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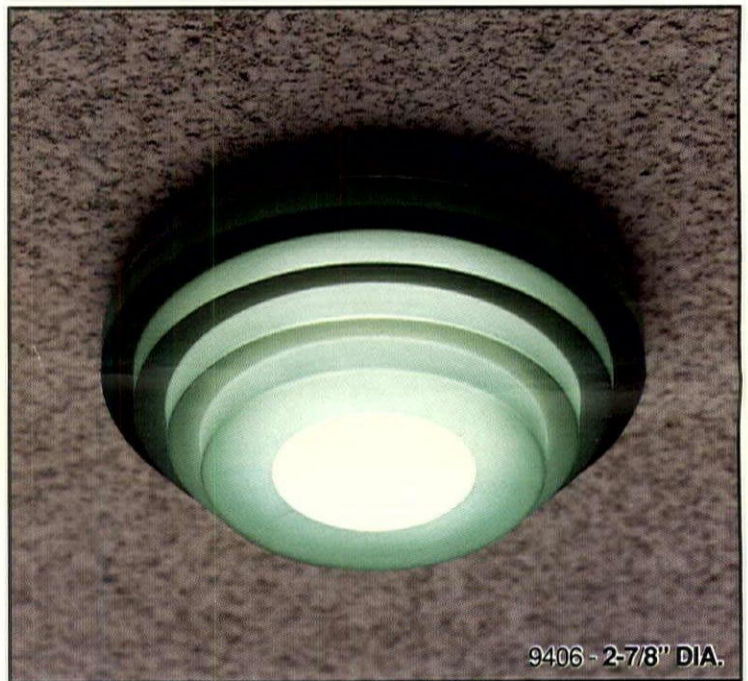
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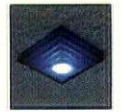
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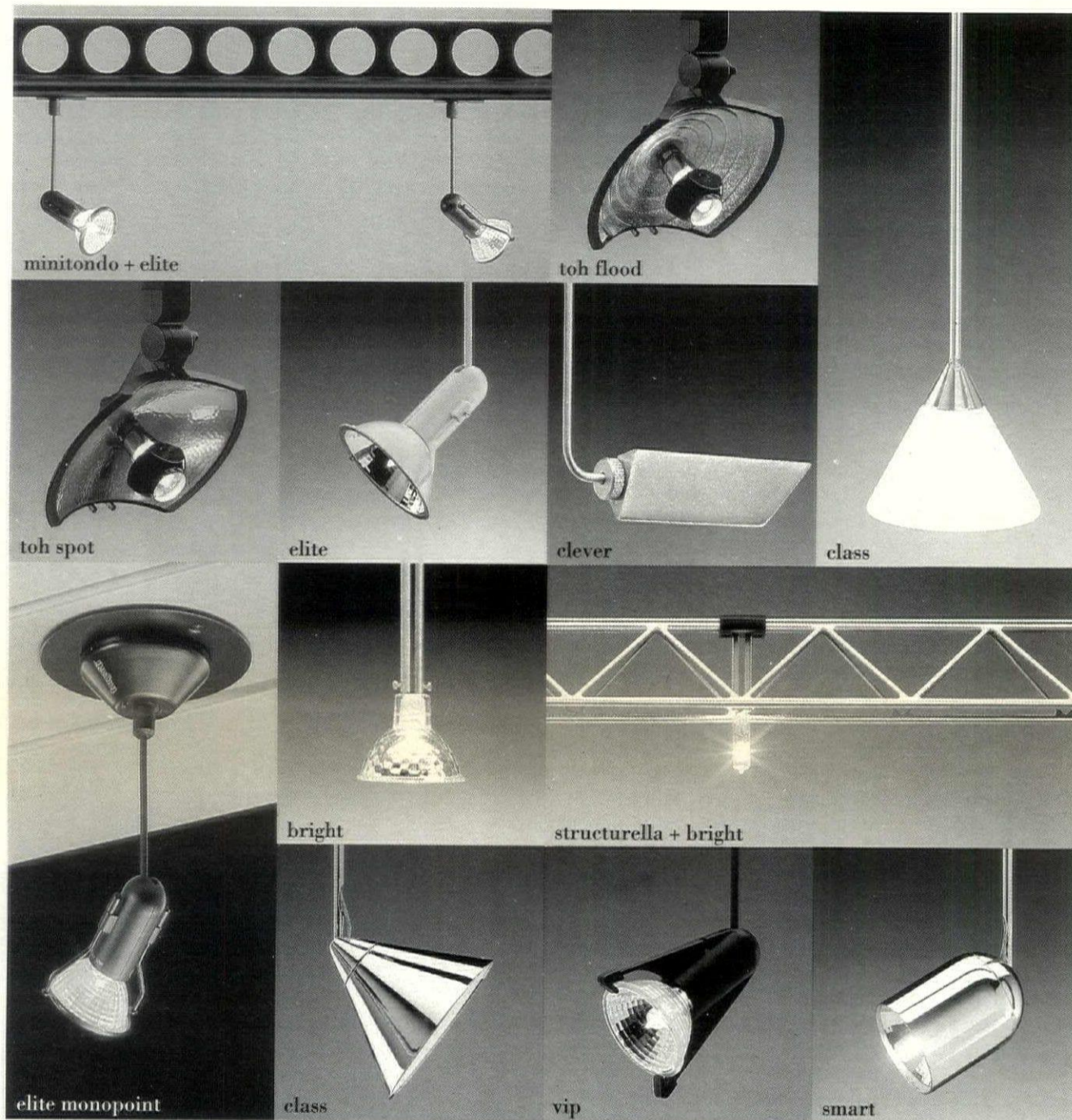


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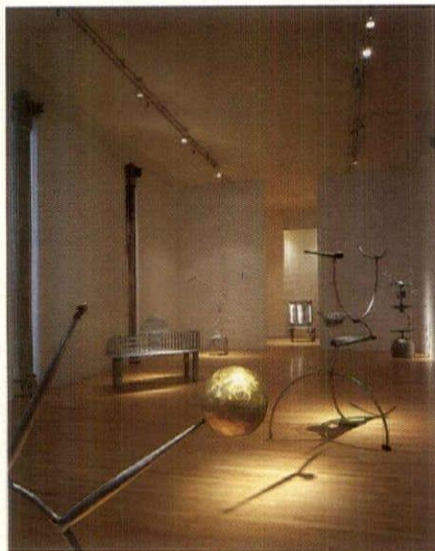
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# SHOWCASE



COVER PHOTO BY JOSEPH COSCIA JR.

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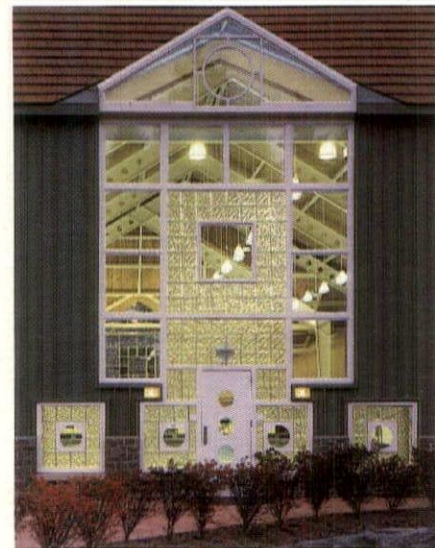
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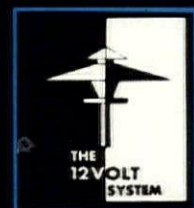
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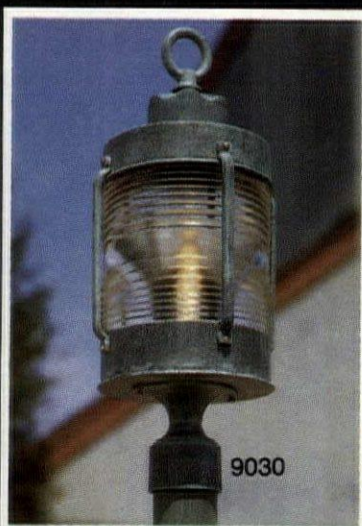
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## UPDATES

### IALD Awards At Chicago LightFair

The International Association of Lighting Designers (IALD) will present its annual lighting design awards in a gala celebration at the Art Institute of Chicago during Chicago LightFair '91. The move will further solidify the IALD awards' prominence by placing it in conjunction with the only industry-sponsored lighting exposition and conference. The special evening event will be co-sponsored by the IALD and *Architectural Lighting magazine*.

LightFair is scheduled for March 5-7, 1991 at the Chicago Merchandise Mart's Expocenter. The IALD awards presentation is set for 7:30 pm on March 6 in the Art Institute's Chicago Stock Exchange Trading Room designed by famed architect Louis Sullivan.

The evening will begin with a cocktail reception followed by a banquet, awards presentation and a spectacular laser light show.

The IALD Awards are given in recognition of lighting design that displays high aesthetic achievement backed by technical expertise, and which exemplifies a synthesis of the architectural and lighting design process. Excellence is judged in terms of the appropriateness, creativity and originality of the design solution to the project criteria and architecture.

Tickets for the 1991 IALD awards ceremony are \$85/person and may be purchased through registration for Chicago LightFair. In addition, corporate tables will be available. For more information, please contact Lynne Weller, communications manager, 240 Peachtree St. NW, Suite 2200, Atlanta, GA. 30303; or call (404) 220-2115 or FAX (404) 220-2136.

### Lumen Awards Call For Entries

The Lumen Awards Program is a lighting design award sponsored by the New York Section Illuminating Engineering Society (NYIES). The program is open to all NYC architects, designers, and engineers or projects within the Metro NY area. Submissions are due by January 11, 1991. For further information contact: Dee Murray with Lighting Dynamics at 212-268-9222.

### Singular Event For Multiples

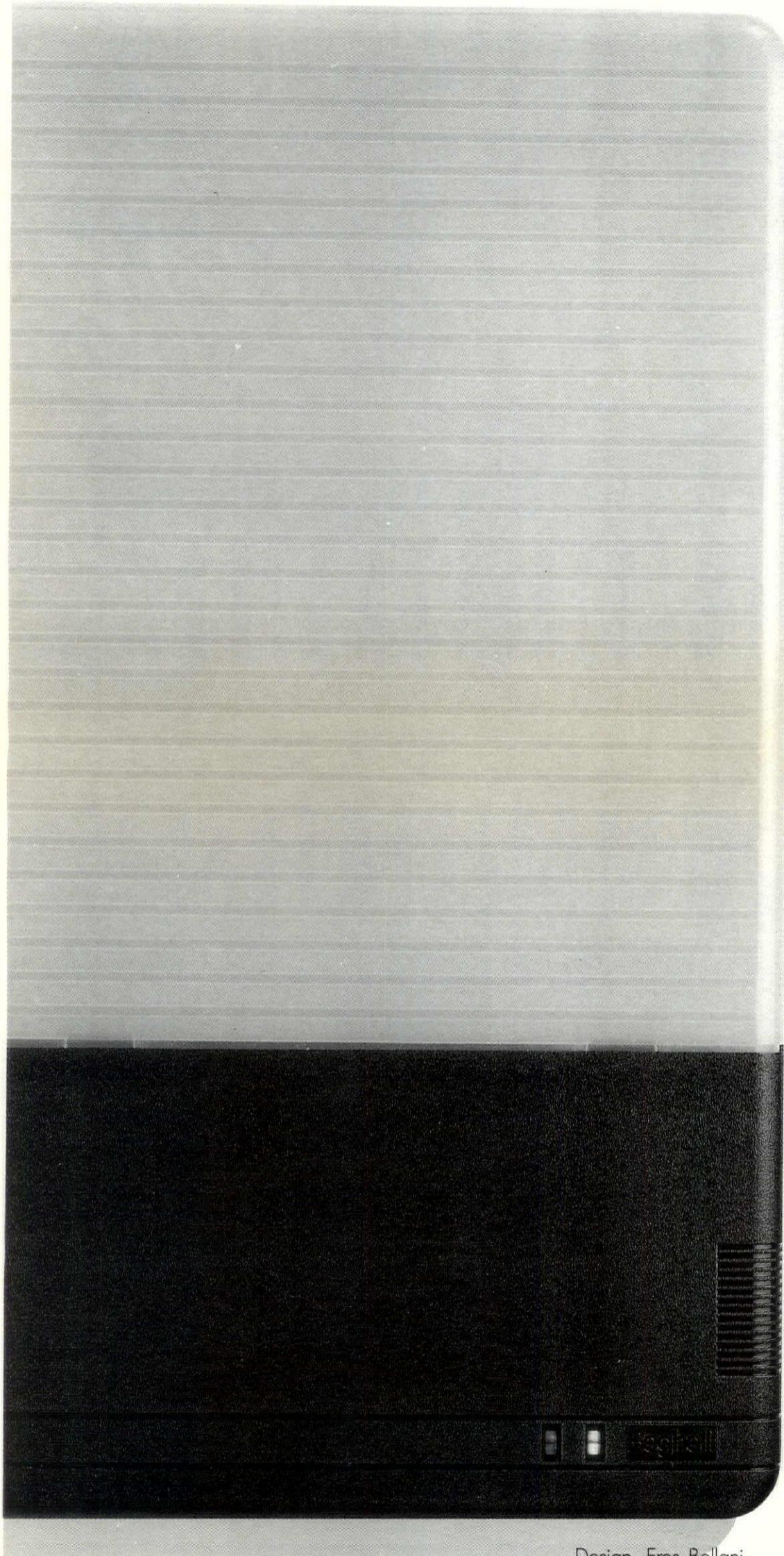
CSL Lighting Mfg., Inc. announces the unveiling of Multiples 948™ by designer Sergio Orozco, with an opening gala set for January 1991 at CSL's new showroom at the Dallas International Market Center, suite 3002.

Based on designer Sergio Orozco's credo of unifying art, design, and architecture, the Multiples 948™ collection of luminaires emphasizes interchangeability, with the possibility of creating 948 different looks from a family of basic fixtures, finishes, and shades.

### Rambusch Sconce Donated To Moving Image Museum

New York, N.Y.—The Rambusch Company recently made a gift to the American Museum of the Moving Image, Astoria, NY, of a lighting sconce (right) custom-designed and fabricated in 1928 for the Stanley Theatre. The Stanley was one of the many Warner Brothers theatres for which Rambusch created the decorative interiors, including custom fixtures. The wall sconce is fabricated of wrought iron, and silverplated hand hammered copper. This graceful uplight was designed by Leif Neandross of the Rambusch staff. The lower half of the cone-shaped unit features iron "pleated" in folds like a fan. The top of the "fan" is pierced by tiny holes forming squares through which light shines with a sparkling effect. This is in dramatic contrast to the even flood of light reaching upward from the scallop shape of the upper part of the sconce. All the light emanates from a single bulb. In addition to the Stanley lighting fixture itself, Rambusch has donated the original full-sized working drawing. Examining the drawing and the object a viewer can experience the progression from concept to finished object.





Design: Eros Bollani

## PRATICA INSIDE

## BELLA OUTSIDE

Beghelli, the Italian leader in emergency lighting products, has now created a totally new kind of lamp: PRATICA BELLA, Practical and Beautiful. Practical because it is easy to install and maintain. Beautiful because it is a creation of Italian design, which adds a pleasant and elegant look to emergency lighting.

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Masterline lamps can deliver added value to everyone who uses accent lighting to make merchandise more attractive, displays more dramatic, restaurants more appealing – and bottom lines more profitable.

Masterline Square MR-16 lamps, for example, use substantially less energy than comparable MR-16 lamps, with the same lighting results. Their unique design retrofits into most existing fixtures. New Masterline Round MR-16 lamps offer as much as 33% more light output than standard MR-16 lamps – enhancing the visual impact on merchandise without increasing energy consumption. And the dichroic

reflector design of Masterline MR-16 lamps protects merchandise from costly heat damage and fading.

Philips breakthrough in halogen lighting extends to PAR lamp applications as well, with the new Masterline Collection PAR 38, 30 and 20 halogen lamps designed to replace standard PAR and reflector lamps by providing energy savings and brighter, crisper accent lighting.

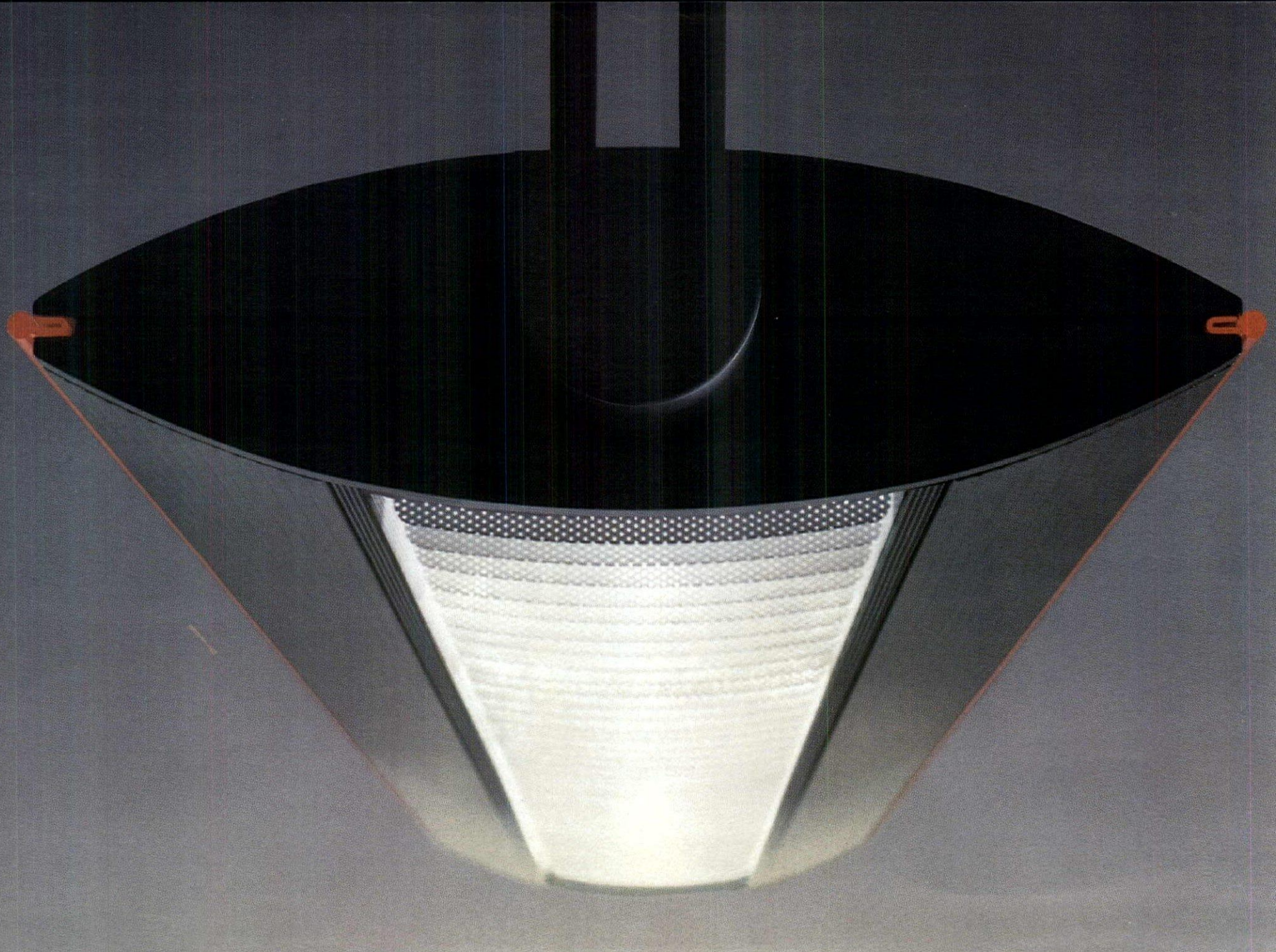
Masterline PAR 20 and PAR 30 lamps deliver more light out of recessed fixtures, thanks to their exclusive **long neck** design which allows retrofit into existing fixtures without the need for adapters.

Put a stroke of Halogenius into your accent lighting, with the new Masterline Collection of lamps from Philips Lighting. You'll discover one more reason why lighting professionals turn to Philips for innovations in high quality lighting. To get all the details on this new family of high performance halogen accent lamps, phone the Philips Lighting team at **1-800-631-1259**. You'll learn why the Masterline Collection sheds new meaning on the word accent.



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RESEARCH NEWS

# The Future Of Lighting Research

BY RICHARD L. VINCENT

The author is director of development and programs for the Lighting Research Institute (LRI), New York.

## LIGHTING AND PRODUCTIVITY

### POST OCCUPANCY EVALUATION (POE)

In a global economy that is increasingly affected by higher energy costs (Figure 1), lighting has been subjected to increased energy competition by new electrical devices and machines, from the electronic office to space heating and cooling. In the end, however, it is *worker productivity* that is driven by the ability to see the task, as well as the ability to sustain the visual effort to produce efficiently. The LRI has come to the conclusion that lighting and human performance is the central issue. Energy is there to be used, but with energy-efficient systems that are sensitive to the conditions of human performance.

The *Post Occupancy Evaluation (POE) Studies*,<sup>1-4</sup> were initiated by the American Institute of Architects Foundation and the Department of Energy. Collaborating with the two organizations, the LRI set out to define the visual environment and the relationships between luminance, lighting characteristics, and the presence of daylight in the office. The objective was to determine if there was a correlation between lighting power and

(CONTINUED ON PAGE 14)

**T**o understand the Lighting Research Institute's (LRI) impact on the architectural and design community, its most active research projects are summarized here. Most of the projects are available in printed form. Now, let's look at the future. . .



