

MICRO-FOL SPOTS

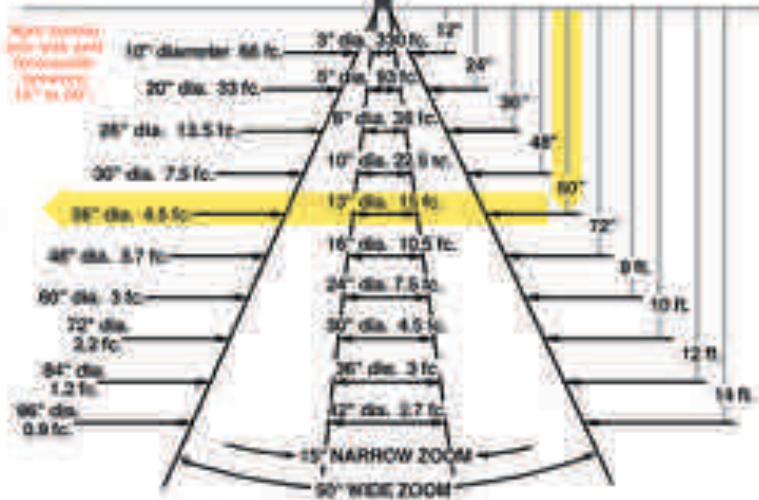
Zoom-AND-DIM MICRO-MINIATURE SPOTLIGHTS WITH PURE-WHITE, STONE-COLD LIGHT. AWESOME!

DESCRIPTION: The MICRO-FOL™ Zoom-and-Dim Spotlight couples NoUVIR's black parabolic flood reflector with a high-tech "zoom" lens. NoUVIR has the only lenses offered anywhere specifically designed for a fiber optic source. The result is an awesome miniature spotlight giving pure-white, stone-cold light that smoothly and simply adjusts from a 15° spotlight to a 50° floodlight and anywhere between.

Actual measured data with luminaire on a single 3mm fiber 10' in length



Read down for distance and across for data.

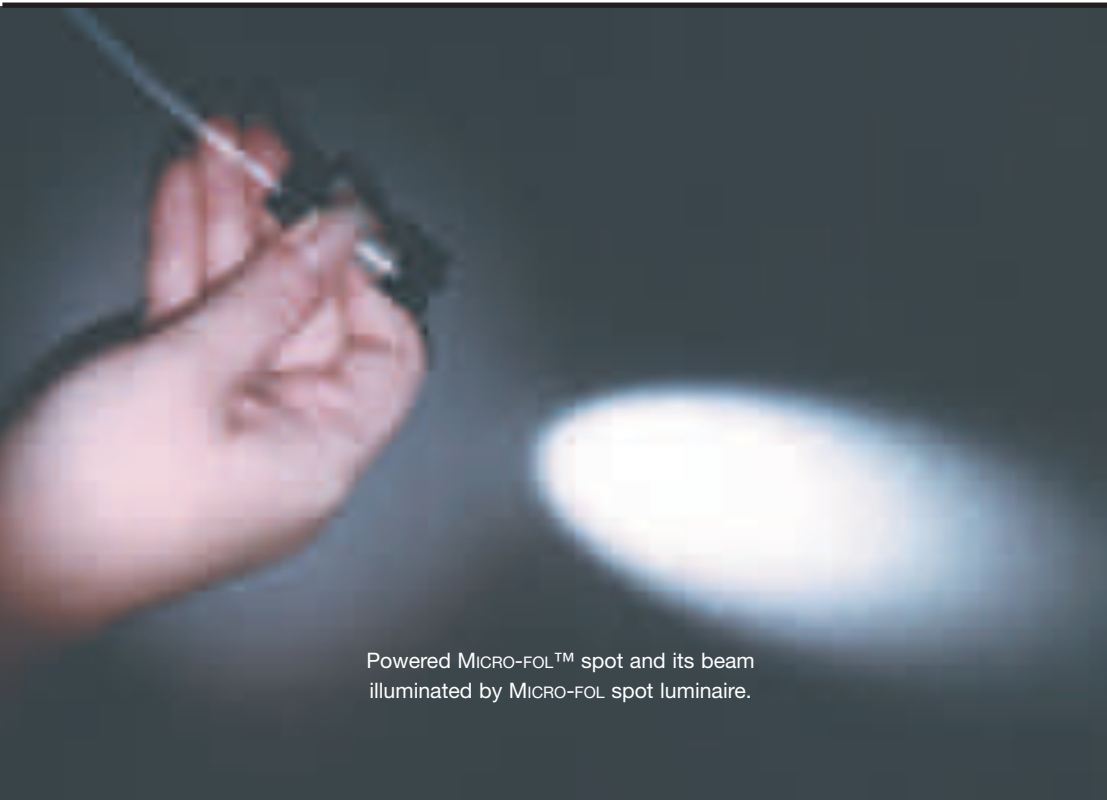


FEATURES:

