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# LIGHTING

AUGUST 1990 \$8.00

**YOUR GUIDE  
TO THE INDUSTRY**

# Directory

**1990-91**

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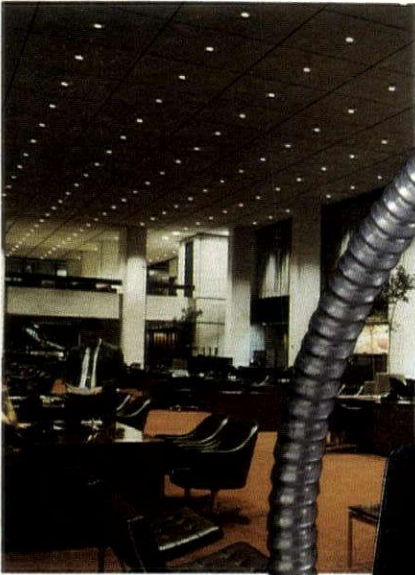
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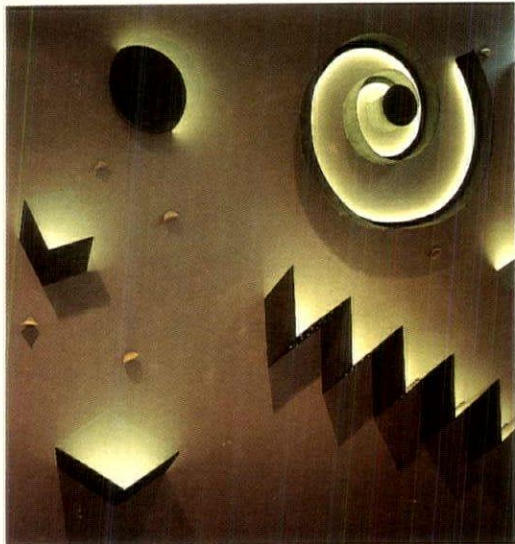
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# ARCHITECTURAL LIGHTING

AUGUST 1990  
VOLUME 4, NUMBER 8



COVER PHOTO BY EDWARD SILVERMAN  
The cover features part of "Cosmos," an illuminated sculptural frieze in bronze and glass, created by Ray King, Ray King Studio, Philadelphia. The large structures are illuminated from within by white neon. Groups of smaller gold-plated forms cluster around and reflect the light spilling from the larger forms. The frieze was installed in November 1989 on a 30-foot high by 60-foot long wall in the main lobby of The Graduate Hospital in Philadelphia.

## Directory Your Guide To The Industry

In this issue, we have included as companion pieces to the DIRECTORY, three reference-type articles. Next month, ARCHITECTURAL LIGHTING will return to its regular format. Design features will focus on merchandise lighting.

### REFERENCE ARTICLES

- 16 **HOW TO BECOME A LIGHTING DESIGNER** James Benya takes a lighthearted-turned-serious look at what's involved in the practice of lighting design—technical, creative and professional aspects, educational requirements, and available opportunities for field experience.
- 20 **WILL THIS FIXTURE LAST?** Specifying long-lasting outdoor fixtures requires an understanding of how environmental conditions affect them. Jan Moyer provides details on water damage problems, drainage techniques, corrosion-resistant materials and finishes, and much more.
- 24 **HOW TO USE PHOTOMETRIC DATA** Alfred Borden's step-by-step explanations of what photometric data is and how to use it in selecting luminaires is accompanied by a sidebar in which Charles Linn presents information on the latest developments in near-field photometry.

### COLUMNS

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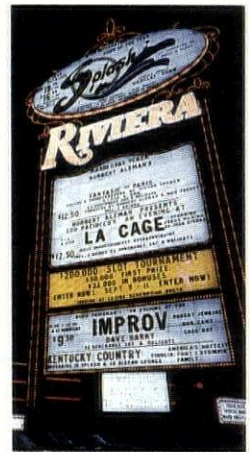
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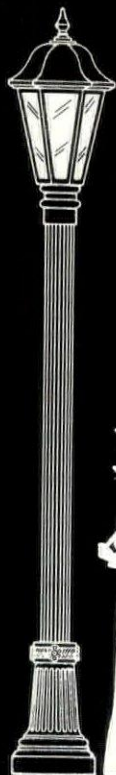