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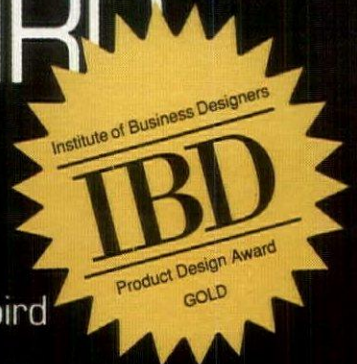
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# SPACEBIRD



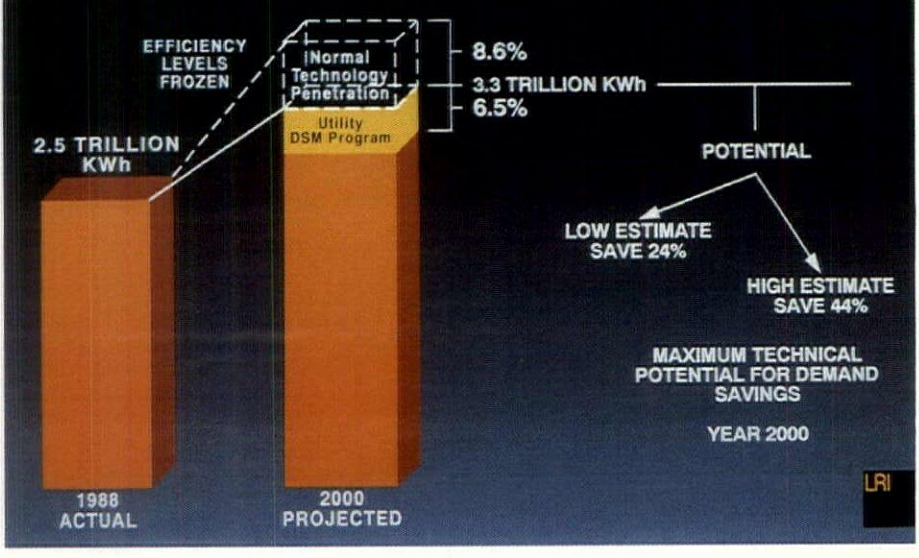
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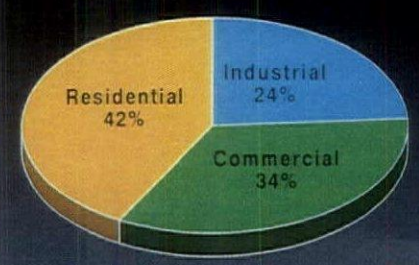
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## PROJECTIONS FOR YEAR 2000



## U.S. ENERGY DEMAND

1988: 2.5 Trillion KWh (\$162 Billion)  
 Electricity Revenue \$



Lighting 20% of Total or \$32 Billion

- 1973 - 1988
- Electricity demand up 2.7%/yr.
  - Commercial up 3.8%/yr. Residential up 2.9%/yr.

Based on past figures, the industry can expect higher costs unless immediate action is taken to improve human performance through research and design. Realizing that energy is there to be used, the LRI looks toward efficient approaches through research. Projections for the year 2000 are shown above. The pie-chart below shows U.S. energy demand 1973-1988.

### LIGHTING RESEARCH (CONTINUED FROM PAGE 11)

the occupants' satisfaction with the lighting. The project has evolved into several phases. In the first phase, a methodology for conducting *post-occupancy evaluations* of buildings was developed, pre-tested, and then used in the field. Now in its second phase, the project members are conducting an in-depth analysis from a database where the crucial relationships between different design parameters and the satisfaction of the occupants to the lighting design are considered. Data has been gathered from over 1,200 work stations in 13 office buildings. The data includes: direct measurements of the physical environment, associated measurements in the amount of space provided for each work station, response of the occupants to the general environment of the work stations, and a series of objective ratings of the lighting conditions. The POE data base is available to researchers on personal computers.

### HUMAN PERFORMANCE

Performance and productivity all narrow down to tasks, activities at work sites and offices, and alertness versus fatigue. The LRI studies on human performance have centered on the influence of lighting on the worker's ability to carry out tasks. In one study,<sup>5</sup> conditions were expressed in photometric terms, and objectives describe what is known and what must be known about the existing relationships between lighting and human performance. Another study<sup>6</sup> was concerned with achieving good lighting and, at the same time, providing a space that is conducive to the best psychological state of the individual. Measurements also included the psychological effects caused by stress. It was further determined<sup>7</sup> that ambient light has a substantial impact on nighttime alertness and performance. It may be that higher or lower illuminances will need to be applied at various times throughout the work shift, as needs warrant, to maintain alertness during night operations. The findings of these studies were presented at a major conference on lighting and human performance to guide LRI's current and future work in this area. The conference was sponsored by NEMA and LRI on April 25, 1989, in Washington, D.C.

## LIGHTING AND HEALTH

### TREATMENT OF MALIGNANT MELANOMA

Human health issues are now becoming a part of the working environment. The means by which the working environment is controlled can be beneficial or it can carry risks. For some years, the LRI has considered the extent to which some light sources may contribute to the human health issue. In particular, because it had been erroneously suggested that fluorescent light might contribute to the development of malignant melanoma, the LRI produced a carefully designed methodology<sup>8</sup> to process data for analysis. Arrangements were made with the Australian Bureau of Standards to measure the output of fluorescent lamps, and the actual epidemiology study is being conducted by Dr. R. MacLennan at Queensland Medical Institute in Brisbane. The study correlates the human life-pattern under fluorescent lighting and the possible risk of acquired melanoma. Related studies<sup>9</sup> in this area were conducted concurrently.

### ATTRIBUTES OF LIGHT

Many studies suggest that a new frontier is being developed in the alleviation of disease. For example, as the skin ages, it has a reduced capacity for producing vitamin D, and recent studies<sup>10</sup> may determine the amount of exposure needed to maintain good health in the aged and immobile.

Can light be used in the treatment of congestive heart failure? An ongoing study<sup>11</sup> suggests that positive therapeutic advantages can be gained by manipulating the biological clock. There are several explanations for this phenomenon, and defining these conditions is an important challenge for future research.

### HUMAN OCULAR SYSTEM

Studies<sup>12</sup> are also underway to consider the potential health hazard to the human ocular tissues from exposure to ultraviolet radiation. Findings may be useful in establishing standards for safe exposure to short-wavelength radiant energy.

It seems that there may be some beneficial aspects to ultraviolet in the development of mammals.<sup>13</sup> One exploration looked at the visual systems of younger humans to determine if environmental ultraviolet can be detected.<sup>14</sup> Given that UV-A reaches the retina of younger humans, it is important to determine if this "photic signal" is detected by the retina, and is processed by the developing visual system in the brain.

### HUMAN RESPONSE TO LIGHT

The LRI has recently undertaken a study of "human circadian rhythms." It asks the questions:

- How does the biological clock regulate the daily cycles of human activity?
- What is the state of knowledge in this area?
- Where should further work be encouraged?

Topics from jet lag to seasonally affected depression, to errors or accidents that may be caused by irregularities in the human body-clock are being examined.<sup>15</sup> "Anti-depressant and Circadian Phase-Shifting Effects of Light"<sup>16</sup> explores the theory that bright light is an effective treatment for seasonal (winter) depression. There is, however, no clear consensus on when the light should be administered. So far it has been shown that the symptoms of depression can be controlled when individuals are subjected to more or less light. Researchers now want to pin-down the amount of light needed, when the light should be administered, and how much light is needed to control the mood states of human beings.<sup>17-19</sup>

(CONTINUED ON PAGE 16)

### WHAT IS LRI?

FOUNDED IN 1982, the Lighting Research Institute (LRI), promotes and sponsors basic and applied research and development for all forms of lighting. As two organizations in one, the LRI and the Lighting Research and Education Fund (LREF) work toward fulfilling the industry's needs for credible research. While the LREF raises money for both the educational goals of the Illuminating Engineering Society (IES) and for LRI research, LRI promotes, sponsors, and manages research in lighting. In close alliance, the LRI and the IES determine future activities and establish their unified fund-raising programs.

Operating as a not-for-profit organization, the LRI selects its projects based on scientific and technical merit. In all respects, the research must meet the needs of the entire lighting industry, which includes manufacturers, designers, and utilities, as well as the users of lighting.

In planning its agenda, research topics recommended by such agencies as the National Institute of Standards and Technology (NIST), IES, Electric Power Research Institute (EPRI), National Electrical Manufacturers Association (NEMA) and the Department of Energy (DOE) are taken into consideration, as well as those research-funding agencies listed in the sidebar. All are closely allied in promoting light and vision through research and education. Many projects are joint efforts where agencies participate both in funding and sponsoring related work.

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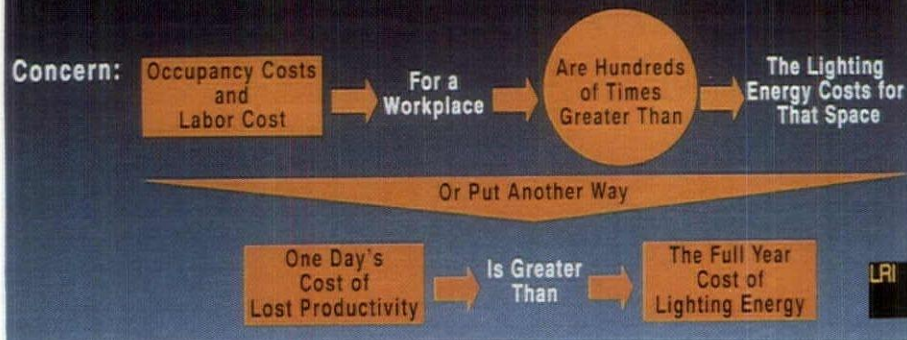
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## STRATEGY DEVELOPMENT: PRODUCTIVITY/CONSERVATION BALANCE

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**STRATEGY DEVELOPMENT: PRODUCTIVITY/CONSERVATION BALANCE: Human performance and productivity center around the worker's ability to carry out tasks. Much of the LRI's current research is concerned with the human element in productivity.**

LIGHTING RESEARCH (CONTINUED FROM PAGE 15)

## LIGHTING APPLICATIONS

### THE ELECTRONIC OFFICE

The visual display terminal, or VDT, is a major element in the modern office and presents any design team with new challenges to create a quality work environment. There is a constant interaction with other technologies that can have a negative effect on the worker and the individual who must occupy the electronic space must be given primary consideration by the designer. Again, *human performance* becomes the key<sup>20</sup> when analyzing the literature devoted to the ergonomic, visual, and lighting problems associated with the VDT. LRI's research in this area places primary emphasis on the current state-of-knowledge, and identifies areas of controversy where further research is still needed.

From the previous work on VDTs, LRI is currently involved in a study of lighting patterns in the visual display terminal.<sup>21</sup> A methodology will be recommended to analyze the effects of lighting systems in VDTs.

As an adjunct to design principles, the LRI has developed a utility lighting demonstration module<sup>22</sup> that creates a practical lighting demonstration for education purposes. The module designers were represented by engineering, architecture and exhibition lighting disciplines. The concept for demonstrating good lighting involved a

modular approach that could be portable and changeable with interactive displays. Modules teach basic principles of light, characteristics of sources and luminaires, color, and measurement techniques.

### DAYLIGHTING

In lighting applications, daylighting plays a major role in an energy conscious world. A State-of-the-Art Review<sup>23</sup> by the institute concerns itself with energy, peak loads during critical periods and the impact on the environment. So that utility companies can take advantage of daylight and electric lighting integration, a vast amount of research in daylighting design and technology was accumulated. Research material, however, is not readily available in a usable form. Having gathered that information, the study can now focus on using techniques from design information for practical purposes. EPRI, LRI, and NIST are currently developing research related to the integration of electric lighting, daylight, and lighting controls.

A system for rating transmittance performance of fenestration systems<sup>24</sup> defines a fenestration performance design tool for builders, designers, architects, and utility auditors. The first phase defined the design tool concept and the experimental and analytical methodologies needed to achieve the project goal. Five fenestration indices were analyzed which, when combined, provide an overall numerical indication of merit. The indices are related to the effects of fenestration on building energy performance, i.e., fuel, electric use, peak electric demand, and thermal and visual comfort.

### ROADWAY LIGHTING

Urban planning has become a major problem in the United States. Architects and roadway designers are concerned with the systematic renovation, the relighting, and the building of new roadways. All of which must take into account society's attitude toward the restoration of the environment while increasing standards of visual performance in both daylight and nighttime hours.<sup>25,26</sup> The institute is now involved in several active projects that deal directly with these problems.<sup>27</sup>

A study of realistic roadway tasks<sup>28</sup> measures the various visibility tasks under a number of different lighting systems. It determines if a correlation exists between the visibility level of those realistic tasks and the surrogate measures of *small target visibility*.

A methodology to assess the influence of lighting characteristics on accidents<sup>29</sup> develops and verifies a means by which lighting can be shown as a benefit in reducing traffic accidents. The final results will show a way by which roadway lighting, applied over a wide range of highway locations, can be realistically expected to reduce accidents.

A study on the relationship between visibility and driver performance<sup>30</sup> obtains improved correlation between photometric visibility and dynamic driver performance measurements. Using 7-inch targets of different reflectance under different light distributions, drivers are rated according to their reaction to test objects. Drivers were observed in their response to identification and orientation to the object, with and without headlights in the automobile.

(CONTINUED ON PAGE 18)

## ORGANIZATIONS AFFILIATED WITH THE LIGHTING RESEARCH INSTITUTE

ADHOC	AD HOC Lighting Research and Education Group (see <i>Lighting Research Institute</i> )
AIAF	American Institute of Architects Foundation 1735 New York Avenue, NW Washington, D.C. 20006
CEC	California Energy Commission 1516 Ninth Street, MS-25 Sacramento, CA 95814-5512
DOE	Department of Energy (United States Government) 1000 Independence Avenue Washington, D.C. 20585
EPC	Education Planning Council Illuminating Engineering Society of North America 345 East 47th Street New York, NY 10017
EPA	Environmental Protection Agency Global Change Division 401 M Street, SW Washington, DC 20460
EPRI	Electric Power Research Institute 3412 Hillview Avenue P.O. Box 10412 Palo Alto, CA 94303

ESEERCO	Empire State Electric Energy Research Corporation 1155 Avenue of the Americas New York, NY 10036
IESNA	Illuminating Engineering Society of North America 345 East 47th Street New York, NY 10017
LREF	Lighting Research and Education Fund 345 East 47th Street New York, NY 10017
NEA	National Endowment for the Arts 1100 Pennsylvania Avenue Washington, D.C. 20506
NEMA	National Electrical Manufacturers Association 2101 L Street, NW Washington, D.C. 20037
NIST	National Institute of Standards and Technology Gaithersburg, MD 20899
NLB	National Lighting Bureau (see <i>NEMA</i> )
NYSERDA	New York State Energy Research and Development Authority Two Rockefeller Plaza Albany, NY 12223
ORNL	Oakridge National Laboratory P.O. Box X Oakridge, TN 87831





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LIGHTING RESEARCH (CONTINUED FROM PAGE 16)

## EDUCATION

### THE FUTURE IS EDUCATION

One of the primary foundations of the LRI is that all of the design disciplines involve lighting, whether it be theatrical, merchandising, interior and architectural design, or scientific and industrial. In this spirit, the students that come to the IES Workshop for Teachers of Lighting may represent many educational institutions, as well as other disciplines, all interrelated, to learn to integrate the principles of lighting design into the teaching curriculum.

Since its inception in 1984, the LRI has played a part as sponsor and contributor to the workshop.<sup>31</sup> The ten-day curriculum consists of concentrated lectures and studio time where teachers learn by doing.

Participants work in teams of two: one technical student, another in creative design or architecture. Results are presented to a jury of instructors and students. Field trips to study real lighting designs augment the instruction. Attendance for each summer session is comprised of about 20 student/teachers, and their respective fields of study may be in theater, architecture, engineering, and interior design.

## LOOKING TO THE FUTURE

### INTERNATIONAL OUTLOOK

The LRI is a broad public agency that has become international in scope representing public and private companies, educational institutions, and various agencies committed to human productivity and health. Its research goals are also broad in scope, touching lighting health, photobiology, systems applications, education, and public information. Over the next five years, the LRI has committed itself to such areas as:

- Development of controls for energy efficient design
- Education and training
- Health and the environment
- Lighting and human performance

This report has only touched the surface of the institute's commitments, but the LRI welcomes your participation and inquiries into the future. Publications giving complete details of research programs can be obtained by writing directly to the Lighting Research Institute at 345 East 47th Street, New York, NY 10017.

## REFERENCES

Note: those items in **bold face** are research projects in which the LRI is actively engaged. A research report on these projects will be available when they are finalized. All completed projects and reports are available from LRI or as indicated in the listing.

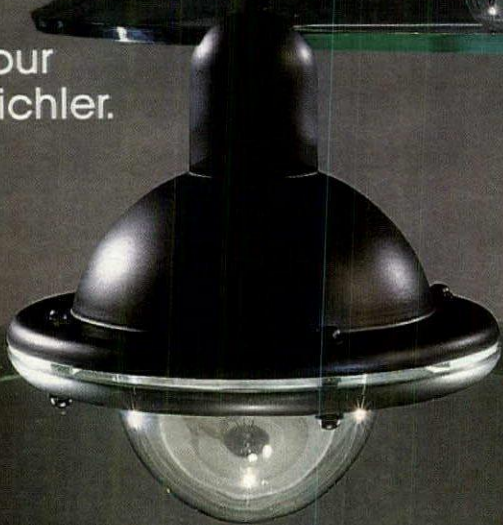
1. *Post Occupancy Evaluation of Lighting Designs*, 86: IMP AIAF: 1, research provided by G. Gillette (American Institute of Architects Foundation) and R. Marans (University of Michigan). A final report is available in four volumes from Oakridge National Laboratory, P.O. Box X, Oakridge, TN 37831.
2. *Evaluating Office Lighting Environments: Reference Lighting Power Density Data Base*, 87: DR NEMA: 1, research provided by G. Gillette (LRI Research Associate and National Institute of Standards and Technology); technical support by B. Collins and A. Rubin (National Institute of Standards and Technology); W. Fisher (LRI Consultant); and H. Lobdell, Lithonia Lighting.
3. *Transfer to LRI of POE Data Base on Lighting Design*, 88: SP LREF: 5, research provided by G. Gillette (LRI Research Associate and National Institute of Standards and Technology).
4. ***Post Occupancy Evaluation: Second Level Analysis***, 87: DR EPRI, DOE, NYSERDA, LREF: 1, research conducted by G. Gillette (LRI Research Associate and National Institute of Standards and Technology); W. Fisher (LRI Consultant); R. Marans (University of Michigan); and B. Collins (National Institute of Standards and Technology).
5. *Lighting and Human Performance—A Review*, 88: DR NEMA: 1, research conducted by P. Boyce; S. Berman; B. Collins; A. Lewis; and M. Rea (LRI Consultants). A final report is available through the National Lighting Bureau, Washington, D.C.
6. *The Effects of the Luminous and Sonic Environment on Visual Fatigue, Task Performance, and Mood State*, 84: SP LREF: 2, research conducted by S. Kaye (University of Manitoba).
7. *Effects of Ambient Light Level on Human Alertness and Performance*, 88: SP LREF: 4, research conducted by S. Campbell (Institute for Circadian Physiology).
8. ***Fluorescent Light and the Risk of Malignant Melanoma***, 85: DR NEMA: 2, research provided by R. MacLennan (Australian Bureau of Standards)
9. *Influence of Fluorescent Light on the Production of Skin Tumors in Mice Through Induced Solar Ultraviolet Radiation*, 84: DR NEMA: 1, research conducted by D. Forbes and F. Urbach (Temple University).
10. ***Effects of Electric Lighting and Solar Irradiation on Human Vitamin D Nutrition***, 88: DR NEMA: 3, research conducted by M. Holick (Boston University, School of Medicine).
11. ***Light for Treatment of Congestive Heart Failure***, 87: DR NEMA: 3, research conducted by B. Natelson (New Jersey Medical School).
12. ***Effects of Near Ultraviolet and Blue Light on the Retina***, 86: DR NEMA: 1, research provided by S. Zigman (University of Rochester).
13. ***Effect of Near Ultraviolet Radiation on the Visual Physiology of Developing Humans***, 88: SP LREF: 6, research conducted by G. Brainard (Thomas Jefferson Medical College).
14. ***Effect of Near UV on the Neuroendocrine and Peripheral Reproductive System***, 87: DR NEMA: 2, research conducted by G. Brainard (Thomas Jefferson Medical College).
15. *Human Circadian Rhythms—A Review* 88: DR NEMA: 2, research conducted by E.W. Bickford (LRI Consultant).

