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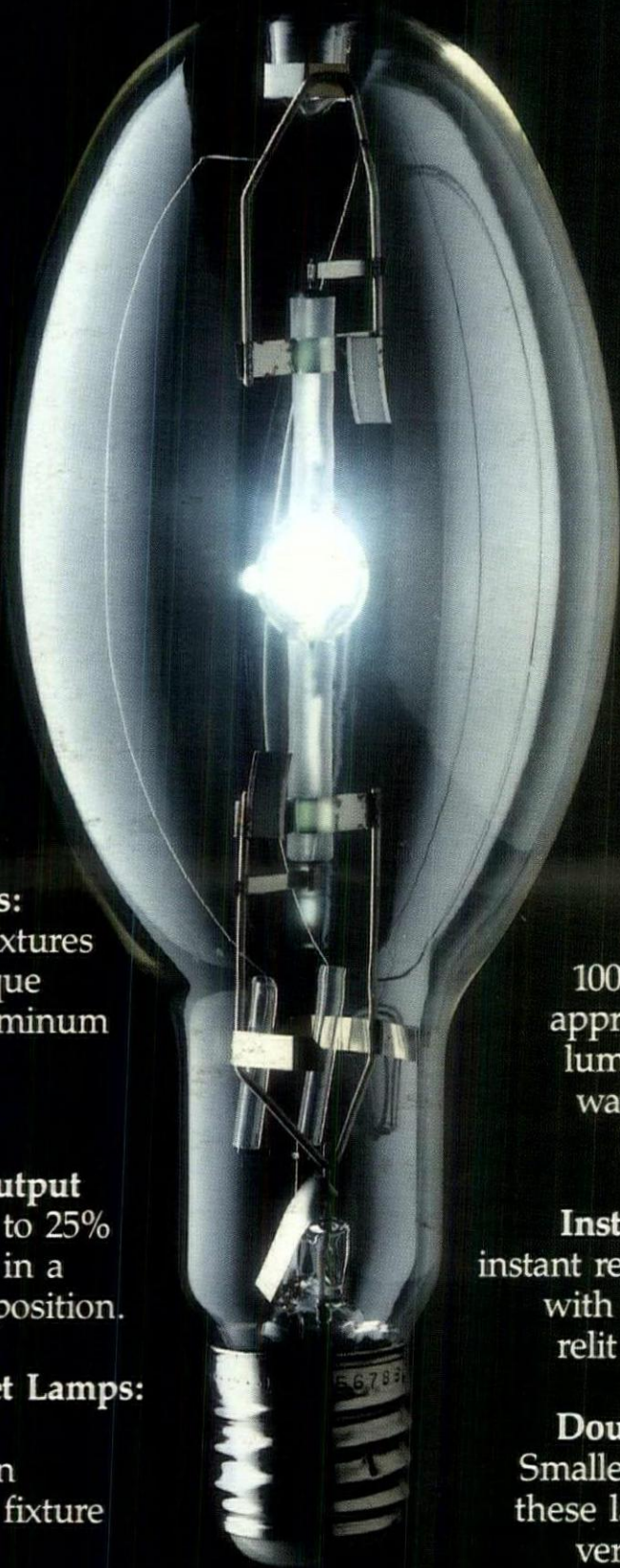
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# SHOWCASE

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**Associate Publisher** Michael Aster

**Editor** Charles Linn, AIA  
**Associate Editor** M. Jane Ganter  
**Senior Assistant Editor** Gareth Fenley  
**Assistant Editor** Susan Degen  
**Editorial Assistant** Mike Heffley

**Art Director** Lee Eide  
**Production Manager** Stephen Roberts  
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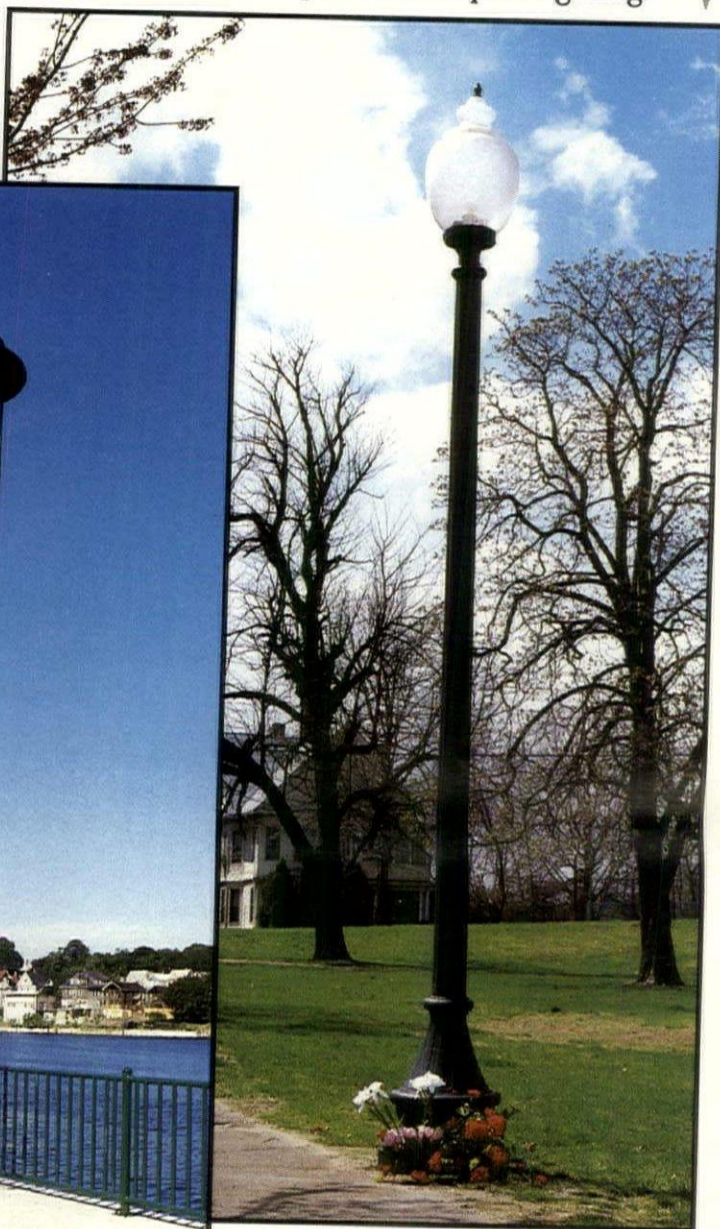


*The Designer's*

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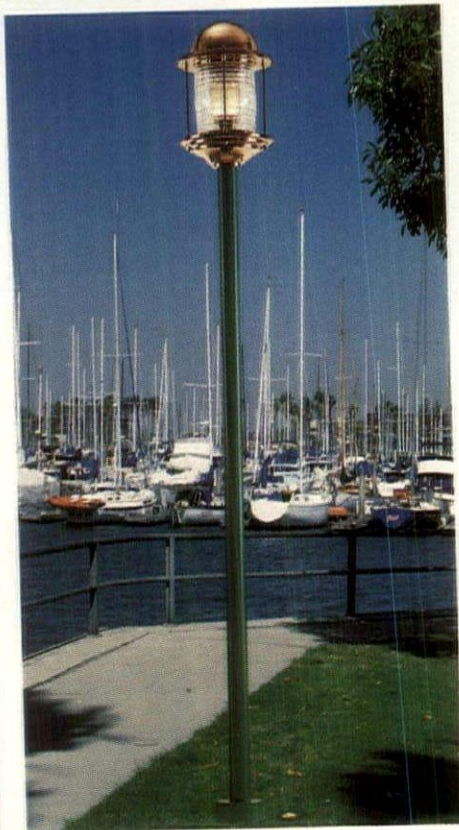
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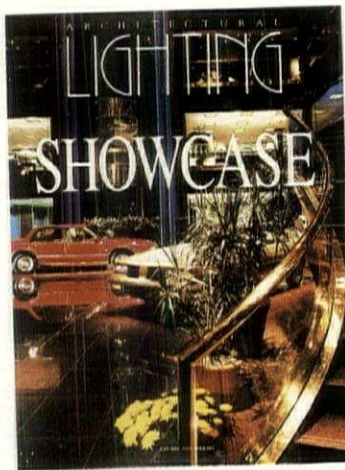
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## From the Editor



Despite the flood of complaints we received about the dimensions of last July's *Showcase* issue, you have in your hands yet another oversized issue. And I know what a lot of you are asking yourselves. You're asking yourselves, "How can this be?"

I know some of you are asking that question because about 0.4 percent of you complained that the July issue was too big. Only about 0.1 percent of you wrote to say it was great. Why, pollsters call presidential elections on smaller samples than that! On the basis of that "poll," the July *Showcase* issue was a flop. And I want you to know that when an issue is a flop, we *really* start thinking about it around here. Those of us who put out this magazine are constantly reminded that if we fail to listen to our readers, we're history! Back to the drawing boards for me after a brief, tragic, uncelebrated publishing career. And I know most of you can imagine how horribly frightening *that* would be.

After the complaints slowed down, the Reader Service Department had some good news for us. They'd tabulated how many reader service numbers you circled on those cards in the back of the magazine. Complaints aside, that's a pretty good indicator of how useful the magazine is to our readers; and guess what? You circled an all-time record number of numbers, exceeding all previous requests for product information by about 25 percent. Despite the reactions of those who responded like we'd printed the darned magazine on a 4-by-8 sheet of particle board, an awful lot of folks got a lot of good out of it.

In retrospect, I know the source of some of the turmoil came from folks who didn't read my June editorial, which warned of the impending *Showcase* issue. Some of them apparently decided we'd irrevocably altered the format of the magazine for all time. We wouldn't do that! Not for all time. But, I will take this opportunity to tell you once again that this is *not* the last time you'll get a larger-than-life copy of *Architectural Lighting*. Another one will be coming out next July.

Oh. One more thing. Next month we'll be back to our regular size, okay?

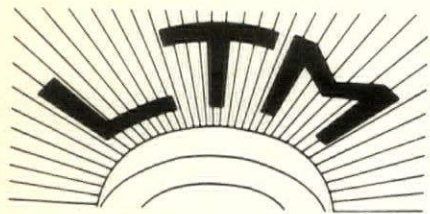
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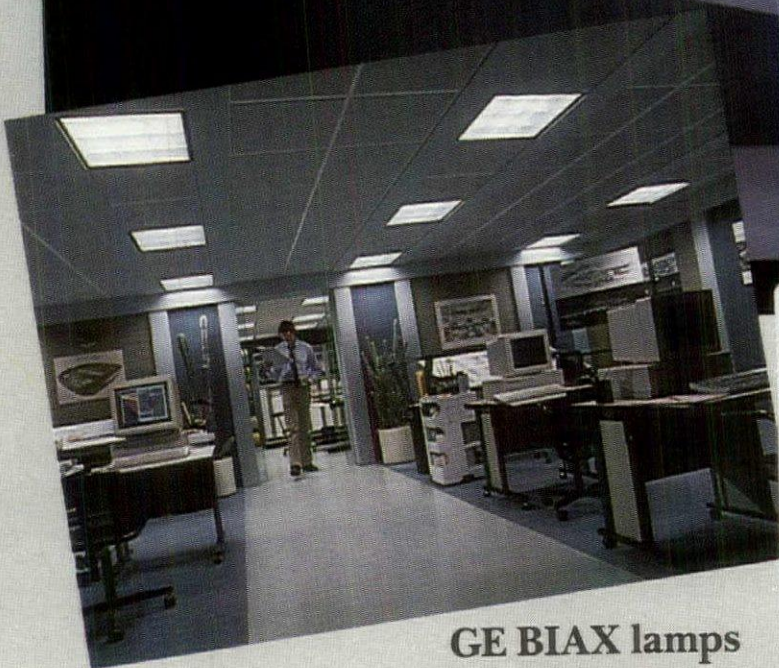
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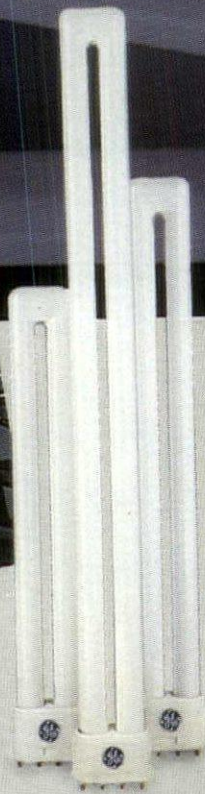
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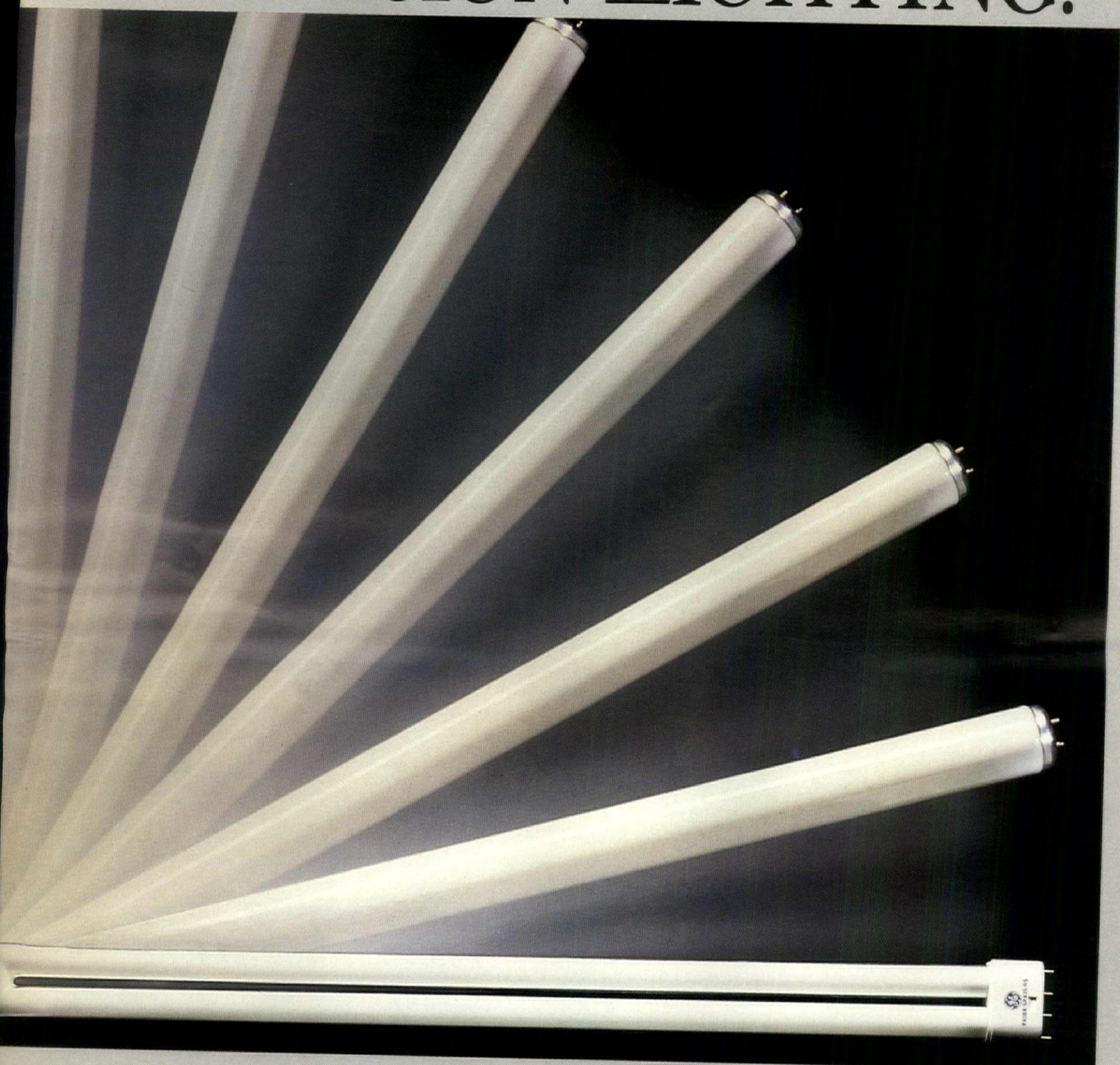
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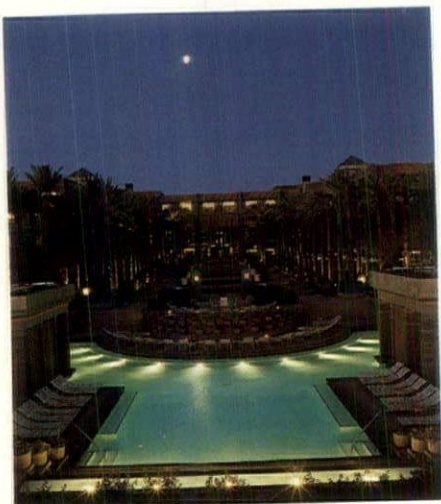
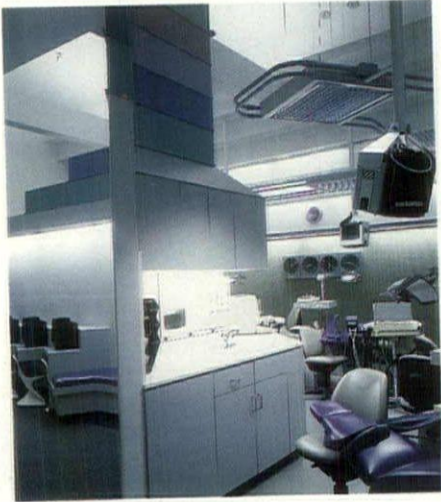


**GE Lighting**

ARCHITECTURAL  
**LIGHTING**

**SHOWCASE**

December 1988  
Volume 2, Number 12



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**Track and Accent Lighting**

12 Light accents space where action, events take place *C. Linn*  
14 Track and accent lighting products

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**Ambient Lighting Systems**

22 No black holes at kids' intergalactic dental station *C. Linn*  
24 Ambient lighting system products

---

**Components and Accessories**

28 Lighting lab takes the guesswork out of lighting design *M. Heffley*  
34 Components and accessories

---

**Decorative Luminaires**

38 Today's fixtures: Good-looking and can cook, too *S.E. Huey*  
40 Decorative luminaires

---

**Landscape and Area Lighting**

48 Variety of lighting effects make resort landscape exciting *G. Fenley*  
50 Landscape and area lighting products

---

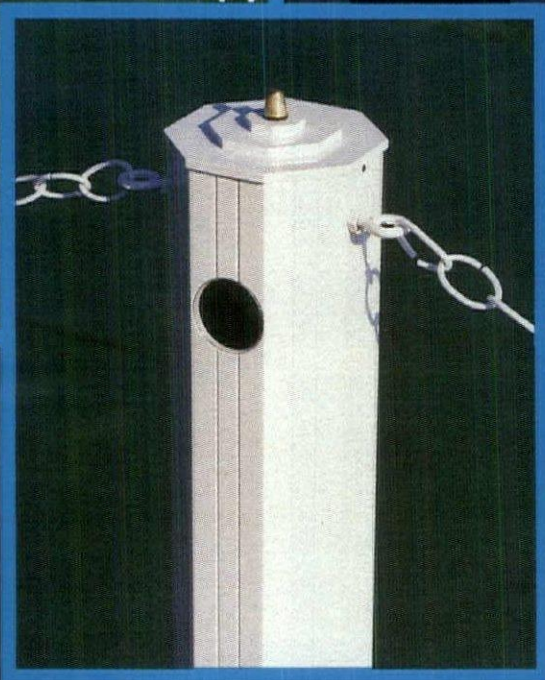
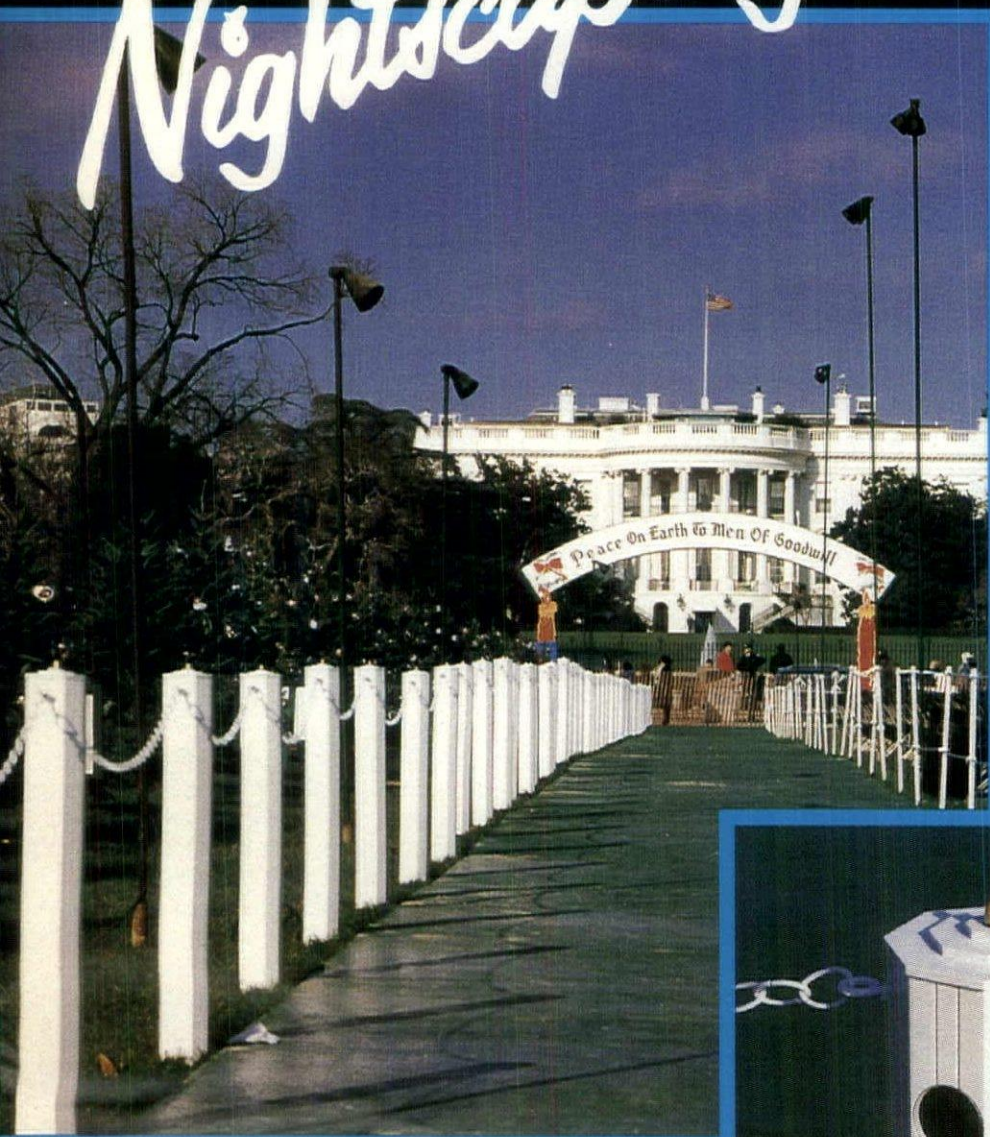
**Departments**

6 From the Editor  
59 Product Literature  
61 Classified Directory  
62 Manufacturers  
62 Photographers  
62 Advertisers



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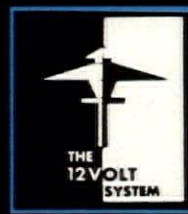
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TRACK AND ACCENT LIGHTING

# Light accents space where action, events take place



"Lighting was only one of many things we considered when making plans for the renovation of the Cathedral of the Incarnation," says architect Elizabeth Thompson, "but it was very high on our list of priorities because everyone agreed it was difficult to see in the building. Members of the parish had noted they couldn't read the hymnals. Also, the architectural detailing of the ceiling and structure was almost invisible." Architects from Gobbell Hays Partners, parish priests, parishioners, and a liturgical consultant spent nearly a year working on a master plan before renovation work began late in 1986.

The renovation commenced in anticipation of the Diocese of Nashville's sesquicentennial this year. The cathedral was originally completed in 1914, and its last major renovation was in 1937, prior to the diocesan centennial. "The first thing we did," says lighting designer Ray Mullican, "was go into the nave of the church in the middle of a clear August afternoon and take some measurements. With all of the electric lighting on, the amount of light at hymnal height averaged about 4 foot-candles.

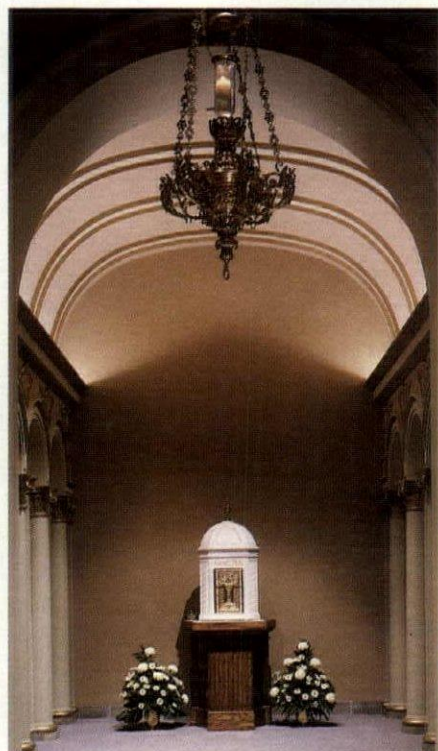
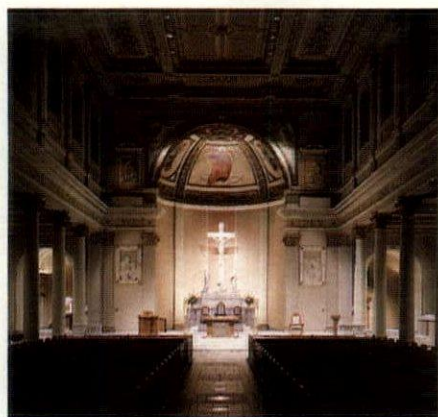
"The existing electric light was provided by 16 cylindrical glass incandescent pendant fixtures, each consuming between 1000 and 1500 watts. These were installed in the 1937 renovation, replacing four large electric chandeliers. We were very careful on that August afternoon to measure directly beneath the pendants, as well as between them, and there was no significant difference. The lighting was very diffuse and very omnidirectional, so there was no modeling on either the magnificent ceiling or the Stations of the Cross."

For illumination of the nave ceiling, as well as the indirect lighting of the nave itself, 250-watt warm deluxe metal halide uplights were installed atop the ledge formed by the Latin-inscribed entablature, two beneath each clerestory window. "The uplights are off during the daylight hours nine months out of the year, but for late afternoon services or when it's really dark and overcast outside, half of the uplights can be switched on. For night services, of course, all of the uplights are switched on," says Mullican. Where downlighting was required, ornamental plaster rosettes — which occurred at regular intervals in the ceiling — were cut out and replaced with fixtures. "Because little daylight penetrates the colonnade that separates the side aisles from the nave, downlighting was required here. One row of quartz ellipsoidal downlights over the side aisles near the colonnade augments the daylighting and provides light for reading during night services. A second row of PAR 38 recessed, adjustable wall washers is used to provide one accent light and one fill light for each Station of the Cross, to get some modeling and rendering of these sculptures.

"The remainder of the downlighting in the nave is for liturgical functions and emphasis on architectural features. The altar has been accented. That space would be the focus for either a wedding or a funeral; it's the location of the bishop's chair for special services, and so on. Basically, all of these fixtures are tied into a preset dimming control system," says Mullican. "All the priest needs to know is what service he's performing — say for a wedding, he comes in and presses the button for 'wedding' — and the lights are either raised in intensity or dimmed to nothing until the setting for that service is achieved.

"Basically, with the associate parish priest, Father Klasek, we've gone through all of the different services that the priests perform to identify the appropriate light levels, identifying the primary, secondary, and tertiary liturgical objects and assigning light levels

*Stations of the Cross (top left) are illuminated by two wall washers, one for fill light, the other for accent light. Light levels for different services (middle left) are set by touching a button on a preset lighting controller. In a small side chapel (bottom near left), the color of 3000K fluorescent lamps resembles that of incandescent lamps used elsewhere in the cathedral. Metal halide uplights, concealed on the ledge just above the Latin inscription, illuminate the beautifully detailed cathedral ceiling (top right) when light from the new clerestory glazing is insufficient. Accent lighting focuses attention on various parts of the cathedral for various services.*



**Project:** Cathedral of the Incarnation  
**Location:** Nashville, Tennessee  
**Architects:** Gobbell Hays Partners; Elizabeth Thompson, AIA, project manager  
**Lighting Designers:** Mullican-Dunn Associates; Ray Mullican, AIA, project lighting designer  
**Art Glass Window Designer:** Kenneth vonRoenn, Jr.  
**Liturgical Consultant:** Richard S. Vosko, PhD  
**Photos:** Rion Rizzo/Creative Sources Photography

to them. For instance, the baptismal font just has a soft glow on it during most of the services. But for a baptism, obviously it is the focus, and the other end of the cathedral goes dark."

