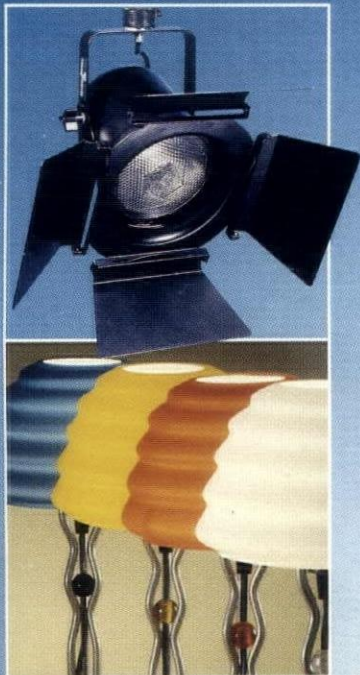
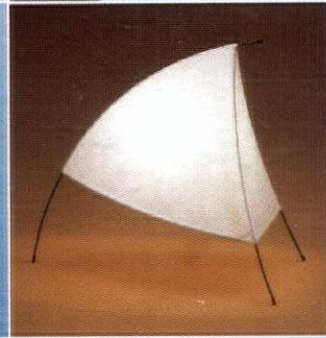
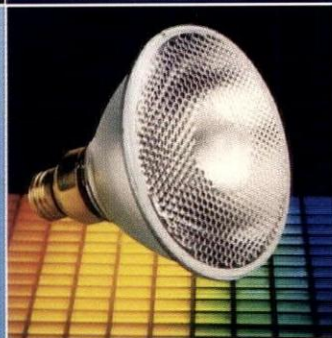
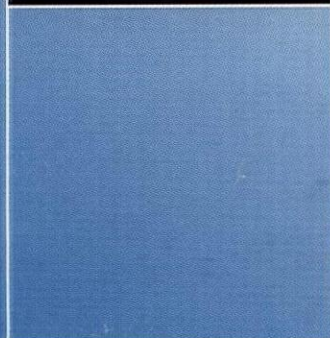
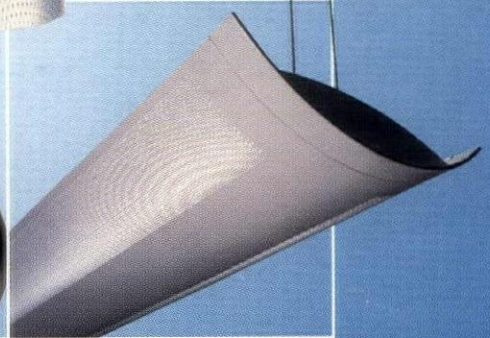
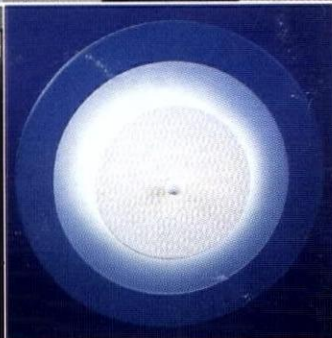
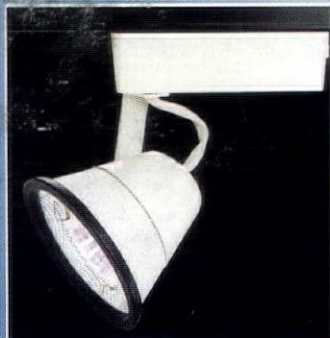
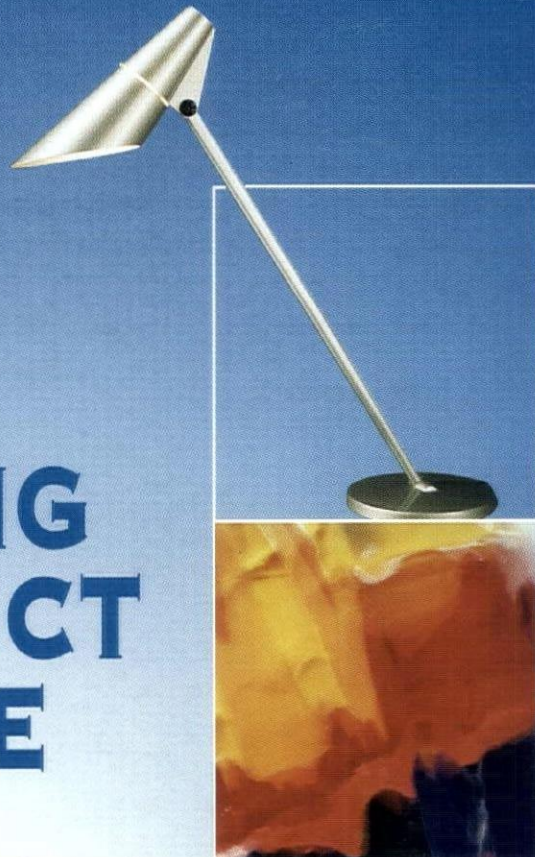


SPRING
1998

architectural lighting



SPRING PRODUCT ISSUE



175 PRODUCTS

**WEB REVIEWS
ASIAN MARKET OUTLOOK
AVOIDING LIGHTING FAILURES**

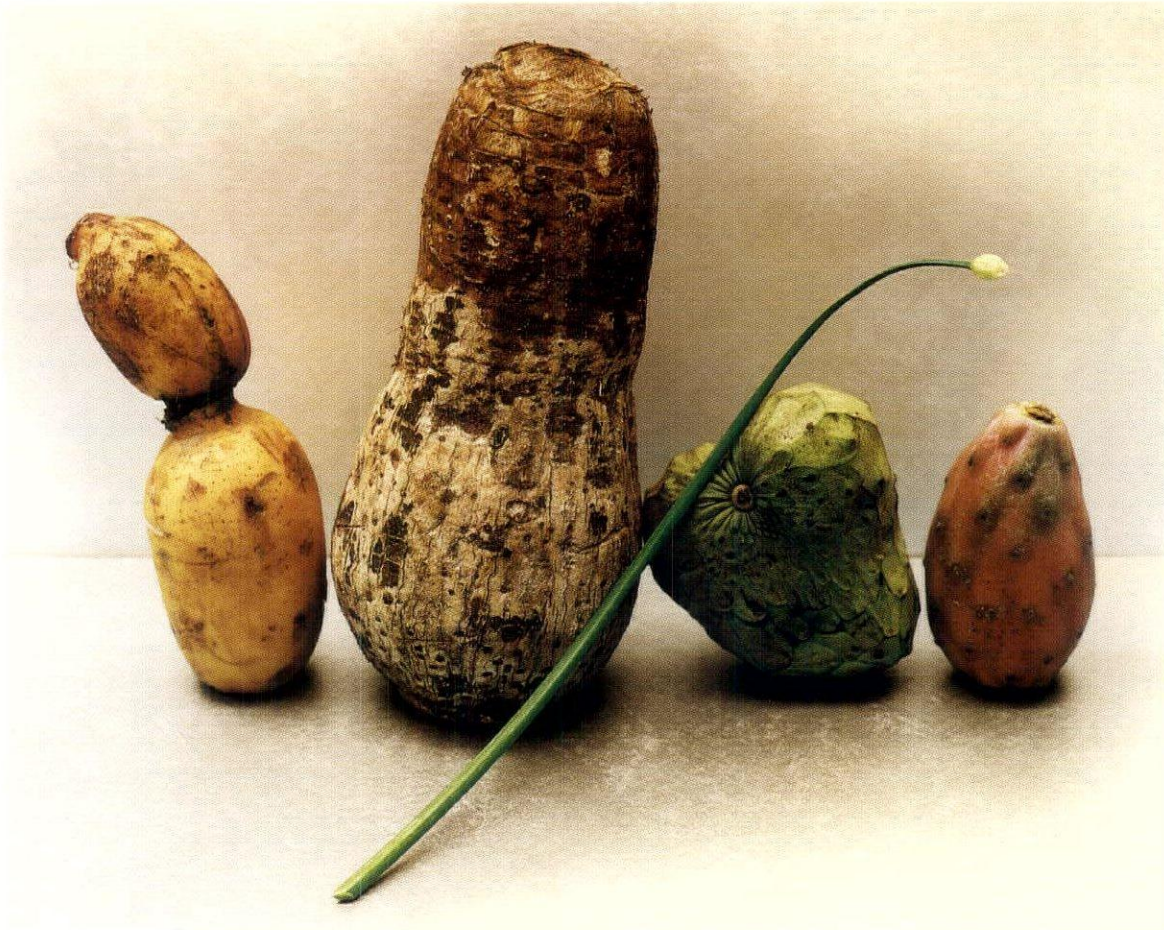
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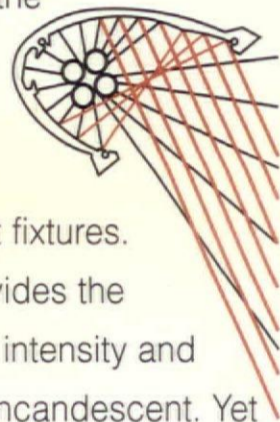
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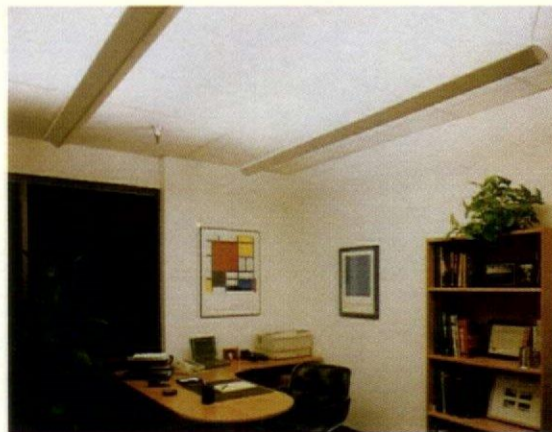
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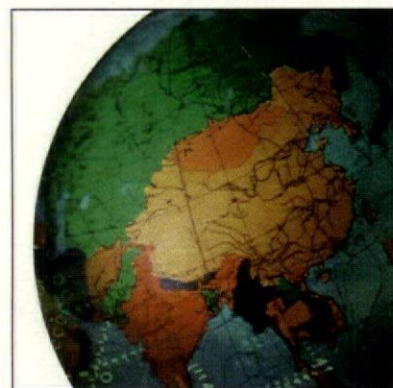
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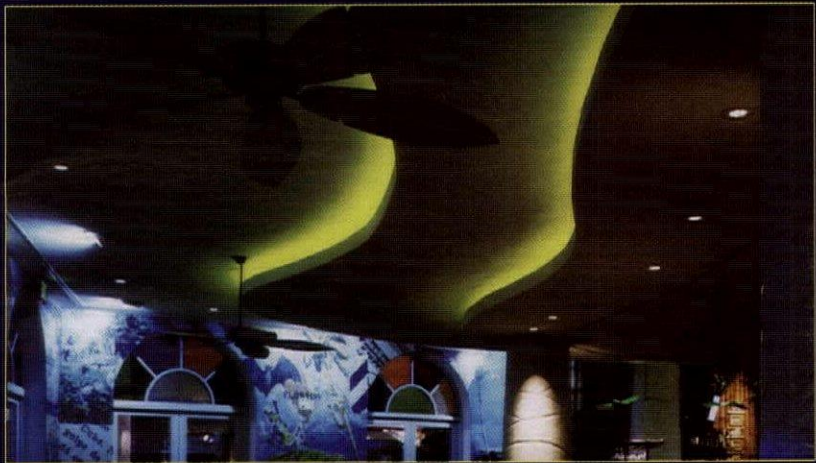
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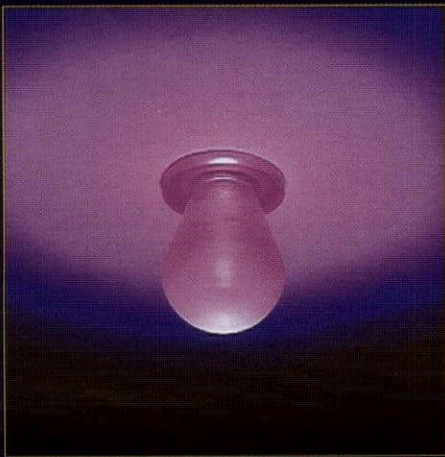
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INTRODUCING **M3**,
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We listened to hundreds of designers describe the track fixtures they need. Designing a product like everyone else's wasn't going to be a solution. **M3** includes all the enhancements you asked for. **M3** services PAR-30 and PAR-38 metal halide lamps, and the matching incandescent track heads service all PAR-30 and PAR-38 halogen lamps. Both metal halide and incandescent

track heads have our new exclusive push button pan and tilt locking mechanism built in. Both have integrated filter and glass holders for color and spread lenses to be used at the same time. Both can use our exclusive new PAR louver design which shields light without blocking it. Both have specifiable color detailing for design signaturization – and our exclusive new barn

door design for both superior look and function. And best of all, both series utilize modular components which can be specified in over 1,584 distinctive combinations allowing the designer to customize without increasing lead time or cost. **M3**, our new Metal Halide and Incandescent Track Series. For design, innovation, and attention to detail, you can't ask for more.

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QUALITY IS JOB ONE

While on a recent trip to Orlando to preview Disney's new theme park, Animal Kingdom, and tour related Walt Disney World properties, what struck me most was the tremendous amount of creativity that goes into all of their efforts to constantly test the limits of one's imagination. Everybody knows they're the king of entertainment and themed environments, but I, and the others in my group, discovered there is so much more to Disney than initially realized. The "Magic of Disney" is inspiration.

As part of a select group of editors, I had the pleasure of being hosted by Walt Disney Imagineering (WDI), the design and development company formed by Walt Disney in the early



CHRISTINA TRAUTHWEIN
EDITOR-IN-CHIEF

1950s, through which concepts are born and eventually realized. WDI serves as the technology and research development center for the Walt Disney Co. and is responsible for the innovations we've come to know—and expect—from Disney.

The master planning and architecture of the properties is fascinat-

ing, as the list of those involved is impressive—a virtual Who's Who in Architecture. Murphy/Jahn, Stern, Isozaki, Graves, Johnson, Pelli, Moore and Rossi, just to name a few, have partnered with WDI to build many of the facilities from resorts and retail to corporate offices and public spaces. With each phase of the tour, we were constantly awed by the collaboration of client and designer and the total dedication of both to produce excellence in detail, quality and creation.

Welcome to Lightfair 1998, where product innovation in our industry abounds, and to *Architectural Lighting's* 1998 Spring Product Issue, where we've captured some of it on the pages that follow. This issue presents 175 products in various categories such as decorative, task and track fixtures to downlights, lamps and ballasts. This year, we've added theatrical effects and doubled our fiber optics/specialty section in response to the growing number of products in these areas.

In this total product resource, there is something for everyone. We offer some products introduced in 1997, as well as a broad range of new products to be debuted at Lightfair. Particularly noteworthy: Prescolite's Virtual Source, a technological advancement in compact fluorescent downlight reflector optics (see page 34), recognizing the lighting professional's need for an energy-efficient downlight with an incandescent aesthetic. This is just one of many examples of the demands of specifiers being heard and met by manufacturers.

While quality products are crucial to maintaining quality designs, installation and maintenance practices are just as significant. In our feature story on page 20, read about actual case studies involving equipment failures, and learn how to help your clients avoid these costly pitfalls. On page 18, "Great Things in Small Packages" addresses miniaturization in both fixtures and sources, a trend spurred on—or at least publicly recognized—by the introduction of Alkco's Slite T2 fixture, winner of last year's New Product Showcase.

Now, turn the page and discover what our industry has to offer. Be inspired by the designs, wowed by the technology and driven to demand excellence...



Hollywood #1701 Metal Halide Imaging Projector

Tremendous HID power in a remarkably compact imaging projector. Ideal for theme park, shopping mall, landscape, and specialty architectural lighting. Project images, logos, and patterns using standard size templates. Create exciting special effects merely by changing the template or accessory filters. For outdoor or indoor use. Rugged corrosion resistant aluminum construction with sturdy mounting yoke for secure vertical and horizontal aiming. Available in three standard finishes—Satin Aluminum Anodized, Black Anodized, and Bronze Anodized. (805) 496-2003



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The Revolutionary Multi Beam 2000™ Light Conveyance System...

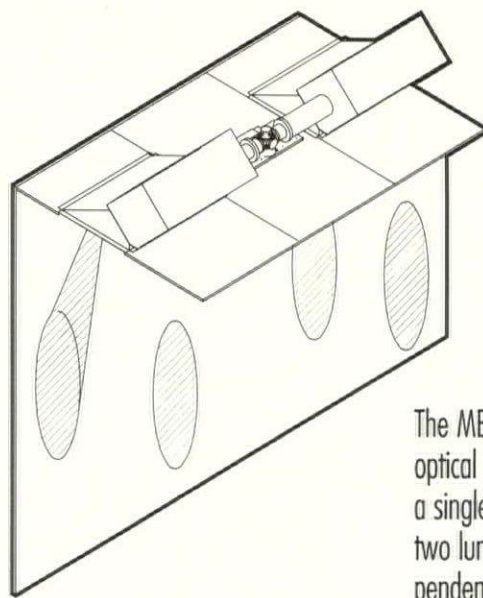
The preferred choice for single source linear lighting.

The Multi Beam 2000™ MBL Linear Series is a single source light conveyance system that transports light from one 70 watt HID lamp into multiple light beams that can be adjusted up to 80° vertically, and 30° horizontally.

The MBL Linear series improves lighting levels by 200%, requires one third the electricity of conventional lighting, utilizes "fiber-optic free" conveyance technology, simplifies electrical distribution, and increases lamp life by 300%. The systems' non-heat producing A-thermal beams significantly reduce air conditioning loads. Simplified installation, less power and less maintenance provide dramatic savings.

The MBL Linear Series is part of the patented MultiBeam 2000™ line of environmentally safe products that reduce emissions associated with electrical generation process.

The MBL Linear Series provides an energy saving, cost effective alternative to halogen and incandescent lamps and is perfect for feature wall lighting.



**Multi Beam
2000™**

**Gold Award of Distinction
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The MBL uses an engineered refractive optical train that transports light from a single 70 watt metal halide lamp to two luminaires, producing four independently adjustable beams.

**Multi
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Light Conveyance System

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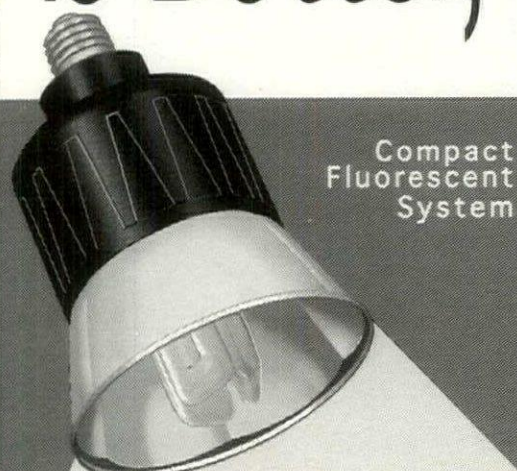
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85% SAVINGS*
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* Based on rated life of the 22 watt Omni EM2 compared to a 150R40 FL.

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SEA GULL LIGHTING ACQUIRES LIGHT PROCESS

Sea Gull Lighting Products, Inc., a privately held company, has announced the purchase of Light Process Company (LPC), a Stafford, TX-based manufacturer of energy-efficient lighting products. Founded in 1985 by Ron and John Howell, Light Process Company will continue to be run by its existing management team of John C. Howell, president and Michael A. Krest, VP.

Sea Gull Lighting is a 79-year-old company based in Riverside, NJ with manufacturing and distribution facilities in New Jersey, Pennsylvania and Nevada. The company manufactures and markets decorative and functional lighting products to electrical distributors, lighting showrooms and various niche markets worldwide.

STRATEGIC RESOURCE SOLUTIONS ACQUIRES PARKE INDUSTRIES

Strategic Resource Solutions Corp. (SRS) has announced the acquisition of Parke Industries, Inc. Parke Industries will retain its name and founder and Daniel W. Parke will continue to serve as president of the company that will be combined with the SRS Lighting Division.

Corporate lighting operations will move to Glendora, CA; the SRS facility in Clayton, NC will become the southeastern regional office for Parke Industries.

HIGH END SYSTEMS WINS AWARD

High End Systems, Inc. was voted 1997's Lighting Equipment Manufacturer of the Year for Lighting by readers of *Performance* magazine, an international trade publication for the touring entertainment industry.

The automated lighting manufacturer was honored with its second consecutive *Performance* Readers Poll Award January 27 in evening ceremonies in Los Angeles, held during the publication's annual Summit conference.

HENNINGSON, DURHAM & RICHARDSON CHANGES NAME

The architecture, engineering, project management firm of Henningson, Durham & Richardson, Inc. has changed its name to HDR Architecture, Inc. HDR Architecture, Inc. provides architectural, engineering, project development and planning services in health care, justice, science and industry.

TIVOLI AWARDED PATENT FOR PARAVISION

Tivoli Industries, Inc. has announced that the U.S. Patent Office has granted a patent for Paravision, the company's integrated illuminated surveillance system, which combines pendant-mounted overhead downlighting with hidden surveillance cameras in a single unit.

Paravision was also cited as one of the "Top 20 Most Innovative Gaming Products for 1998" by *Casino Journal*. An award was presented to the company at the American Gaming and Lodging Summit in Las Vegas.

ELECTRICAL INNOVATIONS CAN SAVE IN ENERGY COSTS

The Energy Cost Savings Council (ECSC) has launched a national campaign targeted at corporate America. According to the campaign, "Re-Electrification of American Business," the average building owner can realize one dollar per square foot of space via the installation of energy-efficient building technologies.

The ECSC, a coalition of manufacturers, utilities, industry groups and government agencies, was formed to educate corporate America about the potential cost savings benefits of electrical retrofits and upgrades. The ECSC campaign is joining with ongoing government efforts to promote energy efficiency, including the Energy Star Building and Green Lights Partnership and the Green Lights Program sponsored by the U.S. Environment Protection Agency and Department of Energy.

RSLI ESTABLISHES \$50 MILLION JOINT VENTURE WITH MEITECH

Remote Source Lighting International, Inc. (RSLI) and MEITECH Development Sdn Bhd, the wholly owned investment subsidiary of Multimedia Development Corporation Sdn Bhd (MDC) of Malaysia, have signed an agreement forming a joint venture to provide lighting and display solutions for Southeast Asia.

RSLI, a privately held American optical technology company founded in 1995, is a manufacturer of fiber-optic lighting and display systems.

BOYD LIGHTING WINS NATIONAL DESIGN AWARD

The Concrete Reinforcing Steel Institute (CRSI) has selected the Boyd Lighting Headquarters and Showroom in San Francisco as one of the 1998 CRSI Design Award Winners. The 14th biennial competition honors structures built of cast-in-place reinforced concrete. Judging was based on architectural design, engineering achievement, functional excellence and economy of construction.

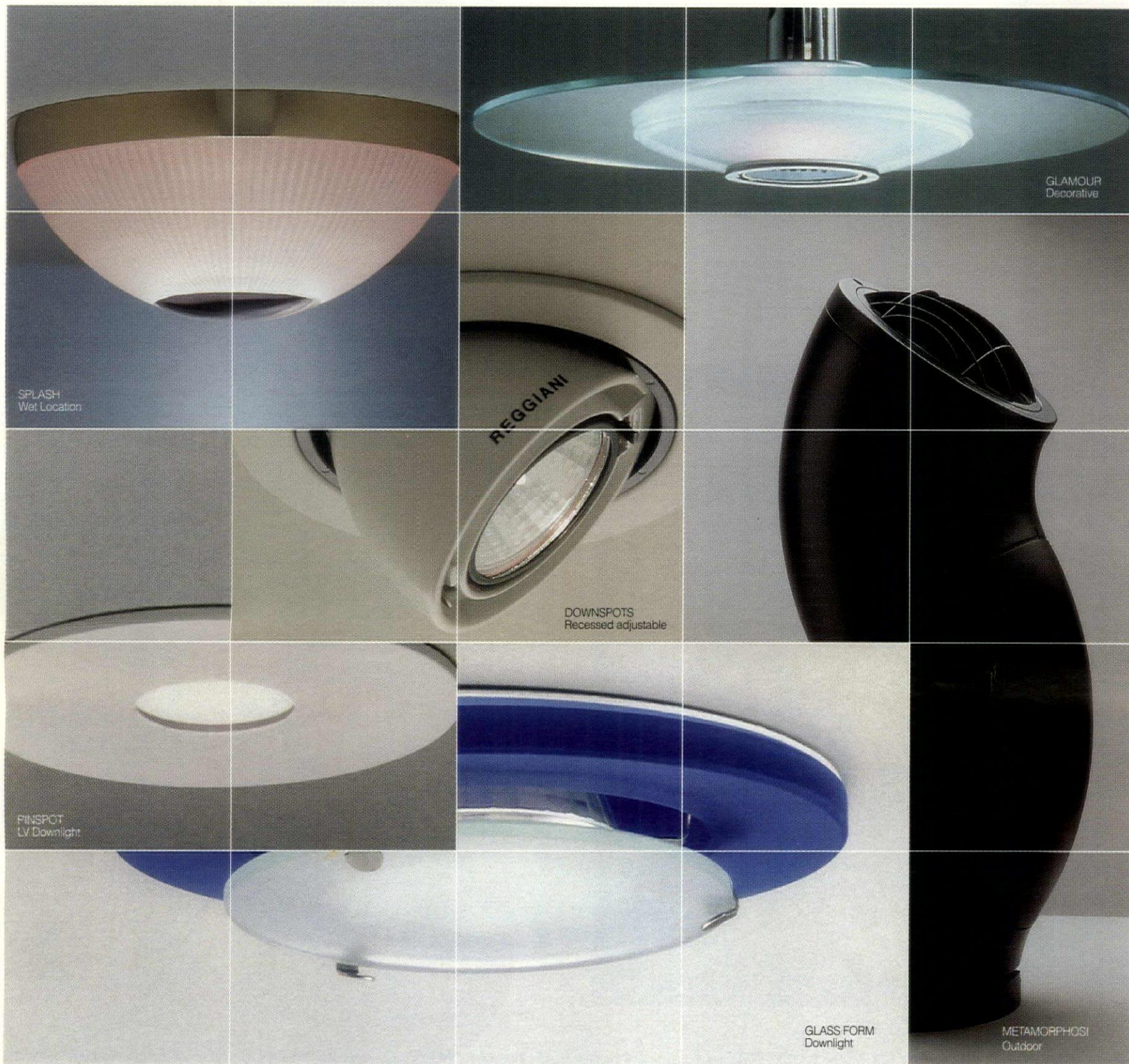
The CRSI is a non-profit organization dedicated to furthering the quality design and construction of cast-in-place reinforced concrete.

LIGHTING SERVICES INC RECEIVES U.S. DESIGN PATENT

Lighting Services Inc has been awarded U.S. Design Patent #D380058 for the Single and Double Light Bar Series of the company's fiber-optic lighting system. Issued August 1, 1997, the patent will remain in force until the year 2011.

The LSI Light Bar features a series of fiber-optic heads, which are individually adjustable in all horizontal and vertical planes.