(CONTINUED ON PAGE 44)

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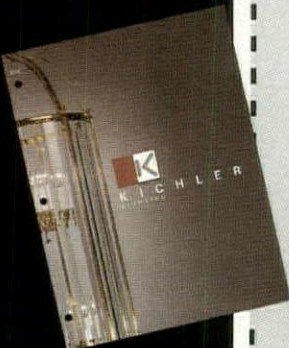
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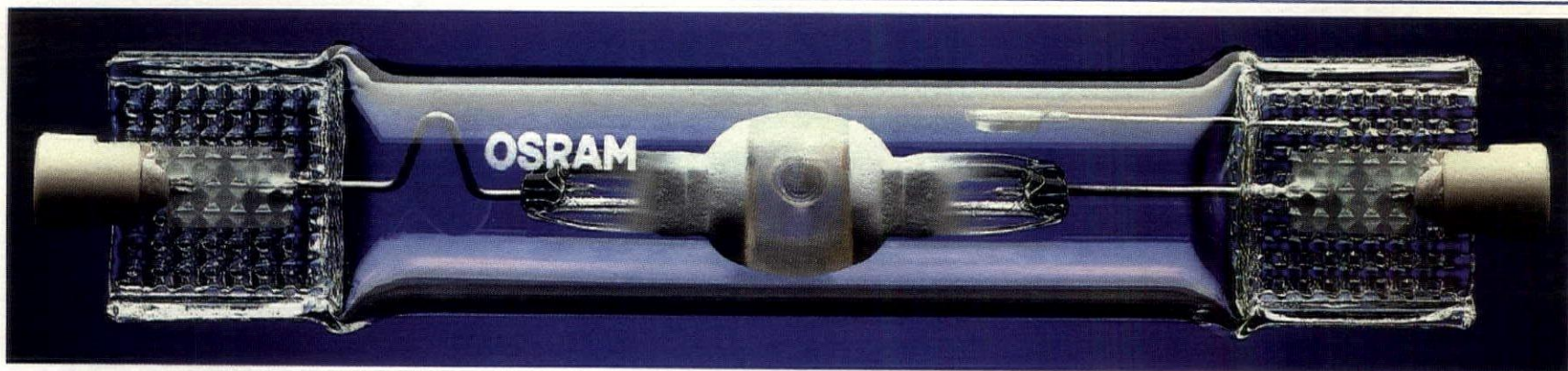
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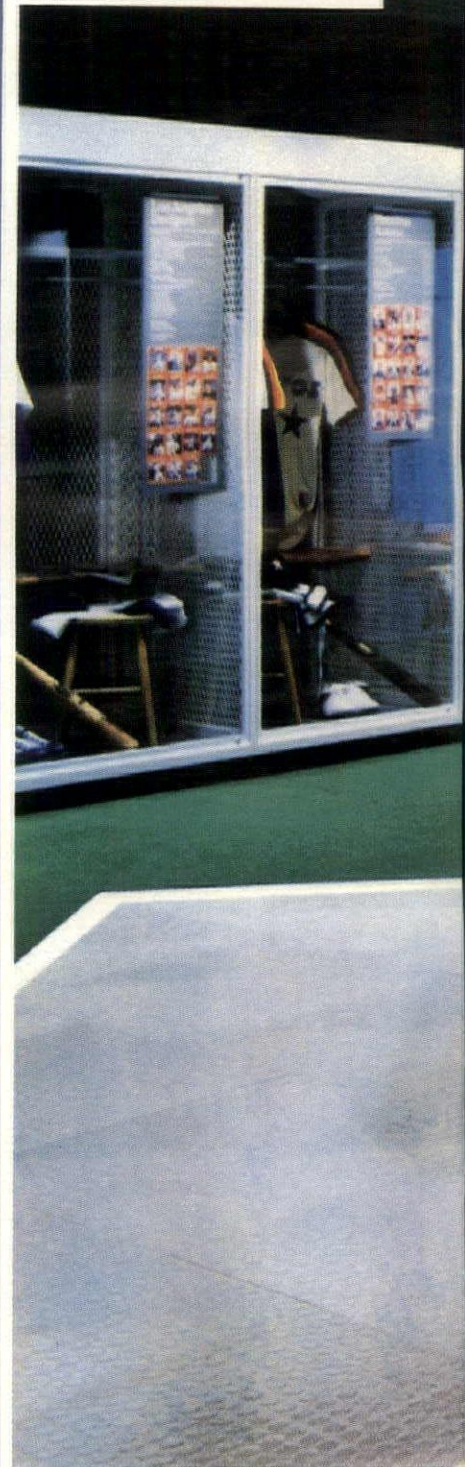
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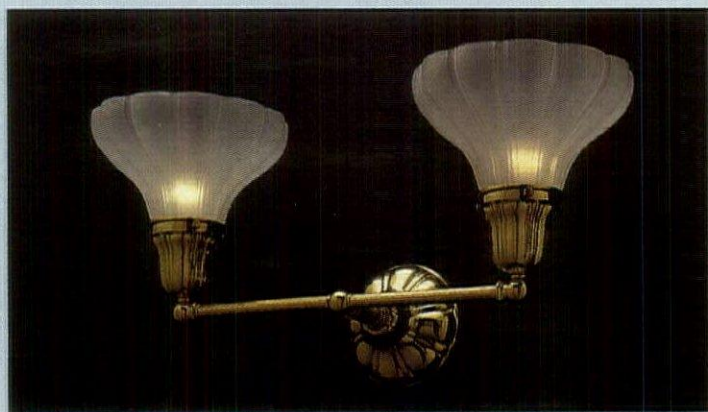


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**UPDATES**



**PORTABLE LEARNING CENTER:** The Sylvania Lightmobile (above, below) is equipped with educational displays, auditorium seating, and for audiovisual presentations.



**Lightmobile Hits The Road**

To further expand its full range of local market distributor education and training programs, GTE's Sylvania Lighting Division introduced the Sylvania Lightmobile, a self-contained 18-wheel training center and sales promotional tool.

The Sylvania Lightmobile offers distributors a new degree of "in the field" education and training flexibility. The entire setup is housed in (and transported by) a Class 8 tractor-trailer rig.

"Our approach is to provide training where it's needed and to keep it hands-on," said Frederick B. Howard, vice president of marketing for GTE's Sylvania Lighting. "That's why the introduction of the Lightmobile represents such an opportunity for our distributors and their customers. We can now conduct training programs virtually anywhere."

The Lightmobile's integrated audio-visual equipment and functional presentation theater—for small groups of up to 10 people—allow its use in a wide range of local sales promotions and special events. "The Lightmobile can be used to create and/or augment regional distributor activities as well as consumer activities such as state fairs and expositions," Howard said.

For further information, contact GTE Electrical Products, 100 Endicott Street, Danvers, MA 01923.

**ASID Relocates To D.C.**

The ASID has formally announced plans to relocate its national headquarters to Washington, D.C., in January 1991. The new headquarters will be housed in a three-story Georgian style building on Capitol Hill.

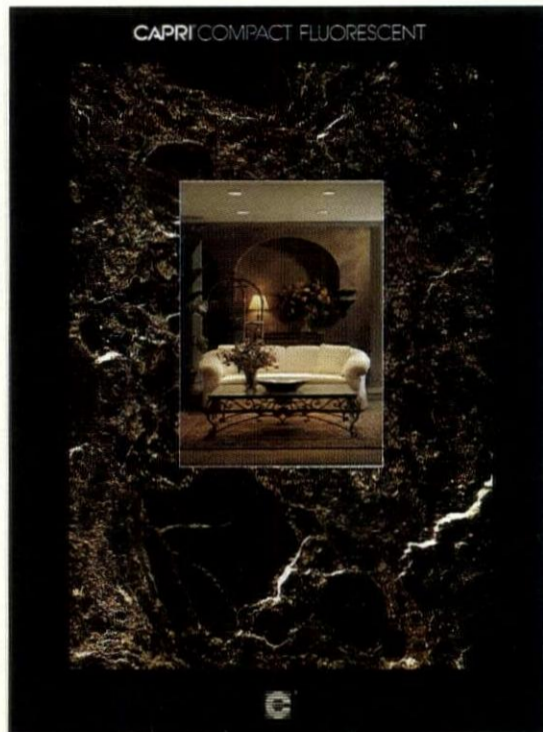
The ASID National Board's decision to relocate was the result of a three-year study conducted by an ASID task force.

"The decision to move to the 'association capital of America' affords ASID the opportunity to purchase its own space, acquiring equity at a cost significantly less than its current New York City lease agreement," said Robert John Dean, FASID, ASID national president. And, with leadership identifying legislative initiatives as a major priority, the close proximity to Capitol Hill offers a major advantage. These factors coupled with the current favorable real estate market formed the task force's recommendations.

Headquarters' operations at 1430 Broadway, New York, will continue through January 11, 1991. Following the week of January 14-18, in which limited membership services will be available as the new office is set up, ASID is scheduled to resume normal operations. ASID's new address as of January 11 will be 608 Massachusetts Avenue N.E., Washington, D.C., 20002; telephone (202) 546-3480/fax 202-546-3240.

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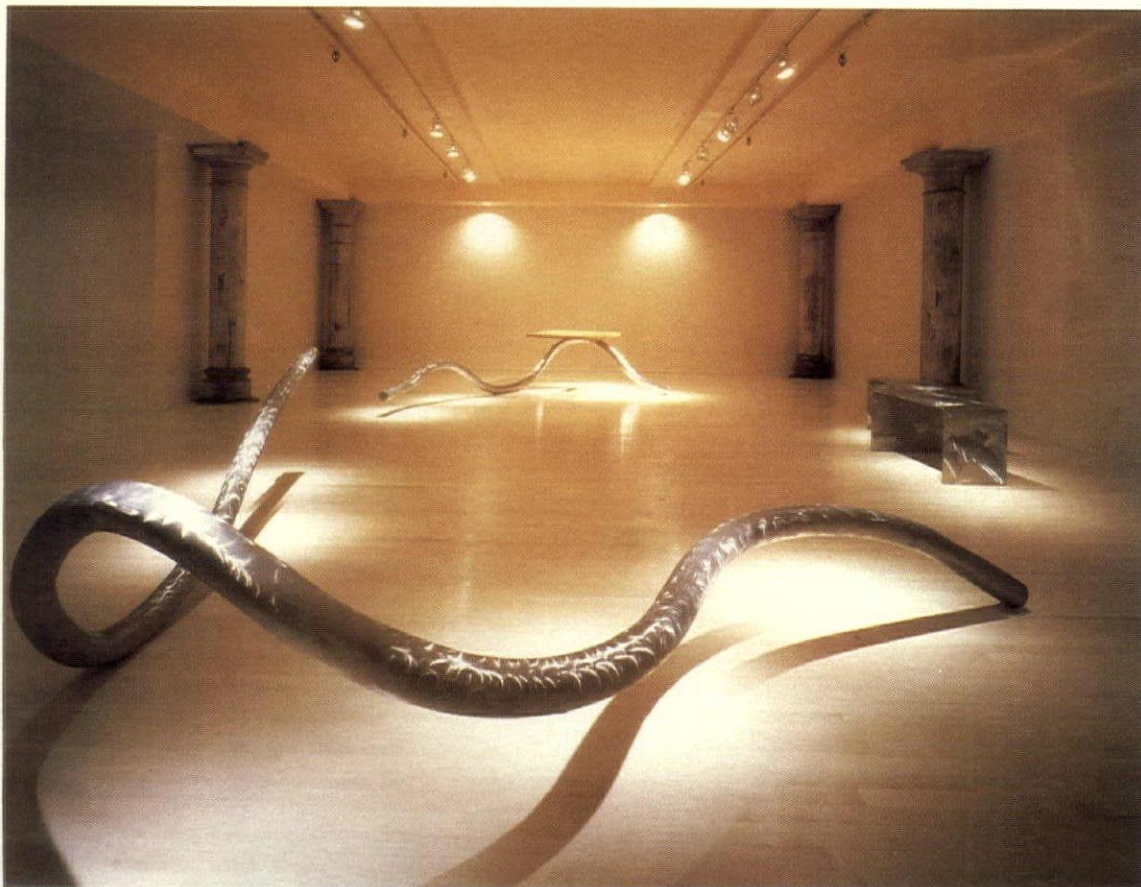
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# Covering All The Angles



**IN THE SPOTLIGHT:** Exhibit pieces at the Art Et Industrie gallery are each given special lighting treatment through the careful angling of the narrow spot, spot, and flood fixtures. As each exhibit changes, so too does the lighting.





PHOTOGRAPH BY ELLIOTT KAUFMAN



PHOTOGRAPH BY JOSEPH COSCIA, JR.

## ADAPTING TO CHANGE

WHEN THE EXHIBITS IN THE Arte Et Industrie gallery are changed, which happens rather frequently, the lighting must change with it, says gallery director and lighting designer Rick Kaufmann.

Kaufmann works to bring the objects out of the shadows and into warm pools of light without creating a glare that would smack off the highly reflective surfaces of metals and glass.

When he reworks the lighting, Kaufmann employs the help of two men—that he's worked with for 10 years—who climb up on ladders and angle the lamps while Kaufmann stays below to tell them if they've hit their mark.

"If the lighting is a thirty-second of an inch off, we could go back and forth for more than 15 minutes for that angle alone," Kaufmann says. "Even if it's only a hairline difference up above, it makes a huge difference in the way the object will appear."

Not all lamps are used with every exhibit: only enough to do the job are put to work. Sometimes, the wall behind the art object is washed with illumination, while the light of only one lamp grazes the top of the piece.

"Each piece is custom lit," Kaufmann says. "Most objects are still, but if a piece—like a chair—is movable, we allow for that. Of all the aspects of preparing for one of our exhibits, the lighting takes the longest."

## Meticulous fixture placement shows art in its best light

BY CATHERINE SCHETTING SALFINO  
MANAGING EDITOR

**A**t the Art Et Industrie gallery in Soho, the art nucleus of New York City, each piece of work is given ultimate exposure and a proper presentation with the help of a stark architectural backdrop and the careful angling of light beams.

"The idea is to have an entirely neutral surrounding that can disappear when the objects are being viewed," says Rick Kaufmann, gallery director and the designer of the space and its lighting. "At the same time, the system can work to deflect the viewer's attention and draw them to the next piece of art or another area."

The gallery's open wall system allows light to pour from one area to another, creating shadows and hinting at spaces beyond. The walls are lacquered with 11 different colors of paint, a point that is almost imperceptible, but which adds richness and depth to the lofty space.

"The lighting here is so critical, it goes beyond words," says Kaufmann. "Our pieces are made of glass, steels, bronzes—industrial-strength materials, hence our name. And these materials are refractive, reflective, or they can absorb light. So, the aiming of the fixtures is everything."

Since the exhibits change every month, flexibility was a major concern when Kaufmann created his lighting scheme. However, rather than choose an extensive grid system with a multitude of lighting options, Kaufmann took the minimalist approach when it came to the number of lamps—he installed only three types of track fixtures—but the sources have maximum aiming capabilities.

Working with art means staying within a range to light the objects properly, Kaufmann says, that range being from how dramatic the piece will be presented to how open the space will look.

"It's very critical," he says. "You want shadows, yes. But not too many or you could end up with an Orwellian nightmare. Excessive shadows could be too much for a gallery, especially ours because we deal in very kinetic pieces."

Because of their materials and designs, the pieces demand crisp light fixtures set at exceptional angles. Metals are textured—grooved, ridged, swirled, dented. Glass is incredibly clear, tinted, patterned, sandblasted.

To get the right light, Kaufmann uses incandescent halogen lamps in narrow spot, spot, and flood fixtures.

"I use the 50-watt narrow spot with the O-ring because it offers a 16-foot long throw of light, which can cover a lot, with no leakage."

A 90-watt halogen lamp housed in a track fixture with a square face is used for its minimalist-quality illumination, tight focus adjustability, and good beamsread, Kaufmann says.

The third fixture has no lens, allowing Kaufmann to install whatever lamp type and wattage is called for.

"When you view an object in a gallery, you don't look at it from just one side," Kaufmann says. "That's why we light each piece from many angles—to try to get a mid-ground for many points of view."

During the day, immense windows offer ambient natural light that blends with that of the fixtures. And at night, when viewed from the outside, the interior appears very mysterious.

"The light is unobtrusive yet it helps make each piece a focal point," Kaufmann says. "In so many places—boutiques, dress shops—the lighting is an exercise in overkill. I've also seen some great systems with sophisticated fixtures of every kind imaginable and grids that raise and lower. But for what I'm doing here, this installation is perfect." ■

### DETAILS

**PROJECT:** ART ET INDUSTRIE GALLERY

**LOCATION:** SOHO, NEW YORK

**OWNER/DIRECTOR:** RICK KAUFMANN

**LIGHTING/INTERIOR DESIGNER:** RICK KAUFMANN

**COVER PHOTOGRAPH:** JOSEPH COSCIA JR.

**PHOTOGRAPHER:** ELLIOTT KAUFMAN & JOSEPH COSCIA JR.

**LIGHTING MANUFACTURERS:** LIGHTOLIER: Superbeamer, standard slip ring fixture, open socket swing arm fixture; GENERAL ELECTRIC: 100-watt halogen lamp; SYLVANIA: 50-watt PAR 30 narrow spot

# Kinetic Connection

Colorful neon cove lighting gives health club a sense of movement and space

BY CHARLES LINN, AIA  
EXECUTIVE EDITOR

**A** health club industry rule of thumb is that prospective members decide whether to buy memberships within 90 seconds of stepping inside the door for the first time. That means that a facility in the highly competitive Southern California market has to make a healthy impression in a hurry if it is going to grab the potential member.

"Our client wanted this club to have a resort-like feel; it was to be a place where one could seriously work out, but also see people and be seen," says architect Roger Charles, Genesis Associates, who designed the Sports Connection Spectrum along with partner Greg Shubin. "It had to be a bit more stylish than a hotel, but certainly not glitzy.

"Often lighting is a big deal only to the designer, but in this case, lighting was a big deal to the client, too. The client said, 'I don't just want lighting design—I want *lighting* that is design. I don't want you to specify the neatest pendants or wall sconces you can find. I want my club to be lighting. I want my customer to walk in and be blown away by how well-lighted the place is. And I want a lot of skylights.'"

It would certainly be difficult not to notice the lighting when walking into the Sports Connection Spectrum. Immediately inside the front door the reception desk is situated beneath one of several large skylights placed throughout the facility. The skylight sits atop a coffer formed by several tiers of cove-concealed pink neon.

Just below, a large planter appears to float above pools of blue neon that are really supported by a pair of columns capped with miniature downlight-encrusted capitals. At night the skylight is uplit by sconces, and fixtures concealed in the planter.

Additional evening lighting in the lobby areas comes from 90-watt halogen PAR 38 downlights recessed into the ceiling as well as some of the soffits formed by the skylight coffers.

Architect Shubin repeated the tiered ceiling treatment at other skylit seating areas and activity hubs, and extended it along major circulation paths. The lighting here helps create visual excitement, but it is not used only as mere decoration. The building is large—over 65,000 square feet on one floor.

"When you walk into this place, you really feel the expansiveness of it," says Charles. "The ceilings are high, and many of the partition walls are glass. When you walk into the lobby you can see the swimming pool, which is almost 300 feet away. That's fun, but Greg Shubin decided to use the ceiling to give people a sense of orientation within that large space, too."

Coves in the sculptured ceiling, which runs above the circulation spines, are lamped with warm 3,000K fluorescent lamps in lieu of neon. The fluorescent is brighter than the neon and its color is slightly different. Using fluorescent allowed selected lamps to remain illuminated for after-hours security, when most of the lighting in the building is off. In addition, certain fixtures along this spine are wired with emergency fluorescent ballasts, which allow them to operate as egress lighting during a power outage.

"It's a great feeling to walk into a lobby like that," says Charles, "but in the restaurant we wanted to make it a little more comfortable. We brought the tiered ceilings closer to the floor, and changed the neon from pink to aqua."

Incandescent lighting is also used extensively to balance the light from the concealed aqua and blue neon sources, and to keep the neon from becoming too dominant. A low partition wall that separates the restaurant from the lobby is punctuated by incandescent torchieres, and its colorful salad bar is accented by a row of adjustable low-voltage downlights recessed into the soffit above. Recessed 90-watt halogen PAR 38s provide additional ambient light.

The restaurant and deli are separated by a partition of glass and stainless steel backlit with blue neon.

"A bar in the restaurant does serve liquor, but our client was concerned that some club patrons might feel conspicuous having a cocktail there, considering that this is a health club after all. He wanted us to visually separate this bar from the deli, but without building an opaque wall. So we built a wall of glass laboratory tubing, stacked between a pair of stainless steel rods, all backlit with blue neon," says Charles. "It's not strictly transparent, but it does still leave the room feeling open."

"I think our client emphasized lighting color and quality up front on this project, because making people look and feel fit is what the business is all about," says lighting designer Greg Smith. "There is an unpleasant feeling of artificiality that people get from exercising in cool white fluorescent light. That's why daylight is our first choice as a light source, and why there are so many skylights located throughout the facility. When we can't have daylight, we've used warm, high-color rendering fluorescent or, where possible, halogen sources."

The use of daylight also works well with the overall lighting control system used in the building. Photocontrols are used to turn off incandescent lights in the building when they are not needed. As required by California's Title 24 energy code, all of the rooms equipped with fluorescent lighting have bi-level switching, allowing half of the fluorescent lamps to be turned off when not needed. This can be accomplished on a room-by-room basis from the main desk.

## DETAILS

**PROJECT:** SPORTS CONNECTION SPECTRUM

**LOCATION:** MANHATTAN BEACH, EL SEGUNDO, CALIFORNIA

**CLIENT:** SPORTS CONNECTION

**ARCHITECT, INTERIOR, AND NEON DESIGNERS:** ROGER CHARLES, GREG SHUBIN, GENESIS ASSOCIATES (During the design of this project, Charles and Shubin were with Miller/Truax and Associates.)

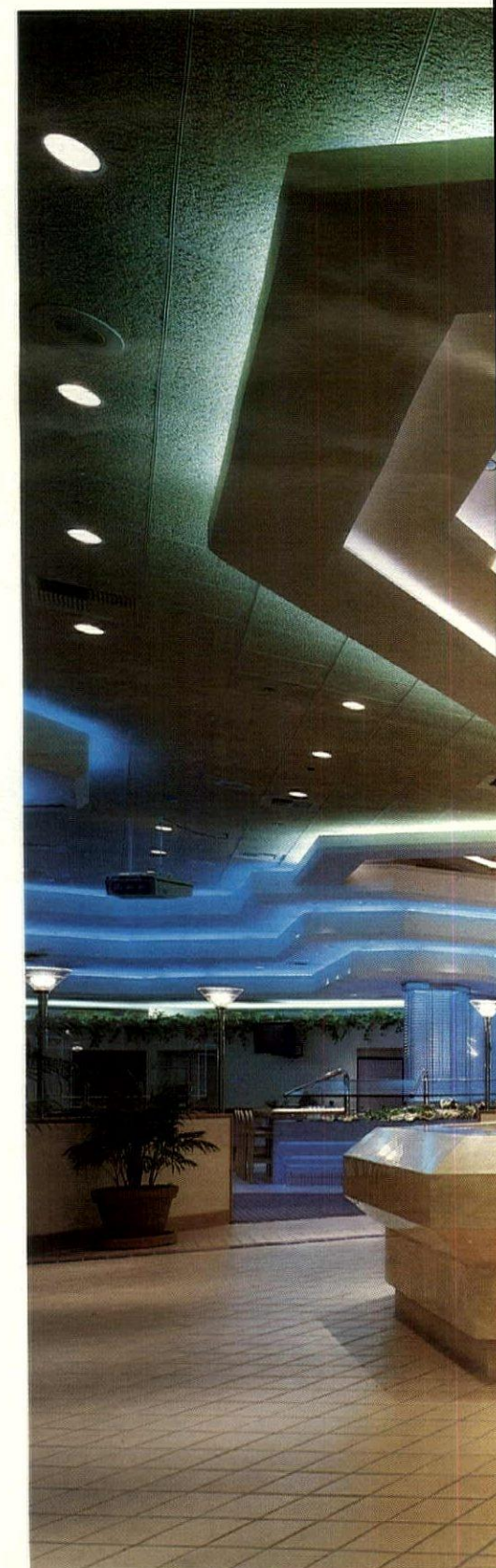
**LIGHTING DESIGN:** GREG SMITH, GDS DESIGN GROUP (During the design of this project, Smith was with RWR Associates, who was the electrical engineer.)