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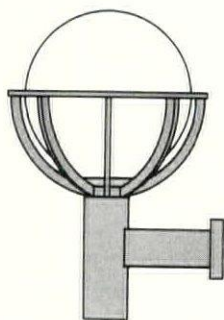
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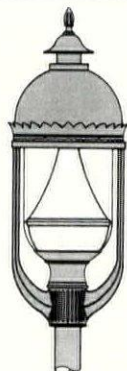
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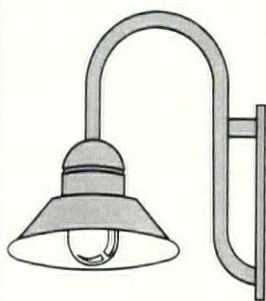
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## LETTERS

### Packaging—A Fact Of Life?

#### TO THE EDITOR:

**M**r. Benya ["Getting Lighting Built Right—Part 1," January, pages 36-38] makes many valid points. There is one point, however, to which we must take a very strong exception.

Mr. Benya says that "occasionally manufacturers' reps may use their access to the special products made by independent specification manufacturers to force the (lighting) designer to accept an entire fixture package." He goes on to say this is "sheer folly" not to account for "packaging" by a representative agency. He then proceeds to encourage designers to build their specification around a package. We at Horton • Lees have not caved in on this subject and for the benefit of owners and users alike we encourage others to continue to resist "packaging."

Legitimate lighting designers are paid a fee by the owner to design and to specify a lighting system which best meets the owner's needs and budget. They are not paid to make life easier for the manufacturer's representative. It is rare that a single manufacturer or a single representative agency will have everything a specifier needs for a given project. When they do not, then the specifier, according to Mr. Benya's article, is compelled to select lesser quality fixtures in order to fit into the package. That obviously creates a conflict of interest and the specifier is doing a disservice to the client.

No lighting designer is ever forced by the contractor, his subs, or manufacturer's

reps to accept anything other than what he/she specifies if the specifications are written clearly, concisely, accurately, and without loopholes. It should never cost the client more money simply because the fixtures are not a part of a package. If the contractor is required to submit an itemized budget with the unit cost of fixtures separate from the installation cost, those prices can be checked. In our office we verify with the manufacturers, on a regular basis, fixture costs submitted by the contractor to make sure that the owner is paying a fair price.

Whether one specifies large or small quantities of light fixtures, if one gets to know the manufacturer's representatives and they understand that the specifier will not tolerate "packaging," they will not do it.

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LIGHTING DESIGN INC.  
New York

#### IN RESPONSE:

I am certainly glad that leading professionals such as Horton • Lees do not cave in to "packaging." We, at Luminae Souter, do not cave in either. But, I know for a fact that packaging is a powerful and omnipresent concern for the average specifier.

The relevancy of the issue of packaging varies with the project region's relative economy, strength of the reps

CONTINUED ON PAGE 12



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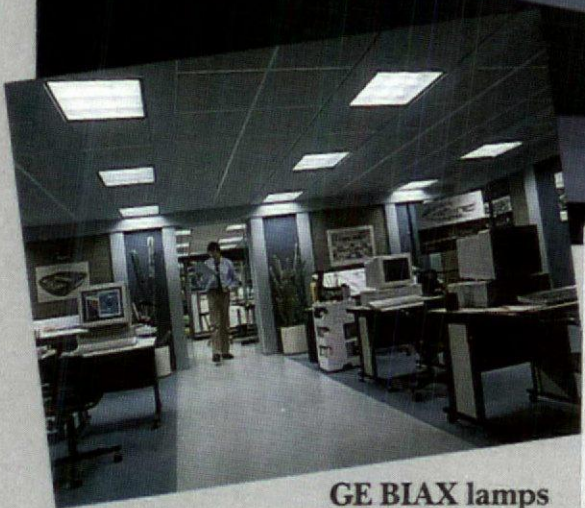


