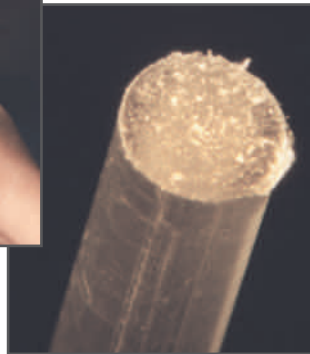
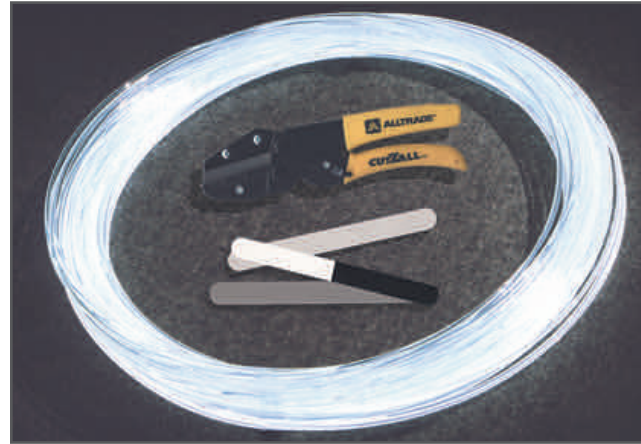


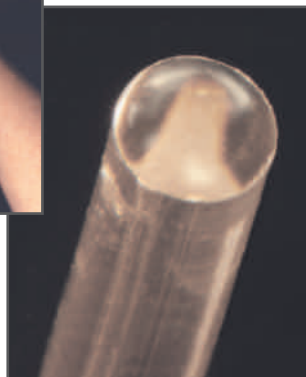
AEROSPACE-GRADE ACRYLIC FIBER

100% aerospace-grade acrylic fiber without intrusions or bubbles creates a pure crystalline structure that transmits only visible light. It's physics. IR and UV energy are absorbed. Without NoUVIR, this absorption can damage fiber. With NoUVIR, you get perfect, full-spectrum, visible light with no UV and no IR.

Clear, non-yellowing acrylic fiber in three sizes



*Simply cut to length.
At only \$1.00/foot leave
a little extra to work with.*



*Now polish until it is clear
and clean, insert the
fiber into a luminaire and
aim, focus, and light.*

POLISHING FIBER

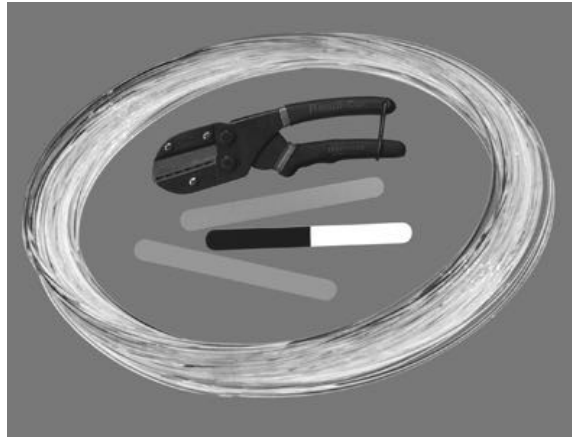
- Order fiber in continuous rolls
- Cut to length with razor cutters (included with your first roll)
- The end will look a little rough
- Smooth and slightly round the fiber end with the black end of the included combo buff or the dark side of the included pink buff. (Or use a flapper wheel or 150 grit wet or dry sandpaper.)
- Rough polish the fiber end with the white end of the included combo buff or the light side of the included pink buff. (Or use a flapper wheel or some 600 grit wet or dry sandpaper.)
- Final polish the fiber end with the grey side of the included combo buff. (Or use a cloth wheel with plastic polish or polishing compound on a soft cloth.)
- It only takes a minute or two. You can light as you go, change whatever you need to whenever you want to, and do it all in house with your staff.