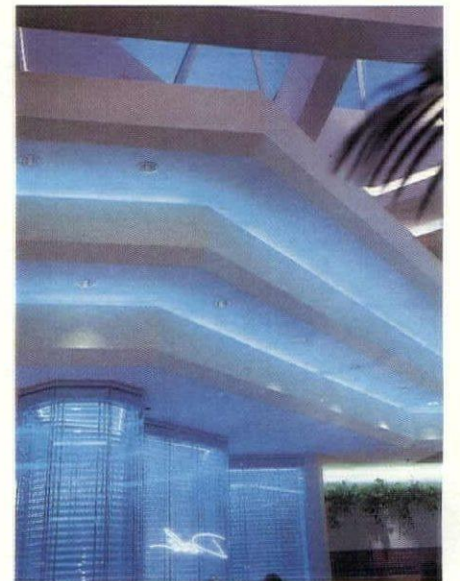
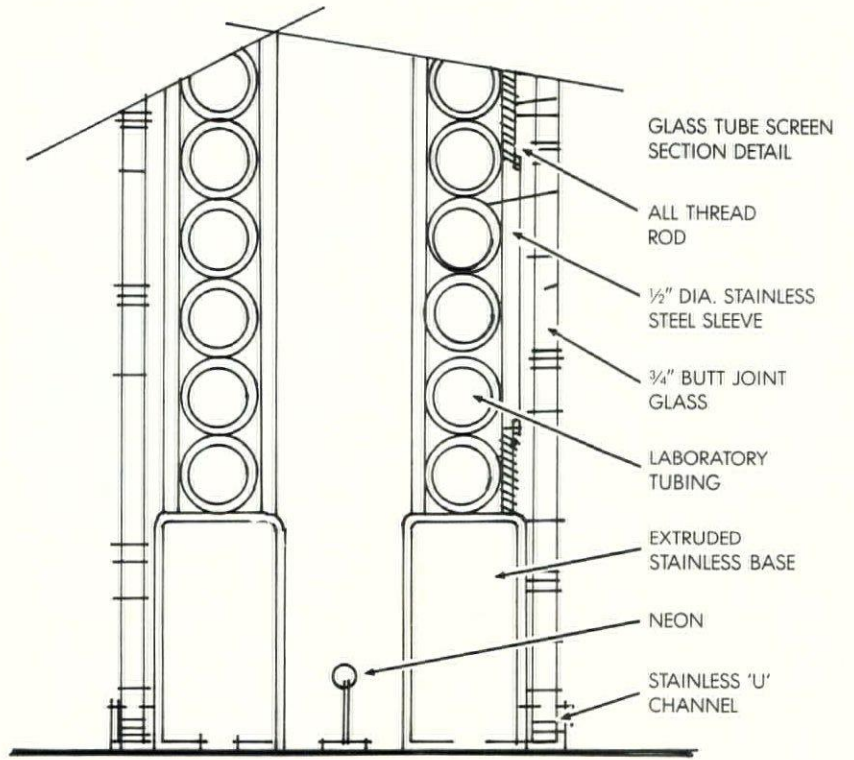
**PHOTOGRAPHER:** DAVID GLOMB

**LIGHTING MANUFACTURERS:** CAPRI: downlights, recessed adjustable low-voltage downlights; COLUMBIA: parabolic fluorescent troffers, high bay metal halide fixtures; C.W. COLE: decorative torcheres; GTE SYLVANIA: lamps; LIGHTOLIER: sconces; LUTRON: dimming control system; SYLVAN DESIGNS: miniature low-voltage downlights



**SWIMMING POOL (above):** Large skylights admit daylight to the area, lit otherwise by 2-foot by 2-foot parabolic fluorescent fixtures. **SALAD BAR (right):** A row of adjustable recessed low-voltage downlights accents appealing food fare. **RECEPTION DESK (below):** A planter "floats" on pools of blue neon.





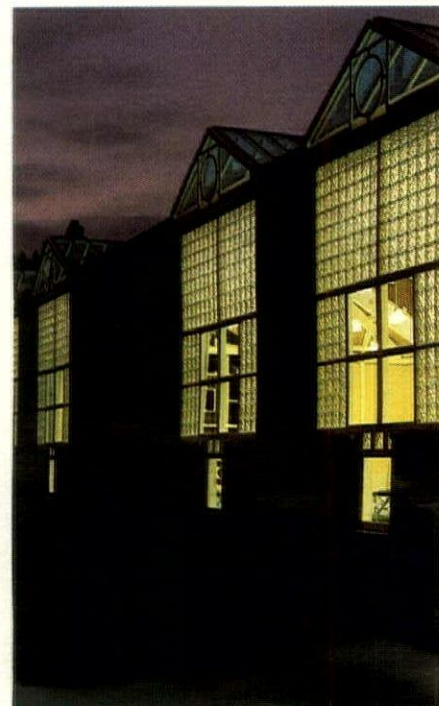
**RESTAURANT/DELI:** The ceiling structure has been lowered to provide this area with a comfortable feel. Custom-made torchieres are built into the low partition separating this space from the lobby. Above as a detail photo and drawing of the lab glass partition wall. **LOCKER ROOMS (below):** At the mirrors, recessed PAR 38 halogen downlights are balanced by warm, indirect fluorescents to give the users a flattering appearance.





PHOTOGRAPH BY RICHARD MANDELKORN

**“A mixture of sources adds warmth to the space and requires little maintenance. The metal halide lamps last approximately 20,000 hours, and the sodium lamps last even longer.”—Jerry Kugler**



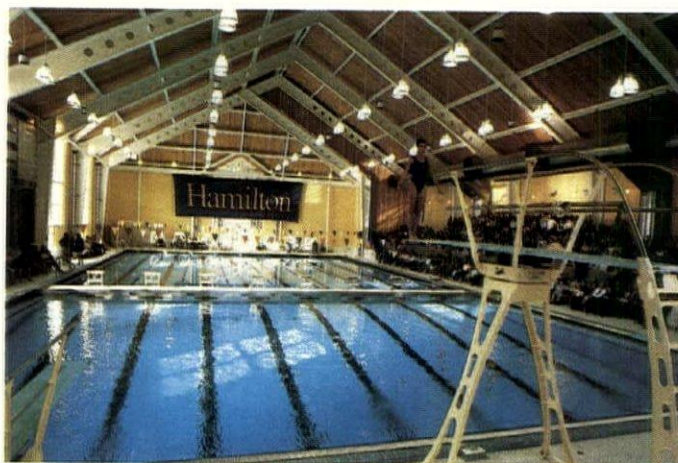
PHOTOGRAPH BY RICHARD MANDELKORN

**HIGH & DRY:** Hamilton's swimming pool is illuminated by pendant-mounted metal halide and sodium fixtures, that provide both uplight and downlight for the space (below, far right). The facility's glass walled corridors wind their way past award and trophy displays highlighted by track mounted incandescent sources (left, below left).



PHOTOGRAPH BY RICHARD MANDELKORN



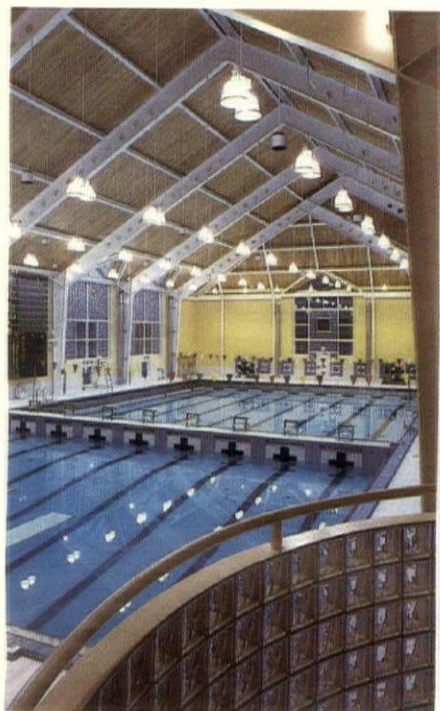


PHOTOGRAPH COURTESY OF HAMILTON COLLEGE

# Sparkling Water

Metal halide fixtures blend form and function at Hamilton College's pool house

BY CHRISTINA LAMB  
ASSISTANT EDITOR



PHOTOGRAPH BY VICKERS &amp; BEECHLER

**N**ostalgic. Charming. Traditional. Hamilton College. Nestled in the hills of central New York, this small, private liberal arts school boasts a campus of native stone architecture mellowed by time. Equally impressive is the history of this prestigious Clinton, NY, college. It is one of the oldest learning institutions in the country, and one that claims its founding under the will of Alexander Hamilton.

New. Modern. State-of-the-art. Enter the William M. Bristol Jr. natatorium, and the result is a college steeped in tradition with elements of contemporary design.

Officially opened December 3, 1988, the pool, named for a class of '17 trustee emeritus, was introduced to the campus in a dedication ceremony featuring the diving skills of Olympic medalist Michele Mitchell. Replacing the original obsolete and deteriorated facility—a 25 meter, four-lane pool—the updated aquatic environment meets the needs of today's Hamilton population of about 1,650 students.

The natatorium, built on the site of the old pool house, joins the school's other athletic facilities—including a gymnasium, hockey rink, and field house—in a single complex. The swimming facility crosses the angle formed by the rink and the gym. Swimmers share the existing locker rooms.

Spectators approach the natatorium from the gym lobby and enter a small foyer. Ahead, a corridor that blends its interior tones of warm wood and bright yellow with stark white columns features glistening waves of decorative glass block.

"In keeping with the cool effect produced by the columns and glass wall, pendant-mounted fluorescent stack lights with aisle shields are clamped to the structural steel beams," says Jerry Kugler, lighting consultant for the project. These linear suspended fixtures illuminate the hallway while backlighting the glass block.

Spanning the side of the corridor, the glass wall undulates toward a skylit rotunda that serves as both a display area for award plaques and an entrance lobby for the pool's spectator seating. On a wall opposite the glass block, award certificates are accented by a 16-foot section of track-mounted, 120-watt PAR 38 wall washers.

Branching from the middle of the main hallway, another corridor, also walled with glass, leads to the locker rooms and then to the pool area. At the junction of both corridors, the hallway overlooks a skylit lounge area. Here, trophies are displayed on the wall, again accented by incandescent track lights.

When entering the swimming area, one is easily impressed by the size of the pool, considering the one it replaced. It's a 126-foot x 60-foot, eight lane NCAA regulation pool with a moveable bulkhead for competition. More than that, one can't help but notice the building's artificial and natural light—how it fills and

defines the space and plays upon the water.

Over the pool, 40 pairs of 400-watt double-headed metal halide fixtures illuminate the swimming area. The four rows of pendant fixtures have glass refractors so that not only do the lamps provide downlight for the swimmers, but also uplight the rich colors and varying angles and heights of the wood ceiling. The metal halide luminaires are uniformly placed 23 feet above the pool surface, although the fixtures' stem lengths differ due to the varied ceiling levels.

Illuminating the decks at each end of the pool are seven HPS lamps, housed in pendant mounted fixtures. These lamps shine on the platforms so that when swimmers are out of the water they have a healthy and tanned complexion, rather than the cold, sickly look the cool metal halide sources would render.

"Using a mixture of sources adds visual warmth to the space and helps to keep a low maintenance cycle," Kugler says. "The metal halide lamps have an approximate 20,000-hour life expectancy, and the sodium lamps last even longer." A switching scheme changes the light levels for recreational and competitive swimming.

Custom designed, vapor-tight wall sconces are mounted along the length of the pool above the spectator seats, providing additional and ornamental light to the space. These fixtures use 150-watt incandescent A lamps.

Four large window walls grace the length of the pool house, with grids of clear glass and glass block. Skylit dormers top the panels of glass and small clear windows are at deck level.

"It was important to keep in mind where the light was going to spill onto the glass block, because we wanted to make the windows glow outside the building," Kugler says.

The effect created with the sheer walls delights those both inside and out, day and night. Natural light streaming and gliding through the patterned windows lends the interior sparkle and warmth, and the filtered sunlight creates shimmering images on the water. When evening falls, the exterior effect is spectacular. The warm and inviting lighting that adds to the pool's aesthetics make the whole building radiate from within.

## DETAILS

**PROJECT:** WILLIAM M. BRISTOL JR. NATATORIUM

**LOCATION:** HAMILTON COLLEGE, CLINTON, NY

**OWNER:** HAMILTON COLLEGE

**ARCHITECT:** PERRY DEAN ROGERS & PARTNERS; CHARLES F. ROGERS II, principal in charge

**LIGHTING DESIGNER:** JERRY KUGLER, JERRY KUGLER ASSOCIATES

**ENGINEERS:** BR+A CONSULTING ENGINEERS, INC.

**PHOTOGRAPHERS:** RICHARD MANDELKORN, and VICKERS & BEECHLER

**LIGHTING MANUFACTURERS:** HOLOPHANE: Pendant lighting in pool area; LITE-CONTROL CORP.: linear suspended lighting; EDISON PRICE, INC.: track lighting; PITTSBURGH CORNING CORP.: glass block

PHOTOS BY RICHARD MANDELKORN, AND VICKERS & BEECHLER

PHOTOGRAPH COURTESY OF HAMILTON COLLEGE

# The Big Picture

**U.S. & foreign manufacturers  
give the lowdown on the latest in lighting**

**BY CATHERINE SCHEITTING SALFINO**  
MANAGING EDITOR

**G**lobal strategies. Global practices. Coming up with them. Putting them into play. The world, as "they" say, is getting smaller and smaller, what with the amount of technology that is at the fingertips of all business people. But knowing a foreign market, knowing what it needs, or creating a need it hasn't even dreamt of yet goes far beyond phones and faxes. And, depending on who you talk to, staying competitive in a market takes either a whole lot of research and development, or creativity with a good dose of luck. The lighting industry is no different. And it's no stranger to the international scene. For years, companies based in the U.S. have been striking ventures with leading or niche lighting manufacturers overseas.

Likewise, foreign firms have seen opportunity for expansion here in the States.

As we charge fully into the '90s, some of lighting's players give their thoughts, opinions, and predictions on what the future of the industry holds. Statements by foreign companies that have entered the U.S. market come from: FLOS INC.'s Vice President Fausto Abbattinali; REGGIANI's President Barry White; TARGETTI's Executive Vice President in charge of U.S. operations Claudio Talesi; and BEGHELLI INC.'s Vice President/Corporate Partner Dania Maccaferri La Spada. American firms with interests abroad offered statements by: GTE INTERNATIONAL INC.'s Vice President and General Manager of the International Lighting Division William S. Merchant; GENERAL ELECTRIC's Corporate Communications Director John Betchkal; and VOLTARC TECHNOLOGIES INC.'s International Marketing Services Manager Jonathan Vick.

## HOME ON THE RANGE... FOREIGN FIRMS THAT HAVE ENTERED THE U.S.

### WHAT DIFFERENCES ARE THERE BETWEEN THE U.S. AND EUROPEAN MARKETS?

**BEGHELLI/LASPADA:** The American market is more price conscious than the European counterpart. The European market is oriented more toward energy efficiency, technological achievement, and quality. Of course, price isn't the only thing Americans take into consideration. It's just considered more here than in Europe. But also, in Europe, we don't have the natural energy resources that are in the U.S. So that's why energy efficient lamps are so important there. Americans only recently began taking this into consideration.

The price factor just seems to be a different way of thinking. If I'm a European and I go to the store and there are two types of apples, I'm going to buy the more expensive one because I think it's better. But if I'm American, I buy the cheaper one, because I think it's a bargain. Europeans don't look at immediate savings, rather they look at a fixture from a technological, quality, and long-term energy savings point of view.

**TARGETTI/TALESI:** The main difference is in style and design. Things that are very popular in the Italian market have not been introduced here yet because of the big difference in taste in America. Lighting here is what it was literally five or more years ago in Europe.

A small niche market is probably out there...one that's interested in high price, high quality, and high style design products. But the big part of the market is not really ready for that. The American consumer is accustomed to paying a very cheap price for lighting products. The problem is that Italian companies, which do invest in design, have to bear a very high cost for research, tooling, and testing new designs. Those costs are reflected in the selling price. So Italian companies, which are the leaders in introducing new designs, offer more expensive products than American companies.

And, since there really is no patent protection in America, once a design proves to be a winner, other manufacturers take inspiration, if not copy it, without having to suffer the development costs. It's one of those things you just have to deal with, because once you have established your image and are recognized as a design leader, then it's your duty to stay ahead of everybody all the time. But it is a very tough exercise.

**REGGIANI/WHITE:** The Europeans have a different design viewpoint in mind when dealing with lighting than the U.S. manufacturers, the major difference being in scale.

I think when looking at the use of what is termed the "minimalistic school," the Europeans have been very clever in designing fixtures that appropriately fit the lamps they surround. For example, they take an MR 11 or MR 16 lamp and design a small fixture for it. It's a simple lesson. But they also haven't impeded the function by the small size of the fixture. Plus they've been able to develop an identity for the fixture, so that someone looking at it says, "This is a European fixture."

This is different than what the U.S. thinking has been. I've seen significant U.S. manufacturers adapt existing products to handle the smaller lamps. Now functionally they're fine, but from an aesthetic viewpoint, it's confusing. Some of the U.S. manufacturers are responding by making smaller fixtures, and rethinking what they've seen of the European design and refining.

**FLOS/ABBATINALI:** The biggest difference between the U.S. and European markets is that Americans, for the most part, don't seem to understand the value of what they are buying. Americans would rather pay money for a plastic fixture that looks like a perfect piece of glass, than pay the same amount for a handblown or hard-to-cast piece of glass that has an imperfect edge. An imperfection seems to suggest to them that it's not precious enough, or it's not worth the money.

Also the marketing is different. Our marketing research tells us what the market wants, but that doesn't mean that that is what we tell our designers to create. Most of the time in America, companies will come out with their marketing research and tell the designers, "What we need is a lamp this big, made of this material, in this price range."

### HAVE YOU CHANGED YOUR PRODUCT SINCE ENTERING THE U.S. MARKET?

**BEGHELLI/LA SPADA:** We made a change in one aspect of aesthetics. In Europe, many of our products have a clear lens because the luminous efficiency is higher that way. But U.S. customers don't want to see the lamp inside the fixture. So here the lens is made of a polycarbonate that makes the screen opaque.

Another difference is that our U.S. products are prewired so that the electrical contractors can install them more easily.

**TARGETTI/TALESI:** We've been in the U.S. for just a year so it's too soon to make any

## INTERNATIONAL FLAVOR

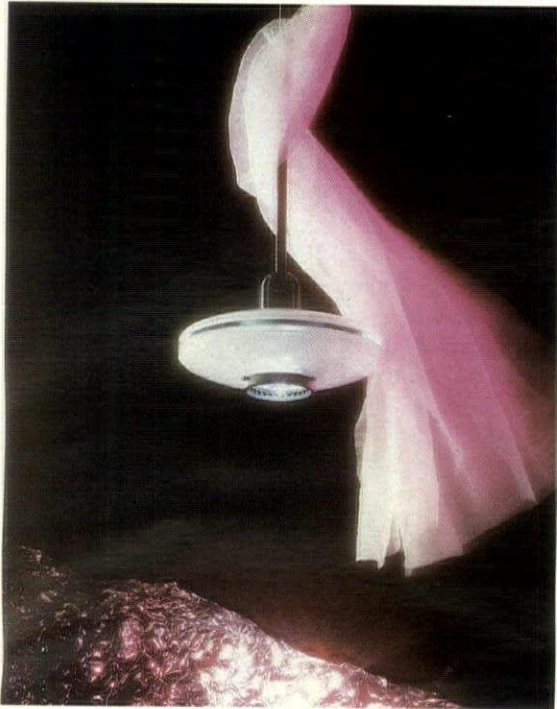
High style, high tech products are offered by Flos, Reggiani, and Beghelli—companies that have entered the U.S. market from abroad. Tastes between the two markets will merge, though, as companies like GTE enter into foreign ventures.

FLOS



BEGHELLI

REGGIANI



GTE SYLVANIA



changes. We've sold our product in the past through licensing and production by companies like Lightolier. But since we just opened up our own branch only recently, we have not made major changes.

**REGGIANI/WHITE:** We haven't made any changes because we're of the opinion that good design is a universal language, that it's appreciated regardless of where it is geographically located. The philosophy of Reggiani is to produce a product that incorporates good design, economy of production, and is universally available throughout the world. The fixture personality remains unchanged, however the technical aspects of the fixture are tailored to the country in which it's being used.

**FLOS/ABBATINALE:** We have changed products because I know that we should listen more to the tastes of the American end-user. But I'd like to know what the end-user thinks. We always have the designer in between us and the end-user. You see, there are three categories of people who use the lamps:

—Wealthy people who don't know anything about lighting, and don't have the time to think of what they want, so they get a designer to buy the fixtures.

—People who are educated about quality lighting products because perhaps they've run across them in Europe or they take a special interest in lighting. They know that if a lamp is priced at \$500, that's what it's worth.

—The end-users that know nothing about lighting and won't pay for a quality product. If they want light they'll go to Pergament or Sears to get a lamp for \$99.

The last group makes up the majority of people. But I think they would love to have quality lighting if they only knew it was out there. They have to be educated and made aware of it.

turers that have been successful in the U.S. are those that have associated with an experienced American company as a partner to provide the necessary modifications, obtain UL listings, and provide a sense of the market. Because, while the Europeans may be masterful in design, they do not understand, in my opinion, the U.S. method of going to market. The U.S. lighting market is complex.

**FLOS/ABBATINALE:** I assume that what's happening in Italy is happening in the rest of Europe. So, if you compare Italy to the United States, I'd have to say the path is narrower now than before. But not because the tastes of Americans has changed a lot. It's more because the new generation in Europe is absorbing more the tastes, the style, and way of life that's here in America.