The color of the lighting was also influential when the ceiling was repainted. "The painters were very special 'old world' sorts of people," Mullican says. "Angelo Gherardi and his crew, of Daprato-Rigali Church Interiors, specialize in this sort of renovation. To them, the words 'metal halide' were completely unfamiliar. The last thing we wanted was for them to select colors under the quartz lights they originally started out using! Finally, we got some samples of the fixture we'd be installing under the clerestories for them to use as their painting lights."

#### Daylighting Considerations

Another alteration of the original structure during the 1937 renovation affected the lighting dramatically: the replacement of clear prismatic glass in the clerestory windows with "dark yellow glass, the color of brown mustard. Our measurements showed the glass had only 10 to 12 percent light transmittance," notes Mullican. "Parishioners who still remembered the 1937 renovation say the motivation for replacing it was twofold. First, there was glare. As one faced the front of the sanctuary, the direct sunlight caused vision and glare problems. The second problem during the summer months was that wherever the sun penetrated, the heat gain was just incredible. So they solved the problems *too well*, and lost all the daylight.

"The evolution of clerestories in this building type was really related to allowing daylighting very evenly into the building. It seemed silly not to look at daylighting as a strategy for getting more light into the building, particularly with the cost of running the electric lights continually. Using overcast winter skies as our base case, British Research Station Protractor Method calculations showed that with 70 to 80 percent transmittance in the new glazing, we could get 12 to 15 foot-candles in the nave at hymnal height. That's still not a lot," says Mullican, "but it's three times more than they had.

"With this information, we started working with Kenneth vonRoenn, Jr., who designed the windows. We gave him two performance criteria. First, whatever he designed had to have at least 70 percent light transmittance. Second, the windows had to intercept the shaft of sunlight at the window plane and completely diffuse it."

VonRoenn's design for the windows consists of a grid formed by rectangles

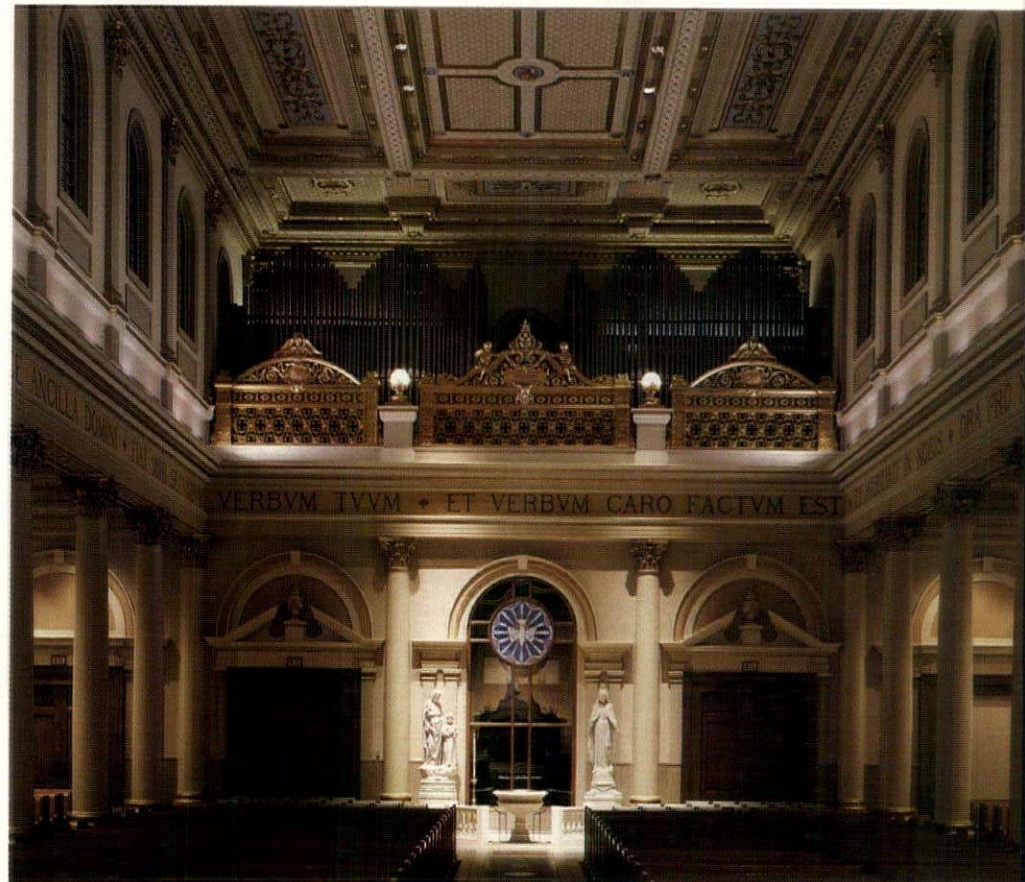


of cobalt blue glass and clear glass prisms. This grid frames square panes of glass; some are sandblasted, and the balance have a floral pattern made of a heat-fused glass paint, applied by a photo-silk screen process. The design is apparently successful, as Mullican says, "The new glazing really does a terrific job of diffusing the light, so the windows do not appear as a series of bright apertures that cause visual discomfort at all.

"The day- and electric lighting design of the cathedral works together to satisfy its users' needs on many levels," says Elizabeth Thompson. "The daylight levels have been increased dramatically, and the electric lighting does a wonderful job of bringing out the building's architectural features. It's very easy for the people to operate as well."

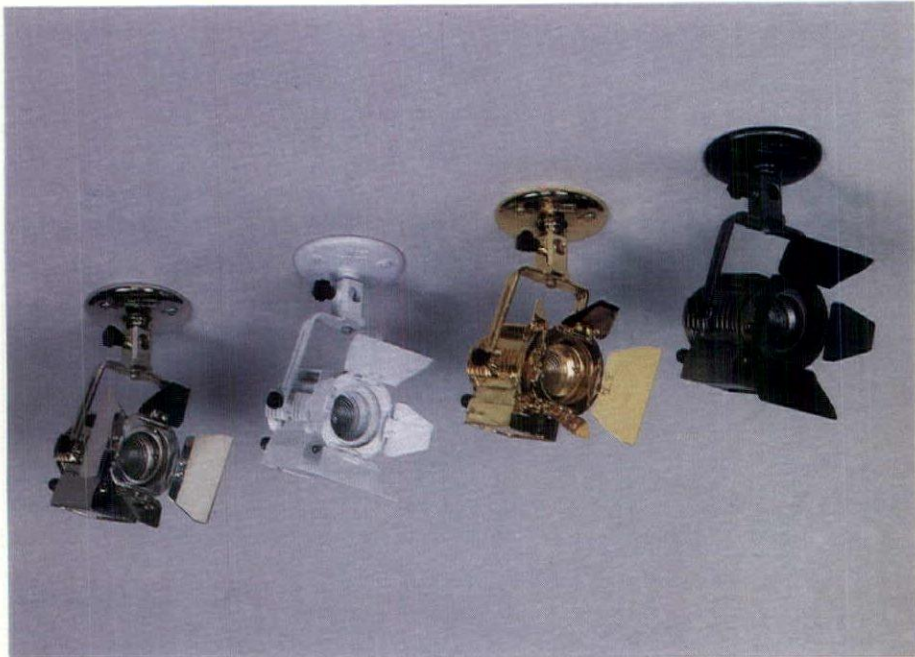
— Charles Linn, AIA

*For product information, see Manufacturers on page 62. Products for track and accent lighting are displayed on pages 14-21.*



# SHOWCASE

## Track and accent lighting



### ■ Fresnel-lensed fixture

LTM's Pepper 150 is smaller and cooler than conventional Fresnel-lensed track units. It is about the size of a fist and can be used to introduce a theatrical element into architectural lighting design. Barn doors and snoots allow for precise highlighting. With its combination of spherical reflector, point light source, and prismatic Fresnel lens, it

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Circle 60



### ■ High-intensity pin spots

Fixtures in the Lighting Services 30 series of low-voltage pin spots use less power to deliver concentrated beams and do it with less heat buildup than standard-voltage fixtures, according to the manufacturer. The spots use sealed-beam PAR 46 lamps that are powered through a transformer by 5<sup>1</sup>/<sub>2</sub> volts. Available options include dimmers, integral on-off switches, glass color filters, spread lenses, and light-blocking screens. Lighting Services Inc., Stony Point, NY.

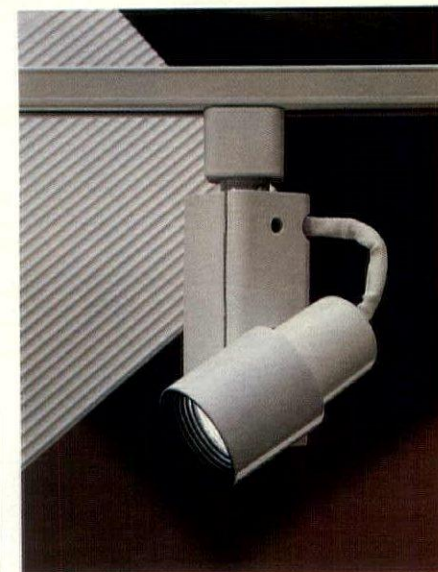
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### ■ Changeable-lensed track head

Halo Lighting offers a solid-state track lamp holder that will accommodate two lenses, allowing users to shape light with a linear spread lens or use a dichroic color filter. Other lens options include soft focus and diffuse spread. Users can exchange lenses without removing the lamp. The low-voltage fixture uses 42- or 75-watt MR16 lamps and can run in one- or two-circuit track. Halo Lighting, Elk Grove Village, IL.

Circle 62



### ■ Low-voltage track head

A low-voltage track fixture from Halo Lighting accepts the smallest or one other MR11 source in narrow spot, spot, and narrow flood configurations. It is designed for one- or two-circuit track to use where heat, color, and light spill are considerations. The fixture comes in white and matte black finishes. Halo Lighting, Elk Grove Village, IL.

Circle 63

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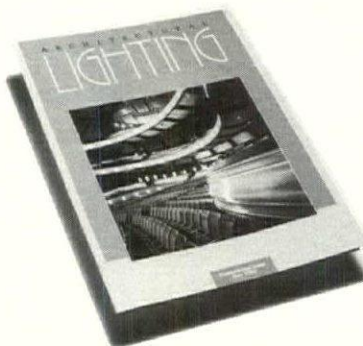
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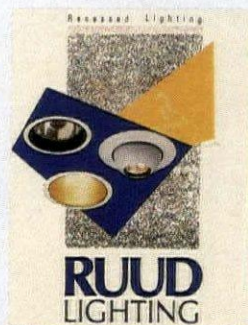
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Circle 12

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City \_\_\_\_\_

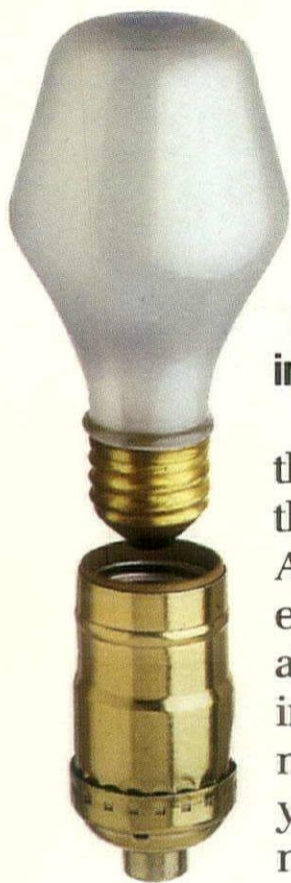
State \_\_\_\_\_

Zip \_\_\_\_\_

Business \_\_\_\_\_

Phone \_\_\_\_\_

# How many Sylvania take to change



**This is the light bulb that changed the face of lighting. Sylvania Capsylite®—the first commercially successful tungsten-halogen bulb that fits into ordinary light bulb sockets.**

Chances are you're reading this ad by an ordinary bulb that has a few shortcomings. An ordinary light bulb, for example, begins to lose light almost as soon as you screw it in. An ordinary bulb eats up more money in energy than you need to pay. An ordinary bulb will go "poof" sooner than it needs to.

The shortcomings of ordinary bulbs led Sylvania engineers to invent a better light bulb. They used their expertise in tungsten-halogen technology. The result?

**Capsylite.**

Already, it's changed the face of lighting in lots of places—hotels, restaurants, schools and stores. Architects, engineers, designers all have recognized its virtues. There are so many, where do we begin?

**These men managed to give Capsylite bulbs 3500 hours of light while maintaining brightness longer.**

To begin with, Sylvania engineers

didn't leave well enough alone. They made sure Capsylite bulbs maintain practically all their lumens for virtually the entire life of the bulb (unlike an ordinary bulb).

And speaking of life, Sylvania engineers made Capsylite bulbs last 40% longer than the typical long life incandescent. 3500 hours. That means an extra thousand hours of life and a big cut in replacement costs.

And, Capsylite bulbs save energy. A lot of energy. The savings range (depending on the wattage) from 19% to 31%. Based on a utility rate of 8¢ a kilowatt hour, that means you can save \$7.84 in energy on a 72 watt





# engineers does it a light bulb?



Capsylite bulb over an ordinary  
100 watt incandescent bulb!  
Almost \$8! Per bulb!



In fact, although  
Capsylite costs a little  
more, when you  
consider your

energy savings plus maintenance  
savings, you're getting returns  
on your investment as high as  
800% (and you thought a bulb  
was just a bulb).



**Sylvania offers you the broadest  
line of halogen capsule lamps. And our  
family keeps growing.**

Now think of how many bulbs you use  
in your office or factory or hotel or store.  
The money you can save with our wide  
range of Capsylite lamps boggles the mind.  
They make efficiency experts ecstatic.  
Capsylite light makes sense.  
Pure and simple.

There's something else pretty spectac-  
ular about Capsylite lamps. Color. Capsylite  
lamps give off a whiter, more natural light  
than ordinary incandescent sources. They  
make colors look truer. Interiors become  
more appealing. Merchandise sparkles.  
And people look better. Amazing isn't it?  
Consider this: lighting over 1 million  
square feet of public space. Whew. That's  
just what the Riviera in Las Vegas has to do  
every single day and all night long.

**The Riviera Hotel and Casino bet on  
Sylvania and won big.**

When the ante kept going  
up on energy costs, the  
Riviera threw in their  
chips with Sylvania. The  
results? By switching to  
Sylvania Supersaver  
Fluorescents and Capsylite  
lamps, the Riviera is saving  
about \$85,000 a year in light-  
ing costs alone. That's a load  
reduction of 357 kilowatts.



**We offer more energy saving lighting  
and best of all it's made right here.**

The fact is that Sylvania engineers have  
helped lead the way in  
lighting for the last decade.



With more energy saving  
lamps than anyone else in  
the world. With innovations  
that the lighting industry  
has welcomed, embraced and is using. With  
the most technologically advanced lamps  
you can think of. And we'll keep doing it.  
Because Sylvania engineers are obsessed  
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D&amp;L—Crystal Mall, Waterford, CT

General Electric Edison Award Competition

## LIGHT turns on PRIZE WINNERS



National Mall Monitor Award (over 20,000 sq. ft.)

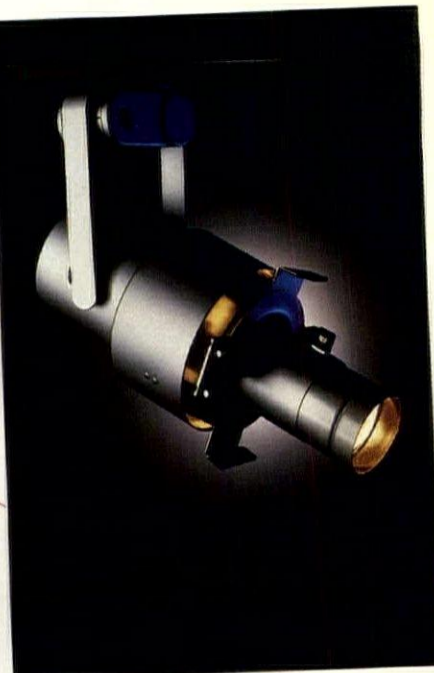
Crawley's—Tel Twelve Mall, Southfield, MI



National Mall Monitor Award (2,000 to 10,000 sq. ft.)

**LIGHTING THE IMPORTANT STORE... AN ART IN ITSELF**  
Enhancing the architectural environment and providing the proper lighting system for the ultimate in visual merchandising. It takes the total commitment of the entire design team. Again, Omega shows the ability to help create the exciting shopping experience.

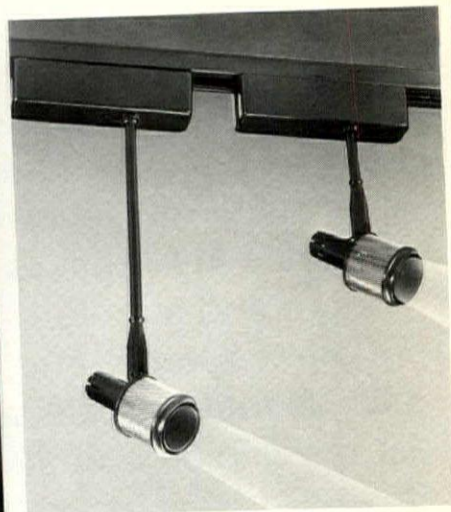
OMEGA  
the lighting specialist for the architectural interior.



### ■ Indoor floodlight

The Q-250 indoor floodlight from Lighting Services is a compact, adjustable, wide-beam fixture for miniature halogen sources. It can be used with the manufacturer's Q-Lens Beamshaper, which defines objects by circles or rectangles of soft- or hard-edged light. An anodized reflector produces a wider, brighter beam than that of standard PAR and R floodlights, according to the manufacturer. Lighting Services Inc., Stony Point, NY.

Circle 64



### ■ Cool track light

Micro/Lyte 911 track fixtures from Con-Tech Lighting are compact air-cooled units that use MR11 lamps. Each fixture has a stainless steel mesh housing that acts as a heat sink and back slots that let air flow over the socket, so that each unit is cool enough to adjust manually. The transformer comes with an RFI filter and an on-off switch. The track lights are suitable for commercial and residential use. Con-Tech Lighting, Northbrook, IL.

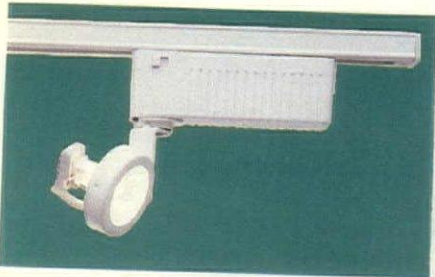
Circle 65



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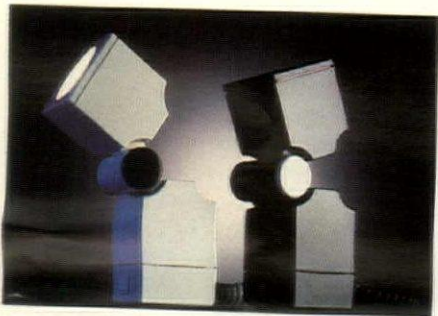
Circle 14



**MR16 track light**

The MR16 Gimbal Ring from Ruud Lighting is a compact fixture made for a lamp up to 75 watts with any beam spread. A cutoff baffle and optional filters and lenses are available. The unit comes in four finishes. Ruud Lighting, Inc., Racine, WI.

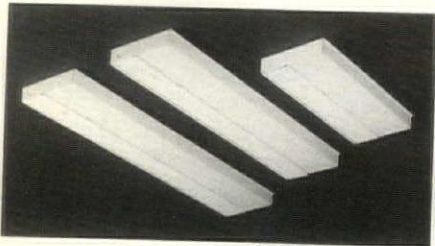
Circle 66



**Task light**

The MRXG task light from Lighting Services is a freestanding low-voltage fixture with a weighted base. It can be placed on a horizontal surface, such as a desktop or shelf, to illuminate vertical surfaces, such as wall hangings and paintings. It comes with an adjustable, self-locking swivel for the beam, integral on-off switching, a non-tangle coil cord, and optional filters and screens. The all-metal, die-cast unit accepts MR16 sources from 20 to 75 watts in all beam spreads. Optional features include glass color filters, louvers, screens, and museum-quality UV-blocking safety glass. Lighting Services Inc., Stony Point, NY.

Circle 67



**Under-cabinet fluorescent**

The Slight Lite from LaMar Lighting is a 1 1/8-inch deep under-cabinet light intended for use where space is tight — over counters and in display cases, for example. The fixture is made of heavy-gauge steel with a white finish and is available in five lengths from 12 1/4 to 42 1/2 inches. Lamps and mounting hardware are included. LaMar Lighting Co., Long Island, NY.

Circle 68



## Shed new light...

... with CON-TECH'S 12-volt track lights for superb color rendition and efficiency for home, commercial or institutional, high-accent lighting.

Choose HY-TECH lamp-holders or choose from round or flat back cylinders, Elite step cylinder, sphere or classic bell shapes in white, black or brass finishes. All have designer styling and a deep baffle for extra eye comfort.

One LA-2075 (120 volt to 12 volt) voltage converter fits all lights, so there's less to order and stock.

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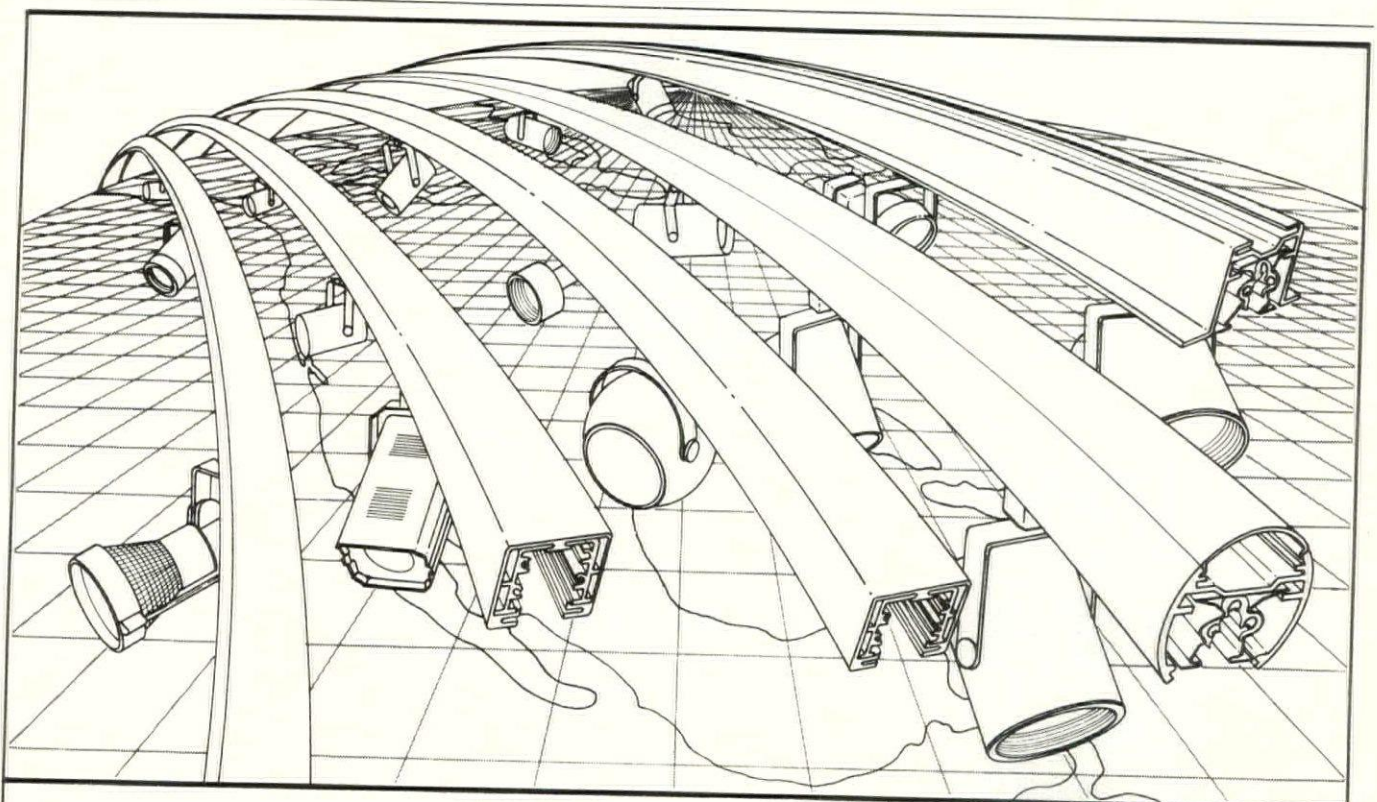


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Using MR-11 Lamps  
Are A Breakthrough  
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Circle 15



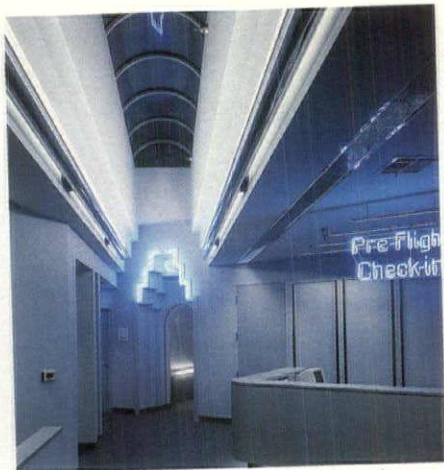
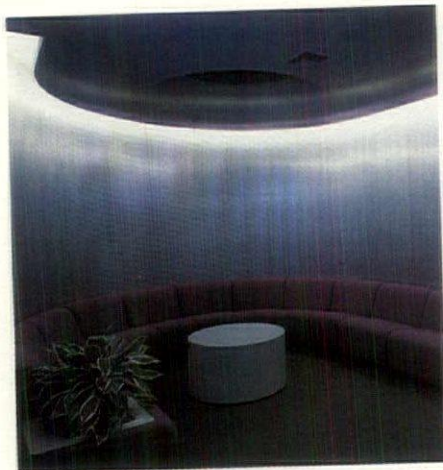
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**Fashions the world around us.**  
20, 30 & 60 Amp Accentrak Systems.

Circle 16

## AMBIENT LIGHTING SYSTEMS

# No black holes at kids' intergalactic dental station



The Simi Valley Children's Dental Group uses architecture and lighting to turn kids' anxiety over a visit to the dentist into an outer space adventure. The clinic interior is an imaginative setting for pedodontics, the dental care of children.

"The child's adventure starts at the 'preflight check-in,' or reception desk, and continues through the 'time-warp tunnel,'" says architect Margo Hebard-Heymann. The tunnel, with automatic sliding doors, separates the public spaces from the operatory and provides a setting for anticipating adventure, she explains. "From here the child may be seated in an 'on-deck' waiting area, or shuttled off to 'invader detection' for x-rays, before finally settling into the 'cockpit' in the 'pedo bay' for the dental or orthodontic 'flight.' After treatment, children stop by for a gift and a consultation in the 'star fleet command' room. Staff members even wear appropriate space uniforms."

Hebard-Heymann emphasizes the use of skylights in her design, employing a vaulted skylight that extends from the entrance of the clinic to the time-warp tunnel, a round skylight over the waiting area adjacent to preflight check-in, skylights in the business office and star fleet command, and clerestories in the employee lounge and other perimeter spaces. Wherever Hebard-Heymann uses a skylight, she also tries to locate indirect fluorescent light, so that there seems to be a natural change; as the daylight fades, the electric light comes on to substitute for it. "I like to use this combination, because it doesn't create harsh facial shadows as downlighting does." In a recessed cove around the perimeter of the semi-circular, skylit waiting area, ordinary 4-foot sections of fluorescent light strip provide indirect backlight, reflected into the area by vertically ribbed, brushed metal applied to the walls. The skylight provides front light.