DESIGNS OF DISTINCTION FROM U.S.A. ILLUMINATION



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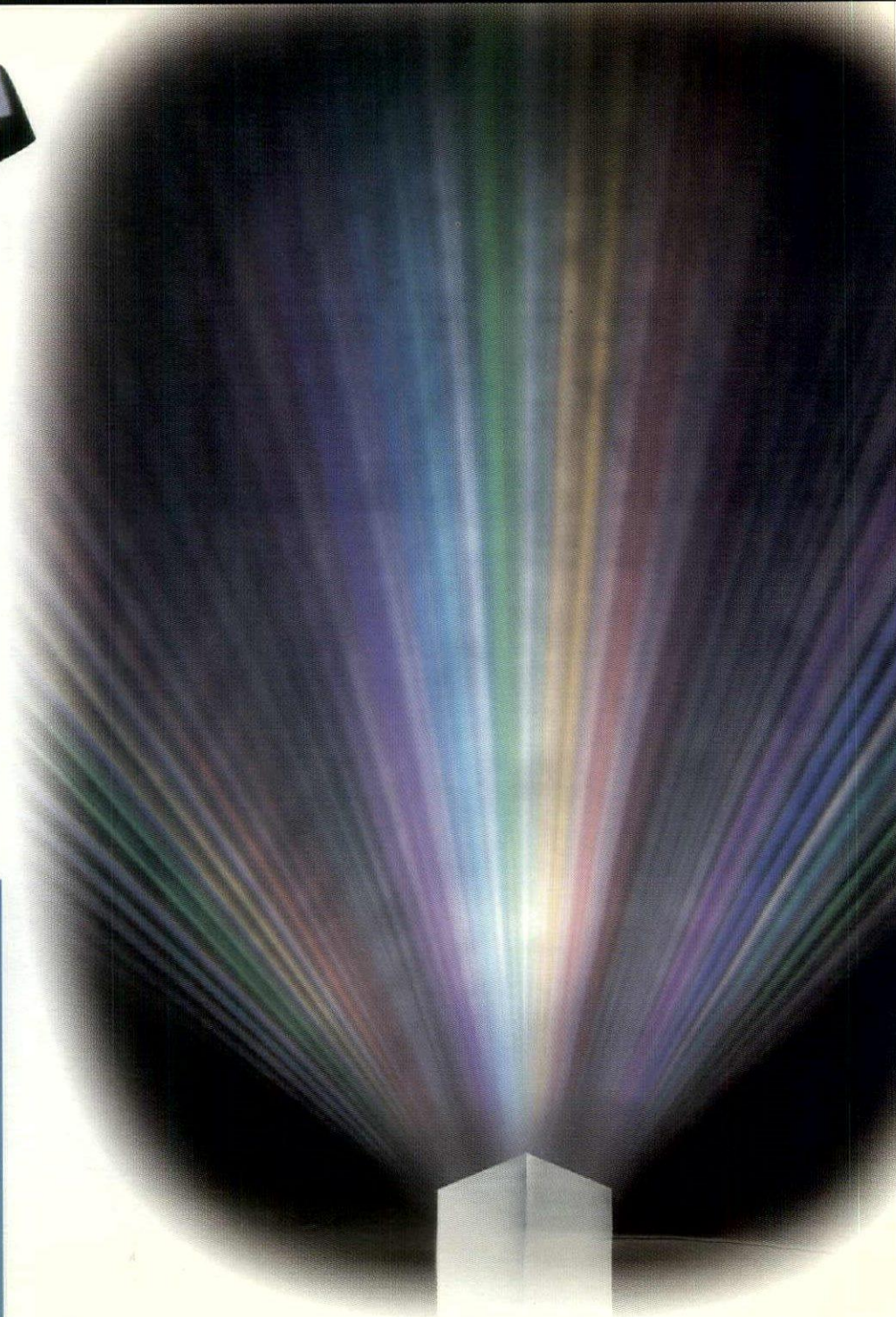
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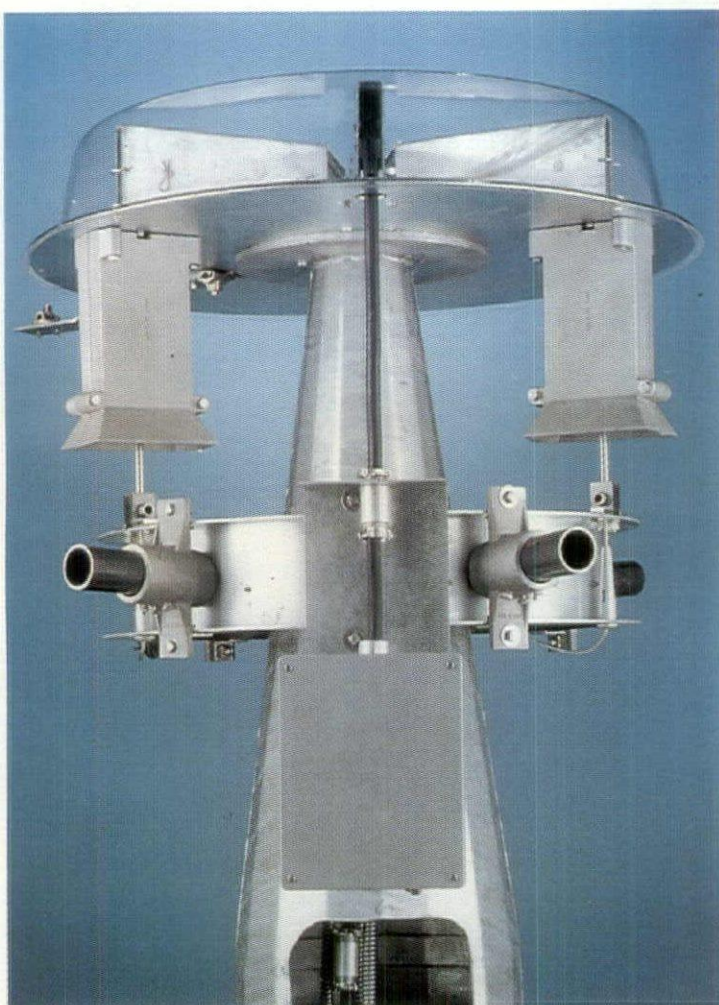


Slide-of-hand:
Alkco's T2 undershelf
and cabinet fixtures (lengths
to 44") flaunt a next-to-invisible
1/2" x 1 1/2" profile.

Endless color combinations for
dramatic exterior wall washing
with d'ac's Fanfare — up to
30 ft. coverage with up and
downlight sprays.



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Metrolux
design
upgrade of
the intricate
raising/
lowering
mechanism
facilitates
lamp servicing
of 15-story,
high-mast
roadway
lights.



Aimable and amiable indirect
lighting from LAM's Horizons fixtures...
predictably uniform wall-washing or ceiling
downlighting from halide, quartz or bix sources.



It's chaos out there

FINE BY US...

Godzillions of electrons whizzing around
While about two thousand companies
try to convert them into useful light from attractive fixtures
Of these, JJI Group comprises fifteen of the finest — all but three acquired since 1983
Today, they're getting even better, because we work to optimize, not drain, the
resources they bring — accomplished managements, gifted workers
respected identities and compelling product arrays

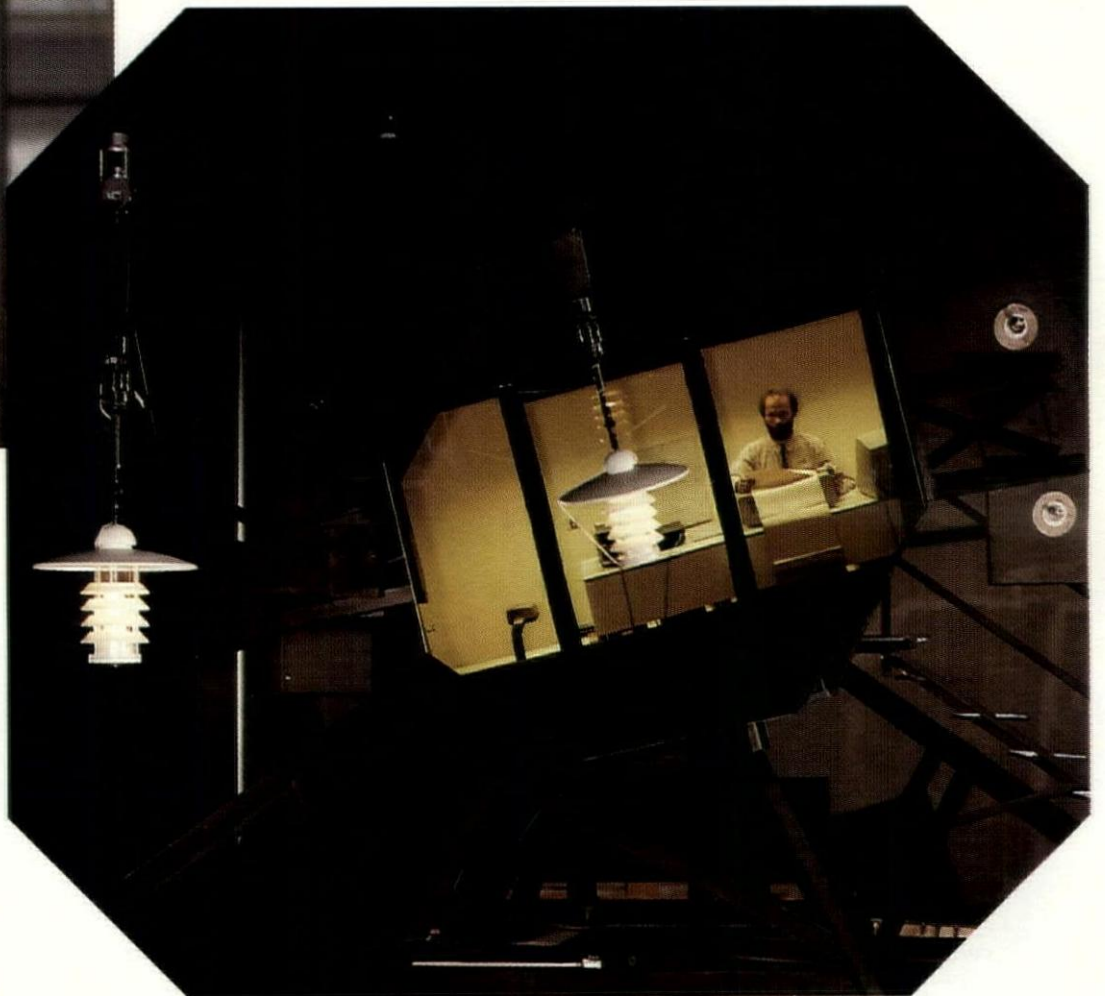
ALKCO ALL ARDEE .hessamerica HIGH-LITES d'ac GUTH HOFFMEISTER LAM METROLUX



One of the two remarkable indirect luminaire series from .hessamerica. The Amalfi is paired with matching pole, wall and bollard mounts.



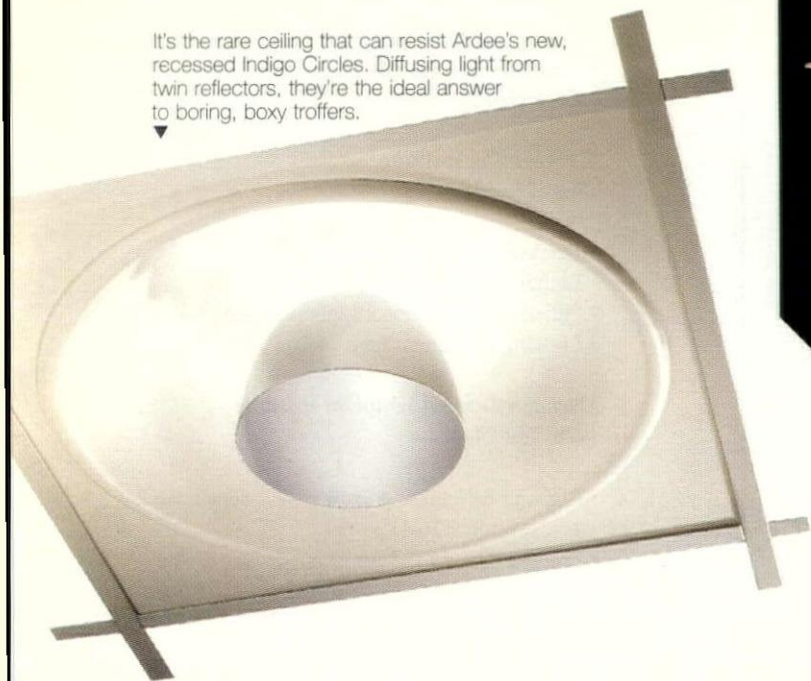
Fresh faces from Europe via Hoffmeister, JJI's latest acquisition. The Corcovado combines focused downlight with decorative, tinted sidelights. Now in north america, via d'ac.



Hoffmeister's spiral photometer: Europe's largest computer-controlled, revolving mirror system with laser calibration.

The "Clock" from ALL mounts indoors and out on pole, wall or bollard. Demurely louvered, it quietly throws enough light to demark large, room-sized spaces.

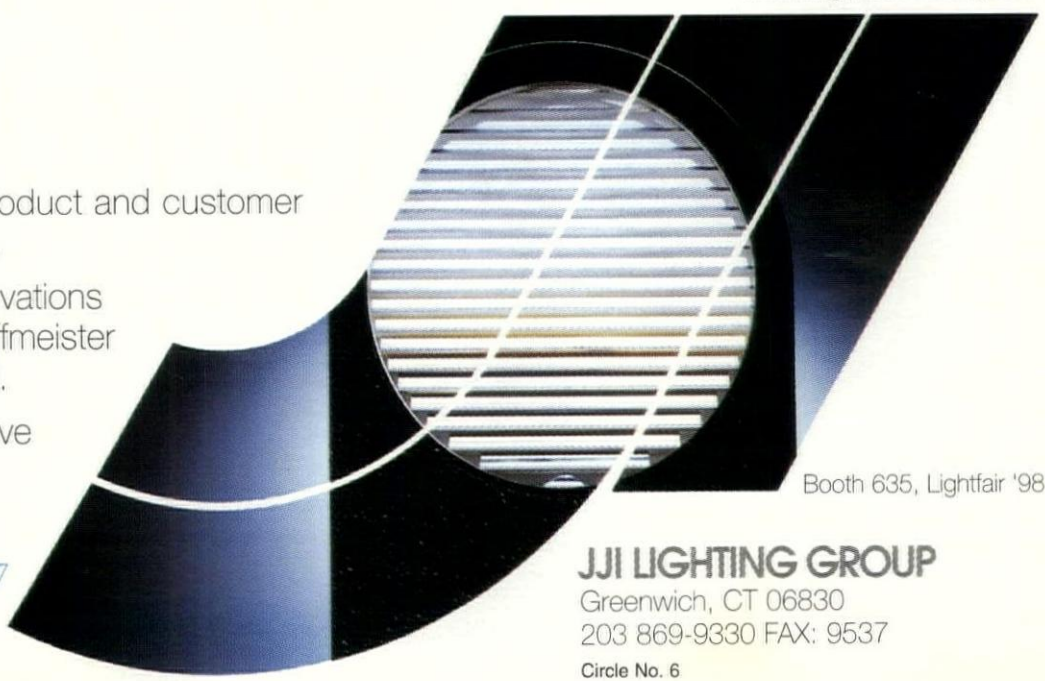
It's the rare ceiling that can resist Ardee's new, recessed Indigo Circles. Diffusing light from twin reflectors, they're the ideal answer to boring, boxy troffers.



As a result, JJI companies focus full force on improving product and customer satisfaction. Non-core distractions befall to corporate staff.

The formula must be working. Above are a few notable innovations we introduced, all within the last 12 months. Our recent Hoffmeister acquisition in Germany by itself grew our business one third.

We invite you to inspect personally how the harmony we have wrought from chaos can help illuminate your world.



Booth 635, Lightfair '98

MORLITE NESSEN QUALITY SPECIALTY VISTA

JJI LIGHTING GROUP

Greenwich, CT 06830
203 869-9330 FAX: 9537

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Calendar of Events

June 2-5 A/E/C '98, McCormick Place, Chicago; (800) 451-1196.

June 4-5 AEE seminar: "Effective Relighting Solutions," Sheraton Inn Lowell, Boston; (978) 452-1200.

June 8-10 NeoCon, Merchandise Mart, Chicago; (800) 677-6278.

June 21-24 Building Owners and Managers Association International, Philadelphia Convention Center, Philadelphia; (202) 326-6331.

June 24 1998 Lumen Awards, Puck Building, New York City; (718) 376-8770.

June 25-28 CSI Annual Convention & Exhibition, Baltimore Convention Center, Baltimore; (800) 689-2900.

July 19-22 Interbuild 98, Melbourne Exhibition Centre, Australia; (301) 656-2942.

July 23-24 AEE seminar: "Fundamentals of Lighting Efficiency, a Preparatory Course for the CLEP Examination," Sheraton Atlantic City, Atlantic City; (609) 343-2896.

August 12-14 Alt.office Conference & Exhibition, San Jose; (212) 615-2612.

September 22-23 AEE seminar: "Effective Relighting Solutions," Navy Pier, Chicago; (312) 836-0100.

September 24-25 International Energy and Environmental Congress, Navy Pier, Chicago; (770) 279-4386.

October 1-2 AEE seminar: "Fundamentals of Lighting Efficiency, a Preparatory Course for the CLEP Examination," Treasure Island, Las Vegas; (702) 894-7111.

October 1-3 IIDEX/NeoCon Canada, Metro Toronto Convention Center, Toronto; (416) 944-3350.

October 6-9 ELENEX Australia, Melbourne Exhibition Centre, Melbourne; (301) 656-3179.

October 28-30 InterPlan, Javits Convention Center, New York City; (212) 615-2737.

October 28-30 The Design Show: Environments for Living, Javits Convention Center, New York City; (800) 950-1314.

December 9-10 Business Energy Solutions Expo, Walt Disney World Dolphin, Orlando; (770) 279-4390.

December 10-11 AEE seminar: "Fundamentals of Lighting Efficiency, a Preparatory Course for the CLEP Examination," Walt Disney World Dolphin, Orlando; (800) 227-1500.

EDUCATIONAL FACILITIES

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- Fundamentals I—Lighting Basics: June 16-18; August 26-28; October 28-30
- Luxicon Training: July 22-24; July 27-29; December 2-4; December 7-9

GE Lighting Institute (800) 255-1200

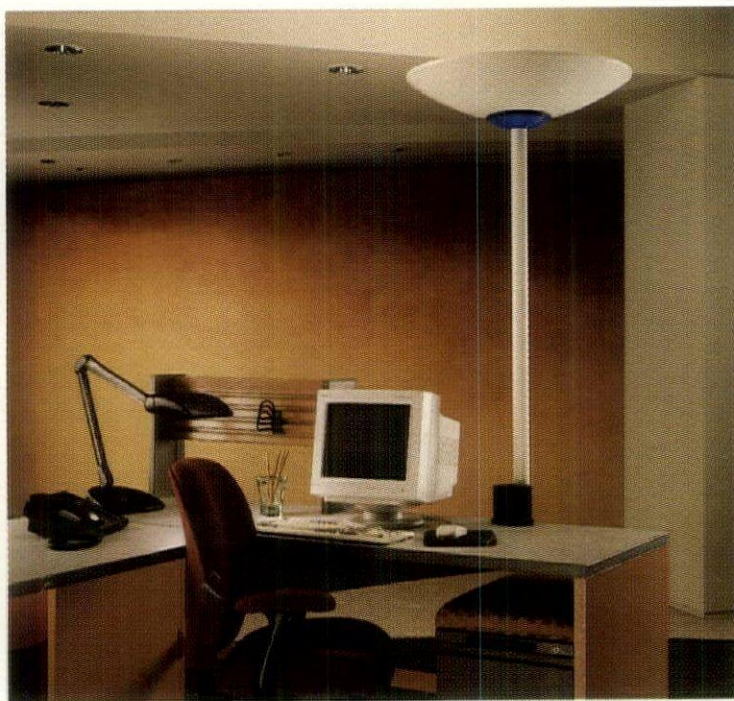
- Fundamentals of Commercial and Industrial Lighting: June 1-5.
- Office and Institutional Lighting: June 15-17.
- Lighting Educators: June 24-26.

Osram Sylvania Lightpoint Institute (978) 750-2464.

- Lighting Essentials: August 24-26; September 14-16; November 16-18.
- Lighting Design and Application: June 29-July 1; October 5-7.
- The Energy Focus: December 7-9.
- Residential Lighting: October 15-16.
- Retail Lighting: September 24-25.

The Philips Lighting Center (732) 563-3600.

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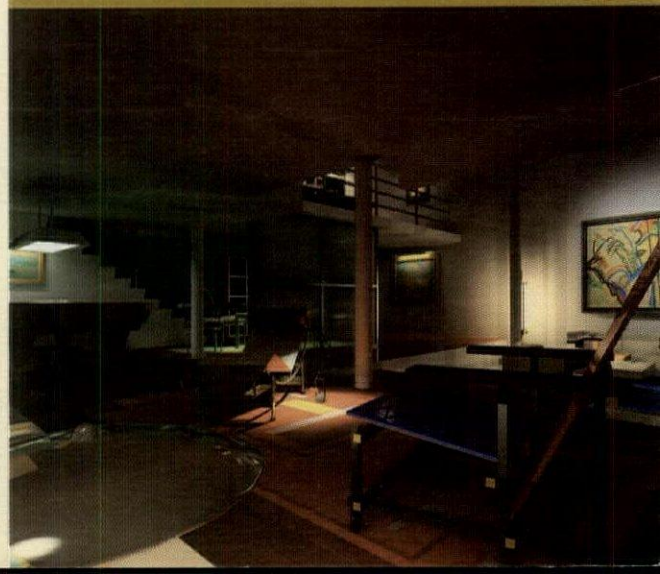
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Site Specific

Picks—and pans—of industry-related websites

BY DAVE BURTNER

When I was asked to write a column reviewing websites, my first reaction sent me scurrying for cover. I knew how the web, more so than a movie, can be an experience judged on very individual "viewer" needs and capabilities.

The answer to the question, "What makes a good lighting company website?" depends of course on what you're looking for. Do you simply want to see an overview of the company product line, do you want a company fax number, are you looking for a local rep, do you want to have a multi-media lighting experience, or do you need an IES photometric file—before your client meeting in an hour?

The answer also depends on what you're looking with: a 14.4 modem or a T-1 line; Internet Explorer 4.0 on a 300 MHz PC, Netscape Navigator 2.0 on 75 MHz Mac; or AOL.

I also knew that web hype has built a set of expectations that almost always exceeds the results. This situation has less to do with the technical capabilities of the web, and more to do with the realities of cost and time required of website builders to meet the expectations. The euphoria over the simplicity of web page development has resulted in an overabundance of simply mediocre websites. The fact that many web designers treat homepages like print advertisements also contributes to a less than satisfying web experience for many users.

That is not to say a basic no frills website might do exactly what the company wants and give targeted users precisely what they need. As in lighting design, simple solutions are often the right ones.

The following sites will be rated in four categories followed by brief comments: Site Design, Loading Speed, Content and Cool Features. Site Design refers to knowing where you are and how to get where you want to go or back from where you came. If that includes nice graphics so much the better. Loading Speed rates the wait time for pages to show up on your screen so you can use them. Content is about

how much product (or other) information resides on the website—from a few photos with brief descriptions to complete specification capabilities. Cool Features rates the "entertainment" factor. It's a nod to the companies that understand that some web surfers, even lighting designers, are just that—Internet junkies in search of the big wave!

Whatever your preferences, don't take my word for it. Check out these sites!

Dazor Manufacturing www.dazor.com

Products: Task lighting for commercial, residential and medical applications
Site Design: Excellent
Loading Speed: Good (after the homepage)
Content: Good
Cool Features: None

Dazor has done a good job of providing a very clean, attractive, easy-to-view site. The user is only two or three clicks away from detailed product information including photos, diagrams and model numbers. It's unclear, though, whether we are seeing all the specifications. A Product Information link takes us to a page to order the "Full Product Catalog," but there is no catalog download capability.

Aromat Corporation www.aromat.com

Products: Metal halide ballasts and rotary lock lamp holders
Site Design: Good
Loading Speed: Good
Content: Excellent
Cool Features: None

The Aromat Lighting Products Group pages reside inside the larger Aromat Corporation site. This site, representing a small lighting product line, is a good example of how a company can provide very complete information about their products very quickly in just one visit to the web. I could view and print the complete specification sheets for each product (PDF files). I could find the sales rep closest to me (including a hot e-mail link). Plus, I was able to ask questions to an application engineer via an on-line form (though not real time chat).

Cooper Lighting www.cooperlighting.com

Products: Fixtures and components for indoor and outdoor commercial, residential, institutional and industrial applications
Site Design: Excellent
Loading Speed: Fair
Content: Excellent
Cool Features: Descriptors pop up on the homepage as the pointer goes over clickable links.

Cooper's site is an excellent example of how a company can provide on-line almost all the information a specifier would need for a project except price. Users can approach the extensive Cooper product line by application, brand or product type. Catalogs can be searched, viewed and printed. Spec sheets and IES photometric files can be downloaded. Distributors can be located. Everything is presented in a clear logical sequence, making site navigation easy. My only complaint is that site speed suffers because of the beautiful, but excessive, graphics.

A nice feature is the Active Info Sign-up which allows users who are not afraid of e-mail overload to automatically receive notification of Cooper product releases and other timely information.

Philips Lighting www.lighting.philips.com/nam

Products: Lamps and ballasts
Site Design: Excellent
Loading Speed: Fair to Good
Content: Excellent
Cool Features: Multi-media presentations; open user forum

Philips has clearly been listening to users. Their redesigned North American site is a major improvement over what was a nice but cumbersome web experience. The new site shows how a company can present volumes of information but organize it in a way that allows access to the most detailed data within two clicks of the mouse. The site uses just five categories, all clickable from the homepage: product information, featured products, featured events, press releases and where to buy (including hot e-mail links).

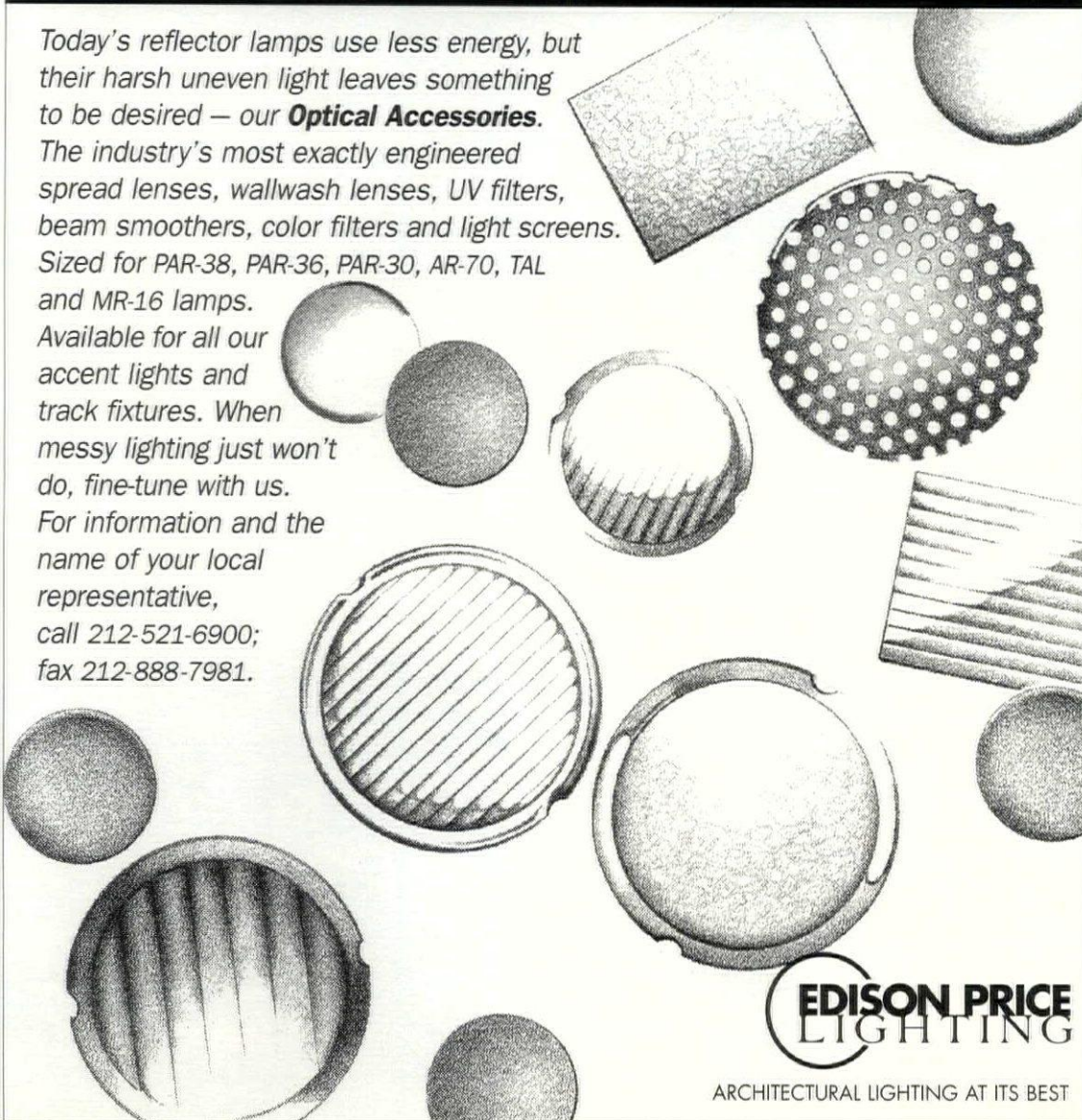
One click on product information and the user is given search menus for each Philips product type. The pop-up search menus include access to spec sheets, photometrics, brochures, ads and case studies. Make a selection and you're looking at a complete product description plus all electrical, technical and order data. Philips handles multi-media nicely by not surprising the user with it, but instead allowing access as one of the search options.