### WILL GLOBAL MARKETING MEAN THE THRIVING OF MORE CONGLOMERATES IN THE FUTURE?

**BEGHELLI/LA SPADA:** In Europe, yes. Some of the smaller companies there will be absorbed into large corporations, while others will have to find their position in each market. In the United States, it is already like this with the big corporations having a strong hold in the industry. Plus, America is coming up with very beautiful designs in lighting. I don't think that they will always look to Europe, because they have some excellent designers here. I think that will continue. But we hope there will be enough space here for us to take care of niche markets.

**TARGETTI/TALESI:** Certainly a market that is more homogeneous allows huge conglomerates to take advantage. Still, I believe that the flexibility that the market will require and is already requiring in Italy—where a particular style does not last longer than two years—will give the possibilities to small companies like Targetti to be active and winning.

The international scene is a big question mark because we certainly are heading toward a recession, or at least a market slowdown. Commercial activities will slow, and so for lighting it will slow also. So, the scene is not very optimistic, but it is during this time that companies can prove their ability. For us we see this possibility as a good factor. We can use this period to research and come out with new styles.

**FLOS/ABBATINALE:** I see a direction where there will be more mergers of small companies into big corporations. It's happening in Europe now. There's an incredible amount of activity there of acquiring and merging companies either by European, Japanese, or, especially, American firms.

To be small and to be independent, you must be different with design and the use of new technologies. It's the only way to stay in business.

### WILL INTERNATIONAL TASTES IN PRODUCTS DRAW CLOSER OR BECOME MORE DIVERSE IN THE FUTURE?

**BEGHELLI/LA SPADA:** Styles and types of usage will certainly get closer between Europe and the United States because there is more and more interchange of technologies and tastes. Also, with many more European companies coming over here and more U.S. firms going to Europe, the difference between the two markets, to me, will become less and less.

**TARGETTI/TALESI:** Tastes are already becoming closer. The halogen wave has reached America, even if it is only a very small portion of the marketplace. Only a sophisticated customer can afford to buy this product, so far. But it will reach a wider base in the future.

**REGGIANI/WHITE:** I think there will be a merging of tastes but I don't know what format it will take. I think some of the styles and designs currently in Europe could be applicable to the U.S. market. Certainly not all of them. But I think foreign manufac-

(CONTINUED ON PAGE 32)

## U.S. COMPANIES ON FOREIGN SOIL

WHAT EFFECT HAS YOUR VENTURE WITH A FOREIGN COMPANY HAD ON THE U.S. FIRM? AND VICE VERSA?

**GE/BETCHKAL:** On January 17, 1990, GE acquired a 50 percent plus one share majority interest of Tungfram in Hungary. This acquisition gives GE a stronger position in the European and general world lighting market. Tungfram is a full-line lamp company.

The acquisition makes Tungfram stronger in their market because we're bringing them advanced technology and manufacturing expertise. We can work together to improve or strengthen the information systems technology and manufacturing pro-

cesses at Tungfram. And, of course, GE brings capital investment dollars.

**GTE/MERCHANT:** GTE and Oy Airam Ab of Finland have a 50/50 joint venture, where GTE has the management and Airam has the right to buy up the other 50 percent when it wants to do so. Airam is a local Finnish producer of incandescent and fluorescent lamps.

GTE entered the deal to participate in the Finnish market and to enjoy a market share in Finland we wouldn't get in any other way.

Airam will benefit by maintaining a market share in that area, which they didn't believe they could continue to do as an independent manufacturer. So, they joined GTE Sylvania to maintain that enterprise.

**VOLTARC/VICK:** Our company has reached an agreement with Brokelmann, Jaeger and Busse GMBH & Co. of Germany to market its products in North and South America. BJB is a leading manufacturer of fluorescent and incandescent lampholders, switches, and connectors, and has been in the business for over 120 years. So they bring to us, as a full-spectrum lighting component manufacturer, products that are outstanding in engineering. They are built to exacting specifications. It's also beneficial to us in that we have added certain products to our line, without having had to go through the research and development phase.

We offer them market knowledge which, until now, they have not had. We offer them multiple levels of distribution, we sell to the distributors, and we reach a number of fractional markets that, if they only had an agent here, would never have time to fully exploit.

WILL THE FOCUS OF U.S. COMPANIES BROADEN TO INCLUDE GLOBAL MARKETING IN THE '90s?

**GE/BETCHKAL:** We've been in the global lighting market for many years. But what has happened is we've been exporting products from the U.S. to countries around the world. Now, the difference is we have a manufacturer based in Europe. This gives us the ability to better serve the European market, thereby increasing our share.

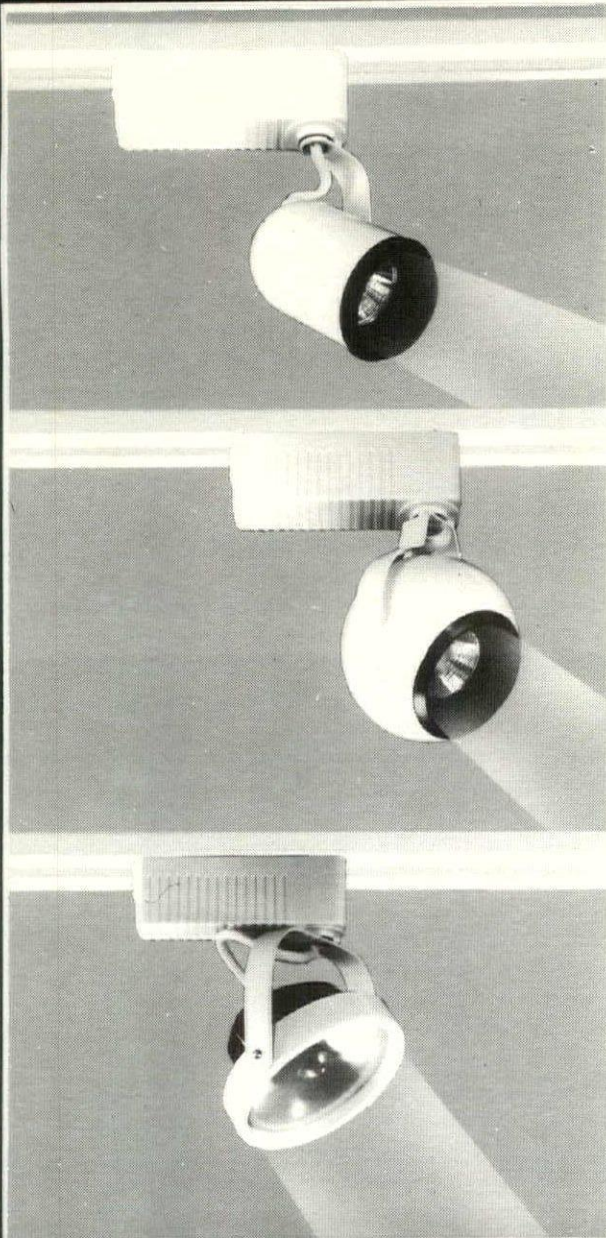
**GTE/MERCHANT:** Very definitely. We have defined the lighting business as a global one for some time, talking strictly light sources. So, all of those manufacturers that are in this global business have to recognize that it's a global market. That means certain things. If you're going to participate globally, you have to be of a pretty significant size with representation everywhere.

### AT PRESS TIME

### MAGNETEK ADDS TO ITS FOLD

MagneTek, Inc., recently entered into two foreign ventures: the acquisition of Officine Elettro Meccaniche Marinato (OEMM) of Milan, a manufacturer of lighting components; and the substantial purchase of all of the assets of Albert Germann & Co., KG, of West Germany, a manufacturer of lighting ballasts and specialty transformers.

Company President and Chief Executive Officer Frank Perna Jr. says the addition of OEMM is an important step in the firm's Pan-European strategy. The Germann acquisition gives MagneTek additional market channels and name recognition in the European market, he says, reinforcing MagneTek's position in technology and low-cost manufacturing.



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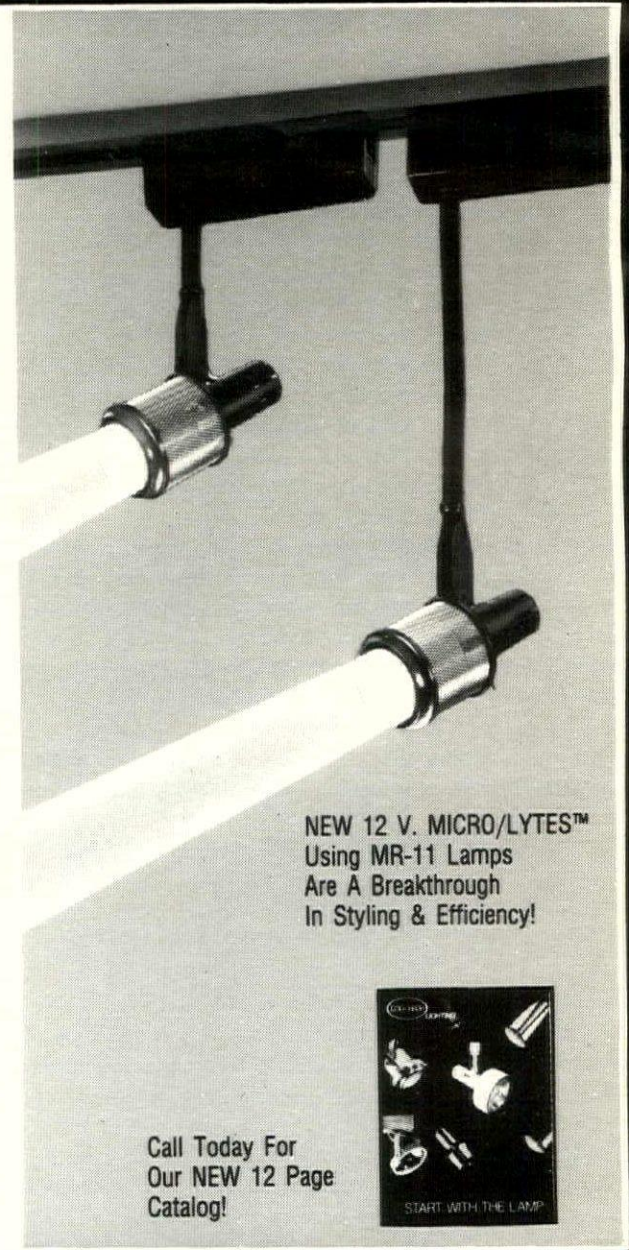
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**“The U.S. doesn’t have anything to prevent it from being a major force.”—Jonathan Vick, Voltarc Technologies Inc.**

**VOLTARC/VICK:** U.S. companies will have to broaden their focus. With the European market becoming a single entity—it will be within the next 10 years, no doubt—it represents a considerable market. The market won’t be as fractional as it is now. So the market itself will expand, and marketing into that part of the world will become much easier for us to approach. We are more than interested in taking advantage of this.

**HOW WILL GLOBAL MARKETING CHANGE THE INDUSTRY OR ITS PRODUCTS?**

**GE/BETCHKAL:** More than ever before, lighting is a global business. So, even though there are certain parameters to include in lamp manufacturing, like voltage and wattage variations, products have to have a universal adaptability or acceptance. Energy efficiency is a big global consideration right now, so I think we’ll see even more movement in the halogen and compact fluorescent sources.

**GTE/MERCHANT:** As new products are developed, they will be developed with a reference to being used in a global sense, rather than a single country or region. In other words, the products used in the U.S. and Europe will be the same. As far as big lamp companies like GTE are concerned, I would expect that global marketing would allow us to continue to grow, because we can focus on a global base, instead of a regional one.

**VOLTARC/VICK:** I think that as we see a standardization of products, we will see a standardization of electrical codes throughout Europe and, eventually, the world. But it would be an evolution, not an overnight deal. Broad standardization is attractive from a manufacturing standpoint. And it’s also advantageous to the consumer, because when you can produce a huge quantity and sell to such a large market, you are then able to provide competitive prices.

(CONTINUED ON PAGE 44)

**CHARTING THE INTERNATIONAL COURSE**

“The light sources used throughout the world closely reflect the cost of energy in various countries,” says Richard Shaver, vice president of research and development at Edison Price Lighting, New York. “For example, 72 percent of the lamps used in Japan are fluorescent because energy costs a great deal more there than in the U.S. or West Germany.”

Some definite increases will be seen in the U.S.’s usage of compact fluorescent and halogen, Shaver says, because of the importance being given to energy efficient fixtures.

Lower usage of incandescent sources in Europe could also be due to different voltage standards, Shaver says: Europe’s is 240 volts, America’s is 120. “It’s difficult to control PAR lamps and achieve the same effects with the higher voltage,” he says.

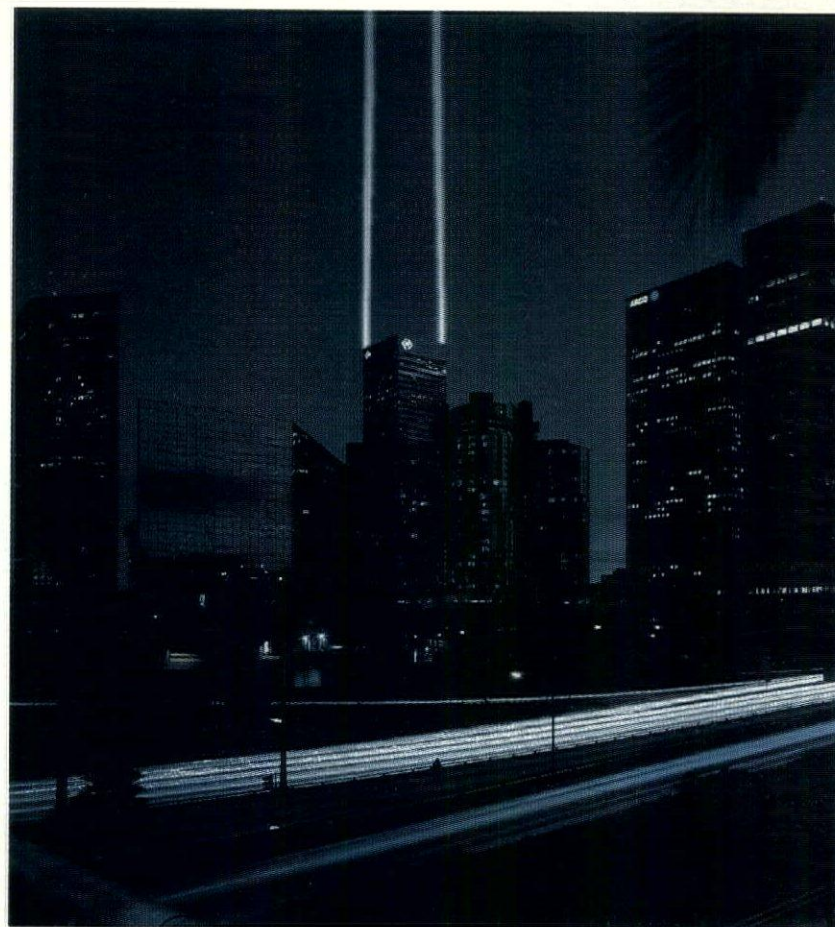
However, the world is trending in the same direction, that being higher numbers in compact fluorescents, halogen, and the better color discharge lamps that are entering the market, Shaver says.

“Energy conservation codes will eventually force the U.S. to change over. I also think that because we import more and more of our lighting from Europe, those halogen numbers will go up here. And with a lot of American lighting designers working in Japan right now, I think we’ll see a halogen and compact fluorescent influence there.”

**PERCENTAGE SHARE OF EACH LAMP TYPE IN TOTAL MARKET**

	WORLD	NORTH AMERICA	EUROPE	WEST GERMANY	JAPAN
Incandescent Lamps	38	47	39	35	10.7
Fluorescent Lamps	37	35	27	36	72
Discharge Lamps	11	10	13	6.5	6.6
Halogen Lamps	6	4.8	9	9	4
Compact Fluorescent Lamps	5	2	9	10.5	5.8
Metal Halide Lamps <150W	3	1.2	3	3	1

Chart based on 1989 figures provided by Erco Leuchten GmbH



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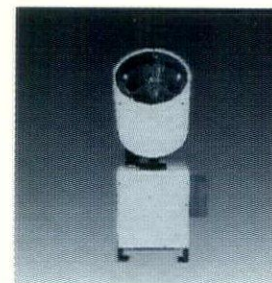
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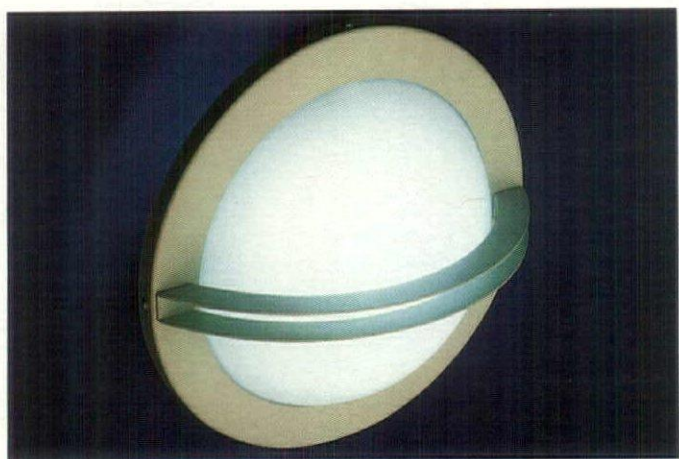
28007 Front Street, Temecula, Calif. 92390  
OR PHONE

(800)-551-8881 • (714) 676-2169 in Calif • (714) 694-0016 (FAX)

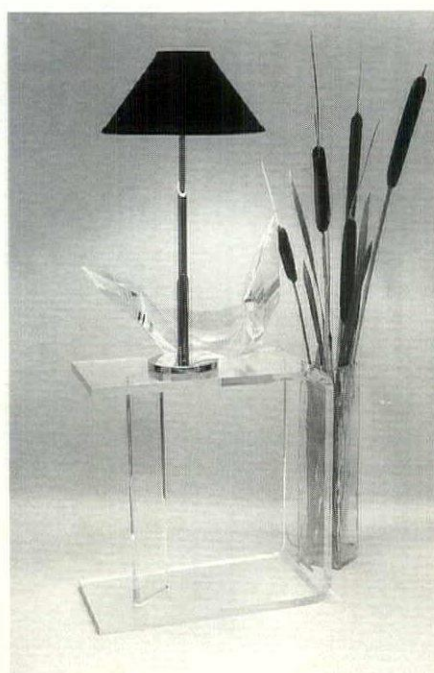
Circle No. 15 on product card.

# SHOWCASE

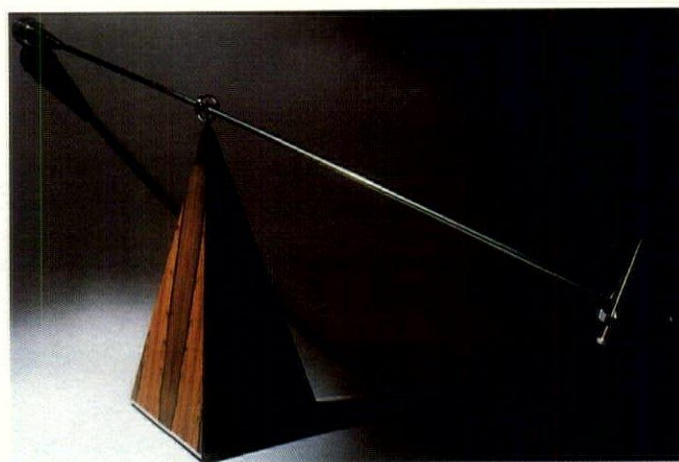
**DECORATIVE**



APPLETON LAMPLIGHTER WALL SCONCE



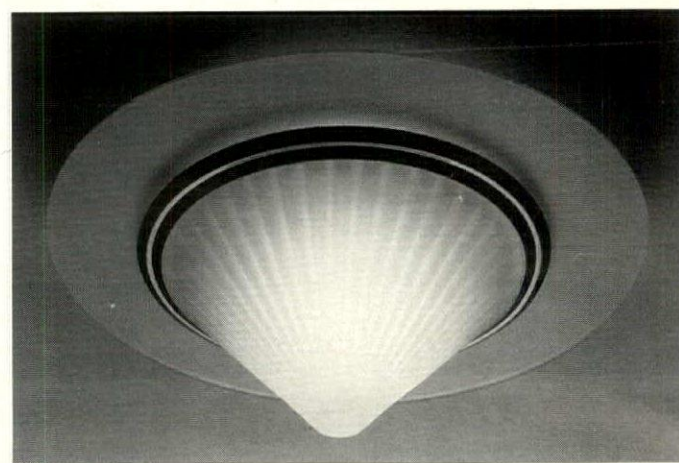
ROBERT LONG SLICE



RAYNER DESIGN BANKER'S LAMP



ARCHITECTURAL AREA REFLECTOR LUMINAIRE



ATELIER ATENA 3

**WALL SCONCE**

AL 480 WS, an 18-inch diameter aluminum and acrylic fixture, is available in Duranamel finish or polished metals. The outside ring and twin horizontal bars are aluminum with a center acrylic dome. Illumination is provided by two PL 13 lamps. Appleton Lamplighter, Appleton, WI. **Circle 60**