In a recessed cove around the perimeter of the semi-circular, skylit waiting area, ordinary 4-foot sections of fluorescent light strip provide indirect backlight, reflected into the area by vertically ribbed, brushed metal applied to the walls. The skylight provides front light.

The base of the skylight vault running between the entrance and preflight check-in is paralleled by round linear fluorescent uplights. These fixtures are finished in polished chrome, which complements the high-tech look of the facility.

Where tasks demand direct lighting, such as at the reception desk, Hebard-Heymann specified recessed fluorescent fixtures fitted with 1-inch by 1-inch silver, plastic parabolic louvers. "Wherever there must be some form of direct lighting, I like to avoid hot spots and glare," she says. In the operatory, where the ceiling is vaulted, patient chairs are lit from behind by 2-foot by 2-foot fluorescent fixtures suspended by aircraft cable. These are also fitted with silver parabolic louvers and have been linked by a double run of painted lavender conduit. Recessed parabolic fixtures also emphasize a stair-stepped soffit that parallels the layout of the patient chairs, and concealed fluorescent under-counter lighting illuminates work surfaces.

Other high-tech touches, such as blue neon outlining the entry into the time-warp tunnel and a blue neon sign announcing the check-in area, round out the spaceship look of the facility. But Hebard-Heymann's design work is still eminently practical. "I've tried throughout the facility to use only 4-foot fluorescent lamps, even when there were longer runs," she says. "I found that these lamps are cheaper and easier for maintenance people to keep in stock." The concealed lamps have also been detailed so that they are easy to change. "It's very important to anticipate the long-term ease and cost of maintenance, so I'm happy to leave an exposed lamp in an cove, as long as it's concealed from sight. Ease of maintenance can have a major impact on the long-term success of the design." That's appropriately forward-thinking for a design that imagines the future.

— Charles Linn, AIA

*Indirect light in waiting area (top left) comes from concealed fluorescent strips and reflective brushed metal. A skylight vault leads young space explorers to time-warp tunnel entry, outlined in blue neon (top right). Chrome-finished tubular fluorescent uplights add to high-tech look of facility and provide illumination that complements the daylighting. Two-by-two fluorescent luminaires light area by each patient chair (large photo); seven are linked by a double run of hard conduit. Recessed parabolic fluorescent fixtures emphasize stair-stepped soffit at side. Walls are washed by recessed fluorescent lighting. Under-counter fluorescent lights illuminate work surfaces.*



**Project:** Simi Valley Children's Dental Group  
**Location:** Simi Valley, California  
**Client:** Barry Cantor, DDS  
**Architect:** Margo Hebard-Heymann, AIA  
**Interior and Lighting Designer:** Margo Hebard-Heymann, AIA  
**Electrical Engineer:** Daylan Engineering  
**Photos:** Bruce Barnbaum

*For product information, see Manufacturers on page 62. Products for ambient lighting are displayed on pages 24-27.*

# FROM THE HOUSE THAT RUTH BUILT TO THE HOUSE THAT JACK BUILT

Incandescent, HID and Fluorescent. Cooper Lighting is the single source that offers a virtually limitless choice of lighting products. The choice for Yankee Stadium, the choice for millions of homes, and the choice for your next project.

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Brilliance from a single light source. Cooper Lighting, 400 Busse Road, Elk Grove Village, IL 60007.

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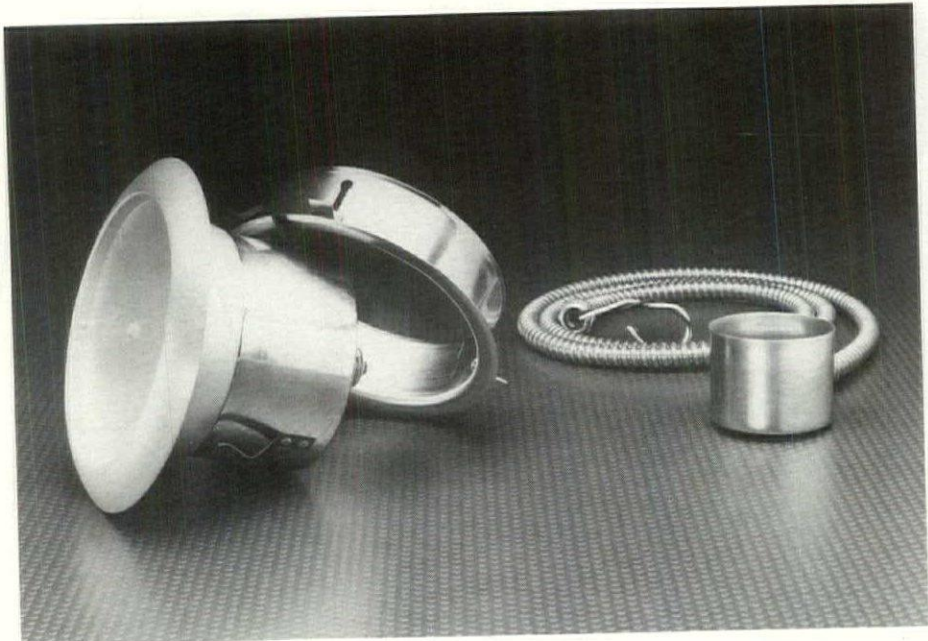
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**THE SINGLE LIGHT SOURCE**



# SHOWCASE

## Ambient lighting systems

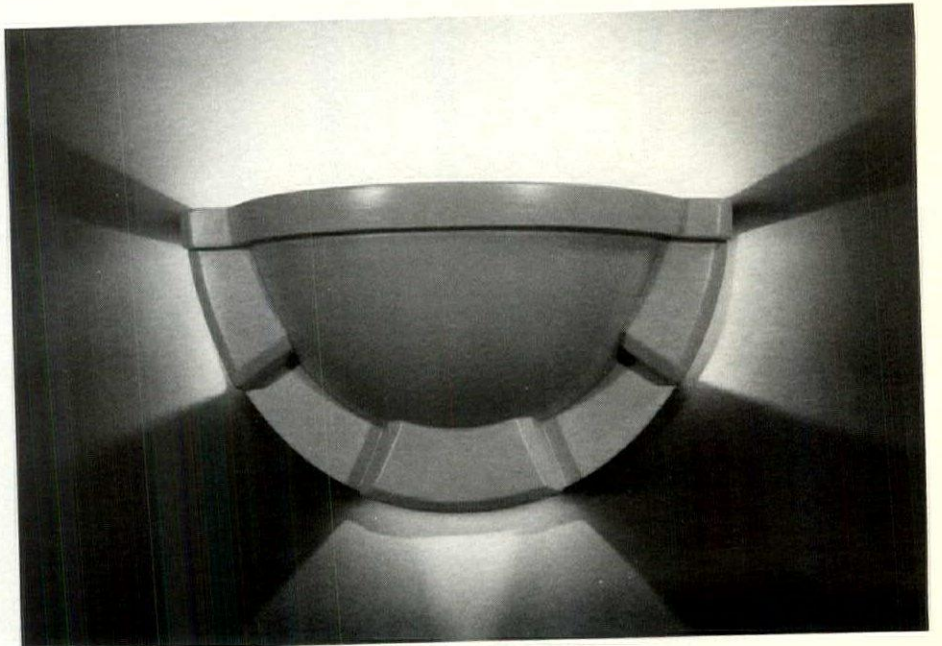


### ■ Compact fluorescent downlight

The X18 downlight for dropped ceilings and flush-mounted installations in new construction projects accepts two compact fluorescent lamps. The fixture includes a steel retainer ring for the ceiling opening and

an Edison-base connector with prewired aluminum flex cable. Scientific Component Systems, Anaheim, CA.

Circle 69

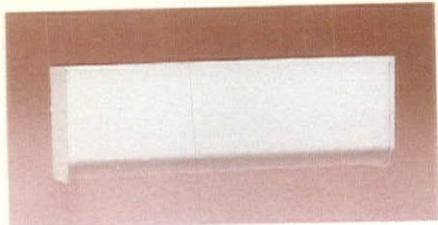


### ■ Ceramic sconce

The Archade sconce from Justice Design is one ceramic piece with side cutouts designed to help create a defined spill of light. The sconce comes with a compact fluorescent socket or a standard-base double porcelain socket for an incandescent lamp up to 150 watts. It comes in white,

matte white, black, and gray glaze finishes that resist chipping and scratching, according to the manufacturer. Justice Design Group, Los Angeles, CA.

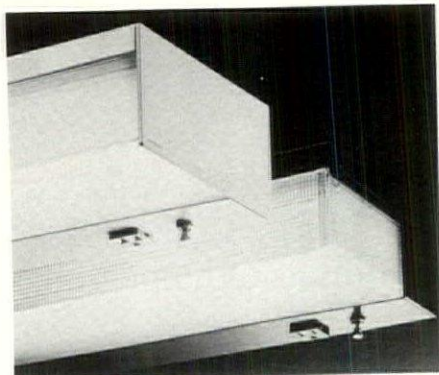
Circle 73



### ■ High-output sconce

The Metro extruded aluminum wall sconce from Norbert Belfer can accept a 150-watt quartz halogen, a 13-watt compact fluorescent, or a 50-watt HPS lamp. Its standard length is 10 inches; a longer multilamp model is also available. Norbert Belfer Lighting, Ocean, NJ.

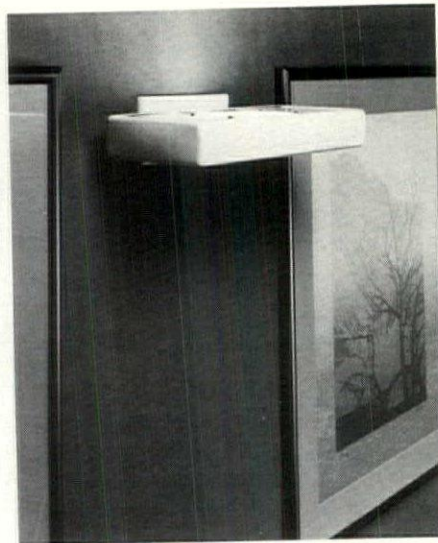
Circle 70



### ■ Fluorescent fixtures

A wall-bracket fluorescent fixture from Metalux is designed for low-brightness lighting of areas such as dressing rooms, lavatories, and stairways. The fixture has an internal baffle and a plastic prismatic refractor that slides forward for easy cleaning and maintenance. Options include multilevel switching and extra outlets. The unit comes in three lengths and two colors. Metalux Lighting, Americus, GA.

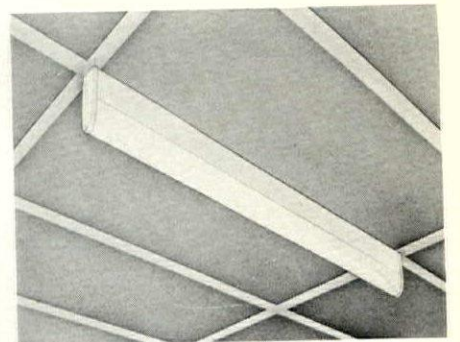
Circle 72



### ■ Compact indirect wall unit

Guth Lighting's Spirit compact indirect luminaire comes in versions for pendant, shelf, wall, and partition mounting. Its textured, specular aluminum reflector produces wide, shadow-free light distribution. A 3/16-inch-thick lens of soda-lime glass resists thermal shock and filters ultraviolet light. The cast aluminum unit accepts double-ended metal halide and bi-axial fluorescent lamps. It is available in four lengths and in single- and multiple-lamp configurations. Guth Lighting, St. Louis, MO.

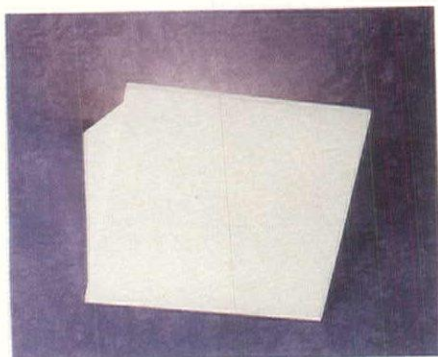
Circle 74



### ■ Clean room fixture

The Air Foil fluorescent fixture from LPI is designed to minimize air turbulence in clean rooms that require laminar-flow systems. The narrow fixture is easily mounted on a 1 1/2-inch T bar. Flush knockouts on the end caps permit end-to-end wiring, and optional enclosure bands permit continuous row mountings. Options include three ballasts, two lenses, and an emergency battery pack. LPI Limited Partnership, Gurnee, IL.

Circle 75



### ■ Wall sconce

The Ibis 314 from Amerlux is designed for direct or indirect lighting. The matte white fixture takes a 100-watt quartz halogen source and is part of the Eurolight series of wall sconces and low-profile linear fixtures. Amerlux, Inc., Fairfield, NJ.

Circle 71

Project: Headquarters, Real Estate and Construction Division, IBM, Stamford CT  
Interior Architect: HOK, Dallas  
Lighting Design: Ralph Savarese, IBM, Stamford  
Lighting: 10" x 3 5/8" Rounded Softshine Indirect Small Office Light by Peerless



## The first fixture designed specifically for today's small office

The Peerless Small Office Fixture makes a real difference in the office environment.

It reduces reflections on VDT screens. It softens hard shadows, saves energy and makes the office seem better lit.

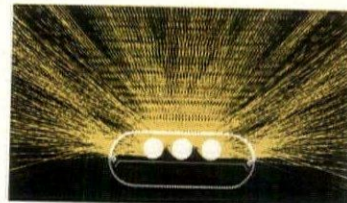
It achieves all this as a result of some very specific applied engineering. The Small Office Fixture differs from other indirect fixtures in the amount of light it throws to the side.

Its lensed optical system has the ability to produce an exceptionally wide spread indirect distribution. A single 8' long fixture can turn the ceiling and walls of a 10' x 15' office into a single, softly glowing light source.

Under an average 8'6" office ceiling, a lensed or parabolic down light — or just about any other practical lighting solution — creates a bright spot in a dark ceiling.

This bright spot bounces back into your eyes off any reflective surface: a desk top, a VDT or this magazine page. It also makes the rest of the office seem dark by comparison.

The unique optics in the Peerless Small Office Fixture make the entire office seem brighter and better-lit. You can see the truth of this claim in a booklet called "Lighting the Small Office" that offers a side by side comparison of the four most commonly used



*Very wide spread distribution covers whole ceiling, illuminates walls.*

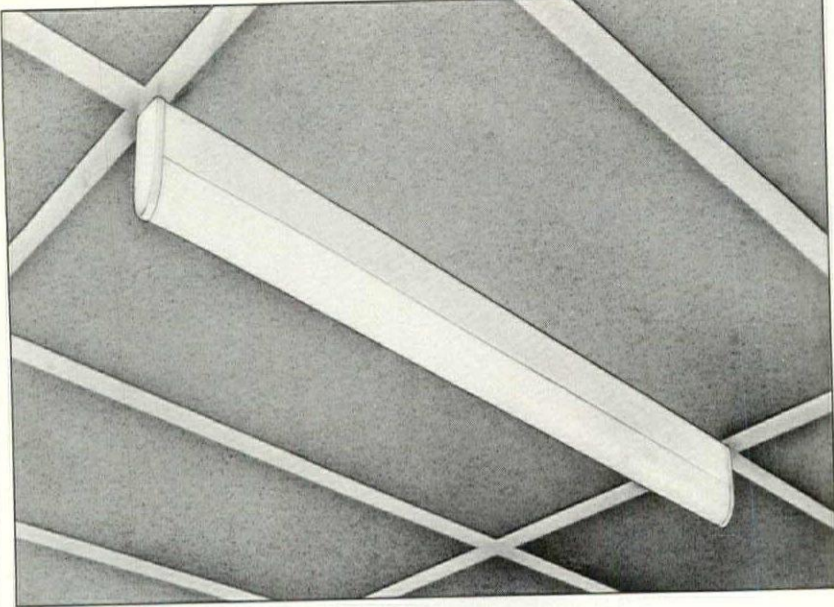
office lighting systems.

Just ask and we'll send you the booklet along with complete product information on the Small Office Fixture. Because the more you know about this specific problem, the better you'll understand why we developed this specific lighting system.

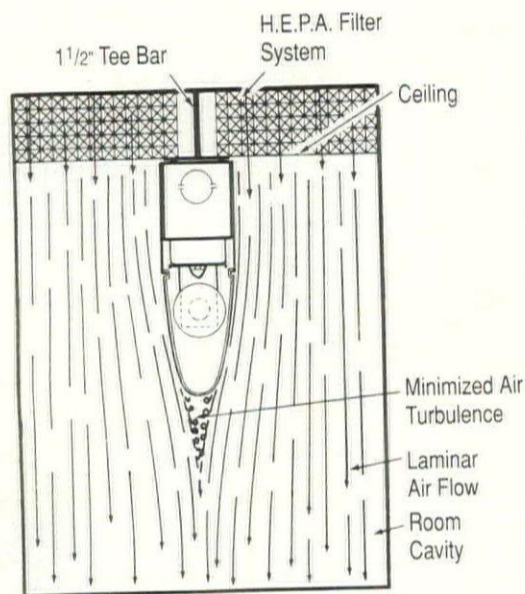
 **PEERLESS**

If you'd like to see the Small Office Fixture installed in an actual office, write on your letterhead to Peerless Lighting, Box 2556, Berkeley CA 94702-0552. (415) 845-2760.

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# Air Foil Meets Your Clean Room Needs To A Tee



Super thin profile

Air Foil is LPI's newest addition to its full line of clean room fixtures. This new surface mounted fixture provides economical clean room lighting for class 10, 100, and 1000 clean rooms.

### Minimized Air Turbulence

Air Foil's aerodynamic design is ideally suited for clean rooms that require laminar flow systems. The super thin profile design minimizes interruption of air flow and reduces air turbulence.

### Simple, Low Cost Installation

The two inch wide fixture can be quickly and easily mounted on any 1 1/2" tee bar. Wiring is simplified with flush knockouts on end caps and enclosure bands for continuous row mounting. Optional lighting flexibility is provided by a choice of 2', 3', 4' and 8' fixture lengths.

### Ease Of Maintenance

The extruded acrylic lens can be easily removed to replace standard or BIAx lamps. The ballast is tray mounted for effortless replacement and standard lamps are mechanically secured with bi-pin sockets. Air Foil's sleek prismatic lens and abrasive resistant white polyester finish make cleaning an easy task.

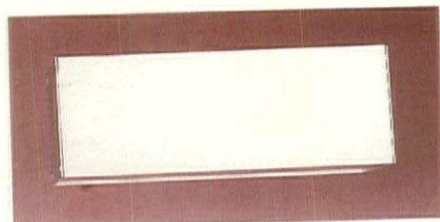
### Options That Meet Your Specific Needs

With Air Foil you pay only for the options you need. Options include: Aluminum or stainless steel housings; Low energy, low temperature and dimming ballasts; Emergency battery pack; Radio interference suppressor; Fast and slow blow fuses; Clear or yellow UV filter lens.



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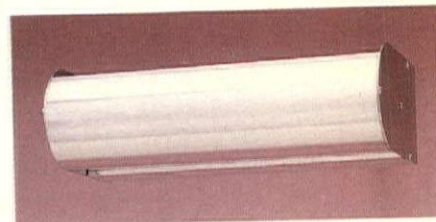
Circle 19



### Aluminum wall sconce

The Arcadia extruded aluminum wall sconce from Norbert Belfer can accept a 13-watt compact fluorescent, a 150-watt quartz halogen, or a 50-watt HPS lamp. Standard length is 10 inches; longer multilamp custom lengths can be ordered. Norbert Belfer Lighting, Ocean, NJ.

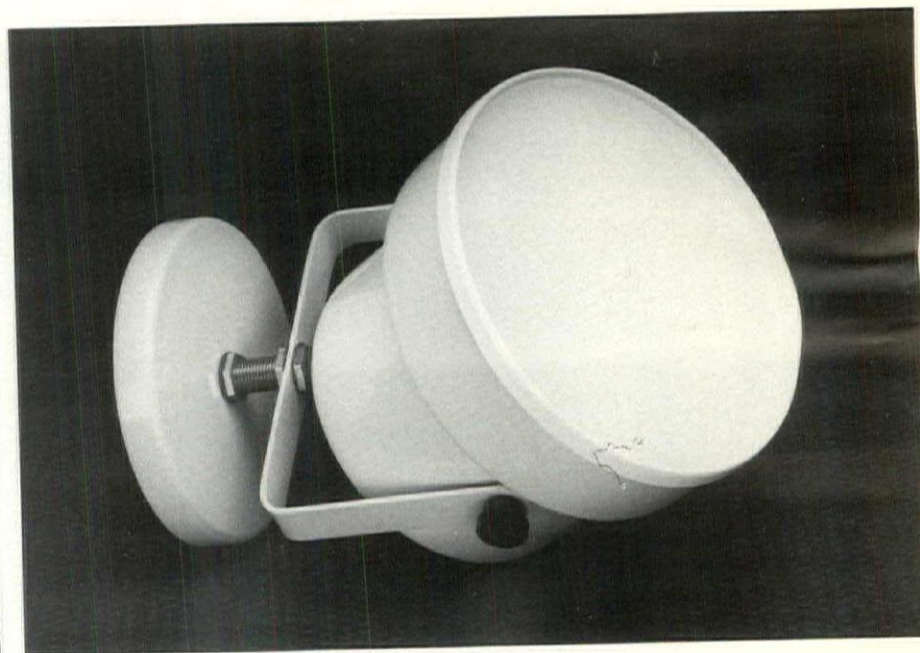
Circle 76



### Wall sconce

The Aurora sconce from Norbert Belfer can accept a 50-watt HPS, a 150-watt quartz halogen, or a 13-watt compact fluorescent lamp. Standard length is 10 inches; longer multilamp custom lengths can be ordered. The wall sconce is made of extruded aluminum. Norbert Belfer Lighting, Ocean, NJ.

Circle 77

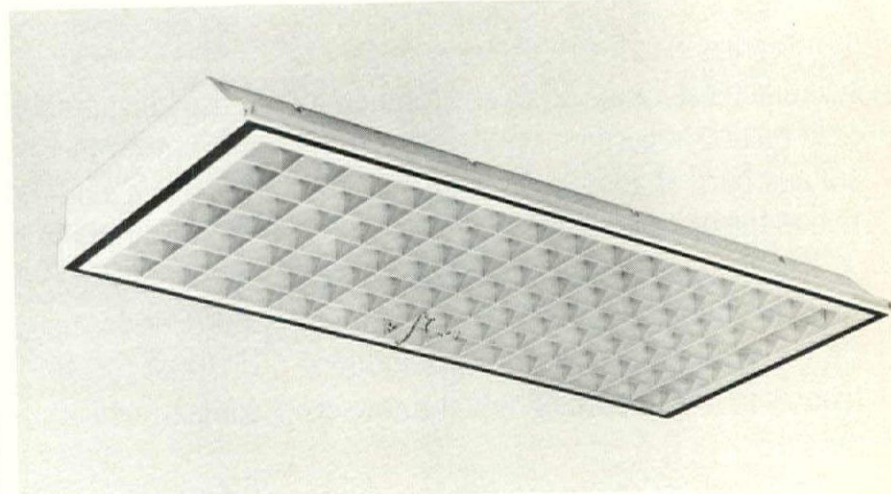


### Adjustable fixture

The X18 wall fixture from Scientific Component Systems is adjustable and accepts two compact fluorescent lamps. Its plastic diffusers come in three colors and its hous-

ing is available in a range of finishes. Scientific Component Systems, Anaheim, CA.

Circle 78



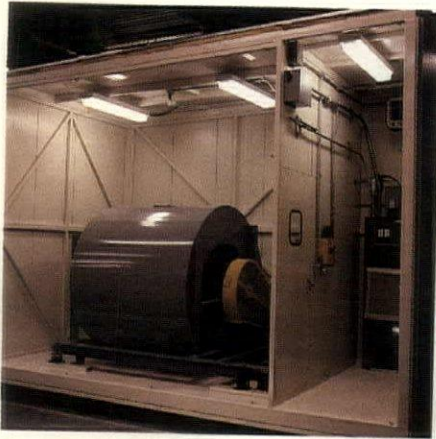
### Antiglare luminaire

Day-Brite's Designer VDT-CF-15 louvered fluorescent fixture is designed to eliminate glare on video display screens. It can provide 66 footcandles at 1.4 watts per square foot even when its louvers are angled for low brightness. It comes with a side-

mounted ballast in static, heat transfer, and air supply-return models; it is also available with an electronic ballast. Day-Brite Lighting Co., Tupelo, MS.

Circle 79

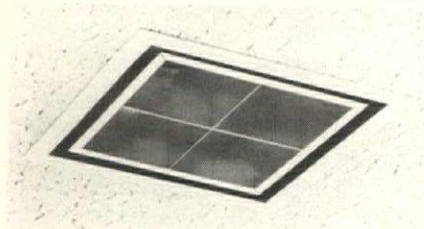




**Fluorescent fixture**

The PEC Lume from Paramount is an enclosed and gasketed fluorescent fixture that is UL listed for use in wet locations. Its zinc-coated, rolled steel body has a painted finish; its clear extruded acrylic lens has bottom prisms and side ribs for light control. Other finishes and lenses are available. Spring-loaded lamp holders take a variety of sources. Paramount Industries, Inc., Croswell, MI.

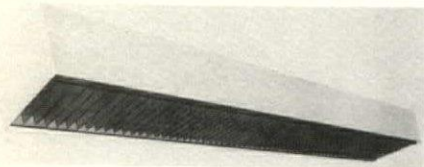
Circle 80



**Parabolic luminaire**

The 1-foot-square Paramax recessed parabolic luminaire from Lithonia uses compact fluorescent or U lamps to produce direct accent light. Standard features include T hinges, spring-loaded cam latches, and a black reveal that produces a floating louver appearance. Lithonia Lighting, Conyers, GA.

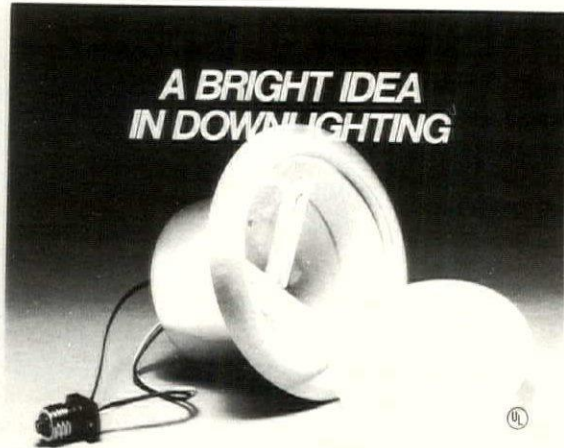
Circle 81



**Fluorescent fixtures**

The model 305 fluorescent fixture for surface or pendant mounting is among Crownlite units equipped with electronic ballasts and special knife-edge sockets. The compact fixtures accommodate one or two T12 fluorescent lamps; they can be surface-mounted on ceilings or walls or suspended on stems or cables. Units can be adapted to provide uplighting, downlighting, or both. A variety of lenses, louvers, and other shielding devices are available. Custom colors, lengths, and widths can be special ordered, as can models for other fluorescent lamps. Crownlite Manufacturing Corporation, Bohemia, NY.

Circle 82



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**THE ENERGY-EFFICIENT X18**

The X18 Series of retrofit fluorescent fixtures provide everything you need to replace energy-draining incandescent downlights. Incredibly compact, the X18's sleek, flush-to-ceiling trim ring doubles as a cooling fin, constantly drawing the heat away from transformers and lamps.