NoUVIR® ACRYLIC FIBER OPTIC LIGHT GUIDES

AEROSPACE-GRADE MEANS SUPERIOR LIGHT TRANSMISSION AND LONG LIFE

FBFK • FULL ROLL KIT – 500 FEET OF 3 mm (1/8”) FIBER FIBER BUNDLE, FULL ROLL KIT

A continuous roll of 500 feet of standard 3 mm (1/8”) diameter **aerospace-grade** PMMA (polymethyl methacrylate) “acrylic” fiber. Simply unwind, cut to desired length, polish and install. A sharp razor cutter is included with the first roll. But any pair of sharp diagonal cutters will work. Every roll comes with buffs for polishing the fiber ends. Bulk polishing can be done using 150 and then 600 grit wet-dry sand paper on a block and paste polishing compound on a soft cloth. Machine polishing can be done using a bench grinder with a flapper wheel and a soft, clean cloth wheel with fine-grit plastic-polishing compound. See the PLKK Machine Polishing Kit for really large jobs (page 6-5). The important point is that polishing fiber is do-it-yourself, quick, easy, and can be done in a variety of ways. Standard 1/8” diameter fibers may be bent no tighter than a 6” radius. If you do not want to measure, cut and polish in the field; bundles made by NoUVIR are also available.



*A hand cutter comes with
the first roll of any fiber.
Polishing buffs come with every roll.*

SPECIFICATIONS:

- 500' (+/-5%) continuous coil of 3 mm (1/8”) diameter clear aerospace grade PMMA “acrylic” fiber
- Light transmission loss of 0.7% per foot (measured photometry includes 10’ of fiber)
- 6-inch minimum bend radius
- 10-year guarantee against yellowing or loss of transmission
- Hand cutter included with first roll, three special polishing buffs included with each roll



FBHK • HALF ROLL KIT – 250 FEET OF 3 mm (1/8”) FIBER FIBER BUNDLE, HALF ROLL KIT

See above. This “half” roll of 250 feet of standard 1/8” (3 mm) diameter aerospace-grade PMMA acrylic fiber. Roll includes three special polishing buffs.

FBMK • MINIATURE KIT – 4,900 FEET OF 1 mm (.040”) FIBER FIBER BUNDLE, MINIATURE FIBER KIT

A continuous roll on a spool of 4,900 feet of 1 mm (.040”) diameter aerospace-grade acrylic mini-fiber. Razor cutter is included with the first roll along with three special polishing buffs for every roll.

SPECIFICATIONS:

- 4,900' (+/-5%) continuous coil of 1 mm (.040”) diameter clear aerospace grade PMMA “acrylic” fiber
- Light transmission loss of 1.0% per foot (measured photometry includes 10’ of fiber)
- 2-inch minimum bend radius
- 10-year guarantee against yellowing or loss of transmission
- Hand cutter included with first roll, three special polishing buffs included with each roll



FBMP • MINIATURE PACK – 250 FEET OF 1 mm (.040”) FIBER FIBER BUNDLE, MINIATURE FIBER PACK

A continuous roll of 250 feet of miniature 1 mm (.040”) diameter aerospace-grade acrylic fiber packed as a coil into a bag. Perfect for adding a historic flame, a few CLOSE-UP luminaires, some stars in a diorama, lighting a small animal’s den or slipping light inside something like a doll house, showing a car’s engine or lighting a carriage’s interior. Cut to desired length and polish. A single buff included.

NOUVIR® ACRYLIC FIBER OPTIC LIGHT GUIDES

AEROSPACE-GRADE MEANS SUPERIOR LIGHT TRANSMISSION AND LONG LIFE

FBMM • MICRO-MINIATURE FIBER KIT

FIBER BUNDLE MICRO MINIATURE KIT

A continuous roll of a 1,000 feet of miniature 1/4 mm (.010") diameter aerospace-grade acrylic fiber is provided for star fields, retrofitting historic fixtures, hiding in dioramas or special effects that do not require luminaires. *Hint: Most starfields are more realistic using 1/4 mm fiber with a little 1 mm.*



Best practice is usually to run a 3 mm fiber as far as you can and then use a DIMMER-SPLICE connector (page 6-7) to break the large fiber into smaller fibers. When necessary run miniature fiber all the way from the projector.

Small diameter fibers, with smaller cross-section, and more internal reflections, have higher light loss. This is why small stranded, fused or braided fibers have never been very practical. Using a 3 mm fiber and a DIMMER-SPLICE, including the connector's loss, usually gives you more light at the end of the fiber. A DIMMER-SPLICE connector can splice a single 3 mm fiber to seven 1 mm fibers. A special 1 mm DIMMER-SPLICE can take a single 1 mm fiber and power 40 individual 1/4 mm fibers.

