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From the Editor

Congratulations are in order for Pennsylvania State University, which received the first grant given by the James L. Nuckolls Fund for the Education of the Lighting Professional. The not-for-profit Nuckolls Fund provides financial assistance to university-level lighting education programs in the United States and was established in the memory of lighting designer and educator James L. Nuckolls. The fund is, by the way, currently undertaking a major fund-raising drive, with a goal of reaching an endowment of $200,000. Income from the endowment will be used to fund the annual grants.

According to Craig Bernecker, director of illumination studies at Penn State, the $5000 grant will be used to develop a graduate-level interdisciplinary program in illumination studies. This program will draw students from a wider range of disciplines than Penn State’s current program, and will foster the design capabilities of those who pursue a degree in illumination studies.

“Penn State’s current illumination studies program is a specialty area within the architectural engineering program,” says Bernecker, “and we’re certainly not planning to leave that behind at all. But since we are an engineering program, any student who comes here for a graduate degree will need to possess a strong engineering or physical sciences and mathematics background in order to enter the program. A student needs that to get into architectural engineering, but not necessarily to do lighting. It precludes a lot of students who have undergraduate degrees in theater, interior design, and architecture from coming here and studying lighting. Our intent is to try to generate a graduate program they can get into, and also make our graduate program a bit more broad based than our current program is, strengthening its design emphasis.

“To be a really good lighting designer,” continues Bernecker, “one needs both design skills and what I’ll call ‘engineering capabilities,’ for want of a better phrase. You need to know the technical side of lighting as well as the art. For a long time we have striven to be both.” The inclusion of more students who are less engineering oriented in Penn State’s new program is certainly a reflection of that philosophy.

I think Jim Nuckolls would have loved the fact that the first grant has been given for such a good purpose.

Charles Linn, AIA
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Low-voltage lighting and glowing glass illuminate London corporate offices  G. Fenley
Ambient and accent lighting products

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Pavilion lighting evokes mystery of ancient Egypt  L. Man
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A little sparkle goes a long way in marble lobby  B.J. Novitski
Components and accessories

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This tree is illuminated by three of the favorite lamp choices of landscape designers – from left to right, a 70 watt Metal Halide HQI, a 100 watt Mercury Vapor, and a 100 watt Quartz Halogen. A landscape rainbow – same tree, different effects. Hydrel recognizes the importance of lamp selection by offering a wide line of fixtures to protect and conceal the source.

Hydrel's 4500 Series Accent Lights were used in this illustration. The 4530 for the Metal Halide lamp, the 4519 for the Mercury Vapor lamp, and the 4525 for the Quartz Halogen lamp. The 4500 Series was designed for the rigors of the outdoor environment. Hydrel's forty years of experience has proven the value of providing the finest materials, testing and ongoing innovation to provide products with an extra margin of reliability.
Owners of the Doral Saturnia Resort "wanted to create one of the most spectacular spas in the world, with the emphasis on total luxury," says Allan Leibow, of the lighting design firm of Wheel Gerstoff Friedman Shankar. The lighting expresses this sense of luxury through the use of primarily incandescent sources and imaginative detailing. "We wanted to keep that warm feeling of sunlight that you get towards the end of the day," says Leibow. "And we wanted it to feel very natural as well."

Luxury and warmth were not the only design criteria that influenced lighting decisions. Interior designer Sarah Lee, of Tom Lee Ltd., explains that she also wanted to reflect the mood of the spa guests. She explains, "We were looking for a certain happy ambience. People go down there to have a good time. So I did a much jollier, more light-hearted decor than I normally do." It was important to her that this light-hearted interior be further lightened by warm incandescent, theatrical lighting, and sunlight.

The spa building, one of several buildings on the site, accommodates ample daylighting, important for achieving the desired grand residential feeling. Inspired by northern Italian renaissance architecture with courtyards outside as well as within the building, the architects created a large, skylit central space as an organizing focus of the spa facilities. To create sunny interiors while avoiding glare and solar heat gain in the tropical Florida climate, they made the cupola skylight very high and of tinted glass. Architect Tom Dolle, of Jung/Brannen Associates, explains: "Because of the cutoff angle, the habitable spaces below are shielded from the direct sun. You still get a lot of light, but it's so high that by the time it's bounced down to you, it's been tempered a lot." And in the process of bouncing, the color of the light is warmed by the color of the surrounding materials.

The large view windows were also protected from the sun. Dolle says, "Because it's in Florida, we have taken pains to create generous overhangs. They do two things: they shade the windows, and they make the building a lot more picturesque with its great roofs and soaring overhangs."

Because of daylight from the windows and the skylight, little supplementary light is required during the day, when electric lighting is dimmed to save energy and prolong lamp life.

A skylight floods the large central atrium with light (left). To accentuate their height, the tall columns are downlight — and uplight with the same kind of downlights turned upside down. Large overhangs (above) protect a deep soffit that holds damp location A-lamp wall washers, which give a soft wash of light to the architectural graphics. This enhances nighttime visibility of the building from a distance without relying solely on windows for a glowing effect.
The pavilion restaurant (above) features a cloud-painted ceiling uplit by continuous incandescent strip lights in a cove, plus a large chandelier and MR16 accent lights in a perimeter soffit. Pool rooms are lit with indirect sources to avoid glare (above right); underwater pool lights create moving patterns on the ceiling. Concealed low-voltage strip lights (far right) delineate planters outside the spa. Leaf patterns (below left) are projected down to the atrium from theatrical spotlights above. Etched glass panels (below center) are illuminated by two rows of downlights, one to light the top and one to light the bottom of the panel. Dressing-room mirror lights (below right) reveal a particularly clever detail. Strips of silver were removed from the backs of the mirrors, and light fixtures were installed behind them. The resulting strip of light appears to glow from within the mirror. The distinctive entry sign (below far right) was made of flat, unpolished marble, sandwiched between glass panels. The assembly sits in the upper basin of a fountain. Four MR16 underwater lights on each side between the stone and glass backlight the sandblasted lettering and illuminate the marble.

At night, lights are turned up, and the dramatic lighting comes to life. Theatrical spotlights, mounted on beams at the third-floor level over the atrium, project leaf patterns down to the restaurant floor below. The patterns are made with leaf-shaped steel templates inside the fixtures. Leslie describes the effect as "a natural feeling, almost of sunlight coming through the trees." To emphasize the height and grandeur of the central space, the designers put downlights and uplights between the columns on multiple levels, recessing them into column supports. These fixtures use 250-watt PAR 38 spot lamps, chosen for their long life and narrow beam spread. The dramatic illumination of these very tall columns draws attention to their height.

Smaller but equally elegant is the neighboring pavilion restaurant. The ceiling of painted clouds is softly illuminated by cove lighting, and light reflected from its surface supplements the light from the large central chandelier. Also illuminating the tables are mini-aperture MR16 adjustable accent lights in the perimeter soffit.

Many artists contributed to the Doral Spa, and the designers took special care in illuminating their work. For example, lighting designer Lesley Wheel devised an ingenious way to light some etched glass panels. Instead of the conventional single row of downlights, she used two rows. The first is 6 inches from the glass panel and lights its top. A second row of adjustable accent fixtures, 18 inches out from the first, lights the bottom of the panel. This second row of lights provides the proper lighting angle without which the bottom would be dark.

Although the most luxurious rooms at the Doral spa are the public rooms, the designers did not forget that people come to the resort for exercise and other healthful pursuits. To avoid excessive ceiling brightness in the spa and massage rooms, where guests spend a lot of time looking at the ceiling, the designers created a soonto-be light with indirect sources, mostly sconces. The spa area is also lit with underwater fixtures in the whirlpools; the pools themselves become indirect light fixtures. The moving water refracts the light and casts it onto the ceiling as moving patterns.

Reminiscent of the Mediterranean materials in ancient Roman spas, many of the rooms are lined with walls of tufa, a porous beige stone.
mined in Florida. Interior designer Lee especially likes the way it reflects ambient light. "The big blocks of tufa give the place a classic flavor," she says.