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Circle 20



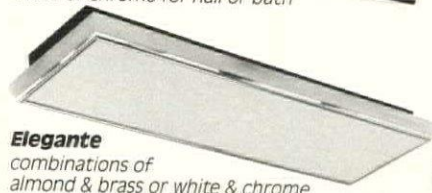
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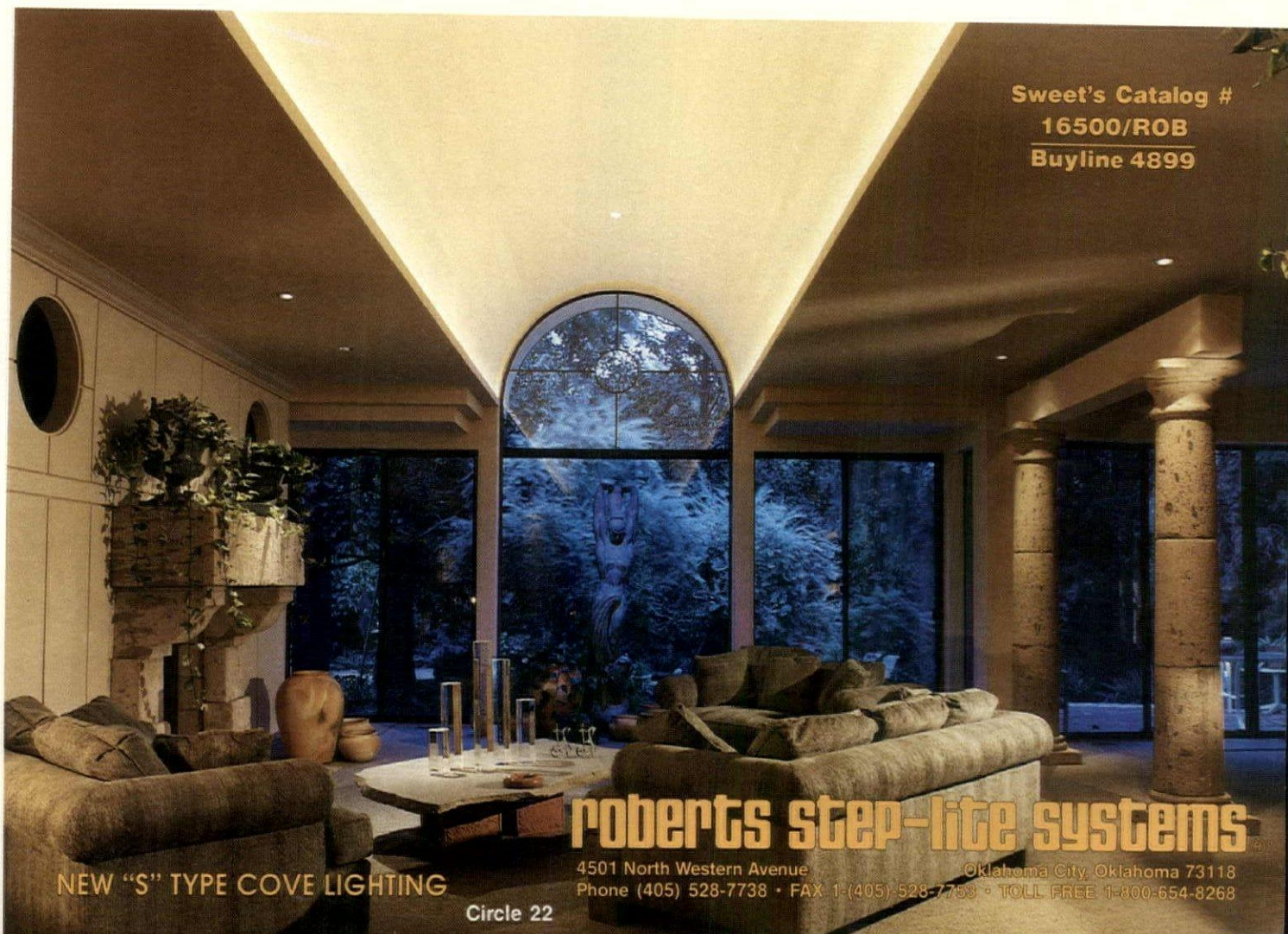


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Circle 21



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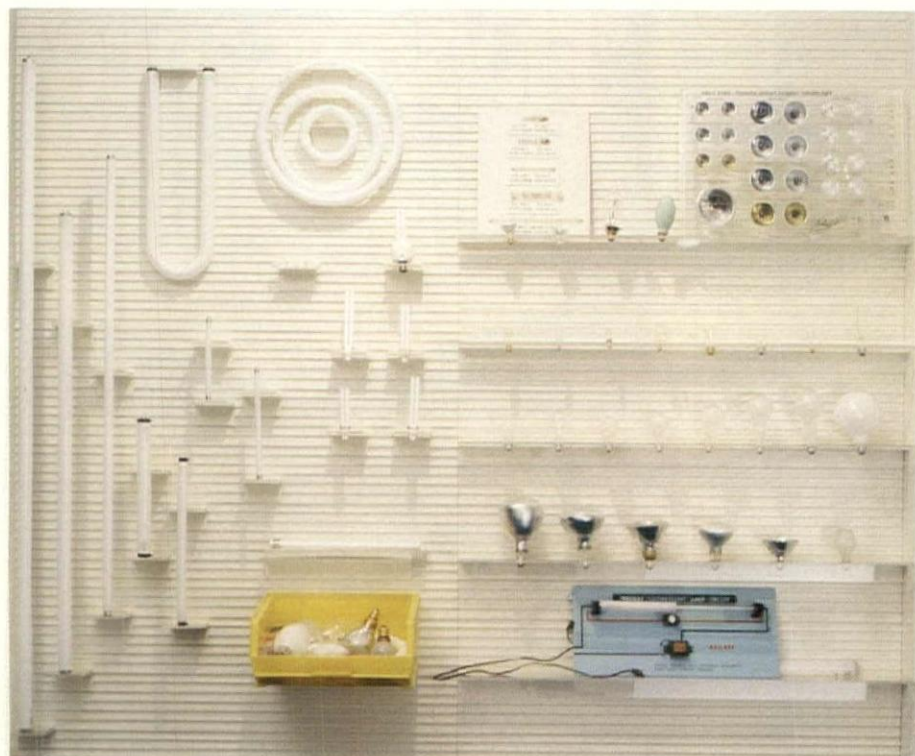
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Circle 22

## Lighting lab takes the guesswork out of lighting design



When an Oregon medical school needed to light an intensive care facility for newborn infants, a nearby lighting lab simplified the process. The design team was able to compare and evaluate fixtures and sources in a realistic setting. Providing this kind of hands-on application assistance is the lab's primary mission.

At the laboratory, the physicians saw demonstrations of triphosphate color technology. With that information, they were able to select a good triphosphate fluorescent lamp in a color they believe will most accurately render the tiny patients' coloring — an essential component of monitoring patient health conditions. Then, lighting lab personnel mocked up 2-by-2 fluorescent fixtures in various lamp and lens combinations. "We actually brought in an incubator, a baby warmer, and a headwall patient care system," says lighting specialist David Weigand. "About 40 people — physicians, architects, and engineers — came to the lab to evaluate the systems, and they made the decision right off. The job was all specified right from this experience — no question, no substitutions."

The lighting lab is probably the most popular area at Portland General Electric's Energy Resource Center (ERC) near Portland, Oregon. It has attracted visitors from throughout the Pacific Northwest, including Montana. "I call it the glamour area of the center," says ERC manager Paul Jensen. "We get most of our traffic there. It's got so many things you can demonstrate, people are intrigued by it."

*Lamps in a wide variety of shapes and sizes can be demonstrated in the lighting laboratory at the Energy Resource Center (top left). The lighting lab is equipped to acquaint visitors with both the basics and innovations in lighting technology. A choice of independently controlled fixtures for various sources surrounds the mirror display (bottom left).*



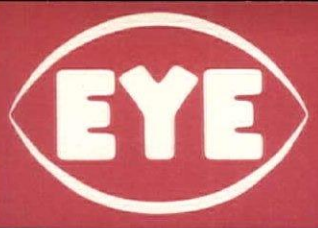
**Project:** Lighting Laboratory  
**Location:** Energy Resource Center, Tualatin, Oregon  
**Client:** Portland General Electric Company  
**Architect:** SERA Architects  
**Lighting Designers:** Gerry Zekowski, Lighting by Design Inc.; David Weigand, Energy Resource Center; The Light Source  
**Photos:** Janis Miglavs, Imagesource

For designers, the lab is more than a high-tech showroom. A central high-bay display area is set up to showcase and demonstrate lighting products. It includes an industrial lighting laboratory with metal halide, high pressure sodium, and other energy-efficient outdoor lighting, some eligible for state tax credits. "The bottom line, as I see it — and I used to be in the electrical engineering business — is that our lab takes the risk out of selecting lighting options for a building," says Weigand. "Designers don't have to do it out of a catalog on faith or on someone else's word. Lighting is such a visual art that the math and the science side of it just can't answer all the questions involved."

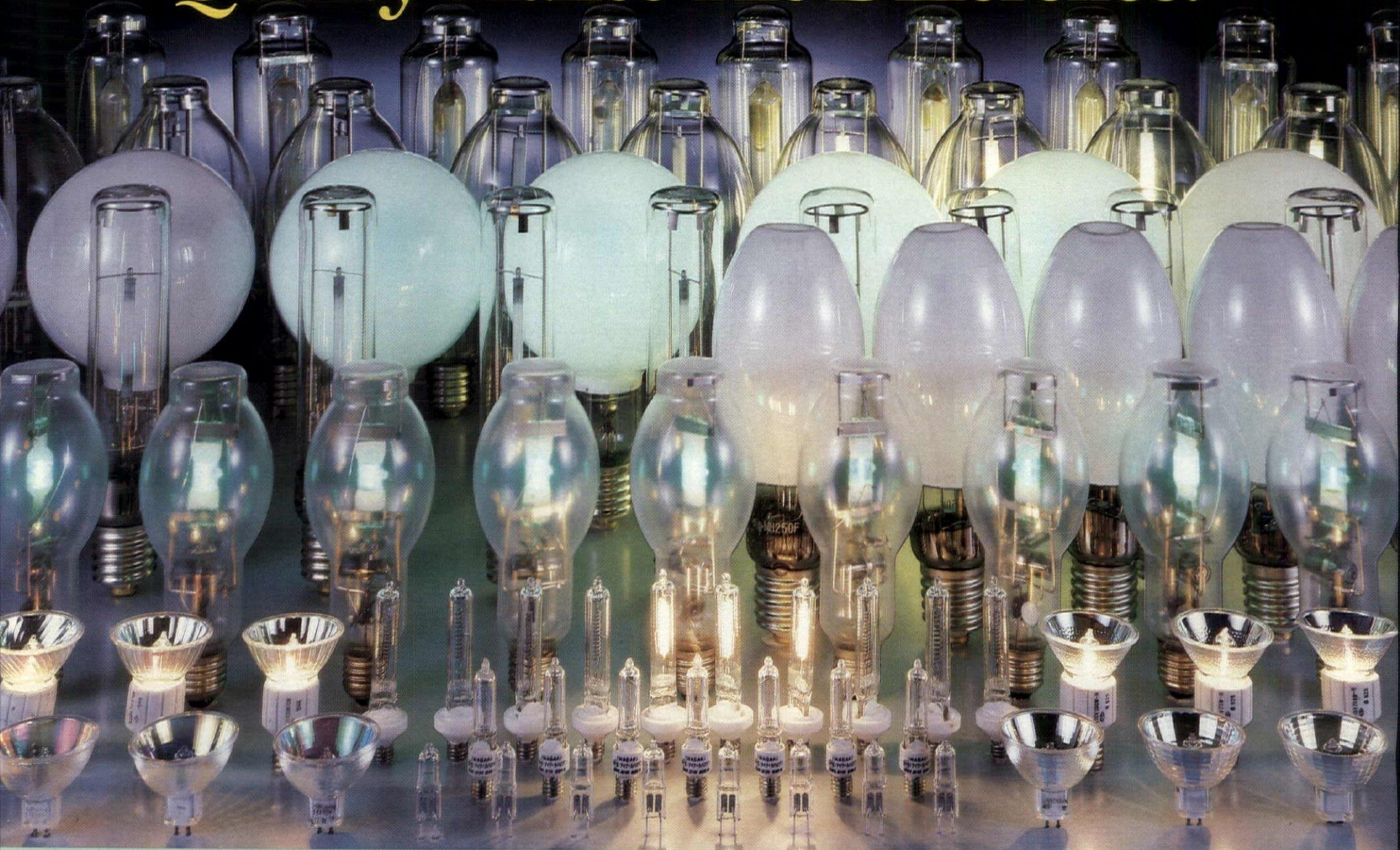
Several lighting systems in various parts of the lighting lab simulate spaces that designers typically light. The spaces include, for example, an office hallway equipped with 12 independently controlled systems, a main office area with 18, and a retail showroom window with 10. Each system has quick-disconnect cord-and-plug setups for fast and easy changes. The systems are installed with proper spacings and arrangements of fixtures, so a room, not just a fragmented space, is lighted. If a designer wants to see a fixture or lamp not installed in the lab, Weigand borrows it from the manufacturer and installs it in the appropriate system.

In addition to its own designated areas, the lighting lab uses other parts of the center to demonstrate lighting effects, including areas devoted primarily to industrial processes, the design of commercial food service facilities, HVAC design, and other applications of electricity, such as computer-grade power, rotating machinery, and energy management systems. The 14,000-square-foot center includes a 100-seat auditorium for seminars, a library, a lounge equipped for catered meals, a demonstration commercial kitchen, and an office area staffed by consultants. "The center as a whole is a lighting demonstration, because every part of the building is illuminated and controlled differently," Weigand says.

The lighting lab was designed as a tool for meeting project-specific design challenges. Visitors can make color and texture comparisons under selected lamps in booths full of fabric samples; one room is set up so that floor and wall coverings can be changed. The ceiling in the office area is adjustable — from 7½ to 10½ feet — so lighting systems can be evaluated at the height of the visitor's ceiling. Fixtures on a track system allow designers to test and compare the light intensity and beam patterns at distances from 0 to



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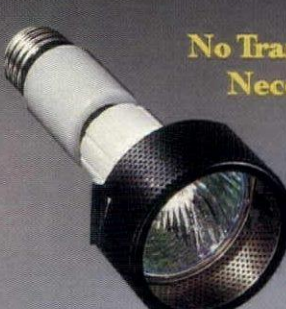


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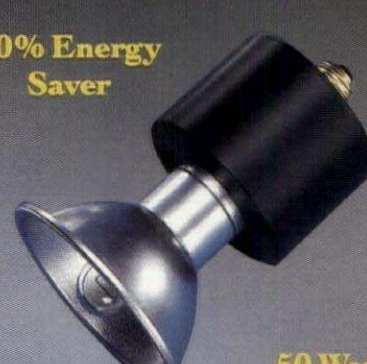
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7 feet from a wall with different coverings.

The lab also offers optical design and lens applications that show how reflector systems and light sources work together. Available computer simulations and hands-on assistance include review of plans and specifications. Mirror lighting is on display, as is dimmable cold cathode and neon. Lighting products in myriad shapes and sizes acquaint visitors with both the basics and the innovations of lighting technology.

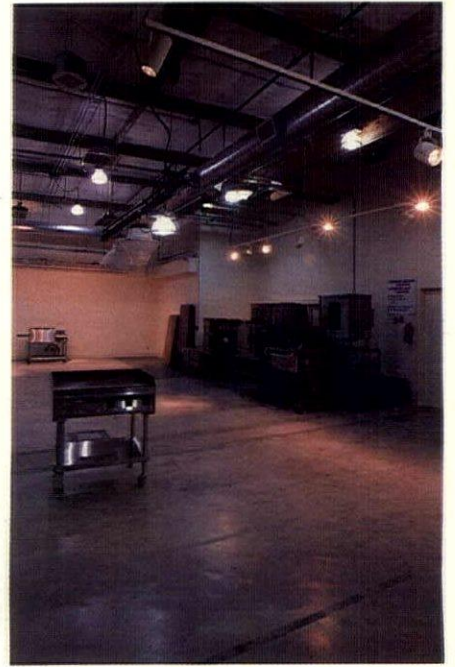
With hundreds of products to choose from, it's obvious that Weigand can't put everything in the lighting lab. He compares newly submitted products with those already on hand. "I try to evaluate each product on how well it does what it was intended to do," he says. "In other words, if I'm looking at an A-lamp downlight, I want to know whether it meets good construction and lighting design criteria. That is, does it have a 45-degree cutoff, a good Alzak reflector cone, and so on? For a good standard 18-cell parabolic fluorescent model, I go with a company that's known for having good products. And those decisions are informed by a lot of personal experience in the business as well as in other lighting labs."

One thing that experience has taught him is that no useful purpose is served by having every version of every lamp and fixture available. "Clients don't need to see 22 versions of the same light from 22 different companies," he says. He says it is much more useful to let designers compare, for example, the distribution of an A-lamp downlight with that of an R lamp with a baffle.

The lab's neutral relationship with manufacturers has proved appealing not only to designers but to teachers and students of design theory. Center manager Jensen is particularly excited about the ERC's future as an educational and training resource. Classes from universities in Washington and Oregon have visited the lab, and the ERC hosted a six-week credit class — Lighting Design for Design Professionals — for Portland Community College.

"I'd like us to become more involved with the engineering schools and architecture schools in Oregon, so that we can benefit from them and they can benefit from us," he says. "That's starting to happen. It's exciting to influence young professionals coming up in the field."

Weigand, too, stresses the education connection. "I really would like to get the message across that our primary concern is good lighting decisions — concepts as well as equipment. We



*Metal halide and other energy-efficient sources, some eligible for state tax credits, are displayed in an industrial lighting lab (above). The color analysis room features adjoining booths, where visitors can compare colors and textures under a variety of light sources. Photos at top and middle show the room lit by two different systems, illustrating the wide range of possible color shifts. Eighteen independently controlled lighting systems are installed in a simulated office area (bottom); similar systems are available for demonstrations in an office hallway and a retail showroom. A movable ceiling lets users view lighting effects at heights from 7½ to 10½ feet.*

really do try to cover the bases of lighting: color, light sources, optical design. Then we go into actual application demonstrations," he says. "A factory-based lab can't afford to spend a lot of time and effort on information that doesn't benefit it directly."

Jensen and Weigand expect to see other utility companies open energy resource centers that offer hands-on lighting labs. "Several utilities around the country have asked us if we would do consulting for them if they decide to do the same thing in their areas," says Jensen.

—Mike Hefley

*For product information, see Manufacturers on page 62. Lighting components and accessories are displayed on pages 34-37.*



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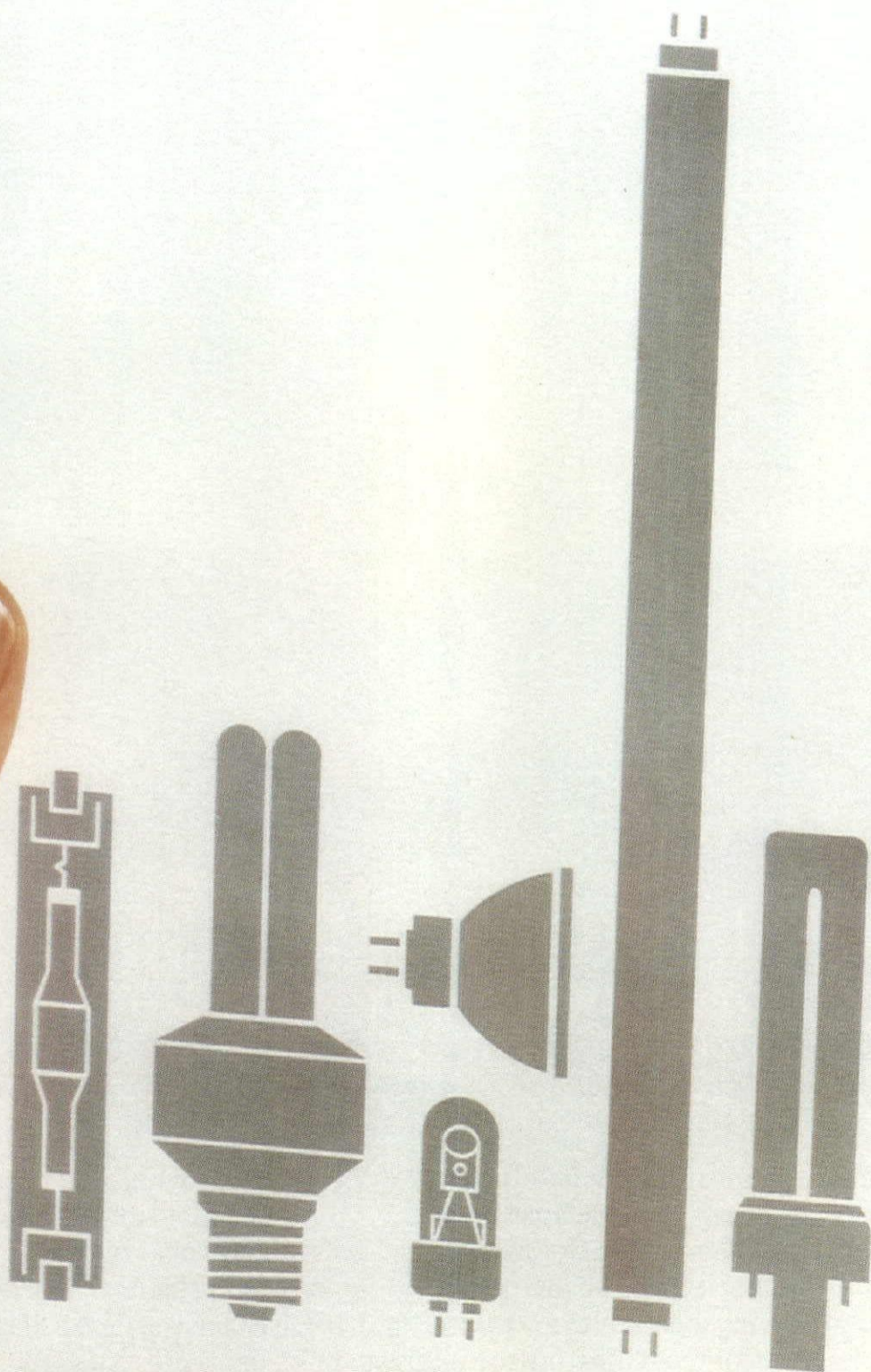


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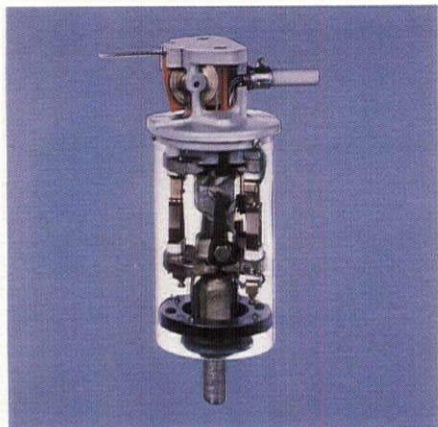
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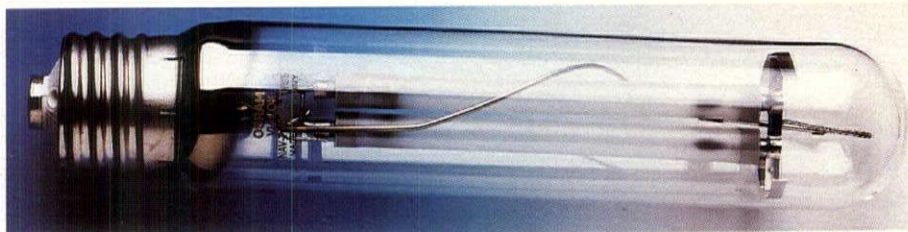
### Components and accessories



#### ■ Indoor contact unit

The SCU-2 contact unit raises and lowers indoor luminaires for floor-level servicing. It can be used with pendant and flush-mounted luminaires in buildings with flat or sloping roofs and in false-ceiling structures. A modified version with nine contacts and a ground lifts loads up to 1100 pounds. The unit can be used in dustproof and waterproof installations. Optional stainless steel coverings are available for use in corrosive areas. Lowering Systems Inc., Northbrook, IL.

Circle 83



#### ■ HPS standby lamps

Osram's HPS standby lamp provides instant restart after a power interruption, eliminating the need for an incandescent backup light source, according to the manufacturer. The lamp is designed to provide 5 percent of normal light output when it restarts and to reach full output quickly. It is available

with a double arc-tube design for 250 and 400 watts to provide as many as 125 lumens per watt. Osram Corporation, Montgomery, NY.

Circle 84



#### ■ Lighting program

Quick-Temp, Version 3.0, is Quality Lighting's updated IBM-compatible program for producing lighting templates and layouts. Designers can use any combination of reflector systems in the same layout, and the program can print the layout in sections to be pieced together. The program includes operating information, help screens, and written specifications of the manufacturer's product line. Quality Lighting, division of LPI Limited Partnership, Gurnee, IL.

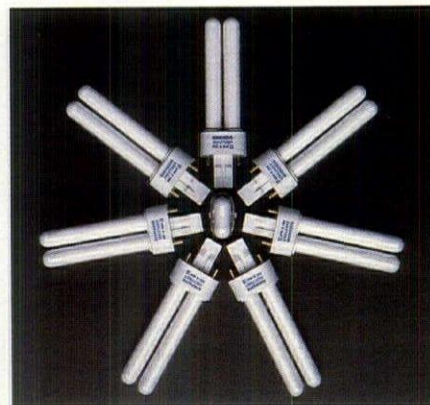
Circle 85



#### ■ Metal halide lamps

GTE/Sylvania's compact 100-watt Metalarc metal halide lamp provides energy efficiency, good color rendering, and long lamp life to spaces with low and medium ceilings, according to the manufacturer. The lamp comes in clear and coated versions and can be burned in any position. A tubular, double-ended model is also available. GTE/Sylvania, Danvers, MA.

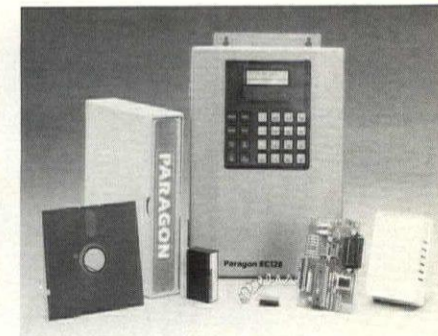
Circle 87



#### ■ Compact fluorescent lamps

GTE/Sylvania offers twin-tube and quad compact fluorescent lamps in a 3500K color temperature. The twin-tube lamp comes in 9 and 13 watts, and the quad comes in 13 watts. The lamps are designed to replace 25- to 75-watt incandescent sources in small fixtures with energy savings as high as 80 percent and a lamp life as much as 10 times longer, according to the manufacturer. GTE/Sylvania, Danvers, MA.

Circle 86



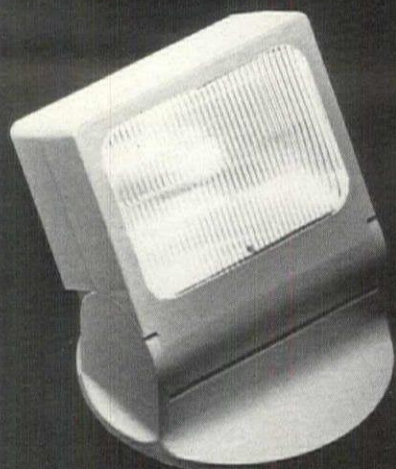
#### ■ Control system

Paragon Electric's EC128 system can control and monitor energy use in small- to medium-size buildings at a cost lower than most similar systems, according to the manufacturer. The device has 12 control outputs and 8 inputs for sensors and is remotely programmable with an IBM PC and appropriate software. The system can be programmed for time of day, length of task, and other criteria within a preprogrammed calendar year. Paragon Electric Company, Inc., Two Rivers, WI.

Circle 88

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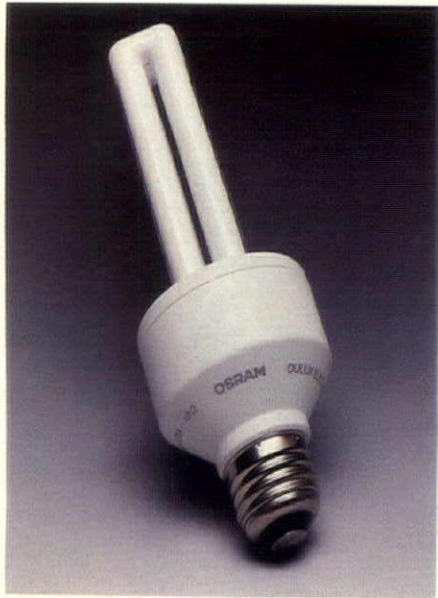
This slim profile lighting unit features a completely automatic solid state charger with long-life pure lead batteries. The A1 mounts to either ceiling or wall and pivots 90° for extended or retracted positioning and is available in white, neutral beige or black.