- Even, 3:1 zoom from a 15° to a 50° beam
- Uniform, perfectly circular beam
- Soft, clean beam edges, no visible spillover
- No halos, aberrations or dark spots
- No peaks or hot spots
- Stone-cold, pure-white light (3200°K)
- No UV, No IR.
- 10-year warranty on structure and optics

SPECIFICATIONS:

- 3/8" diameter body
- 1-1/2" overall length
- Powered by one 3mm (1/8") fiber
- Externally threaded for simple mounting
- Mounting nuts and neoprene seal included
- 1/2" knurled FIBER-LOCK locks adjustments



Powered MICRO-FOL™ spot and its beam illuminated by MICRO-FOL spot luminaire.



1. Aim light with tight beam.



2. Zoom beam out to frame.

What a BIG difference *the world's only fiber optic reflector* and *the world's only fiber optic lens* make in how fiber optic lighting works. It's all about performance! NoUVIR offers the most beautiful beams in the industry... multiple patents, create a unique lighting system for those who want the very best. Why fight dim, ragged focus with halos, splotches and light spilled outside the beams. NoUVIR's beam is bright, adjustable, completely in focus, clean, smooth, without any spill, pure white and has absolutely no UV and no IR.



Every beam zooms...easily and smoothly from a tight 15° spot to a wide 50° flood with all the beam sizes in between. NoUVIR gives you the ultimate in control. Frame key objects, so no visitor can miss them. Cross-light objects. Plan shadows for drama, or eliminate them. With NoUVIR, it's easy to show off.

MICRO-FOL MICRO-MINIATURE SPOT LUMINAIRES

ZOOM-AND-DIM MICRO-MINIATURE SPOTLIGHT WITH PURE-WHITE, STONE-COLD LIGHT

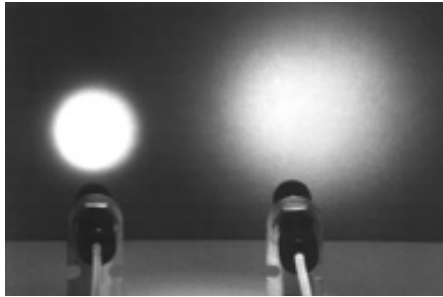


ZDSL • MICRO-FOL SPOT LUMINAIRE ZOOM-AND-DIM SPOTLIGHT LUMINAIRE

The ZDSL MICRO-FOL™ spot is a basic spotlight for mounting through a ceiling or panel. With a small 3/8" diameter body and a high tech optical system designed specifically for a fiber optic light source, the ZDSL gives awesome performance and a range of full adjustment impossible until now.

Adjustable from a 15° beam spotlight to a wide angle 50° conical flood, the ZDSL is a lovely and versatile downlight in areas where the diameter needs to be zoomed to a specific and exact size on a floor or an object. Adjustment is easy. At narrow focus, center the beam on the object you wish to light. Then, zoom the beam out to completely illuminate the object.

*For a downlight with great focus range, an even white beam and exact control, order **ZDSL***



*15° to 50° beams with one fixture on a bracket. Order **ZSBL**.*

ZSBL • MICRO-FOL SPOT LUMINAIRE with Bracket

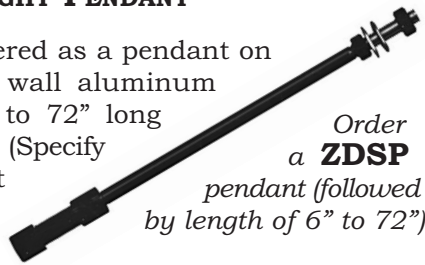
ZOOM-AND-DIM SPOT WITH BRACKET LUMINAIRE



Identical to the MICRO-FOL™ spot described above, with the same features and awesome range of adjustment, the ZSBL comes with a 90° mounting bracket which can be attached to a case or wall with an included screw and washer. The bracket can be used in either orientation allowing 3/8" or 1-1/2" centerline offset from the surface and may be bent easily for aiming. Aim through a small hole into a case or mount behind leaves, moldings or from the top edge of a tall case or bookshelf. Easy to hide.