Philips also offers a user forum that functions like a news group and a "virtual talk" feature that allows users to ask questions and receive a response within 48 hours. ■

Dave Burtner of *inter.Light Inc.* is also webmaster at www.lightsearch.com. Dave is operating a Web-Browser with Internet Explorer 4.0, 28.8 modem.

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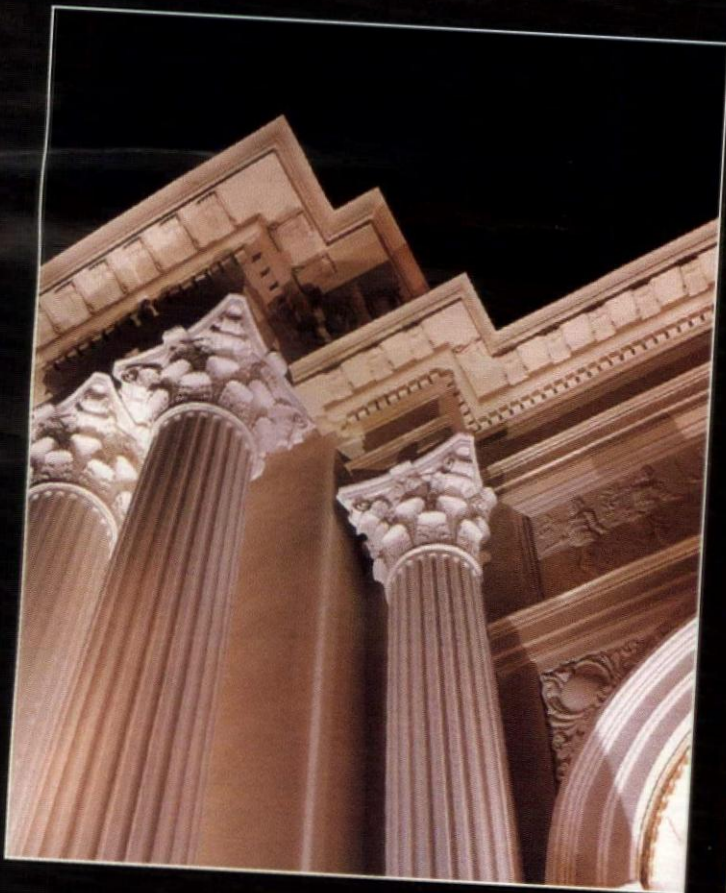
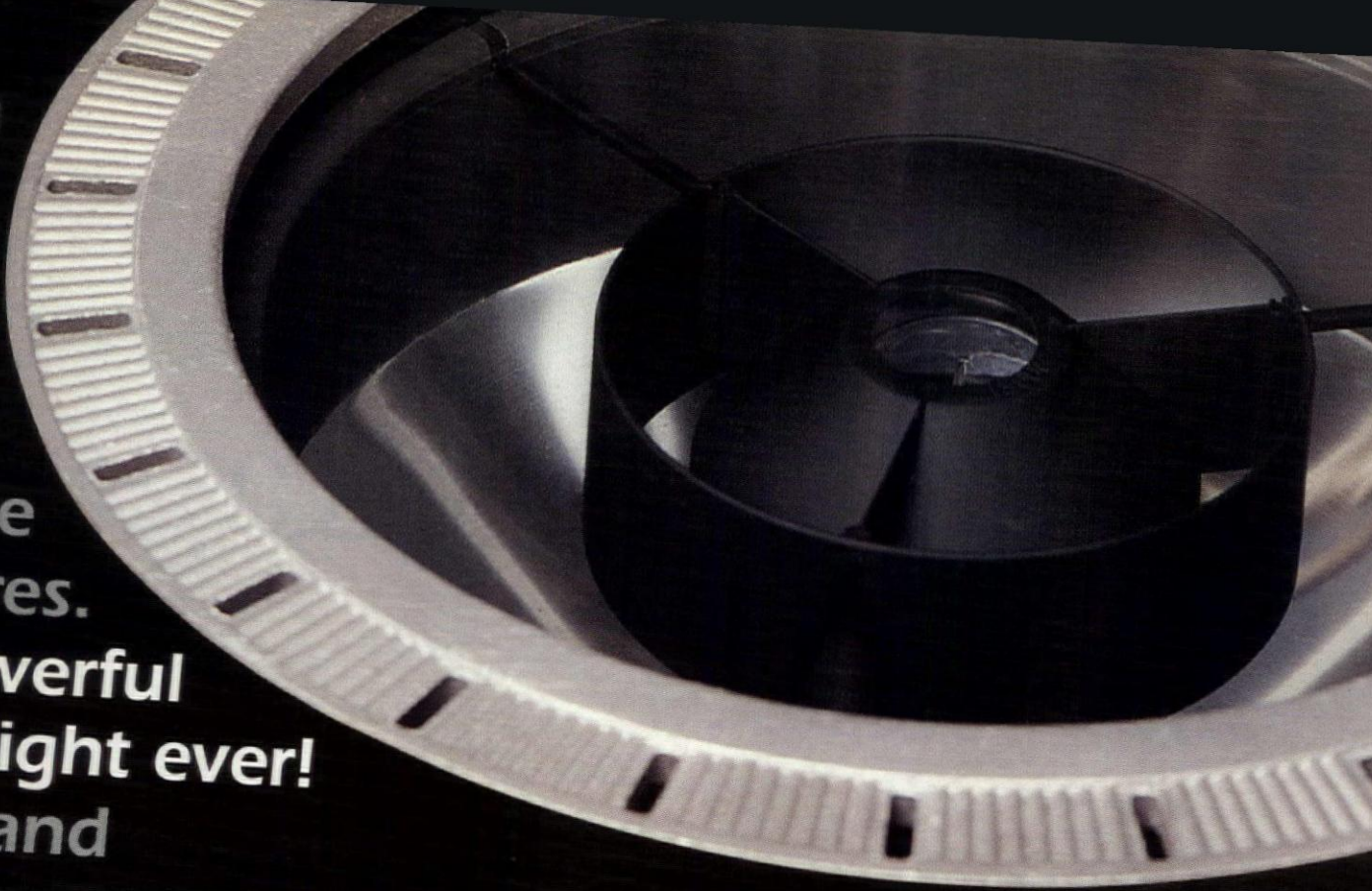


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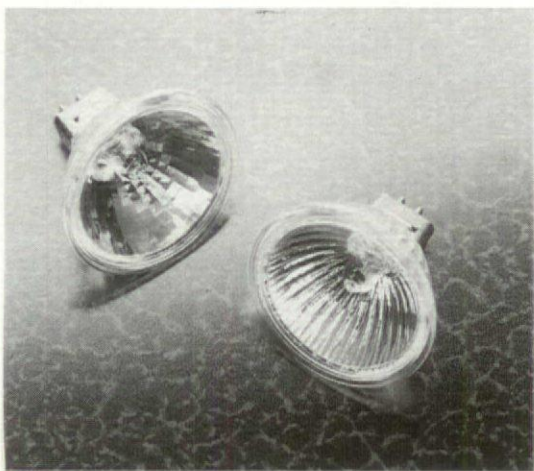
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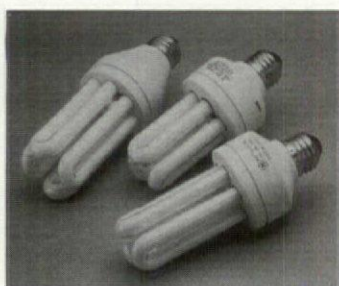
BY LOIS BURGNER, CONTRIBUTING EDITOR

It all goes back to 1878-79, according to GE Lighting's Terry McGowan: Electric lamps have been getting smaller and smaller and brighter and brighter since the days of Swan and Edison. Though there has always been a demand for miniaturized light sources, the trend toward larger



CONTINUUM COLOR MR16
PHILIPS LIGHTING
CIRCLE NO. 30

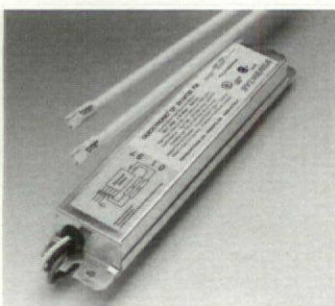
lumen packages is not quite as universal. For example, through the movement in recent years from T12 to T8 to T5, the (4-ft.) lumen package has remained in the neighborhood of under 3000 lumens [every rule has exceptions, e.g., high-output (HO) lamps]. But the efficacy of these products (lumens per watt) has increased progressively, as has optical efficiency due to their smaller diameter.



42W TRIPLE-TUBE
COMPACT FLUORESCENTS
GE LIGHTING
CIRCLE NO. 31

she said, after much trial and error, with the triple-tube compact fluorescent lamp.

So what drives this diminutive phenomenon? Rochelle Kimball, a lighting application consultant with Philips Lighting Company, cites energy concerns, with the compact fluorescent lamp as a prime example. The goal of bringing the efficiency of electronically ballasted fluorescent lighting technology toward the point-source optical qualities of the incandescent A-lamp has basically been achieved, she



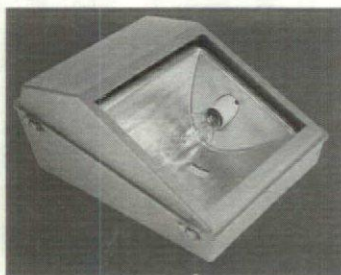
T2 WITH BALLAST
OSRAM SYLVANIA
CIRCLE NO. 32

"We began to need something that would replace the incandescent and halogen lamps [with higher] efficiency and yet give us that same look," Kimball said. "We wanted something we could put in a sconce, put in a downlight, put in a pendant that would look like incandescent, but would give you much more

efficiency and also longer life."

The next step is the quadruple-tube; GE's offering is called the Oct and was added to their line of triples as a 42W lamp. The 2D flat compact fluorescent remains a unique GE offering and is now available in a 55W version that has the same 8.1-in. footprint as the 38W. GE's discontinued Heliac lamp sought to emulate the A-lamp, but quality-control issues that arose in high-speed manufacturing made the lamp financially unworkable, according to McGowan. Litetronics still offers their helical lamps, in smaller wattages and lumen packages.

Lighting designers, predictably, give more aesthetic reasons for this Lilliputian trend in lighting components.

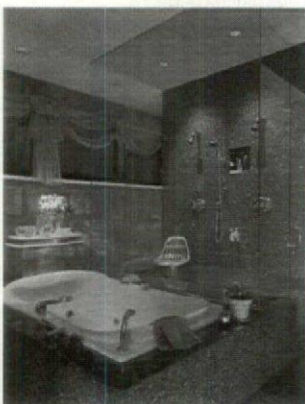


TRU-LUX T2 FIXTURE
STARFIRE LIGHTING
CIRCLE NO. 34

are getting more light into the beam of lower-wattage sources, which perfectly suits designers' preference for smaller apertures in ceilings. "No one ever put a downlight in a ceiling to make the ceiling look better," Kale quipped.

"It's more about Modern architecture," said Michael Webb, principal of Revolver. To achieve that clean, simple look, "we're always trying to hide the source and the hardware somewhere, yet still provide good lighting." Webb's major clients these days are Gap and Banana Republic: "If they had miracle invisible track lighting, they would definitely use it."

Dave Doubek, market manager for specification products at Cooper Lighting, said that his ideal light fixture would be a small pinhole, "or even no hole in the ceiling." Cooper Lighting's new Iris series was designed to grant this wish, as far as possible, in residential applications. The 3 1/2-inch IC-rated housings accept R20, PAR20 and MR16 in adjustable accent and downlight configurations. As the adjustable fixture pivots, Iris's unique "translating center beam optics" keep the center-beam candlepower aligned

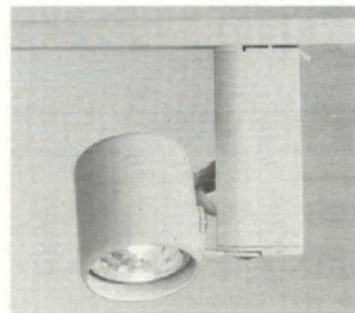


IRIS
COOPER LIGHTING
CIRCLE NO. 35

with the center of the aperture and bring the face of the lamp closer to the aperture. "You can get more light out as you tilt the lamp than you would with conventional accent-type fixtures," Doubek said. The pinhole element leaves a 1.25-in. aperture.

According to Greg Widman, national sales manager of Danalite, "Lighting designers ultimately would love to have a light source that is basically invisible and produces huge quantities of light in exactly

the right spot." Widman, who was with GE for over 20 years, explained that lighting manufacturers listen to specifiers, along with other segments of their market, in determining product introductions and allocation of R&D resources.

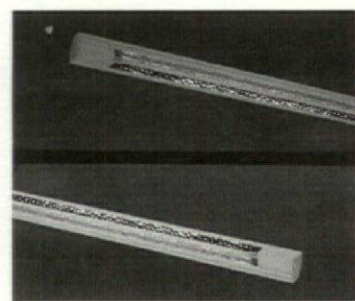


MINIFORMS MR16 FIXTURE
LIGHTOLIER
CIRCLE NO. 36

Danalite specializes in compact linear lighting systems and has introduced a fixture that uses the thinner-than-a-pencil T2 lamp from Osram Sylvania. At only 3/4 in. x 1 1/8 in., the Slite fixture from Alkco also integrates the T2 into undershelf and cabinet lighting. "As designers start to do mock-ups and see how good the

merchandise looks [under this source and optical system] they're going to be very impressed," said Scott Roos, Alkco's VP of marketing and product development. Slite won the Best New Product award at Lightfair in 1997.

Retail and residential applications in display, showcase and undercabinet lighting currently dominate this source,

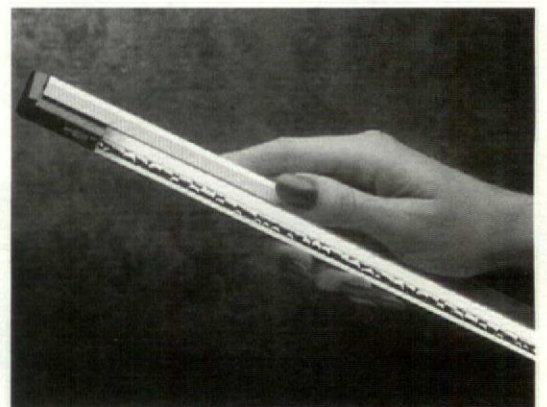


T2 FIXTURE, CUSTOM SERIES
DANALITE
CIRCLE NO. 37

but many uses are yet to be exploited: uplighting atop cabinets, toekick lighting, ultrathin coves, architectural detailing, to name a few. General lighting with the T2 is unfeasible, partly because the source is much less efficient than the T8 or T5.

George Bosson, VP and general manager of Lam Lighting Systems, had a practical perspective on why indirect lighting products are shrinking in aspect: "There was a time in which 10-ft. ceilings were fairly regularly built," Bosson said. "But dropped ceilings, to accommodate HVAC systems, have brought spaces down to 9 ft., even 8 1/2 ft."

Lam's latest introduction, the RX9 T8 indirect system, is only 1 7/8-in. deep. "In a very open office environ-



SLITE
ALKCO
CIRCLE NO. 40



MINUET T5, T8 BIAx
LEDALITE
CIRCLE No. 38

ment, two or three rows down from your point of view, the fixture because of its very slim profile, begins to disappear; it begins to fade away so that the environment remains an open environment." Lam is also marketing a wedge-shaped dedicated T5 linear indirect system, and look for two lines from Ledalite that accom-

modate T8, T5 or compact fluorescent (Minuet and Crescendo).

Though all the metal halide manufacturers have responded to specifiers' demands for low-wattage products for use indoors, GE's ConstantColor CMH and Philips' MasterColor families utilize a ceramic arc-tube; its high heat resistance offers good color stability over life and color consistency lamp-to-lamp. The most popular lamp configurations in these families are PAR lamps, which provide much greater lumen output in a familiar package. For instance, the PAR38 offers a three-fold increase in lumens for 20 fewer watts. As with any new technology, some unforeseen failures have occurred and there is limited availability on some lamp shapes and wattages.

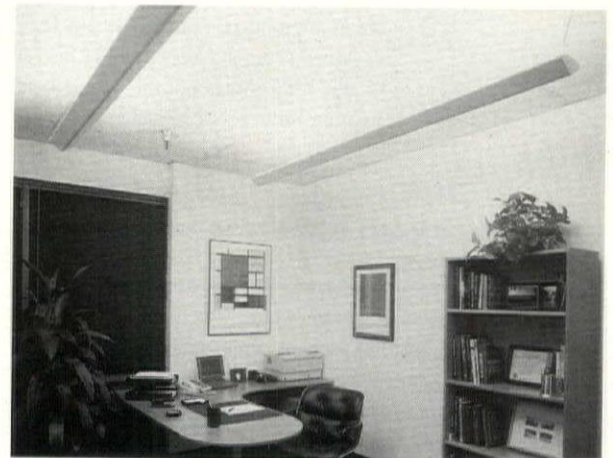
Janet Nolan, principal of J.S. Nolan + Associates, sees these metal halides as a prime opportunity for fixture

manufacturers to scale down fixtures: A metal halide PAR38 can now do the work of an incandescent PAR56. "You're still not going to get the quality of incandescent light out of an improved-color HID source," Nolan said. "But it will do the job as far as lighting high-volume spaces with relatively good color and relatively small aperture sizes."

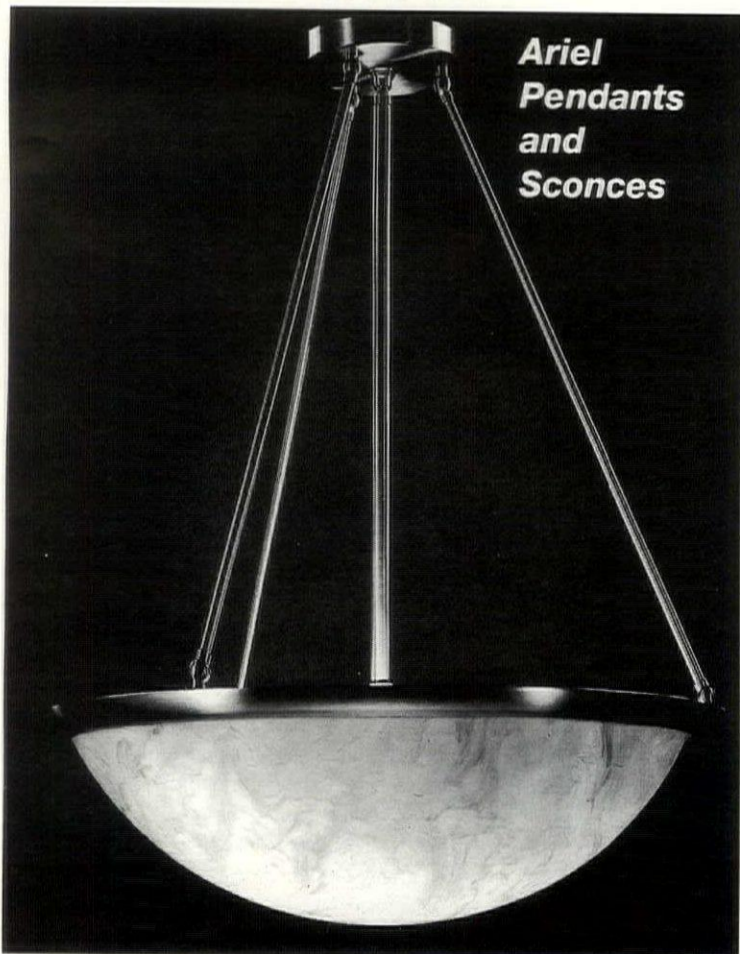
The Coronado series of landscape accent fixtures from Lumière Design and Manufacturing takes the metal halide PAR20, PAR30 and PAR38 outdoors. "This lamp just happens to be perfect for the kind of product we make," said John Baldasti, VP of sales for Lumière. "Our fixtures were always made to be as small around the lamp as possible." The purpose, he said, is to create the appropriate lighting effect without drawing attention to the fixture itself.



CORONADO PAR30 FIXTURE
LUMIÈRE DESIGN & MFG.
CIRCLE No. 33



T5 WEDGE
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Circle No. 16

Why Lights Fail

BY DAVID HOUGHTON, PE CONTRIBUTING EDITOR

The phone rings—it's your client from the project you designed last year. Those expensive halogen PAR lamps you specified are burning out way too fast, and now he wants to know where to buy them by the case—cheap. By the way, he's also wondering why you used those lamps in the first place, if they were only going to last a few months.

Even though equipment failures teach us valuable lessons, they're no fun. Premature failures are expensive and annoying for building owners and tenants, tarnish lighting designers' and contractors' reputations and may cause fire danger or other hazards. In the spirit of avoiding lamp failures—or at least understanding them—let's look at and learn from several failure stories. Often the problem does not lie in the design, but in poor installation and maintenance practices.

As lighting professionals, we make it our business to know as much as possible about lighting equipment. But a few months or years after a lighting system is designed and installed, it may be operated by somebody who isn't adequately trained or doesn't know about the subtleties of the latest equipment. By being students of lighting failures, we're better ready to deal with those problems that come back to

haunt us. Better yet, we can spread the word and help avoid making the same mistakes again.

HOW TO AVOID LIGHTING FAILURES: THE BASICS

Whenever possible, "group relamp" before lamps fail. Using trained staff to replace all lamps at about 70 percent of rated life can prevent many types of installation failures and allows fixture inspection and early detection of problematic conditions (such as overheating).

Don't "hot relamp." Installing a lamp into an energized socket combines mechanical and electrical stresses on the lam, and can contribute to early failure. It also violates OSHA regulations.

Carefully match lamps and ballasts. Many failures result from unwitting mismatches that create poor electrical conditions for lamps—even though mismatched equipment may work for a while at first. Compatibility information is found on the ballast label.

Document equipment purchases and replacements. Keeping track of the age and history of lighting components can help uncover problems.

Be inquisitive. When an early failure is detected, follow the trail back to the root cause rather than just replacing the failed component.

Train staff thoroughly and continuously. The continual accumulation of knowledge and data is the best defense against expensive lighting failures.

Manufacturers recommend cold relamping for all types of screw-in lamps; however, for HIR lamps, it's particularly important. A related problem: Workers screwing a lamp into a hot socket sometimes stop as soon as the lamp lights and fail to make a firm connection at the base contact. This can cause resistive heating and damage the lamp or fixture.

In a high-end restaurant, the 75W halogen PAR lamps were lasting only about 1,000 hours rather than their rated 2,000 hours. This was happening even though employees were careful to fully seat the lamps in "cold" sockets. By marking the installation date on each lamp, the owner discovered that early failure of the \$10 lamps was costing about \$900 per year.

Several voltmeter checks showed that the restaurant's sockets ran consistently at about 126 volts—five percent higher than the 120V standard. Running incandescent lamps even slightly above their rated voltage will significantly shorten their life; in this case, over-voltage conditions cut lamp life by 50 percent.

High voltage can occur for a number of reasons, including proximity to utility transformers, poor electrical-system grounding, loose neutral-wire connections, or unbalanced loads on multiple-phase or split-phase systems. Utilities are typically allowed a plus-or-minus five percent tolerance on voltage supplied, but most will try to correct abnormally high voltage that occurs consistently throughout a facility—usually with a simple transformer adjustment. However, high voltage that occurs only in parts of a facility is probably caused by internal wiring problems. This may be more difficult to correct, and requires troubleshooting by an experienced electrician.

In an office building lighted by several hundred 4-ft. fluorescent fixtures, the "tombstones" (white lamp holders) in about 50 of the fixtures looked as if they had been toasted in an oven.

The fluorescent lamp pins had not been fully rotated into the tombstones' recessed grooves. Although there was enough electrical contact to start the lamps, high resistance across the poor connection caused electrical heating that slowly cooked the lamp holders.

Fluorescent lamps have a little-known feature that aids installation: grooves or dimples on the metal endcaps. These grooves are perpendicular to the axis of the pin connectors, and should be vertical when the lamp is properly rotated into a horizontal lamp holder.

After a large-scale office lighting retrofit (T8 lamps and electronic ballasts), the lamps in about 90 fixtures flickered a few times per second—creating a "strobe" effect. The lamps ran normally after about an hour of operation, but the problem returned each morning.

This problem was due to a bad batch of ballasts with poor soldering. Once the ballasts warmed up fully, the soldered connection developed enough conductivity to allow normal operation.

Ballast manufacturers continue to improve production methods and quality control, but defects still occur, usually in batches. Although failed ballasts are almost always replaced by the manufacturer in cases like this, make sure that a labor allowance (about \$10 per unit) is also included in the warranty.

A facility manager bought several cases of 4-ft. T8 lamps when they were available at a good price, in anticipation of a lighting retrofit. About six months later the lamps were installed, but some units exhibited "barber-poling"—bands of light and dark progressing along the length of the lamp. Others simply could not strike up an arc to start.

The lamps had been stored by standing the cases up on end in an unheated storage room; the mercury in the lamps condensed into small droplets and pooled in the endcaps of the lamps. Fluorescent lamps require mercury vapor to operate, and the storage conditions reduced the vapor pressure in the lamps to the point that they could not run properly.

Improperly stored lamps return to normal operation as the mercury becomes vaporized over the course of a few days' use. In general, fluorescent lamps should be stored above 50°F.

A maintenance technician replacing a dead fluorescent lamp noticed that two small holes had been burned through either side of the glass lamp wall near the endcap, and wondered if the ballast should be replaced.

Fluorescent lamps fail from the breakdown of the cathodes at either end of the lamp. Occasionally, the cathode will fail in such a way that the ballast, in trying to strike an arc across the lamp, actually causes an arc to form from one leg of the cathode support to the other, creating hot spots that can burn holes in the lamp wall.

Although this might appear to be a dangerous ballast failure, all that is needed is a fresh lamp. If the problem recurs or happens on a large scale, however, it indicates either a lamp-ballast incompatibility, or a batch of ballasts that is supplying excessive voltage. Some ballast manufacturers are considering adding "end-of-life" circuitry to their T8 ballasts to prevent this problem. This circuitry, already used in many compact fluorescent ballasts, shuts off power to the lamp when the ballast senses that the lamp has failed or been removed.

In the middle of a summer afternoon, the lamps in about 25 fluorescent light fixtures scattered throughout a large building went out simultaneously. The rest of the fixtures (about 3,000 units) appeared to be operating normally.