3 mm fiber is easier to run through ceilings or walls. DIMMER-SPLICE connectors provide safer handling of artifacts like this sole-surviving, French gold-plated chandelier and shorten the time spent on ladders, scaffolding or lifts.



FRSF • PLASTIC BLACK JACKET FOR SINGLE FIBER

FIRE RESISTANT SLEEVE FOR FIBER

Flexible, flame-retardant and self-extinguishing, black PVC, tubing slides over standard 3 mm fiber to block side-glow from the fiber and protect from physical damage. Like all flame-retardant materials, it does outgas and should not be used inside cases. In cases, use the inert woven nylon jacketing below. (May require air lubrication to pull over long fibers. Call NoUVIR for easy installation techniques.)

Jacketing does not increase or decrease fiber performance. It will protect fibers from aggressive glue, tape, abrasion and scratches in abusive installations. Jacketing is not required to meet fire codes. All NoUVIR fiber meets U.L. Flame Class "HB," although this specification applies only to communication fiber. Optical fiber for lighting falls under separate light fixture standards. Available in 100-foot rolls.

SPECIFICATIONS: High-heat stability, flame-retardant, self-extinguishing, black PVC-105 tubing .162" inside dia. x .020" wall thickness. Capable of -20°C to 105°C operation. U.L. recognized E52331. Meets U.L. VW-1, C.S.A. LR41513M-6M, plus MIL-I-631D and MIL-I-22129C. Fiber meets U.L. Flame Class "HB".

FRSB • PLASTIC BLACK JACKET FOR 32 FIBER BUNDLE

FIRE RETARDANT SLEEVE FOR BUNDLE

The same black PVC tubing as above, but sized to slide over a bundle of 32 individual 3 mm (1/8") diameter fibers. Available by the foot. The jacketing blocks all side glow from the bundle.

FCSF • WOVEN INERT NYLON BLACK JACKET FOR SINGLE FIBER

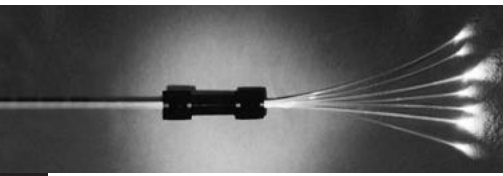
FLEXIBLE CONSERVATION-SAFE SLEEVE FOR FIBER

Flexible, woven, black nylon sleeve easily slides over standard 3 mm fibers. Ideal for fitting around luminaires to hide side-glow light as the cloth can be scrunched or gathered and easily accommodates fiber movement. This **conservation-safe**, fine woven jacketing covers fibers inside a case or inside a track when there is a need to conceal the slight side glow of the fiber. Lower cost and easier use makes woven nylon jacket the usually preferred choice over the above plastic jacketing. Available in 100-foot rolls.

NoUVIR® ACRYLIC FIBER OPTIC LIGHT GUIDES

AEROSPACE-GRADE MEANS SUPERIOR LIGHT TRANSMISSION AND LONG LIFE

FBML • MINIATURE FIBER LENGTHS



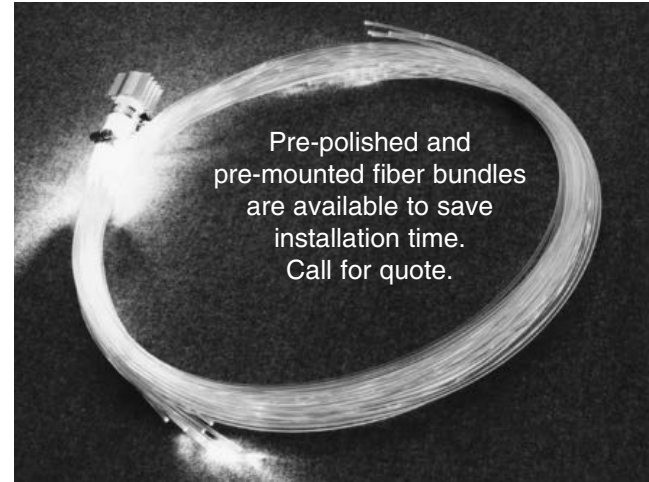
Power seven 1 mm fibers from a single 3 mm fiber.

FIBER BUNDLE, MINIATURE FIBER LENGTHS

Seven cut and polished, ready-to-use, 4-foot-long pieces of 1 mm (.040") diameter fiber mounted in a DIMMER-SPLICE connector for converting and splitting one standard 3 mm (1/8") diameter fiber into seven miniature fibers to power a historic lamp or seven CLOSE-UP luminaires. Simply insert one polished 3 mm fiber from the projector into the splice and you are ready to light. Use to eliminate long runs of small fiber.