ZDSP • FIBER-STEM SPOT LUMINAIRE ZOOM-AND-DIM SPOTLIGHT PENDANT

The spot may also be ordered as a pendant on black 1/4" dia. x .030" wall aluminum tubing in any length 6" to 72" long including fractional values. (Specify total length including spot luminaire.) Pendants can be bent in any shape



*Order a **ZDSP** pendant (followed by length of 6" to 72")*

Smooth, clean beams show every color.



Spots are ideal for mounting in concealed places. Hidden in cases where they can be mounted along inside corners, their 3:1 zoom makes them capable of everything from intense key lighting to subdued fill. Control is so exact that the small piece of coal here recovered from the *Titanic* site stands out from other anthracite specimens.



using a 6" radius with a tube bender. They can mount in any orientation, or bend to reach inside an artifact without touching it. Includes hardware for mounting.

MICRO-FOL MICRO-MINIATURE SPOT LUMINAIRES

ZOOM-AND-DIM MICRO-MINIATURE SPOTLIGHT WITH PURE-WHITE, STONE-COLD LIGHT



*For an aimable, repeatedly adjustable, infinitely versatile spot, order **ZDSA***

ZDSA • AZ-EL MICRO-FOL SPOT LUMINAIRE**ZOOM-AND-DIM SPOT WITH AZ-EL MIRROR**

The MICRO-FOL™ spot with an AZ-EL mirror swivel aims where eyeballs only dream to reach. Mounted through a ceiling, the mirror aims the beam to spotlight walls, objects or graphics. The unobtrusive black-backed AZ-EL mirror maintains the luminaire's near invisibility.

FEATURES:

- Maintains MICRO-FOL 3:1 zoom, 15° to 50°
- Stone-cold, pure-white light
- No UV, No IR
- 10-year warranty

Plus

- 360° azimuth aim around axis
- 45° to 90° off-axis aim
- 97% reflectance first surface mirror

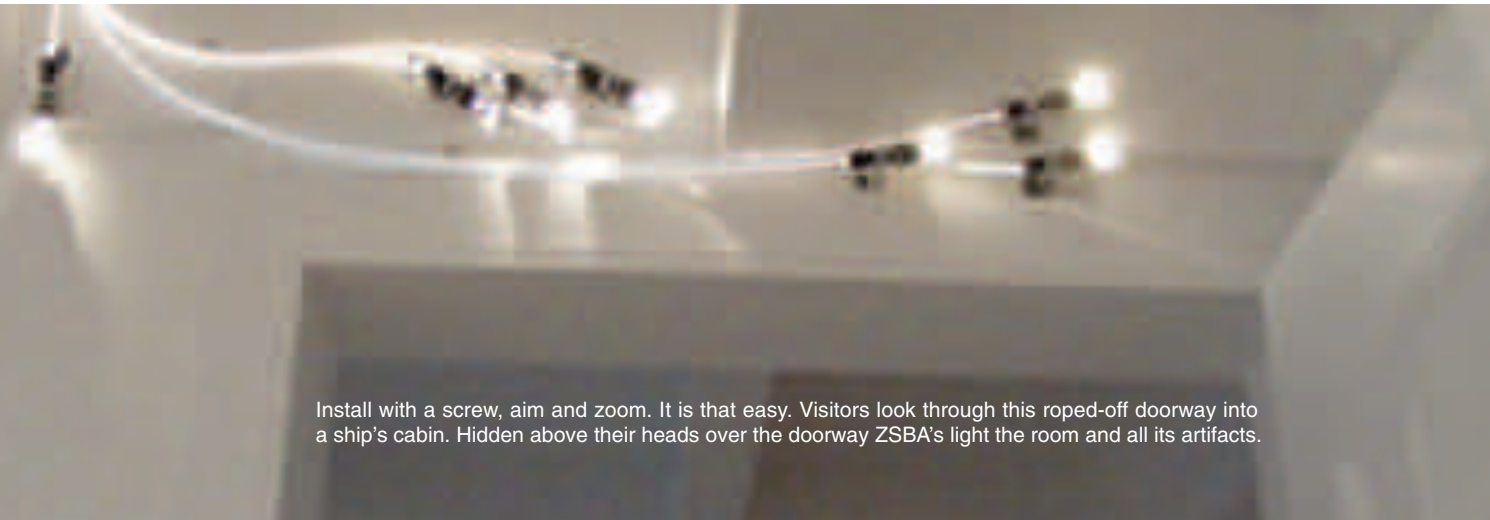
ZSBA • AZ-EL MICRO-FOL SPOT LUMINAIRE with Bracket
ZOOM-AND-DIM SPOTLIGHT WITH BRACKET AND AZ-EL MIRROR

