Brilliant Innovations

With an eye toward innovation and new technological advances, Venture Lighting International has developed the broadest line of Metal Halide lamps in the industry. Advances in the Metal Halide product line include:

- **Glare Guard Lamps:** reduce glare from fixtures by utilizing an opaque highly reflective aluminum coating on the top of the bulb.

- **Horizontal High Output Lamps:** provide up to 25% greater light output in a horizontal burning position.

- **Special Outer Jacket Lamps:** smaller outer jacket assemblies for use in compact low-profile fixture designs.

- **Compact Arc Lamps:** short arc gap allows higher level of beam lumens from standard fixtures.

- **Low Wattage Lamps:** our 70 and 100 watt lamps deliver approximately the same lumens as 250 and 300 watt tungsten halogen lamps, respectively.

- **Instant Restart Lamps:** instant relighting capabilities with 90% light output if relit within 15 seconds.

- **Double Ended Lamps:** Smaller envelope size lets these lamps be utilized in very compact fixtures.

To see how brilliant these innovations can be, contact us at:

VENTURE LIGHTING INTERNATIONAL
A subsidiary of Advanced Lighting International
625 Golden Oak Parkway, Cleveland, Ohio 44146
(216) 232-5970 1-800-338-6161
Light columns

The age of light columns.

Circle 2
THE MUSEUM LIGHT
A favorite of museum lighting directors across the country, this compact low-voltage spotlight has a built-in dimmer to let you cast just the right amount of light on the subject.

For an information kit, write on your letterhead to:
Lighting Services Inc, Industrial Park Rt. 9W, Stony Point, NY 10980-1896 (914) 942-2800

Circle 193

SPARKLE PLENTY
Turn any of a number of our lights into its own dramatic display with our new snap-on sparkler.
The Real Reason: it looks awfully pretty up there.
For an information kit, write on your letterhead to:
Lighting Services Inc, Industrial Park Rt. 9W, Stony Point, NY 10980-1896 (914) 942-2800

Circle 3

Architectural Lighting is published monthly by Aster Publishing Corporation.

Editorial Offices: 859 Willamette Street
Eugene, OR 97440-2460
(503) 343-1200
Fax: (503) 343-3641

Sales Offices: 195 Main Street
Metuchen, NJ 08840-2737
(201) 549-3000
Telex: 139308 Fax: (201) 549-8927

Circulation Offices: PO. Box 10955
Eugene, OR 97440-9895
(503) 343-1200

Publisher Edward D. Aster
Associate Publisher Michael Aster

Editor Charles Limn, AIA
Associate Editor M. Jane Gozert
Senior Assistant Editor Gareth Fenley
Assistant Editor Susan Degen
Editorial Assistant Mike Heffley

Art Director Lee Eide
Production Manager Stephen Roberts
Advertising Coordinator Helen Hornick

Director of Advertising Robert Joudanin
National Sales Representative Arthur S. Rosenberg

SUBSCRIPTIONS: U.S.: 1 year (12 issues), $49; 2 years (24 issues), $90; 3 years (36 issues), $129. Foreign surface rates: 1 year (12 issues), $89; 2 years (24 issues), $170; 3 years (36 issues), $249. Foreign airmail: add $60 per year to foreign surface rates. Single copy price: U.S., $5; foreign countries, $10.

REPRINTS: Reprints of all articles in this issue and past issues are available (250 minimum). Write or call: Aster Marketing Services, 859 Willamette Street, PO. Box 10460, Eugene, OR 97440-2460, USA. (503) 343-1200.

CHANGE OF ADDRESS: Allow 4 to 6 weeks for change; provide old mailing label and new address, including ZIP or postal code. POSTMASTER: Send address changes to Architectural Lighting, PO. Box 10955, Eugene, OR 97440-9895.

© 1988 Aster Publishing Corporation. All rights reserved. Reproduction in part or whole without written permission is strictly prohibited. Architectural Lighting and the logo appearing on the cover of this magazine are registered trademarks of Aster Publishing Corporation.

Second class postage paid at Eugene, Oregon, and at additional mailing offices.

Aster Publishing Corporation:
Chief Executive Officer, Edward D. Aster; Senior Vice President, Michael Aster; Editorial Director, David Webster; Senior Production Editor, Karen Carlson; Production Director, L. Gino Imbrogio; Circulation Director, Linda Pierce; Marketing Manager, Archie A. Anderson; Marketing Services Director, Richard P. Scheckenbach.
The Columbia
Combine graceful fluted styling, the durability of cast iron, and the classic Parklane luminaire—specify The Columbia, a sound example of outdoor promenade post lighting.

The Charles
High performance and decorative detailing produce yet another Welsbach alternative to standard roadway lighting: The Charles revives authentic street lighting. Designed for retrofit applications too.