A voltage spike had occurred—about 200 percent of nominal peak voltage for 10 milliseconds. A big batch of high-frequency ballasts—like most electronic devices—responds to over-voltage conditions along a bell curve: A slight voltage spike (like this one) will knock out a few of the devices, while a massive spike will kill nearly all of them. In this case, the spike was large enough to cause component failure in just under one percent of the installed ballasts.

A variety of devices and systems are available to guard against voltage spikes, although it can be costly to provide this protection for an entire building's electrical system.

This article draws on research performed for E Source, an independent source of information on energy technologies and services based in Boulder, CO.

Wide-Lite proudly introduces the EFFEX Area Luminaire (EAL) Series. The EAL boldly sets new standards of performance and flexibility for area lighting luminaires.

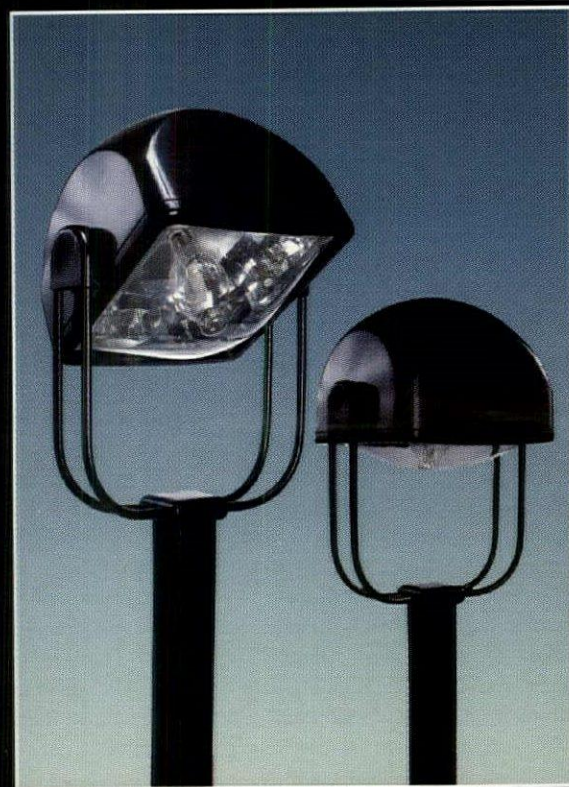
Designed to complement any architectural setting, the EAL Series incorporates the most extensive array of high-performance optics available in an area lighting luminaire.

The EAL Series' many optical choices combine with an almost limitless selection of mounting options resulting in the most flexible area lighting luminaire series available.

As the leader in HID lighting and controls systems, Wide-Lite is known worldwide for the success of its products' performance and durability.

Continuing our long tradition of excellence, four years ago Wide-Lite introduced the EFFEX – the industry-leading, high-performance architectural floodlight.

And now the EFFEX family has been expanded to include the EAL Series of area lighting luminaires... for the specifier who will not accept compromises.



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Asian Flu: Could Be Just a 24-Month Thing

BY LOIS BURGNER, CONTRIBUTING EDITOR

The newspapers and financial weeklies have carefully watched the transformation of Asia's miracle "tiger" economies into mewling kittens. It could be just growing pains: Malaysia, Thailand, Indonesia, South Korea, the Philippines and their neighbors may emerge quickly as centers of economic growth and power with stronger policies and practices in place. If so, U.S. lighting manufacturers and design professionals will be ready.

James Porter is a partner in Altoon and Porter Architects, which works in the U.S., Europe and Asia. "Anybody that's making any prognosis is looking at a crystal ball, for sure; you're going to get different slants," he said. "There is a huge amount of optimism in the long run. It's generally seen as a problem that's not as bad as the U.S. savings and loan crisis was here."

Altoon and Porter had just completed a major project in Indonesia when the "meltdown" occurred. "We still have three people in Indonesia," said Porter. "They've been there about three years and they'll probably be coming home soon. We've worked on a number of design schemes since this one project was completed, but virtually all that work has ground to a halt." Porter said that his firm is still active in Singapore and has a 12 million-sq.-ft. development underway in Hong Kong.

Lighting design expertise, just like quality light fixtures, is valuable merchandise, and America is the leading exporter. But due to last summer's catastrophic devaluation of first the *bah*t (Thailand) and later the *rupiah* (Indonesia), buying U.S. exports with these currencies has become unaffordable. Because the Asian countries trade heavily with one another, stronger infrastructures such as Taiwan, China, Singapore and Japan are also negatively influenced. Exports from the countries with devalued currencies are extremely cheap, causing trade imbalances. The U.S. trade deficit has never been higher, but repercussions of the crisis should remain largely within the Pacific Rim region.

To expand its Asian market share beyond what U.S. designers specify, Baldinger Architectural Lighting has obtained representation through lighting distributors in Singapore, Hong Kong, Malaysia and Japan. "If you have somebody looking out for your interests in those countries, it does make it a lot easier," said Linda Senter, VP of sales and marketing for Baldinger. Despite the economic woes, Baldinger is enjoying expanded sales in this region, particularly in Japan though several orders for projects in Indonesia have been put on hold.

Japan, an economic powerhouse through the 1980s, is seen by many as the linchpin of the region. Indeed, Japan has shouldered much of the financial burden of the International Monetary Fund relief efforts. The ailing Japanese economy was to receive a major boost April 1 as "Big Bang" economic reforms were implemented. Deregulation of the potentially huge financial services industry and small-scale tax breaks may bring about some positive change in the world's second largest economy. But government fiscal policies may not turn things around. To truly reform Japanese practices of lifetime employment, emphasis on market share instead of profits, and tight regulation and price controls may require a devastating economic upheaval. This catastrophic scenario (which would likely damage U.S. finance as well) could easily stretch the current crisis to four years, or much longer.

Through the past 15 years of euphoric growth in several Asian countries, changes in economic and political structures have failed to keep pace. Cronyism, corruption and crushing debt have brought currencies crashing down, with several more teetering on the edge.

The tasks of reforming and liberating wayward banking systems, state-supported conglomerates and nonstandard accounting methods are formidable. Deeply ingrained business practices, highly regulatory government policies, pre-

ferred debtor systems, and even social behavior must be changed in order to embrace the bottom-line capitalism widely practiced in the West. Though abused by some political officials, the basically Confucianist values of family and loyalty may save the region: These same values emphasize hard work, high savings and education.

THE AMERICAN EXPERIENCE

"We've seen some jobs that we were up for just stop dead in their tracks," said Tom Ruzika, owner and principal lighting designer for Ruzika Company, based in Irvine, CA. A year ago, Ruzika's phones were ringing off the hook, but today, requests for proposals from that region are infrequent. The company has a Japanese project in full swing, but the client is Hollywood's own Universal Studios. "I'm still fearful of everything that's going on in the Japanese economy, but the project is definitely moving ahead. And it's such a massive project that if it stops, hundreds of people will be hurt," he said.

The leisure industry is first to suffer throughout the Pacific Rim. The New Zealand and Australian dollars are weathering the storm, but their tourism and the hotel industry is expected to languish. Vietnam, with its shaky *dong*, and Singapore travel industries are already suffering.

However, the construction industry in Australia is currently performing better than last year at this time, driven partly by Olympic-related projects and continuing strong domestic demand. Tim Thomas & Associates reported that its twin retail lighting design projects in Australia are proceeding apace.

"There's business in Singapore, Kuala Lumpur, Brunei, Japan, Hong Kong, China," according to Ben Sparenberg, VP, international marketing and sales for Edison Price Lighting. "Their economies and the people are just too vibrant to just let it go. So there'll be a little belt-tightening and some economic reform and they'll be back." Edison Price also has several local agents in the region.

The Malaysian capital of Kuala Lumpur is struggling to keep the momentum in developing its new, high-tech, multimedia industrial corridor. H.M. Brandston & Partners is completing work on the spectacular Petronas Towers there, the tallest building in the world. Brandston has seen other Pacific Rim projects slow down and others not start, but he perceives it as just another business cycle. Western investors will rush into the newly liberalized market sectors, according to Brandston, revitalizing the regional economies. "Sooner or later this will all straighten itself out. There's too many people there and too much investment."

Perhaps the worst predicament is found in Indonesia, where the 32-year reign of President Suharto and his family's monopolies has led to massive unemployment and student riots. Twenty years of infrastructure and progress could be quickly lost if the situation does not stabilize soon. Suharto's brinkmanship with IMF seems to have abated, and he appears to be implementing the benchmarks required. These reforms should result in the emergence of a stronger, more competitive Indonesia.

Babu Shankar, principal of Integrated Lighting Design, is designing retail, hospitality and residential lighting

applications in Japan, Malaysia, the Philippines and Indonesia. But he is increasingly turning to flourishing U.S. construction as economic troubles curtail new projects overseas. In Indonesia, "we had one project that we had trouble getting paid on and we just had to walk away," Shankar said. "Our whole focus has been changed a great deal. Our economy here is doing so well, there's enough work for everyone and it really hasn't affected our market in any way." Shankar explained that he maintains many personal relationships in the Asian region and that he expects to be sending them proposals within 18 months.

To date, the Asian financial crisis has only mildly dampened the U.S. economic forecast. The trade deficit with the region is expanding, but in our heavily service-based (not manufacturing) economy, the influx of inexpensive goods and fuel will be welcome. Leery investors are investing in American assets, which keeps interest rates down and construction up. Overall annual growth in this the world's strongest economy was forecast at about 8 percent as the stock market surged through 9000 in late March.

Thailand and South Korea have taken the full dose of IMF medicine changing labor laws to let companies lay off workers; letting corporations go bankrupt; and allowing foreign companies to take over domestic, even previously state-run, firms, and as a result their currencies have stabilized. Though condition in-country may worsen before they get better, the Philippines is already enjoying a rising *peso*, a stable stock market, and renewed interest from U.S. investors. Financial and political gurus declare that the shift of global economic power from the Atlantic to the Pacific is inevitable. Through sheer force of population, China and its neighbors will likely take on Western economic models and emerge as centers of affluence. ■

Researcher George Hutchinson contributed to this article.



THE LINE BETWEEN
FORM AND FUNCTION...



Fixture shown actual size.

JUST
GOT
A LOT
THINNER.

Introducing

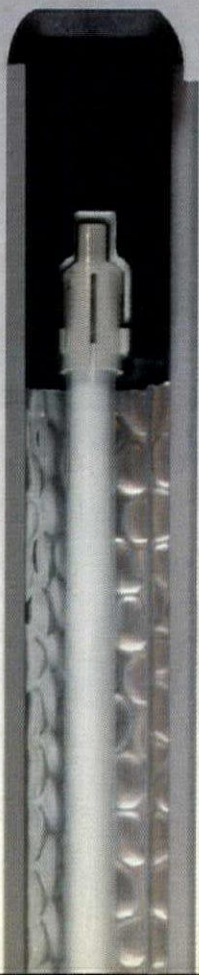
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Never before have you been able to get such a large visual impact from such a small lighting fixture.

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Circle No. 18

More light Hubbell

HIGH POWER FACTOR ELECTRONIC BALLAST ENGINEERED FOR LONGER LAMP LIFE AND QUIETER OPERATION. INCLUDES END-OF-LIFE CIRCUIT PROTECTION.

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FULL RANGE OF TRIMS – NINE IN ALL – PROVIDE DESIGN CONTINUITY FROM ONE OPTICAL SYSTEM TO ANOTHER.

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The secret is in its innovative design. For example, our 9" fixture uses two next generation triple tube amalgam compact fluorescent lamps. Combine them with an electronic ballast and it gives you an unparalleled level of performance and energy savings.

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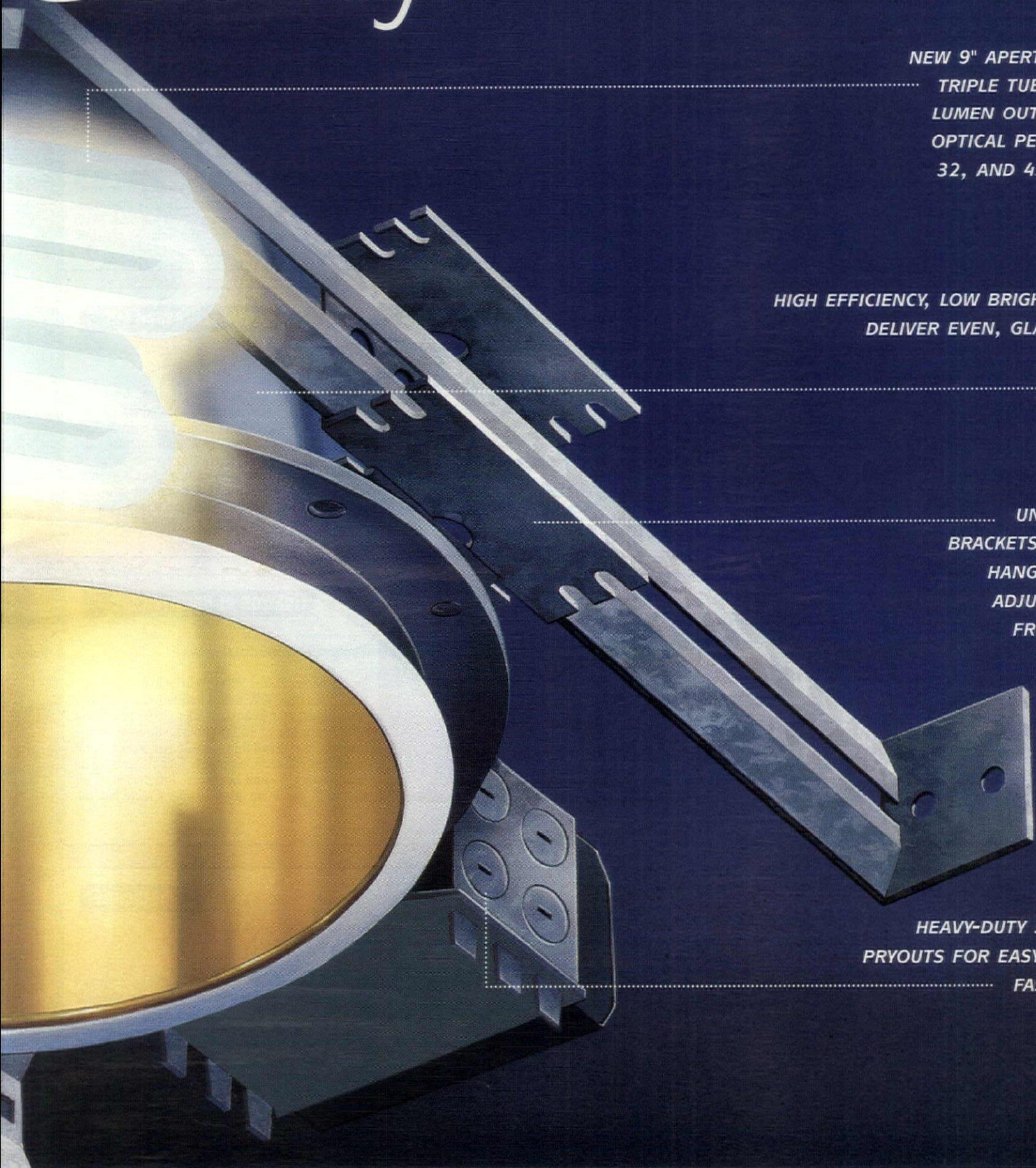
replace 2x2 fluorescent troffers or low wattage metal halide downlights.



Instant-on electronic ballasts are engineered for even greater energy savings, quieter performance and longer life, and include end-of-life circuit protection.

Featuring great design flexibility, Hubbell's compact fluorescents offer you nine trim choices. Including low iridescent, clear alzak standard, and

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ultra low iridescent clad alzak.

Need to set the mood? Electronic dimming is also available. And all triple tube fixtures are supplied with lamps as a standard feature.

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quality and value, let Hubbell light the way – with a new generation of compact fluorescent downlights. More light. Less energy. All the more reason to make Hubbell your lighting leader.



Lighting, Inc.

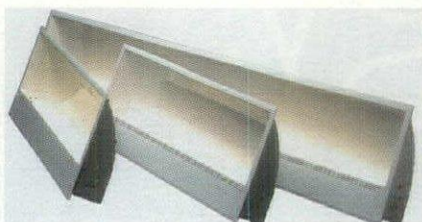
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ENLIGHTEN YOUR DESIGN

APERTURE	6"			7"			8"			8"			9"		
LAMP TYPE	VERTICAL			VERTICAL			VERTICAL			HORIZONTAL			HORIZONTAL		
	TRIPLE TUBE			TRIPLE TUBE			TRIPLE TUBE			2X QUAD TUBE			2X TRIPLE TUBE		
BALLAST	ELECTRONIC			ELECTRONIC			ELECTRONIC			ELECTRONIC & MAGNETIC			ELECTRONIC		
WATTAGES	18	26	32	18	26	32	26	32	42	13	18	26	26	32	42

JJI/Alkco Lighting

Phone: (847) 451-0700

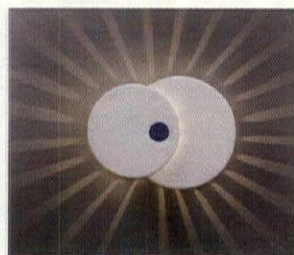
Alkco's Flare wall washing fixture features a reflector system that provides exceptional visual uniformity, precise wall/ceiling cut-off, wide spacing capability and balanced fixture/ceiling luminance. Flare's powder-coated extruded aluminum reflector does not show fingerprints or dust and maintains initial performance levels over the life of the fixture. **Circle No. 50**



Koch + Lowy

Phone: (508) 588-4700

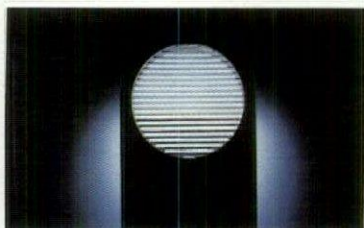
Eclipse is a 100W halogen ceramic wall sconce that illuminates a setting and simultaneously casts an artistic pattern of light upon the wall. Offered in matte white with cobalt blue glass; 11½ in. high x 4½ in. deep. **Circle No. 56**



JJI/Architectural Landscape Lighting

Phone: (714) 668-3660

The Clock's silvered louvers release just enough light at eye level to present a pleasant, glowing face, yet direct more than enough downlight to demark a large, room-sized area. Mounts indoors or out on pole, wall or bollard. Euro-designed by JJI's latest Common Market acquisition, Hoffmeister-leuchten; available here through Architectural Landscape Lighting. **Circle No. 51**



Leviton Manufacturing Co., Inc.

Phone: (718) 229-4040

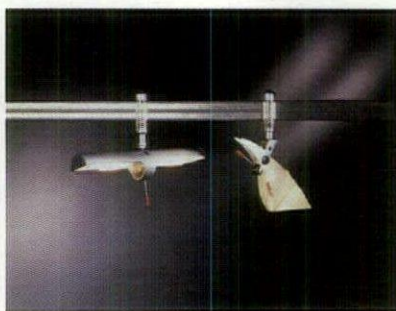
The Decora wall switch occupancy sensor (Cat. No. 6768) features new self-adjusting sensor technology and automatic "walk-through" sensing. This enables the lights to switch off within 2½ minutes immediately following initial entry if the 6768 does not continue to detect activity. During periods of occupancy where there is little activity and infrequent motion detection, the self-adjusting delayed-off time setting is automatically increased up to the maximum of 30 minutes. With more activity and frequent motion, the delayed off-time setting will automatically be decreased. **Circle No. 57**



Bruck Lighting

Phone: (714) 259-1000

Bruck, a manufacturer of low-voltage track and cable systems, introduces Flex-line, a highly developed track rail system with two independent electrical circuits rated for 300W each, for a total of 600W. Flex-line track flexes (not bends) to allow for curved or linear installation. **Circle No. 52**



Lightly Expressed Ltd.

Phone: (540) 387-2104

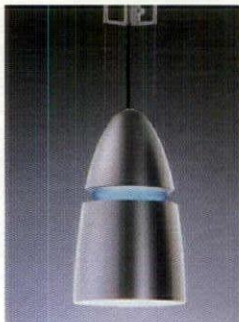
Lightly Expressed Ltd., engineers and manufacturers of fiber-optic lighting, offers patented systems including compact fiber-optic spotlights, high intensity linear washes and custom fixtures for a wide range of special applications. For fiber-optic lighting design, contact Lightly Expressed Ltd. for general information and application-specific guidance. **Circle No. 58**



JJI/d'ac Lighting

Phone: (914) 698-5959

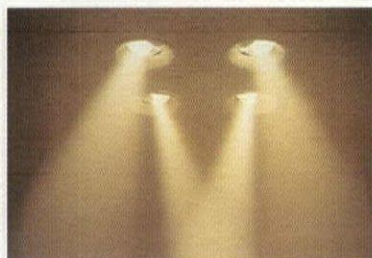
In three sizes and with multiple lamping options, the Corcovado adds decorative, indirect sidelighting to directional downlighting suited to a variety of commercial display applications. The Corcovado is one of several European lighting designs now available through d'ac and other JJI Group members by way of Hoffmeister-Leuchten, JJI's latest Euro-based acquisition. **Circle No. 53**



Lightron of Cornwall Inc.

Phone: (914) 562-5500

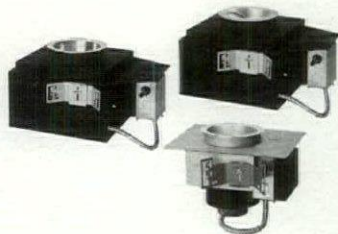
In the Multi Beam 2000 light conveyance system, a single 100W metal halide lamp provides four adjustable beams. Under 30W per beam with beam life of 15,000 hours. Several distributions are available (15-25 degrees). One electrical connection powers four fixtures. The beams are UV- and heat-free. Intensities of up to 250 fc per beam are possible. **Circle No. 60**



Edison Price Lighting

Phone: (212) 521-6900

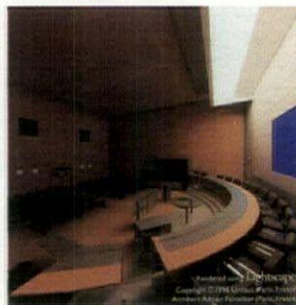
Arclites, a complete line of downlights, accent and wall washers for use with metal halide PAR20 lamps. The fixtures are available in 4-, 5-, and 6-in. apertures and use 39W and 70W lamps. Complementing the downlights and accent lights are Arclite Washlites, which provide uniform illumination on vertical surfaces. UL-listed. **Circle No. 54**



Lightscape

Phone: (408) 342-1900

Lightscape 3, an advanced visualization and lighting tool for Windows 95/NT, accurately simulates the physical properties of light and materials, delivering three-dimensional scenes of realism. Lightscape enhances the ability to evaluate and communicate intentions to clients. Lightscape is compatible with a range of 3D CAD applications. **Circle No. 59**



Hydrel

Phone: (818) 362-9465

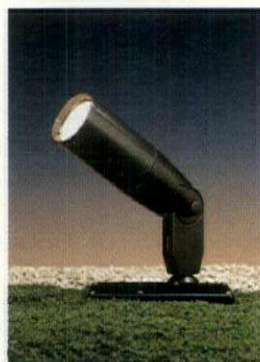
The M9400 accommodates the new color-corrected metal halide lamps in a housing with only a 9-in. footprint. The M9800 is the first modular in-grade fixture to accommodate 400W mogul base lamps. Provides a new alternative for floodlighting architectural structures with in-grade concealment. **Circle No. 55**



Lumiére Design & Mfg., Inc.

Phone: (805) 496-2003

Designed for MasterColor type metal halide lamps, Lumiére's Coronado Series fixtures feature distinctive styling and performance. Versions available for PAR20, PAR30 and PAR38 lamps. The fixtures received two U.S. patents, the 1996 ADEX Award for outdoor lighting, and one of *Residential Lighting* magazine's "Top 100 Products" of 1997. **Circle No. 61**



Luxo Corporation

Phone: (914) 937-4433

Iris is a contemporary, energy-efficient pendant fixture that emits evenly distributed, non-glare illumination from two 24W compact fluorescent lamps. It features a metal housing in matte-white polyester powder-coat finish and an opal glass diffuser and ring louvers. Iris is available in two sizes; custom cable lengths allow for use in a wide range of high-ceiling commercial spaces. **Circle No. 62**



Tech Lighting

Phone: (773) 883-6110

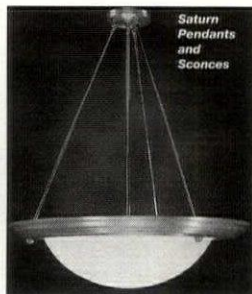
The Water Pendant is made of case glass imported from Murano, Italy. Cobalt, red, green, apricot or frost glass is layered over an opaque white glass interior, which diffuses the light from a 50W halogen bi-pin. The neck is embellished with a hand-bent "trickle" of chrome or gold. It measures 7 1/4 in. high with a 2 1/4-in. diameter at base. **Circle No. 68**



The Original Cast Lighting

Phone: (314) 863-1895

The newly expanded Saturn series offers a wide variety of contemporary and classic finishes coupled with three diffuser materials. Shown here is the SND-279ER-4DP1 which couples a brushed aluminum and polished chrome finish and tripod hanging system with a matte white acrylic diffuser. This fixture will accommodate four 26W quad fluorescent lamps. **Circle No. 63**



Times Square Lighting

Phone: (914) 947-3034

The miniature, high-tech C5M parlight adds drama wherever theatrical lighting is required. The C5M accepts the new PAR38 halogen lamps, which are compact and energy-efficient and have total beam control. Compatible lamps for the C5M are available in a variety of wattages and beam spreads, including narrow spot for highlighting and narrow flood and flood lamps for general illumination. The fixture has attached four-way barndoors, accepts color media, louvers and other accessories. Numerous mounting options and various finishes available. **Circle No. 69**



Osram Sylvania

Phone: (978) 777-1900

Osram Sylvania's new Tru-Aim IR MR16 is a low-voltage infrared-coated reflector lamp. A multi-layer thin film coating on the quartz capsule transmits visible light but reflects infrared back to the filament. Capturing the infrared heat within the lamp capsule reduces the energy input required to bring the lamp up to optimal operating temperature, increasing operating efficiency. The new 37W Tru-Aim IR draws 13 fewer watts of power versus conventional 50W MR16 lamps. **Circle No. 64**



Unison Fiber Optic Lighting Systems

Phone: (888) UNISON-9
(440) 519-1033

Opti-Flex brand light pipe, Cable Lite Light pipe and illuminators offer fiber-optic lighting for interior and exterior retail and commercial applications. The products allow retailers to achieve multiple light ratios from just one light source and do not emit UV light. With Unison Fiber Optic Lighting Systems, multiple cables can be run from a single remote light source. The remote light source allows the light pipe to be easily installed without having to contend with electrical wiring or weatherproofing issues. **Circle No. 70**



ProLight

Phone: (800) 968-2556

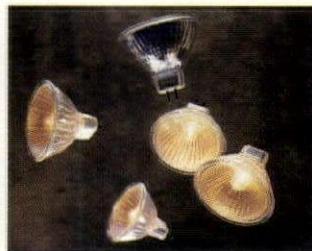
The Omni EM2 is a high-tech screw-in compact fluorescent product for recessed downlight fixtures. It replaces up to 150W floodlights. The modular design utilizes two lamp types (General Electric's Triple Biax 18W and 26E lamps or ProLux 18W and 24W quad lamps). The reflector system features the company's patented multi-parabolic design. **Circle No. 65**



Ushio America Inc.