**REFLECTOR LUMINAIRE**

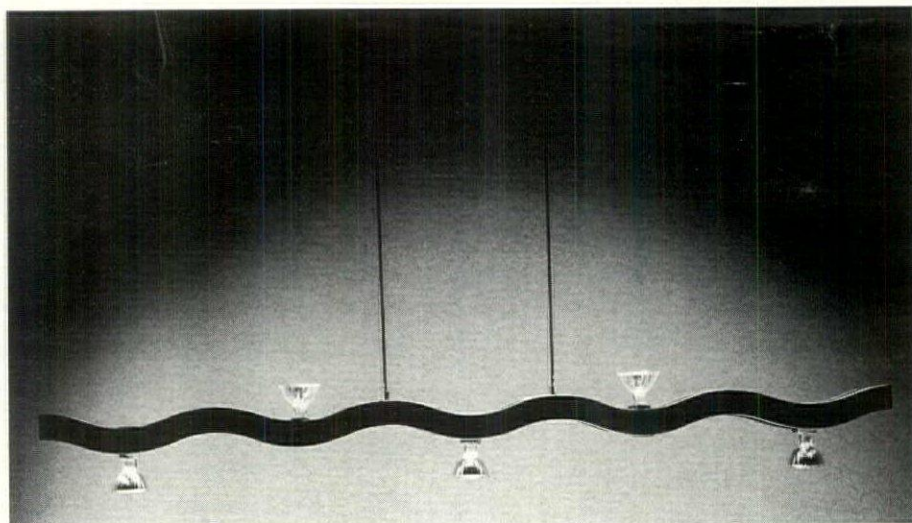
The 3-ring reflector luminaire is made of aluminum for post, pendant, and bracket mountings. Its three acrylic rings have luminous edges, and come in a variety of accent colors. The luminaire can accommodate a variety of HID lamps, and is suitable for both interior and exterior applications. Architectural Area Lighting, Inc., La Mirada, CA. **Circle 61**

**SUSPENSION LAMP**

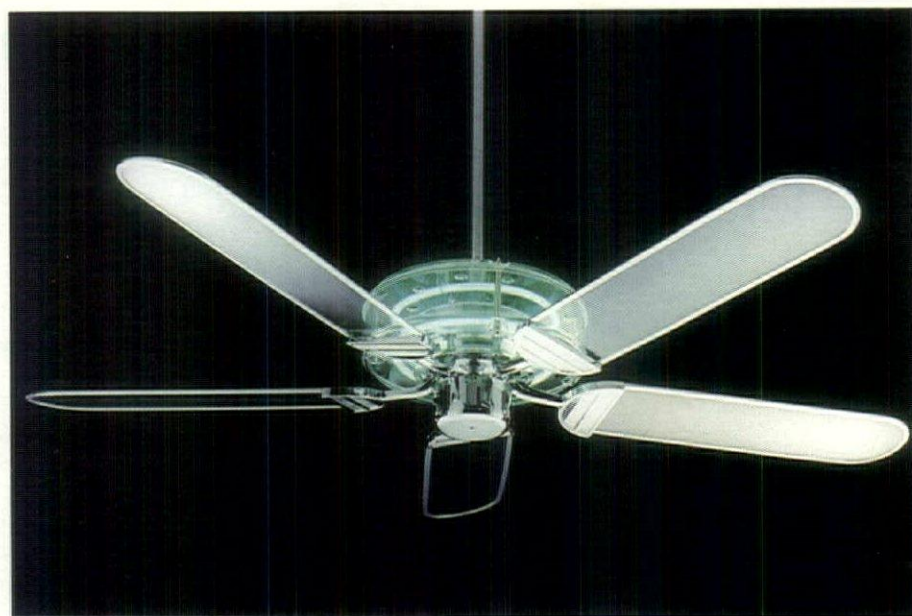
Nessie, designed by De Pas D'Urbino Lomazzi, and manufactured by Stilnovo, is a suspension lamp made from lacquered metal. The fixture provides both direct and indirect lighting and is available in black or grey. Hampstead Lighting and Accessories, Inc., Irvine, CA. **Circle 62**

**NEON FAN**

Prizsm has five clear acrylic blades set in frames of chrome, with its polished motor enclosed in a clear acrylic body surrounded by tubes of neon. The ceiling fan can be equipped with any of the company's many lighting kits and will soon be available in six colors of neon. Davimport, Fort Worth, TX. **Circle 63**



HAMPSTEAD NESSIE



DAVIMPORT PRIZSM

**SLICE TABLE LAMP**

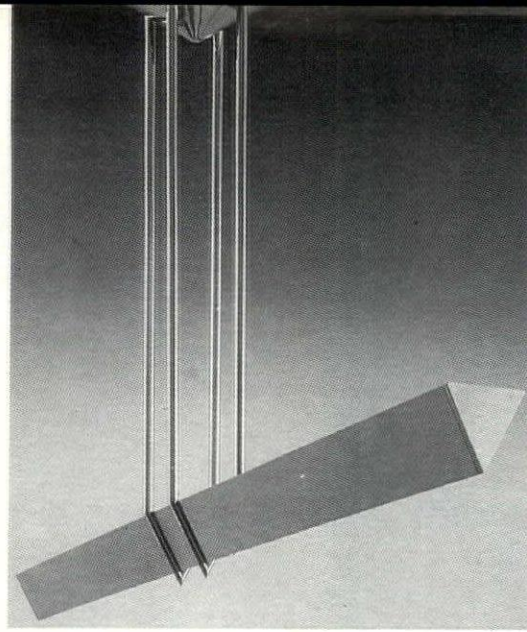
This fixture has an overall height of 25.25 inches with a shade 4 inches in diameter at the top and 3 inches at the base. The table lamp uses an incandescent bulb to 100 watts and is available in polished chrome and polished brass as well as other finishes upon request. Robert Long Lighting, Healdsburg, CA. **Circle 64**

**BANKER'S LAMP**

This halogen table lamp's three-sided pyramid base supports an aluminum rod upon which is mounted a counterbalanced cone-shaped aluminum and lexan bulb housing. The rod is able to swing 360 degrees around the vertical axis of the base. The lamp is off when the rod is horizontal, and turns on when above or below the horizontal position. The bulb housing rotates around the rod's horizontal axis and projects light either up or down. The fixture uses a 12-volt, 20-watt MR 16 halogen bulb. Rayner Design, Seneca Falls, NY. **Circle 65**

**CEILING/WALL LUMINAIRE**

Atena 3 has a conical glass diffuser, a 12.6-inch flat metallic ring of stamped steel, and an 18.5-inch diameter flat circular glass diffuser in sandblasted white, rose, blue, or green glass. The conical lamp support is available in gloss white enamel. The fixture uses either incandescent or fluorescent light sources. Atelier International Lighting, Long Island City, NY. **Circle 66**



BALDINGER LINDA PENDANT



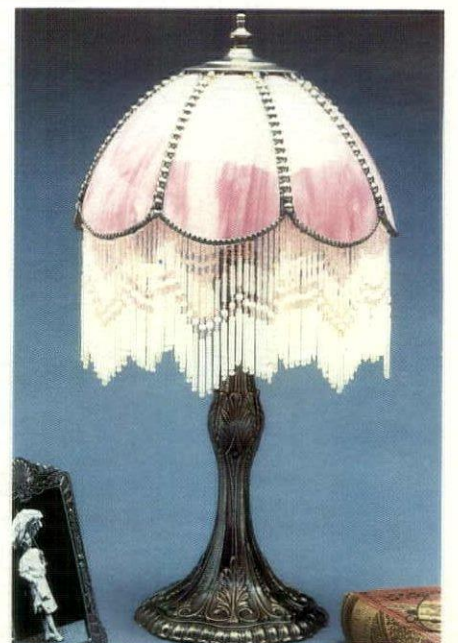
HAMPSTEAD GLORIOSA



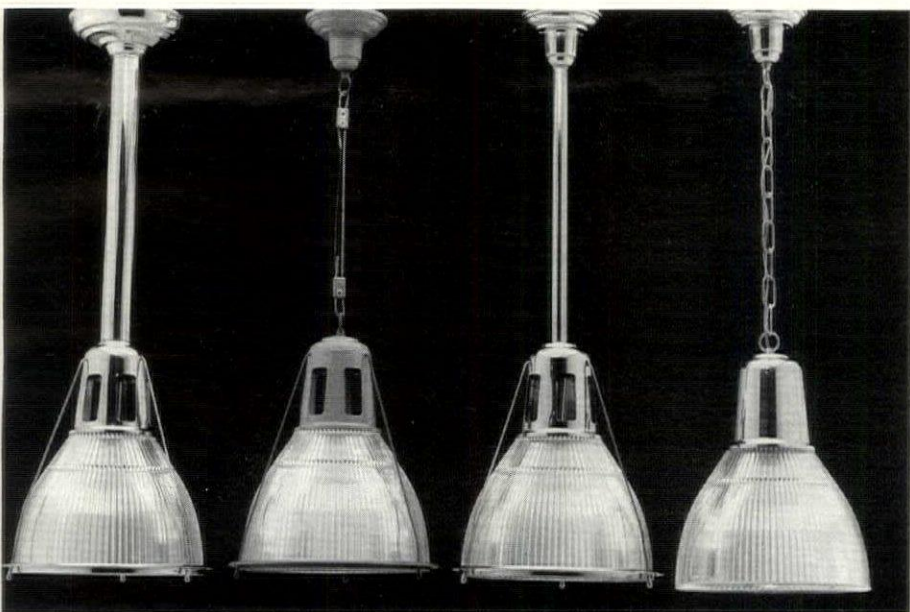
GEORGE KOVACS LARRY



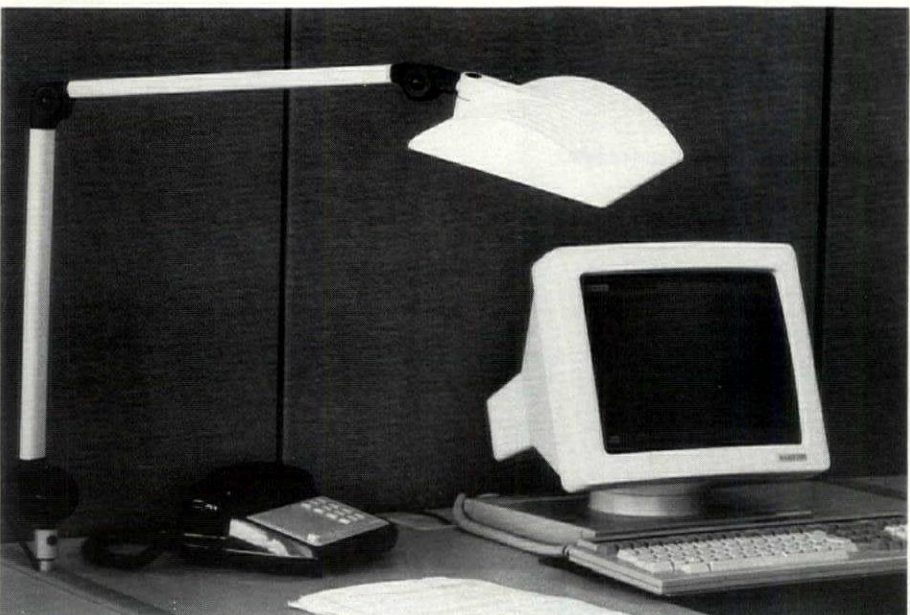
KOCH + LOWY ONA SR.



MEYDA TIFFANY NOSTALGIC CLASSIC



D'LIGHTS SHADES



WALDMANN TASK LIGHT

**GLASS FIXTURE**

Gloriosa, designed by Ettore Sottsass, features Venetian glass elements in straw-yellow and green. The spherical diffuser is opaque pink glass. The fixture uses an incandescent lamp, and also has golden metal accessories. Hampstead Lighting and Accessories, Inc., Irvine, CA. **Circle 67**

**HALOGEN FIXTURE**

Larry, designed by Michael DiBlasi, has an overall height of 9 feet, a 3.5-inch diameter, and a 15-foot adjustable cord. The fixture uses a 55-watt halogen capslite bulb, and is available in satin aluminum with a perforated shade and a clear, blue, or green acrylic ring. George Kovacs Lighting, Inc., Glendale, NY. **Circle 68**

**TABLE LAMPS**

Ona Sr. serves as both an ambient and task light source. It incorporates a touchtronic mechanism that is activated by touching the conical tip of the cable switch for three levels of light. The 25.25-inch tall fixture uses a 12-volt, 50-watt halogen lamp and is available with a glass, silk-screened polycarbonate, or metal shade. Koch + Lowy, Long Island City, NY. **Circle 69**

**SHADES**

The G88-2 series shades are available on a variety of pendant mounted fixtures such as brass chain, brass rods, or steel cable. Painted or special finishes are also available, including chrome, antique brass, antique copper, and a verde finish. D'Lights, Glendale, CA. **Circle 70**

**PENDANT LAMP**

Linda, a metal pendant lamp, designed by Andrée Putman, features a triangulated form and provides uniform up-light in 48-inch or 96-inch lengths. The light from the shorter fixture is provided by two 150-watt quartz halogen lamps, and the 96-inch length uses four of these lamps. The fixture is available in finishes such as satin aluminum, satin brass, polished chrome, and polished nickel. Baldinger Architectural Lighting, Inc., Astoria, NY. **Circle 71**

**TIFFANY-STYLED LAMP**

The Nostalgic Classics Collection features brass bound, curved glass accented with a color-coordinated stained glass beaded fringe. The hand-crafted fixture stands 19 inches tall and is available with a 21-inch French-bronzed base. Meyda Tiffany, Utica, NY. **Circle 72**

**OFFICE TASK LIGHT**

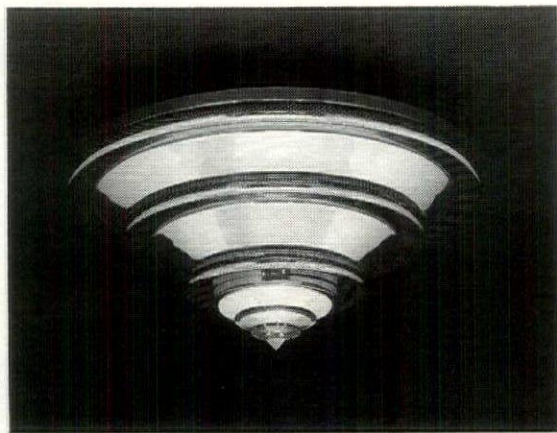
The BT-209, from the 209 Designer Series, features a built-in parabolic louvre that directs light on the work area and reduces glare and reflections from the VDT. The fixture's arms provide horizontal or vertical movement, and the head swivels 180 degrees on three axes. The BT-209 is available in matte black, brown, slate grey, and beige, and uses two 9-watt PL-type lamps that provide a 4,100K color temperature and an 82 CRI. Waldmann Lighting Co., Wheeling, IL. **Circle 73**

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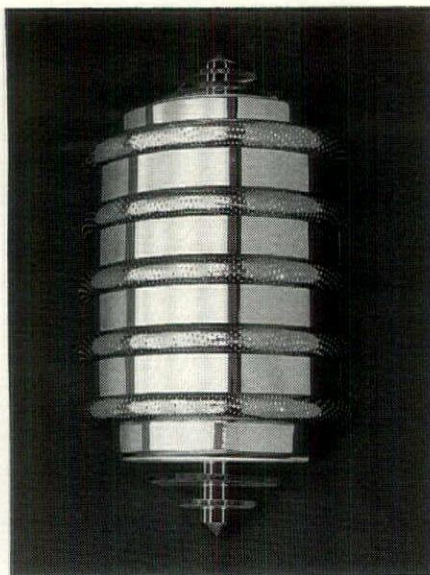
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- Delivery



#### Pendant

3'8" diameter x 17" deep. Perforated chrome spinning. Polished bronze, tempered glass, 100 quantity, T-3 1/4 lamp, 4.9 watt and one 250 watt PAR 38 lamp.



#### Wall Sconce

1'9" diameter x 30" tall x 1'0" projection. Perforated chrome spinning. Polished bronze, tempered glass. 45 quantity, T-3 1/4 lamp, 4.9 watt and two quantity 100 watt PAR 38 lamp.

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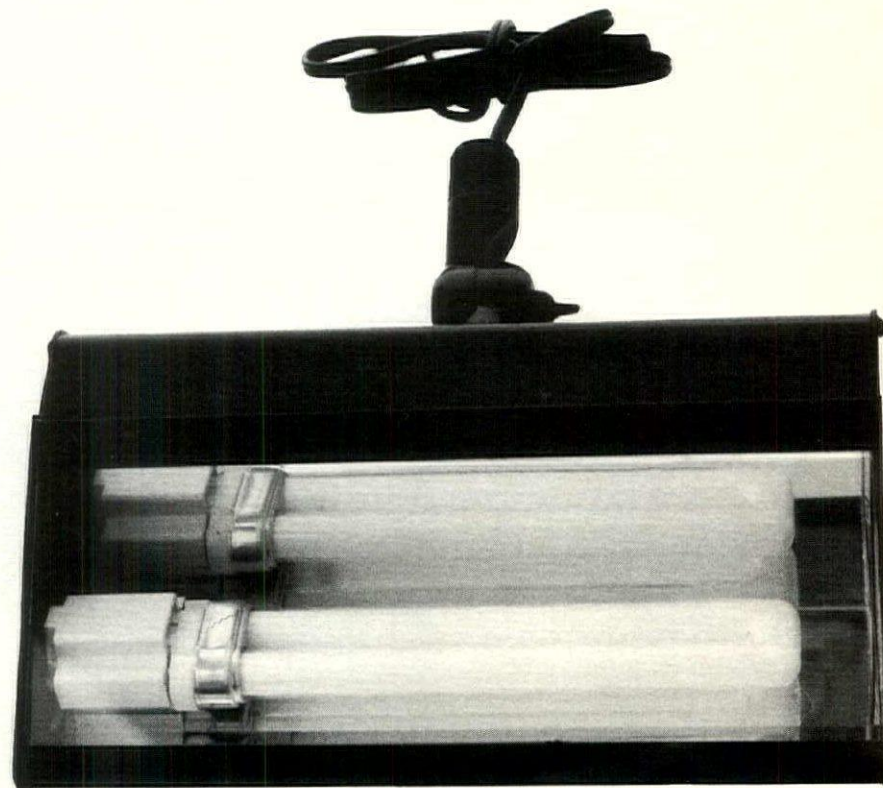
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# SHOWCASE

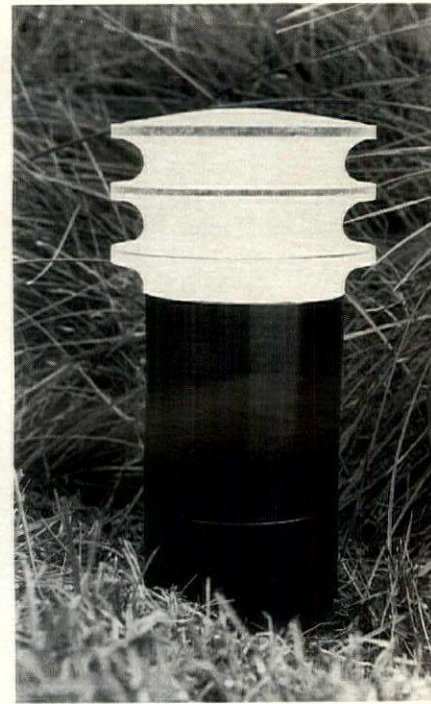
LANDSCAPE



FOCUS FLOODLIGHT



HANOVER LANTERN SPREAD LIGHT



LUMIERE TAHOE

#### FLUORESCENT FLOODLIGHT

This floodlight uses an energy efficient 13-watt, 4,100K cool white compact fluorescent lamp. The fixture has an extruded aluminum housing with a die-cast aluminum swivel, a high impact acrylic lens, and a highly polished specular aluminum reflector. The luminaire is available in a durable baked black enamel finish. Focus Lighting, Santa Fe Springs, CA. **Circle 80**

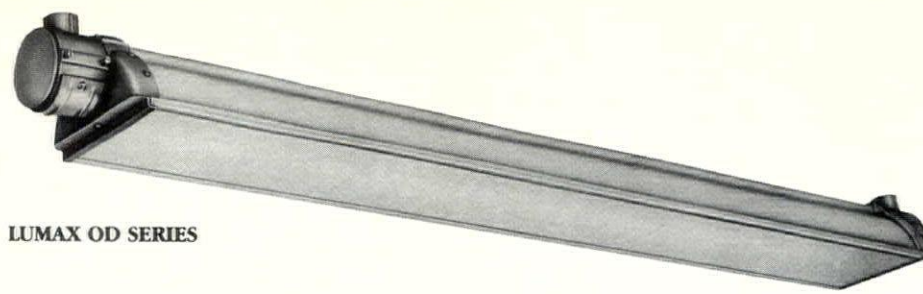
#### MINIATURE SPREAD LIGHT

Terralight low-voltage model LV140 creates small pools of indirect light. The seashell top is 3 inches x 7 inches and is constructed from heavy-duty cast aluminum. The fixture comes with a 24-inch pipe, cast aluminum ground spike

with a splicing compartment, 1-foot of low-voltage cable, a cable connector kit, and a 12-volt, 18-watt double contact bayonet base lamp. Hanover Lantern, Hanover, PA. **Circle 81**

#### MINI BOLLARD

The Tahoe family of fixtures includes mini bollards with heights of 6 to 10 inches. The crystal-like dome is crafted of solid UV stabilized acrylic rod, and the body is zinc chromate converted-thermoplastic polyester coated. The fixture uses a low-voltage halogen lamp and is sealed at the base with a ring for a water-tight fit. Lumiere Design & Manufacturing, Inc., Westlake Village, CA. **Circle 82**