With the AZ-EL mirror and a mounting bracket, the ZSBA MICRO-FOL is our most popular luminaire. The ZSBA spot can be tucked into corners and behind trim almost anywhere to provide illumination exactly where it is needed. The AZ-EL mirror allows the beam of light to be rotated 360° around the axis of the luminaire and aimed 45° to 90° off axis. This is a wonderful light



*MICRO-FOL Spot with AZ-EL mirror and bracket, order **ZSBA***

for display cases (proscenium arches) and diadems (light attics). Each luminaire can be individually aimed, focused and adjusted to a set light level. The bracket is bendable and adjustable, increasing the already amazing range of aim. Like all NoUVIR products, there is no UV and no IR, just pure-white, stone-cold light. Cases stay cool and clean. Artifacts are protected. And objects look terrific.

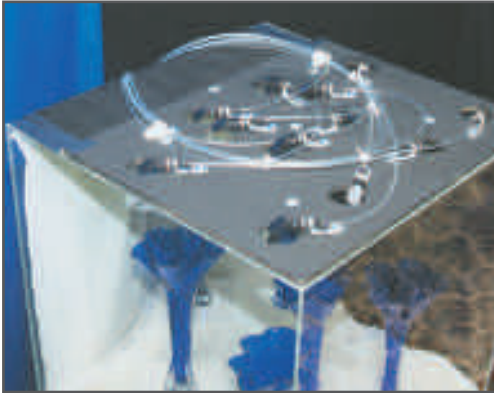


Install with a screw, aim and zoom. It is that easy. Visitors look through this roped-off doorway into a ship's cabin. Hidden above their heads over the doorway ZSBA's light the room and all its artifacts.

MICRO-FOL MICRO-MINIATURE SPOT LUMINAIRES

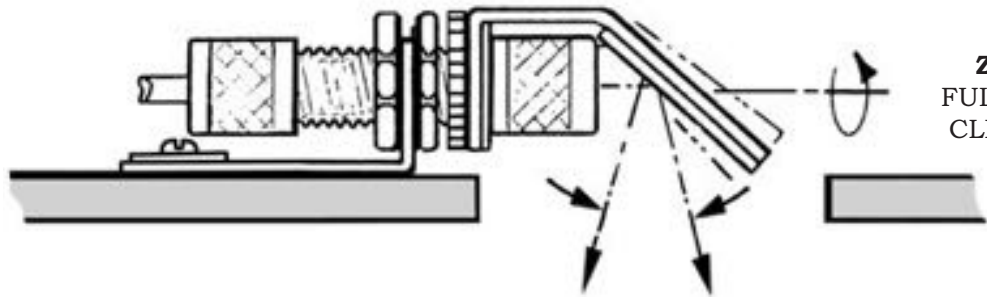
ZOOM-AND-DIM MICRO-MINIATURE SPOTLIGHT WITH PURE-WHITE, STONE-COLD LIGHT

ZSBAs provided lighting for a temporary exhibit at a university awards banquet. Existing acrylic cubes were fitted with black particle board tops with 2" diameter holes cut above the vases. ZSBAs were then mounted to the board where they could be