The Traditional Fluted
The Traditional Fluted, one of the various styles within The Essex Series of posts and bollards, blends historic design with contemporary value. Available with The Londonderry fixture, as shown, or with any Welsbach luminaire.
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?

Charles Linn, AIA
ALL THE WORLD’S A STAGE

So illuminate your world, define your space and set the mood with LTM’s DESIGNER FRENSNELS. Widely used for motion picture, television and theater, these miniature fresnel fixtures create highly dramatic lighting. Their superior optical capabilities gather and focus light while maintaining a smooth, even field.

Use them to imaginatively define product displays and create your most striking interiors. Barndoors, snoots and focal spots precisely direct the light and give you complete control.

LTM DESIGNER FRENSNELS come in 7 standard finishes with a full range of accessories to complement your creativity and imagination.
GE Is THE LIGHT THAT WILL RESHAPE THE WAY

GE BIAX lamps make everybody and everything, including operating costs, look better.

It won't take you long to discover that with GE BIAX™ 40-watt lamps, the design possibilities are endless.

Because they're only 22.5 inches long, yet deliver all the light of standard four-foot fluorescents, you can design with smaller fixtures. And that means more attractive ceilings.

And because BIAX lamps make colors look richer and more vibrant than standard fluores-
You Design Lighting.

cents can, the lighting you design will make the environment and the people who work in it more attractive.

Equally attractive is the amount your clients will save on operating costs. GE BIAX 40-watt lamps, you see, last up to 8,000 hours longer than conventional U-shaped tubes. And 13 times longer than incandescents.

Feast your imagination on the endless possibilities of the GE BIAX family of lamps.

For more product or application information, call your local GE Specification Area Manager. Or call the GE Lighting Information Center at 1-800-523-5520.

GE Lighting

GE is Light.
Track and Accent Lighting
Light accents space where action, events take place  C. Linn
Track and accent lighting products

Ambient Lighting Systems
No black holes at kids' intergalactic dental station  C. Linn
Ambient lighting system products

Components and Accessories
Lighting lab takes the guesswork out of lighting design  M. Hefley
Components and accessories

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

Landscape and Area Lighting
Variety of lighting effects make resort landscape exciting  G. Fenley
Landscape and area lighting products

Departments
From the Editor  6
Product Literature  59
Classified Directory  61
Manufacturers  62
Photographers  62
Advertisers  62
Good design is never easy, and illuminating the WALKWAY OF PEACE for the 1987 National Christmas Tree Lighting Ceremony was no exception. When Nightscaping was selected for the job by the White House Committee, 28 years of low-voltage outdoor lighting experience helped provide the design answer.

The challenge was to provide 120 fixtures illuminating 60 state trees without distracting attendees. Nightscaping developed the Postliter for the job, keeping the MR-16 light source hidden in the simple but elegant walkway marking posts. The Postliter is now in production for general distribution with a 10-year warranty on our powder coated finishes. Choose from White, Black, Green or Copper colors.

If you have a unique or difficult design application, call our DESIGN HELPLINE. A current product may serve you well, or our custom development process may provide the answer. That's what service is all about. Call Us – Let's Talk!

Let Nightscaping Light The Way

DESIGN HELPLINE: 800-LIGHT40

First and Finest in 12-Volt Outdoor Lighting

Nightscaping®

LORAN INCORPORATED
1705 East Colton Avenue • Redlands, California 92373 • (714) 794-2121

Circle 9
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 footcandles.

The altar has been accented. That space 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.
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 vonRoonen, 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.”

VonRoonen’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 provides high-quality light that can be focused in a range from spot to flood. It comes in seven standard colors; custom colors can be special ordered. LTM Corporation of America, Sun Valley, CA.

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 1/2 volts. Available options include dimmers, integral on-off switches, glass color filters, spread lenses, and light-blocking screens. Lighting Services Inc., Stony Point, NY.

Circle 61

**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

---

**MITY LITE HALOGEN LAMP Series**

MITY LITE Model No. 7060 Model No. 8521

Track Model No. 3114 Under Cabinet Model No. 9020

Sensation of the year! Roter's new MITY LITE Series shines like no other light you've ever seen. These compact halogen lights pack a punch of pure white light from their low, unbelievably efficient, low voltage bulbs. Just think—with only 12 watts (Model No 7060) of power you can light up (and I do mean LIGHT UP) your favorite sculpture, painting, or any small item you want to focus your attention on. Light beam is adjustable, and has convenient on-off switch. Available in semi-gloss white or semi-gloss black. Ideal for both residential and commercial use.

Write or call today for new color catalog.

