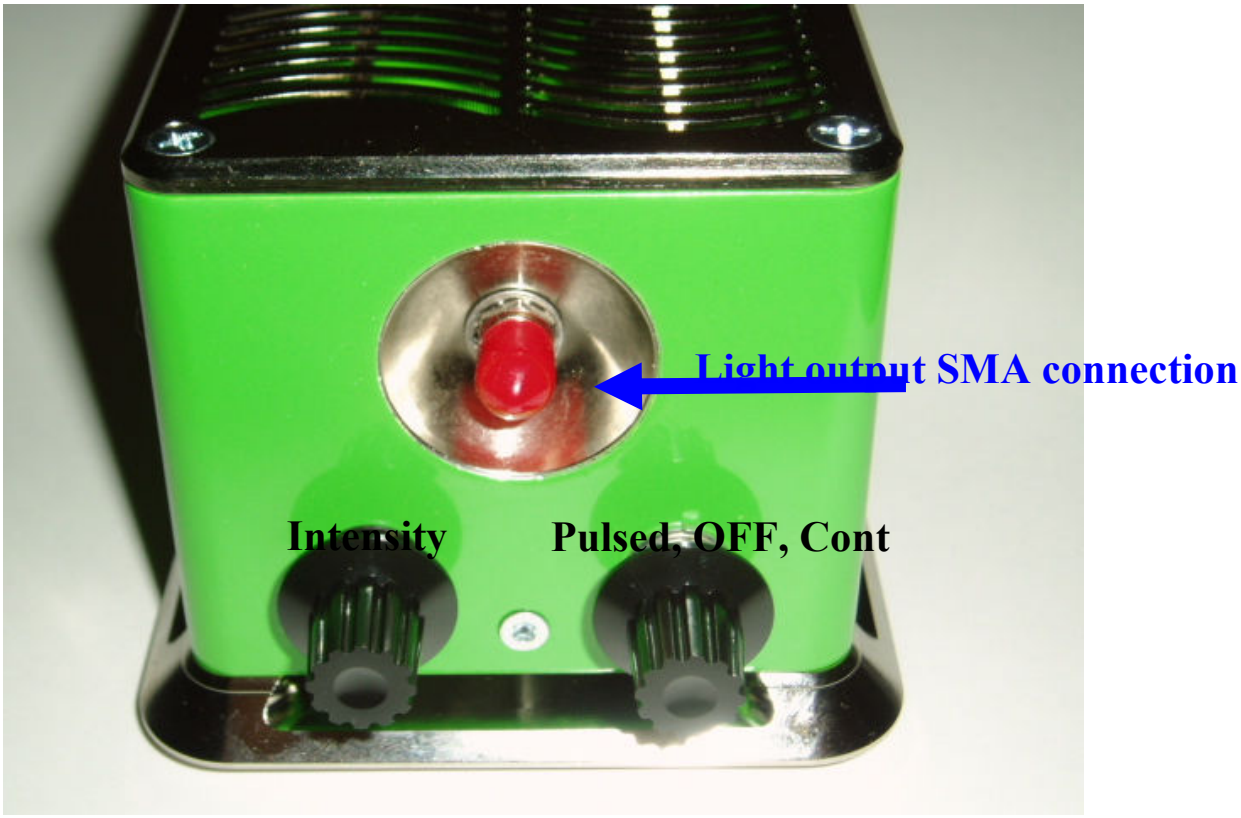

Figure 1.

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.