FBBU • FIBERS IN BUSHING READY-TO-USE FIBER BUNDLE IN BUSHING

Ready-to-use 256 feet of standard 3 mm (1/8") diameter acrylic fiber is provided as 32 light guides. The bundle contains 16 fibers at six feet long and 16 fibers at ten feet long. All fiber ends are polished. One end of each fiber is installed in the FIBER-SERT bushing supplied with the projector. Put the bushing into the projector, turn the projector on and start lighting. Any individual fiber may be removed, re-cut and polished, and inserted back into the bushing or a fiber may be cut shorter and polished by hand. Fibers may be bent no tighter than a 6" radius. This fiber bundle covers an 18-foot circle. See below if you want a ready-made bundle with different lengths that you specify.



Pre-polished and pre-mounted fiber bundles are available to save installation time. Call for quote.

FBBC • CUSTOM BUSHINGS READY-TO-USE FIBER BUNDLE IN BUSHING, CUSTOM

Nearly any length or variety of individual fibers can be specified and fabricated into a custom fiber bundle at NoUVIR. These custom bundles will be quoted and made to order. Jacketing is an option.

FRSU • BLACK PLASTIC JACKETED FIBERS IN BUSHING FIRE RESISTANT SLEEVE UNIT

The FBBU bundle described above, but with a flexible, flame-retardant, self-extinguishing, black plastic PVC jacket on each of the 32 fibers. Used in installations where the fiber is exposed to abrasion, or the normal glow of the fiber must be concealed by a very durable jacketing. All fire-retardant plastics outgas slightly. None are completely inert. Do not use inside museum cases.

FBCU • WOVEN INERT BLACK NYLON JACKETED FIBERS IN BUSHING FIBER BUNDLE IN COTTON SLEEVE UNIT

The FBBU bundle described above, but with inert woven black nylon jacket on each of the 32 fibers. The jacketing is used in installations where fiber requires some physical protection or the slight side-glow of non-jacketed fibers can be seen and will be a distraction..

BUFF • POLISHING BUFFS

A set of four polishing buffs. Each buff is a combination buff with different surfaces for making a beautiful optical polish on a fiber.

ATIE • BLACK FUZZY FIBER TIES

A dozen black, fuzzy ties or holding fiber together or tying a fiber or fibers down to without using adhesives. Secure, reusable, will not scratch.

DMSPs connect 3 mm fiber to 1 mm fiber under a historic table to light two colonial candles.



NoUVIR® ACRYLIC FIBER OPTIC LIGHT GUIDES

AEROSPACE-GRADE MEANS SUPERIOR LIGHT TRANSMISSION AND LONG LIFE

APTI • OFF-WHITE PLASTIC TIE CLIPS

One dozen screw-mounted natural nylon locking clips hold fibers securely. Attach the clip with a single screw, run fibers up to the clip and snap the clip closed. To remove a fiber, open the clip and release the fiber. These plastic clips are secure, hold a large number of fibers and will release immediately. They can be used safely hold fiber back and out of the way over and over again.

PLKK • MACHINE POLISH KIT

MACHINE POLISH KIT

For extensive installations, save time using this kit on your 6" bench grinder (available at almost any hardware store). Remove the grinder's stone wheels and install the flapper wheel on one side and the stitched, soft-cloth polishing wheel on the other. A full stick of plastic polishing compound is provided to load the cloth wheel heavily so that it polishes quickly. Hand polishing buffs are included to touch-up each fiber along with a new cutter with a sharp blade. These are the same tools we have used at NoUVIR for 20 years, available to you to make large jobs easier.



Order **PLKK** for polishing wheels, compound, etc.

ACAP • BLACK CAP FOR FIBER TIP

A conservation-safe, opaque black cap that fits over the tip of any 3 mm fiber to block end light. Useful in track or cases where spare fibers are installed for future changes or where new exhibits have lower intensity requirements, the cap blocks the light and protects the fiber end's polish.

READ THIS IMPORTANT INFORMATION:

The NoUVIR® COLD-NOSE® Fiber Optic Projector is designed specifically to provide intense illumination levels for high-quality acrylic fibers. It is a TUNED light source that will not melt, scorch, yellow or age acrylic fiber.