Roter Mfg. Corp.
Better Living Through Better Lighting®
10-11 40th Avenue, Long Island City, NY 11101
Tel. (718) 392-5060 FAX: (718) 392-9811

Circle 10

**REPRINT SERVICE**

Reprints of all articles published in Architectural Lighting are available exclusively through Aster Marketing Services.

Reprints can be used effectively to broaden your exposure, enhance your marketing and educational programs, or promote your product or services.

For further information on volume orders, please contact:

Aster Publishing Corporation
MARKETING SERVICES
859 W. Willamette St.
PO. Box 10480
Eugene, OR 97440
(503) 343-1900

Circle 60

---

---
If you're still buying recessed lighting through a middleman

CUT IT OUT

Buy direct from Ruud.
Mail this coupon today and introduce yourself to a whole new way to purchase quality recessed lighting. You can cut out the middleman and not only save up to 50 percent, but also receive free lighting layout assistance and cost quotation services on a full line of Recessed, HID (Industrial and Outdoor), and Track lighting fixtures.

The same great quality and service you've come to expect from Ruud Lighting is now available in a full line of recessed fixtures.

Don't have time to mail it in? Call toll-free and let one of our friendly, experienced customer service representatives answer your questions.

1-800-558-7883
In Wisconsin call: 1-800-236-7500

RUUD LIGHTING
9201 Washington Ave.
Racine, WI 53406
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 spectacular 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 lighting 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 with lighting, so you won’t have to be. Contact your Sylvania Independent Electrical Distributor or call 1-800-LIGHTBULB.

SYLVANIA
WHERE THE BEST COMES TO LIGHT.™

Circle 13
Track and accent lighting

LIGHT turns on
PRIZE WINNERS

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 Beamsplitter, 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.

Cool track light
MicroLyle 911 track fixtures from ConTech 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 64
Circle 65
Track and accent lighting

**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 1/4-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.

Just call or FAX your requirements. You'll like the selection ... and the prices!

Circle 15

---

**NEW 12 V. MICRO/LYTES™**
Using MR-11 Lamps Are A Breakthrough In Styling & Efficiency!

Call Today For Our NEW 12 Page Catalog

Circle 16

---

**Fashions the world around us.**
20, 30 & 60 Amp Accenttrak Systems.
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 Hebald-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."

Hebald-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 Hebald-Heymann uses a skylight, she also tries to locate indirect fluorescent light, so that there seems to be a natural 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 a 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," she says. "The concealed 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. "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."

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. 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, Hebald-Heymann specified recessed fluorescent fixtures fitted with 1-inch by 1-inch silver, plastic parabolic louvers. "Whenever 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 laminar 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 Hebald-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 a 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

Project: Simi Valley Children's Dental Group
Location: Simi Valley, California
Client: Barry Cantor, DDS
Architect: Margo Hebald-Heymann, AIA
Interior and Lighting Designer: Margo Hebald-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.

Halo, Metalux, Crouse-Hinds, Lumark, McGraw-Edison and Sure-Lites are all part of Cooper Lighting. We are an unparalleled resource for manufacturing, engineering, marketing, design and research. Seven regional showrooms provide an opportunity to experience first-hand the effects of lighting.

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

COOPER LIGHTING
THE SINGLE LIGHT SOURCE
 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

- **High-output sconce**
The Metro extruded aluminum wall sconce from Norbert Belfer can accept a 150-watt quartz halogen, a 15-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

- **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

- **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

- **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
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 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.
Air Foil Meets Your Clean Room Needs To A Tee

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. Wring 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.

P.O. Box 608, Gurnee, IL 60031
Phone (312) 360-0010 FAX (312) 360-9821

Ambient lighting systems

■ Aluminum wall sconce
The Arcadia extruded aluminum wall sconce from Norbert Belfer can accept a 15-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 15-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 housing is available in a range of finishes. Scientific Component Systems, Anaheim, CA.
Circle 78

■ Antiglare luminaire
Day-Brite’s Designer VDT-CE-15 louvered fluorescent fixture is designed to eliminate glare on video display screens. It can provide 66 footcandles at 3.4 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

Circle 19
Ambient lighting systems

Fluorescent fixture
The PEC Lumco 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 CrowneLite 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. CrowneLite Manufacturing Corporation, Bohemia, NY.
Circle 82

"FluorEssence"

THE ENERGY-EFFICIENT X18
The X18 Series of retrofit fluorescent fixtures provide everything you need to replace energy-draining incandescent downlights. Incrredly compact, the X18's sleek, dual-in-celing trim ring doubles as a cooling fin, constantly drawing the heat away from transformers and lamps. The patented ZIP-CORD makes the X18 a snap to install: Just screw the electrical connector into the ceiling socket, "zip" into place and snap the cord.