From the outside, the Doral Spa shows off its classic forms best at night. The cupola at the crown of the main building is illuminated by metal halide floodlights, making it a beacon that can be seen for miles. Large uplit arches further enhance this building's prominence in the cluster of resort buildings. Architect Dolle says, "For me, what makes the lighting so great is that it captures the effect of a grand, luxurious palace. I particularly like lighting that enhances the architecture and is not in and of itself the feature."

In a stairwell glazed with square panes, for example, cantilevered stairs are silhouetted by fluorescent strips with glare shields, hidden from sight and surface-mounted on the side between the stair and the wall. "That creates the illusion that the stairs are floating," Lebow says. "In this area and throughout the resort, we tried to get as many glowing surfaces as possible. Glowing walls create a feeling of richness within the rooms and an inviting warmth when viewed from outside the building."

Lee agrees. "I think being in the country shouldn't just be a daylight pleasure," she says. "When you're walking in the garden at night and look back, it's lovely. It adds so much to the magic."

For product information, turn to page 62 and see Manufacturers.
**Custom strips**

Norbert Beller Lighting's Marquee light strips can be cut, curved, mitered, and multicircuited to meet custom requirements. Two-piece construction of the extruded aluminum base eliminates visible mounting hardware. Medium- or candelabra-base incandescent sockets can be spaced 6, 8, or 12 inches on center. A recessed strip is also available. The strips are UL listed and made with weatherproof sockets for indoor and outdoor use. Norbert Beller Lighting, Ocean, NJ.

Circle 60

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**Decorative pendant**

The model 338 pendant from Fredrick Ramond's Geo Collection has an etched glass diffuser surrounded by a disk of marbled-like white or granitelike black Corian, a synthetic stone. The supporting stems and ceiling canopy are available in polished brass, antique patina, and brushed steel finishes. The pendant accommodates a 150-watt miniature candelabra (minican) halogen lamp. Fredrick Ramond Inc., Cerritos, CA.

Circle 61

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Circle 10

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**Brass gasolier**

The Victorian collection from Brass Light Gallery includes a reproduction gasolier of polished solid brass with etched French glass shades. The gasolier comes in two-, three-, and four-lamp models and is recommended for residential and commercial applications. Lead crystal shades are available. Brass Light Gallery, Milwaukee, WI.

Circle 63

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**Tiffany-style pendant**

Gemba's Parash II pendant has an art glass shade that is handcrafted in the Tiffany copper foil technique and mounted.
on a ball swivel. It has a hand-cut, hand-burnished copper stem that is designed for spaces with 7- to 12-foot ceilings. The glass panels come in more than 20 colors of domestic and European opalescent and sandblasted glass. The pendant accepts 60-watt round candelabra lamps. Gemma Studios, Northampton, MA. Circle 64

- **Mission-style lantern**
  Arroyo Craftsman's brass Mission lantern has a patina finish. It comes with an arm and backplate for wall mounting and is also available in hanging and post-mounted versions. Four sizes and four glass colors are available. Arroyo Craftsman Lighting, Inc., Duarte, CA. Circle 67

- **Ceiling-mounted luminaire**
  Fredrick Ramond offers the model 357-CM ceiling-mounted luminaire from its Geo Collection. It has an etched glass diffuser, a disk of marbelike white or granitelike black Corian, a synthetic stone, and metal accents in polished brass, antique patina, and brushed steel. The luminaire accepts a 100-watt A lamp. Fredrick Ramond Inc., Cerritos, CA. Circle 65

- **Brass chandelier**
  Brass Light Gallery offers an electrified reproduction of an original Victorian four-arm gas chandelier. The polished solid brass luminaire shown has lead crystal shades, etched French glass shades and matching sconces are available. Brass Light Gallery, Milwaukee, WI. Circle 66

- **High-output table luminaire**
  The Brendel Light 44 collection from Staff Lighting includes a table model with a reflector head that rotates around its clamp axis and around the stem. The base and head come in three colors; the stem has a chrome finish. A stainless steel grill controls glare from a 100-watt double-ended halogen lamp. Staff Sales, Inc., Highwood, NY. Circle 68

- **Etched glass wall bracket**
  Lightolier offers the Metro wall bracket of triplex etched glass. The bracket's conical shape tapers into a softly edged, stepped band of glass with polished chrome or satin black fittings. Versions accommodate a 100-watt A19 or 15-watt compact fluorescent lamp. Lightolier, Secaucus, NJ. Circle 69
The Alinea Light is an Art Deco concept brought to beautiful perfection by Amsco Manufacturing. A tubular incandescent bulb and fixture, the Alinea radiates a soft, warm light that is especially flattering to flesh tones. Controlled by a standard incandescent fixture, Alinea makes everything in a room more radiant and beautiful. Alinea bulbs come in two sizes. Fixtures are available in 10 decorator colors. For more information call Amsco at (201) 434-0722, or write Amsco, P.O. Box 15119, Jersey City, NJ 07305.

Decorative pendant

Winona Lighting offers the Harlow pendant, one of three pendants with matching sconces. The version shown is made of polished brass; other versions are available in brushed brass, brushed aluminum, and painted finishes. The pendant comes in two sizes that accommodate 60-watt A19 lamps; the matching sconce comes in versions for A19 and 13-watt compact fluorescent lamps. Custom lengths and finishes are available. Winona Lighting, Winona, MN.

Desktop luminaire

The handcrafted Desk Cylinder from Gemma's Tradition Series has an 11¾-inch-long cylindrical shade of glass sections joined with copper foil stripping. The shade and its burnished copper stem are mounted on miniature ball swivels that can be locked in place. Other features include open-worked brass side enclosures, a high-low line switch, a weighted brass base, and brass fittings. The luminaire accepts a 75-watt standard or tubular incandescent lamp. Gemma Studios, Northampton, MA.
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Circle 15
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Table lamp
Poulsen Lighting's PH 4/3 table lamp has matte white metal shades and a chrome-plated stem and base. The 21-inch-high, 17-inch-diameter luminaire was designed by Poul Henningsen and is UL and CSA listed. It has a 6-foot black cord, a grounded plug, and a tumbler switch unit in its base. Poulsen Lighting, Inc., Miami, FL.

Wall bracket
Lightolier offers the solid brass Dauphine two-lamp wall bracket, which features a fleur-de-lis motif backing. Each of the bracket's solid brass arms supports a carved, translucent alabaster bowl. The wall bracket measures 20 inches wide and 16 inches high and uses two 40-watt G16 1/2 candelabra-based lamps. Lightolier, Secaucus, NJ.
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The new Philips Advantage X fluorescent lamp.
Decorative luminaires

Pendant
Visa Lighting offers the CP1520 pendant, which has a virgin acrylic bowl available in diameters of 24, 30, and 36 inches. The canopy, stems, and accents come in polished solid brass, chrome, and a variety of painted finishes. The 36-inch-high pendant accepts incandescent, fluorescent, and HID lamps. Visa Lighting Corporation, Milwaukee, WI.
Circle 74

Table and task luminaire
Philippe Starck designed the Ara table and task luminaire from Flos. It has a weighted base and a tapered stem that supports a horn-shaped lamp head. Tilting the lamp head down turns the light on; tilting it up turns the light off. The luminaire accommodates a 35-watt halogen lamp and has a mirror-polished chrome finish. Flos Incorporated, Huntington Station, NY.
Circle 75

Cove-lighting unit
Lightspace Design's two-piece Curvescent Light allows users to create a cove lighting effect with a standard 4-foot, two-lamp fluorescent fixture. The lightweight, vandal-resistant unit has a spreader that mounts above the fixture. Below the fixture, a cove piece shields the lamps and directs light up to the spreader. Cove pieces come in a variety of translucent and opaque colors. Spreaders come in standard white and custom colors. Lightspace Design, Berkeley, CA.
Circle 76

Ceramic sconce
Ambis, a ceramic sconce from Justice Design, is designed especially for narrow wall spaces. It is 7 inches wide and 7 1/4 inches high and has a 5 1/2-inch projection. The sconce is available in matte and gloss finishes and has a single porcelain socket for a 150-watt lamp. Justice Design Group, Los Angeles, CA.
Circle 77