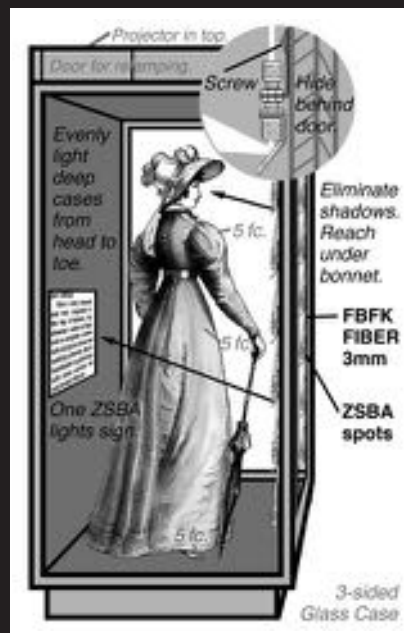
easily aimed and focused. Black felt concealed the fibers down the back of the case. The resulting diadem light attic was less than 1" high. Covered with a second layer of felt, the diadem disappeared. The ZSBA's lit the signed Tiffany vases inside and out. The awards glowed!

Like the flood, the ZSBA Spotlight can be aimed through a hole from an absolutely cool light attic only 1" deep



ZDSL
FULL SIZE
CLIP ART

MICRO-FOL spots with AZ-EL mirrors and brackets are perfect for mounting in concealed places. Used in cases where they can be mounted down the inside corners, they are fast to install and at hand to adjust. Along the top inside of a case's mullion, they do not need a light attic. The light mounts sideways and the mirror rotates the beam from the front edge of the case's floor to the top of the back wall and from side-to-side. Their beautiful 3:1 zoom makes them capable of everything from smooth lighting with highlights to intense key lighting. Spots can throw amazing shadows to display shape. A mixture of floods and spots will light almost anything.



MICRO-FOL MICRO-MINIATURE SPOT LUMINAIRES

ZOOM-AND-DIM MICRO-MINIATURE SPOTLIGHT WITH PURE-WHITE, STONE-COLD LIGHT



Order **ZSAP** with choice in length from 6" to 72"

ZSAP • AZ-EL FIBER-STEM MICRO-FOL SPOT LUMINAIRE

ZOOM-AND-DIM SPOTLIGHT WITH AZ-EL MIRROR PENDANT

NoUVIR's MICRO-FOL spot with the AZ-EL mirror may be ordered on a 1/4" dia. black aluminum pendant in any length from 6" to 72", including fractional values. (Specify total length including luminaire when ordering.) Against a dark background a ZSAP Pendant is almost invisible, but it provides a bright even white beam of light. Pendants can be bent in any shape with a minimum 6" radius and can be mounted horizontally as well as vertically. Pendant includes mounting hardware for 1/4"-28 threaded end.



Order **ZDST**. Note how dark the track is at the light source.

ZDST • FIBER-TRACK MICRO-FOL SPOT LUMINAIRE

ZOOM-AND-DIM SPOT FOR FIBER-TRACK & CORNER-TRACK

The ZDST is a MICRO-FOL spot with AZ-EL mirror on a clip that can be used in:

- **FIBER-TRACK™** - a 2" x 1-1/4" track (as shown)
- Recessed **T-BAR FIBER-TRACK** for lighting between ceiling panels
- **CORNER-TRACK™** - a fiber optic track designed specifically to hide in a 90° corner or light walls or staged items from the ceiling

Track-mounted luminaires are secure, concealed, and can be covered in the track with snap-on clear polycarbonate lenses. Luminaires can be moved, rearranged, and re-used over and over as exhibits change. Tracks are available in different colors. See Section 4 - Tracks.

ZSFT • FLAT-TRACK MICRO-FOL SPOT LUMINAIRE

ZOOM-AND-DIM SPOTLIGHT FOR FLAT-TRACK AND BANISTERS



Order **ZSFT**

The ZSFT is a MICRO-FOL spot with AZ-EL mirror on a clip to fit:

- **FLAT-TRACK™** - a low profile wide-angle track
- **FIBER-RAIL™** - 2" and 4" diameter bannister rail

See section 4 for Tracks and Banisters.



CORNER-TRACK seen here uses only 16 ZDSTs to light a famous motorcycle and its setting. Notice how the track disappears.

The motorcycle, not the background, is the center of attention. See the beams and shadows on the platform's floor? Now that's control.

SPHERI-FOL EYEBALL SPOT LUMINAIRES

MICRO-FOL™ ZOOM-AND-DIM SPOTLIGHT OPTICS IN A PRECISION-MACHINED EYEBALL

ZDEL • SPHERI-FOL EYEBALL SPOT LUMINAIRE ZOOM-AND-DIM SPOTLIGHT EYEBALL LUMINAIRE



A ZDEL SPHERI-FOL™ operated by one fiber and illuminated by one spot.