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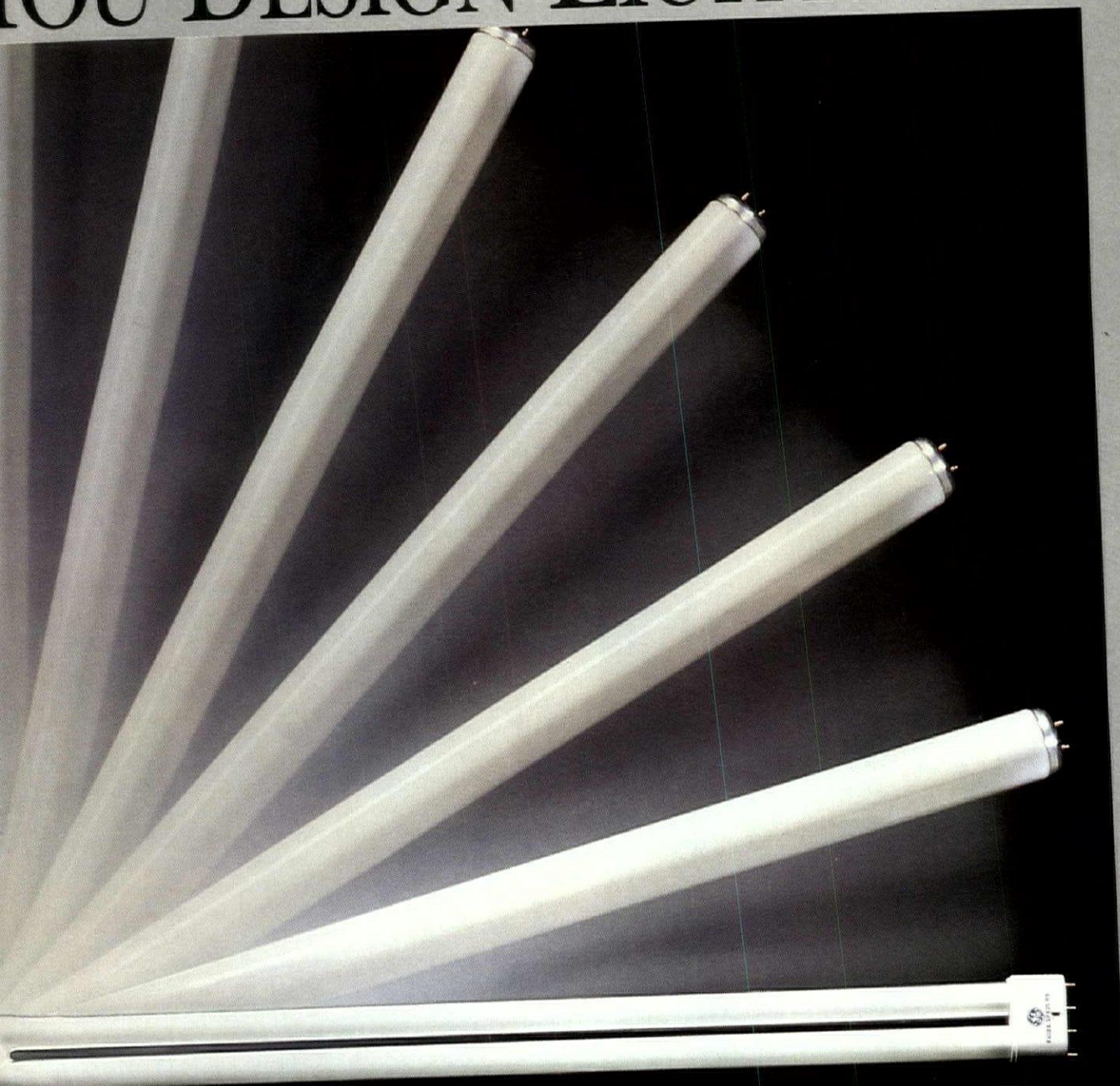


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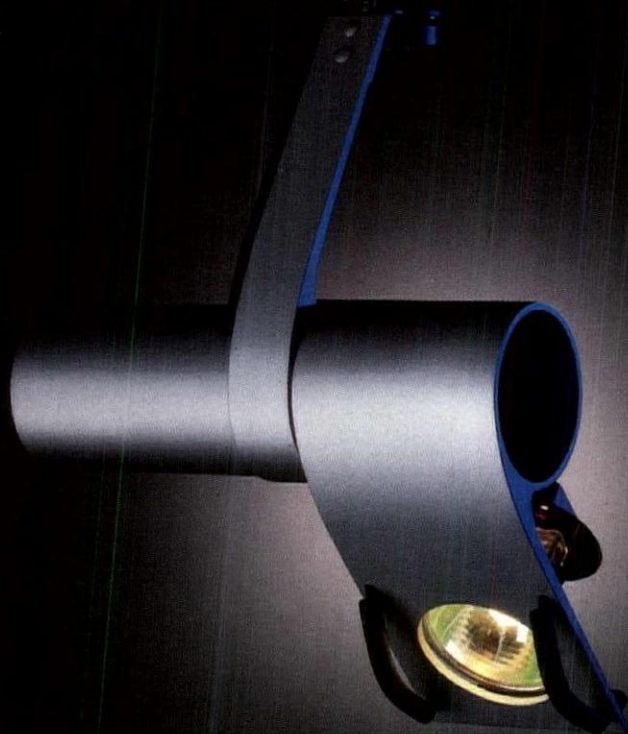
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LETTERS  
CONTINUED FROM PAGE 8