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Circle 26





■ Screw-base compact fluorescent

The Dulux EL from Osram is an electronic compact fluorescent lamp with a medium screw base for use in standard incandescent holders. It starts instantly, is free of flicker, and uses less energy and lasts longer than standard incandescents, according to the manufacturer. It has a 2700K color temperature and is available in 7-, 11-, 15-, and 20-watt sizes to replace 25-, 40-, 60-, and 75-watt A lamps. Osram Corporation, Montgomery, NY.

Circle 89



■ Plastic enclosure

A UL-approved NEMA Type 3 plastic enclosure for Paragon's electromechanical time controls can be used indoors and outdoors and is rustproof and weathertight. The heavy-duty construction includes bottom, side, and rear knockouts, a security hasp for a padlock, and three-point mounting. The enclosure is typically used for electromechanical time controls such as those used for controlling lighting, HVAC systems, and swimming pool pumps. Paragon Electric Company, Inc., Two Rivers, WI.

Circle 90

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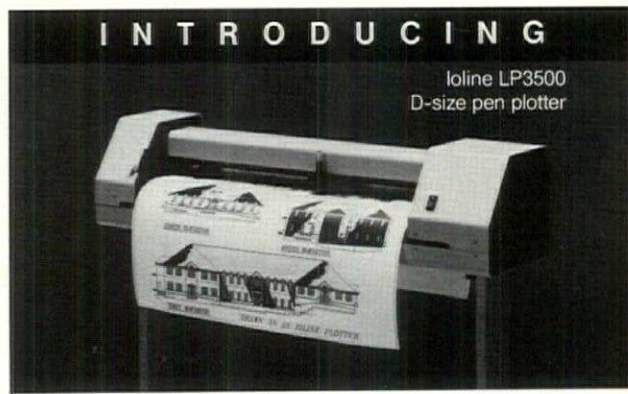
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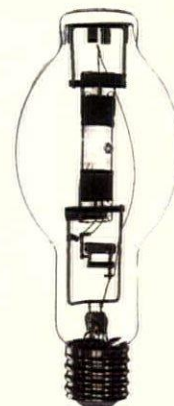
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Circle 29



### ■ Metal halide lamps

The X-Line metal halide lamps from CEW Lighting are designed to maintain a high lighting output and a consistent color appearance throughout their lives and from lamp to lamp. The lamps come in clear and coated versions from 175 to 1000 watts and have a universal burning design. CEW Lighting, Dallas, TX.

Circle 91



### ■ Low-voltage halogen lamp

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Circle 92

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Circle 93



**HPS lamp unit**

The Daylux-50 from CEW Lighting is a 50-watt high pressure sodium ballast, reflector, and lamp unit made to replace 150-watt incandescent sources in recessed can-type fixtures where lights burn for long hours. The unit is small enough to fit completely inside most recessed fixtures and comes with either a spot or flood reflector. CEW Lighting, Inc., Dallas, TX.

Circle 94

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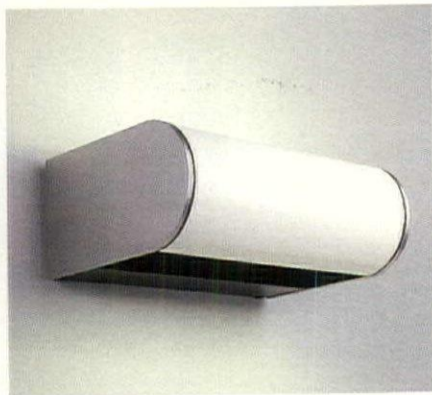
## DECORATIVE LUMINAIRES

# Today's fixtures: Good-looking and can cook, too

## Four types of decorative luminaires



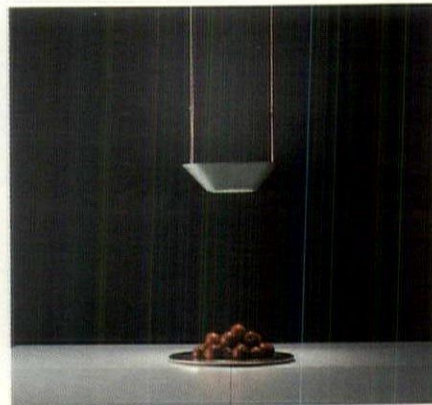
COURTESY OF ARTEMIDE



COURTESY OF ELLIPTIPAR



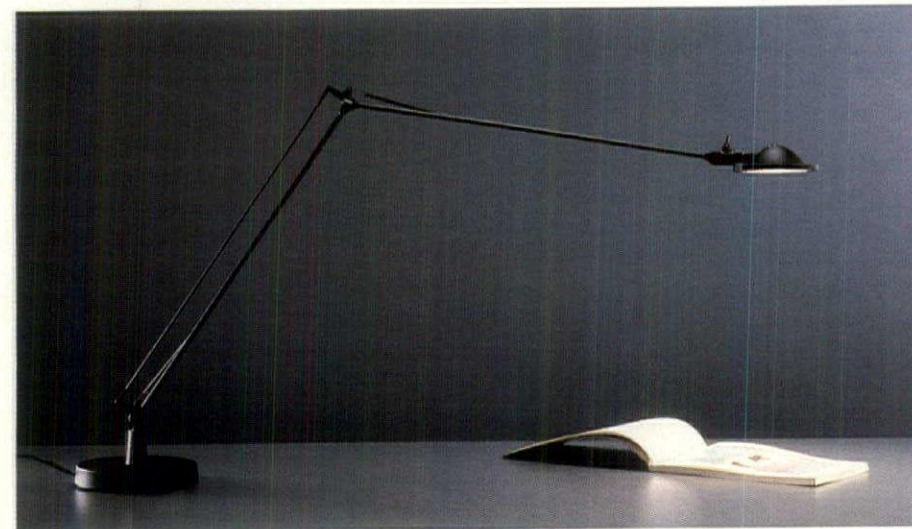
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COURTESY OF LUCE PLAN/ARTEMIDE

The best decorative lighting fixtures available today are designed for improved photometric performance — “good-looking and can cook, too!” No wonder lighting designers show a growing interest in decorative luminaires. We no longer have to trade off lighting quality for the decorative appearance of sconces, torcheres, table lamps, chandeliers, and pendant fixtures.

Many of today's decorative luminaires have been designed not only as works of art — beautiful creations of glass, metal, and acrylic — but also with careful attention to the quality of light they produce. They enhance the interiors of fine homes, hotels, restaurants, large corporate offices, and high-end retail settings. Watch out, though; many attractive luminaires are poorly designed as light sources.

### Four Types

The four basic types of luminaires — diffusers, uplights, downlights, and up-and-down lights — are classified by candlepower distribution. Candlepower is a measurement of light intensity relative to the direction from a luminaire. A candlepower curve (or distribution diagram) shows this pictorially. Simply by observing the diagram, you can determine how intensely a luminaire will emit light in various directions. If no diagram is available, make a visual assessment by turning on and observing a sample fixture.

**Diffusers.** Because they send light in all directions, diffusers are especially effective in the center of a ceiling where you want general, even illumination, or mounted by a mirror in a bathroom. Avoid them where control of the light is necessary. For example, diffusing wall sconces placed around the perimeter of a room can cause glare, and the high contrast level they create can wash out the room.

*The top four photos on this page show the four basic types of decorative luminaires: diffusers, uplights, downlights, and up-and-down lights. More than just attractive objects, the best decorative luminaires enhance architecture with their illumination. The Star-of-David uplight in the large photo was custom designed for North Shore Congregation of Israel, Glen-coe, Illinois, by architect Hammond, Beeby & Babka. A tiny halogen lamp allowed the sleek design of the task light in the bottom photo.*

**Uplights.** Also called indirect lights, uplights push light up and out into the environment. Uplights are most effective when they house an optical system, usually an asymmetric reflector, designed specifically to bounce light up and out of the fixture. The relationship of the ceiling height to the mounting height of an uplight is critical to good candlepower distribution. Visually, uplighting can effectively expand a space with light. Be cautious, though, when using this type of luminaire with an unattractive ceiling.

**Downlights.** These fixtures send light directly into a space. Until recently, many designers did not consider downlighting to be decorative. Semirecessed decorative downlights are relatively new on the market; other luminaires that are traditionally considered decorative, such as shaded pendants, emit only downward light. Downlights are often used for the light over a table, in a corridor, or in a living room. Remember that any downlighting scheme tends to create a dramatic, high-contrast effect.

**Up-and-down lights.** Some fixtures combine downlighting and uplighting to balance general and accent lighting layers in the design. The same luminaire can uplight a ceiling and simultaneously provide accent lighting for a centerpiece on a table below. To keep the lighting flexible, it is always a good idea to control the direct lighting source independently of the indirect source.

### Managing Glare and Brightness

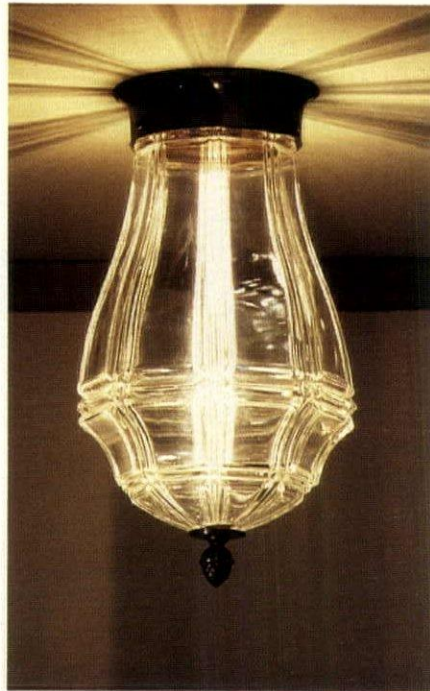
Many decorative luminaires are too bright. Diffusers, in particular, often can accommodate far too much wattage for most applications. A 60-watt standard incandescent lamp may provide the right amount of light, even in a fixture that can accept a 150-watt quartz halogen lamp. The 150-watt lamp might be too dim, however, in a torchere, simply because the uplight hides the source from the eye.

Bright lights against a dark background can cause glare, especially in areas where people come in close contact with the light source, such as dining tables, seating areas, and lobbies. Dimmers can help, but you can control or eliminate this unpleasant glare more effectively by using fixtures with a more appropriate candlepower distribution. Up-and-down lights or dark-shaded table lamps are less glaring than decorative globes or fixtures with pale, translucent shades.

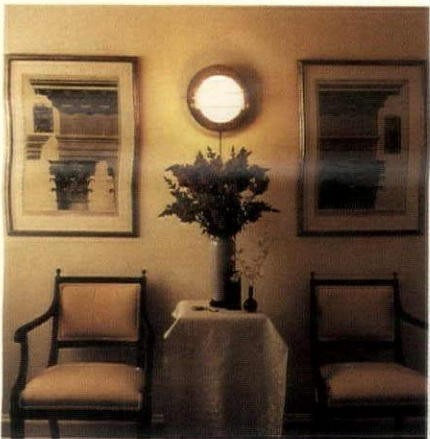
You can also reduce glare by softening the light source itself. Try using a frosted diffusing lens or some object designed to camouflage the lamp. Or, specify a frosted rather than clear lamp



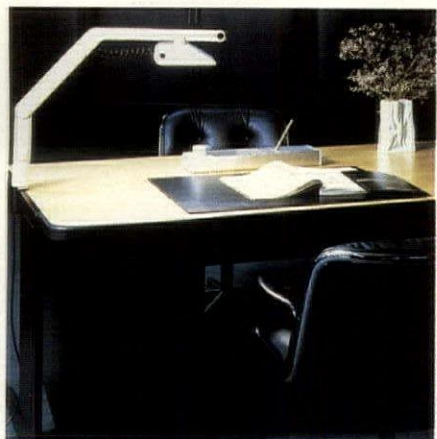
JIM BENYA



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use a silver-bowl lamp and bounce the light off the inside of the luminaire housing.

Halogen lamps are usually too bright to expose. They are excellent for torcheres, asymmetric wall sconces, downlights, and other applications where light control is essential. Remember that halogen sources are whiter and crisper than standard incandescents.

Fluorescent lamps themselves are usually not very attractive, but it is possible to design attractive luminaires to house them. The most effective applications include desk task lights, wall sconces, and pendant fixtures. Fluorescents should be used in decorative luminaires only when they will appear to be incandescent lamps to the viewer, so they should be hidden and used primarily as indirect sources.

Few decorative luminaires are available for high intensity discharge (HID) sources; even fewer are good-looking. The lamps are large and require a ballast, so the luminaires they fit must be even larger.

Designing a new decorative HID luminaire can be expensive and time consuming, largely because the design usually has to go to Underwriters Laboratories for approval. However, it is not uncommon for a lighting designer to use an existing UL-listed fixture and design a decorative shell for it. As long as the shell does not trap heat, this process can allow for high-performance HID lighting in a custom-designed housing, without the worry and expense of a totally custom fixture.

*Watch out for hot spots above torcheres. A higher ceiling, broader distribution, or smaller lamp might help in the space shown above at left. Be careful with diffusers; too much brightness at eye level will cause glare. The fixture shown above might need to be dimmed. In the photo at far left, the attractive beam pattern is created by a clear tubular lamp and clear lens. Contemporary task lights like the one at near left use compact fluorescent lamps to advantage.*

— but be aware that this will alter the pattern of light produced by a luminaire.

### Turning Down the Heat

The heat produced by a light source can be just as undesirable as glare. A notorious example is an exposed incandescent strip light with G lamps, commonly called "Hollywood dressing room lights." Strip lights create glare and an uncomfortably warm temperature because they are usually so close to people.

With compact fluorescent lamps, designers can pleasantly combine comfort, energy conservation, aesthetics, and economy. Less expensive materials may be used for compact fluorescent fixtures because the lamp doesn't get as hot as incandescent lamps do. More importantly, you need not sacrifice good color rendition when specifying decorative luminaires with these lamps.

High heat from decorative fixtures could create a burn hazard. Be sure to choose fixtures that don't present a hazard to people — especially children — or nearby finishes, such as fabrics or woods. Underwriters Labora-

tories requires that high-wattage halogen fixtures have special lamp enclosures or shields, and even low-wattage halogen lamps can still be very hot to the touch.

### High-Performance Fixtures

Designers place high performance requirements on commercial contract lighting equipment. In general, contract fixtures must have greater efficiency, higher lumen output, and more control options than fixtures for residences.

**Torcheres.** Torcheres used as uplights are often required to light a large portion of the room. For a smooth, well-lighted ceiling, torcheres should have very broad spread distributions; otherwise, the ceiling will be "hot" above the luminaire.

**Wall sconces.** The upward light from a contract wall sconce is also expected to light the ceiling evenly. The best fixtures have asymmetric reflectors that push the light out into the room and prevent a hot spot right over the luminaire.

**Task lights.** A good desk light should provide smooth light distribution and should be adjustable to meet various

work needs. Traditional decorative housings usually are not as well articulated (jointed for adjustment by the user), nor do they spread light as evenly as do contemporary halogen and fluorescent desk lights.

### Which Lamp?

The lamp you choose can limit your choice of decorative luminaires, dictating the size, material, and flexibility of the luminaire. For example, a halogen source will, more often than not, allow you to select a small, low-profile luminaire. Halogen lamps are used in many of the sleek Italian products now seen in lighting catalogs.

In general, for diffusing and exposed-lamp fixtures, select low-wattage standard, not halogen, incandescent lamps, including candelabra, globe, and other special types. A beautiful lamp often enhances the appearance of the luminaire, but remember that the lamp itself can easily be too bright to view directly.

High-wattage incandescent lamps can be used in pendant fixtures, such as those often suspended over a dining table. But, if the fixture does not shield or soften the lamp, you may wish to

### Beware of Catalogs

Lighting fixture catalogs generally show fixtures as works of art. They are photographed with light added by the photographer from outside the luminaire! Often, a pretty fixture becomes an unwelcome source of glare when illuminated. Dimming may not solve the problem — it reduces glare only by reducing the amount of light in a room.

We recommend that our clients see a fixture illuminated before choosing it. Many apparently wonderful luminaires have serious brightness problems that need to be solved by the choice of application, lamp wattage, and other lighting fixtures to use alongside. With a little extra care, you can be sure that the good-looking luminaires you specify will make the space look good, too.

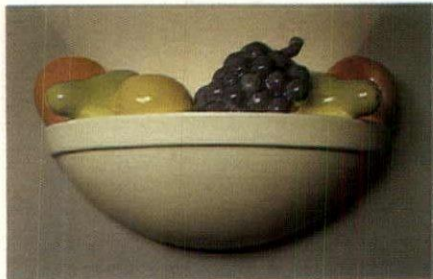
— Susan E. Huey

*Susan E. Huey is a senior designer at Luminare Souter Lighting Design, San Francisco.*

*Decorative luminaires are displayed on pages 40-47.*

# SHOWCASE

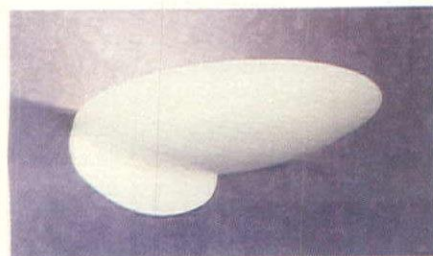
## Decorative luminaires



### ■ Ceramic sconce

Justice Design's Fruit Bowl sconce is designed for hotels, kitchens, and restaurants. Glazed ceramic fruits fit into an aluminum rack that allows illumination of the fruits from below while reserving a clear space for light to shine through. The sconce has a standard-base porcelain socket and can be custom-ordered for other sockets. The fruit set is removable for easy cleaning. Justice Design Group, Los Angeles, CA.

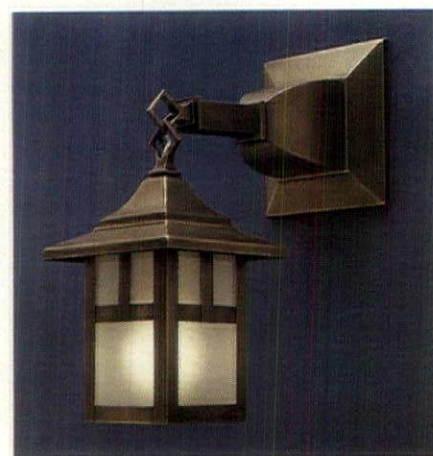
Circle 95



### ■ Dish wall fixture

Amerlux's Alpha 301 flat dish wall fixture provides uplight with a 200- or 300-watt quartz halogen lamp. The sconce is part of the Eurolight series of wall and linear fixtures and comes in matte white and polished brass finishes. Amerlux, Inc., Fairfield, NJ.

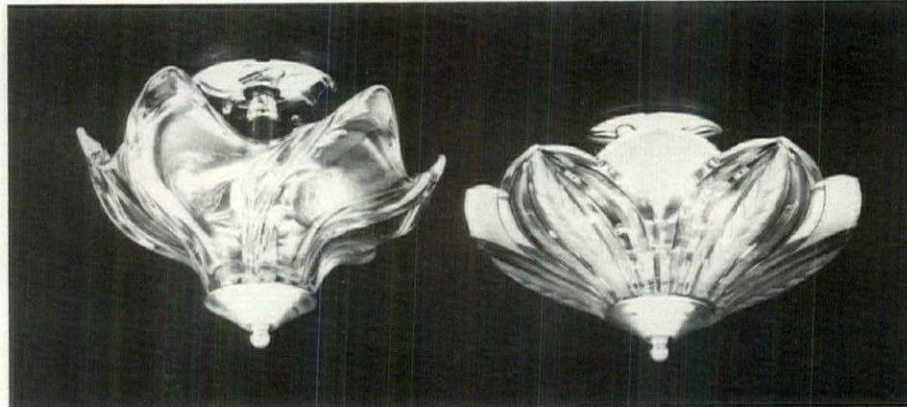
Circle 96



### ■ Mission style lantern

The Rainier is a solid brass Mission style lantern from Rejuvenation. The wall-mounted fixture comes in a variety of finishes: polished and japanned copper, polished nickel, and antiques, and brushed brass finishes. The glass panels are available in plain frosted, green, blue, pink, or cream art glass. Rejuvenation Lamp & Fixture Company, Portland, OR.

Circle 97

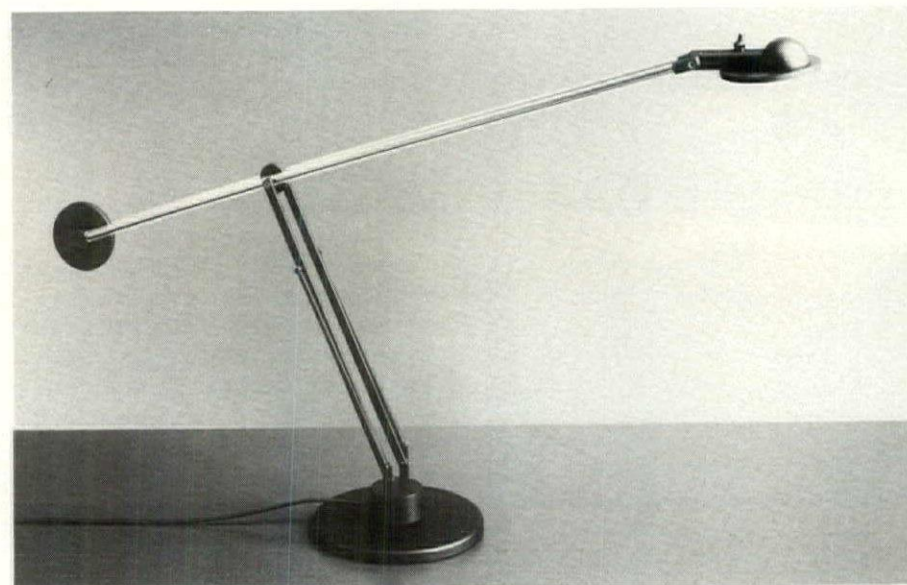


### ■ Crystal chandeliers

Crystorama offers the Lead Crystal Collection of flush-mount ceiling pieces of hand-carved crystal that contains 15 percent lead for added sparkle and strength. A variety of styles range from contemporary to Art

Deco to traditional. All fixtures take two 60-watt candle lamps. Crystorama, Inc., Carle Place, NY.

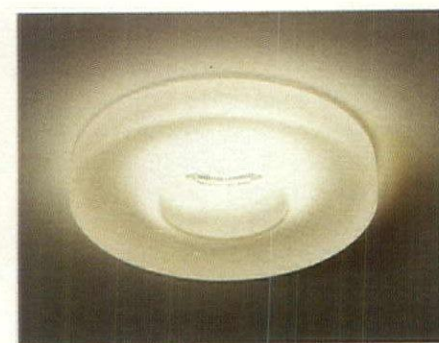
Circle 98



### ■ Halogen table lamp

Fly is a black metal table lamp from Lighting by Kenneth. A halogen source is included; the arm and head are movable. Lighting by Kenneth, Inc., Miami, FL.

Circle 99



### ■ Ceiling fixture

Tirio ceiling fixtures from Tech Lighting use ringed glass diffusers to create a glowing ring of light. The European glass fixtures come in cobalt blue, pale rose, and white models. Tech Lighting, Inc., Chicago, IL.

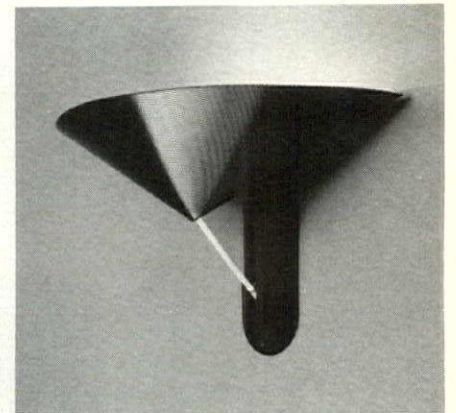
Circle 100



### ■ Murano glass pendant

Thomas Industries offers the Cristabol line of 11 luminaires; their hand-pressed Murano glass shades are formed by pressing a layer of white glass between two layers of clear glass. Clear ice glass is sprinkled on and molded into the shade to complete the design. Pictured is a pendant luminaire with a floral-patterned shade that accommodates a 150-watt G lamp. Thomas Industries Inc., Louisville, KY.

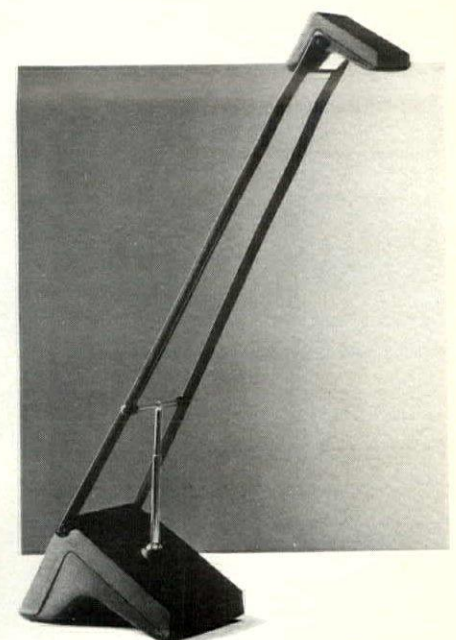
Circle 101



### ■ Wall sconce

The Demetra wall sconce from Calger Lighting has a shallow cone-shaped shade of screening that creates a decorative light pattern. The shade is supported by a triangular glass rod that catches the light for contrast with the shade's black metal. The sconce holds a halogen source; a floor lamp model with a dimmer also is available. Calger Lighting, Inc., New York, NY.

Circle 102



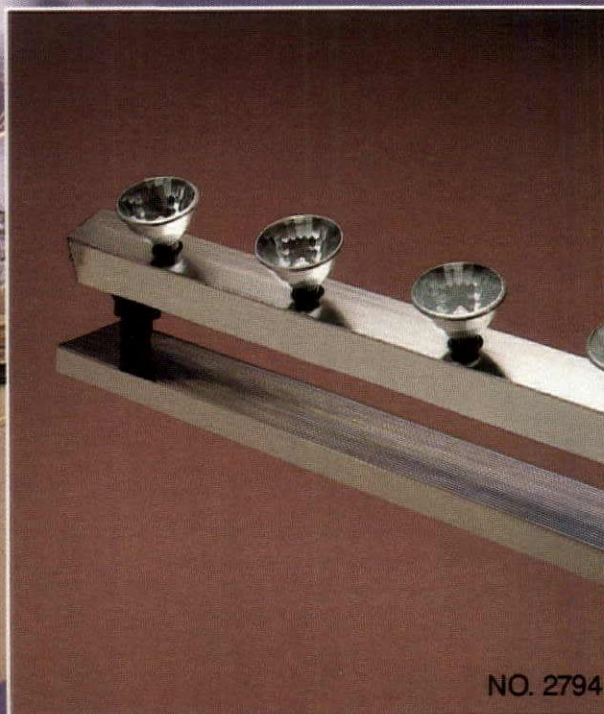
### ■ Telescoping lamp

The Kendo from Tre Ci Luce is an Italian-designed, adjustable, low-voltage table lamp. The telescoping mechanism on the aluminum and nylon fixture adjusts lamp height and reach range, and its diffuser rotates 360 degrees so the portable lamp can be used for task lighting, wall washing, and other applications. Lightning Bug, Ltd., Hazel Crest, IL.