Luminous pendant
The CP1470 luminous pendant from Visa Lighting has a virgin acrylic bowl available in three sizes. The canopy, stems, and accents are available in polished solid brass, chrome, and a variety of painted finishes. The 36-inch-high luminaire accommodates incandescent, fluorescent, and HID lamps. Visa Lighting Corporation, Milwaukee, WI.
Circle 78

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Circle 21
- Ceiling light
Marianne Tuxen designed the Safir luminaire for Poulsen Lighting. Its open design permits light to strike all its exposed surfaces and the ceiling on which it is mounted. The white, die-cast aluminum housing includes a reflector shade connected to an arched backplate with three tapered columnar struts. A white opal glass enclosure hides one 75-watt A19 incandescent lamp. Poulsen Lighting, Inc., Miami, FL.
Circle 79

- Pendant hood
Robert Long Lighting offers the 8220 pendant hood in a variety of plated and painted finishes. The luminaire is 20 inches wide and 6 inches high; it comes with 6 feet of cord or with an optional stem for hanging. Robert Long Lighting, Healdsburg, CA.
Circle 80

- Brass luminaire
Art Directions offers the Camelot Flush, a solid brass luminaire from its Original Cast collection. The luminaire has an acrylic diffuser and accepts two incandescent lamps. It comes in several sizes suitable for mounting on walls or ceilings. The smallest size is available with an optional glass diffuser. Art Directions Inc., St. Louis, MO.
Circle 81

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Low-voltage lighting and glowing glass illuminate London corporate offices

When an international lighting company opens a new headquarters, lighting is naturally a focus of the project. "We wanted the new head office to reflect the design profile of the company's products," says Emess chairman Michael Meyer, "as well as its multinational character and its confidence in the future." The new office, a renovated 5,250-square-foot space on the sixth floor of a building in London's west end, had to provide both an efficient working environment and an impressive venue for meeting overseas clients.

David Davies Associates created a cool, white-walled interior featuring luminous glass and low-voltage lighting. The reception area sets the tone with a sweeping curved wall made of pivoting glass screens. The screens open for access to the adjacent offices, which look out over the rooftops through Georgian windows. When the screens are closed, light floods in through stippled glass specially developed for this project. Each pane is actually two laminated opaque stippled glass sheets with an opalescent white liner.

Downlights set into a sinuous metal ceiling canopy give the screens an intriguing white glow, while recessed floor lights pick up the shimmering sparkle of the glass and satin-finished metalwork. The ceiling fixtures are standard catalog items using 55-watt MR11 lamps with various beam spreads. The uplights recessed in the fumed oak flooring were custom made for this project, satisfying the interior designers' request for a directed uplight accent. The uplights are completely flush to the floor and dustproof. The lamp holder within, with its 20-watt narrow beam MR16 lamp, can be angled to aim the beam. A semicircular sandblasted area on the glass cover provides glare relief.

Blue glass occurs repeatedly through the project, representing one of the corporate colors (the other is rusty red). The blue glass shows up first in a writing tablet on the reception desk, but it is most often used in conjunction with lighting fixtures. Similar to the stippled white glass, the blue glass is actually two clear sheets laminated with a blue liner. The top surface is acid-etched to further diffuse light.

Interior designer Chris Dewar-Dixon explains that "rafts" of blue glass solve a number of design problems encountered during the renovation. Existing single-lamp recessed parabolic fluorescent fixtures in the corridors had to be retained, yet their visual effect was considered harsh. Strips of blue glass 2 to 4 meters long were suspended beneath the fluorescent, diffusing their light and providing an unusual, subtly glowing surface. More low-voltage downlights — identical to the ones in the reception area — are mounted in the glass rafts.

The chairman's office has a drum doorway with curved bronze doors. Several MR11 fixtures shine out horizontally from the rim of the drum. Their bright beams are intercepted by circular cutouts of blue glass. Dewar-Dixon calls these "blue halo" fixtures because of their striking color effects. Like the office's other customized lighting features, the blue halos effectively call attention to the company's livelihood.

—Gareth Fenley

For product information, turn to page 62 and see Manufacturers.
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***SHOWCASE***

**Ambient and accent lighting**

- **Direct-indirect fluorescent**
  The Spheros architectural lighting system from Zumtobel is made of extruded aluminum and has decorative accent side panels available in four colors. Other components include connecting end pieces, a highly specular aluminum reflector, and an extruded acrylic lens. Louvers come in a post-anodized version for areas with VDTs.

- **PAR spotlight**
  The 20 Series spotlight from Lighting Services is the smallest in a series of specification-grade fixtures that are designed to provide a coordinated look for installations using PAR lamps of different sizes and intensities. The lightweight unit holds a PAR 20 or PAR 16 lamp and works best in applications requiring very short throws of light. Optional accessories include a range of lenses, louvers, and color filters; several mounting devices are available. Lighting Services Inc., Stony Point, NY.

- **Pendant**
  SPI Lighting's SFO series single-stem pendant has a symmetrical indirect optical system that accommodates a 100- to 400-watt horizontally mounted metal halide, HPS, or incandescent lamp. A 45-degree black cutoff baffle at the bottom of the dome emits 5 percent downlighting. The hemispheric metal dome comes in standard white and a variety of custom plated and painted finishes, including the black with red accents shown here. SPI Lighting Inc., Mequon, WI.

- **Quad fluorescent strip**
  The Linear Quad light strip from Norbert Belfer Lighting is specifically designed for Panasonic's 28-watt quad-tube compact fluorescent lamp. The strip features integral ballasts and an extruded aluminum raceway that comes in standard 6-foot lengths. Single 8-foot and twin 16-foot modules and custom lengths are available. Norbert Belfer Lighting, Ocean, NJ.

- **Pier-mounted luminaire**
  A pier-mounted luminaire from SPI's Renaissance line has a housing composed of two white translucent or opaque domes attached to a plated steel trim ring on a circular base. The reflector system works with a 100- to 400-watt metal halide or HPS lamp. The steel trim is available in two styles; domes come in a variety of plated and painted finishes. SPI Lighting Inc., Mequon, WI.

- **Sloped-ceiling downlights**
  Halo Lighting's downlights for 9- to 27-degree sloped ceilings have an adjustable socket plate that moves in two directions, allowing the lamp to be aimed straight down. The H4T7 downlight, shown here, has an integral thermal protector to prevent overheating and a double housing of heat-dissipating aluminum that permits it to be covered by insulation. The H4T7 fixture has no thermal protector. Both models have adjustable bar hangers that span spaces up to 24 inches between ceiling joists. Models are available for MR16, R40, PAR 88, and A21 lamps. Halo Lighting, Elk Grove Village, IL.

- **MR16 track fixture**
  The MR16 track fixture from Lighting Services has an integral electronic transformer that powers a 20- to 75-watt MR16 lamp. The extruded aluminum fixture is fully adjustable and can be aimed in any direction. Accessory holders accommodate a variety of attachments, including light-blocking screens, hexagonal-cell louvers, glare-blocking lamp jackets, and glass color filters. Wall, ceiling, and track mounts are available. Lighting Services Inc., Stony Point, NY.

- **Sloped-ceiling downlights**
  Halo Lighting's downlights for 9- to 27-degree sloped ceilings have an adjustable socket plate that moves in two directions, allowing the lamp to be aimed straight down. The H4T7 downlight, shown here, has an integral thermal protector to prevent overheating and a double housing of heat-dissipating aluminum that permits it to be covered by insulation. The H4T7 fixture has no thermal protector. Both models have adjustable bar hangers that span spaces up to 24 inches between ceiling joists. Models are available for MR16, R40, PAR 88, and A21 lamps. Halo Lighting, Elk Grove Village, IL.

- **Parabolic reflector**
  A parabolic reflector from Lighting Services is the smallest in a series of specification-grade fixtures that are designed to provide a coordinated look for installations using PAR lamps of different sizes and intensities. The lightweight unit holds a PAR 20 or PAR 16 lamp and works best in applications requiring very short throws of light. Optional accessories include a range of lenses, louvers, and color filters; several mounting devices are available. Lighting Services Inc., Stony Point, NY.