Phone: (800) 218-7446

Ushio's Ultraline 10,000-hour MR16 lamps are rated at more than twice the life of standard MR16 lamps. The Ultraline series maintains consistent color throughout the life of the lamp, and the halogen capsule helps to protect UV-sensitive objects by eliminating 90 percent of the harmful UV emissions. Available in medium-, wide-, and soon to be released spot-beam spreads. **Circle No. 49**



Ruud Lighting

Phone: (800) 236-7000

Constructed from weather-resistant, glass-filled polypropylene, the new Retractable Bollard (DR Series) is available in low-voltage (12V) or line-voltage models with MR16 halogen lamps through 50W, and an 18W T5 wedge-based halogen model. Internally adjustable, the floodlight version is available with an MR16 lamp. A louvered and non-louvered (shown) path light model is also offered. The low-voltage model includes a wiring compartment for conduit entry and the line voltage model comes with the patented pig-tail connector for use with Luma self-sealing cable. **Circle No. 66**



Wide-Lite

Phone: (512) 392-5821

Wide-Lite introduces the EFFEX Area Luminaire (EAL) Series. The EAL is designed to complement any architectural setting and incorporates a wide array of high-performance optics available in a single-area lighting fixture. The EAL Series' many optical choices combine with a selection of options for arm- and post-top mounting. **Circle No. 48**



SPI Lighting

Phone: (414) 242-1420

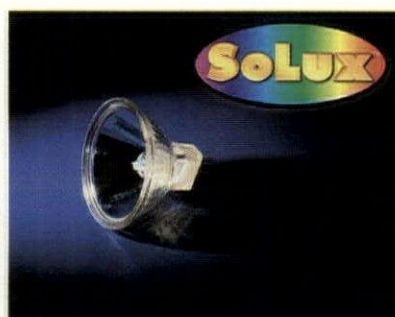
Echo is available in four sizes in solid steel or perforated steel with extruded aluminum housing. The fixtures accommodate linear fluorescent, metal halide and halogen in single- and multiple-lamp configurations. Integral and remote ballast options, and opticals up to 85 percent efficient. Mounting variations include ceiling, wall, pier or pendant. **Circle No. 67**



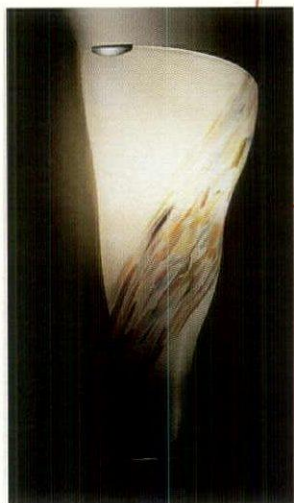
Wiko Ltd.

Phone: (708) 349-1570

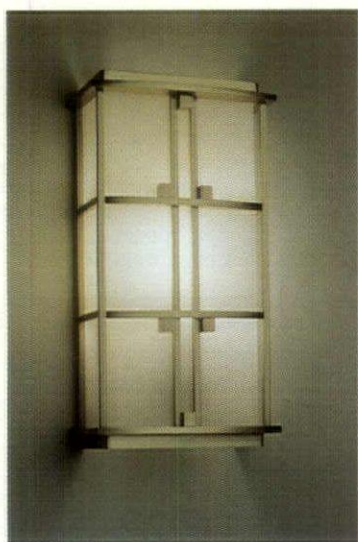
With the flick of a switch, you can be sure that you are seeing colors the way they were meant to be seen. Wiko introduces a lamp that simulates actual daylight at color temperatures of 3500, 4100 and 4700K. The SoLux MR16 Display Lamp features true color rendition, superior beam pattern and low UV and IR emission. **Circle No. 47**



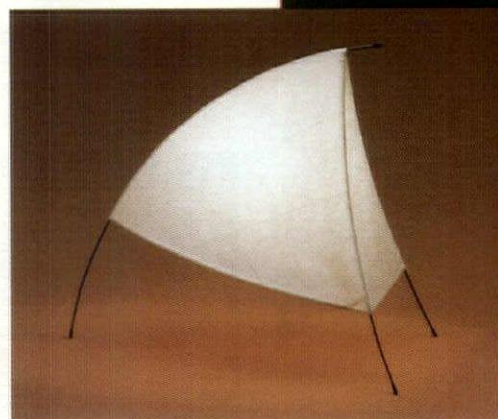
Decorative



Leucos USA's Vivia collection of incandescent sconces and pendants, designed by architects Renato Toso and Noti, combine malleable hand-blown Murano glass with refined metal fittings. Vivia comes with white, amber or white "zebrato" glass tonal striping. Other options include "maculato" amber spotted glass and white "con murine," a multicolored crushed glass used to create a kaleidoscope effect running in wide bands across a white ground. Metal details are finished in 24-karat goldplate or polished chrome. Fluorescent sconces also available. UL-listed. **Circle No. 192**

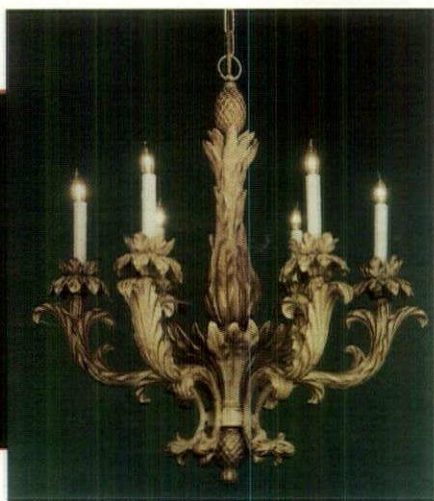


Nessen Lighting's Radiants line of ADA-compliant wall sconces, designed by Peter Wooding, consists of six models: Antares, Aries, Aurora, Lyra, Orion (shown) and Polaris. All fixtures feature an opal or sandblasted white translucent acrylic diffuser and utilize a 32W triple-tube compact fluorescent. Finishes include polished brass, brushed brass, polished chrome, satin chrome, polished nickel and satin nickel. Custom baked enamel-listed. **Circle No. 194**

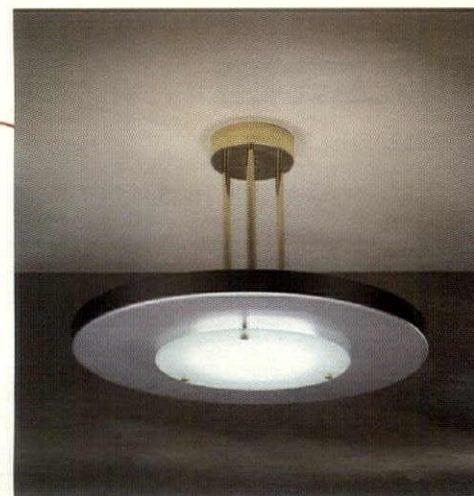


Yamagiwa Corporation's La Foglia table lamp and wall sconce, designed by Fumio Enomoto, feature the Japanese papermaking technique of Washi. Resistant to yellowing and crumbling and growing only whiter as it ages, the paper used in the lamps has an archival quality. The paper has been stretched over an irregular curve to create a contemporary form. The fixture is 15.8 in. high and uses a 60W incandescent lamp. UL-listed. **Circle No. 193**

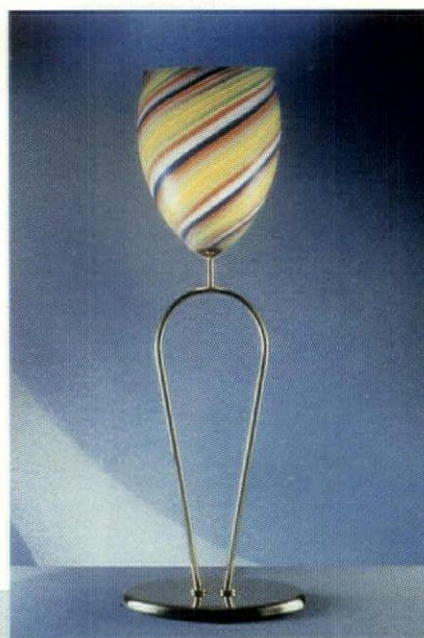
New Metal Crafts introduces a carved wood chandelier enhanced by carved leaves and pine cones. The six-arm fixture has a light glaze over a pickled pine finish. Its pineapple motif includes antique gold leaf glazed accents. The fixture measures 27 1/2 in. high and 26 in. wide. UL-listed. **Circle No. 195**



Advent Lighting's AP1000 is a new pendant fixture that comes in two standard sizes (24 in. and 33 in.) with a modified option of 44 in. Shown is a green acrylic lens with a polished edge and frosted inner surface. The lens can be changed to accommodate a variety of materials that range in thickness from 1/8 in. to 1/2 in. The AP1000 uses a 39W or 50W bi-x lamp with integral electronic ballast. UL-listed. **Circle No. 196**

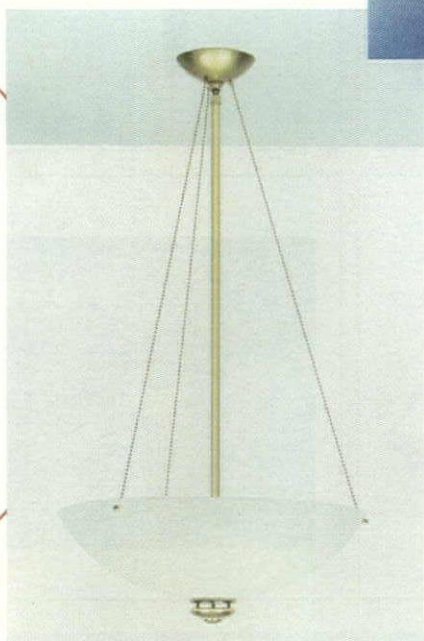


Meyda Tiffany introduces the Clematis Trellis Series in its collection of Tiffany lamp reproductions. The Clematis Trellis Series recreates one of Louis Comfort Tiffany's renowned floral styles. Decorative cone-shaped lampshades feature the flowering vine Clematis climbing on both vertical and horizontal borders. UL-listed. **Circle No. 197**



The Venus Collection from **Leucos USA**, designed by Venetian Architects Renato Toso and Noti Massari, includes floor, table and suspension fixtures, and wall sconces. Light sources are halogen and incandescent. Five handblown Murano glass diffusers are available. Shown is the Harlequin table lamp. UL-listed. **Circle No. 198**

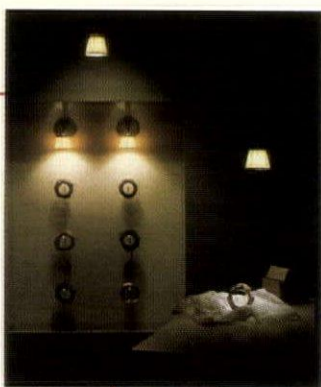
The Peter Wooding Pendant Collection from **Nessen Lighting** features eight styles: Golden Gate, Jamestown, Lake Shore Drive, Leeward, Parasol, Park Avenue (shown), Regatta and Windward. Each is supported by a single, polished metal primary pendant that supports a semi-spherical globe diffuser. The central pendant (Parasol model excluded) is surrounded by auxiliary suspension elements integral with each design. Each is uniformly illuminated by three medium-base 100W incandescent lamps or three four-pin 26W compact fluorescent lamps. Various finishes available. UL- and CUL-listed. **Circle No. 199**



Two new fixtures in **Boyd Lighting's** ceiling fixture line are the Kensington (shown) and the Berkeley. Kensington's height is 16 3/4 in. with a diameter of 7 in. The Kensington uses one 100W A19 lamp and is suited for use in corridors and lobbies for general illumination. Finished in oil-rubbed bronze or satin nickel. The glass is satin-etched. UL-listed. **Circle No. 200**



Flos has introduced a companion fixture to its Romeo Moon pendant—Romeo Babe, both designed by Philippe Starck. Romeo Babe features a small, ribbed, molded glass shade available in clear or cobalt blue with a diameter of 3.4 in., suspended from the ceiling by a thin brushed aluminum cord available in three lengths. UL-listed. **Circle No. 201**



Scholls Ferry from Rejuvenation Lamp & Fixture Co. is a three-light billiard-room fixture, an early reproduction that takes on a contemporary look in a polished nickel finish with shades #123OP-12. Scholls Ferry is available in 11 finishes and a wide selection of shades. UL-listed. **Circle No. 210**



Tech Lighting's Water Pendant is made of case glass imported from Murano, Italy. Cobalt, red, green, apricot or frost glass is layered over an opaque white glass interior, which diffuses the light from a 50W halogen bi-pin lamp. The neck is embellished with a hand-bent "trickle" of chrome or gold. It measures 7 1/4 in. high with a 2 1/4-in. diameter at base. UL-listed. **Circle No. 202**

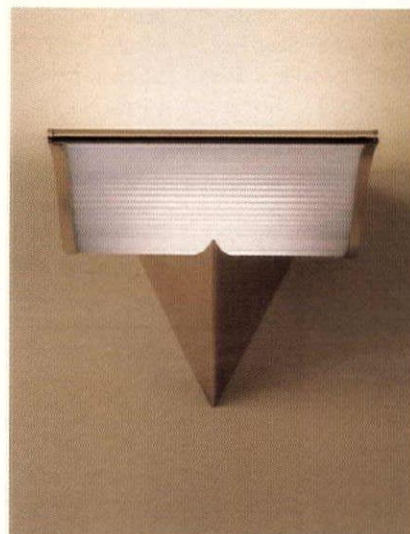


Joan Sherman introduces "Sea, Sky and Earth," a collection of 24 decorative objects. Inspired by Venetian grottos, Regency furniture, and nature motifs found in Chippendale furniture, the collection is available in bronze with custom patinas and a variety of hand-lacquered finishes, including gold or silver leaf. Bronze sconces, one-of-a-kind objects, furniture and lighting can also be commissioned directly from the artist. **Circle No. 203**



Vetzeria DeMajo, the Murano glass lighting manufacturer, is showing some of its portable fixtures in the U.S. market. The fixtures, distributed by Illuminating Experiences, include Mammolo and Pisolo, designed by S. T. DeMajo. These small-scale table lamps feature glass shades in satin

white, cobalt blue, yellow, Tangiers red and gray. The base, which houses a stained glass Murano ball, is available in yellow, cobalt blue and red. The fixtures measure 14 1/4 in. high x 7 3/4 in. wide. UL-listed. **Circle No. 204**



The Concorde wall sconce, designed by Charles Pfister, is available from Baldinger Architectural Lighting. With its scoop form resting on a tapered triangular bracket, the Concorde resembles an outstretched hand with light in its palm. The underside of the scoop has a cascade of frosted glass or polished metal rods to provide a combination of diffused downlight with uplight, or purely uplight. The lamp is available in polished brass or polished chrome and can take either a halogen or fluorescent lamp. UL-listed. **Circle No. 205**

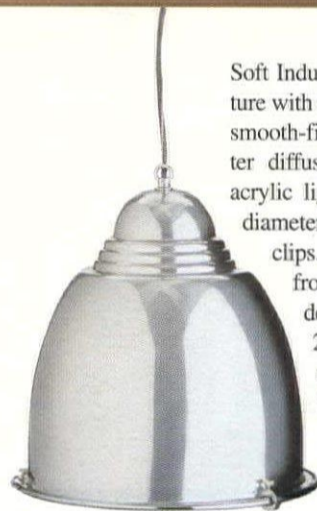


Luxo Lighting introduces the Designer Series of specification-grade contemporary wall sconces and ceiling light fixtures. The series is a family of 24 individual models of wall sconces and ceiling pendant fixtures. Each model is crafted in metal and acrylic forms reminiscent of the Machine Age. UL- and CUL-listed. **Circle No. 206**

Lightolier introduces Lytepoints, miniature low-voltage halogen pendants that create a soft glow of light. Their compact scale and proportions enable flexibility in design. A selection of colored and finished glass and metal shades are offered, all of which can be interchanged. UL-listed. **Circle No. 208**



Soft Industrial by d'ac Lighting is a pendant fixture with an inverted drum-shaped canopy made of smooth-finish spun aluminum with a 5-in.-diameter diffuser opening. A sandblasted white opal acrylic light diffuser ring secures to the outside diameter of the canopy via three adjustable metal clips. The diffuser provides a soft white glow from a range of light sources: a 150W incandescent A-lamp; a 100W halogen T lamp; 23W or 32W triple-tube compact fluorescent lamps or 13W quad tube compact fluorescent; and 70W, 100W or 140W metal halide lamps. UL-listed.



Circle No. 207

Classic Illumination announces its new line of slumped and etched glass diffusers, which are available for use on many of its pendants and wall sconces. Each fixture is custom made of solid brass in a choice of more than 20 finishes. Lamping is available in incandescent, halogen or PL. UL-listed. **Circle No. 209**

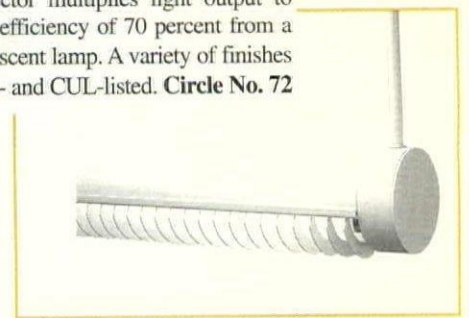


indirect/
direct-indirect

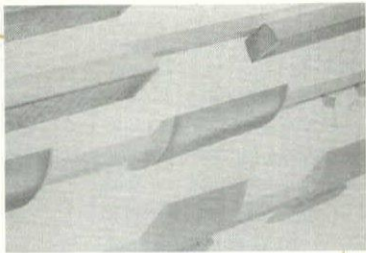
Columbia Lighting's Avalon ceiling-suspended indirect fixtures feature a housing constructed of extruded aluminum. A proprietary built-in quick-locking post-and-clip connection mechanism allows fixtures to be snapped together endcap to endcap for continuous alignment or in tightly connected rows. Eight shielding options; four specular aluminum reflector designs; four lamp configurations and four amp combinations. UL- and CUL-listed. **Circle No. 71**



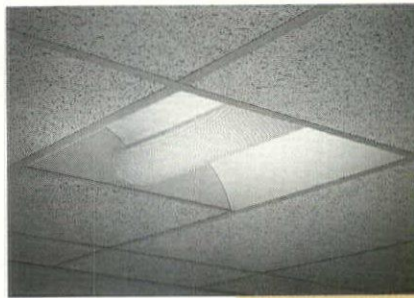
Lam Lighting's Literod CR provides efficient one-way lighting from a choice of wall-mounted or pendant fixtures. Models are rotatable to 358 degrees (direct option shown) and available in fixture lengths of 4, 8 or 12 ft. Fixtures can be mounted individually or connected to create integrated linear runs. A proprietary specular aluminum reflector multiplies light output to provide fixture efficiency of 70 percent from a single T8 fluorescent lamp. A variety of finishes is available. UL- and CUL-listed. **Circle No. 72**



Lightolier's suspended channel structure of Multi-Lyte allows ambient and accent lighting to be combined in one system. Designed for a broad range of spaces, Multi-Lyte features five separate lighting modules and accepts hundreds of different track fixtures for accent lighting. Meets IES RP-1 criteria for lighting VDT spaces. **Circle No. 73**

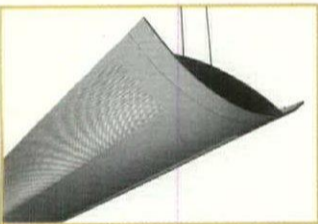


Lightolier introduces Phase II of its Alter Soft Lights commercial lighting system. Alter Soft Lights comprise a complete lighting system of recessed direct/indirect fixtures for ceiling-mount commercial applications. Phase II includes five new families of fixtures with long-life lamp types and electronic ballasts in versions ranging from 18W to 55W. Phase II products include the following fixtures: 2x2 round, 1x1 square, 2x2 single lamp and 1x4/2x4 T8. New lamps include a T5 bi-tube and T5 linear in addition to T8. UL-listed. **Circle No. 74**

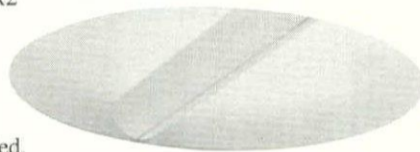


The Stratus STR Series from **Columbia Lighting** is a direct/indirect fixture. Stratus serves as a one-for-one replacement for standard 2x4 or 2x2 ceiling troffers. The fixture recesses fully into ceiling openings and employs T8 linear fluorescent or T5 compact fluorescent lamps. Housings are baked white enamel, and the metal reflector and perforated light basket are powder coated matte white. UL-listed. **Circle No. 75**

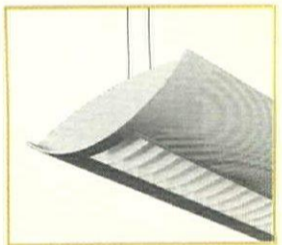
Neo-Ray's Shell fluorescent fixture features a partially perforated metal housing backed with an acrylic overlay to facilitate a uniform "glow." Shell has a fixture profile of 10 1/2 in. wide x 2 1/4 in. high and an integral ballast. Die-cast components and dual cable supports are designed to convey a perception of lightness, low mass, and minimal scale. A slotted perforated pattern is also available. UL-listed. **Circle No. 76**



Litecontrol's SAE Systems family includes the P-I/D-9700, a direct/indirect fixture with curved blade baffles for comfortable shielding; the P-S/I-9800, an indirect fixture; and the P-S/I-9800, a semi-indirect fixture with 10 percent downlight. UL-listed. **Circle No. 77**



The Petite Nuage D-I-P pendant-mounted direct/indirect three-lamp T8 fluorescent fixture from **Neo-Ray** is designed to provide three lighting distributions—indirect, direct, and direct/indirect—by the separate switching of the single-lamp direct component and the two-lamp indirect component of the fixture. UL-listed. **Circle No. 78**



architectural lighting *thanks*

Ardee Lighting
Columbia Lighting
GE Lighting
JJI Lighting Group
Litecontrol
Luxo Corporation
Prescolite Lighting
Targetti USA
Tivoli Industries

Wide-Lite
International Association of
Lighting Designers
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Alliance
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- National Lighting Bureau
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Two industry leaders join forces to shatter the boundaries of retail lighting



Fiber optic lighting systems shatter the boundaries associated with standard visual merchandising and display designs by offering a light source remote from the application. This solves many of the problems that retailers encounter with traditional lighting options including: heat and UV damage to product, burn and electrical hazards to employees and customers, and wiring and maintenance concerns. The problem was, until now, there had been a lack of standardization in the fiber optics industry which made its use in the retail industry not exactly what you'd call user-friendly.

Unison, a joint venture of Advanced Lighting Technologies, makers of Venture Lighting metal halide lamps, and Rohm and Haas, makers of OptiFlex™ flexible light pipe, have shattered this image by revolutionizing the industry. By combining these technologies, Unison fiber optic lighting doesn't just offer an illuminator or a fiber optic cable. Instead, it offers a total solution to your retail lighting needs. With Unison, you get the most complete fiber optic lighting solution available including side and end light fiber, illuminators and fixtures, couplers, even specially designed cutting and stripping tools. Everything you need, for any application from display case to visual merchandising, is packaged and at your fingertips.

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Circle No. 19




no heat damage to perishables.



attractive visual stimulus by varying light levels.



no UV to damage sensitive dyes.



*"safe" lighting at the fixture.
(no electricity, glass or heat)*

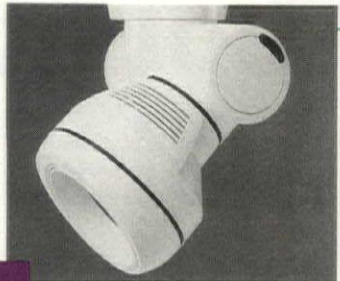
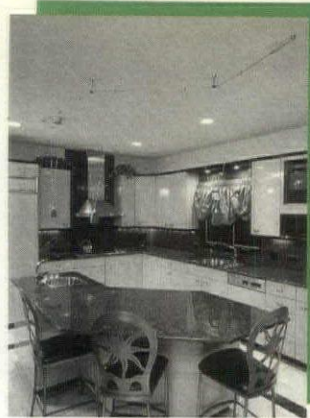
track lighting

Industrie und Design Licht's 20-page full-color brochure features its Alulite low-voltage track system with flexible aluminum track. The track can be shaped by hand and bent up to 180 degrees. The tracks are available in many lengths and can be cut to fit the application. Invisibly mounted track insulators enable several systems to be mounted without visibly interrupting the run of the track. There are fixed, simple swivel and double swivel fixtures with 12 glass fittings; all are equipped with 20-50W lamps. **Circle No. 80**

Thomas Lighting's Capri track lights feature "ESP—Extra Sensory Performance"—"smart" track adapters that automatically conform to the internal configurations of other track brands, including Halo, Juno and Edison. Fixture designs include line voltage, low voltage, fluorescent and HID types. Single- or two-circuit application. UL- and CUL-listed. **Circle No. 79**



Con-Tech's Sirius Uni-Cable halogen lighting system features a single 2-conductor insulated power cable. Sirius may be configured for horizontal, vertical or angular designs. Fixtures utilize MR16 lamps and can be positioned anywhere along the cable. Downlighting models are suspended with thin cable for a "floating" look and are available with a variety of glass or metal shades. An unshielded fixture with 360-degree adjustability is offered for accent or uplighting. A selection of surface- or remote-mounted low-voltage transformers are available to power the Uni-Cable system. ETL-listed. **Circle No. 82**



Prescolite • Moldcast's new M3 PAR lamp track system combines flexibility with the color rendering capabilities of halogen and new metal halide lamp technology. The rugged, all-plastic housing is available in limestone or slate gray with a choice of five bezel styles and six

accent colors (red, blue, teal, purple, limestone, and slate gray). Simple push-button locking mechanism retains prefocused position. UL-listed. **Circle No. 81**



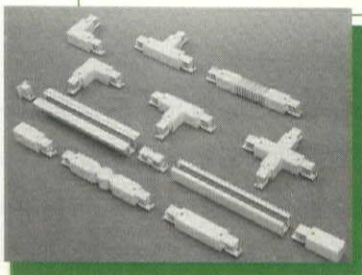
Cooper Lighting's Lazer Track line features a slim track and 41 new track lighting fixtures. Because Lazer Track has been designed to be interchangeable with Halo PowerTrac, Lazer or Halo lampholders may be used with either track system. Lazer is available in line or low voltage and offers a variety of lampholder styles. Available in a 6-ft.-length

track, as well as the common 2-, 4-, and 8-ft. lengths, the new family of track lighting fixtures includes 13 different accessories. UL-listed. **Circle No. 83**

Lighting Services Inc's 216 Series Orbiter is the latest in the company's Low-Voltage Series.

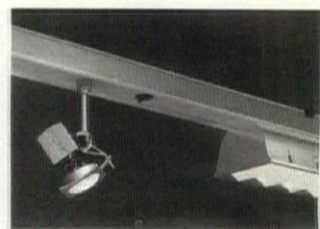
An adjustable unit utilizing a 75W MR lamp, the Orbiter module revolves around two separate axes for off-track striking angles, and pans vertically on a third axis for precise illumination. Available as standard in black, white, silver and graphite finishes with optional accessories. ETL-listed.