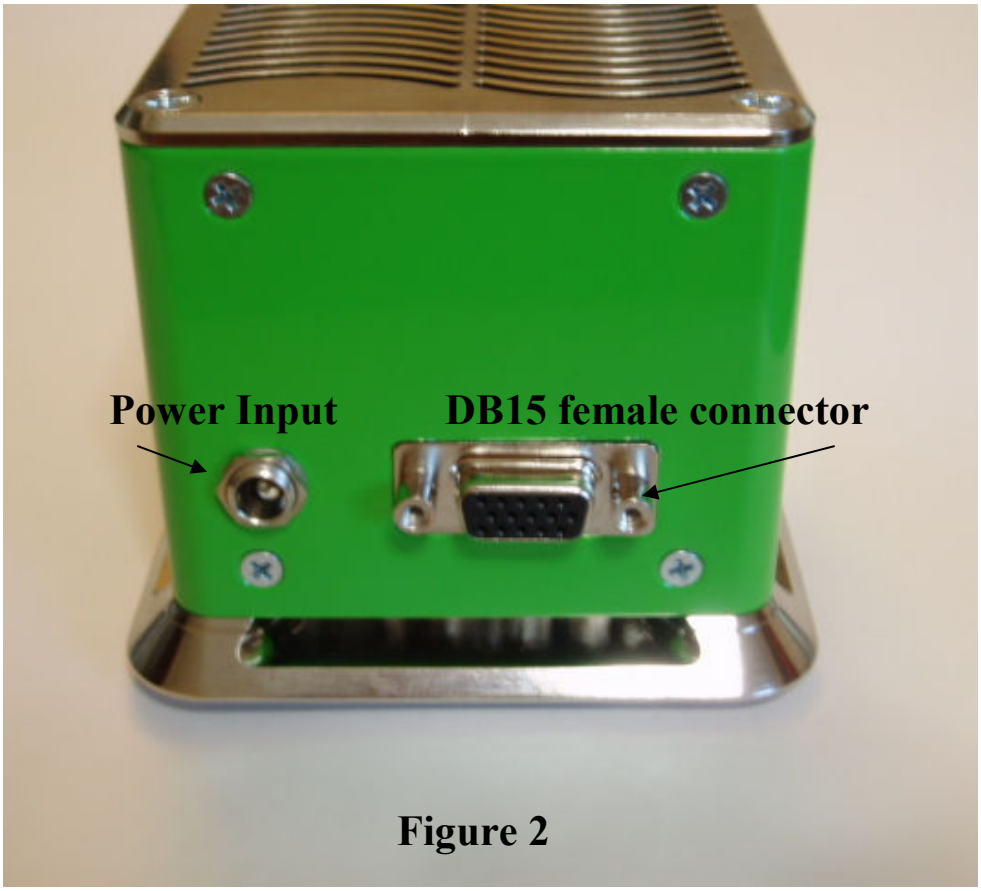

Figure 2

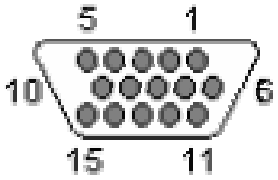

Figure 3

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.

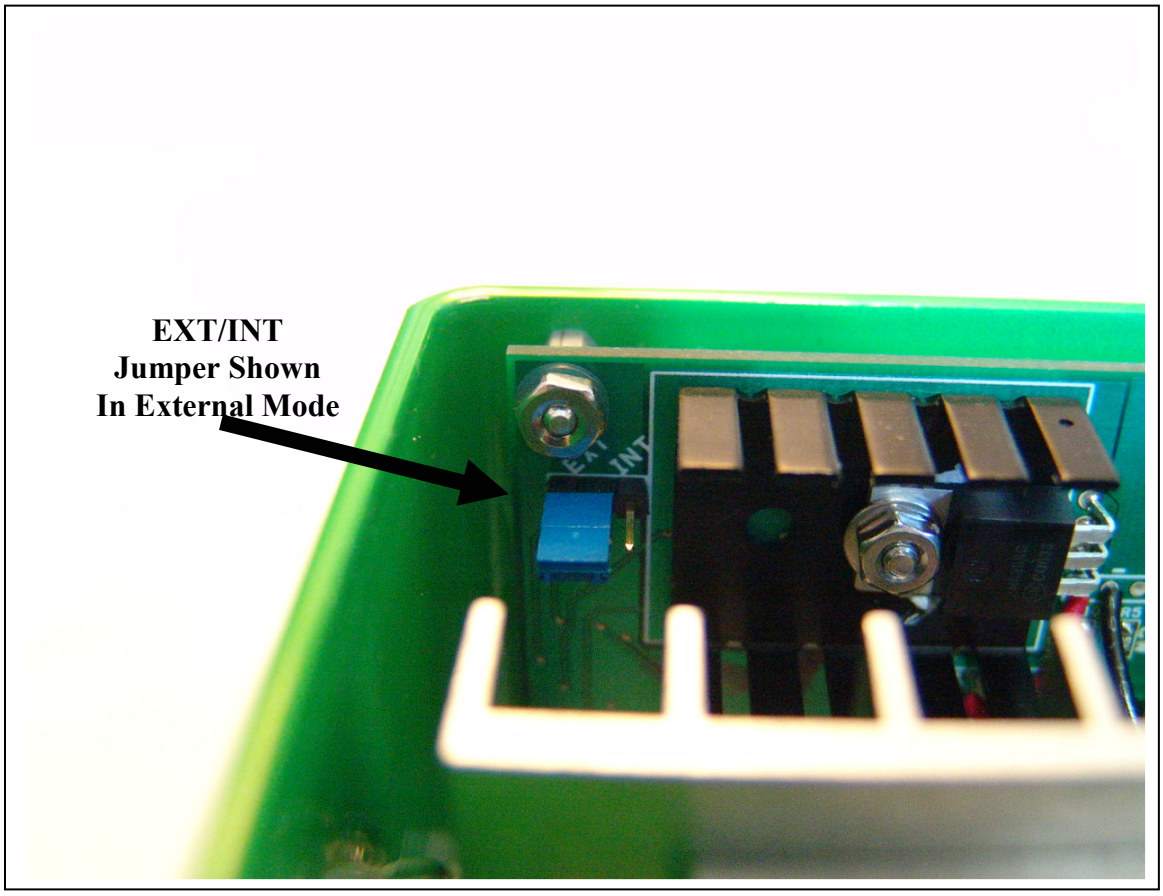

Figure 4.