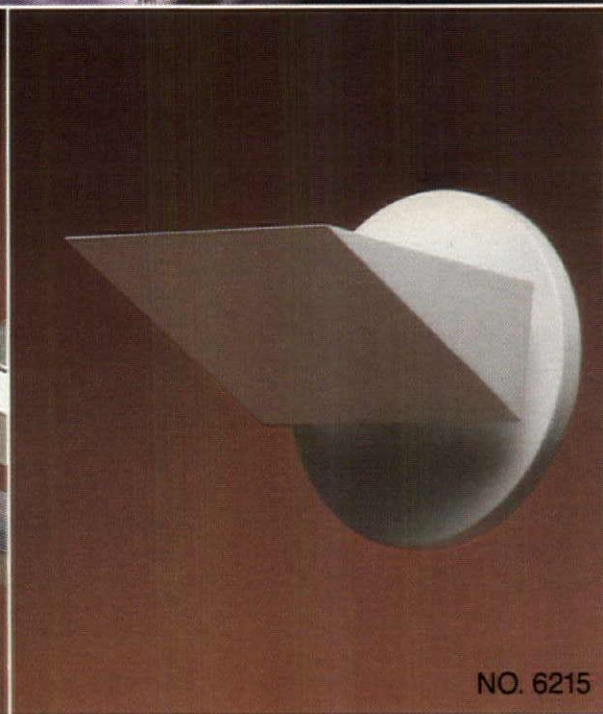
Circle 103

# norbert belfer lighting

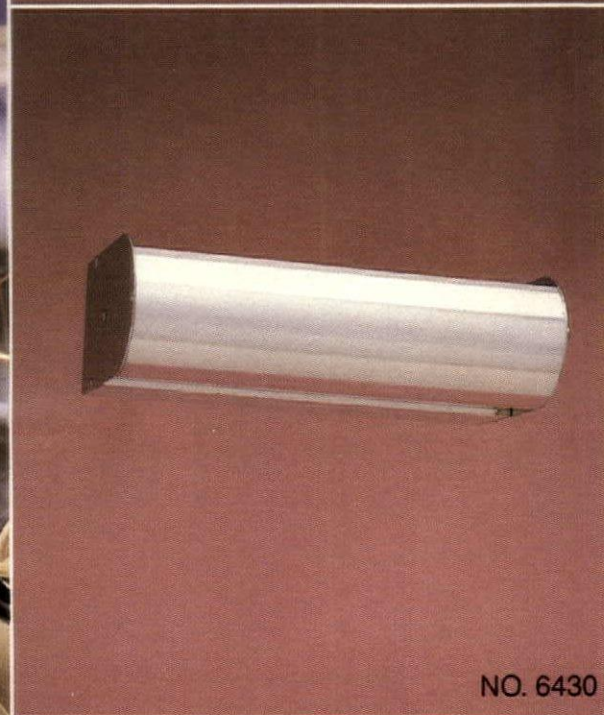
*Specification Lighting Systems Manufacturer*



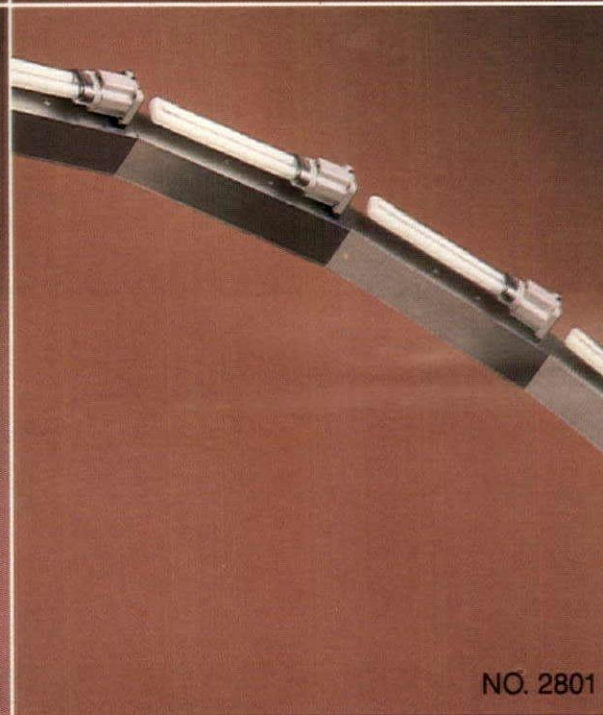
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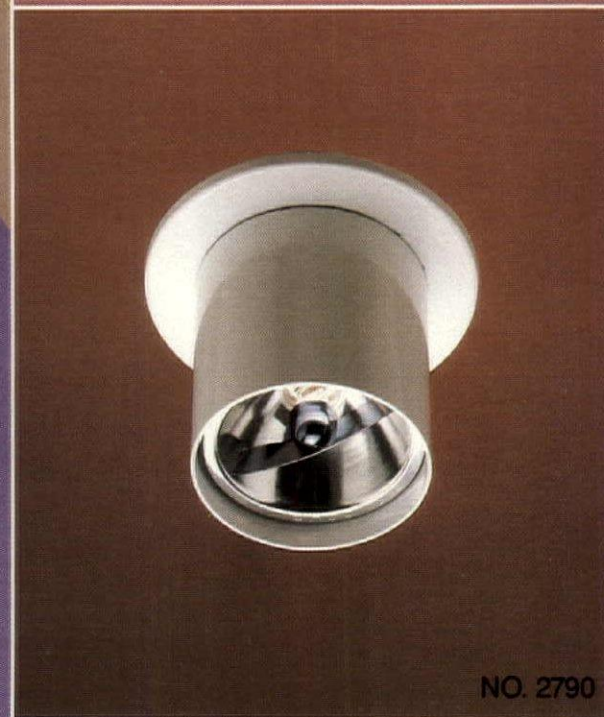
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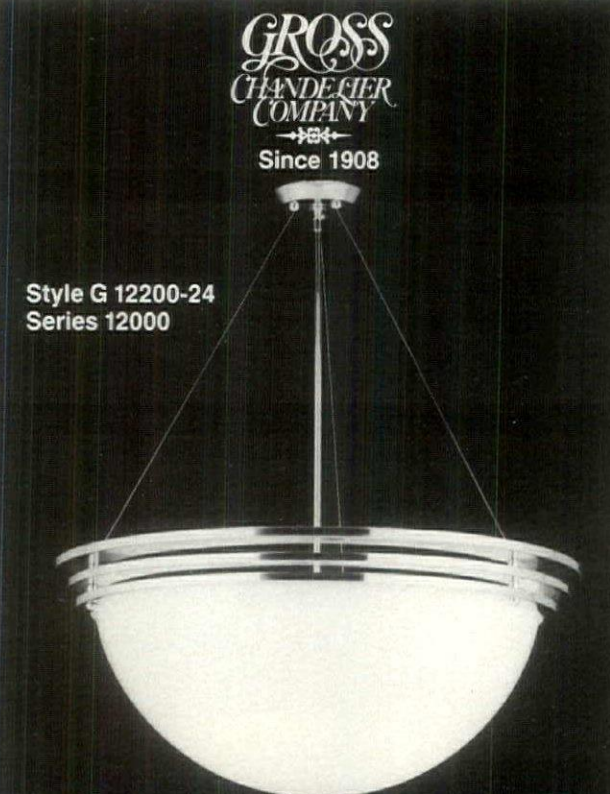
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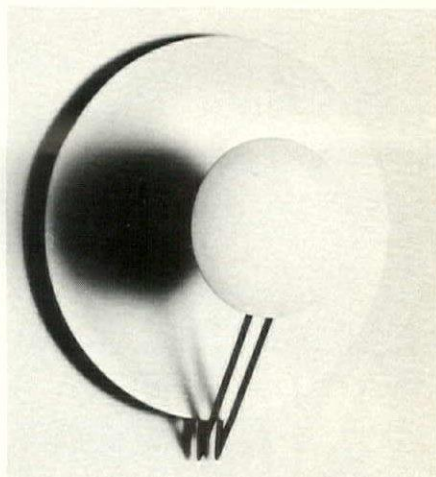
Circle 36



#### Table lamp

The St. Regis brass table lamp from Boyd Lighting is a contemporary variation on traditional designs. It holds one standard incandescent source up to 60 watts. Available is a sloped shade of white linen, white matte paper, white gloss paper, black matte paper, or black gloss paper and a spun brass shade with a polished brass, polished chrome, or silver granite finish. Boyd Lighting Company, San Francisco, CA.

Circle 104



#### Halogen fixture

The Vega halogen fixture by Tre Ci Luce can be mounted on walls or ceilings. It is made of two convex aluminum alloy disks connected by a satin black aluminum arm. The small disk comes in two finishes and conceals an anodized aluminum inner reflector; the large disk is satin-finished and comes in three sizes. Lightning Bug, Ltd., Hazel Crest, IL.

Circle 105

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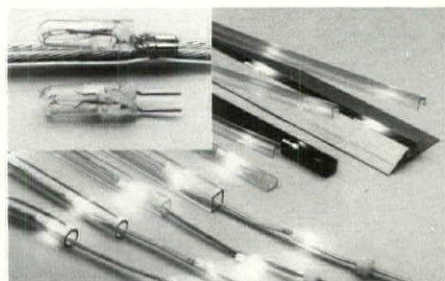
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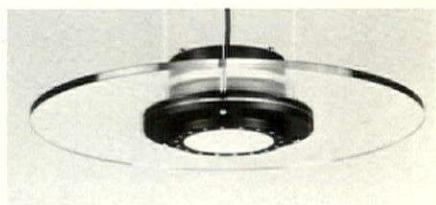
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#### Floating pendant

Murray Feiss's floating pendant fixtures come in black, white, polished brass, or chrome finishes, each with a 150-watt halogen lamp. The fixtures are 20 inches in diameter and are designed to appear to hover in midair. Murray Feiss Import Corp., Bronx, NY.

Circle 106





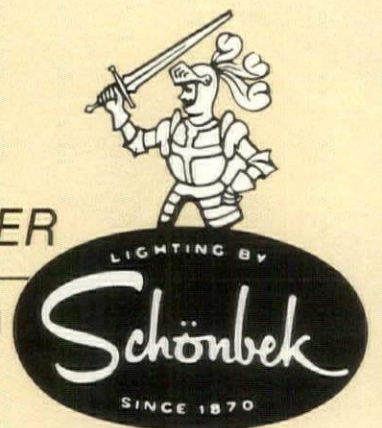
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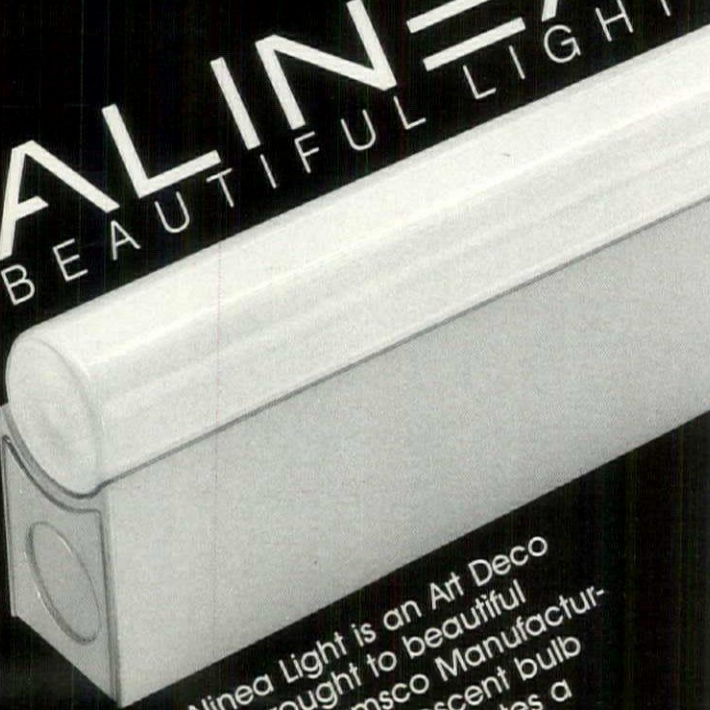
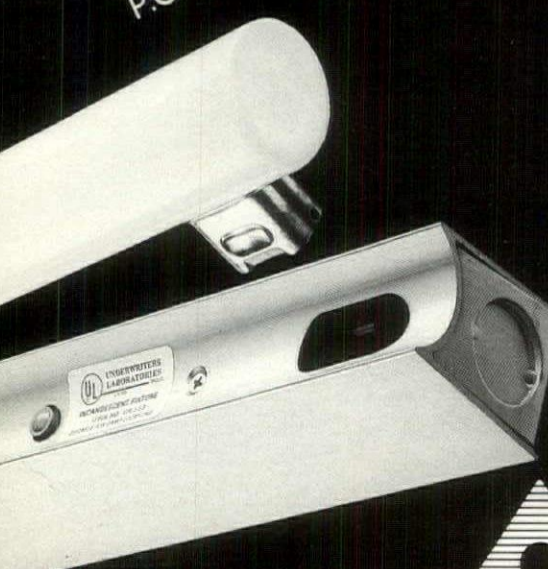

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Circle 39



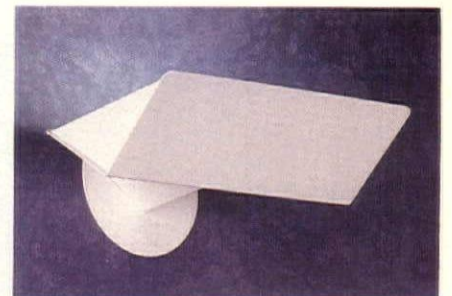
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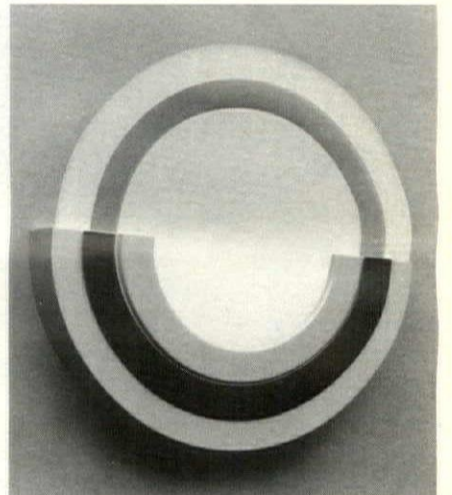
Circle 40



■ Wall fixture

The Gamma 305 wall fixture from Amerlux is a V-shaped, downward-pointing scone that provides uplight from a 300-watt quartz halogen lamp. Available finishes are matte white and polished brass. The scone is part of the Eurolight series of sconces and linear fixtures. Amerlux, Inc., Fairfield, NJ.

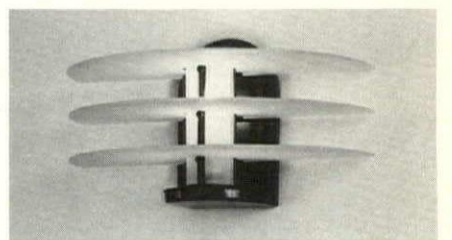
Circle 107



■ Wall sconce

Gross Chandelier's G-9000 wall sconce for corridor and room lighting is 1 foot in diameter and projects only 2 3/4 inches from the wall. Its metal frame is available in several finishes and colors. The sconce comes with a frosted and clear glass disk diffuser and is made for compact fluorescent lamps. It is part of a collection of 22 fixtures designed for the same application. Gross Chandelier Company, St. Louis, MO.

Circle 108

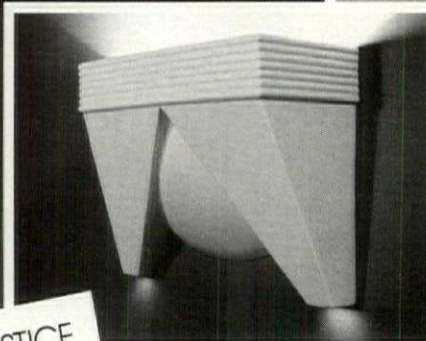


■ Wall sconce

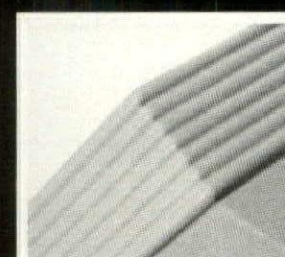
The Virgo wall sconce from Tech Lighting has three tiers of sanded glass mounted on a metal structure. The light source is a 150-watt halogen lamp behind a central vertical diffuser. The sconce comes in two sizes and in either black or gray. Tech Lighting, Chicago, IL.

Circle 109

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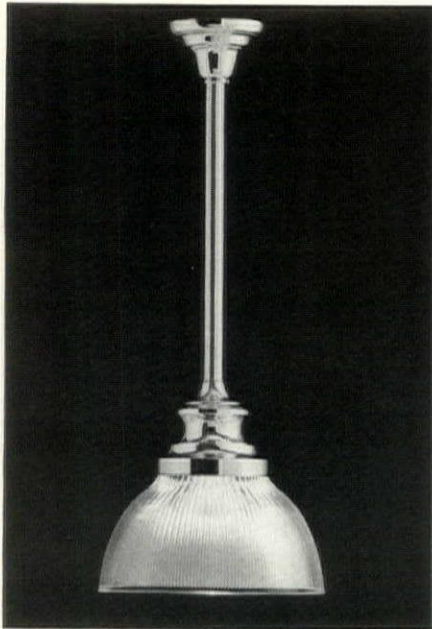


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Circle 41



■ Prismatic glass pendant

A glass pendant fixture from Brass Light Gallery has a prismatic pattern inspired by a 1920s design. The glass is set in a modern crown fitting that is available in a choice of colors and in solid brass. The fixture accepts a lamp up to 200 watts and comes in five sizes. Hanging poles are available in a variety of lengths. Brass Light Gallery, Milwaukee, WI.

Circle 110



■ Lantern pendant

A lantern pendant from Brass Light Gallery is a solid brass reproduction of fixtures in the Arts and Crafts tradition that can be used either indoors or outdoors. The fixture holds a 150-watt lamp and comes in polished, satin antique, verdigris, white, and black finishes, with a choice of art glass panel colors. Wall-sconce and multiple-pendant versions are available. Brass Light Gallery, Milwaukee, WI. ■

Circle 111

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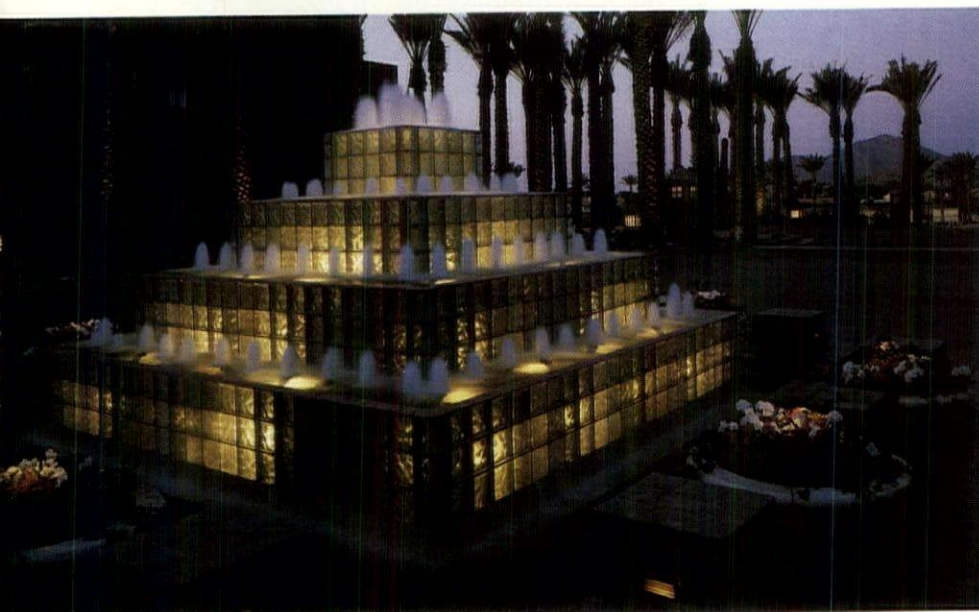
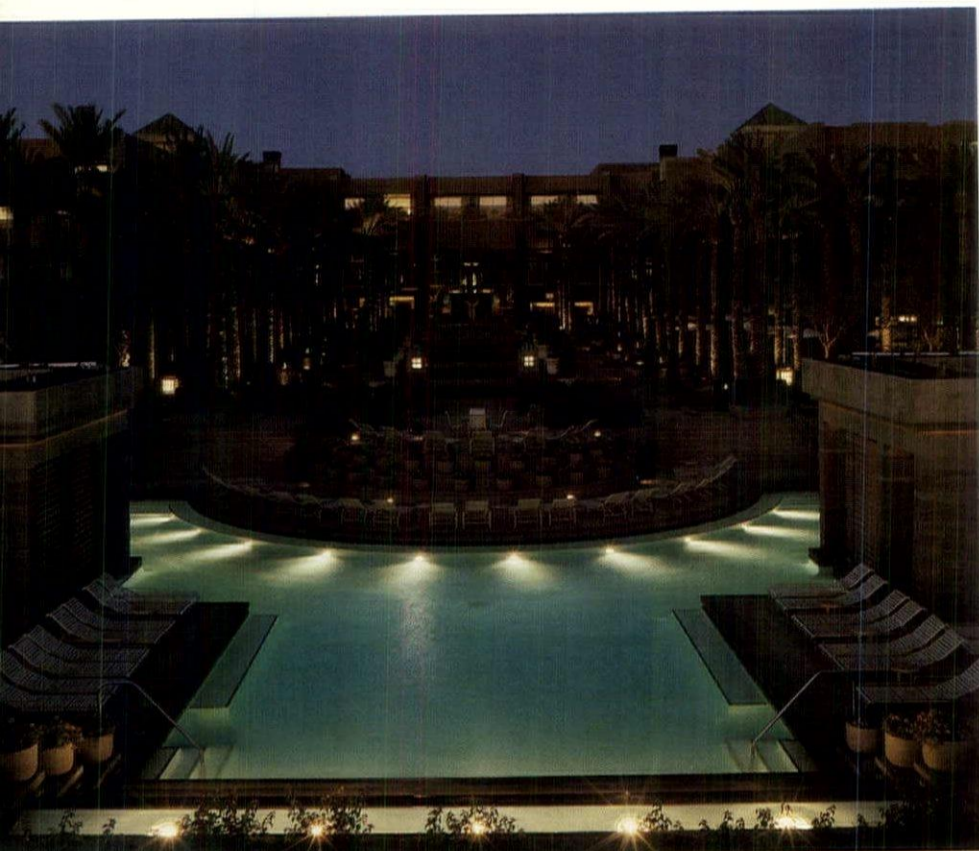
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Circle 42

## LANDSCAPE AND AREA LIGHTING

## Variety of lighting effects make resort landscape exciting



"We know from experience at our major resorts that exterior lighting is extremely important," says John Nicolls of Hyatt Hotels. "It's hard to over-emphasize the importance of landscape lighting at a resort, because it *is* the landscape at night."

At its new Gainey Ranch resort in Scottsdale, Arizona, Hyatt wanted to avoid pole-mounted fixtures and any kind of intrusive, glaring, eye-level source. The original design concept was to rely on low-lying bollards, a handful of uplights, and the reflected light from water features to light the grounds. When the hotel opened, however, the grounds obviously needed more light — both for pedestrian safety and for aesthetic reasons. Nicolls brought in lighting designer Babu Shankar, who augmented the existing scheme with new lamps and fixtures.

Lighting now reinforces the unique character of each landscaped courtyard at Gainey Ranch. "You want as much visual variety as you can provide around the grounds," Nicolls says. "Variety helps to make a hotel feel larger and provides a sense of discovery." Subtle uplighting on willow trees in one area provides an attractive view from the restaurant, while uplights and tree-mounted low-voltage downlights in the outdoor ballroom area provide enough illumination for a party. At the entrance, light helps to direct traffic flow; at the nine separate pools, underwater lighting primarily ensures safety, with decorative appeal as an extra benefit.

*Lighting creates a variety of nighttime moods for guests exploring the grounds of this desert resort. Glowing glass block columns are a focal point in the main swimming pool (middle photo). The entry fountain (bottom photo), a foaming ziggurat, is lit by submerged MR16 lamps.*

The pools, fountains, waterfalls, aqueducts, and other water features draw the attention of guests at any time, but they are especially magical after sunset. "Lighting creates a fantasy at night," says Howard Fields, who designed the underwater lighting. "You're drawn to a feature that glows more strongly than its surroundings. When you leave it, you take off on a moonlit walk" — which leads to the next discovery.

A double row of glass block columns, for example, march out of a sand beach and right into the middle of the biggest pool. Incandescent underwater lamps inside the columns glow brightly at their bases and tops, which are crowned with frothing fountain jets.

At the perimeter of the main swimming pool, an aqueduct carries 1000 gallons of water a minute to a shimmering two-story waterfall. En route, 43 scuppers pour plumes of water into the pool. Each plume is uplit by a 300-watt underwater fixture recessed under a custom Lexan plate set flush with the pool bottom. Water circulates through ventilation holes in the plate, preventing overheating in the cavity.

A ziggurat-shaped entry fountain greets visitors as they approach the hotel. "It looks like it's from outer space, a brightly lit hunk of ice that landed in the auto court," says Fields. Horizontally and vertically aimed MR16 underwater lamps behind glass blocks create the attention-grabbing effect.

Throughout the grounds, light focuses on features that Hyatt wanted to draw attention to: fountains, artwork, umbrellas in the outdoor cafe, trees, cactus, and a giant saguaro cactus. Without landscape lighting, they would all be barely visible — as John Nicolls found out firsthand. "When we first opened this resort, no site power was turned on. At night, the building stopped at the glass line," he says. "When we turned on the power, and later when Shankar did additional work on the landscape lighting, the transformation was phenomenal."

—Gareth Fenley

**Project:** The Hyatt at Gainey Ranch  
**Location:** Scottsdale, Arizona  
**Architect:** Mark Hornberger, Hornberger Worstell and Associates, Inc.  
**Landscape Architect:** Bill Callaway, SWA Group  
**Water Features Consultant:** Howard Fields and Associates  
**Interior Designer:** Lee Rovtar  
**Interior Lighting Designer:** Carl Hillmann Associates, Inc.  
**Electrical Engineer:** W.L. Thompson  
**Landscape Lighting Designer:** Babu Shankar, Wheel Gersztoff Friedman Associates Inc.  
**Photos:** Stephen Fridge

*For product information, see Manufacturers on page 62. Products for landscape and area lighting are displayed on pages 50-58.*



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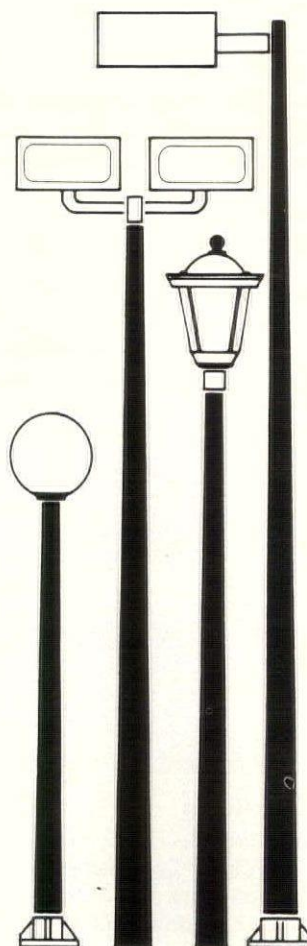
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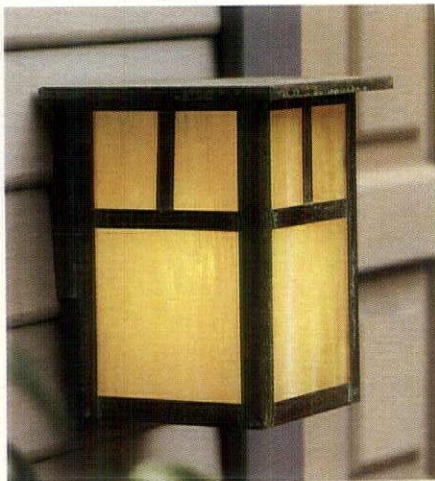
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## SHOWCASE

### Landscape and area lighting



#### ■ Brass lantern

The Mission luminaire from Arroyo Craftsman is an individually assembled brass lantern with a verdigris patina finish. It comes with an arm and backplate for wall mounting and is available in hanging and post-mounted versions. Four sizes and several glass colors are available. Arroyo Craftsman Lighting, Inc., Duarte, CA.

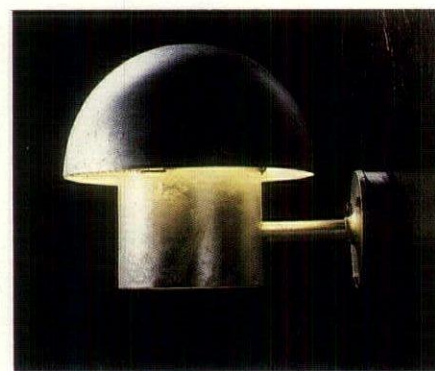
Circle 112



#### ■ Reflector luminaire

An aluminum fixture from Architectural Area Lighting comes with a reflector hood over a sag diffuser; its cast aluminum arm is suitable for mounting on posts or walls. The fixture is available for single and multiple configurations of various HID light sources and comes in several finishes. Architectural Area Lighting, La Mirada, CA.