THE USE OF ANY OTHER PROJECTOR OR ILLUMINATOR MAY DAMAGE THE ACRYLIC FIBERS AND WILL NULLIFY ANY WARRANTY ON THE FIBER OR PERFORMANCE CLAIMS MADE BY NoUVIR.

Other types of fiber, including glass and solid core light guides, lack the durability, light stability, color rendition or transmission efficiency of NoUVIR aerospace-grade acrylic fiber.

Lower grades of acrylic fiber have higher transmission losses and can produce half or less the light. When considering other fiber sources direct, side-by-side evaluation of performance, customer service and warranty is strongly recommended. Don't get burned.

NoUVIR lights everything from documents to dinosaurs, BC to AD, Faberge to extinct eggs, 4,000-year-old sandals to famous athletes' sneakers, mummies to wet specimens including a famous Siamese twin liver. If it's rare, valuable or important, it should be protected from damage and beautifully displayed. It should have NoUVIR. Here's a taste of things to see...

- The document that started it all. NoUVIR lit Thomas Jefferson's draft of the Declaration of Independence. (*Did you know he had a type of white-out paper and made a number of corrections?*)

- The best land deal in history. NoUVIR lights the Louisiana Purchase with the signatures of Thomas Jefferson, Napoleon and the King of Spain.

- The most beautiful book in the world. It's a hand colored, scientific work on the stars with the earth as the center of the solar system, printed in the 1500's.

- The most-quoted speech in U.S. history (although its writer thought it was marginal). NoUVIR lit both of Lincoln's Gettysburg Addresses. He made notes on an envelope, then wrote out his speech again after he gave it.

- The weirdest fossil. The rare Diceratops is either the only one of its species ever found or a two-horned Triceratops anomaly. No one knows.

- The very first Monopoly game with a printed table cloth instead of a board and typewritten property cards. Bracelet charms make the players' pieces.

- The night they didn't invent Champagne. When Champagne bottles were recovered from the *Titanic*, the corks re-sealed and locked ocean sand in the bottles.

- The strangest sticks. Shoved in cracks high on the walls of the Grand Canyon, twisted wood figures depicting various animals have been discovered.

- The most expensive piece of "cheap" printing in the world. A Honus Wagner baseball trading card looks great and stays protected with NoUVIR lighting.

- The saddest seat in the house. NoUVIR lights the chair from Ford's theater where Lincoln was sitting when he was shot.

- The most expensive stamps in the world. Jenny airplanes on the first airmail stamp were printed upside-down. One sheet escaped into circulation.

- The first *Air Force One*. Called the "Sacred Cow," the interior of FDR's plane including his office, his inlaid desk and a large oil painting which are all lit with NoUVIR.

- The earliest photo of a slave. Isaac Jefferson, Thomas Jefferson's slave, was the subject of an early daguerreotype.

- The world's oldest known hide. It's from a horse found in the permafrost.

- The world's oldest human remains. Ethiopia's "Lucy" was exhibited with NoUVIR as she traveled places the real Lucy never dreamed.

- The world's most famous dress...or is it? NoUVIR lit Marilyn Monroe's white subway dress and her Happy Birthday, Mr. President dress. From Elvis to the Beatles to Elizabeth Taylor's golden Cleopatra's gown, NoUVIR is the costume lighting of choice.

- The strangest thing to pack...Napoleon's socks. They were a trophy of war taken by a British doctor, not given in admiration to a French subject.

- The most expensive collection ever exhibited to the public...diamonds. The lighting was so good, you could grade the diamonds by color.

- The world's oldest amber. The Jurassic movies made it the most popular exhibit ever and it may still hold the record.

- The most gold ever displayed...a ton, exhibited in the Yukon.

NOUVIR® ACRYLIC FIBER OPTIC LIGHT GUIDES

AEROSPACE-GRADE MEANS SUPERIOR LIGHT TRANSMISSION AND LONG LIFE

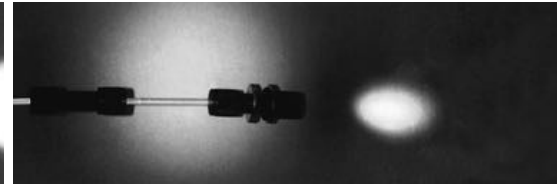
DMSP • DIMMER-SPLICE CONNECTOR AND/OR DIMMER DIMMER SPLICE FIBER CONNECTOR

The DIMMER-SPLICE™ Connector is a tiny dimmer and/or splicer that fits anywhere along a fiber to accomplish any of four important functions.