Savings are dramatic. 16 baffled 75 watt reflector floods drawing 1200 watts provide 5.5 ft-c. Replaced with 16 "X18" energy consumption drops to 288 watts with an average illumination of 5.6 ft-c. nearly three times the uniformity. That's a 76 percent reduction in energy use. So, for reduced re-lamping and energy costs and a quick payback - talk to us first.

Circle 20

Send for free catalog of designer fluorescent fixtures

IA MAR INC
200 Huntington, NY 11520
Scientific Component Systems
1200 A North Van Buren Street, Anaheim, California 92807
(800) 654-3498 (714) 630-3453
Circle 20

NEW "S" TYPE COVE LIGHTING

Circle 22
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).

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 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 7 1/2 to 10 1/2 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 with beam patterns at distances from 0 to...
Quality Makes The Difference!

- **DICHRO-COOL HALOGEN**
  - No Transformer Necessary
  - MR-16 120 Volt
  - Converts Incandescent To Halogen

- **X-LINE METAL HALIDE**
  - Higher Light Output With NO Color Shift

- **SUNLUX SUPER-ACE**
  - HPS Conversion Lamp

- **DAYLUX 50**
  - 60% Energy Saver
  - Converts Incandescent To "WHITE" HPS
  - 50 Watt C.R.I. 82

Available for immediate shipment a full range of H.P.S., Metal Halide, Mercury Vapor, Self Ballasted Mercury Vapor, as well as a complete line of Halogen bulbs including the 12V and 120V MR-16 lamps.

Call 1-800-255-LAMP for our free catalog.

(Outside Texas) Sold through Distributors Only

**LIGHTING**

U.S. Agent

**Home** 4337 Beltwood Parkway South
Dallas, Texas 75244
Ph: (214) 960-1993
(800) 242-LAMP (TX only)

**East Coast** 6710 Benjamin Rd., Suite 500
Tampa, Florida 33614
Ph: (813) 884-4459
(800) 848-LAMP

**West Coast** 7302 Alondra Blvd.
Paramount, California 90723
Ph: (213) 531-1249
(800) 338-LAMP (CA only)
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 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 Jeffley

For product information, see Manufacturers on page 62. Lighting components and accessories are displayed on pages 34-37.
Which comes first
an electronic ballast you can depend on
or energy savings you can crow about?

Ballastar® electronic ballasts lower lighting energy costs by a significant degree... up to 36% in most applications. Our light-level switching ballast can raise that to as much as 50%. Compound those savings with an average ballast life twice that of conventional ballasts and Ballastar becomes a very valuable investment... with a very short payback time. Ballastar electronic ballasts have been proving themselves for years... in schools and universities, office buildings, banks, hospitals, retail stores, shopping centers, restaurants and factories.

So for savings and reliability you can crow about in new or renovated buildings or as retrofit or replacement of existing ballasts, get the details on Ballastar electronic ballasts. Call us at (219) 356-7100. Or write 1124 E. Franklin St., Huntington, IN 46750.

We’re making MagneTek the new first name in electrical equipment.

Circle 24
ILLUMINATING READING.

GENERAL LIGHTING PRODUCT CATALOG

TECHNOLOGY BROUGHT TO LIGHT

OSRAM
IF YOUR DESIGNS REQUIRE LIGHT, EVERYTHING YOU NEED IS IN HERE.

The OSRAM General Lighting Catalog is a thorough source of information on every one of our energy saving lamps for general, task and accent lighting. It features complete specifications for each lamp, including luminance, efficiency and dimensions—and detailed schematics too.

In the guide you'll learn more about:

- **DULUX® EL Electronic Light Bulbs:** The DULUX EL's compact, lightweight design incorporates an electronic ballast—the key to its energy efficiency, long life, instant start and low heat. It stays lit for more than 10,000 hours—about 10 times longer than a comparable A-type incandescent.

- **BI-PIN Lamps:** Bi-Pin tungsten-halogen incandescent low voltage lamps offer a high luminous efficacy of up to 25 lm/W—for concentrated light in a sturdy, compact package. They are the perfect fit to light small spaces and burn in any position, and have a lifespan of more than 2000 hours. The Bi-Pin is suitable for wall decorations as a working or supplementary light, for small showcases, and for highlighting in store windows, museums and galleries.

- **HQI Lamps:** HQI metal halide lamps offer a high luminous efficacy and the highest level of CRI available. Their long life, high lumen output and low heat radiation make them the right choice for indoor lighting systems in showrooms, store windows, trade shows, hotels and restaurants—any place where high quality and economical operation are a requirement.

- **PAR-36 Lamps:** A unique aluminum reflector is responsible for the tungsten halogen PAR-36 lamp's light weight and antiglare characteristics. It offers excellent color rendition, a 2000 hour life and tight beam control. Applications include: display and accent, landscape, track and downlighting, disco and spot lighting.