Circle 113

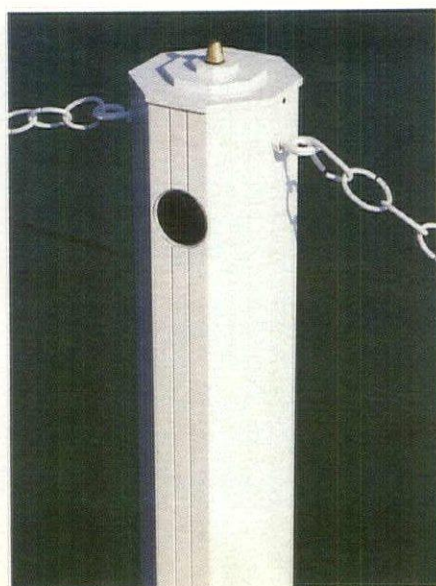


#### ■ Lantern

The Bjarne Bech Post Top round lantern from Poulsen Lighting has an upper hemispherical inner surface that symmetrically reflects light down and out from a mercury vapor, metal halide, incandescent, or HPS

source. The galvanized steel fixture comes in post- and wall-mounted versions and is UL listed for wet locations. Poulsen Lighting, Inc., Miami, FL.

Circle 114



#### ■ Low-voltage fixture

The Executive extruded aluminum bollard from Nightscaping is a low-voltage fixture with a concealed mounting base that can be set in concrete or buried in the ground. A ceramic socket on an adjustable gimbal takes an MR16 lamp; the fixture can be modified for a low-voltage PAR 38 lamp. Its powder-coated finish comes in several colors and has a 10-year warranty. Clear and colored lenses are available. Nightscaping, division of Loran Inc., Redlands, CA.

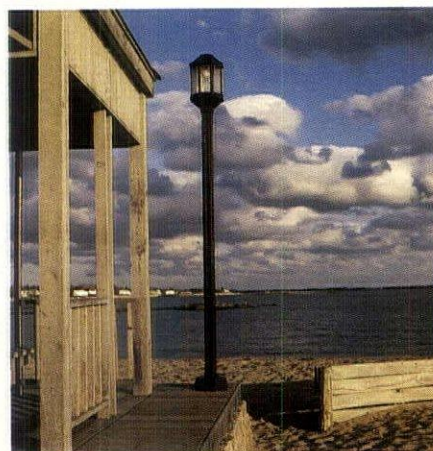
Circle 115



#### ■ Garden bollard light

A redwood bollard from Sylvan Designs has a slanted diffuser that directs soft light forward and down for pedestrian traffic or special highlighting. The wood is kiln-dried, unstained heartwood that is naturally resistant to insects and decay. The bollard is designed for easy relamping with a 60-watt incandescent lamp behind a clear prismatic lens; it is available for both low-voltage and standard line-voltage systems. Sylvan Designs, Northridge, CA.

Circle 116



#### ■ Post and luminaire

The Venice fixture and post assembly from RWL's Welsbach Lighting has rippled panels for low brightness, vandal-resistant cast aluminum construction, and corrosion-resistant stainless steel hardware. Various lens configurations accommodate a variety of sources. The fixture fits an octagonal post and comes in several finishes. RWL Corporation, New Haven, CT.

Circle 117



#### ■ Parking garage lighting

LSI offers five reflector systems, three for vertical burn lamps, for its Park Avenue parking garage fixture. The fixture holds various HID lamps and is designed to provide even distribution and to eliminate glare. Four mounting options are available for the fixture, which has a two-piece housing of either aluminum or steel. Lighting Systems, Inc., Cincinnati, OH.

Circle 118

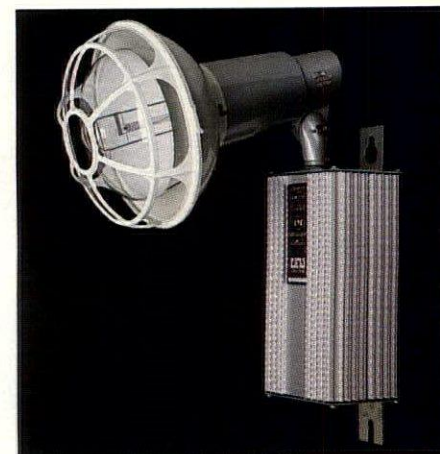


#### ■ Outdoor fixtures

Fixtures in Dinico's Tech 1 series are designed to be wall- or post-mounted in contemporary architectural settings. Their modular construction allows for multiple

configurations of two or three lights on a post. The solid die-cast aluminum fixtures come with tough plastic diffusers. Versions are available for compact fluorescent and standard incandescent sources. Dinico Products, Inc., Hackensack, NJ.

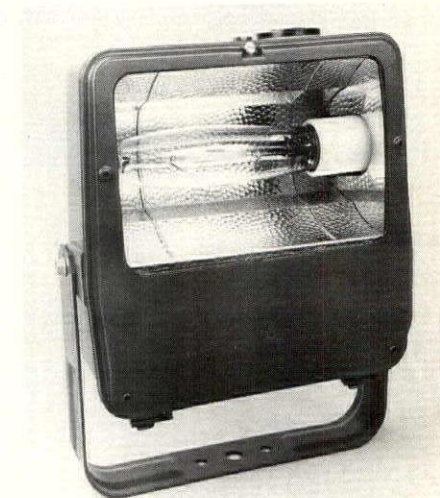
Circle 119



#### ■ HPS fixture

The Watchman high pressure sodium fixture from CEW Lighting provides weather-resistant security lighting outdoors; it is also suitable for indoor areas. The light, compact fixture is prewired for quick installation with a slide-out ballast tray. Lamp positioning is adjustable through 180 degrees. Models are available for 220 and 360 watts. CEW Lighting, Dallas, TX.

Circle 120



#### ■ Wide-beam floodlight

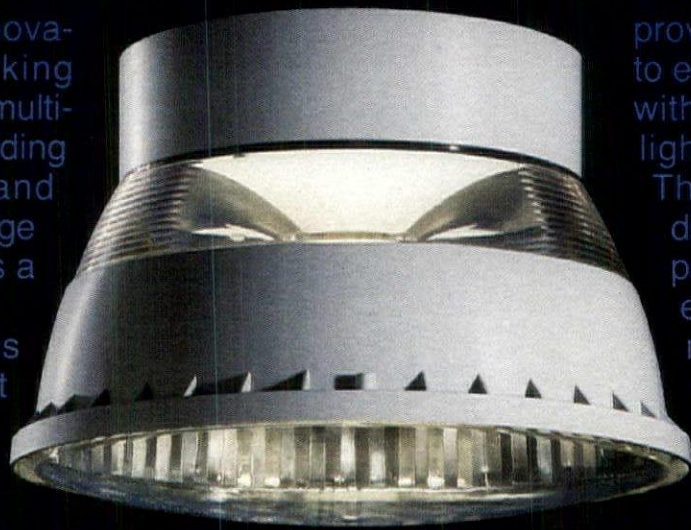
The lightweight PF-154 Powerflood from GE Lighting Systems uses high intensity discharge sources up to 400 watts and can be easily installed with trunnion, knuckle slip-fitter, or knuckle wall mountings. A hinged, removable door allows front access for installation and maintenance, and a quick-aiming sight is molded into the top of the die-cast aluminum housing. Accessories include a polycarbonate shield, visors, and a wire guard. GE Lighting Systems Department, Hendersonville, NC.

Circle 121

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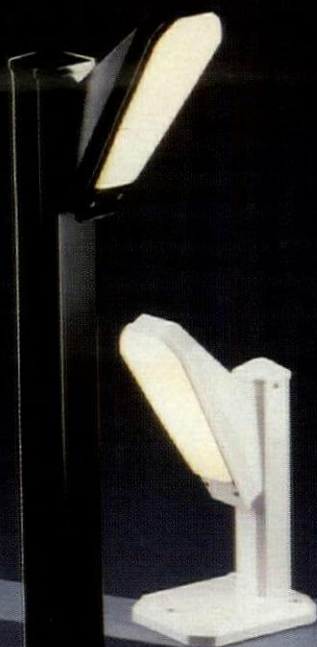
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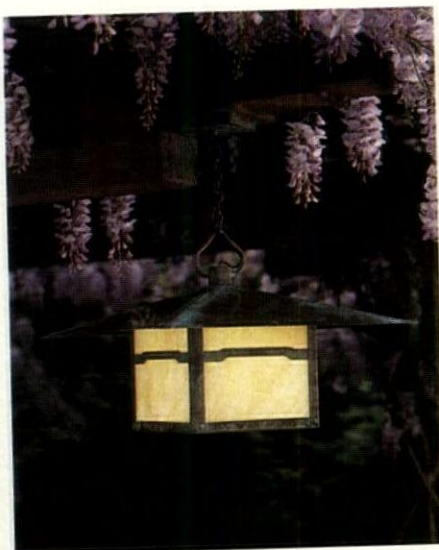


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Circle 45



#### ■ Lanterns

Monterey solid brass indoor-outdoor lanterns from Arroyo Craftsman come in four sizes for wall or post mounting. Each is individually assembled and has a verdigris patina finish. Several glass colors are available with an optional pine needle or sycamore filigree overlay. Arroyo Craftsman Lighting, Inc., Duarte, CA.

Circle 122



#### ■ Cylindrical luminaire

Poulsen Lighting's HW Patina is a cylindrical luminaire topped by a flared conical reflector shade. The fixture's diffuser is made of a heavy, opalescent plastic, and the underside of the reflector is finished in weather-resistant baked white enamel. Versions are available for HID sources ranging from 70 to 175 watts and for 300-watt incandescents. The fixture comes in wall- and post-mounted versions in copper or aluminum. Poulsen Lighting, Inc., Miami, FL.

Circle 124



#### ■ Exterior wall sconce

An outdoor wall sconce from Appleton Lamplighter is designed for upscale commercial and residential settings. The luminaire is made of brushed stainless steel and polished bronze and has opal acrylic lenses. It houses five A19 lamps and is UL approved for exterior installation. Appleton Lamplighter, Appleton, WI.

Circle 123



#### ■ Step light

The Alesco step light from Sylvan Designs has a hooded cover that can be rotated 360 degrees to direct the light in almost any direction. The semirecessed wall-mounted fixture is only 3<sup>5</sup>/<sub>16</sub> inches in diameter and protrudes only 1<sup>5</sup>/<sub>8</sub> inches from the mounting surface. The low-voltage unit can be used either indoors or outdoors and can be mounted on either vertical or horizontal surfaces. Sources are standard 12-volt incandescents from 6 to 18 watts. Sylvan Designs, Northridge, CA.

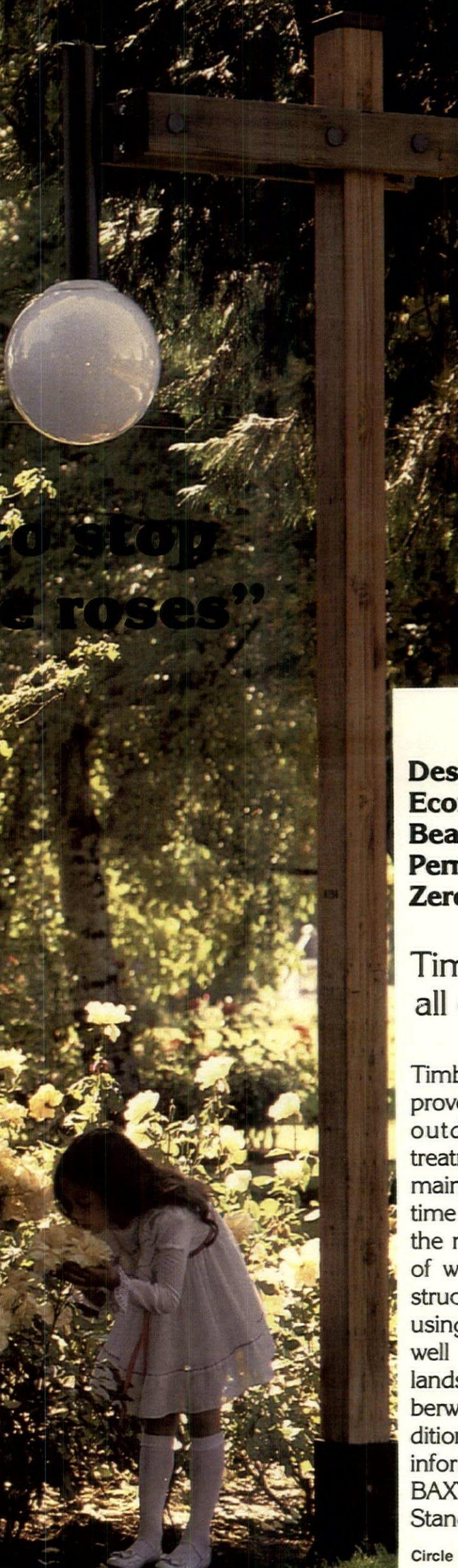
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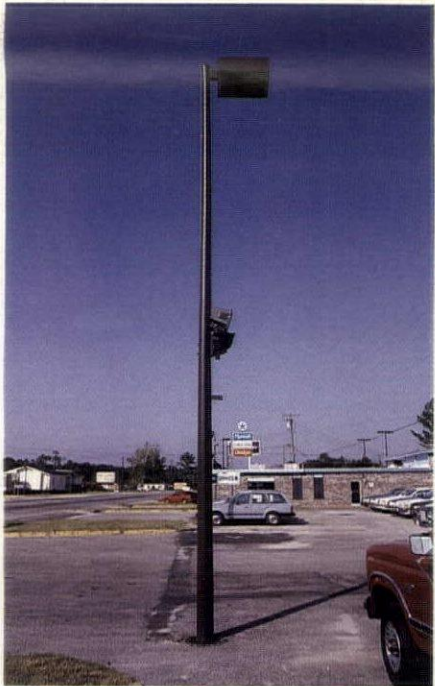
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#### ■ Vandalproof fixtures

The SL5 from Kim Lighting's Site Light-forms series of vandal-resistant luminaires is designed for cutoff lighting of pathways, entrances, courtyards, atria, and landscaped areas. The fixture is designed to complement neoclassic and contemporary architecture. Kim Lighting, City of Industry, CA.

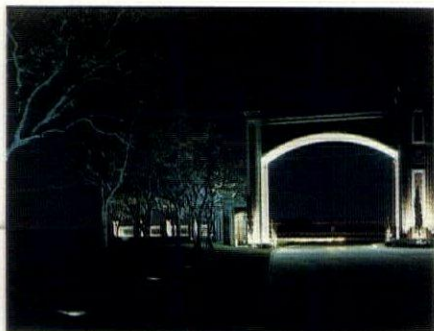
Circle 126



#### ■ Fiber glass poles

Fiber glass light poles from Shakespeare can withstand weather extremes without corroding and are light enough for manual installation, according to the manufacturer. The poles come in heights up to 47 feet, in natural and smooth finishes, in three shapes, and in seven UV-protected colors. Installation choices are direct burial and anchor base. Shakespeare Company, Newberry, SC.

Circle 127



#### ■ Landscape lighting

Fixtures from Greenlee Landscape Lighting are designed for uplighting, to showcase signage, and to provide a moonlight effect. The fixtures include a burial unit with a lens flush to the ground. All are designed to bring drama to functional and security lighting. Greenlee Landscape Lighting, division of Lighting Systems, Inc., Carrollton, TX.

Circle 128



#### ■ Lighted bollards

Bollard Ten luminaires from Gardco are made with 1/4-inch cast aluminum. They have a one-piece impact-resistant lens to thwart vandalism and are sealed with silicone to prevent the entry of water, insects, and dust. Optical assemblies are engineered for uniform, glare-free, site-confined lighting. The bollards are 42 inches high and can be mounted on a base, a post, or a concrete structure. Gardco Lighting, San Leandro, CA.

Circle 129



#### ■ Wall downlight

The Stylist downlight from Nightscaping can be mounted on a wall to illuminate both the wall and the path below. It can also be mounted on fences, ceilings, and other flat surfaces for weather-resistant, controlled-beam lighting. The fins on its extruded aluminum housing dissipate heat; an optional honeycomb louver enhances beam control. Relamping can be done from front, side, or rear. Nightscaping, division of Loran Inc., Redlands, CA.

Circle 130



#### ■ Walkway light

The Litey Bug is a low-voltage walkway light from Sylvan Designs. Its mushroom hood directs a broadly diffused light pattern from 12 inches above pedestrian areas. Its housing is powder-painted aluminum with an acrylic diffuser; it comes with a post and metal stake point. Its standard brown color integrates it into most daytime landscapes, and other colors can be ordered. Sylvan Designs, Northridge, CA.

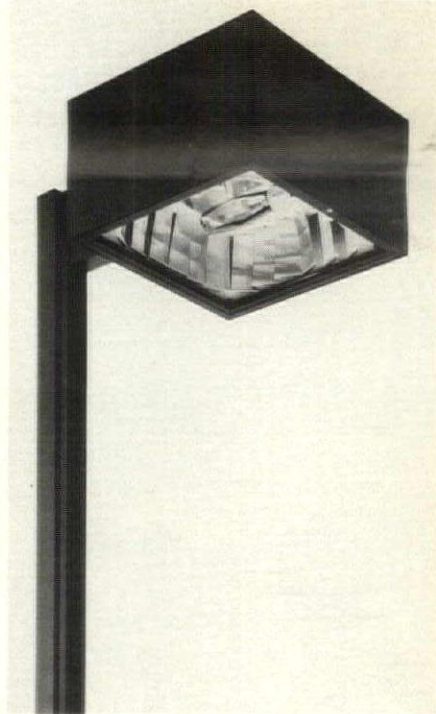
Circle 131



#### ■ Recessed outdoor uplight

Hubbell's Perimascaper recessed uplight is constructed from a high-strength, impact-resistant fiber glass-reinforced polyester composite. The lens frame and ballast box covers have a one-piece molded silicone gasket. The watertight, chemical- and corrosion-resistant unit comes factory wired for easy installation. It is available for low- and line-voltage incandescent and HID sources. Hubbell Incorporated, Lighting Division, Christiansburg, VA.

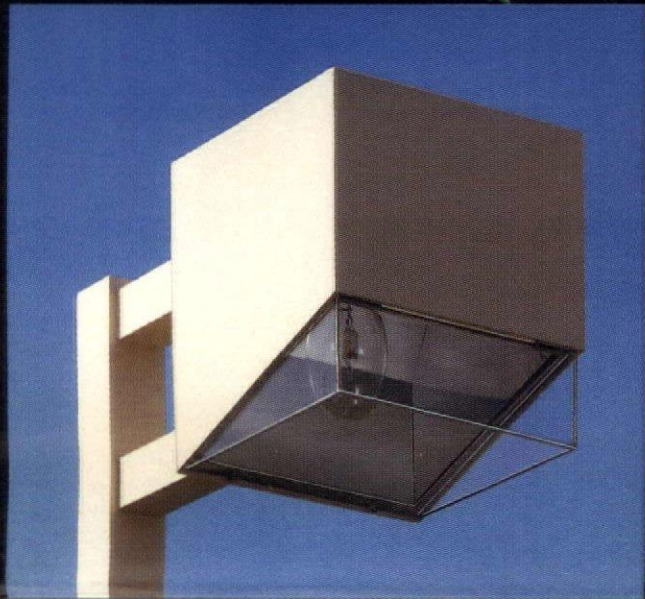
Circle 132



#### ■ Square outdoor fixture

The square light distribution of Emco's In-finisquare outdoor fixture can reduce the need for other fixtures in a given area by as much as 44 percent, according to the manufacturer. Nine optical assemblies can be rotated in 90-degree increments to permit a number of light pattern and distribution combinations. The fixture is sealed from the weather and insects and has a tempered, vandal-resistant lens. Emco Environmental Lighting, Milan, IL.

Circle 133



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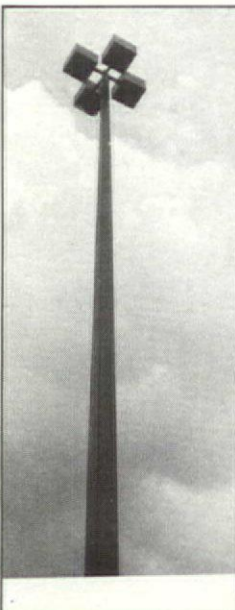


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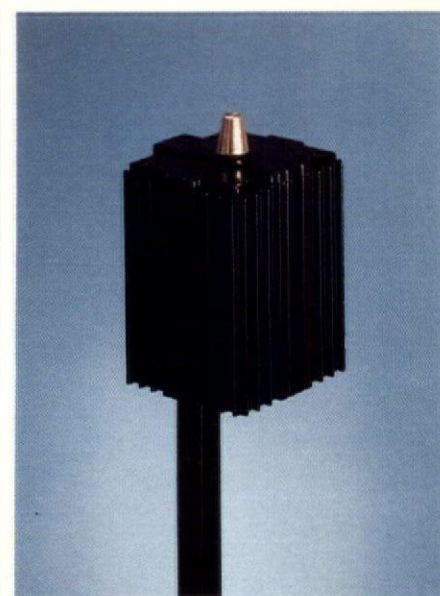
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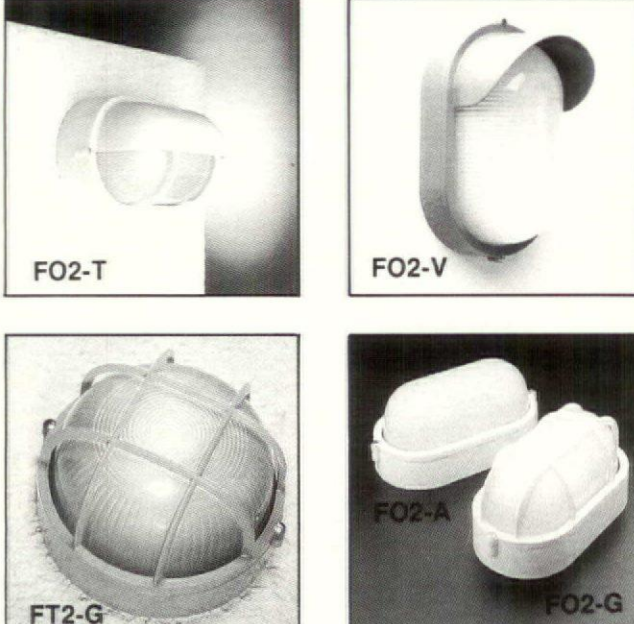
Circle 50



■ Walkway light

Nightscaping's Charmer is a ground-mounted downlight for walkways that casts an 8-foot circle of light from a height of 18 inches. With its optional top lens, the fixture can provide both up- and down-light. The fixture uses single-contact bayonet lamps from 6.9 to 35.4 watts. Fins on its extruded aluminum housing help dissipate heat. The fixture's powder-coat finish has a 10-year warranty and comes in several different colors. Nightscaping, division of Lorain Inc., Redlands, CA.

Circle 134



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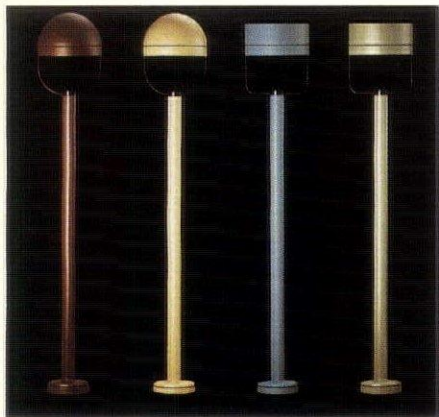
PS Form 3526, Dec. 1987 (See instructions on reverse)



■ HID fixture

The Multikat from GTE/Sylvania uses different lenses and reflectors with a compact high pressure sodium or metal halide lamp to optimize beam control and lumen output. The unit is designed to produce rectangular and circular beam patterns at 80 percent energy efficiency. The aluminum housing is a 9-inch cube that comes with various mounting options. GTE/Sylvania, Danvers, MA.

Circle 135



■ Landscape luminaires

Gardco's Post Top luminaires are available in custom colors for landscape lighting from heights to 25 feet. The fixtures come in round and semispherical shapes in two diameters. Their sharp cutoff optical system comes in five optical assemblies. A dual-yoke design provides strength and symmetry without light-blocking mass, according to the manufacturer. Gardco Lighting, San Leandro, CA.

Circle 136



■ Streetlight fixture

The Biltmore is an Old World Lighting streetlight for HID area lighting of heights of 12 to 25 feet. It has a zinc-coated steel cage, impact-resistant lenses, and a cast aluminum ballast housing and fitter. It comes in two sizes and is designed to meet precise specification requirements. Old World Lighting, division of RWL Corporation, Solvang, CA.

Circle 137

**GOLF**  
designer Roberto Fiorato

**PRISMA**  
ILLUMINAZIONE

Circle 52

**EMCO**  
ENVIRONMENTAL  
LIGHTING

EMCO ENVIRONMENTAL LIGHTING  
QUAD CITY INDUSTRIAL AIR PARK  
P.O. BOX 1640  
MILAN, ILLINOIS 61264  
(309) 799-3111  
FAX: (309) 799-7647

**EMCO ENVIRONMENTAL LIGHTING**

**EMCOLITE**® is a Registered Trademark of EMCO ENVIRONMENTAL LIGHTING.

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LIGHTING

**THOMAS**  
INDUSTRIES INC.

**VISIONARY**

The future of environmental lighting can be seen in the growing EMCO line. Excellent photometrics. Long life. Reduced maintenance. High quality. Aesthetics. Thousands of installations on commercial sites, walkways, tennis courts, airports and parking areas.

With EMCO, you get more than luminaires. You get service. EMCOLITE®, the first computer-aided program offered by an outdoor lighting manufacturer, is available free from your EMCO representative. *Lighting, Design and Application* magazine calls EMCOLITE "...an excellent design tool...lets the designer confirm the correctness of his design in a few minutes at the keyboard... re-edit and decrease entry time by as much as 100%."

Whether you're designing an historic restoration or a modern high-rise, EMCO has the lighting to enhance the environment.

Circle 53





**LOWERING SYSTEMS INC.**

**LOWERING SYSTEMS INC.** has designed a new lowering system for indoor and outdoor applications; at the same time keeping the system simple and safer for unskilled maintenance people to operate.

**LOWERING SYSTEMS INC.**  
1808 JANKE DRIVE, NORTHBROOK, IL 60062 • Telephone: 312-272-9391

Circle 54

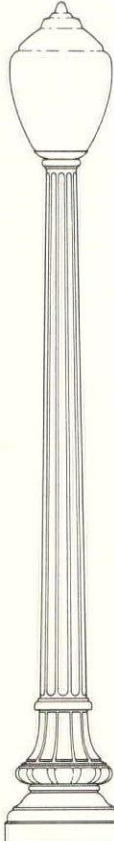
## BRASS FABULOUS

Classic wall sconces by Brass Light Gallery. Latest design addition to Goldenrod Collection. High quality solid brass Mission/Prairie replicas. Catalog \$3.00

*Brass Light Gallery*  
719 S. 5th St.  
Milwaukee, WI 53204  
(414) 383-0675



Circle 55



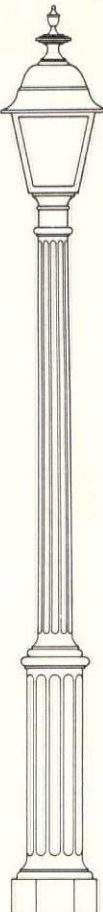
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Our unique Polysteel molding process provides the ultimate in lighting posts features.

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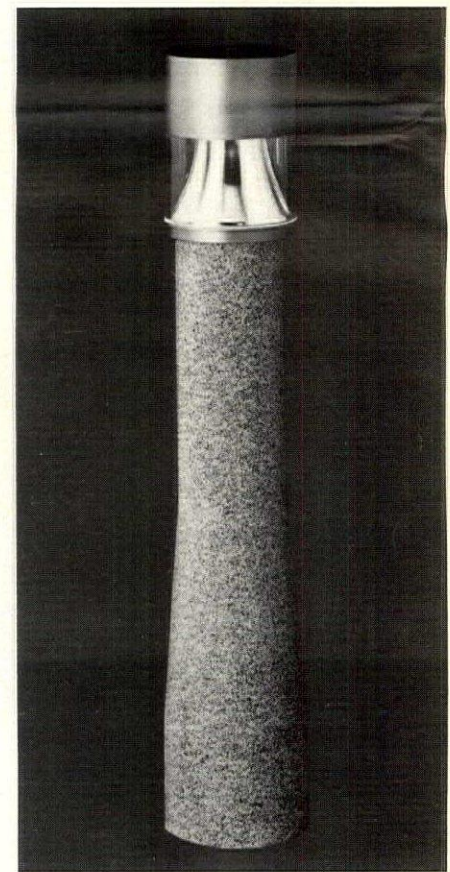
Circle 51



■ **Garage lighting**

Gardco's parking garage luminaires are built to resist vandalism, eliminate glare, and distribute light uniformly. They can easily be mounted, relamped, and repaired by one person. Six optical systems are available for use in confined, low-ceilinged spaces where glare is a problem. Gardco Lighting, San Leandro, CA.