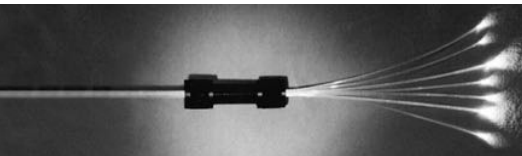
1 – The DIMMER-SPLICE connector allows adjustment in intensity of any luminaire from 10% to 80% of its initial brightness. Polished 3 mm (1/8") fibers are pushed together or pulled apart within the connector and locked to set exact preservation lighting for photo-sensitive materials.



DIMMER-SPLICE™ bright



DIMMER-SPLICE™ dimmed



2 – The DIMMER-SPLICE connector also will connect a 3 mm (1/8") fiber to seven 1 mm (.040") fibers with a 50% light loss. A single large fiber, more efficient for long runs, can then power a historic lamp or seven CLOSE-UP luminaires to produce small beams of light. With connectors a single projector could power 224 CLOSE-UP luminaires.

SPECIFICATIONS:

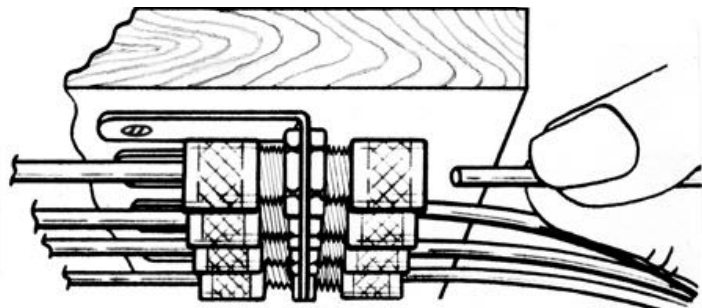
- 1/2" diameter x 2" long.
- Machined, externally-threaded aluminum body
- Twin black anodized FIBER-LOCK™ collets lock fibers
- Evenly adjustable 10% to 80% dimming ability
- Joins two polished 3 mm (1/8") fibers
- Joins one 3 mm (1/8") fiber to seven polished 1 mm (.040") fibers
- Joins one 3 mm fiber to forty 1/4 mm (.010) fibers

3 – The DIMMER-SPLICE Connector can also be used as a splice to hook cases or parts of traveling exhibits to a fiber harness without opening the cases, re-running fiber, or readjusting the aim and focus of luminaires. Run several cases or displays from one projector by simply attaching fiber from the projector to the connectors built into the back of the case or display.

4 – Running a single fiber directly through a DIMMER-SPLICE connector automatically creates an air tight seal for sealed and climate controlled cases without damaging the fiber or sacrificing the ability to remove, change or rearrange the fiber.

DMSB • DIMMER-SPLICE CONNECTOR AND/OR DIMMER *with Bracket* DIMMER SPLICE FIBER CONNECTOR WITH BRACKET

The DIMMER-SPLICE Connector above with a 90° mounting bracket. The bracket forces connection at a fixed end and can make an installation cleaner. Connectors do not have to be mounted, but there are times having them screwed down makes it easier to set the intensity of a number of luminaires. Mounting is also recommended for attaching a number of fibers to a portable or traveling exhibit.



DIMMER-SPLICE connectors mounted for easy adjustment

DMSS • DIMMER-SPLICE FOR SPECIAL EFFECTS

A connector like above with a collet for a single 1 mm fiber. For special effects like star fields, a single 1 mm fiber can power up to 40 of the tiny diameter 1/4 mm fibers. Using DMSS connectors, one projector can power 7,680 1/4 mm "stars" which is the ideal sized fiber for realism.

NoUVIR® ACRYLIC FIBER OPTIC LIGHT GUIDES

AEROSPACE-GRADE MEANS SUPERIOR LIGHT TRANSMISSION AND LONG LIFE

EORL • ELECTRO-OPTICAL RELAY

ELECTRICAL-OPTICAL RELAY

The EORL ELECTRO-OPTICAL RELAY will electrically switch individual fibers and fiber optic luminaires. It receives a 3 mm diameter fiber from a projector and a second 3 mm fiber to any luminaire, locking them into collets at each end of the relay. The output fiber may be used to operate any NoUVIR fiber optic luminaire. The EORL RELAY is "NORMALLY OFF" so no light is transmitted as a beam output until energized with a 12 Volt signal. Then it turns on light to the output fiber and turning on the luminaire. When the power is removed, gravity drops the plunger back into place and turns off the output fiber and the luminaire. May be operated continuously "ON", but the EORL is really designed to work as an electronic docent and point out specific things in interactive exhibits.