- **Pendant**
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- **Pier-mounted luminaire**
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- **Prismatic fixture**
  The prismatic lens of the Skylume Prismatic from LaMar Lighting is made of 0.187-inch-thick virgin acrylic. Prisms on the sides and bottom are designed to provide efficient light distribution. LaMar Lighting Co., Inc., Freeport, NY.

Circle 82
Circle 83
Circle 84
Circle 85
Circle 86
Circle 87
Circle 88
Circle 89
Circle 90
STEP ASIDE COMPETITORS
Day-Brite’s VDT sets the standard in computer environment low brightness fixtures.

Personal visual comfort and fixture efficiency highlight an impressive list of benefits of the new Day-Brite Designer VDT fixtures, especially designed for video display terminal environments. But, unlike competitive single-shot efforts at low glare fixtures, Day-Brite’s VDT series is a family of fixtures, offering all these benefits:

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When your job is to specify lighting for a glare-free environment such as VDT installations, look at Day-Brite’s Designer VDT series. Don’t settle for less!
Trapeze fixture

Capri Lighting's Trapeze fixture can be adjusted — from a vertical to a horizontal position — for multidirectional lighting. The fixture comes in black or white. Capri Lighting, Los Angeles.

Stage track fixtures

Micro/Lyte 911 series compact stage track fixtures have a built-in ball-bearing system with back slots that allow the lamps to move over the socket. Stainless steel surrounds the lamp holder as the die-cast metal fixtures accommodate two stem lengths and two standard lamp types. Con-Tech Lighting, Willowbrook, IL.

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Ambient and accent lighting

Concealed track system
The Recessed Trak accent lighting system from Alkco consists of low-voltage MR16 light modules and a track that are both completely concealed from view. The light modules can be aimed from 0 to 40 degrees, rotated 360 degrees, and placed anywhere along the track. Different lamp wattages and beam spreads, combined with various accessory lenses, produce a multitude of lighting effects from pin spotting to floodlighting. Alkco, Franklin Park, IL.
Circle 96

Low-voltage Fresnel
Times Square Lighting's CSMR16 low-voltage Mini Fresnel track fixture is designed to accept an MR16 lamp. It is available with a low-voltage track adapter or an integral magnetic transformer. Accessories include barn doors, color media, louvers, and hoods. Times Square Lighting, Stony Point, NY.
Circle 97
Fiberstars’ non-electric ribbons of light now have H.I.D. intensity.

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Lighting for the 21st century™

Circle 25

Compact track fixtures
Inlite offers Beam Spots, a line of compact track lighting fixtures designed for halogen PAR 20 and PAR 30 lamps. The fixtures come in three styles and are available in track- and canopy-mounted versions. Inlite Corporation, Berkeley, CA.

Circle 93

Semirecessed spotlight
Lighting Services offers the compact, adjustable 281 Series semirecessed spotlight for short- and medium-throw interior applications. The UL-listed fixture is designed to accommodate 50- and 75-watt medium-base PAR 30 halogen lamps in three beam spreads. It comes in three finishes and is available with a variety of accessories. Lighting Services Inc., Stony Point, NY.

Circle 94

Parabolic accent luminaire
Lithonia Lighting has added a 1-foot-square recessed parabolic accent luminaire to its Paramax series of specification-grade parabolic troffers. Standard features include spring-loaded cam latches, T hinges, and a black reveal that creates a floating louver appearance. The luminaire comes with a four- or nine-cell louver and is available in versions for 16-watt T8 U lamps and for 9-, 13-, and 18-watt compact fluorescent lamps. Options include a choice of louver finish, trim style, and air function. Lithonia Lighting, Conyers, GA.

Circle 95
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Circle 30

Rambusch's RD-45-500 recessed downlight is designed for use in areas with ceilings higher than 22 feet. Its extremely high efficiency (71 percent) and low brightness are achieved with a specular Alzak reflector and annular baffling, which comes in twist-lock and mintrim styles.

The downlight is UL listed for use in both fireproof and nonfireproof construction and is approved by the Canadian Standards Association. Pyrex disks are available to conform to UL standards that take effect January 1, 1990. Rambusch Lighting, New York, NY.

Circle 99

■ Retrofit kit

The Refractive Grid lens from Holophane is made to retrofit existing fluorescent fixtures; it reduces glare as much as 70 percent, according to the manufacturer. Because the lens decreases lumen output at high viewing angles, it is particularly suited to locations where computers and VDTs are used. The lens fits into a nominal 2-by-4-foot exposed T ceiling grid with a 3/8-inch grid-bar width. Holophane, Newark, OH.

Circle 98

■ Baffled downlight

Rambusch's RD-45-500 recessed downlight is designed for use in areas with ceilings higher than 22 feet. Its extremely high efficiency (71 percent) and low brightness are achieved with a specular Alzak reflector and annular baffling, which comes in twist-lock and mintrim styles.

The downlight is UL listed for use in both fireproof and nonfireproof construction and is approved by the Canadian Standards Association. Pyrex disks are available to conform to UL standards that take effect January 1, 1990. Rambusch Lighting, New York, NY.
**Ambient and accent lighting**

- **Linear incandescent**
  Norbert Beller Lighting recommends its Spectralinea linear incandescent luminaire for continuous cove lighting and for surface mounting as a single unit. The extruded aluminum chassis comes in three standard lengths and in many colors, with and without single and double angular reflectors. Custom lengths can be mitered to suit special design requirements. The luminaire is UL listed for damp locations. Norbert Beller Lighting, Ocean, NJ. Circle 100

- **Direct-indirect luminaire**
  Reggiani's direct-indirect Space Light has an adjustable aluminum reflector and is designed to accommodate a double-ended metal halide, HPS, or halogen lamp. Metal halide models have a high-spectrum UV filter; HPS and halogen models have protective glass. The die-cast aluminum unit comes in two standard and four metallic finishes. Direct-only and indirect-only versions and versions with combined sources are available. Reggiani USA Inc. Illumination, New Windsor, NY. Circle 101

- **Low-profile fluorescent**
  NuTone’s LC Series compact fluorescent fixtures of durable bone white Noryl measure 2 inches deep and 9 3/8 inches square. Five available models include styles for one or two 9-watt lamps and a pull-chain version. Lenses come in two colors and can be quickly snapped in and out. NuTone. Cincinnati, OH. Circle 102

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SHOWCASE

Pavilion lighting evokes mystery of ancient Egypt

Dramatic interplays of light and shadow evoked the mystery of ancient Egypt for modern-day visitors viewing a 3000-year-old statue in a special pavilion at the Boston Museum of Science. The Ramesses II Pavilion was an outdoor structure designed to display the 57-ton, 24-foot-high granite statue of Pharaoh Ramesses II, which had once flanked a temple in Memphis, the ancient capital of Egypt. In designing the pavilion's lighting, we wanted to focus viewers' attention on the statue, the showpiece of a touring exhibition of ancient Egyptian artifacts, and let the pavilion assume the role of a stage set that echoed images of temples from Egypt's past.

We wanted to use daylighting in the outdoor structure in ways not possible with indoor exhibits and to provide a different experience for evening visitors. We also wanted the lighting to add feeling to the visitors' experience and make it memorable. Finally, because the pavilion was a temporary building, we wanted to maximize the effectiveness of the lighting system and yet keep costs to a minimum.

Our solutions were simple and straightforward, though there were a few customized details. To light the large centerpiece with enough intensity to create a sense of focus, we initially thought of using a track lighting system because of its flexibility. However, in the final design, we used some of the museum's theatrical-type PAR 64 exhibit fixtures to direct focus light onto the statue and wash the wall behind it with a soft glow. We designed a series of 18-inch-wide, 16-inch-deep ceiling coffers to accommodate recessed steel-pipe hangers and to partially conceal the fixtures. This gave the exhibit a neat, organized appearance that minimized visual distractions for viewers.