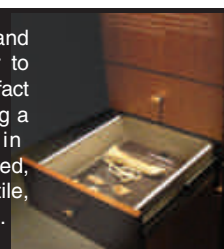
The ZDEL SPHERI-FOL™ spot eyeball is exquisitely designed. It uses a single standard fiber and has the identical optical character of a spotlight (3:1 zoom, 15° to 50°, with a clean beam and no UV or IR). In addition to these regular spot features, the ZDEL eyeball is fully sealed, can be aimed up to 30° off axis from above or below, and locked in place. Installed the ZDEL looks absolutely elegant with only a 1-1/4" diameter bezel ring visible. A favorite for cases, the ZDEL can be installed in a case top and completely aimed and adjusted from outside without opening the case.



Eyeballs in the deck's ceiling light typical 1800's cargo in the bow of an interactive gallery on steamships.



From signed footballs and helmets in a sports bar to beautifully lit pull-out artifact drawers, to safely lighting a staircase, to lighting in areas that can be touched, eyeballs are a versatile, tamper-resistant solution.

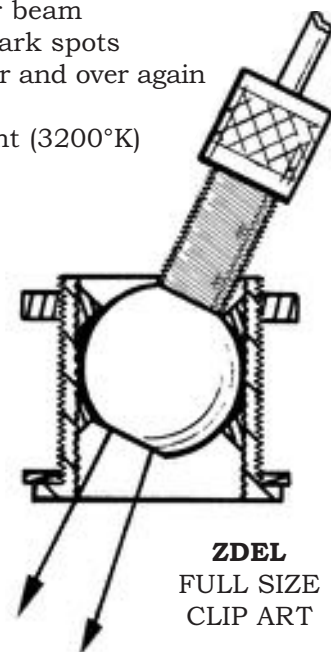


FEATURES:

- Even, 3:1 zoom from a 15° to a 50° beam
- Aimable up to 30° off-axis
- Uniform, perfectly circular beam
- No halos, aberrations or dark spots
- Locks and unlocks aim over and over again
- Completely sealed
- Stone-cold, pure-white light (3200°K)
- No UV, No IR
- 10-year warranty

SPECIFICATIONS:

- 1" diameter body
- 1-1/4" O.D. bezel
- Powered by one 3mm (1/8") fiber
- Externally threaded for simple mounting
- Mounting nuts and neoprene seal included
- knurled FIBER-LOCK™ locks adjustment of the fiber