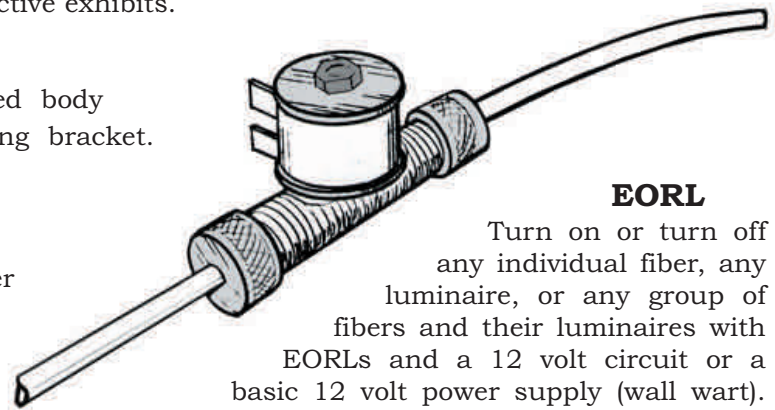
SPECIFICATIONS:

- anodized, aluminum 1/8" I.P.S. threaded body
- mounts in a 7/16" hole or on a mounting bracket.
- Normally off, with no light transmission (Gravity operated, mount coil up)
- May be operated continuously "on"
- Solenoid coil operates from 12 volt power (AC or DC) at 0.2 amps
- Power consumption 2.4 Watts
- Male .250 tab terminals for electrical hook-up
- Optical loss 30%
- Can be dimmed additionally (use like a DIMMER-SPLICE Connector)

A projector powers 32 luminaires. Take a few fibers and add EORLs to make an interactive display, map or educational exhibit where the visitor controls the illumination to point out an item, a group of items or some key detail.

Or use EORLs for the ultimate in conservation lighting. There is no UV and no IR in the light. But why expose a very sensitive artifact like a rare document to any light unless someone is viewing it? Light items around the document, light the signs using NoUVIR's tight control and keep the case inviting as it is not totally dark. But have an EORL turn light on the document when someone approaches. Lighting can even be timed to limit exposure to actual patron viewing time. Dark exhibits lose interest. With EORL relays, only the most sensitive artifacts themselves remain unlit until activated.

EORLs can create an interactive docent. Switching 12-volt signals on and off with an audio or video presentation can point out objects by synchronizing illuminating with the narration. Exhibit builders have created amazing exhibits. One uses projected people walking across an archeological dig with pinspots turning on and off pointing out artifacts. Small museums have also used EORLs for interactive presentations. In one a volunteer used a old computer and a simple switching box to take visitors through a complete manufacturing process, pointing out the various parts and operation of a historic machine.

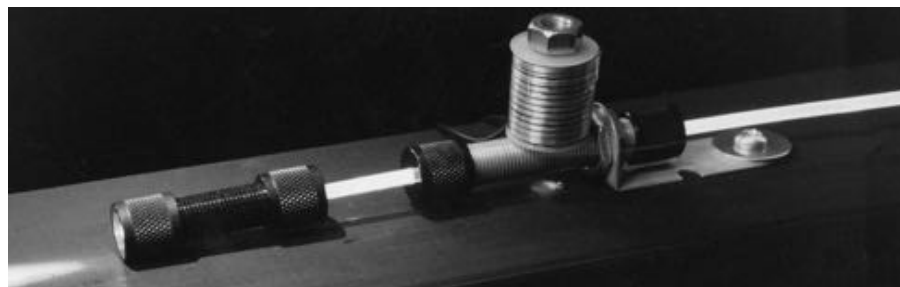


EORL

Turn on or turn off any individual fiber, any luminaire, or any group of fibers and their luminaires with EORLs and a 12 volt circuit or a basic 12 volt power supply (wall wart). Normally "off" is without power closed by gravity with the coil pointed up.



EORL ELECTRO-OPTICAL RELAY "off" (De-energized)



EORL ELECTRO-OPTICAL RELAY "On" (Energized)