

## **VISIBLE LASER DIODE POWER SUPPLY LDP-214 OPERATING INSTRUCTIONS**

The **LDP-214** is a compact, low cost current source designed to operate CW laser diodes. By Utilizing the laser diode's internal photodiode the **LDP-214** will maintain constant optical power from the laser diode. The optical power can be adjusted with a miniature potentiometer built into the module.

The accompanying diagram shows how to connect the **LDP-214** to several different styles of laser diodes. A pinout sheet shows proper connections to several diode manufacturer's products.

### **Preparation**

Always make sure that the power is off before connecting or disconnecting the laser diode to the driver. If the driver has been previously adjusted, it will ramp up to the set value when power is applied to the driver. If the driver has not been adjusted for the laser diode, set the potentiometer to its minimum value (fully counterclockwise). After power is applied to the system the potentiometer may be rotated clockwise to increase current to the proper value. Make this adjustment carefully so as not to exceed the diode rating.

### **Adjustment**

The best method is to use an optical power meter calibrated at the appropriate wavelength for the diode. Make certain that all diode output is captured by the power meter. Remove the lens or make an allowance for lens losses if adjusting for the maximum power the diode is capable of. With the optical power meter properly adjusted and the laser properly directed into the power meter, rotate the potentiometer clockwise until desired power is indicated. Do not exceed the rated diode output.

### **Adjustment (Alternate method)**

This method requires that the manufacturer specify the responsivity of the built-in photodetector precisely. Do not use specifications sheet rating. You must have individual current information on every laser to use this method. Place a high quality milliampere meter in series with the white lead before applying power to the system. Starting with the potentiometer fully counterclockwise, rotate clockwise until the milliampere meter reading coincides with the manufacturer's photodiode calibration, i.e.,  $I_m = 0.54\text{mA}$  @ 3mW. The photodiode current is very nearly linear and can be scaled to give different operating power levels, i.e., in the above example  $0.18\text{mA} = 1\text{mW}$ .

### **Caution**

Laser anode is normally connected to laser case and white wire is internally connected to red lead in the **LDP-214**. Take appropriate precautions to prevent shorting your power source.

### **Caution**

Do not disconnect photodiode lead (Yellow) while power is applied to the **LDP-214**.