ZDEL
FULL SIZE
CLIP ART

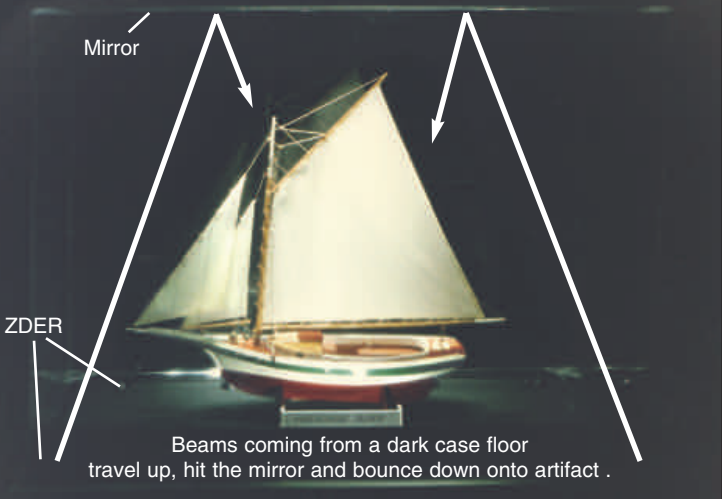
SPHERI-FOL EYEBALL SPOT LUMINAIRES

MICRO-FOL™ ZOOM-AND-DIM SPOTLIGHT OPTICS IN A PRECISION-MACHINED EYEBALL

ZDER • REFLEX SPHERI-FOL EYEBALL SPOT LUMINAIRE ZOOM-AND-DIM SPOTLIGHT EYEBALL REFLEX LUMINAIRE

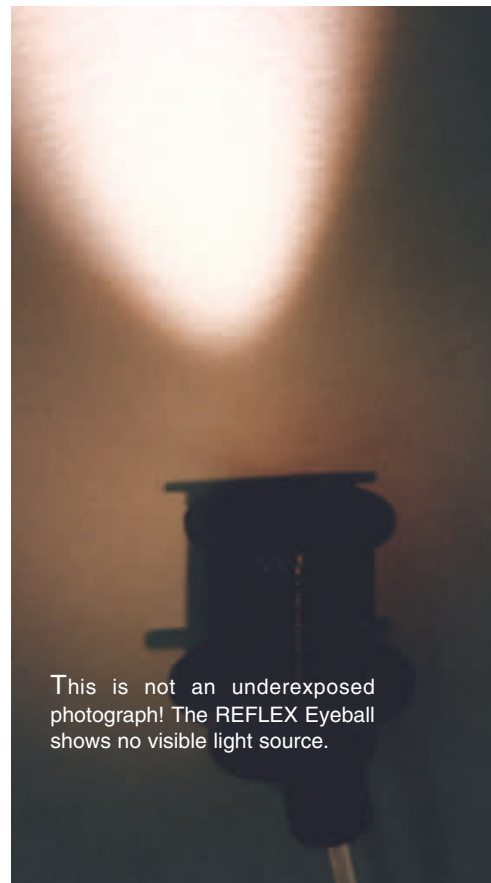
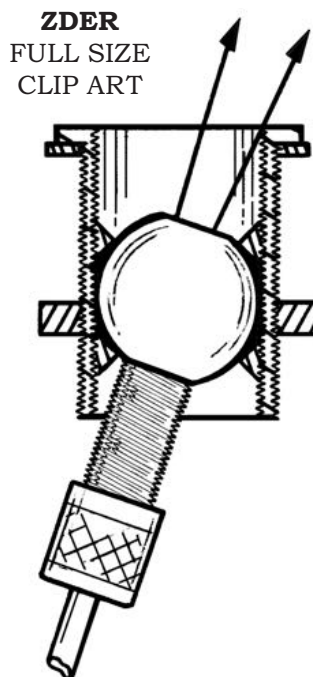
With a lower aperture socket, the Reflex Eyeball aims 15° off-axis through a much deeper hole that hides the beam's source. It works well in a ceiling sacrificing aiming ability for more concealment from odd

In an extreme example, a reflex case disappears in a dark room, but magically lights a ship model's every detail.



the beam pointed up to reflect off of a mirror set upside down on the top the acrylic bonnet. A reflex case looks like a pedestal case with an acrylic cube top. The mirror sitting on the top is hard to see with the eye. It turns gray, because of the lighting angles. But the artifact glows as the case is lit inside by reflection. The artifact is magically lit with no visible light source. This design can make cases into beautifully lit, stand-alone islands in a gallery.

viewing angles. Perfect for dioramas, stairwells or tunnels, it is designed to be mounted in the deck or floor of a vitrine case with



This is not an underexposed photograph! The REFLEX Eyeball shows no visible light source.

Order **ZDER** for reflex version

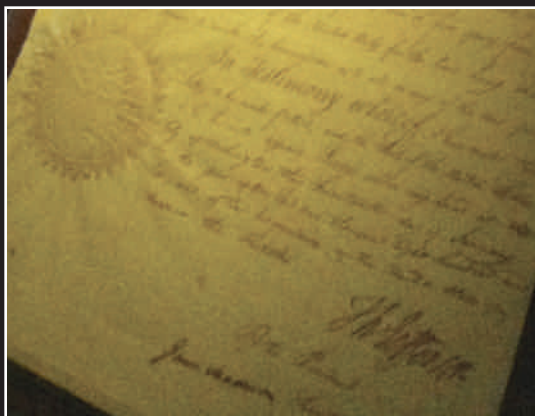


Order **LNSA**

LNSA • SPHERI-FOL AZ-EL LONG-NECK SPOT LUMINAIRE

LONG-NECK SPOT WITH AZ-EL MIRROR

The LNSA is designed for applications where you are locked outside a case, but you need precise aim and focus of a beam 90° to the nadir axis. The LNSA beam can be aimed up to 30° off axis, rotated 360° around the axis and zoomed smoothly from a 15° spot to a 50° conical beam *after a case is sealed and secured*. Like all eyeballs, the SPHERI-FOL LONG-NECK will lock and unlock its aim. The unique combination of an eyeball swivel with a rotating mirror gives it reach into hard to light places. The mirror can be removed to cover shallower angles. Its long neck makes grabbing the light from either side of its mount easy to adjust by feel much like NoUVIR's bracketed luminaire. But it is automatically sealed mounted through a hole. Case designs require more space to handle the swivel feature and leave room for the fiber to swing, but some museums like this light so much they use it when there are no access issues. The unusual design also comes also in a popular pinspot version.