- **DULUX® D Compact Fluorescents:** The DULUX D is a single-ended compact fluorescent that stays lit more than 10 times longer, and consumes up to 75% less energy than a comparable incandescent, while providing the same light output. The DULUX D offers a warm quality of light and excellent color, making it suitable for small, unconventional fixtures, shallow downlights and modern lighting systems.

OSRAM lamps have a reputation as the standard that others follow. If you're the kind of designer who likes to lead the way, you should make them your standard.

Whether you're lighting a space, or designing a new fixture, we'll work with you to make it better than you would ever imagine.

For your personal copy of the catalog write or call OSRAM Corporation, JAF Box 888, New York, NY 10116 1-800-424-7669.

Doing some illuminating reading today, just may spark some brilliant designs for tomorrow.
**Showcase**

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

- **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
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.

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 knockout, 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 89
Circle 90
Circle 27

ALCOA's Coilzak just became a better choice for your lighting needs—because it's backed by an exclusive 25-year warranty. ALCOA's Coilzak warranty is the industry's only performance warranty. It offers you and your customers proof of the benefits users will realize during the life of the product in actual use. It won't burn, peel, crack or chip. Guaranteed.

For decades, Coilzak has been specified to meet critical design criteria demanded by energy-efficient lighting systems. For office and commercial applications, Coilzak products are preferred because of their optical properties and eye-pleasing appearance. Whenever a durable, highly-reflective, low-maintenance surface is required, Coilzak is the answer.

Through the new warranty, Coilzak users are guaranteed in writing what the performance history of the popular product has already demonstrated. For more information on ALCOA's new 25-year warranty, write to: ALCOA Sheet & Plate Division, P.O. Box 8025, Bettendorf, Iowa 52722.

Only ALCOA can make a guarantee like this.

Circle 27
New Debuzzing Chokes...

- Minimum Noise
- Miniature Size
- Maximum Savings

Amecon's new Series 22 and 27 filter chokes effectively lower noise in dimmers, lamps and fixtures. They're under 2 1/4" and 3" in diameter and are priced under $4.00 and $7.00 each respectively in quantity.

These high quality chokes are available from 3 to 30 Amps in a wide range of part numbers... many from stock.

They offer a full 400 microsecond rise time (ranging from 200 to 600) depending on load and voltage conditions. Manufactured from UL recognized materials, they are available in semi- or full epoxy-molded configurations.

Applications recommended for all types of professional light dimmers: architectural, touring, theatre, low voltage, and nearly anywhere a noise-rejection system is required.

Call or write for updated catalog.

Quality Magnetics & Electronics
Amecon, Inc., 1900 Chris Lane, Anaheim, CA 92805
TEL: (714) 634-2220, FAX: (714) 634-0905
TWX: 510-100-0364

Circle 28

The New Standard in Ease of Use

- Value priced at $3,195
- One-year, no-cost warranty
- Professional plot quality
- Revolutionary plot utility eliminates learning curve
- Supports HP-GL and DM/PL
- Plot sizes from 23"x81" to 1.5"x1.5"
- Optional oak stand available

IOLINE CORPORATION
Call (206) 821-2140 or write for more information
12020 - 113th Ave. NE, Kirkland, WA 98034

Circle 29

Metal halide lamps

The X-Line metal halide lamps from CEW Lighting are designed to maintain a high lumen 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

Osram's AR 48 lamp features an integrated halogen source and a photometrically precise silver-colored aluminum reflector. The lamp measures less than 2 inches in diameter, has a built-in glare shield, and comes in sizes of 10, 20, and 30 watts. Its average rated life is 2000 hours. A gold-colored reflector is available for the 20-watt version. Osram Corporation, Newburgh, NY.

Circle 92
Components and accessories

Contact unit

The SCU-1 suspension contact unit raises and lowers luminaires for servicing and eliminates the need for high-rise lifts and skilled maintenance personnel. The unit can be mounted on low, medium, and high poles and will lift up to 150 pounds. Its stainless steel housing cover and its top and bottom enclosures resist corrosion. Lowering Systems Inc., Northbrook, IL.

Circle 93

HPS lamp unit

The Daylux-SO 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

Custom fabrication of decorative and functional products is a natural extension of the custom lighting expertise at Appleton Lamplighter. Products crafted to enhance interior and exterior business and recreational environments. It is a matter of skill and pride.