The fixtures were wired to electrical racetrays in several independently dimmed circuits. We aimed lights on the statue from its front and sides to emphasize its sculptural form and carved details. Lights behind the statue washed the back wall to minimize shadows and create an intermediate level of light that framed the dominant view of the statue. Because access to the fixtures would have been difficult during the run of the exhibit, we included backup fixtures for use in case of lamp failure.

We designed a structure with minimum enclosure to take advantage of daylighting for general illumination throughout the day. Though the colossal was protected by textured plywood pylons and a floating roof, direct sunlight could penetrate the openings between freestanding columns of 1/2-inch-thick laminated fiber. The changing interplay of light and shadow on the statue and pavilion floor allowed the public to see the statue in a dramatic setting, just as it once was viewed in ancient Memphis.

We created a strikingly different evening atmosphere with an indirect lighting system. To accentuate the separation between the floating roof and the freestanding columns, we put a ring of eight incandescent fixtures inside each flared column capital. By dimming the lamps, we balanced the subdued indirect light with the focus light on the statue. The resulting dark silhouettes of the columns against the luminous ceiling reinforced the feeling of mystery within the pavilion.

To complement the interior lighting, we placed an exterior accent light in front of each entrance pylon. Hidden behind plantings and aimed upward, these fixtures accentuated the rusticated walls of the pylons and added a ceremonial dimension to the visitors' experience. We left the portal itself unlit so that the darkened entrance enhanced the dramatic effect of the brightly illuminated colossal at the far end of the pavilion.

—Lawrence Man, AIA

For product information, turn to page 62 and see Manufacturers.

Project: Ramesses II Pavilion
Location: Boston Museum of Science
Architect: E. Verner Johnson and Associates, Inc.; George Adler, Lawrence Man, Jon Andersen, Richard Leaf, Brad Nederhoff, Carolyn Swett
Electrical Engineer: Fales, Letendre and Ziobro, Inc.
Lighting Technician: David Freese, Boston Museum of Science
General Contractor: Bond Brothers, Inc.
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SHOWCASE
Landscape and area lighting

Traditional lighting standards
Ryther-Purdy’s traditional Type T lighting standard is constructed of western red cedar. The rustic design is particularly suited for condominiums, parks, parkways, shopping centers, and other large landscaped areas. The standard is offered in three post sizes from 7 to 10 inches square with mounting heights from 14 to 40 feet. Various arm lengths may be specified; plinth blocks to house a splice or transformer are optional. Ryther-Purdy Lumber Company, Old Saybrook, CT.

Circle 103

Fresnel lens luminaire
Architectural Area Lighting’s nautical-style Fresnel lens luminaire comes with a Lexan lens and accommodates a variety of HID lamps. The post- or bracket-mounted luminaire is offered with several finishes, including a solid copper top and bottom with solid brass rods. It is suitable for both exterior and interior applications. Architectural Area Lighting, La Mirada, CA.

Circle 105

Custom outdoor sconce
Appleton Lamplighter manufactured this custom exterior sconce for a retail mall in Chicago. Jules Fisher and Paul Marantz, Inc., designed the sconce, which is made of brushed stainless steel and polished bronze and has opal acrylic lenses. Appleton Lamplighter, Appleton, WI.

Circle 104

Spherical luminaire
The pole-mounted L26-1-1 outdoor luminaire from ELA was designed by Paul Steel. Its Alzak reflector system produces a 70-degree horizontal cutoff; a decorative halo also glows at the top of the sphere. The cast aluminum body has a baked polyurethane finish. The luminaire holds an acrylic or UV-stabilized polycarbonate lens and will accept a 150-watt HPS or 250-watt metal halide lamp. A wall-mounted companion fixture is also available. ELA Company, City of Industry, CA.

Circle 106

Circle 33

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American Lighting Association

Circle 103

Circle 105

Circle 104

Circle 106
The new Terralux® bollard from Holophane® solves a lot of walkway lighting design problems. The square distribution pattern of Terralux — unique for a thin profile bollard — allows you to illuminate the entire walkway. And you can give it the most even, uniform lighting ever. This means that fewer bollards will be needed to do the job. The result: lower cost to start with and less maintenance over the years.

The thing that makes Terralux special is that it incorporates a prismatic glass refractor that does what no ordinary bollard's optical system can do — shape light. That's how Terralux puts light where it's needed with very little glare.

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Lumière
Design & Manufacturing, Inc.
Circle 35

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Light shield
Nightscaping has introduced the Eyebrow optional shield for its Pro-Liter series of exterior fixtures. Positioned on any of the fixture’s four sides, the 3-inch-deep shield directs light where the designer wants it while limiting the visibility of the light source. It is shown here on a Stylist fixture with the low-profile canopy mounting option. Nightscaping, division of Loran, Inc., Redlands, CA.

Circle 107

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Parking garage lighting
The high-performance Park Avenue luminaire from Lighting Systems provides uniform, glare-free illumination for parking garages. The specification-grade unit comes in versions for HPS, metal halide, and deluxe mercury vapor lamps. Its two-piece housing is available in steel and aluminum. Four mounting options and five reflector systems are available. Lighting Systems Inc., Cincinnati, OH.

Circle 110

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Pastel finishes
Dinico Products offers four pastel finishes among its 12 standard finishes for exterior lighting equipment. The rose, blue, green, and gray tones are inspired by the natural environment. All have a protective coat of clear acrylic lacquer. The rose-finished fixture shown here is the model PUD 8020 from the Forum series 8000, mounted on a 3P pole. Dinico Products Inc., Hackensack, NJ.

Circle 111

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Landscape fixture
Hinkley Lighting offers a garden-walkway fixture for a 75-watt source. The fixture is finished in weathered copper and comes with a mounting pipe. Hinkley Lighting, Cleveland, OH.

Circle 112

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Service-station fixture
Holophane has introduced the Visualite, an HID fixture for service-station canopy lighting applications. A tapered injection-molded acrylic lens provides elongated light distribution and high vertical foot-candle levels; the result is bright lighting of gasoline pumps, signage, displays, and building facade. Light reaching the driveway outside the canopy area could reduce the number of pole-mounted perimeter fixtures required. Holophane, Newark, OH.

Circle 109

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Flagpoles
Ryther-Purdy offers a selection of flagpoles made of western red cedar, the same wood as the company’s lighting standards and fixtures. Available in heights of 15, 20, and 25 feet, the tapering octagonal poles are provided unfinished, stained gray, or stained white. Ryther-Purdy Lumber Company, Old Saybrook, CT.

Circle 108

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Landscape and area lighting

---
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NO RUST! Unlike steel, Shakespeare fiberglass poles are impervious to moisture. They need no paint, special treatment, or protection to stand against the harsh environment for years... maintenance free!

NO CORROSION! Shakespeare fiberglass lightpoles will not corrode above or below ground. Unlike aluminum, fiberglass is oblivious to salt air and adverse soil conditions that cause deterioration. You get the option of cost efficient direct burial installation plus the assurance of a like-new appearance for generations.

NO ROT! Even as you read this, there is wood... treated, painted, or unprotected... rotting above and below ground. NEVER Shakespeare fiberglass lightpoles!

NO BRUTE STRENGTH! Pick it up. It's lightweight Shakespeare's 18' pole, for example, weights as little as 39 lbs. Shoulder carry it to the hole and place it in the ground. Only lightweight Shakespeare fiberglass lets one person do the work of many.

NO CORROSION! Shakespeare fiberglass lightpoles are impervious to moisture. They need no paint, special treatment, or protection to stand against the harsh environment for years... maintenance free!

NO CONCRETE! Direct bury a Shakespeare fiberglass lightpole in just three easy steps: dig a hole, insert the pole, backfill and tamp. The exclusive flared bottom prevents twist and pull while the lightweight characteristics of fiberglass construction eliminates expensive concrete foundations. But, if your need is above ground installation, select from Shakespeare's standard line of Anchor Base lightpoles.