Each projector can power 32 fibers and 32 luminaires. That does not mean each fiber has to be used in the same case, installed the same way or even used in the same luminaire.

This very rare document is lit with ZDEL eyeballs mounted both above and *in the floor of the case*. The lights below, on their own projector, aim up through the hollow column and transilluminate the paper to show its watermark, seal and chain-marks. ZDEL Eyeballs mounted above and on a second projector provide conventional lighting of the document.

Additional ZDEL eyeballs cross-light the case floor. The area becomes a perfect stage for exhibiting artifacts from the period, but still lets the document and the portrait dominate. With no scatter or spill, the document is dark unless illuminated from either above or below.

LBBA floods with azimuth-elevation mirrors provide steeper off-axis lighting angles for the historic painting. Each mirror will swivel 360° on its axis, and aim the beam up and down on the back wall of the case. Adjusting beam size also adjusts its intensity so the painting can be evenly lit top to bottom at the same footcandle level.

In the back of the case lined against the wall, each CLDN-HP projector (page 5-3) and its power supply is mounted on its side. The pans are screwed to the wall of the case. The space is well vented. A door allows access to the slide-out-drawer for changing lamps.

An AIR-SAFE System mounted in the bottom of the case, maintains a constant internal humidity level, stops air exchange with the gallery and filters and chemically cleans the air in the case every 72 hours.

This case uses less than a dozen fibers (11 luminaires). Since it holds three projectors, there are 85 fibers that could be used to light other documents, cases or artifacts in the gallery in this historic building.



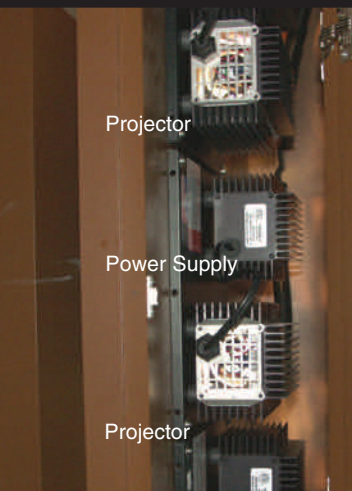
ZDEL Eyeballs in the case ceiling light the document conventionally.

LBBA Flood with AZ-EL Mirror

ZDEL Eyeball

ZDEL Eyeballs light case floor for future artifacts.

ZDEL Eyeballs in the case floor aimed up the column transilluminate the document.



Projector

Power Supply

Projector

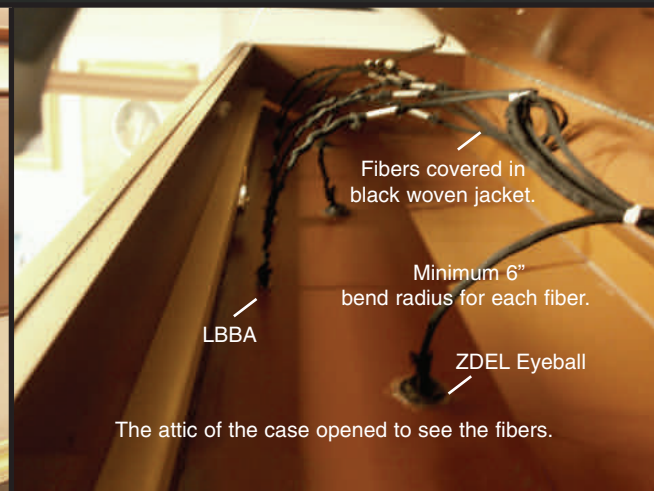


LBBA Flood

AZ-EL Mirror

ZDEL Eyeball

The ceiling of the case looking up.



Fibers covered in black woven jacket.

Minimum 6" bend radius for each fiber.

LBBA

ZDEL Eyeball

The attic of the case opened to see the fibers.