BOMBAY CO. STORE FRONT
MILWAUKEE, WI
ARCHITECT: Glenn Higgins.
New Orleans, LA
DESIGN: Jon Edwards Designs.
New Orleans, LA

APPLETON Lamplighter
P.O. Box 1434 • Appleton, Wisconsin 54913
FAX 414-739-1656
Phone 414-739-9001

Paragon lighting controls are the brightest solution for all lighting requirements. They reduce energy costs without reducing productivity or security. Paragon controls are available with 24-hour, 7-day and 365-day programming, 1 to 32 outputs, DIN or NEMA enclosures and a variety of voltages, for every application and installation. Controls that automatically respond to seasonal light changes and controls that monitor light levels are also available.

When you're installing lighting controls, choose the brightest. Talk to your Paragon distributor or contact Paragon Electric Company today.

PARAGON ELECTRIC COMPANY, INC.
306 Parkway Blvd., P.O. Box 28, Two Rivers, WI 54241
414-739-1161 Fax 414-739-3736 Telex 26-3450

Circle 32

“Passive Infrared Occupancy Sensors”
Lighting Control from U.S. that makes SEN$E.

Wall Switch
The 2-Wire Occupancy Sensor that Replaces the Traditional Toggle Switch.
SUPERIOR FEATURES
• 800 Square Foot Coverage Area
• 1200 Watts Fluorescent/Incandescent
• Adjustable Time Delay (30 sec. to 20 min.)
• Three-way Switching
• Off-Auto-On Override Switch, or
• Off-Auto Only - User Selectable
• Made in U.S.A

Wide View & Hall Way Sensors
Low Voltage Remote Sensors for Large Areas and Long Corridors.
SUPERIOR FEATURES
• Wide View - 40 Feet by 110° Coverage
• Hall Way - 130 Foot Distance Coverage
• Master/Slave Sensors for Optimum Coverage
• Daylight control (20 to 420 Foot-Candles)
• Variable Light Level thru Dual Output
• Adjustable Time Delay (30 sec. to 20 min.)
• Multiple 20 Amp Circuit Control

60 DAY TRIAL OFFER

□ Yes, I want to try one. □ Send literature only.
Purchase Order No.

Name ____________________________
Company ____________________________
Address ____________________________
Date ( ) Phone ( ) Voltage (circle)

Note: Upon receipt of this coupon we will rush to you your Wall Switch and bill you $69.50 plus tax and $2.00 handling. At the end of the 60 days you are not satisfied, simply return the unit and disregard the invoice.

Sensor Switch, Inc., P.O. Box 1588, Branford, CT 06405
(203) 483-1501

Circle 33
Four types of decorative luminaires

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.

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 down into a space. Until recently, many designers did not consider downlighting to be decorative. Semi-recessed 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.

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, 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.

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 down into a space. Until recently, many designers did not consider downlighting to be decorative. Semi-recessed 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.
- 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 Laboratories 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 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.

Fluorescents 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.

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 Luminaire Souter Lighting Design, San Francisco.

Decorative luminaires are displayed on pages 40-47.
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 sources. 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, N.J.
Circle 96

• 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., Garle 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

• 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 antique, polished unlacquered, polished lacquered, 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

• Ceiling fixture
Trio ceiling fixtures from Tech Lighting use sanded 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

• Telescoping lamp
The Kendo from Tre Ciluce 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. Lighting Bug Ltd., Hazel Crest, IL.
Circle 103

• 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

• 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
Norbert Belfer Lighting, the architectural lighting designers source for specification grade linear and specialty lighting... products that curve, twist and flex... that pinpoint, highlight and accent.
- Low voltage lighting products
- Cove and valance light strips
- Marquee and facade accents
- Halogen wall and ceiling luminaires

We offer staff engineers for technical and planning assistance and a reputation for timely delivery, quality workmanship and budget cost control.
We invite your inquiry.
Call or write.

Norbert Belfer Lighting
Since 1965
1703 Valley Road, Ocean, NJ 07712
FAX (201) 493-2941 • (201) 493-2666
Something You Could Never Do Before.

Tubular Lighting As Easy To Maintain As Changing A Light Bulb.

Forget the frustrations of having to live with dark spots.
Now there's E-Z STREAMS. The new clear tubular lighting from Sylvan Designs that, for the first time lets you replace lamps on-site. You simply slip out the old lamp and slip in the new.
E-Z STREAMS comes in both square and round styles and installs easily. The lamps are twice as bright as most other tubular systems.

And they are wired in parallel, which means only one lamp goes out at a time. E-Z STREAMS standard sizes also makes it easy to upgrade your present system, without having to start over from scratch.
Powered by UL Listed, Class 2 transformers for safe installation.
For full details call or write today: Sylvan Designs, Inc., 8921 Quartz Ave., Northridge, CA 91324, Tel. (818) 998-6868.

SOMETHING YOU COULD NEVER DO BEFORE.