LUMAX OD SERIES



INTERMATIC MALIBU



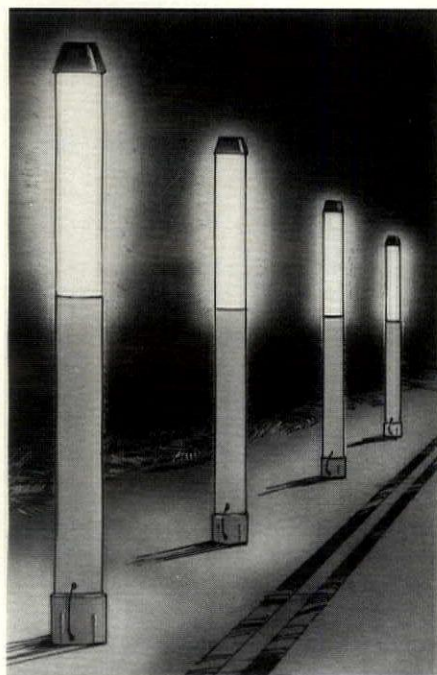
HANOVER LANTERN TERRALIGHT



HYDREL 9000 SERIES

**WEATHER-RESISTANT**

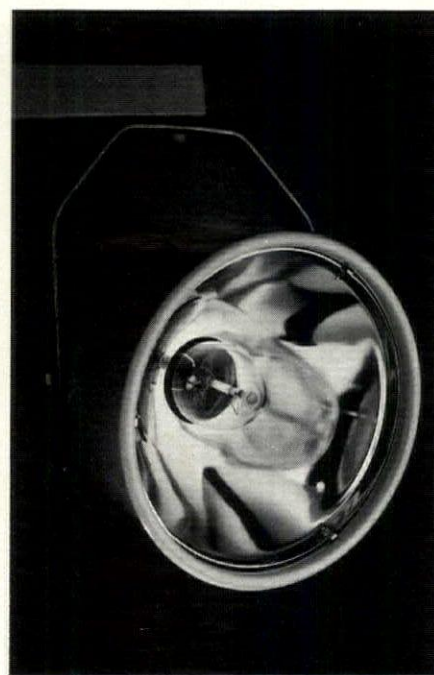
The OD Series two-lamp, fluorescent fixture is designed for illuminating signs, building facades, parking garages, and service stations. The fixture features heavy-duty cast aluminum ends, flexible aiming, gasketed construction for all-weather operation, and a housing interior finished with high reflectance white enamel. Available for high or very high output lamps and remote ballasts, the fixture is offered in 4-, 6-, and 8-inch sizes. Lumax Industries, Inc., Altoona, PA. **Circle 83**



HUGHEY & PHILLIPS MARKERS

**RETROREFLECTIVE MARKERS**

High intensity retroreflective markers for runway and taxiway provide safety features and require little maintenance. The markers feature a pop-out coupling with the retroreflective portion of the marker tethered to the coupling. The markers are available in blue, yellow, silver, and red, and in sizes from 14 to 30 inches. They have an anti-corrosion treated steel stake for low maintenance and a long life. Hughey & Phillips, Simi Valley, CA. **Circle 84**



TORK DOCK LIGHTS

**BOLLARD ACCENT LIGHTS**

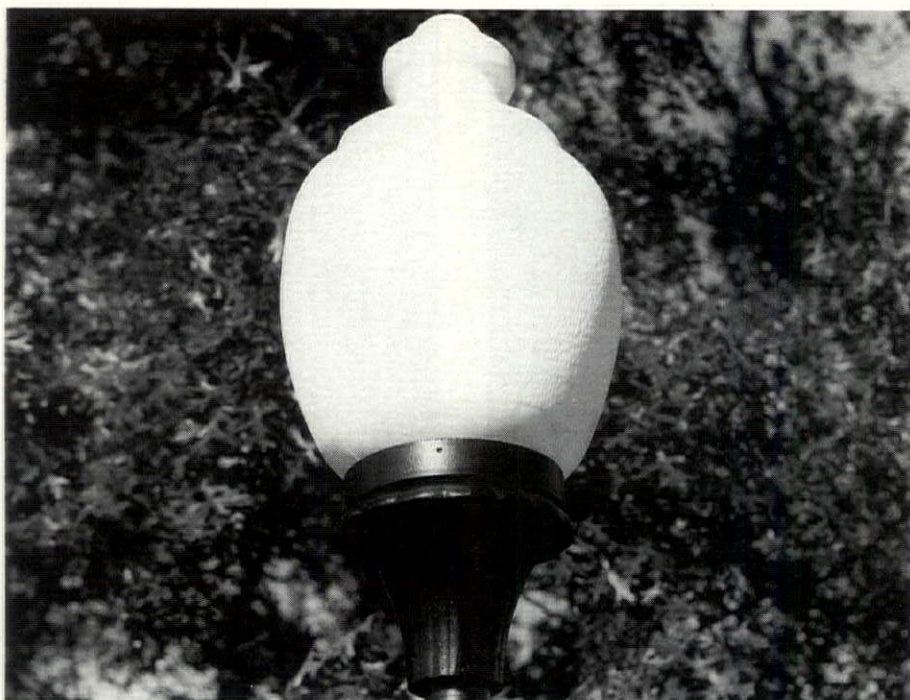
Malibu fixtures are cylindrical in shape and feature a faceted lens cylinder that softly diffuses light. Internal reflectors provide even distribution. Available in two heights, 19 inches and 26 inches, the fixture requires a 12-volt current, and features a high-impact polymeric construction. Intermatic Inc., Spring Grove, IL. **Circle 86**

**THATCHED HAT FIXTURE**

Terralight model 6304 is a standard 120-volt system with a medium base socket, and it uses a standard A lamp with a maximum of 60 watts. A low-voltage conversion kit is available. The luminaire measures 11 inches in diameter, 9.5 inches in height, and is made of heavy-duty cast aluminum. Hanover Lantern, Hanover, PA. **Circle 87**

**ADDITIONAL PHOTOMETRICS**

The Edison III luminaire, part of the Lighting Legends family, has added new photometrics and shielding. The post-top mounted fixture utilizes HID lamps from 35 - 175 watts to provide medium non-cutoff Type V (symmetrical) or Type III (asymmetrical) light distribution. A house side shield and an uplight shield offer additional control of light output. The luminaire has a glare-free acorn globe of white or clear polycarbonate which is UV stabilized for color clarity and is impact resistant to -40 degrees Fahrenheit. GE Lighting Systems, Hendersonville, NC. **Circle 85**



GE EDISON III

**IN-GRADE LIGHTS**

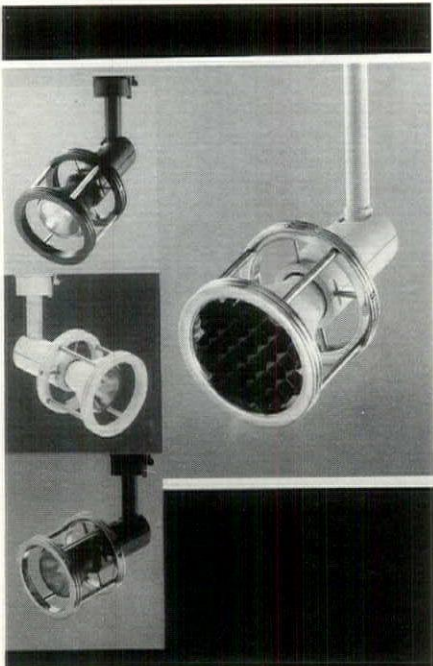
The 9000 series in-grade lights feature a sealed modular design that optimizes the use of HID lamps. A locking door assembly and single fastener retains the lamp and power modules, which are interconnected with water-tight connectors allowing the removal of modules for replacement or service. The 9000 is available to 75 watts incandescent and the 9100 to 100 watts HID, 250 watts incandescent. Hydrel, Sylmar, CA. **Circle 88**

**LOADING DOCK LIGHTS**

These fixtures use 50-watt HPS lamps, are dual voltage (115/230 VAC), and have a rated life of 24,000 hours. They feature knuckle joint construction at the elbow to allow for horizontal and vertical positioning. Also offered is a replacement kit to convert incandescent dock lights to HPS. Tork, Mount Vernon, NY. **Circle 89**

# SHOWCASE

## ACCENT



SWIVELIER ORBITER

### MINI HALOGEN LIGHTS

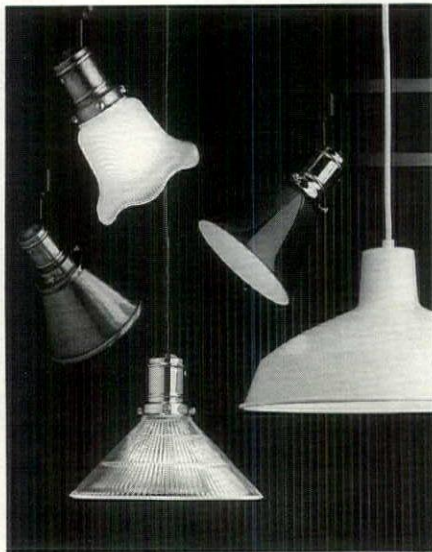
Orbiter track lights with the Tech 16/38 line, are designed for miniaturized halogen light sources. Track light heads are available for line voltage 55- and 75-watt Designer 16, and 50-watt PAR 20 lamps. The Orbiter design is offered in 2-inch and 18-inch stem lengths and is available in black, white, and black or white with chrome or polished brass. All miniaturized halogen fixtures are available in single- and three-circuit track models. Swivelier, Nanuet, NY. **Circle 90**

### DECORATIVE LAMP HOLDERS

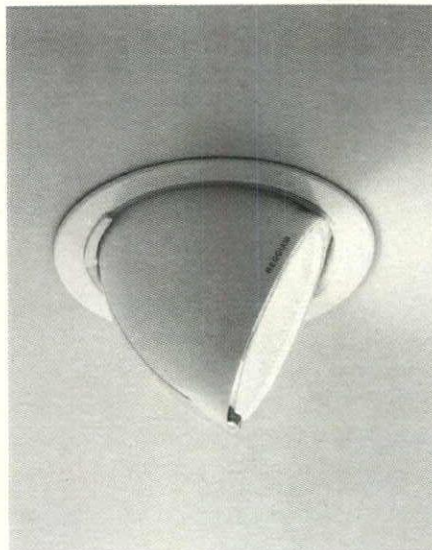
A selection of line voltage track and pendant mounted lampholders range from classic, petal-shaped and cylindrical clear or etched optic glass shades to metal and green-cased shades. Pendant-hung shades, including an industrial-type pendant mounted fixture, is offered in white enamel or prime coat, which may be painted to coordinate with any color scheme. The lampholders accept lamps ranging from 40 to 100 watts. Capri Lighting, Los Angeles. **Circle 91**

### DOWNLIGHT AND SPOTLIGHT

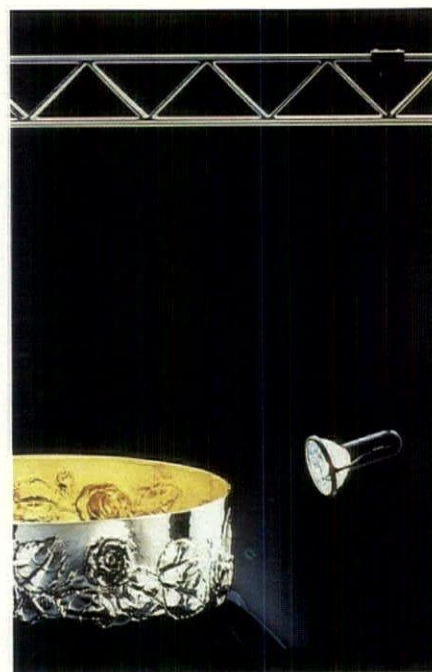
Downspot is a series of fully adjustable lighting fixtures available in four sizes and designed to utilize a wide selection of light sources. Downspots can be adjusted from 0-60 degrees vertically, and 0-365 degrees horizontally. The design, a combination of spotlight, is available in white, graphite, 24K gold-plated, chrome, satin chrome, and polished brass. Reggiani USA, New Windsor, NY. **Circle 92**



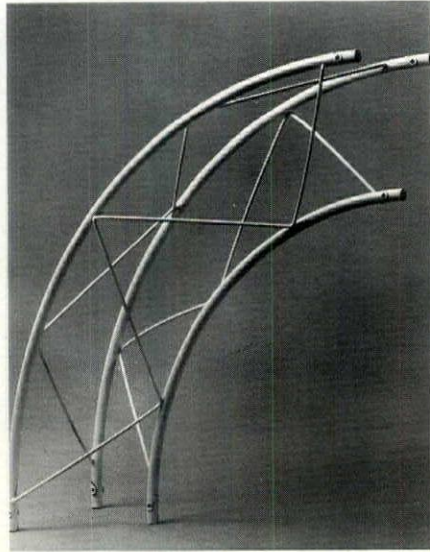
CAPRI LAMP HOLDERS



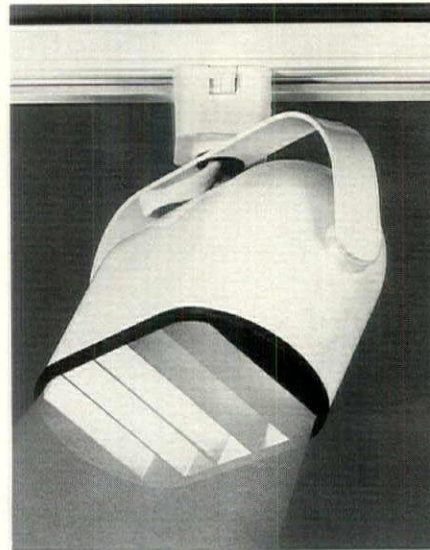
REGGIANI USA DOWNSPOT



TARGETTI STRUCTURELLA



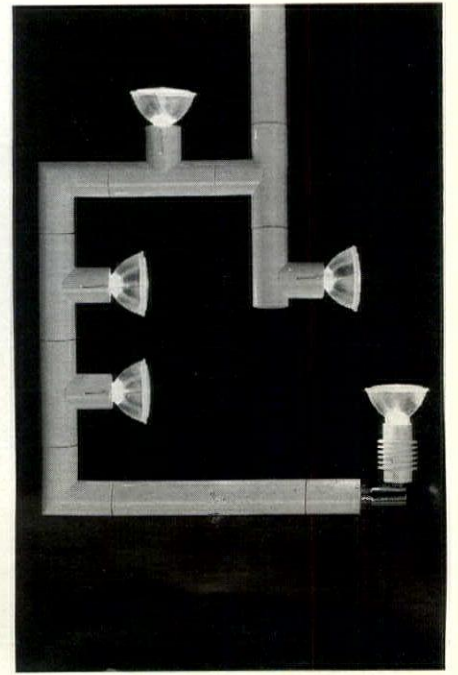
INTERLOCK TRANSFORM 8



CON-TECH WALL WASH



TARGETTI STRUCTURELLA



TIMES SQUARE SYSTEME ZIP

### THREE-DIMENSIONAL SYSTEM

Systeme Zip is a three-dimensional 12-volt lighting system that utilizes 20-, 50-, or 65-watt MR 16 lamps. The interchangeable joiners and tubes that can be arranged in any configuration. Times Square Lighting, Stony Point, NY. **Circle 93**

### CURVED TRUSS

TransForm 8, two foot lengths are available in both 45-degree and 90-degree radii, and a 4-foot section is available with a 45-degree arc. Also, there are 6-, and 8-foot lengths with a 30-degree radius. Interlock, Maple Grove, MN. **Circle 94**

### WALL-WASH TRACK FIXTURE

Model CTL1504, features a die-cast full cut-off louver that provides broad, even distribution. The fixture uses a single-ended T4 frosted tungsten-halogen flood lamp, 150-watts maximum. Available in black or white, the track comes in 2-, 4-, 6-, 8-, and 12-foot lengths. Con-Tech Lighting, Deerfield, IL. **Circle 95**

### MINIATURE SPACE FRAME

The Structurella System consists of miniature extruded aluminum, three-dimensional frames that function as insulated electrical conduits as well as supports for miniature halogen and dichroic spotlights. The maximum run from each electrical feed is approximately 20 feet in each direction. The system can be suspension or wall mounted. Targetti Inc., New York. **Circle 96**

# SHOWCASE

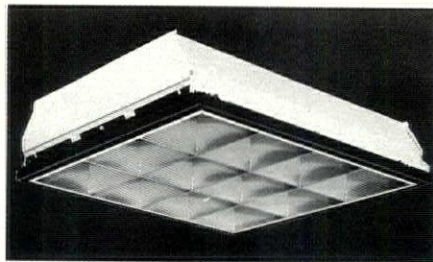
## AMBIENT

### WALL BRACKET

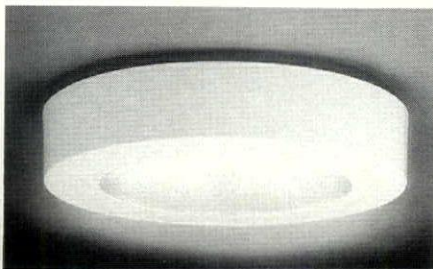
The Monroe series is a contemporary grouping of armed chandeliers and wall brackets. The chandeliers are available in 28-inch and 42-inch diameters, and the wall brackets in 1-, 2-, and 3-arm styles. The 2-arm style (shown) is finished with polished brass and white nextel paint, and the shade is made of metal. The fixture is 15.5 inches high, 20.5 inches wide, has a 10.5-inch projection, and uses 120-volt incandescent lamps. Winona Lighting, Winona, MN. **Circle 100**



WINONA FIGARO



LITHONIA OPTIMAX



EDISON PRICE COROLUX



EDISON PRICE WASHLUX

### SCONCES & BRACKETS

Figaro, part of the Metropolis series of six wall sconces and brackets, combines polished brass and bronze with polished stainless steel accents. It measures 10 inches in width with a 5.5-inch projection and uses a 120-volt quartz halogen lamp. Winona Lighting, Winona, MN. **Circle 101**



CAN-AM VALANCE

### VALANCE OR SCONCE

This fixture projects a neon glow while providing clear illumination of fluorescent light, and can be used as a valance to highlight product displays or as a sconce to add diffused light. The system is available in 2-, 3-, or 4-foot lengths and can be installed directly to walls or slatwall. Can-Am Merchandising Systems, Buffalo, NY. **Circle 102**



WINONA MONROE SERIES

### RECESSED WALLWASH FIXTURES

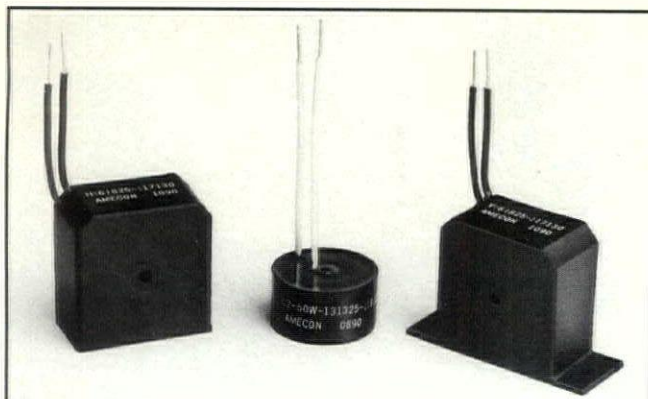
The Washlux family of recessed, lensed wallwash fixtures provides five wallwashers with the same aperture size. The fixtures use color balanced, long-life compact fluorescent lamps featuring illumination levels from different lamp combinations: one 13-watt, one 18-watt, one 26-watt, two 18-watt, and two 26-watt lamps are all in 120- and 277-volt models. The fixture is 6.75 inches deep and is available in clear, champagne gold, and black Alzak finishes with either overlap or flush-trim detail. Edison Price Lighting, New York. **Circle 103**

### SURFACE-MOUNTED FIXTURE

Corolux uses two 13-watt color balanced compact fluorescent lamps, has a contoured Alzak reflector and a beam-splitting acrylic lens. Corolux has a 2-inch deep housing and is available with 120-volt high power factor ballasts. Edison Price Lighting, New York. **Circle 104**

### GLARE-CONTROL LUMINAIRES

An expanded Optimax family of glare-control fluorescent luminaires includes 2-foot x 2-foot models that can be used with either 31-watt T8 U-lamps or 40-watt compact fluorescent lamps. This model also features an added degree of design flexibility with its symmetric, modular shape. Lithonia Lighting, Conyers, GA. **Circle 105**



### TECHNOLOGY BREAKTHROUGH: Improve Light Intensity and Debuzz, too

Due to a newly developed core material, Amecon's new debuzzing chokes increase light intensity by 50% and reduce temperature by 25% over present technology. And they essentially eliminate noise in your lighting systems. Designed for OEM and retrofit applications, the new chokes are packaged for quick and easy installation into standard fixtures, wall boxes and compact areas. They're built with high temperature, high impact, fire retardant

UL recognized materials. They're rated at 50 and 75 watts from 5 to 24 volts. Two models include (1) the high performance 2-1/16" square by 1-1/16" deep model with centerhole or vertical/horizontal mounting and (2) the standard performance 1-5/8" diameter by 7/8" deep circular model with centerhole mounting. Ask about our custom designs, too. Call, FAX or write for new Technical Bulletin/Selection & Design Guide ALC-0790.



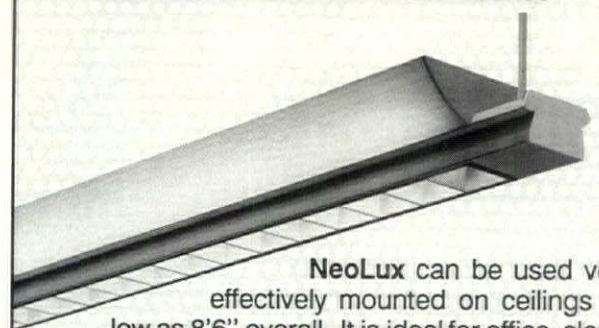
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DIRECT/INDIRECT LIGHTING FOR LOW CEILINGS



NeoLux can be used very effectively mounted on ceilings as low as 8'6" overall. It is ideal for office, classrooms and open space areas. The light distribution is wide spread and the ceiling luminance ratio meets the IES recommended levels. NeoLux is ideal for use in offices utilizing VDT's.

NeoLux has an efficiency rating of 83% and is available for 1, 2 or 3 lamps, T8 or T12. Ballasts are located in the fixture and fixtures are completely wired ready for installation.

Fax for Free Information FAST  
718/456-5492



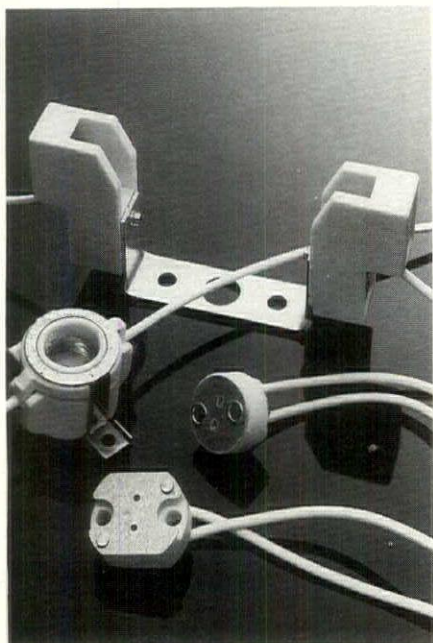
537 Johnson Avenue, Brooklyn, NY 11237  
Tel: 718/456-7400

PAT. PEND.