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Landscape and area lighting

- **Step light**
  Step by Step is a new glare-free, recessed step light from Poul sen Lighting. Designed by Ole Bruhn, Torben Rix, and Leif Jensen, it accommodates a 5-watt compact fluorescent lamp in a baked matte white enamel housing 8 ½ inches high, 3 inches wide, and 6 inches deep. Poulsen Lighting, Inc., Miami, FL.
  Circle 113

- **Flexible area lighting**
  Compact Greenbriar Series luminaires from Lighting Systems offer flexibility and aesthetic appeal for applications that require low-level landscape lighting applications, such as parks, walkways, and town squares. Four lens options and seven distribution patterns are available. Lighting Systems Inc., Cincinnati, OH.
  Circle 114

- **Miniature bollards**
  Lumière has introduced the Tahoe family of miniature bollards, which are each 6 to 10 inches high. A low-voltage halogen lamp illuminates the fixture crown, machined from a solid rod of UV-stabilized acrylic. Lumière Design & Manufacturing, Inc., Westlake Village, CA.
  Circle 115

- **Outdoor fixture**
  Cambria is a versatile, low-voltage outdoor lighting fixture from Lumière. Its hydraulic compression-type swivel fitting locks into a watertight position when its adjustment screw is tightened. The fixture has O-ring seals at the lens and where the front and rear bezels join. It accommodates a 20-watt MR11 or MR16 lamp. Lumière Design & Manufacturing, Inc., Westlake Village, CA.
  Circle 116

- **Colored concrete poles**
  CPI Concrete Products offers prestressed concrete light poles up to 65 feet high in 14 colors and exposed aggregate finishes. The colors are blended with the concrete for a permanent finish that requires no paint and neither peels nor rusts. Bollards are available to match any pole color or finish. CPI Concrete Products, Memphis, TN.
  Circle 117

- **Circular area luminaire**
  Lighting Systems offers the Hilton Series area luminaire, which has a distinctive grooved inlay on both the circular luminaire and its bracket. Versions are available for a variety of lamps, including a vertical-burn high-output metal halide. Lighting Systems Inc., Cincinnati, OH.
  Circle 118
HID cylinder
Paramount's heavy-duty HID Cylinder Lite is designed for such applications as airports, malls, corridors, lobbies, and mass transit stations. It can be surface, chain, or stem mounted and is constructed of 18-gauge zinc-coated steel with a baked enamel finish. Unfinished stainless steel models are also available. Paramount Industries, Inc., Crosswell, MI.
Circle 119

Vandal-resistant globe
The vandal-resistant L2944-2 outdoor luminaire is part of ELA's contemporary series, designed by Paul Steel. A clear or white seamless globe of polycarbonate or acrylic, 14 inches in diameter, rests in a cast aluminum guard. A guard that fully encloses the globe is optional. The unit accepts a 100-watt metal halide or HPS lamp; a refractor is standard with the clear globe. Wall-mounted units and larger sizes are available. ELA Company, City of Industry, CA.
Circle 120

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Circle 39
A little sparkle goes a long way in marble lobby

The renovation architects for Atlanta's Colony Square lobby replaced dull, dark tile with highly reflective granite, glass, and veined marble. Lighting designer Ramon Noya knew he would have to be careful to avoid undesirable fixture reflections on all those shiny surfaces. But after specifying indirect sources for the primary lighting system, he decided to put some of the reflection back in. As he explains, "a reflective and shiny surface needs to have reflections or else we cannot tell that it's reflective! So one of the design ideas was to make this a shimmering, gleaming space."

To create the indirect lighting system, Noya mounted fluorescent lamps on high marble shelves supported by a freestanding colonnade. A 2-inch gap between shelving and wall reveals uninterrupted planes of marble. Inside the tray, the fluorescents fit within the jungle of metal brackets that hold the marble in place.

The designers could have chosen incandescent lighting to illuminate this elegant space, but they chose not to for reasons of economy. In addition to the higher electricity consumption and shorter lamp life of incandescent sources, the heat they generate is also a factor in the hot, humid Atlanta climate. The energy-efficient fluorescents in the Colony Square lobby stay on around the clock.

But the designers were not willing to pay the penalty of flicker — a common problem with conventional fluorescents. "Normally, fluorescent sources have a little flicker that you can just pick up slightly with peripheral vision," Noya says. This would have spoiled the beauty of the materials. So he chose electronic ballasts for the primary lighting system. Because they operate at 25,000 cycles instead of the conventional 60, there is no perceivable flicker. Noya says, "These ballasts give a seamless, very creamy quality to the light."

Having eliminated the annoyances of fixture reflection and flicker with indirect lighting and electronic ballasts, Noya decided that in order to express the reflective quality of materials, he would have to add some source of reflection. He used three kinds of incandescent fixtures to create this effect:

| Project: Colony Square lobby |
| Location: Atlanta, Georgia |
| Client: Cousins Properties Inc. |
| Architect: Thompson, Vertulet & Steinback; Paul Duckwall, Jeff Hendrick, Sheri Raiford |
| Lighting Designer: Ramon A. Noya, Ramon Luminance Design |
| Photos: Gabriel Zenar, Inc. |

small low-voltage pinhole fixtures in the ceiling, lights in the column capitals, and downlights for an etched glass sculpture. Together, although they add only one or two footcandles to the ambient light level, they create twinkling highlights on the floors and enliven the lobby space. When the automatic clock timer shuts off all but the fluorescent lights at closing time, Noya says, the change is remarkable. "The space goes quiet — which is interesting, because that's what we theorized would happen. It's as if all the life goes out of it."

The columns are, in effect, decorative lampposts. Inserted in their capitals are frosted glass panes backlit with 20-watt MR16 lamps that produce a crystalline twinkle, visibly reflected on the floor.

Prominently displayed in the lobby is an etched glass sculpture, permanently sealed in a glass case to keep dust out. Above the case are two dimmed rows of 50-watt narrow spot MR16 downlights. Reflections from this beautiful piece make it a light source in itself.

A plaster dome above the elevator lobby is uplit with concealed fluorescents. Like all the other painted surfaces, its color was selected in the field, after the lighting and finish materials had been installed. The designers wanted to make sure they understood the interactions between the light sources and the materials before choosing paint colors. With this degree of fine tuning, they were able to select a warm cream color that would be compatible in practice — as well as in theory — with the surrounding lobby materials.

The combined effect of this color selection, the indirect lighting, and the color temperature of the lamps (3100K) is ambient lighting that is warm and soft. Even though stone and glass are normally considered to be cold, hard materials, Noya explains that this has an important psychological effect on people who use the space. "The light gives a soft quality to their complexions," he says; people feel better about themselves when they see others around them "whose faces are soft and warm and glowing."

Soft, warm, and glowing is perhaps the best way to describe the Colony Square lobby itself. It's a successful blend of the softness of indirect sources with the sparkle of direct light on polished stone.

— Barbara-Jo Novitski

For product information, turn to page 62 and see Manufacturers.
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**Showcase**

**Components and accessories**

- **Edge-lit exit sign**
  Lithonia's Precise edge-lit exit sign has injection-molded letters and a wedge-shaped acrylic panel that provides clear visibility and uniform illumination. Its solid extruded aluminum housing trim fits flush to the mounting surface; the rough-in section is fully recessed. Emergency models have maintenance-free nickel cadmium batteries. The sign accepts one or two 8-watt T5 fluorescent lamps. Lithonia Emergency Systems, division of Lithonia Lighting, Conyers, GA. Circle 121

- **Coated high-output lamps**
  Shat-R-Shield has introduced double-coated, high-output fluorescent lamps. If a lamp is broken, the heat-resistant coating — layers of Surlyn plastic and Teflon — will contain broken glass, mercury, and phosphors, minimizing potential hazards in industrial and commercial applications. The lamps meet FDA, USDA, and OSHA requirements, according to the manufacturer. Shat-R-Shield, Inc., Salisbury, NC. Circle 122