LINEAR LIGHTING THAT WON'T LEAVE YOU IN THE DARK
revived in the Grand Ballroom at The Milwaukee Athletic Club - made possible by a combination of professional people appointed by the club’s management.

We at Schonbek, as designers and manufacturers of the elegant Empire chandeliers, are proud to have been able to contribute to this spectacular masterpiece, and give special praise to Cheryl A. Olson, Interior Designer, and Lappin Electric (Lighting Division)* with whom we worked closely.

WHY SETTLE FOR SECOND BEST? ... GO WITH THE LEADER

U.S.A.: A. SCHONBEK & CO INC., 4-8 Industrial Blvd. W., Plattsburgh, NY 12901
TELEPHONE: (518) 563-7500 • FAX: (800) 443-7358, OR (518) 563-4228

SHOWROOM: THE WORLD TRADE CENTER, Room 10071, 2050 Stemmons Freeway, Dallas, TX 75207

*LAPPIN ELECTRIC CO.
DISTRIBUTORS OF FINE RESIDENTIAL DECORATIVE LIGHTING FOR A. SCHONBEK & CO., INC.
Circle 38
The Alinea Light is an Art Deco concept brought to beautiful perfection by Amsco Manufacturing. A tubular incandescent bulb is held at the end of a fixture. When lit, the fixture radiates a soft, warm light that is especially flattering to flesh tones. Controlled by a standard incandescent dimmer, Alinea makes everything in a room more radiant and beautiful. A 2800K, Albea bulbs come in three lengths, colors are available in 10 decorator colors. For more information call Amsco at (201) 434-0722 or write Amsco Inc., P.O. Box 15119, Jersey City, NJ 07305.

Wall fixture
The Gamma 305 wall fixture from Amerlux is a V-shaped, downward-pointing sconce that provides uplight from a 500-watt quartz halogen lamp. Available finishes are matte white and polished brass. The sconce is part of the Eulrolight series of sconces and linear fixtures. Amerlux, Inc., Fairfield, NJ.

Ceramics for Lighting
Circle 39

Justice Design Group Inc.
3457 South La Cienega Blvd, Los Angeles, CA 90066
(213) 836-9575

Circle 40

CERAMICS FOR LIGHTING

#1250 PACIFIC SCONCE

Circle 41

Wall sconce
Gross Chandelier's G-9000 wall sconce for corridor and room lighting is 1 foot in diameter and projects only 2 1/4 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.

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.
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
“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 possible 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, tubs of flowers, 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

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

Up until now Shakespeare's fiberglass light poles have been the best-kept secret in the industry!

And now the word's out. Attractive fiberglass light poles complement any architectural design. They can endure the elements for generations of dependable service and require virtually no maintenance.

Unlimited design flexibility. Contractors appreciate their light weight, ease of installation and ready availability. Unlimited versatility is derived from a variety of shapes, finishes, sizes and colors.

Let yourself in on our little secret. Our new brochure is now available to give you all the facts and when the facts are known, fiberglass poles are the logical choice.

See us in Sweet's 16503/SHK
BuyLine 24/7

The logical choice...

Shakespeare
SINCE 1897

ELECTRONICS AND FIBERGLASS DIVISION
P.O. Box 733, Newberry, SC 29108
(800) 845-7750

an Anthony Industries company
**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

- **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 MR 16 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. Nightscaping, division of Loran Inc., Redlands, CA.

  Circle 115

- **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

- **Post and luminaire**
  The Venice fixture and post assembly from RWL's Welshach 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

- **Post and luminaire**
  The Venice fixture and post assembly from RWL's Welshach 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

- **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
The First Luminaire Exclusively Designed for Parking Garages.

The Kim PGL is an innovative solution to parking garage lighting. It is a multifunction luminaire providing both performance and design-conscious garage lighting. First, the PGL is a vertical-lamp cutoff luminaire which means low brightness, excellent visibility and outstanding uniformity of illumination. Second, the PGL is an indirect luminaire providing ceiling illumination to eliminate the "cave effect", with the additional bounce-light softening shadows. Third, the PGL is a semi-direct luminaire toward the parking stalls, providing extra fill-light where it is needed for safety and security. The PGL is a design statement that says parking garages are more than just utilitarian structures.
Landscape and area lighting

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

Step light
The Alco 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 5/8 inches in diameter and protrudes only 1 3/8 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.

Circle 125

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
Timberwood features all of the above

Timberwood has become a proven performer in the field of outdoor lighting. Pressure treatment ensures many years of maintenance free service. This time tested performer combines the natural softness and beauty of wood with uncompromising structural integrity. Specifiers using Timberwood point to how well it enhances all types of landscape environments. Timberwood demonstrates unconditional performance. For more information about the J.H. BAXTER Timberwood Light Standard, call or write today.