Circle No. 18 on product card.

# SHOWCASE

## ACCESSORIES



GILWAY LAMP HOLDERS

### HALOGEN LAMP HOLDERS

The "H" series halogen lampholders provide positive electrical connection to halogen lamps and are constructed of ceramic, silver-plated brass contacts, brass mounting inserts, and high-temperature wire. The holders mount low wattage halogen lamps in the G-4 and MR 11 configurations, and high wattage halogen lamps designated as G-6.35, GZ-6.35, GX-5.3, GY-9.5 and MR 16. Gilway Technical Lamp, Woburn, MA. **Circle 110**

### IMPROVED PAR 38

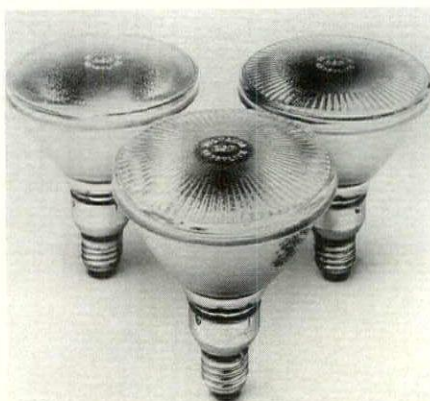
The 90-watt PAR 38 Capsylite lamp is now rated at 2,500 hours average rated life, a 25 percent increase over its previous rating of 2,000 hours. The 90-watt lamp replaces a 150-watt PAR 38 incandescent, saving 40 percent on energy consumption. GTE Electrical Products, Danvers, MA. **Circle 111**

### SELF-LUMINOUS SIGNS

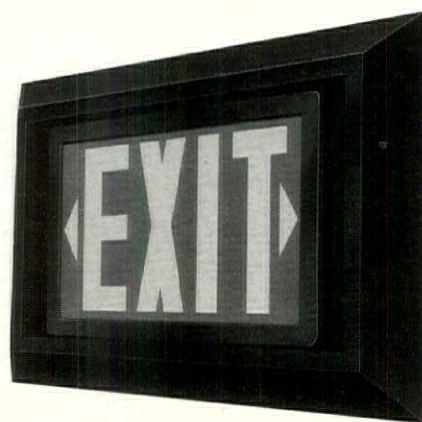
The Betalux-E self-luminous institutional exit signs feature flush fitting, an angled frame and tamper-resistant mounting screws that make the fixture virtually vandal-proof. The Betalux-E requires no electricity, no batteries, no bulbs, and has a 20-year life expectancy. SRB Technologies, Inc., Winston-Salem, NC. **Circle 112**

### LIGHTING CONTROLLER

Symmetry is a computer-based, digitally operated dimming control system for convention centers, hotels, and similar facilities. The computer can operate the lighting in 16 rooms on as many as 256 control channels. Each room has 12 presets and a full function time clock with a 365-day calendar. A variety of designer-quality and custom wall mount stations are available, as well as a hand-held portable controller. Macro Electronics Corp., Austin, TX. **Circle 113**



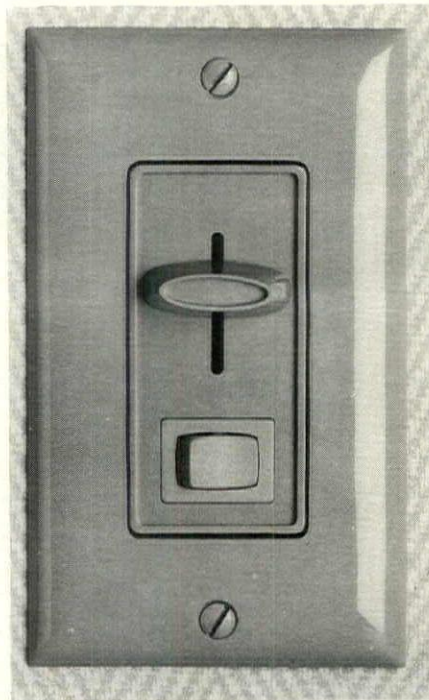
GTE IMPROVED PAR 38



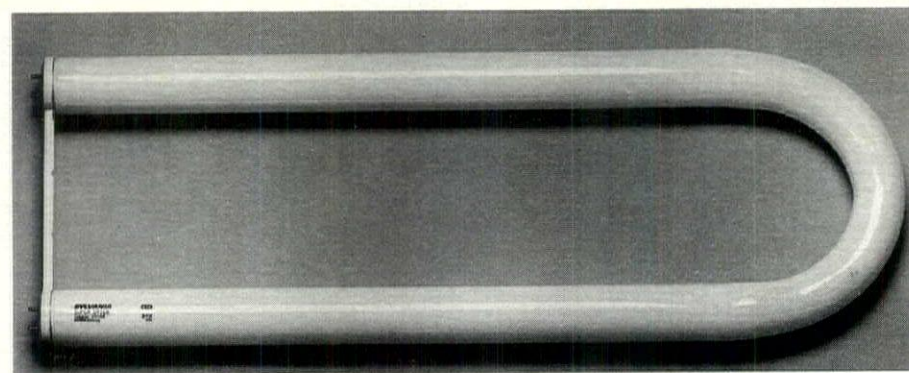
SRB SELF-LUMINOUS SIGNS



HEATH ZENITH LIGHTING CONTROLS



HUBBELL DIMMERS



GTE DESIGNER CURVALUME



VALMONT LEADLESS BALLAST



MACRO ELECTRONICS SYMMETRY

### INDOOR LIGHTING CONTROLS

The Reflex SL-6105B motion-sensing wall switch and replaces any two-way wall switch and is designed to control lighting up to 300 watts. The unit features a PIR motion sensor that automatically turns lights on and off. It can also be adjusted so that lights stay on as long as five minutes or as short as five seconds once motion is detected. A daylight control is also included so that the switch operates during daylight hours where needed. Heath Zenith Reflex Brand Group, St. Joseph, MI. **Circle 114**

### LOW-WATTAGE LAMPS

Supersaver Designer Curvalume 34-watt lamps, are available in three colors—3,000K, 3,500K and 4,000K—and have an initial lumen rating of 2,800, and an average rated life of 18,000 hours. GTE Electrical Products, Danvers, MA. **Circle 115**

### INCANDESCENT DIMMERS

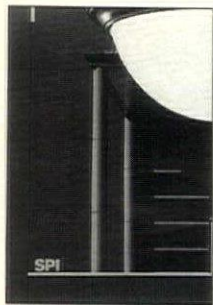
Specification grade preset slide incandescent dimmer lighting controls allow lighting to be switched on to a predetermined level without changing the light intensity. A sliding actuator controls the wattage level, and a switch button turns the power on and off. The preset incandescent controls are rated at 600 and 1,000 watts, 120-volt AC. Hubbell Inc., Wiring Device Division, Bridgeport, CT. **Circle 116**

### LEADLESS BALLAST

The XL series of leadless ballasts has all internal connections converging at an external plug. A wiring harness is inserted to complete the connection. The Val-Miser XL can support fixture automation, cut storage requirements, and simplify ballast replacement. Valmont Electric, Danville, IL. **Circle 117**

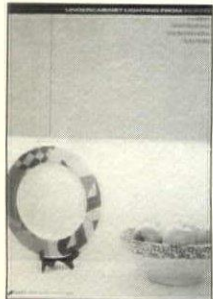


## PRODUCT LITERATURE



### INTERIOR FIXTURES

A full-color, 24-page catalog features the capabilities of the company's fixtures in interior environments. Fifty photographs show applications in office settings, public spaces, recreational and educational interiors, merchandising areas, and manufacturing and storage facilities. Also included is a section addressing the impact of lighting on renovation and restoration projects and an examination of the advantages of indirect versus direct lighting. SPI Lighting, Mequon, WI. **Circle 50**



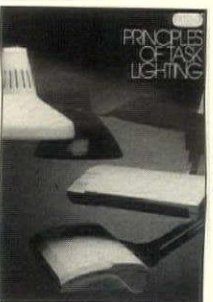
### UNDERCABINET LIGHTING

A 24-page, four-color catalog features an expanded line of undercabinet lighting fixtures and design options. The catalog includes models with features such as adjustable light levels, lensing and louvers for brightness and glare control, accent lighting modes, and lensless designs for indirect overcabinet lighting. Featured is the Little Inch 1-inch thin miniature fluorescent with a new high performance ballast that instantly starts lamps without flicker. Alkco, Franklin Park, IL. **Circle 51**



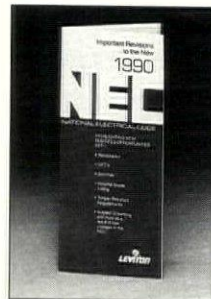
### TRACK LIGHTING

The Trac-Master 84-page catalog is fully illustrated and features the Strap and Cast 16 series with special application products like the Coil Cord Clamp-Ons, Theatre Lite, and Trac Tube. Juno Lighting, Inc., Des Plaines, IL. **Circle 52**



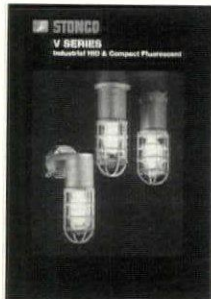
### TASK LIGHTING SYSTEMS

Principles of Task Lighting is a complete line of symmetric and asymmetric task lighting, document holders and VDU arms, illuminated magnifiers, and a full complement of mounting options, including a rail mount system. Luxo Lamp Corp., Port Chester, NY. **Circle 53**



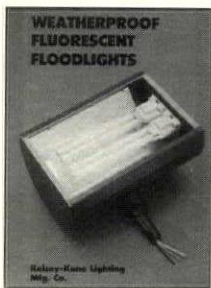
### SALES OPPORTUNITIES

This brochure describes sales-building opportunities created by changes and/or additions to the National Electrical Code since its 1987 revision. The brochure addresses new requirements in the use of electrical wiring devices and interprets each section suggesting current products that can be used to comply with the regulations. Leviton Manufacturing Co., Inc., Little Neck, NY. **Circle 54**



### VAPORTIGHT FIXTURES

A fully-illustrated four-color brochure features a line of vaportight fixtures with HPS or compact fluorescent lamps. A diagram highlights features and benefits of the design including a die-cast aluminum housing with a wheelabrated finish to withstand harsh plant conditions and a guard to protect the lamp and refractor against breakage. Also included is a porcelain socket pulse-rated for 4 KV and a prismatic glass refractor for symmetrical light distribution. Stonco, A Genlyte Co., Union, NJ. **Circle 55**



### FLUORESCENT FLOODLIGHTS

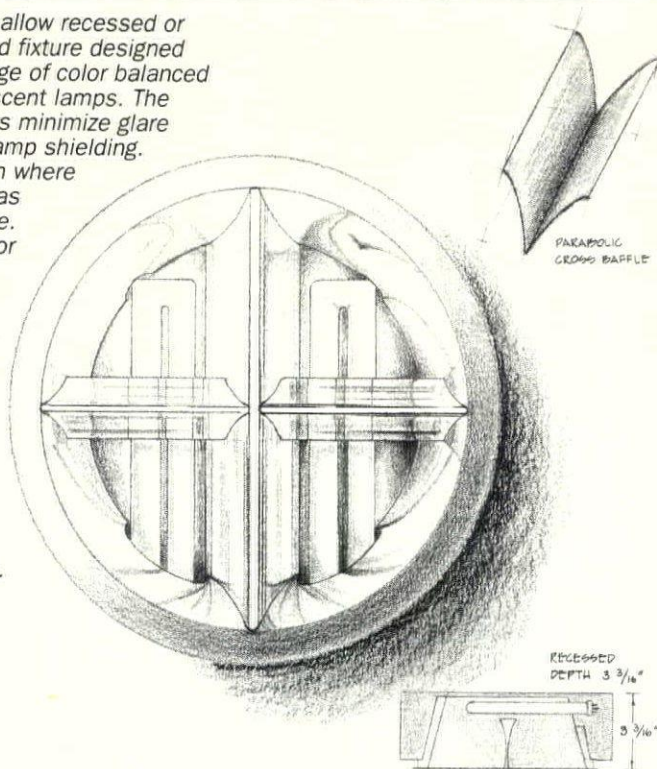
Kelsey-Kane Lighting's fluorescent floodlights have durable, weatherproof PVC housings and come in single- and multiple-lamp versions for several compact fluorescent sources. A brochure lists features and accessories. Kelsey-Kane Lighting Manufacturing Co., Fort Lauderdale, FL. **Circle 56**

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## BAFLUX™

An extremely shallow recessed or surface mounted fixture designed to take advantage of color balanced compact fluorescent lamps. The parabolic louvers minimize glare by maximizing lamp shielding. For any situation where incandescent was once appropriate. High power factor ballast; 120 or 277 volt. The energy efficient Baflux is one of our readily available **Standards**. Write or call Dept. A for further information and the name of your local rep.



## EDISON PRICE LIGHTING

ARCHITECTURAL LIGHTING AT ITS BEST

Edison Price Inc., 409 East 60 Street, New York, NY 10022 Tel: 212-838-5212 Fax: 212-888-7981 **Circle No. 19 on product card.**

LIGHTING RESEARCH (CONTINUED FROM PAGE 17)

16. *Antidepressant and Circadian Phase-Shifting Effects of Light*, 88: DR NEMA: 4, research conducted by A. Lewy (Oregon Health Sciences University).
17. *Studies on the Effects of Light on Biological Systems*, 84: DR NEMA: 2, research conducted by R. Hoffman (Colgate University).
18. *Influence of Light Irradiance and Wavelength on the Primate Suprachiasmatic Nuclei*, 84: SP LREF: 5, research conducted by G. Brainard (Thomas Jefferson Medical).
19. *Treatment of Winter Depression and Endogenous Depression Using Chronobiologically Active Light*, 85: SP LREF: 1, research conducted by A. Lewy (Oregon Health Sciences University).
20. *Lighting and Vision at Visual Display Terminals (VDT) Work Stations—A Critical Review*, 88: SP LREF: 1, research conducted by W. Adrian (University of Waterloo).
21. *Lighting Patterns in Visual Display Terminals*, 90: SP EPRI/Lithonia/Litecontrol/Penn State/LREF: 1, research conducted by P. Sandeis, C. Bernecker and R. Mistrick (Pennsylvania State University).
22. *Development of a Utility Lighting Demonstration Module*, 85: IMP EPRI: 4, research conducted by R. Vincent and T. Schneider (Lighting Research Institute).
23. *Daylighting State-of-the-Art Review*, 89: EPRI: 1, research conducted by A. Rubin; B. Collins; and S. Treado (National Institute of Standards and Technology).
24. *Rating Transmittance Performance of Fenestration Systems*, 85: IMP EPRI/NYSERDA: 1, research conducted by S. Selkowitz (Lawrence Berkeley Laboratory) and R. McCluney (Florida Solar Research Center).
25. *Tunnel Lighting Research*, 88: SP LREF: 3, research conducted by W. Adrian (University of Waterloo).
26. *Comparison of Real-World Roadway Dynamic Simulation and Cumulative Brightness Evaluation and Glare-mark*, 84: SP LREF: 7, research conducted by S. Konz (Kansas State University of Agriculture and Applied Science).
27. *Roadway Lighting Visibility Study*, 87: SP LREF: 1, research conducted by M. Janoff (JMJ Research), Visibility Task Force Subcommittee of the IES Roadway Lighting Committee, and the Lighting Research Institute.
28. *Visibility Measurement of Realistic Roadway Tasks*, 88: SP LREF: 2, research conducted by M. Keck (LRI Consultant) and M. Lipinski (Memphis State University).
29. *Development of a Methodology to Assess the Influence of Lighting Characteristics on Accidents*, 90: SP UNCC/LREFF 3, research conducted by E. King (University of North Carolina at Charlotte).
30. *The Relationship Between Visibility and Driver Performance*, 90: LRI SP LREF 2, research conducted by M. Janoff (JMJ Research).
31. *1990 Summer Workshop for Teachers of Lighting*, 90: ED LREF: 1, coordinated by J. Murdoch (University of New Hampshire) and J.E. Kaufman (IESNA staff representative).

INTERNATIONAL NEWS (CONTINUED FROM PAGE 33)

WHAT PREDICTIONS DO YOU HAVE FOR PRODUCTS IN THE '90s?

**GE/BETCHKAL:** I think we'll see an increasing usage of fluorescent in the future. Additionally, consumers are appreciative of the efficiency value of the energy-saving incandescent lamps that are on the market now.

**GTE/MERCHANT:** From a light source standpoint, new product developments that will occur over the next 10 years will be in the HID areas—metal halide and high-pressure sodium lamps. We'll also see significant development in tungsten halogen, in both specialty display and general lighting types. Thirdly, there will be major developments in compact fluorescent sources. I think we'll see all kinds of fluorescent discharge sources in different, smaller packages.

**VOLIARC/VICK:** I think some of the newer trends that we have going on in the U.S., like the MR 16s, the extra long PLs, the short PLs, are going to become more and more common. I think the high output, low voltage is becoming more attractive, and for indoor application, the range of what you can do is virtually limitless.

There's no reason the trade has to go one way. The U.S. doesn't have anything to prevent it from being a major force. We certainly have the production capability, the inventiveness, and we sure have enough salesmen. We're looking to get the best we can out of Europe, and I don't see any reason why we can't put our best foot forward.

## MARKETPLACE

**Classified Directory:**

First line (boldface italics)  
all caps or upper and lower case \$82.50@  
Each Additional Line (regular face) upper and lower case 57.50@

**Career Opportunities:**

\$28/line per issue (3 line minimum)  
Mini-display Ad (3½" wide × 1" deep) \$160  
Situations Wanted: \$60 for 4 lines per issue.

### AREA LIGHTING (EXTERIOR)

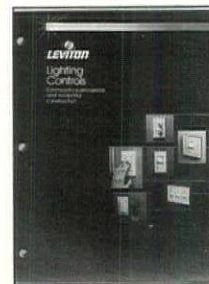
SPRING CITY ELECTRICAL MFG. CO., Spring City, PA 19475 Call 215-948-4000 or Fax 215-948-5577  
Historically authentic, cast iron ornamental lighting posts, bollards and adaptations.

## PRODUCT LITERATURE



### PARABOLIC TROFFERS

A two-page brochure describes 2-foot × 2-foot and 2-foot × 4-foot parabolic lighting troffers for a variety of office applications. The brochure features illustrations depicting the uniform, four-side reveal of the M5 Modula's 5.25-inch deep one-piece, crush-proof housing, and highlights the M5 Modula's choice of three interchangeable door frames and the benefits of each. KLP, a Genlyte Co., Wilmington, MA. **Circle 45**



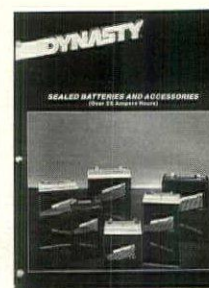
### LIGHTING CONTROLS

A 40-page catalog describes a line of lighting controls for residential and commercial applications. Catalog numbers, product features and benefits, dimensions, wiring diagrams and applications are listed, and a section on occupancy sensors is included. Typical specifications and technical information are also provided. Leviton Manufacturing Co., Inc., Little Neck, NY. **Circle 46**



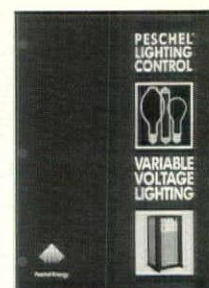
### PRISMALUME FIXTURES

A brochure for Prismalume 31 lighting fixtures describes its features. The luminaires can be used for industrial lighting applications, increasing the vertical illumination on machines, labels, dials, and assembly work stations. The fixtures can be used in all types of high mounting areas due to the corrosion resistant materials used in their construction, and may be used with 150-, 200-, 250-, and 400-watt HPS or 175-, 250-, and 400-watt metal halide or mercury vapor lamps. Holophane Co., Inc., Newark, OH. **Circle 47**



### LEAD-ACID BATTERIES

An eight-page brochure details the features and specifications of the Dynasty line of sealed lead-acid batteries larger than 25 ampere hours. The line covers 17 models up to 180 ampere hours, including gelled-electrolyte and AGM technology. Technical and installation information are included. Johnson Controls, Inc., Special Battery Division, Milwaukee, WI. **Circle 57**



### VARIABLE VOLTAGE CONTROLS

The PL/500 series of variable voltage lighting controls is featured in a brochure. Energy savings of 20 to 30 percent can be achieved for either HID or fluorescent sources wherever lower lighting levels can be tolerated. Voltage is varied by means of an autotransformer system. The brochure describes five control strategies and how they can be applied to facilities such as parking garages, warehouses, factories, retail stores, and large open offices. Peschel Energy, Inc., Salisbury, CT. **Circle 58.**

### LAMPS

USHIO AMERICA, 20101 S. Vermont Ave., Torrance, CA 90502 . . . FAX 800-776-3641 or 800-326-1960  
Manufacturer of MR11, MR16, T3 Quartz, Minican and DC Bayonet Halogen Lamps.  
GTE/SYLVANIA LIGHTING, Sylvania Lighting Center, Danvers, MA 01923 508-777-1900 617-777-1900

### LIGHTING POLES (WOODEN)

J.H. BAXTER & COMPANY, P.O. Box 10797, Eugene, Oregon 97440 . . . 503-689-3020  
Manufacturer of Timberwood Lighting Standards. A superior pressure-treated Douglas Fir laminate for decorative outdoor lighting support. Contact Richard Baxter.

### CAREER OPPORTUNITIES

#### SENIOR ELECTRICAL ENGINEER, ELECTRICAL ENGINEER

Engineering firm seeks registered Electrical Engineer with a minimum of five years experience in consulting services with emphasis on design of power, lighting, and signal systems for commercial and institutional buildings. Design experience in roadway lighting a plus. Opportunities exist in San Diego, California; Phoenix and Tucson, Arizona; and Alexandria, Virginia. Send resume to Robert Alcalá, P.E., JHK & Associates, 110 South Church Avenue, Suite 470, Tucson, Arizona, 85701. EOE