Circle No. 85



Kaltek, Inc.'s new Global track products from Nordic Aluminum include features such as open architecture (accepts fixtures from most manufacturers); ISO 9001 quality; high load-bearing capacity; oversize conductors; feedable connectors; custom colors; curved track; and pre-drilled mounting holes. UL-listed. **Circle No. 84**

The RTX System from **Zumtobel Staff Lighting Inc.** combines fluorescent ambient lighting and incandescent accent lighting in one system. Monopoint track sections can be combined with



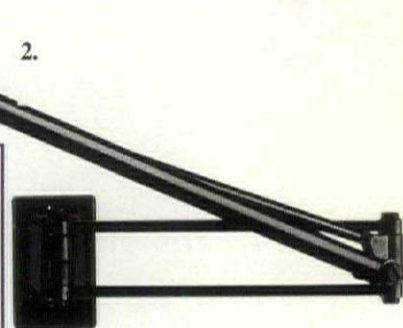
standard RTX fixture modules allowing line-voltage and low-voltage incandescent track heads to be used on the same fluorescent trunking. The track sections can be interchanged with fluorescent reflectors and louvers. The track modules are 4 ft. in length and are supplied with two or three monopoint locations. Modules are rated for 600W maximum, 120V operation. UL-listed. **Circle No. 86**

task lighting

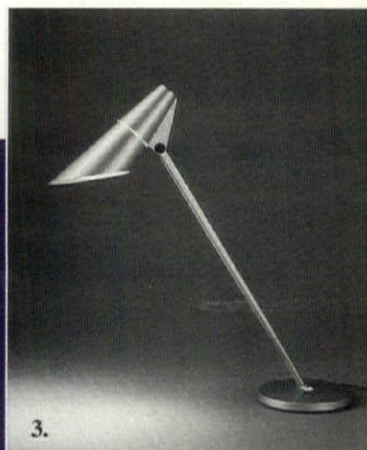
I. Guth Lighting introduces the Enviroguard Taskliter, a cylindrical fluorescent inspection fixture for low-ceiling workplace environments. It features a smooth, rounded exterior that resists deposits of workplace contaminants and withstands high pressure hosedown. T5 fluorescent lamps and a 120V 60 Hz Class-P electronic ballast provide up to 25 percent greater light output than standard cylindrical fluorescent fixtures. UL-, CUL- and ETL-listed. **Circle No. 117**



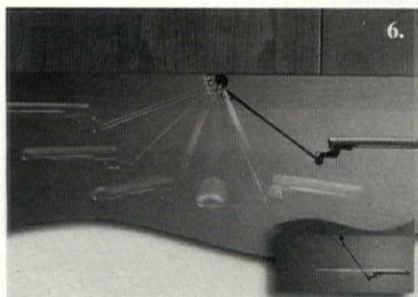
2. Halogen 4 task and floor lights from Luxo Lighting are multi-adjustable and employ Luxo's patented, fully articulating, counter-balanced concealed springarm. This device is available in two lengths, 20 and 29 in., each with two hinge points. The fixture is designed to swing left or right 180 degrees and vertically within an arc of 180 degrees. A choice of three mounting options is offered, and two shades of high-impact plastic with integral perforated-metal reflectors are available. CUL-listed. **Circle No. 118**



3. Artemide introduces the Spy table/task lamp. Providing direct, orientable, incandescent or halogen task lighting. Spy is suited for home and office spaces. Spy features an adjustable head with fully rotating diffuser in die-cast aluminum and steel with metallic gray lacquer finish. Arm is extruded aluminum; base is steel with a metallic gray lacquer finish. UL-listed. **Circle No. 119**



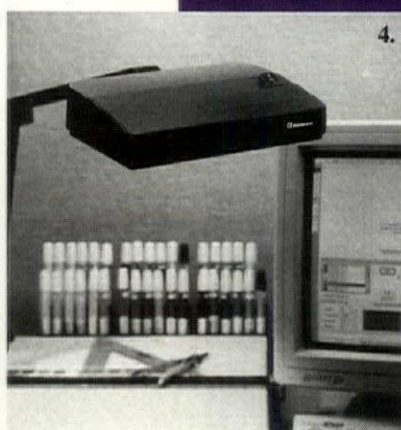
6. Jolt Lighting's Huron Railite is designed to mount under a binder bin or shelf, sweeping all angles to provide lighting for workspaces. The base contains a nylon-coated glider that travels along an aluminum extruded rail which mounts to the shelf or cabinet with screws. UL-listed. **Circle No. 122**



5. Luxo's classic L-1 Task light, created in 1937, has been reintroduced. The L-1 is aimable and multiadjustable, employing a counter-balanced springarm with two pivot points. It has been formally reintroduced as part of the company's 60th anniversary in response to continued requests for the fixture. UL-listed. **Circle No. 121**



4. Waldmann Lighting's Geneva task light offers a two-position switch that enables users to turn on one or both lamps. This feature is especially suited for offices with varying light levels or multiple users. The Geneva features an optional black parabolic louver for CAD-Room environments. The Geneva is also available with a specular silver parabolic louver for standard office lighting applications. The Geneva is offered in three arm styles with five mounting options. The series includes models with two 9W or two 13W lamps. UL-listed. **Circle No. 120**



SPI

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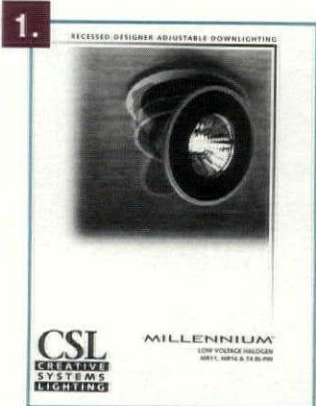
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downlights

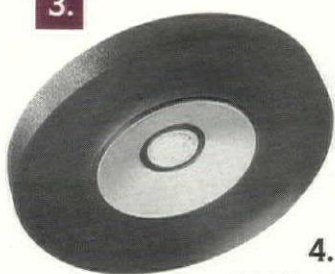


1. Millennium recessed architectural downlighting from **CSL Lighting Mfg. Inc.** offers a wide array of recessed trims including adjustable pull-downs, decorative dropped glass, adjustable gimbles, specular baffles, glass dome lenses and straight downlights. All trims utilize low-voltage MR11, MR16 or GY 6.35 bi-pin halogen lamps. The MR16/GY 6.35 trims (3 1/2-in. diameter) require housings while the MR11 (three sizes ranging from 1 1/8- to 3 1/8-in. diameter) include housings. Available finishes are black, white and polished gold. ETL-listed for damp locations. **Circle No. 87**

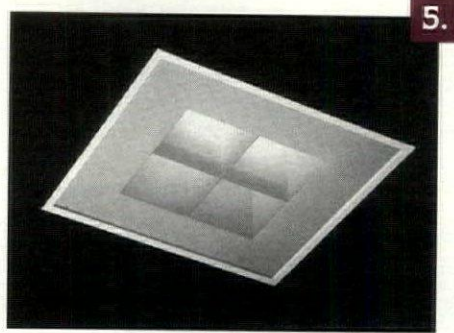
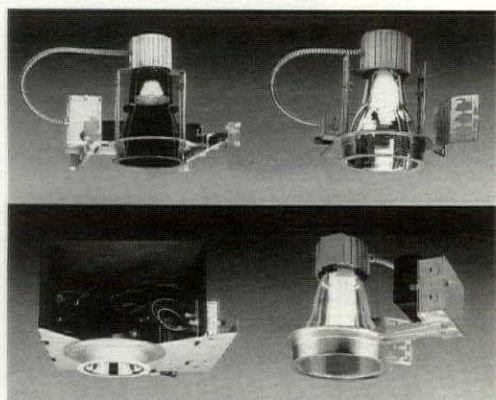
2. **Edison Price Lighting** introduces new Arclites, a complete line of downlights, accent and wall washers for use with metal halide PAR20 lamps. The fixtures are available in 4-, 5-, and 6-in. apertures and use 39W and 70W lamps. Complementing the downlights and accent lights are Arclite Washlites, which provide uniform illumination on vertical surfaces. UL-listed. **Circle No. 88**



3. **Fiberstars, Inc.**'s Fiberstar FE-4133-XX and FE-4134-XX are small-scale, point-source fixtures designed for ceiling accent lighting applications using fiber-optic lighting systems. Fiberstar FE-4133-XX is a shallow, cylindrical glass fixture, reminiscent of a demitasse cup. The FE-4134-XX model (shown) is a flat disc- or saucer-shaped frosted glass fixture. There is no electricity, heat or UV radiation emitted from the fixture. UL-listed. **Circle No. 89**



4. **Halo Lighting's** (Cooper Lighting) Portfolio recessed downlighting offers a complete range of distributions with matching apertures. Portfolio's wall-wash downlights are built with Halo's patented Geometric Reflector for Uniform Vertical Illumination, which incorporates a series of calibrated facets within the reflector. A choice of low-iridescence clear, haze, straw and wheat reflector finishes are available. Other features include die-cast plaster frames, socket caps and connectors, as well as being able to be installed in up to 3-in.-thick ceilings. Incandescent, low-voltage and HID fixtures available. UL-listed. **Circle No. 90**



5. Fancy Free from **Neo-Ray Lighting Products** is a 12-in. recessed compact fluorescent fixture that features a recessed steel housing, lamp holder/reflector, two 18W quad lamps and a two-lamp electronic ballast. A translucent acrylic snap-in, four-cell parabolic-shaped louver directs the light in precise zones for even horizontal illumination while the luminous surround reduces glare and lowers the contrast between fixture and ceiling. Various colored and textured diffusers are offered, as is a range of finishes for the louver. UL-listed. **Circle No. 91**

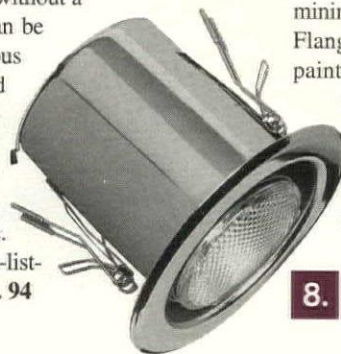
6. **Prescolite • Moldcast's** Virtual Source reflector optics provide even, symmetrical light distribution and brightness control from asymmetric, horizontally positioned quad- and triple-tube compact fluorescent lamps inside the recessed ceiling housing. The Virtual Source reflector provides a continuously even image flow from the top of the reflector to its aperture opening. Virtual Source is designed to eliminate glare and "hot spots" from all viewing angles. Virtual Source employs a single, rigid, computer-enhanced specular aluminum AlzakE reflector of proprietary design. Specific reflectors are available for horizontal configurations, and discrete optical designs are available for vertically oriented fluorescent lamps, as well as metal halide or incandescent light sources. Virtual Source reflector optics may be ordered in a variety of finishes. UL-listed. **Circle No. 92**



7. **Prescolite • Moldcast's** Horizontal One-lamp Triple Tube offers high performance, energy-efficient lighting from an unobtrusive, low-profile, recessed ceiling fixture. The product features a modular housing design that allows 6- and 8-in. aperture downlight and wall-wash reflectors to be field-interchangeable. A single socket design accepts 26W, 32W and 42W triple-tube compact fluorescent lamps. UL- and CUL-listed. **Circle No. 93**



8. **Specialty Lighting's** miniature Recessed Canister accent lighting fixtures feature a compact 3 1/4-in.-diameter housing that is available with or without a self-trimming flange. Fixtures can be wired individually or in continuous rows of up to six units controlled by standard switches, rotary dimmers, touch dimmers or an on/off roll-switch on the power cord. A choice of finishes and mounting options is available. UL- and CUL-listed. **Circle No. 94**

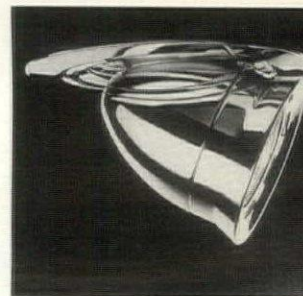


9. The Capri One modular downlighting system from **Thomas Lighting** is geared to the needs of rapid-schedule commercial projects. It employs a single universal mounting frame that accommodates more than 70 different incandescent, fluorescent or HID electrical systems. For a wide range of applications, the system offers 100 6-in. and 8-in. trim styles. UL- and CUL-listed. **Circle No. 95**



10. Omega 8-in.-aperture open downlights from **Thomas Lighting** incorporate twin 32W triple-tube lamps and electronic ballasts to create a high lumen package. Optically engineered deep reflectors employ horizontally mounted lamps and generate high light output in a medium distribution. These fixtures are suitable for ceilings up to 18 ft. in heights. Self-flanged reflectors are the heart of the optical system, offering a clean ceiling appearance and visual shielding. UL-listed. **Circle No. 96**

11. The Mondial 50 from **Targetti USA** is an addition to its series of precision orbital recessed ceiling projector lights. At the heart of Mondial 50 is an adjustable, aimable proprietary mechanism. The housing is 4 in. deep and the lamphead employs heat-dissipating aluminum fins, enabling Mondial 50 to be used in low-tolerance ceiling spaces. The fixture is capable of rotating vertically to 65 degrees and horizontally to 359 degrees. Low-voltage, long-life halogen light sources with dichroic reflectors may be specified from 20W to 50W in 12V. Available in five standard lamphead finishes. UL- and CUL-listed. **Circle No. 97**



12. The Specification Downlighting Series from **Zumtobel Staff Lighting Inc.** is detailed in a 16-page color brochure. The series is comprised of incandescent/PAR, incandescent A-Lamp, low-voltage halogen, HID and compact fluorescent fixtures. Fixtures are available for downlighting and wall-washing applications and come in matching apertures of 4, 6, 7 and 8 in. Reflectors are self-flanged with flat, 1/2-in. low-profile flanges for minimal trim in the ceiling. Flanges can be factory painted to match ceiling color. Standard finishes are matte and clear; other colors are available upon request. **Circle No. 98**



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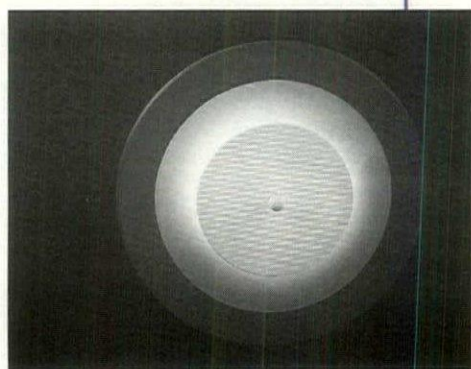
Just fax us at (615) 316-5162 on your company letterhead or e-mail us at ballast@magnetek.com, and we'll send you a sample. Make sure you specify electronic or magnetic, voltage and the type of lamp. We'll take care of the rest. Want help? Call 1-800-BALLAST or visit our website: www.magnetek.com/ballast. You'll find the information you need to specify all MagneTek ballasts, including electronic and magnetic linear fluorescent and HID.

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wall sconces

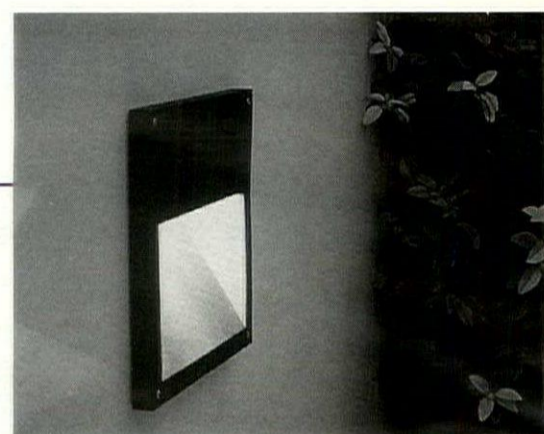
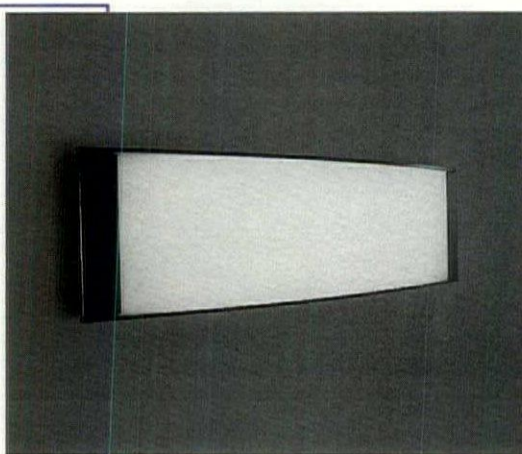


Luxo's Designer Series consists of 24 individual models of wall sconces and ceiling pendant fixtures. Crafted in metal and acrylic, the lamps emit evenly distributed non-glare light from a range of low-wattage incandescent or compact fluorescent sources. Selected wall models meet ADA requirements. UL- and CUL-listed. **Circle No. 129**



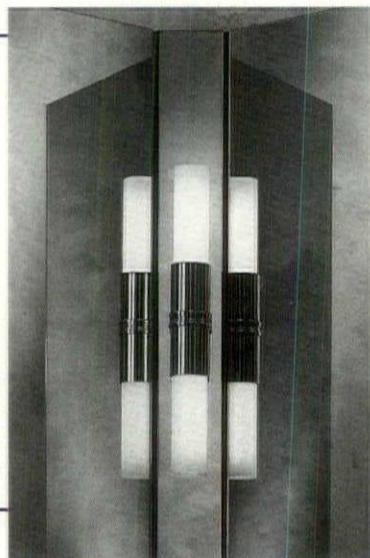
Vista Lighting's Lumiform 7400 series wall sconces are available in four models: Colonial, Convex, Fluted and Stepped; and four standard sizes: 12-, 14-, 18- and 24-in. lengths. Housings are fabricated from rigid aluminum, and the integral channel provides ready mounting to a wall or junction box. Available with electronic or magnetic ballasts. UL-listed. **Circle No. 131**

Luceplan's new line of lighting fixtures designed by Dante Donogani, Strip is available in two-, four-, or six-lamp versions: all 29 in. long x 7 1/4 in., 15 in. and 26 in. wide, with the two larger sizes available as suspension lamps as well. Inside, energy-efficient electronic ballasts drive the 17W 1-in. diameter fluorescent lamps. The use of these lamps and low-profile ballasts allows for a 3 1/2 overall depth, making Strip suitable for use in public spaces where a 4-in. maximum must be observed to comply with ADA requirements. UL-listed. **Circle No. 130**

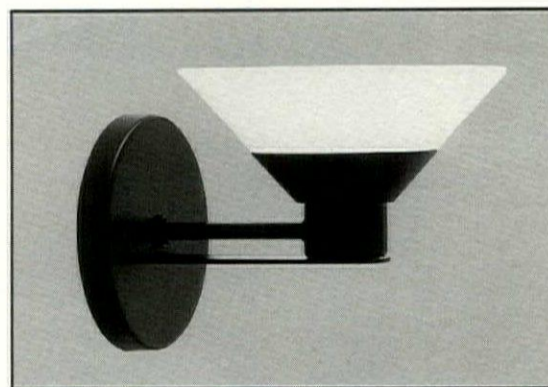
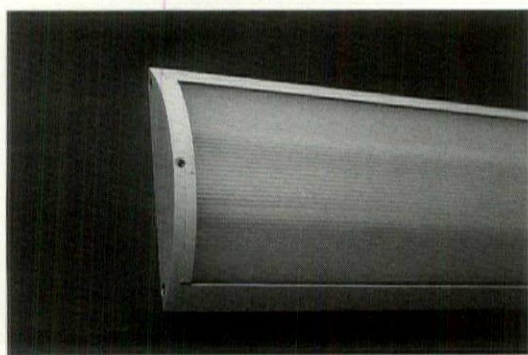


Quality Lighting's Design QL/QR product line offers a family of compact, energy-efficient lighting for surface or recessed mounting in entryway, walkway and corridor installations. The Design QL surface-mounted units measure 10.30 in. wide x 10.30 in. high x 3.15 in. deep, and are available with a choice of clear, opal or tempered prismatic glass lenses. The Design QR recessed mounted units are 12.6 in. wide x 12.6 in. high x 5.9 in. deep with a choice of lenses, louvered or metal-shielded faceplate styles available. Custom colors and finishes are available. UL-listed for wet-location. **Circle No. 133**

Robern has added two sconces to its collection of vertical lighting systems: incandescent (MIL3.5) and compact fluorescent (MFL3.5). The sconce fixtures attach to the sides or between arrays of Roburn modular mirrored cabinets. The standard incandescent fixture uses two 60W bulbs per sconce and the fluorescent uses two 9W compact fluorescent bulbs per sconce. UL-listed. **Circle No. 132**

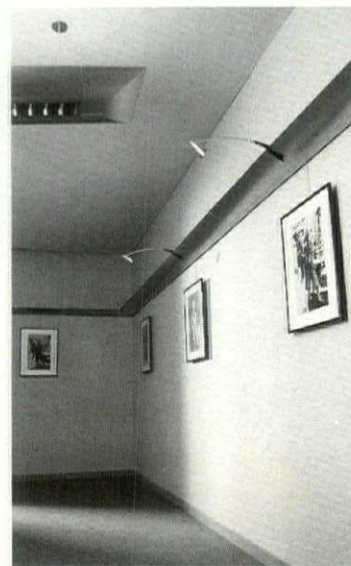
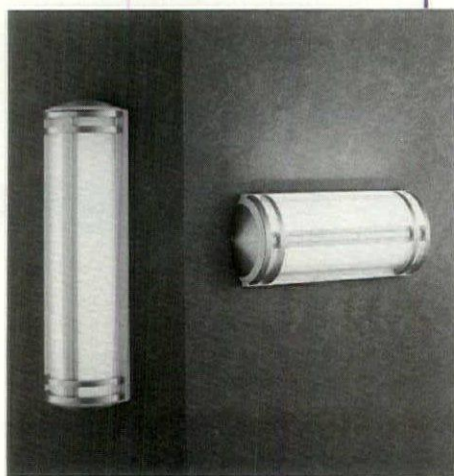


Selux Corporation introduces VPS Vandal Resistant Surface Mount Luminaire for exterior or interior applications. The shallow 2 3/8-in. depth allows this fixture to comply with ADA requirements, and can be specified with 5/8-in. diameter linear T5 lamps. Various options are available. UL-listed. **Circle No. 134**



Koch + Lowy introduces Spats, a simple yet sophisticated wall sconce designed for commercial or residential settings. Spats uses a 250W halogen bulb, is 5 1/4 in. high, and extends from the wall 8 1/4 in. The lamp is available in four finishes: black, chrome, brass and white. UL-listed. **Circle No. 136**

Visa Lighting introduces the Avatar, available in wall and ceiling mount. The wall-mount version is ADA-compliant. Features include die-cast end-caps with solid brass or aluminum decorative dome; extruded aluminum housing and mounting plates; white acrylic or clear prismatic lenses; and symmetric or asymmetric lamp placement. UL- and CUL-listed. **Circle No. 135**



Artemide Inc. introduces the Wall Flap System, which consists of single and joining fixture modules for indirect T8 fluorescent cove lighting. The modules are optionally equipped with an incorporated, concealed, low-voltage track for snap-in Flap MR Spotlamps. The Flap Wall System comes standard with 120V, electronic fluorescent ballasts, with 277V optional. UL-listed. **Circle No. 137**

BRUCK

L I G H T I N G U S A



BRUCK, the leader in the field of low-voltage track and cable technology, introduces **FLEX-LINE**.

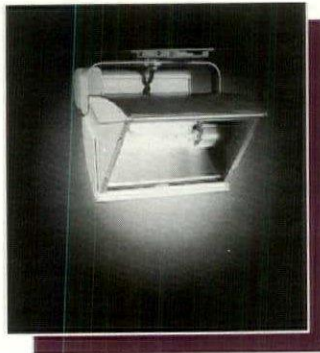
The track flexes to allow for curved or linear installation, and with two independent electrical circuits it is listed for a total of 600 watts.

FLEX-LINE is one of six different systems manufactured by **BRUCK LIGHTING**.

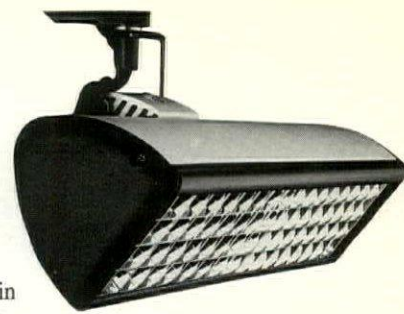
714 259-1000 Fax 714 259-1505 Tustin, California

Lightfair
International
98 Booth I580

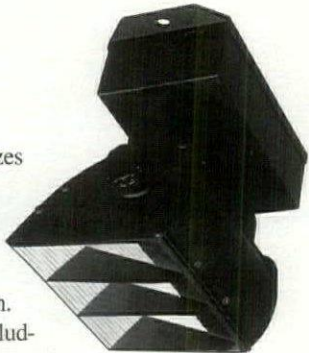
Lighting Services Inc's MQM70 Series features a wide angle floodlight which utilizes a computer-designed reflector working in unison with a 70W double-ended Metal Halide lamp and produces an even wash of light. With a long life of 10,000 hours, the 70W Metal Halide lamp has a CRI up to 82 and is available in two color temperatures: warm and neutral white light. The specification quality MQM70 has a self-locking yoke allowing the unit to be focused in horizontal and vertical planes. Available in standard LSI finishes with a range of optional accessories. ETL-, CETL-listed. **Circle No. 180**



Skanda Lights II, part of The DSL Group, introduces the Parabol compact fluorescent wall washer. Parabol can be custom ordered to fit 18-55W compact fluorescent lamps with dimensions of 97 mm. in height x 100 mm. in depth. The fixture is available in four standard wattages and lengths, and has a flexible mounting system which fits one-, two- or three-circuit track systems. UL-listed. **Circle No. 181**



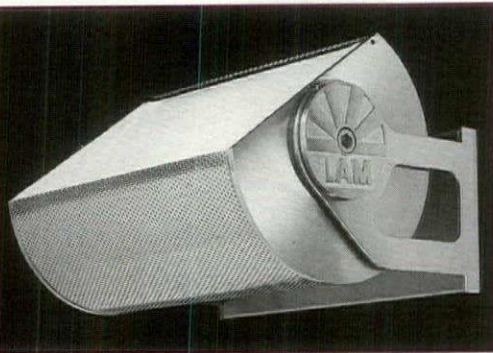
Engineered Lighting Products' surface-mount, adjustable wall wash fixture utilizes a 70W metal halide lamp. This 4-in. lamp produces 6200 lumens with a CRI of 83, and is housed in a compact adjustable fixture which is 6 1/2 in. wide x 8 in. long x 7 in. high including yoke and ballast box. UL-listed. **Circle No. 182**



Ruud Lighting introduces the Rectangular Fixture (L Series), suitable for ground, wall-mounted installations and indirect illumination for interior applications. The Rectangular Series with Area Cutoff optical system provides a 60-degree forward throw. The series measures 5 1/10 in. high x 16 in. wide x 9 1/4 in. deep. Six different optical systems are available with lamps ranging from 50-175W metal halide and 35-185W HPS. Available finishes are bronze, black, white and verde green. UL-listed. **Circle No. 183**



LAM Lighting Systems' Horizons AA delivers aimable, highly controlled linear asymmetric lighting from a choice of metal halide quartz or biax compact fluorescent sources. Horizons AA models are available in wall-bracket, ceiling-mounted, semi-recessed ceiling-mounted and twin-stem designs. Each features a compact, semi-tubular housing design that offers adjustable linear beam spreads with minimal intrusion into the space being illuminated. Fixtures may be specified in new handbrushed nickel and a variety of colors and finishes. UL-listed. **Circle No. 184**



Thomas Lighting's recessed fluorescent linear wall-wash fixture, the Omega H9493, utilizes one 39W or 40W 22 1/2-in. biax fluorescent lamp, and is available in 120V or 277V. The fixtures are offered in either magnetic or electronic versions and are available with dimming ballasts. The fixture features a 7-in. aperture with a semi-circular clear reflector horizontally mounted

in a 24-in.-long housing, which has a white powdercoat finish. The unit is 4 1/4 in. deep. UL-listed. **Circle No. 185**

theatrical effects

The miniature C5M parlight from **Times Square** accepts PAR38 halogen lamps. The C5M fixture has attached four-way barndoors and accepts color media, louvers and other accessories. The C5M features a built-in accessories holder and has numerous mounting options. Finishes include black, white and custom colors. UL-listed. **Circle No. 186**



Lumiére Design and Manufacturing Co.'s Hollywood #1701 is a compact outdoor imaging projector that utilizes a metal halide source. Image templates are standard ER Micro-E size and can be metal or glass; the fixture also accepts colored or dichroic filters. Hollywood #1701

can be used for surface/ground mounting, trees or exterior/interior walls. It is constructed from a corrosion-resistant silicone aluminum alloy; a hood with tempered glass lens protects the optical assembly. UL-listed. **Circle No. 187**



Irideon's eight-page, four-color brochure highlights the company's interior line of automated fixtures, as well as its exterior lighting fixtures. Irideon provides fixtures with automated, remotely controlled functions to the architectural market. Product and installation photos are included. **Circle No. 188**