- **Electronic ballast**
  Thomas Industries has announced a totally electronic fluorescent ballast that has a regulated constant-wattage output. According to the manufacturer, the ballast provides safer, more reliable lamp start-up and longer lamp and ballast lives, yielding up to 40 percent savings over the life of an installation. Low input line voltage will not reduce the overall light levels of fluorescent fixtures using the ballasts. Thomas Industries Inc., Louisville, KY. Circle 124

- **HPS accent lamps**
  Philips Lighting has introduced the White Son family of high pressure sodium lamps for display and accent applications. The lamps provide a warm, incandescent-like color with low ultraviolet emissions and exceptional color rendering properties, according to the manufacturer. Operated on an electronically controlled ballast with a built-in igniter, the design maintains a high degree of color stability throughout the 10,000-hour lamp life. Available wattages are 55, 50, and 100, with initial lumen outputs of 1250, 2500, and 4700, respectively. The lamps are recommended for general lighting, task lighting, and merchandise display lighting, particularly in florist shops, museums, atria, and lobbies. Philips Lighting Company, Somerset, NJ. Circle 123

- **Combination sensor**
  Honeywell's wall-mounted occupancy sensor features two different sensing technologies. A passive infrared occupancy sensor recognizes body heat generated by motion, and a photosensor detects ambient light. The occupancy sensor has a programmable time delay; the photosensor can be set to switch lights on and off in response to daylight levels. Honeywell Inc., Building Controls Division, Golden Valley, MN. Circle 125
GE IS THE LIGHT THAT DELIVERS BIGGER LIGHTING PUNCH FROM A SMALLER LAMP.

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GE Lighting

Circle 42
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Introducing PureBrite™, the durable anodized aluminum lighting sheet that helps lighting equipment manufacturers build superior fixtures with high light output at a low energy cost. PureBrite controls the objectionable iridescence that occurs when high efficiency lamps (tri-phosphor) are paired with traditional Coilzak® louvers.

PureBrite, the newest member of the Coilzak family of products, is manufactured using highly specialized aluminum sheet which is chemically brightened and anodized in a carefully controlled process. This combination of special sheet and finish is the key to iridescence control and yields outstanding durability, appearance and economy.

PureBrite products are available in specular and semi-specular finishes and will resist corrosion, abrasion and loss of reflectance. Alcoa warrants that performance for a full 25 years.

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Components and accessories

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**New Packaged Chokes Offer No Noise In No Time**

Extremely quick and easy to install for both new and retrofit applications, Amecon’s new line of architectural chokes essentially eliminate noise in dimmers, lamps and fixtures. The chokes are professionally packaged to dramatically reduce installation time as they mount to standard recessed fixtures, remote areas and wall boxes. They’re built with high temperature, high impact, fire retardant UL recognized materials. Attractively priced, they’re rated at 50 and 75 watts at 12 volts, and 400 to 750 watts at 120 volts.

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Applications are recommended for all types of architectural light dimmers, accent, decorative, display, and nearly anywhere a noise reaction system is required. Call or write for new Technical Bulletin/Selection & Design Guide ALC-0689.

**Triphosphor fluorescents**
Staybright XL lamps provide higher light output and longer life than any of GE’s other 40-watt fluorescent lamps. The 4-foot lamps are offered in all six of the company’s triphosphor colors and offer excellent lumen maintenance. They have a rated life of 24,000 hours at 5 hours per start—a 20 percent improvement over standard lamps. GE Lighting, Cleveland, OH.

**Coated lamps**
Shat-R-Shield’s fluorescent lamps are coated from end to end with flexible Surlyn plastic, which resists punctures and abrasions and has high impact strength. The coating prevents contamination of employees, workplace, product, and processes in case a lamp is broken. The single-unit lamps replace the conventional assembly of standard lamp, sleeve, and end caps. Shat-R-Shield, Inc., Salisbury, NC.

**Electronic ballasts**
Ballastar electronic ballasts can be specified for three-lamp lighting fixtures that are 2 to 5 feet long, or for linear applica-
Quality of light. Quantity of light. Economy of light. All are important in an illumination package. But it's frequently difficult to provide all three without compromise. Enter low wattage metal halide lighting which combines the best in quantity and quality of light with energy economy.

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For high quality lighting, add Venture Lighting to your list of low wattage metal halide lamp suppliers.
Components and accessories

Inverter ballasts

Series K Tran-Bal inverter ballasts from Bodine will operate fluorescent lamps from a DC power source. Six models operate a variety of lamp sizes and run on input voltages of 12 or 24 volts DC. The manufacturer recommends the ballasts for applications involving computer scanners, copiers, food processing, and laboratory equipment, and for motor vehicle, solar-powered, and wind-powered lighting. The Bodine Company, Collierville, TN.

Circle 132

Contact unit

Lowering Systems offers the SCU-2 contact unit, which raises and lowers indoor luminaires for floor-level servicing. It lifts loads up to 150 pounds and can be used with pendant- and surface-mounted luminaires in buildings with flat or sloping ceilings and in structures with false ceilings. A modified version lifts loads up to 1100 pounds. Accessories allow the device to be used in dustproof and waterproof installations and in highly corrosive environments. Lowering Systems Inc., Northbrook, IL.

Circle 131

Inverter ballasts

Inverter ballasts from Bodine will operate fluorescent lamps from a DC power source. Six models operate a variety of lamp sizes and run on input voltages of 12 or 24 volts DC. The manufacturer recommends the ballasts for applications involving computer scanners, copiers, food processing, and laboratory equipment, and for motor vehicle, solar-powered, and wind-powered lighting. The Bodine Company, Collierville, TN.

Circle 132

Contact unit

Lowering Systems offers the SCU-2 contact unit, which raises and lowers indoor luminaires for floor-level servicing. It lifts loads up to 150 pounds and can be used with pendant- and surface-mounted luminaires in buildings with flat or sloping ceilings and in structures with false ceilings. A modified version lifts loads up to 1100 pounds. Accessories allow the device to be used in dustproof and waterproof installations and in highly corrosive environments. Lowering Systems Inc., Northbrook, IL.

Circle 131
A formulation of DuPont® Surlyn® seals the cooler, center section of the High Output (HO/TSC) Lamp. Surlyn® resists punctures, abrasions and has high-impact strength. It will not yellow or craze with age, it will remain unchanged over the rated life of the lamp.

The steel ring seaming system prevents Teflon® and Surlyn® from separating when the lamp is broken.

A tough, flexible DuPont® Teflon® polymer seals the cathode ends of the lamp where the greatest heat is generated. The coating is clear and will remain unchanged over the rated life of the lamp.

The durable coatings overlap the metal ends eliminating the risk of separation when the lamp is broken.

Why waste valuable time specifying sleeves and end caps?

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Available in a full range of Fluorescents, High Outputs and Incandescents, SHAT-R-SHIELD lamps are presently providing protection to food processing plants, cafeterias, restaurants, supermarkets, hospitals, schools, cosmetic and pharmaceutical plants, nuclear facilities, bakeries, dairies, government installations, employee work stations, high-tech clean rooms and a host of other safety-committed areas.

When your design calls for safe lighting, specify SHAT-R-SHIELD. The safest and simplest form of lamp protection money can buy. Call or write today for our FREE, full color brochure.
Reflective sheet

PureBrite lighting sheet was developed by Alcoa to help lighting fixture manufacturers reduce the iridescence that may occur with high-efficiency triphosphor lamps. Spectral emissions from these lamps may interact with an oxide coating, causing iridescence, the company reports. PureBrite uses a special manufacturing and finishing process to modify the optical path and reduce objectionable coloring. It is available in specular and semispecular finishes and carries a 25-year warranty. Alcoa Sheet and Plate Division, Bettendorf, IA.

Circle 133

Learn How Bodine Can Convert Any Fluorescent Fixture Into An Emergency Light

Many commercial industrial/institutional buildings require emergency lighting. In these applications, specify emergency lighting that provides safety, convenience and code compliance - without detracting from attractive lighting designs.

Bodine Emergency Ballast

Bodine's unobtrusive emergency products are installed inside or adjacent to a fluorescent fixture, ensuring the visual integrity of even highly sophisticated interior designs. The result: emergency lighting that doesn't look like emergency lighting. Problems with occupant panic, vandalism and installation of wall-mounted auxiliary lighting are eliminated.