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.

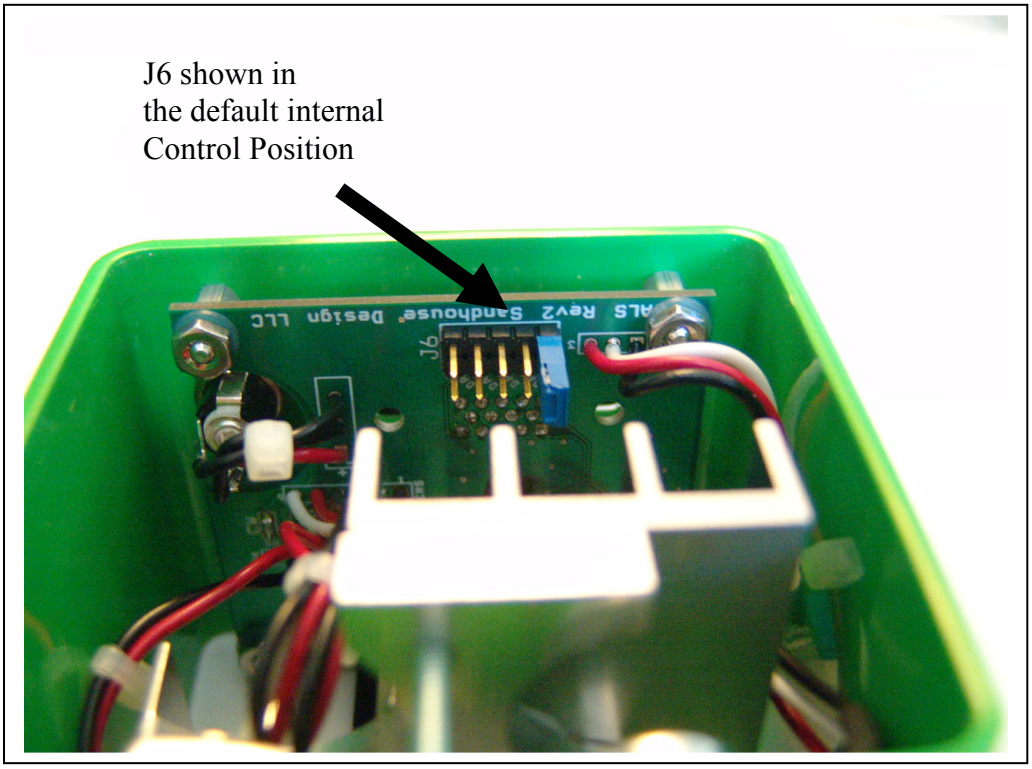

Figure 5.

MOD Price List 022008

PN	Description	1-9 Pcs Price
MOD250	Fiber Coupled LED 20uw @ 250nm	$1,249.00
MOD270	Fiber Coupled LED 20uw @ 270nm	$1,169.00
MOD290	Fiber Coupled LED 20uw @ 290nm	$1,099.00
MOD310	Fiber Coupled LED 20uw @ 310nm	$1,079.00
MOD325	Fiber Coupled LED 20uw @ 325nm	$1,029.00
MOD345	Fiber Coupled LED 20uw @ 345nm	$999.00
MOD365	Fiber Coupled LED 2.5mw @ 365nm	$850.00
MOD455	Fiber Coupled LED 1.5mw @ 455nm	$750.00
MOD470	Fiber Coupled LED 1.5mw @ 470nm	$750.00
MOD505	Fiber Coupled LED 1.5mw @ 505nm	$750.00
MOD530	Fiber Coupled LED 1.5mw @ 530nm	$750.00
MOD590	Fiber Coupled LED 1.5mw @ 590nm	$750.00
MOD614	Fiber Coupled LED 1.5mw @ 614nm	$750.00
MOD617	Fiber Coupled LED 1.5mw @ 617nm	$750.00
MOD627	Fiber Coupled LED 1.5mw @ 627nm	$750.00
MODVIS	Fiber Coupled LED 1.5mw Visible	$750.00
MODIR	Fiber Coupled Broadband IR source	$1,570.00