in the market, design-build contracting, and other parameters. Jules, Steven, Denise and Barbara are Principals in a firm with "clout," as I mentioned in the article. Smaller lighting design firms, especially those just starting in the business, will be packaged into submission. Standing up for one's specification against a strong contractor is not easy.

Contractors and distributors use financial leverage, time leverage, and other means to set up an almost-impossible situation and ram it down the specifier's throat. It becomes the word of the specifier versus the contractor, distributor, and rep, and often the sheer preponderance of personnel assures the latter point of view is accepted. I have heard of lighting designers, including ourselves and Horton•Lees, being criticized for holding a spec too dearly, by their own client who paid a fee for a fair, independent specification. I've heard of well-known consultants being fired from projects for not being willing to work with a "package" situation.

I disagree that specifying around packages is a conflict of interest and a disservice. It is simply being a worldly, intelligent specifier. It creates a properly competitive environment for the mass-production products, without sacrificing specification of the sensitive, specialty products. I think I made it very clear: specify exactly what you want when you need an exact product; *otherwise*, specify commodity products with packages in mind. *Then*, hold spec.

James R. Benya, PE, IALD, IES  
Senior Principal  
LUMINAE SOUTER  
LIGHTING DESIGN  
San Francisco

## Codes And The Real World

DEAR EDITOR:

I was interested in your editorial on the New York State Energy Code in the June issue.

I do not profess to be a lighting expert, so cannot comment upon the code provisions and revisions. I do wonder, however, if these officials have any idea of what goes on in the real world. Undoubtedly, there are projects to which their regulations may be applied, but there are thousands to which enforcement is impractical, if not unenforceable.

Many of my clients put up buildings for speculation. No one has any idea who will occupy them. Some building departments require a "lighting budget" to conform to the code before they will issue a permit. The Architect has no choice but to design for an imaginary occupant. The actual occupant will have needs radically different from this, and will put in his own lighting. Some occupancies require special task lighting. These changes are made with no official approval whatsoever.

What happens to existing buildings when the occupancy changes? Does the state think the new occupant is going to rattle his brains or ask them how he should revamp his lighting?

Of course, the energy code is not alone in this. These comments could apply to aspects of other codes. It is only when the work requires a permit and the local official is aware of these restraints that the code is applied. In my experience this is rare.

