

**PLEASE DO NOT TURN ANY ADJUSTMENT KNOBS
UNTIL YOU READ THIS!!!**

**UNPACKING AND SET UP INSTRUCTIONS FOR COLD CUBE, DUAL FIBER
SWITCH & LIGHT OUTPUT PHOTODIODE**

Please note that all of the adjusting knobs have been pre-centered at the factory. The only Module that does not have green tape on the X + Y knobs is the single Output Module which goes with the Cold Cube that does not have a diaphragm. All of the white Delrin focusing knobs are also pre-set and are approximately at the focal point of the installed lenses. Please do not move these until you are in the process of setting up and maximizing throughput!

The tripods supplied will support the Cold Cube alone, but probably will not support it when the lamphouse is attached. A separate support must be devised for the lamphouse; a wire rack or other metal support should be used. Do not restrict air flow through the bottom of the lamphouse!

Unpack the Cold Cubes and the three tripods. Open the tripods, set the screw vertically and tighten the locking knob securely. Pick up the Cold Cube without a diaphragm and thread the tripod screw into the screw hole of the Input Module. Now turn on the lamphouse on and set it up to be focussed at infinity (see Installation Instructions paragraph 2 LAMP SET UP). Mount the lamphouse to the Input Module/Cold Cube assembly, using an additional support for the lamphouse. In this instance of the single fiberoptic system, go to paragraph 4 of the Installation Instructions. The LOP is already secured to the Output end of the fiberoptic, so plug it into your multimeter. Note that this LOP has an ohms reading of 11.7. Try to bring the ohms reading down (higher throughput) to this value by adjusting ALL of the adjustments on the lamphouse! Make certain to go through all of the lamphouse adjustments 2 or 3 times so that you are confident that you have maximized throughput (lowest ohm reading) within 0.1 ohm and cannot get it lower. Now, adjust the white Delrin focussing knob on the Cold Cube Input Module for maximum throughput. Next remove the green tape from the pre-aligned X + Y knobs on the Cold Cube Input Module and try to lower the ohms reading with careful tweaking of these, one at a time. If, perchance, you have made a significant change in the ohms reading by adjustments on the Input Module, then please return to the lamphouse and go over the whole routine again.

Once this is done you will not have to redo it until you change the arc bulb.
Hooray!

The reason for making adjustments on the lamphouse first, and then the Scrambler Input Module is that we have aligned the Cold Cube/Mirror/Input Module lens and Fiberoptic. What we are trying to do is to bring the lamphouse arc into alignment with the Cold Cube/Scrambler Input Module. The illumination from an axially aligned Scrambler system, Lamphouse to fiber is the flattest, most uniform illumination.

USING THE SPECIAL LOP TO ALIGN THE TWO LAMPHOUSES THE DUAL FIBER SYSTEM

Now set up the two Cold Cubes for the DFS onto their tripods. Align the lamphouses as before. Attach the lamphouses to their respective Cold Cubes after making sure that the diaphragms are fully open. Insert the Red banded end of the fiberoptic into the Fiber Holder until the lock collar touches. Lock the fiber with the thumbscrew. Again, do not make any adjustments on the Scrambler Input Modules until you have brought the arc lamps into alignment first.

Hold the Output Module with the DFS face down on a clean surface. Pull and twist the white Delrin focussing knob and remove it. The lens will gently fall to the surface and the Module may be lifted up, leaving the lens.

Now insert the LOP into this Module while looking in the focussing knob hole. The LOP should slide in so that the rear edge is about centered in the hole. It will be about 1 or 2mm from the tip of the fiberoptic at this point. You can verify that it touches and then pull it back 1 or 2mm.

Keep the Module horizontal so that the DFS does not shift its position while you are aligning the two lamphouses and switching from one fiber to the other!

Now carefully adjust each lamphouse individually to achieve maximum throughput (lowest ohms). After you are convinced that you have maximized throughput by adjusting the lamphouses, then you can tweak each Input Module, first the focus knob, and then the X and Y knobs until you are satisfied that you have maximized throughput within a 0.1 ohm or so.

Now you may remove the DFS/LOP and insert the lens with its Delrin Objective holder back into the Module; observe when the marked hole on the DOH (Delrin Obj. Holder) is in view in the focussing knob hole to one side or the other. Carefully insert the white focus knob while turning it so that it engages the hole

in the DOH. After this is done turn the focus knob so that the DOH is approximately in the center of its travel.

Now mount the DFS Output Module on the microscope port and set up for proper illumination, first by moving the fiber tip by loosening the thumbscrew, then fine adjusting with the focus knob, and then aligning the image with the X + Y knobs to the optics of the microscope.

One or the other of the diaphragms may be partially closed so as to balance the illumination from the two lamphouses if this is desired.

Good luck with the setup! Please call, email or fax us if you have any questions or experience any difficulty.