



Del Lighting Installation & Fiber Guide

There are several rules that one must be aware of when working with fiber optic cable.



DO NOT put the unjacketed fiber outside without protection it from Ultraviolet rays. Protection is required inside when the fibers will be subject to UV from skylights, windows or fluorescent lighting.

DO NOT bend the fiber at hard right angles.

DO NOT cut the end of the fiber without using a very sharp razor, scissors or a special hot knife. Measure the cable very carefully because once its cut that's it, you can't glue it back together. If you have any doubt, allow extra for your cut.

DO NOT put the ends of the fiber in liquids.

DO NOT drag the fiber around on a rough surface, as this will damage it.

1) How tight can I bend the fiber?

Generally, do not bend the fiber more than eight times the diameter. If it is bent in a very sharp angle you may create a spot that will result in a marked degradation of light output. Gentle bends will result in brighter light emissions.

2) Do UV rays effect fiber optic cable?

Yes, these rays will degrade the cable, effecting longevity and light output. You must protect the cable with either lexan tubing or a special PVC type jacket (all of our cable has this). Make sure your illuminator has UV filtering glass.

3) How far will the cable illuminate?

This really depends on many things. Because the cable loses about 3% of the light per meter, if you have a long run you must have a very bright illuminator (which is also very expensive!). If you can loop the cable with both ends in the illuminator, you may be able to illuminate up to 200 feet successfully. For a straight run you should consider 50 to 60 feet the maximum.

Another factor that plays a critical role is the ambient lighting. What looks to be bright around a pool will be drowned out in a shopping mall. For the former, a 75-watt illuminator will be fine, for the latter, several 150-watt illuminators may have to be used. Also, taking into account what was mentioned before about bending the cable, the more bending you put in the cable the bigger the illuminator or the shorter the run will have to be. The cable should have a straight run for the first few feet if at all possible.

4) Placing the cable properly in the illuminator can effect your results. Because the light is focused directly into the cable end, if the end of the cable is not straight some light will be lost. Be extra careful when positioning the cable in the illuminator. Don't push it too far in or you can break the color wheel. Don't have it too far out or you will lose a lot of light. Try to find the middle of the light cone inside the illuminator for the best results, but if you have a light meter, use that to find the best place for the cable.

5) Certain colors carry better over the cable and are perceived as being brighter by the human eye, i.e. yellow is much brighter than red. Take this into consideration when planning your project

Installation Guide

There are some things you need to do to make sure your project performs as you expect it to. You must polish the cable end that goes into the illuminator. If you don't, the light output will be weak and you could actually melt the cable (one good reason to have a service loop in the cable!).

If you purchased a metal halide illuminator, there are a few things to know. Metal halide lamps take a few minute to get to full brightness. If you turn it off it won't turn back on right away. It gets VERY hot, don't touch it!

To prepare the cable: Trim the cable jacket from the fiber strands (be careful not to cut or damage the Teflon coating on the outside of the fiber strands. Leave approximately 4" of exposed fiber strands. If you nick the strands you WILL reduce the fibers ability to transmit light. Unscrew the large nut from the fiber port and place it on the cable. Place the exposed fiber strands into the fiber port, extending the fibers about 1/2" beyond the port and screw the nut back onto the port face. Tighten carefully, this will determine the light intensity, the tighter the cluster of fibers before the final cut, the more light will be transmitted. If the fiber ends are still loose you will have to use the reducers or extra fibers to "fill in" the empty space. To use the reducers, just place one inside the other until you get a tight fit on the cable. If it's still loose, place 4" lengths of fiber into the fiber ends sticking out of the fiber port until it is as tight as you can make it. Heat the blade of a utility knife or other sharp knife. Make sure the blade is quite hot before cutting the exposed fiber. Carefully trim the excess fiber in front of the port end (use the metal ring on the port end to do this and to make sure you don't melt the port). Do not use a sawing action; rocking back and forth is OK. Press down on the fiber and allow the hot blade to do all the cutting. A smooth cut (like ice smooth) will increase the light transmitted dramatically. After you cut your cable, it's very important that you prepare the end of the cable that will go into the illuminator port. You can do this quite easily by using 150 grit sandpaper to remove the rough edges of the cable. Sand the strands until they're fairly smooth. Finish the cable by using 600 grit wet/dry sandpaper. Wet the sandpaper and sand until the cable is mirror smooth - this will give you the maximum light output for your project!

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