Circle 138



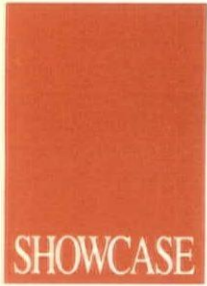
■ **Bollard**

Bollards from Emco Environmental Lighting provide glare-free lighting to pedestrian areas and are designed to withstand weather and vandalism. The bollard pictured is an industrial-plastic simulation of a concrete bollard with a flared base. Five optical systems are available and include cone reflectors and cast louvers. Uplighting and house-side shields are optional; versions are offered for five different sources. Emco Environmental Lighting, Milan, IL. ■

Circle 139

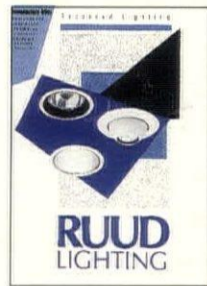
# SHOWCASE

## Product Literature



### Track and accent lighting

Track and accent lighting products are featured on pages 14-21.



**Recessed downlights**  
A brochure presents Ruud Lighting's collection of incandescent and fluorescent recessed downlights and matching trims. Ruud Lighting, Inc., Racine, WI.

Circle 144



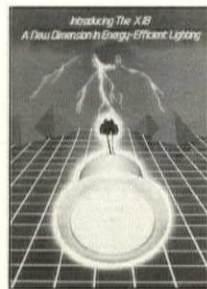
**Occupancy sensors**  
A brochure describes capabilities and lists features for three models of passive infrared occupancy sensors. It includes charts of estimated payback periods and diagrams for placement, coverage, and wiring. Sensor Switch, Inc., Branford, CT.

Circle 149



**Designer Fresnel**  
The Pepper 150 Fresnel-lensed track fixture is designed to give a theatrical touch to architectural applications. A data sheet describes optional four-leaf barn doors and snoots. LTM Corporation of America, Sun Valley, CA.

Circle 140



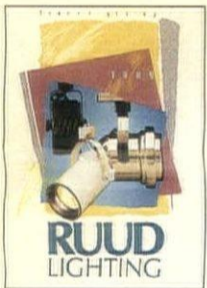
**Fluorescent fixtures**  
X18 compact fluorescent fixtures have polycarbonate diffusers and come in models for recessed downlights and track, wall, and ceiling fixtures. Adapters and reflectors are available. Scientific Component Systems, Anaheim, CA.

Circle 145



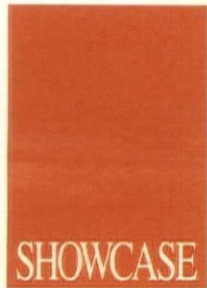
**Emergency lighting**  
A 40-page color catalog from Lithonia Emergency Systems details a full line of emergency lighting fixtures, exit signs, AC power systems, and application information. Lithonia Emergency Systems, division of Lithonia Lighting, Conyers, GA.

Circle 150



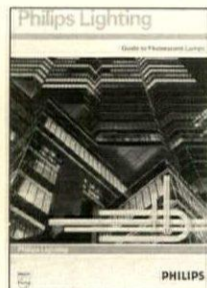
**Track lighting**  
A 36-page full-color catalog from Ruud Lighting profiles track lighting system components, including low- and line-voltage fixtures, one- and two-circuit tracks, connectors, accessories, and lamps. Ruud Lighting, Inc., Racine, WI.

Circle 141



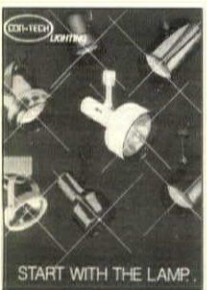
### Components and accessories

Lighting components and accessories are featured on pages 34-37.



**Fluorescent lamp guide**  
A 34-page illustrated guide to fluorescent lamps discusses operating characteristics, lamp color, maintenance hints, and other features for standard, U, compact, and specialty fluorescent lamps. Philips Lighting Company, Somerset, NJ.

Circle 151



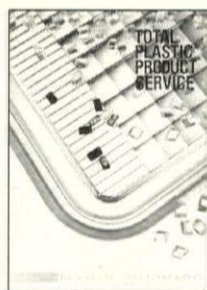
**Track fixtures**  
A 12-page color catalog describes features of Con-Tech's low- and line-voltage track fixtures and contains photos, dimensions, and lamp requirements for seven models. Con-Tech Lighting, Northbrook, IL.

Circle 142



**Tungsten halogen lamps**  
Pro-Quartz tungsten halogen lamps come in two lengths and in wattages from 250 to 1500. A data sheet describes features and benefits and provides technical and ordering information. Venture Lighting International, Cleveland, OH.

Circle 146



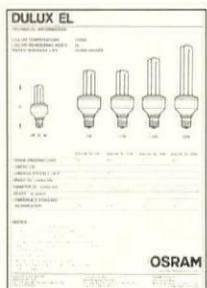
**Prismatic reflectors**  
LexaLite International manufactures plastic optical refractors, globes, drop lenses, and other lighting fixture components. A color brochure describes the company's capabilities and custom services. LexaLite International Corporation, Charlevoix, MI.

Circle 152



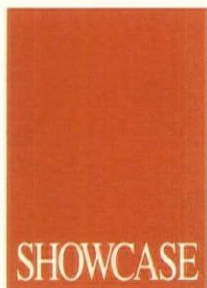
### Ambient lighting systems

Ambient lighting products are featured on pages 24-27.



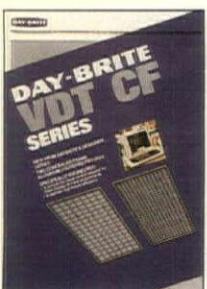
**Electronic fluorescents**  
A data sheet describes features and applications of Osram's Dulux EL lamps, which are designed to replace standard 40- to 75-watt A lamps. It includes information on lumens, heights, and diameters for four sizes. Osram Corporation, Newburgh, NY.

Circle 147



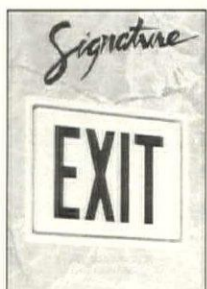
### Decorative luminaires

Decorative luminaires are featured on pages 40-47.



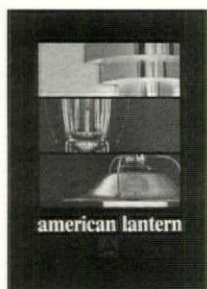
**VDT luminaires**  
A catalog features louvered fluorescent luminaires especially designed for use in areas with video display terminals and includes technical data for VDT installations. Day-Brite Lighting Company, Tupelo, MS.

Circle 143



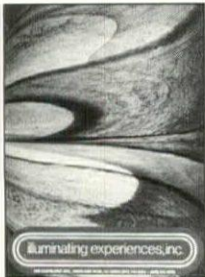
**Recessed exit sign**  
Lithonia Lighting's Signature line of recessed exit signs is profiled in a color brochure that lists features, options, and ordering information. Lithonia Emergency Systems, division of Lithonia Lighting, Conyers, GA.

Circle 148



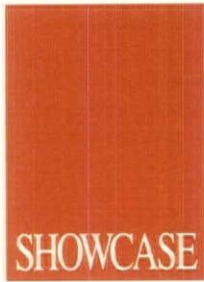
**Lighting collection**  
A brochure provides a sampling of American Lantern's indoor and outdoor fixtures, including wall sconces, pendants, and outdoor post-top and wall-mounted luminaires. American Lantern, Newport, AR.

Circle 153



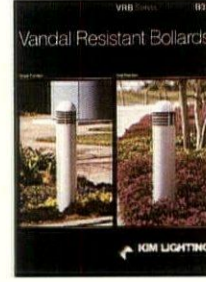
**■ Marble-glass fixtures**  
A 40-page color catalog presents modular lighting, designer fixtures, mirrors, and fixtures with diffusers of hand-blown colored glass that simulates marble. Illuminating Experiences, Inc., Highland Park, NJ.

Circle 154



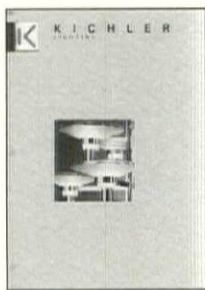
**Landscape and area lighting**

Landscape and area lighting products are featured on pages 50-58.



**■ Vandal-resistant bollards**  
Kim's single- and dual-function VRB series vandal-resistant bollards accommodate HID, fluorescent, and incandescent lamps. The dual-function model provides both cutoff pathway lighting and uplighting. Kim Lighting, City of Industry, CA.

Circle 159



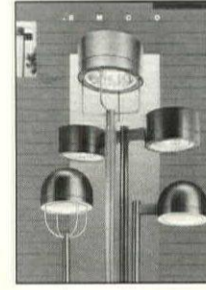
**■ Glass and brass**  
A color catalog offers chandeliers, pendants, sconces, and flush-mount fixtures in a variety of materials for various architectural styles. The catalog provides ordering information. Kichler Lighting, Cleveland, OH.

Circle 155



**■ Backlit awnings**  
Fascias and awnings with fluorescent backlights come in modules for constructing signs and walkway covers on and between buildings. Color brochures show shapes, colors, and configurations. Lighting Systems Inc., Cincinnati, OH.

Circle 157



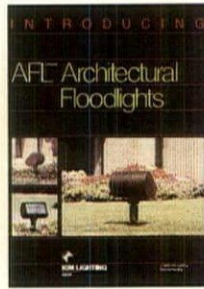
**■ Circular lighting**  
Infiniround and Infinisphere luminaires produce distribution patterns matching those of luminaires with square distribution optics. A 10-page brochure includes specifications for nine optical assemblies. Emco Environmental Lighting, Milan, IL.

Circle 160



**■ Brass chandeliers**  
A brochure contains dimensions and color photos of one-, two-, and three-tier brass chandeliers and matching wall sconces in the Series 80000 collection, many of which use incandescent candelabra lamps. Gross Chandelier Company, St. Louis, MO.

Circle 156



**■ Floodlights**  
AFL series HID architectural floodlights for indoor and outdoor applications come in three beam patterns, three colors, and nine mounting configurations. A brochure illustrates models and options. Kim Lighting, City of Industry, CA.

Circle 158



**■ Outdoor fixtures**  
A color catalog describes and illustrates Nightscaping's Pro-Liter extruded aluminum outdoor fixtures for MR16 lamps and 500- and 1000-watt Raintite transformers. Nightscaping, division of Loran, Inc., Redlands, CA.

Circle 161



**MR75** LOW VOLTAGE PATTERN AND FRAMING PROJECTOR

Frame a masterpiece. Light David like he's never been lit before, or create any mood with patterns or custom patterns. All this and more from our new low voltage framing projector MR75.

Utilizes low voltage MR16 lamps.

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Showroom  
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**TIMES SQUARE LIGHTING**


Circle 57

**REFLECT ON THIS**

At Badger USA, customer service is as important to the Bookkeeper as it is to the President.

At Badger USA we do more than design and manufacture three distinct varieties of Megalux Fluorescent Light Reflectors. We make your job easier, too. Our approach to customer service is just one of the things we do to maximize the return on your investment. We consider it "Basic Technology" for a productive working partnership. For more information, call us today!

**Megalux . . . not megabucks**  
Badger USA  
103 Water Street  
Baraboo, Wisconsin 53913



Circle 58



## Classified Directory

### ACCENT AND DISPLAY LIGHTING (INTERIOR)

- AMERLUX, 23 Daniel Rd., Fairfield, NJ 07006 ..... 201/882-5010  
**BEND-A-LITE (see ad this section)**  
 DANALITE, 16392 Gothard St. #A, Huntington Beach, CA 92647 ..... FAX 714/848-1669 714/841-4325  
 Low voltage / slim profile linear lighting system / high intensity halogen lamps / extensive apps.  
 FIBERSTARS, 47456 Fremont Blvd., Fremont, CA 94538 ..... 800/327-7877  
 MIROFLECTOR CO., 40 Bayview Ave., Inwood, Long Island, NY 11696 ..... 516/371-1111  
 Full line of recessed accent lights, down lights & wall washers. Architectural cylinders for HQI, incandescent compact quad fluorescents and HID lamp sources.  
 NL CORP., 14901 Broadway, Cleveland, OH 44137 ..... FAX 216/662-9069 or 216/662-2080  
 Recessed HID and incandescent; decorative; custom; church; 20, 30, & 60 amp track; fluorescent lighting systems. Call for more information.

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FLEXIBLE MULTI-PURPOSE LIGHTING

**Bend-A-Lite Flexible Neon**

- Lengths from 3 ft. to 500 ft.
- Cut with Scissors • Easy to Re-Electrify
- Waterproof • Unbreakable
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 Truro Cape Cod, MASS. 02666 USA  
 508-487-3437 FAX 508-487-3933 800-235-2201

### ACCESSORIES AND COMPONENTS

- AMERICAN LOUVER CO., Skokie, IL, Louvers and Lenses ..... 800/323-4250 or 312/470-3300  
 MAXIMUM TECHNOLOGY, 60 Industrial Way, Brisbane, CA 94005 ..... 415/468-2560

### AMBIENT LIGHTING SYSTEMS (INTERIOR)

- H.E. WILLIAMS INC., P.O. Box 837, Carthage, MO 64836 ..... 417/358-4034  
 LITHONIA LIGHTING, We cover the lighting spectrum ..... 404/922-9000  
 NORBERT BELFER LIGHTING MFG., Cove & Linear Lighting Products ..... 201/493-2666  
 PEERLESS LIGHTING CORP., P.O. Box 2556, Berkeley, CA 94702 ..... 415/845-2760

### AREA LIGHTING (EXTERIOR)

- ADJUSTA-POST MFG. CO., P.O. Box 71, Norton, Ohio 44203 ..... FAX 216/745-9746 800/321-2132  
 Residential & commercial outdoor fixtures. Stds. & Acces., HID, fluorescent, low volt. & incandescent.  
 AMERICAN ELECTRIC, 1555 Lynnfield Rd., Memphis, TN 38119 ..... 901/682-7766  
 HID luminaires for area, facade, roadway, sports, and industrial lighting applications.  
 C.P.I. CONCRETE PRODUCTS, P.O. Box 13324, Memphis, TN 38113 ..... FAX 901/775-9883 or 901/775-9880  
 Concrete light poles & bollards. Fourteen decorative colors & exposed aggregate finishes such as dark bronze, black, & granite to match any setting. Square tapered design up to 65 ft.  
 ELA CO., 17891 Arenth Ave., City of Industry, CA 91748 ..... 818/965-0821 FAX 818/965-9494  
 Mfgs. of decorative outdoor fixtures, poles and arms for the commercial and residential mkts. Custom designing and mfg. of decorative interior/exterior fixtures.  
 EMCO ENVIRONMENTAL LIGHTING, 7300 50th St., P.O. Box 1640, Milan, IL 61264 ..... 309/799-3111  
 HOLOPHANE, 214 Oakwood Ave., Newark, OH 43055 ..... 614/345-9631  
 J.H. BAXTER & COMPANY, P.O. Box 10797, Eugene, Oregon 97440 ..... 503/689-3020  
 Manufacturer of Timberwood Lighting Standards. A superior pressure-treated Douglas fir laminate for decorative outdoor lighting support. Contact Richard Baxter.  
 PEMCO CORP., Philadelphia, PA, Exterior HID & Custom Lighting & Poles ..... 215/236-9020  
 RUUD LIGHTING, 9201 Washington Ave., Racine, WI 53406 ..... 800/558-7883  
 RWL CORP., 240 Sargent Dr., New Haven, CT 06511 ..... 203/789-1710  
 STONCO, 2345 Vauxhall Rd., Union, NJ 07083. Contact Phil Henry at ..... 201/964-7000  
 Outdoor lighting: fixtures and accessories for industrial, commercial and residential markets.  
 UNION METAL CORP., 1022 9th St. SW, Canton, OH 44707 ..... 216/456-7653  
 Steel, aluminum and concrete poles for area, roadway and sports lighting. Hi-mast raise-lower systems. Ornamental nostalgia lighting poles and luminaires.  
 W.F. HARRIS LIGHTING, 4015 Airport Ext. Rd., Monroe, NC 28110 ..... 704/283-7477  
 Indoor/outdoor decorative & vandal-resistant rustproof lighting for wall, ceiling, post & landscape applications. U.L. listed H.I.D., FL, INC & emergency fixtures.

### CONTROLS

- LEE COLORTRAN, Inc., 1015 Chestnut St., Burbank, CA 91506 ..... FAX 818/954-8520 or 818/843-1200  
 VIEWPOINT, a field-configurable system of off-the-shelf Architectural Dimming and Control Components from Lee Environmental Lighting—a division of Lee Colortran, Inc.  
 LUTRON ELECTRONICS, 205 Sutter Rd., Coopersburg, PA 18036 ..... 215/282-3800  
 STRAND ELECTRO CONTROLS, 2975 S. 300 W. Salt Lake City, UT 84115 ..... 801/487-6111  
 Manufacturing full line of lighting controls and dimmers for Restaurants, Hotels, Board Rooms, etc.

### DAYLIGHTING PRODUCTS

- MULTIPOINT CONTROL SYSTEMS, 3101 111th St. SW #A, Everett, WA 98204 ..... 206/347-3499  
 Full line of adjustable photocell lighting control sensors & systems for indoor/outdoor applications.

### DECORATIVE LUMINAIRES (INTERIOR)

- BRASS REPRODUCTIONS, 9711 Canoga Ave., Chatsworth, CA 91311. Decorative Fixtures. . . 800/828-5858

### DESIGN SOFTWARE & TESTING/MEASURING INSTRUMENTS

- INTERNATIONAL LIGHT, Dexter Industrial Green, Newburyport, MA 01950 ..... 617/465-5923  
 Radiometers, photometers, spectroradiometers, laser power meters for radiometry, photometry, UV curing, UVA/B phototherapy, germicidal radiometry & UV hazard use.

### LAMPS

- GENERAL ELECTRIC, Ad Response Dept., Nela Park #4151, Cleveland, OH 44112 ..... 216/266-3200  
 GTE/ PENNSYLVANIA LIGHTING, Sylvania Lighting Center, Danvers, MA 01923 ..... 617/777-1900  
 OSRAM CORP., P.O. Box 7062 Jeanne, Newburgh, NY 12550 ..... 914/564-6300  
 PHILIPS LIGHTING CO., 200 Franklin Square Dr., Somerset, NJ 08875 ..... 800/631-1259 800/752-2852  
 USHIO AMERICA, 20101 S. Vermont Ave., Torrance, CA 90502 ..... FAX 213/329-3641 or 213/329-1960  
 Manufacturer of MR11, MR16, T3 Quartz, Minican and DC Bayonet Halogen Lamps.  
 VENTURE LIGHTING INTL., 625 Golden Oak Pkwy., Cleveland, OH 44146 ..... 800/437-0111  
 Metal Halide, High and Low Pressure Sodium, Mercury, MR-16 and MR-11 Display Lamps. Many new and unique products not available from other manufacturers.

### LANDSCAPE LIGHTING

- ABEC LIGHTING, 4084 Arnold Ave., #8, Naples, FL 33942 ..... 813/643-4242 or 813/643-3305  
 Quality outdoor landscape & security lighting. PVC construction. Fluorescent/low voltage available—all styles. Custom color & design. Commercial, residential, marine.  
 DINICO PRODUCTS, INC., 123 So. Newman St., Hackensack, NJ 07601 ..... 201/488-5700  
 ELECTRO-ELF, 10011 Olive St., Temple City, CA 91780 ..... 818/286-5002 Fax 818/579-1333  
 Energy Efficient Fluorescent lighting. Sealed Waterproof Fixtures available in many styles and colors.  
 HADCO, P.O. Box 128, 100 Craftway, Littlestown, PA 17340 ..... 717/359-7131  
 IDAHO WOOD, Sandpoint, ID, Landscape Lighting (Wood) ..... 800/635-1100 or 208/263-9521  
 NIGHTSCAPING, 1705 E. Colton Ave., Redlands, CA 92373 ..... 714/974-2121

### LIGHTING DESIGNERS AND CONSULTANTS

- FREDRICK RAMOND INC., 16121 S. Carmanita Rd., Cerritos, CA 90701 ..... FAX 926-1015 213/926-1361  
 LIGHTSPACE DESIGN, 2111 Vine, Suite B, Berkeley, CA 94709. Consultant & MFG. .... 415/540-6023

### LIGHTING POLES (WOODEN)

- WOODFORM, INC., Portland, OR 97220-1230 ..... 800/624-5091

### OEM MANUFACTURERS

- EDWIN GAYNOR CO., 200 Charles St., Stratford, CT 06497 ..... 203/378-5545 or FAX 203/381-9019  
 For more information about fluorescent wiring devices, switches and lamp holders, call and ask for Jill Sapak.

### OTHER LIGHTING SYSTEMS AND LUMINAIRES

- CUSTOM NEON Mfg., Install interior neon. Portable & wall-mount art & signs. .... 213/937-6366  
 LIGHTING TECHNOLOGIES INC., 2540 Frontier, Suite 107, Boulder, CO 80301 ..... 303/449-5791  
 Complete luminaire design and lighting system analysis software and consulting service.

### REFLECTOR MATERIALS

- ALCOA, Sheet & Plate Division, P.O. Box 8025, Bettendorf, IA 52722 ..... 319/344-3007  
 ALUMINUM COIL ANODIZING CORP., 501 E. Lake St., Streamwood, IL 60107 ..... 800/289-2645  
 Pre-anodized lighting sheet: Specular, Semi-Specular, low iridescent, hammertone, diffuse, EverBriter.

### THEATRICAL/STAGE LIGHTING

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 Innovative and growing manufacturer seeks person with strong technical and communication skills to design lighting systems through conceptual and scaled drawings, calculations, and computer modeling. Contact with architects and engineers, and technical support for sales/marketing staff and field representatives. Unique opportunity to work in association with a leading lighting design group. Send resume to ELLIPTIPAR INC., 145 Orange Ave., West Haven, CT 06516
- MANUFACTURER REPRESENTATIVES WANTED**  
 Leading Southern California Manufacturer of Architectural Fountains looking to set-up a commissioned rep network nationwide. Must currently be servicing the lighting industry with emphasis on specification and distribution. REPLY TO: Andy Gillespie C/O Rain Jet Fountains, 27671 La Paz, Laguna Niguel, CA 92656 or call 714/831-6000
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# Directory



# In This Issue

## Manufacturers

**Page 12.** *Light accents space where action, events take place* (Cathedral of the Incarnation, Nashville, Tennessee).

**Edison Price:** Incandescent downlights.

**Lithonia:** Incandescent downlights.

**Louisville Art Glass:** Clerestory windows.

**Osram:** 250-watt, 3000K HQI metal halide lamps.

**Rambusch:** Metal halide uplights.

**Page 22.** *No black holes at kids' intergalactic dental station* (Simi Valley Children's Dental Group, Simi Valley, California).

**American Louver:** Silver parabolic louvers.

**Lightolier:** Linear fluorescent uplights.  
**Prudential Lighting:** Recessed and suspended fluorescent fixtures.

**Page 28.** *Lighting lab takes the guesswork out of lighting design* (Energy Resource Center, Tualatin, Oregon).

**Amerlux:** Indirect pendant fixture.

**Benjamin:** Recessed metal halide fixture, surface wall fixture.

**Capri:** Monopoint and surface track fixtures.

**Columbia:** Recessed fixtures.

**Day-Brite:** Recessed metal halide fixture.

**Forecast:** Surface wall fixture.

**Globe Illumination:** Recessed fluorescent fixture.

**Guth:** Freestanding HID fixture.

**Halo:** Recessed downlight and low-voltage downlight, eyeball, and track fixtures.

**Keene:** Recessed fixtures.

**Kurt Versen:** Recessed downlights.

**Lightolier:** Recessed downlights and low-voltage downlights, deep-louver fixtures, surface wall and shelf fixtures.

**Litecontrol:** Steel fixture.

**Lithonia:** Recessed fixtures.

**LPI:** Recessed fixtures, steel fixture.

**Marco:** Recessed downlights.

**Metalux:** Recessed fixtures.

**Peerless:** Indirect pendant fixture.

**Philips:** Fluorescent lamps.

**Prescolite:** Recessed downlight, recessed wall step light, surface wall fixture.

**Progress:** Surface wall fixture.

**SPI:** Freestanding HID fixture.

**Sunlux:** Socket and ballast.

**Tivoli:** Low-voltage light strip.

**Page 48.** *Variety of lighting effects make resort landscape exciting* (The Hyatt at Gainey Ranch, Scottsdale, Arizona).

**Hydrel:** Underwater lighting.

**Purex:** Underwater lighting.

*Manufacturer credits reflect the products specified for the projects; it is possible that other products were installed during construction or maintenance.*

## Photographers

**Bruce Barnbaum,** 6551 Chari Lane, Somis, CA 93066, (805) 987-7912

**Stephen Fridge,** Fridge Photography, P.O. Box 421502, San Francisco, CA 94142, (415) 861-7655

**Timothy Hursley,** The Arkansas Office, 1911 West Markham, Little Rock, AR 72205, (501) 372-0640

**Janis Miglavs,** Image Source, 525 S.W. First, Lake Oswego, OR 97034, (503) 635-5616

**Rion Rizzo,** Creative Sources Photography, 5245 Green Oak Court, Atlanta, GA, 30327-4901, (404) 843-2141

## Advertisers

Aamsco Manufacturing Inc. . . . .	44
ALCOA . . . . .	35
Amecon, Inc. . . . .	36
Amerlux . . . . .	63
Appleton Lamplighter . . . . .	37
Architectural Area Lighting . . . . .	6
Arroyo Craftsman Lighting, Inc. . . . .	56
Aster Marketing Services . . . . .	14
Badger USA, Inc. . . . .	37

J.H. Baxter & Company . . . . .	53
Norbert Belfer Lighting . . . . .	41
Brass Light Gallery . . . . .	58
Caribbean Worldwide Inc. . . . .	56
CEW Lighting . . . . .	29
Classic Lamp Posts . . . . .	58
Conservation Technology, Ltd. . . . .	21
Cooper Lighting . . . . .	23
CPI Concrete Products . . . . .	56
Dinico Products, Inc. . . . .	52
EMCO Environmental Lighting . . . . .	57
Gardco Lighting . . . . .	3
GE Lighting . . . . .	8-9
Gross Chandelier Company . . . . .	42
GTE/Sylvania Lighting . . . . .	16-17
Ioline Corporation . . . . .	36
Justice Design Group, Inc. . . . .	44

Kim Lighting . . . . .	51
LaMar Lighting Co., Inc. . . . .	27
Lighting Services Inc. . . . .	4
Lighting Systems Inc. . . . .	55
Lightning Bug, Ltd. . . . .	57
Lithonia Lighting . . . . .	64
Lowering Systems Inc. . . . .	58
LPI . . . . .	26
LTM Corporation of America . . . . .	7
MagneTek, Inc. . . . .	
MagneTek Triad . . . . .	31
Minolta Corporation . . . . .	36
Nightscaping/ . . . . .	
Division of Loran Inc. . . . .	11
NL Corporation . . . . .	21
Omega McPhilben . . . . .	18
Osram Corporation . . . . .	32-33

Paragon Electric Company . . . . .	60
Peerless Lighting Corporation . . . . .	25
Poulsen Lighting Inc. . . . .	44
Roberts Step-Lite Systems . . . . .	27
Roxter Manufacturing Corp. . . . .	14
Ruud Lighting, Inc. . . . .	15
RWL Corporation . . . . .	5
A. Schonbek and Company, Inc. . . . .	43
Scientific Component Systems . . . . .	27
Sensor Switch, Inc. . . . .	37
Shakespeare Company . . . . .	49
Sylvan Designs, Inc. . . . .	42
Tech Lighting . . . . .	42
Times Square Lighting . . . . .	60
Venture Lighting International . . . . .	2
Worldstore . . . . .	47
York-Lite Electronics, Inc. . . . .	34