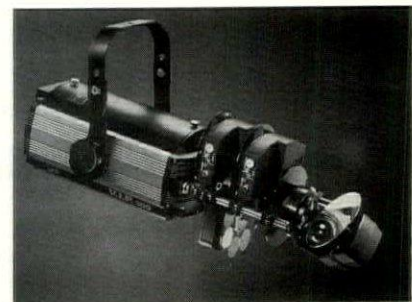
Altman Stage Lighting Co. Inc.'s Luminator, an addition to Altman's line of followspots, is lightweight and compact. The front end holder will accept any 7 1/2-in. accessory. All controls are top mounted. UL-listed. **Circle No. 189**

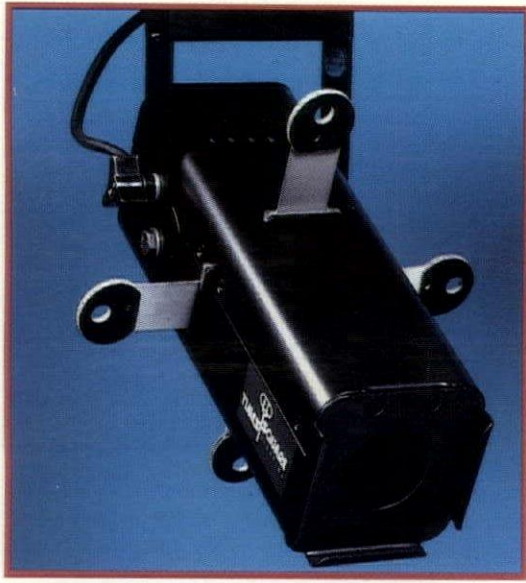


High End Systems' Technobeam automated fixture use MSD 250-2 metal halide arc lamps and enhanced photolithographic images with 3300 dpi for retail, architectural and themed entertainment markets. Rotating effects wheel allows layered images. The fixture is made of high-tech polymers and is lightweight (41 pounds). ETL-listed. **Circle No. 190**

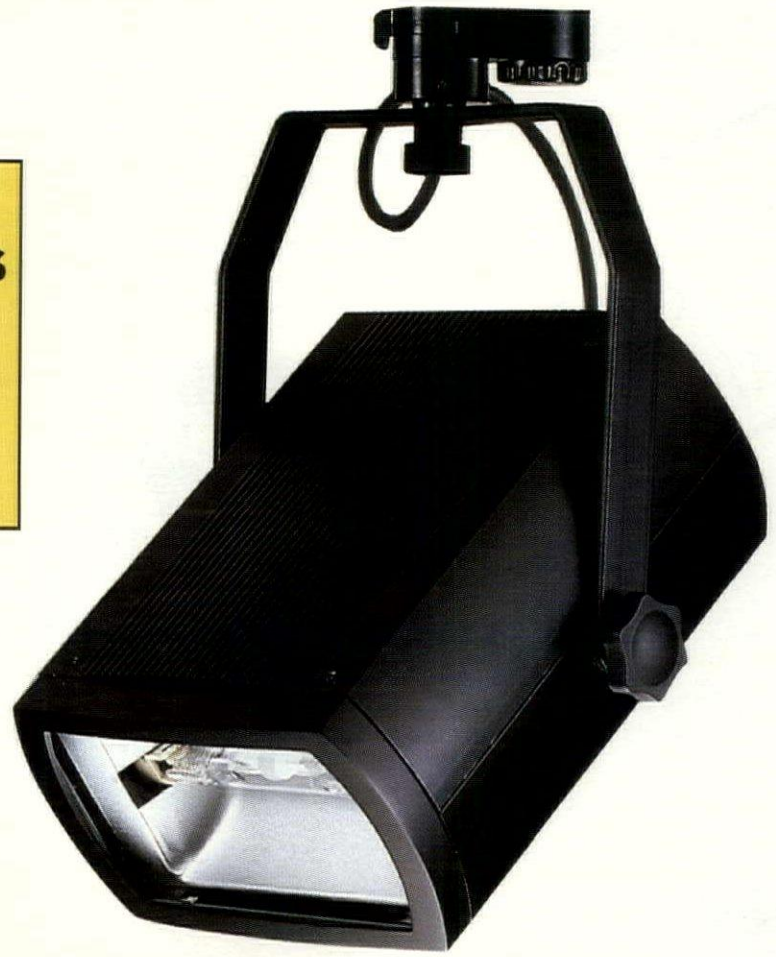


The Display Line from **Clay Paky** features four models—a range of compact projectors and attachments for designating areas and projecting logos or signs. Shown is the Versatile Image Projector (VIP 300), which utilizes an HTI 300 lamp. Two electrified guides can accommodate color wheels, dimmers, mirror (fixed or moving) and gobos. The VIP 250 ALO uses a 250W/24V halogen lamp. The VIP 300 DIA features 35mm slide projection. SIP 300 is designed for static image projection. ETL-listed. **Circle No. 191**





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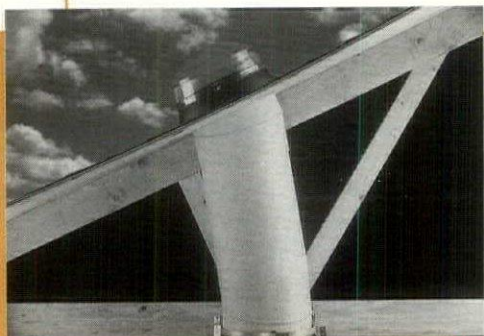
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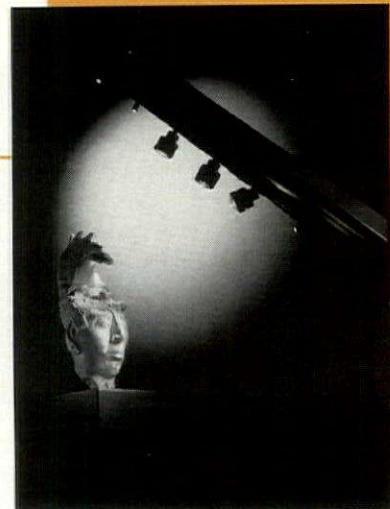
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fiber optics,
tools &
specialty

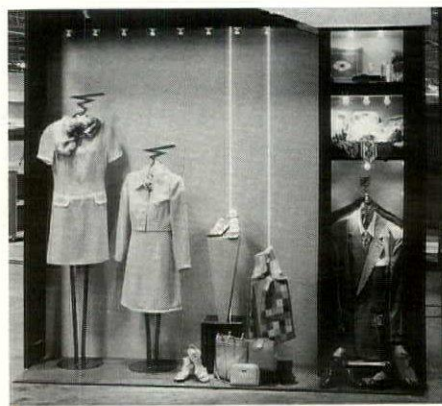
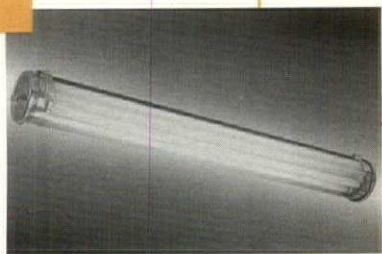
Solatube International Inc.'s 14-in. model features Raybender technology and a rough-in assembly kit specifically engineered to facilitate installation in the phase prior to dry wall installation in new construction or remodels. The 14-in. model gathers and distributes natural light down through a shaft of Spectralight 2000 tubing into an interior space covering up to 250 sq. ft. Optional integrated light for nighttime lighting is available. Sealed to lock out dust, bugs and moisture, Solatubes are guaranteed by a 10-year product warranty. **Circle No. 99**



Lighting Services Inc.'s fiber-optic lighting system is comprised of a remote light source (illuminator), "tails" or bundles of light carrying glass optical fibers (harness), and lighting instruments (lightbars and fixtures). Illuminators are available in metal halide (150W, 6000-hour life) and tungsten halogen (50W, 5000-hour life). Fiber-optic lightbars and fixtures eliminate UV and infrared wavelengths, making them suitable for museum case lighting and retail lighting. UL- and CUL-listed. **Circle No. 100**



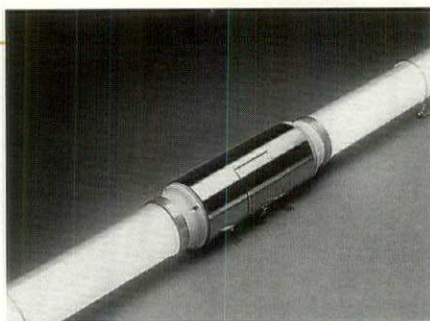
Designed by **Guth Lighting** for the food processing industry, Enviroguard Tube's cylindrical shape allows moisture or workplace debris to roll off the fixture. An extruded, high-impact DR acrylic or polycarbonate lens is sealed at both ends with neoprene O-ring gaskets secured by tooled stainless-steel end caps. Pre-wired housing stainless-steel hangers facilitate installation. Illumination is provided by 32W Octron T8 or rapid-start/HO T12 linear fluorescent lamps up to 110W. Available in 4- or 8-ft. lengths, suitable for wet locations. C2 certified by NSF. UL-listed. **Circle No. 101**



Unison Fiber Optic Lighting Systems, featuring OptiFlex light pipe, provides focused or multiple points of light from a remote source to spotlight products in retail display applications. The system does not emit any heat or UV light, and multiple light ratios are achieved within the display case from a single light source. Special effects, including color changes similar to

neon, can be created with OptiFlex side-emitting light pipe. Distributing light from 8 to 50 ft., OptiFlex is solid core fiber-optic cable, available in both side- and end-emitting versions and various diameters. UL-listed. **Circle No. 102**

TIR Systems Ltd.'s Series 6000 fiber-optic light fixture is available in a wide range of anodized or painted colors. The fixture uses 250W or 400W metal halide lamps in indoor and outdoor applications. It features a specially designed reflector maximizing the amount of light entering the light guide, easy relamping, flexible liquid tight conduit and a simple two-piece track mounting system. UL-listed. **Circle No. 103**

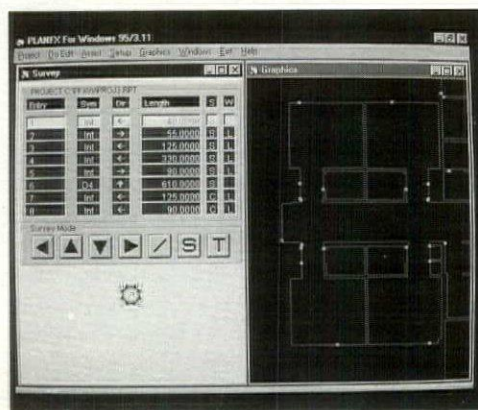


Formelle Glass Panels by **Leucos** can be used individually within doors, walls or ceilings to create detailing, or mounted as a series of modular components within metal or wood frames. Formelle is available as single-glazed interior panels, or as double-glazed panels, shatterproof-glass panels and triple-glazed panels with bulletproof glass for both interior and exterior applications. The panels have been packaged with suggested framing systems and tested for all residential and commercial specifications. **Circle No. 104**



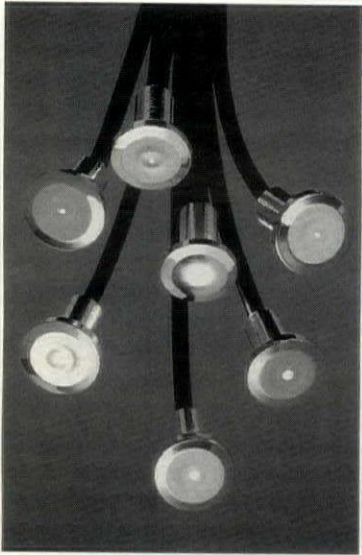
The interactive CD-ROM, "An Introduction to Lighting," initially developed by **Osram Sylvania** as a sales tool for its General Lighting sales force, is now available for specifiers. The six major sections included on the CD-ROM are lighting basics, incandescent and halogen sources, fluorescent and compact fluorescent sources, HID sources, electronic control systems and a final exam. Photographs, instructive sights and sounds highlight the CD-ROM, which is compatible with Windows 3.1 and Windows 95. **Circle No. 105**

Cesar Color Inc.'s new laminated architectural design glass, GlassFresco, combines continuous tone color imaging with interlayer technology. GlassFresco is offered in a standard line of 50 images manufactured in 36 standard sizes up to 50 in. x 120 in. Custom images are available. Designers can work with a variety of materials to create customized graphics with photographic quality in opaque, transparent or translucent glass laminations. GlassFresco is certified to meet all code requirements for safety glazing. **Circle No. 106**



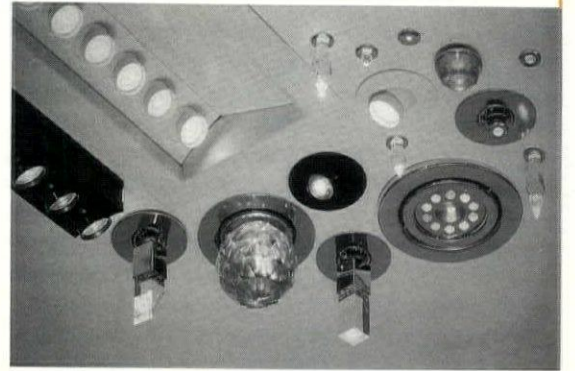
conversion to a CAD drawing. Available in DOS, Windows 3.1, Windows 95 and Windows NT versions, PlanFx works with most existing CAD programs and can be utilized by most existing CAFM programs. **Circle No. 107**

PlanFx Measurement Services & Software's PlanFx captures site data and converts it to a DXF file for importing into existing CAD programs. PlanFx is programmable, allowing users to modify it to suit specific recording requirements, such as lighting design. On-site accuracy to 1 mm or 1/16 in. is ensured with built-in error checking and closure routine before conversion to a CAD drawing. Available in DOS, Windows 3.1, Windows 95 and Windows NT versions, PlanFx works with most existing CAD programs and can be utilized by most existing CAFM programs. **Circle No. 107**

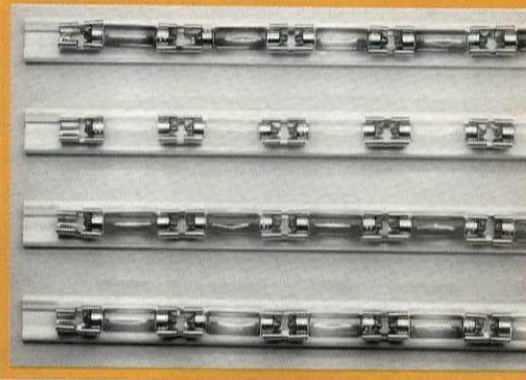


The Fiberstar FE-9000 Series of small-scale point-source accent lighting fixtures from **Fiberstars, Inc.** is designed for commercial and residential decorative ceiling accent lighting applications. Each of the six models requires minimal ceiling clearances; up to 300 points of light can be illuminated by a single illuminator. Fiberstar FE-9003 and 9004 contain Swarovski cut glass crystal, available with 15mm or 30mm light heads that cast diamond-like light patterns. FE-9001 comprises semi-recessed light heads available with 0.5mm, 1.0 mm and 2.00mm aperture openings. FE-9002 features a 5.0 mm domed lens. UL-listed. **Circle No. 110**

Swaro Lite Crystal Architecture point-source fiber-topic light fixtures from **Starfire Lighting, Inc.** comprise tiny spheres of faceted and pointed, round or half-round, cut optical crystal from D. Swarovski & Co., encased in miniaturized metal housings. Lens shapes can be integrated into system-specific designs for zoned room, area and task lighting. These can consist of multiple points of light in rows or other designed configurations; wallwashing and illumination of objects; and showcase lighting. UL- and CUL-listed. **Circle No. 109**

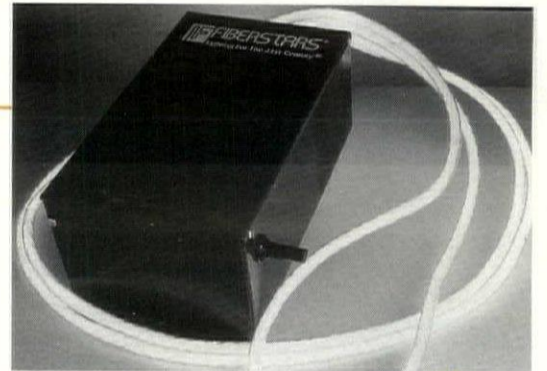
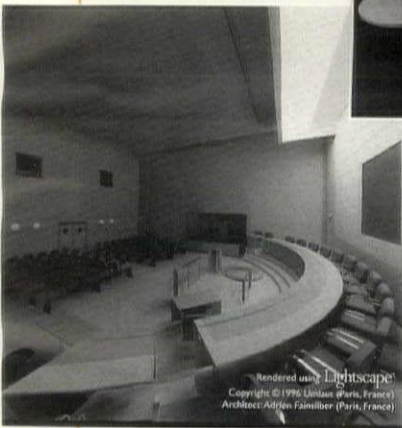


Ardee Lighting's Klikstrip, a low-voltage linear strip lighting system, provides high-output accent lighting for hospitality, recreational and commercial interior applications, including architectural profiles, coves, cornices, staircases, workstations and display cases. Klikstrip conforms to concave or convex profiles and can be specified in any length and lamp spacing, and with colored lights. Halogen inserts allow MR11 and MR16 halogen lamps to be used in place of (or in combination with) incandescent, argon or xenon festoon lamps from 3W to 6W. UL-listed. **Circle No. 111**



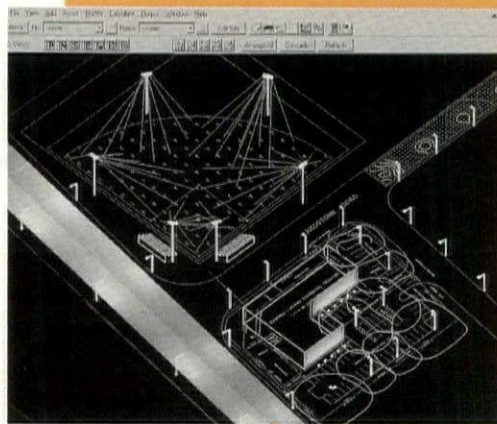
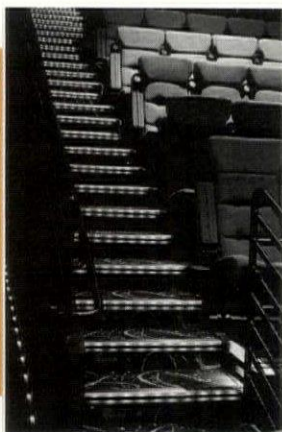
Lightscape Technologies announces its Lightscape 3.1 upgrade adding significant performance improvements to Lightscape 3.0, increasing speeds by as much as 10 percent, as well as providing enhanced interactive viewing, usability and interface features. **Circle No. 112**

Lightscape Technologies' next generation of Lightscape version 3.0 for Windows NT and Windows '95 provides high quality 3D visualization easily accessible to a broad base of users. Lightscape is the first advanced visualization and lighting application offering radiosity technology combined with an integrated ray tracer and physically based lighting. The radiosity technology produces subtle yet significant lighting effects including direct and indirect diffuse lighting, soft shadows and color bleeding between surfaces. **Circle No. 113**



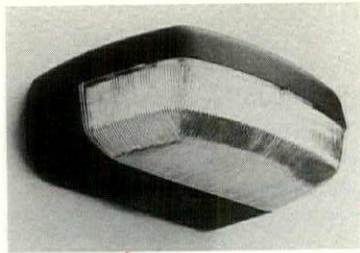
Fiberstars, Inc.'s Model 405 fiber-optic illuminator provides intense, even light distribution from a 150W metal halide HID light source. It yields up to 50 percent more brightness than its immediate predecessor, the 403 illuminator. The light source operates at 3000K to 4000K and is illuminated by an electronic power supply with a quick-start feature. Fiberstars can wire the power supply to accommodate line voltages from 100V to 277V for different applications. The illuminator measures 16 in. long x 6 in. high x 8 1/2 in. wide. Optional built-in computerized controls provide custom operating effects. UL-listed. **Circle No. 114**

Tivoli Industries' Lumitred illuminated step lights feature scuff-resistant, translucent step material that lights and defines stair edges with uniform illumination. Lumitred can be used to light the riser and the tread and is available in a field-cuttable option, or in precut and wired individual steps. An LED option is offered in amber, green, red or yellow; an electroluminescent version is also available. UL-listed. **Circle No. 115**

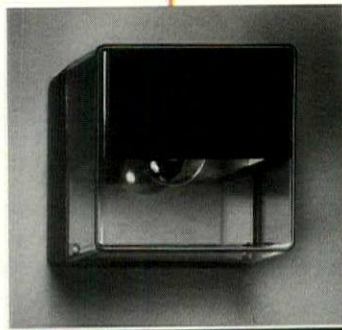


Lighting Technologies, Inc.'s Lumen Micro version 7.5 is a comprehensive indoor and outdoor lighting design, analysis and specification program for Windows 95 and NT. **Circle No. 116**

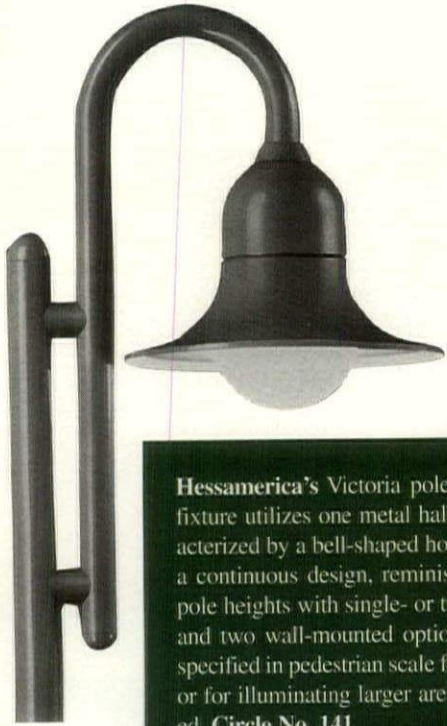
outdoor/landscape



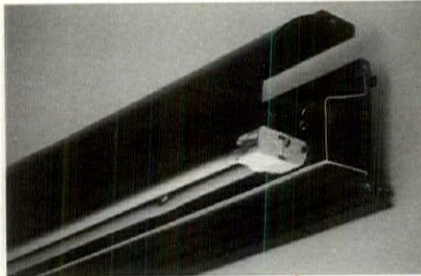
C.E.W. Lighting Inc.'s Spartan WPD Series wall pack is available in black or white with a durable polyester coat finish. Features include a die-cast aluminum housing and UV stabilized acrylic refractor. Accepts both metal halide (50-70W) or HPS (35-70W) light sources. Available in 120, 208, 240 and 277V. UL-listed. **Circle No. 138**



Rud Lighting's SE Series offers four optical systems in either 8-in. or 12-in. die-cast aluminum housings. Multiple knockouts and two convenient 1/2-in. conduit entry plugs allow for ease of installation. Available lamp wattages range from 50-175W metal halide, 35-150W HPS and 26W fluorescent. UL-listed. **Circle No. 139**



Hessamerica's Victoria pole-mounted landscape area lighting fixture utilizes one metal halide or HPS lamp. Victoria is characterized by a bell-shaped housing and curved mounting arm in a continuous design, reminiscent of historic city lights. Three pole heights with single- or twin-bracket mounting arm options and two wall-mounted options are available. Victoria may be specified in pedestrian scale for mounting at 12- or 15-ft. heights or for illuminating larger areas at 18- to 20-ft. heights. UL-listed. **Circle No. 141**



SignMaster fixtures from **Quality Lighting** are designed to minimize light pollution from illuminated roadway signs. SignMaster's adjustable, computer-enhanced Alzak-coated aluminum reflector system and its tempered flat-glass lens eliminate skyglow from its source. The angle of the reflector is adjustable through 16 degrees. An integral gauge in the reflector numerically indicates degree angle and locks in place. The fixtures uses a range of HID high-output lamps up to 750W. UL- and CUL-listed. **Circle No. 140**

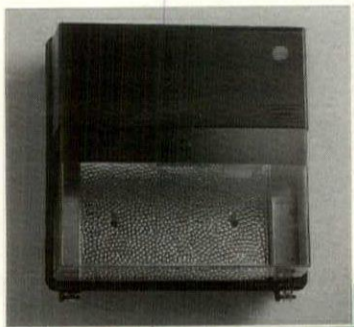


Baldwin Hardware Corporation's brass exterior lighting collection consists of four solid brass silhouettes in carriage, square, round and hexagonal body styles. All styles come with Baldwin's patented Lifetime Finish to protect brass from tarnishing and other material defects. UL-listed. **Circle No. 142**

Bronzelite has expanded its bollard and beacon line to include seven new models. The new fixtures are designed for heavy-duty use. The RFHD and RCHD models utilize a 6-in.-diameter base. The upper housings are made from die-cast aluminum and can be specified with a flat or coned head. The potted core and ballast of the models are suspended 18 in. above ground with a modular twist-lock system for trouble-free operation. UL-listed. **Circle No. 143**



The Spartan FB Series floodlight from **C.E.W. Lighting Inc.** produce four beam patterns. Available in 250W, 400W and 1000W for metal halide and HPS. A range of voltage and photocell options as well as vandal shields and light control accessories are available. UL-listed. **Circle No. 144**



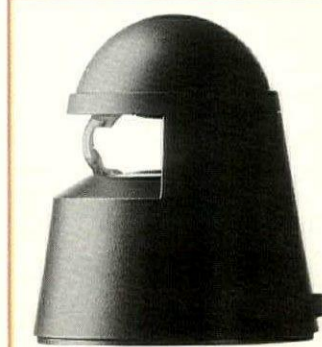
Hubbell Lighting's Perimashield II Polycarbonate PRS Series exterior wall pack is suited for applications where a sharp or shielded cutoff effect is needed. The wall pack has a field-adjustable socket that optimizes cutoff light distribution. With a four-to-one spacing-to-mounting height ratio and typical mounting height of 12 to 18 ft., the series provides security and general illumination for commercial and architectural exterior walls, and area lighting for parking lots, office buildings, stores, etc. Units can be single or back-to-back post-top mounted with the PVL-PT adapter for use in areas away from buildings. CSA-approved. **Circle No. 145**



Campo from **Hessamerica** is an indirect pole and wall-mounted outdoor area lighting fixture. Campo features a vertically arched wing-shaped reflector mounted to the finned lower housing by two cast-steel arms. Dual adjustment wheels allow the wing to pivot in 15-degree increments. Campo is offered in two sizes: CA450 is 27 in. long x 18 in. wide and mounts on a 12-ft. pole; CA770 is 39 in. long x 23 in. wide and mounts on a 22-ft. pole. UL-listed. **Circle No. 146**

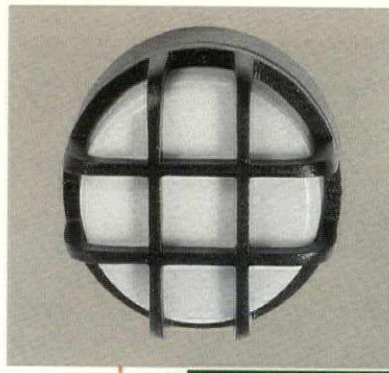
The Low Level Directional Luminaire from **Bega** is designed for the illumination of walkways, pathways and open landscape areas from a low level. Its rugged construction uses die-cast aluminum, heavy cast glass and stainless steel. The fixture delivers 180- or 360-degree lighting distribution from an internal optical system. Suitable for wet locations. UL-listed. **Circle No. 148**

SPI Indirect Lighting Systems introduces Wet Location Echo. All-new extruded aluminum housings, in lengths up to 8 ft., provide the structural integrity and corrosion resistance for wet locations. New weathered finishes are available. Opticals up to 85-percent efficient accommodate linear fluorescent, metal halide and halogen in single- and multiple-lamp configurations. Integral and remote ballast options. UL-listed. **Circle No. 147**





Bega Lighting introduces a new general purpose floodlight (Product #B8402) for the illumination of plantings, trees, walls and signage. The fixture utilizes tungsten halogen, compact fluorescent or metal halide light sources. All die-cast aluminum and stainless steel construction for corrosion resistance. Tempered glass. Fully adjustable swivel mounting. Fully enclosed and gasketed, suitable for wet conditions. UL-listed. **Circle No. 149**