Send for a FREE brochure with application, operation, installation and complete specifying information.

Circle 51

Compact fluorescent

The Smartlight 16-watt compact fluorescent medium screw-base lamp from Philips Lighting produces the same amount of light as a 75-watt incandescent. It can save customers $50 over the life of the lamp and lasts about five years when burned six hours a day, according to the manufacturer. Philips Lighting Company, Somerset, NJ.

Circle 136

Parabolic louvers

A.L.P.'s Hexabolic 2 parabolic louvers have interlocking hexagonal cells measuring 3/8 by 3/8 by 3/4 inch that are integrally molded into a single, structurally rigid plastic element. The injection-molded louvers are made of acryle or poly styrene, have a highly specular, vacuum-metallized coating, and come in three standard sizes. A.L.P. Lighting & Ceiling Products, Inc., Chicago, IL.

Circle 137

Super-efficient PARs

GE's Halogen-IR PAR 38 lamps are the first commercially available lamps to use the company's special infrared coating, which makes halogen lamps substantially more efficient. The multilayer optical film coating, applied to a precisely shaped filament tube, allows visible light to shine out while reflecting infrared rays back onto the filament. The 60-watt Halogen-IR spot lamp uses 60 percent less energy than a standard 150-watt PAR spot, produces 27 percent more light, and projects a beam that is one-third cooler. A 60-watt flood, 100-watt spot, and 100-watt flood are also available. GE Lighting, Cleveland, OH.

Circle 135

Edge-lit exit sign

Lightalarms offers a recessed edge-lit exit sign with a polished, engraved acrylic panel. The signs, lit by concealed 8-watt F8T5 fluorescent lamps, are available in AG-only and self-powered models. The latter have a sealed nickel cadmium battery and an inverter ballast. The signs are available in several mounting styles; panels and trim plates come in a variety of colors. Lightalarms Electronics Corporation, Baldwin, NY.

Circle 138
Decorative luminaires

Decorative luminaires are featured on pages 16-27.

- **Illuminated sculpture**
  The Tulip illuminated sculpture can function as accent light, backlight, downlight, or reading light. It accepts a 75-watt R lamp or halogen lamp; its base takes a 7- or a 15-watt source. Ronald Reyburn Lighting Design, Long Beach, CA.
  
  Circle 160

- **Prairie-style luminaires**
  The Sonneman Design Group designed Maxim's collection of pendants and surface and wall-mounted luminaires with ribbed glass panels, which were inspired by the Prairie Movement. Maxim Lighting, City of Industry, CA.
  
  Circle 163

- **Period luminaires**
  St. Louis Antique Lighting restores period luminaires and manufactures reproductions and custom luminaires. A catalog shows luminaire and shade styles for residential and commercial applications. St. Louis Antique Lighting Co., St. Louis, MO.
  
  Circle 164

- **Church lighting**
  A 24-page color catalog illustrates 18 traditional styles of matching pendants, wall brackets, and ceiling-mounted luminaires for churches. It also includes downlights, accent lights, and accessories. R.A. Manning Company Inc., Sheboygan, WI.
  
  Circle 162

- **Decorative luminaires**
  A color brochure describes and illustrates several lines of Kichler's traditional and contemporary decorative solid brass pendants, sconces, chandeliers, and outdoor lanterns. Kichler Lighting, Cleveland, OH.
  
  Circle 165

- **Ceramic sconces**
  Saxe-Patterson's Ziggurat ceramic sconces are available in nine styles and 10 finishes. A brochure includes specifications, drawings, and finishes for all models. Saxe-Patterson, Taos, NM.
  
  Circle 161

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  Circle 164

- **Louvers**
  The Blade system combines a metal louver and a prismatic diffuser with a highly efficient troffer to produce lighting with high cutoff and low glare. A brochure shows finishes under warm and cool white sources. H.E. Williams, Inc., Carthage, MO.
  
  Circle 166

NEW... LIGHTING INNOVATIONS
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Six new finishes—30 mix-match combinations available!
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Circle 52

Circle 53
Low-profile fixtures

Circle 167

Track-mounted fixtures
Con-Tech's track-mounted fixtures are suitable for general, accent, and task lighting applications. A 12-page color catalog describes and illustrates fixtures for standard and low-voltage PAR and halogen lamps. Con-Tech Lighting, Northbrook, IL.

Circle 168

Modular fluorescent
The P69 modular lighting system is a 6-by-9-inch fluorescent luminaire for direct, indirect, or combination lighting. It can be mounted on walls or suspended from cables or stems. Prudential Lighting, Los Angeles, CA.

Circle 169

Landscape and area lighting
Landscape and area lighting products are featured on pages 40-47.

Circle 170

Cutoff street lighting
Optixx 80 and 85 series streetlights have segmented optical assemblies that can provide any of four light distribution patterns. A brochure describes features and shows six standard finishes. Lumicor Inc., Saint-Thérése, Quebec, Canada.

Circle 171

Light strips
The Light Bud Channel is a strip of low-voltage miniature lamps backed by a stippled, nonmetallic reflector and mounted in a rigid aluminum groove. A color data sheet describes custom options. Sylvan Designs, Northridge, CA.

Circle 172

HID floodlight
The Infrator 855 floodlight has an aluminum housing and a removable tray for the reflector and ballast. A brochure describes features and shows mounting, shield, and beam pattern options. Sterner Lighting Systems Incorporated, Winsted, MN.

Circle 173

Ceramic fixtures
Popovitch offers handcrafted ceramic and copper landscape lighting fixtures from its Nature series. A brochure contains descriptions, color photos, and dimensional drawings for each fixture. Popovitch Associates, Pittsburgh, PA.

Circle 174

Optical projector
Wendelighting's model 2345 cast aluminum optical projector provides controlled illumination for building exteriors, fountains, sculptures, and other landscape focal points. A data sheet lists specifications. Wendelighting, Burbank, CA.

Circle 175

Deck lighting
A brochure illustrates a selection of Dinico's cast aluminum lanterns for lighting decks and landscapes. It includes dimensions, lamp requirements, and mounting accessories. Dinico Products Inc., Hackensack, NJ.

Circle 176

Components and accessories
Components and accessories are featured on pages 50-58.

Circle 177

Ballasts
A brochure describes features of Bodine's emergency ballasts for standard and compact fluorescent lamps, central battery ballasts, DC inverter ballasts, and an HID emergency lighting system. The Bodine Company, Goffstown, TN.

Circle 178

Electronic controls
A 32-page color brochure describes and illustrates Hunt Electronics lighting control systems and components and discusses five typical system applications. Valmont Electric, Danville, IL.

Circle 179

Colorimeter
Minolta's Chroma Meter CS-100 is a noncontact tristimulus spot colorimeter that is suitable for spot metering of lighting-source and surface colors. A data sheet lists features, technical data, and specifications. Minolta Corporation, Ramsey, NJ.

Circle 180

Electronic lamps

Circle 181

Light control products
A 35-page catalog contains descriptions, illustrations, and technical information for Osram's incandescent, halogen, standard and compact fluorescent, metal halide, and high and low pressure sodium lamps. Osram Corporation, Montgomery, NY.

Circle 176

Light sources
A 36-page catalog contains descriptions, illustrations, and technical information for Osram's incandescent, halogen, standard and compact fluorescent, metal halide, and high and low pressure sodium lamps. Osram Corporation, Montgomery, NY.

Circle 176

Downlight trims

Circle 182
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ARCHITECTURAL INTERIORS & LIGHTING

BEMIS ENLIGHTENMENT

BURLINGTON LIGHTING

CLASSICAL LIGHTING

CONTROLS

DAYLIGHTING PRODUCTS

DECORATIVE LUMINAIRES (INTERIOR)

LAMPS

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Manufacturers


Page 28. Low-voltage lighting and glowing glass illuminate London corporate offices (Emess plc Corporate Head Office).


Page 48. A little sparkle goes a long way in marble lobby (Colony Square lobby, Atlanta).


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

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