J.H. Baxter & Co.
P.O. Box 10797
Eugene, Oregon 97440
Phone (503) 689-3020
Fax (503) 689-8319
Vandalproof fixtures

The SL5 from Kim Lighting's Site Lightforms 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 1/2-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 Lorain 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 Infinsquare 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
When the night moves, LSI is there to capture it!

At LSI, we capture the night with our technically and aesthetically innovative outdoor lighting fixtures... the high-performance, low-profile fixtures that light the way in the vast architectural landscape that is home to so many industries.

We're LSI: the brave, the bold, and the dauntless. Don't fear the night. Let us capture it for you...beautifully.
There's a storm brewing over CPI's Colored Concrete Poles...

And the competition is running for cover. The reasons are simple; No Rust, Paint or Peel, No Rot, No Vibration, No Maintenance. There's nothing plastic about CPI poles.

The question is not “Can I afford CPI Poles?” but “Why pay the price of using metals, plastics or wood... SPECIFY CPI.” Make your choice Carved in Stone. For durable permanent beauty to blend with any setting, use CPI's colored or exposed aggregate poles with their specially developed process that links the color and beauty deep in and throughout the concrete.

For more information, call or write CPI at:

CPI
PO. Box 13324
Memphis, TN 38113
(901) 775-9880 or Fax (901) 775-9883

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 Loran Inc., Redlands, CA.

Circle 134

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 and area lighting**

- **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 from 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*

- **PRISMA**
  Landscape and area lighting

  **GOLF**
  Designer Roberto Fiorato

  **EMCO ENVIRONMENTAL LIGHTING**
  **EMCO LIGHTING**

  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 52*

  **EMCO LIGHTING**
  **EMCO ENVIRONMENTAL LIGHTING**
  QUAD CITY INDUSTRIAL AIR PARK
  PO BOX 1640
  MILAN, ILLINOIS 61264
  PHONE: (309) 799-3111
  FAX: (309) 799-7647

  EMCO® is a Registered Trademark of EMCO ENVIRONMENTAL LIGHTING.

  *Circle 53*
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, NORTHIBROOK, IL 60062 • Telephone: 312-272-939T

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

Classic Lighting at Affordable Prices
Our unique Polysteel molding process provides the ultimate in lighting posts features.

- Best Appearance
- Easiest Installation
- Lowest Maintenance
- Lowest Cost
- Energy Efficient
- Fast Delivery

To add elegance to your next project call or write today for our brochure and illustrated price guide.

Classic Lamp Post
3645 N.W. 67th St.
Miami, FL 33147
800-654-5652
305-696-1901 in Florida

Circle 51

Garage lighting
Gardeco'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. Gardeco Lighting, San Leandro, CA.
Circle 138

Bollard
Bollard 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.

- **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

- **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

- **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

Ambient lighting systems

Ambient lighting products are featured on pages 24-27.

- **VDT luminaires**
  A catalog features昼ered 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 downlights

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

Circle 144

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

Components and accessories

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

- **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

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 luminous, heights, and diameters for four sizes. Osram Corporation, Newburgh, NY.

Circle 147

Deporative luminaires

Decorative luminaires are featured on pages 40-47.

- **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 149

- **Fluorescent lamp guide**
  A 54-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

- **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

- **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 hard-blown colored glass that simulates marble. Illuminating Experiences, Inc., Highland Park, NJ.

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.

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.

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

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.

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.

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.

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

Outdoor fixtures

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

Utilizes low voltage MR16 lamps.

CALL FOR FREE LIGHTING HANDBOOK
Sales and Manufacturing
Industrial Park, Stony Point, N.Y. 10980
(914) 947-3034 FAX (914) 947-3047
Showroom
318 West 47th St., New York, N.Y. 10036
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.


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) 843-2114

Advertisers

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

Allyx Baxter & Company ...... 53
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 ................ 5
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
Lighting Bug, Ltd............ 57
Lithonia Lighting .......... 64
Lowering Systems Inc ....... 58
LPI ................................ 26
LM Corporation of America ... 7
MagneTek, Inc ................. 31
MagneTek Triad ............... 56

Nightscaping .................. 11
Division of Loran Inc ....... 21
NH Corporation ............. 18
Omega McPhilben ........... 32-33
Osram Corporation ....... 32-33

Paragon Electric Company .... 60
Peerless Lighting Corporation 25
Poulson Lighting Inc......... 44
Roberts Step-Lite Systems . 27
Roxter Manufacturing Corp. 14
Rudal Lighting, Inc ......... 15
RWI Corporation ............. 5
A. Schonbek and Company, Inc. 43
Scientific Component Systems 27
Scensor 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... 54