Architectural Landscape Lighting has added four fixtures to its BL-Series of specification-grade, building-mounted, landscape lighting fixtures. These four new fixtures are BL-36, 38, 44 and 45. Each fixture housing is cast aluminum, with a high-impact clear glass or opal polycarbonate lens and extruded silicon gasket for a water-tight and bug-free seal. Fixtures accommodate a range of long-life compact fluorescent or HID light sources. UL- and ETL-listed. **Circle No. 150**

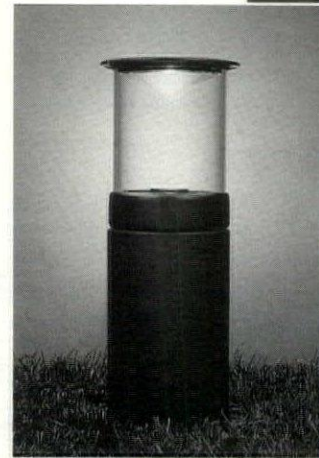
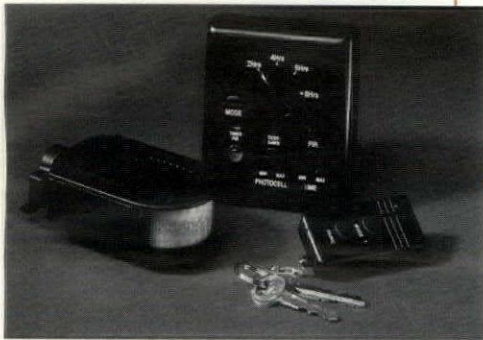
Phoenix Products Company, Inc. introduces the MG Series fixture, a landscape fixture made of corrosion-resistant copper-free aluminum. The internal optic system is controlled by two exterior set screws that allow for 30-degree vertical and 360-degree horizontal aiming. Once the lamp is aligned, the system locks into place. The MG Series accepts single-ended medium base ED-17 HID lamps to 175W; PAR38 metal halide to 150W; incandescent PAR38 to 250W; double-ended metal halide lamps to 150W; and double-ended quartz up to 300W. UL-listed. **Circle No. 151**



Selux Corporation announces the introduction of Beta, a new line of exterior lanterns. The Beta is a combination of modern lighting technology and historical form based on the traditional gas lantern. Available in either pole top, wall mount or pendants with asymmetric light distribution. UL-listed. **Circle No. 152**

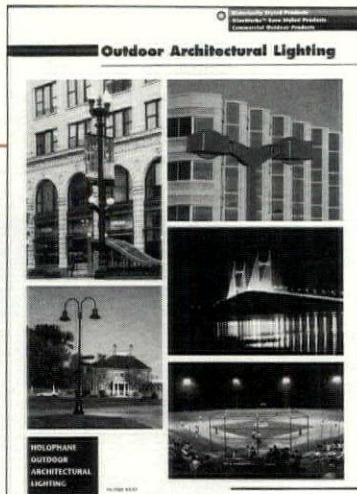


The Lyte Command exterior security lighting system from **Hadco** includes a command module, two motion sensors, and two hand-held remotes. The system detects motion with infrared sensors; the hand-held remote allows one to override the command module and turn on the lights at the push of a button. UL-listed. **Circle No. 153**



The Retractable Bollard (DR Series) from **Ruud Lighting** offers illumination by night that retracts and conceals itself during the day. Choose low-voltage (12 V) or line-voltage models with MR16 halogen lamps up to 50W. An 18W T5 wedge-based halogen model is available. The bollard features a variety of optical systems. UL-listed. **Circle No. 154**

Holophane's new *Outdoor Architectural Lighting Guide* includes a section that describes the requirements for different types of outdoor lighting such as street lighting, parking areas, walking paths and residential areas. The guide features fixtures from three main categories: Historically Styled Products, GlasWerks Euro Styled Products and commercial Outdoor Products. Typical configurations, photometrics, specifications, options and accessories, as well as an ordering guide are included. **Circle No. 155**



Stonco offers a new catalog of its line of interior and exterior lighting fixtures and accessories designed for use with HID lamps. The illustrated 1442-page catalog provides detailed information on Stonco floodlights, area, industrial and landscape lighting fixtures and accessories. Included are vapor-tight fixtures and lampholders, plus lighting photocontrols and motion detectors. A technical section as well as product specifications, ordering information and diagrams are included. **Circle No. 156**



Prescolite-Moldcast's Pedestrian ContraCline pole-mounted outdoor fixture features an optical system designed to provide low-glare illumination of roadway, pathway and area applications from 10- to 16-ft. mounting heights. The tiered reflector system is housed in a traditional "acorn" globe reminiscent of turn-of-the-century gas lanterns. UL-listed. **Circle No. 157**

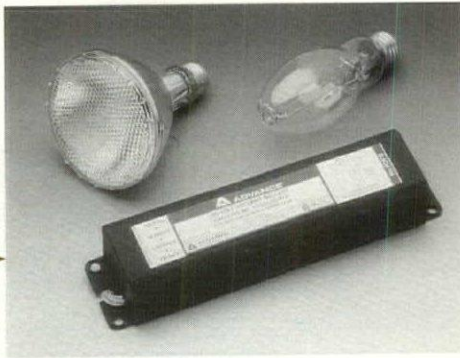
The K2Series from **B-K Lighting** utilizes a PAR38 metal halide lamp, including MasterColor lamps, in 70W, 100W and 105W. The fixture is available in three different cutoff configurations and can be combined with optical, accessory and ballast options. **Circle No. 158**



Sterner Lighting Systems' compact Infranor Capella-5 floodlight delivers three different rectangular beam patterns (narrow, medium and wide) that provide precision-controlled distributions (the narrow beamspread is 5 degrees wide in the vertical plane and 95 degrees wide in the horizontal plane). For instant on/off capabilities, a quartz lamp can be specified; for long lamp life and high color rendering, use a metal halide ceramic arc tube lamp can be used. UL-listed. **Circle No. 159**

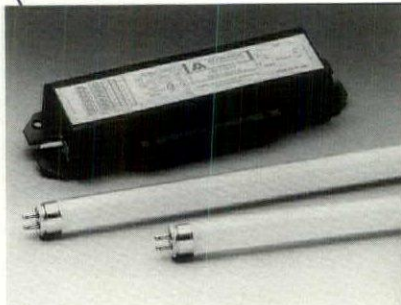


lamps/ballasts



Advance Transformer Company's F-Can magnetic ballast is suited for 120V metal halide track and down-lighting applications. Measuring 8 1/2 in. x 1 1/16 in., the single-component ballast is shorter, slimmer and lighter than standard HID F-can ballasts. The ballast operates 35W M130 metal halide lamps. UL-listed. **Circle No. 161**

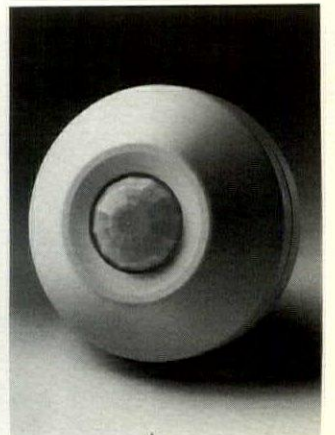
Less than an inch in height, Advance Transformer Company's Low-Profile Ballasts feature built-in electronic starters to ignite lamps, eliminating start-up flicker and the need for the starter, socket and related wiring required by external starters in conventional preheat ballasts. The one-lamp ballast operates one F8T5 (12-in.) or one F13T5 (21-in.) lamp. The two-lamp ballast operates one, two or a combination of F8T5 and F13T5 lamps. The ballasts operate five lamp combinations and five fixture lengths: 12, 21, 24, 33 and 42 in. UL-listed. **Circle No. 162**



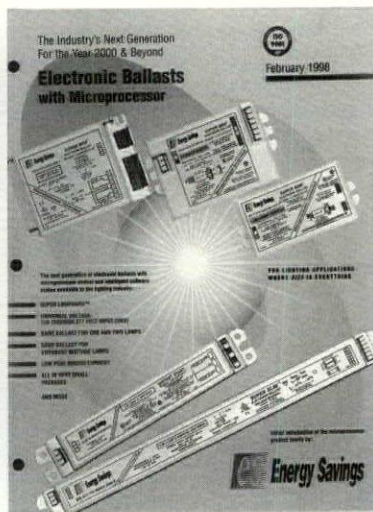
LG Industrial Systems USA, Inc.'s E-Series of instant-start electronic ballasts for commercial and industrial use features less than 10 percent total harmonic distortion, quiet operation (Class A+) and a power factor of greater than 99 percent. The E-Series includes one- and two-lamp ballasts that weigh one pound and are 1.83 in. wide. UL-listed. **Circle No. 160**



The Self-Contained Passive Infrared Ceiling Mounted Occupancy Sensor Switch from Leviton Manufacturing Company is designed for automated lighting control of open areas in commercial, institutional and industrial applications. Cat. No. 16786-120 contains a sensor and switching relay in one unit and provides a 360-degree field of view that is 40 ft. in diameter from an 8-ft. ceiling. The unit is rated 800W at 120V AC incandescent, 1200VA at 120V AC. No. 16786-277 is rated 2700VA fluorescent at 277V AC. UL-listed. **Circle No. 163**



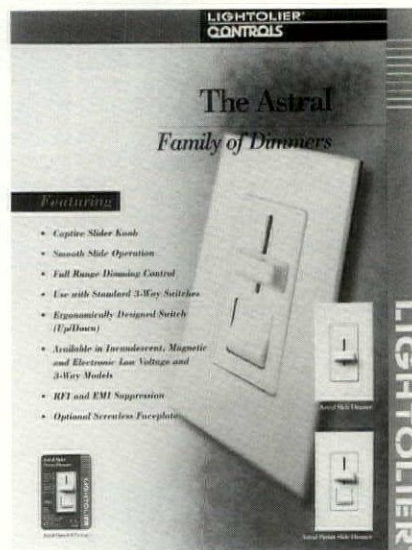
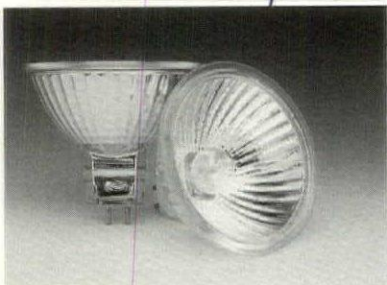
Energy Savings, Inc.'s brochure describes a new product line of electronic ballasts with microprocessor control and intelligent software. The ballasts enable SuperLampgard; Universal Voltage of 120V through 277V input; same ballast for one and two lamps; and same ballast for different wattage lamps. All features are offered in small packages for compact, T8, T5, T2 and Biax lamps. **Circle No. 165**



The Bodine Company introduces B33, a three-lamp parallel emergency ballast for use with three FO32 T8 fluorescent lamps. The B33 is fully warranted for five years from date of purchase. Emergency illumination time exceeds the standards set forth in the current National Electric Code, Life Safety Code, and UL 90-minute requirements. UL-listed. **Circle No. 164**

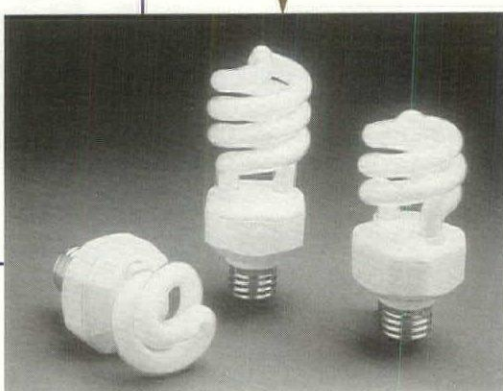


The new Tru-Aim IR MR16 by Osram Sylvania is a family of infrared-coated, low-voltage reflector lamps. The lamps feature Sylvania's UV-Stop quartz capsule and IR coating, which reduce UV radiation. An axial filament allows for a smooth beam pattern and the hard-coat dichroic reflector ensures consistent color throughout lamp life. The 37W Tru-Aim IR lamp is offered in narrow spot (10 degrees), narrow flood (24 degrees) and flood configurations (38 degrees), and is a direct replacement for dichroic reflector MR16 applications. Both 20W and 50W versions of the MR16 are expected later in 1998. The Tru-Aim IR MR16 is rated for 4,000 hours of lamp life. **Circle No. 166**



The Astral Family of mechanical dimmers from Lightolier includes 10 slide dimmer models including preset, three-way preset, low-voltage and quiet electronic versions. Astral dimmers feature a captive slider knob and an ergonomically designed on/off switch. Depending on the model, the dimmers can be used with a variety of standard light sources, including incandescent, quartz halogen and magnetic low-voltage loads. Easy to install, Astral comes in various faceplate colors. Matching screwless faceplates are also available. UL-listed for 120V AC, 60 Hz. **Circle No. 167**

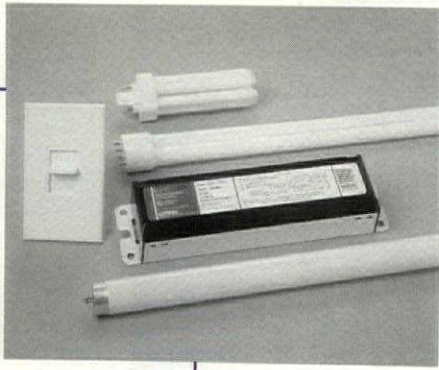
Spiral-lite from Litetronics International, Inc. is an electronically ballasted compact fluorescent lamp designed to replace incandescent lamps. The lamp's open-coiled shape allows for maximum axial and radial light distribution. Resembling an A-line incandescent lamp in size and shape, Spiral-lite is available in 9W, 11W, 15W and 20W. The largest, 20W, is under 6 in. high. UL-listed. **Circle No. 169**



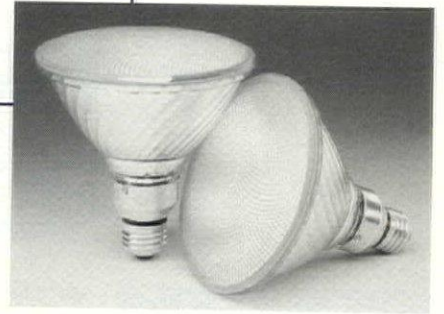
Litetronics International, Inc. introduces the 5,000-hour, 78W Coolray Halogen PAR38 lamp. A coating applied to the reflector allows heat to escape from the back of the lamp while directing the light out front. Coolray XL, designed to light heat-sensitive areas, has the same light intensity throughout its lamp life as a 100W incandescent PAR38 lamp. A patented inner halogen burner mounting system locks the inner burner in place to ensure optimum focus. **Circle No. 168**



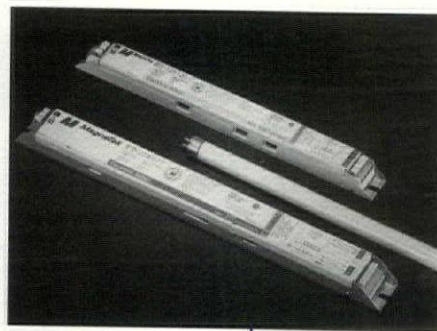
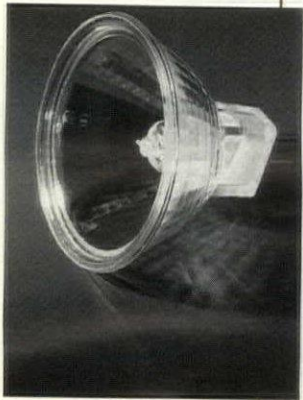
From **Lutron Electronics Co., Inc.**, the new Eco-10 10V Option electronic fluorescent ballasts dim T4, T5 and T8 fluorescent lamps and can be used with one-, two- and three-lamp fixtures (120V or 277V). Control signals are low voltage 0-10V DC. Eco-10 ballasts are available for a variety of 120V and 277V T5 twin-tube, T8 linear and U-Tube lamps, as well as 120V 32W 4-pin compact fluorescents. UL-listed. **Circle No. 170**



Osram Sylvania's family of Capsylite SPL PAR38 products features redesigned parabolic aluminized reflectors and a spiral pattern that work together to provide smooth beam performance, eliminating unwanted stray light and uneven beam delivery. A precisely focused tungsten halogen capsule and improved optics enhance the efficiency of the reflector system by maintaining maximum lumens in the beam. The new Capsylite PAR38 lamps are available in 45W, 60W, 75W, 90W and 120W versions. **Circle No. 171**

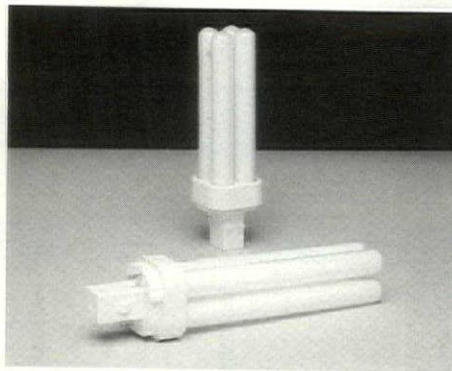


Wiko's SoLux product line now includes halogen, full visible spectrum lamps in 4100K and 3500K. With a spectral power distribution that is smooth, continuous and full, SoLux accurately simulates daylight at the respective color temperatures, thus providing accurate color rendition. Engineered for very low UV and infrared emissions, the 12V 50W MR16 display lamps are available with beam spreads of 10, 17, 24 or 36 degrees. **Circle No. 172**



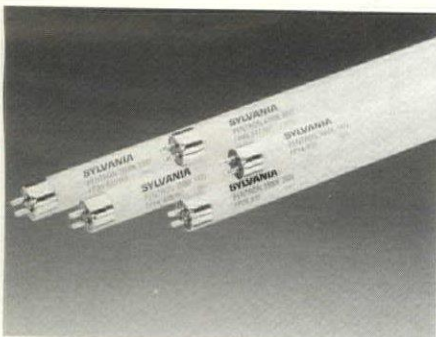
MagneTek's new T5 Linear Fluorescent Ballasts are designed for one- and two-lamp models with 21W and 28W lamps. The T5 ballast features constant lumen output with variation of input supply voltage, a ballast factor of 1.0 for rated lumen output, automatic reset shutdown circuitry for safe lamp shutdown, and a metal case for dual grounding options. Ballasts are available in 120V and 277V 60Hz as well as 230V 50 Hz. UL-listed. **Circle No. 173**

Panasonic Lighting introduces the Quick Start Collection of T4 Quad-Tube lamps. The T4 plug-in fluorescents, including 13W and 18W models, comprise a solid, single-ended ANSI standard two-pin base for operation with standard magnetic ballasts. The 13W model features a lumen output of 860 initial lumens and the 18W model features a lumen output of 1200 initial lumens. The lamps have a CRI rating of 84 and are available in 2700K and 4100K. **Circle No. 174**

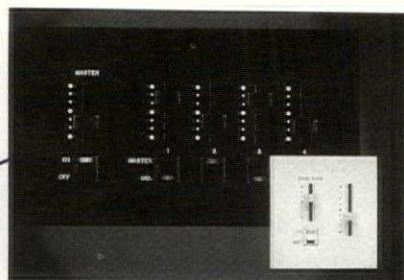


Venture Lighting's 400W UVGuard metal halide lamp shields UV light to prevent the yellowing of fixture lenses and can extend the life of a polycarbonate fixture lens 6-10 times longer than a non-UVGuard lamp. Compact and energy-efficient, the lamps are available in 50W, 70W, 100W, 150W, 200W and 350W. **Circle No. 176**

With their slim profile and high-output, **Osram Sylvania's** new Pentron and Pentron HO T5 (5/8-in. diameter) linear fluorescent lamps provide greater design flexibility and improved system performance over T8 and T12 lamps. The Pentron and Pentron HO lamps are available in 3000K, 3500K and 4100K color temperatures and feature a CRI of 82. Both lamp types provide 95 percent lumen maintenance over life and are rated for an average life of 16,000 hours. **Circle No. 175**



TecnoLux, Inc. introduces Incandescent 31 to the company's line of Ultra-Clean neon glass tubing. This phosphor-coated neon and cold cathode tubing replicates the color of a soft, linear incandescent light source. Incandescent produces 2300K light with a CRI rating of 86. Incandescent 31 is factory-sealed on both tube ends and is available in diameters ranging from 6mm to 25mm for neon and cold cathode manufacturers. **Circle No. 178**



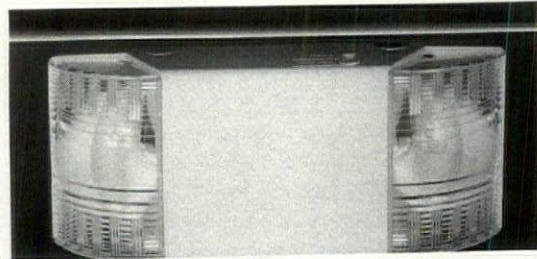
Three different series of controllers are available. ATS1 offers operator control with a choice of manual or automatic fade control for standard one-channel dimming. ATS1-EX allows up to 12 different lighting channels to be individually dimmed. ATS6 offers individual control of up to 12 dimming channels, plus the ability to master any or all of those channels. ATS6, used with a control assignment panel, is designed for applications requiring the ability to assign and reassign individual room control functions. UL-listed. **Circle No. 179**

Prescolite-Moldcast's ATS Controllers control lighting for simple to complex installations.



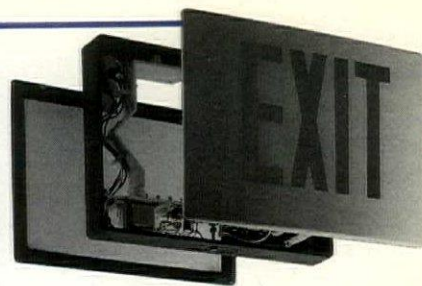
The DT-200 sensor from **Watt Stopper** offers new DIP switch settings, a smaller, attractive appearance and an improved and simplified mounting bracket. Incorporating The Watt Stopper's ASIC, Pulse Count Processing and Detection Signature Analysis technologies, the DT-200 operates by turning lighting on when both the PIR and ultrasonic technologies sense occupancy. The sensor features a user-adjustable time delay easily programmed with a DIP switch and a single-pole, double-throw isolated relay for interfacing with HVAC, EMS and monitoring systems. **Circle No. 177**

emergency

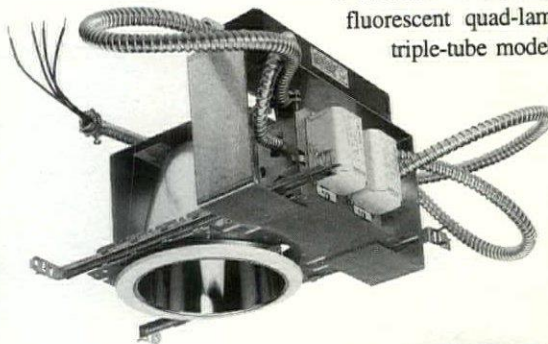


AstraLite's 9000 Designer Series Emergency Unit Light is designed as a contemporary-styled replacement for failed or poorly performing "bug-eye" emergency lights. The AstraLite 9000 utilizes fresnel optic technology and dual 5.4W T5 incandescent lamps. A full 90 minutes of emergency light is provided by the maintenance-free, 6V sealed lead calcium battery. UL-listed. **Circle No. 123**

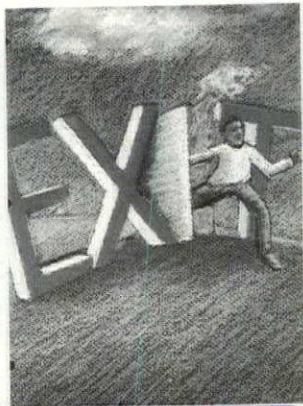
Compass Diecast Exit Signs from Prescolite Emergency, a division of Prescolite-Moldecast, are specification-quality LED exit signs that illuminate and mark paths of egress during emergency situations. The signs are completely self-contained, with battery and electronics inside the housing. Self-contained design allows ready access to all components for maintenance. High temperature, high-performance NiCad batteries provide a long operating life. UL-listed. **Circle No. 124**



Ruud Lighting's energy-efficient 6-in. Fluorescent Recessed Emergency fixture (R7FTEM) combines efficiency with the added safety of an emergency standby, nickel cadmium-powered ballast. The fixture includes two 13W fluorescent quad lamps and is available in 120V or 277V; a single 13W fluorescent quad-lamp version and 32W triple-tube model are also available. A variety of trim rings is available for all three versions. UL-listed. **Circle No. 125**

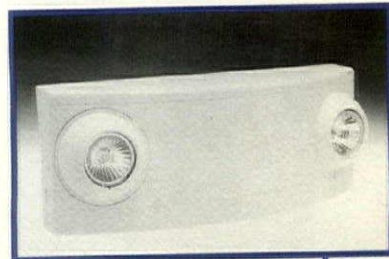


Alkco Lighting's four-page, full color brochure features the Edge-Glo line of edge-lit exit signs. The signs employ LED technology and feature "floating" letters on a clear, injection-molded panel. An operating-cost chart comparing Edge-Glo to standard illuminated exit signage is included as are specifications, product options and ordering information. Edge-Glo is also available with T5 fluorescent lamps. **Circle No. 128**



High-Lites, Inc.'s full-color, 18-page brochure details the company's line of LED exit signs. The brochure features photos and an overview of High-Lites' commercial, industrial and "designer" exit signs, which use energy-efficient LED sources. Information on the self-diagnostic LED circuit feature and XL-100 LED lamps is also provided. **Circle No. 127**

The Liteforms Collection LZ Series of emergency lighting units from Dual-Lite features semi-recessed lighting heads—which make the units less obtrusive—and curved styling. Liteforms models use high-output MR16 halogen lamp assemblies. Snap-together construction, universal mounting knockouts and finger-touch lamp adjustments are designed to make installation quick and simple. UV-stable thermoplastic housing is available in black or white finish. Remote capacity, damp location, tandem (unit/exit) models are also available. UL-listed. **Circle No. 126**



NCQLP

National Council on Qualifications
for the Lighting Professions

Early Application Deadline: August 20, 1998
Final Application Deadline: September 18, 1998
Examination Date: November 7, 1998

Yes, please forward a copy of the 1998 LC Candidate Bulletin and add me to the NCQLP mailing list

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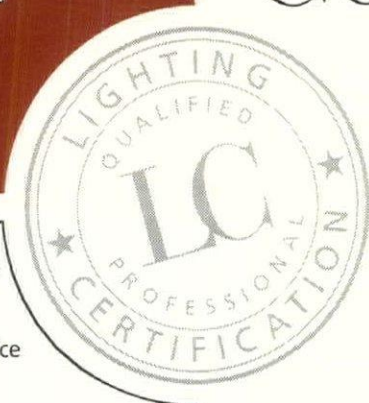
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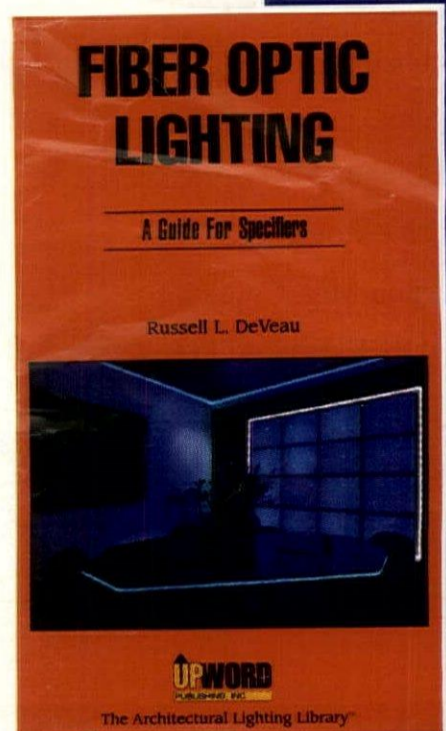
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