Leon Rosenthal, AIA  
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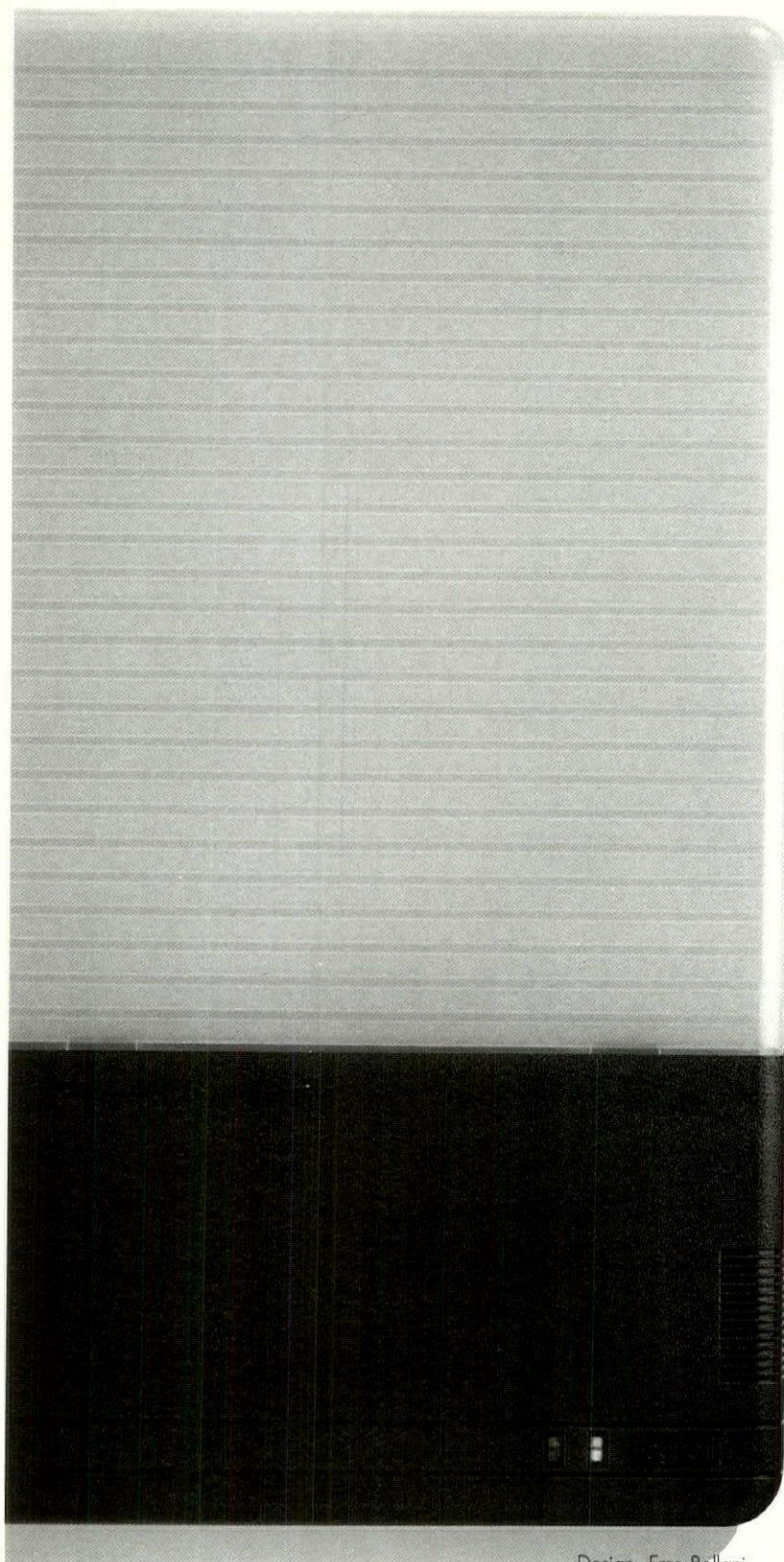
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## Trade Show Trauma

**W**e hope that one comprehensive show will be the outcome of this year's turmoil. This infighting gives the whole industry a black eye," writes Marvin Gelman, president of Lighting Services, in his recent "On Track" newsletter.

For those of you who've been in the Fiji Islands for the past year and out of touch with the industry, there are three major U.S. lighting shows this year run by two different managements. LightFair was held in April in New York; Lighting World was held in June in Chicago, with another to follow in October in Los Angeles.

"The costs have become prohibitive for manufacturers to participate in more than one trade show a year," says Gelman. He also feels that with the three shows, attendees no longer have the advantage of seeing all manufacturers at one location.

### THE MORE THE MERRIER

Well, there is a second opinion on this issue, held by some lighting professionals who have attended both shows. Anything that celebrates lighting is welcome. More trade shows mean the opportunity to spread more awareness of lighting. And if the industry can sustain more than one show, perhaps it is a sign of growth.

Also, attendees who could not afford to fly, for example, from one coast to another for a show would be assured of seeing a show each year closer to home. Combined attendance at all lighting shows would be increased.

### FREE ENTERPRISE = BUYER BEWARE

Well, I've been thinking (always dangerous!), and have a third opinion on the subject. In a free enterprise system, you can't expect one show management or the other to throw in the towel if each believes it is serving the industry best.

Business is business—as long as both show managements believe there is a market for their services and have hopes of profits, they will continue. As long as manufacturers, lighting experts who speak at seminars, and attendees choose to participate in more than one show, there will be more than one.

### IF THE SHOW FITS. . .

How to solve the exhibitors' financial dilemma Gelman points up? Here's an analogy. Every field usually has a variety of magazines in which manufacturers can advertise to promote their products. Manufacturers study the readership, the publication's quality and content, and expenses involved in creating and running advertisements for each magazine in order to choose which vehicle(s) best fits the goals they want to achieve, and use their money wisely.

Trade shows are marketing tools, too. **SO BE DEMANDING.** Demand the trade show managements and sponsors tell you exactly:

- who the audience is for their show
- what the quality and content of the seminars will be in advance
- what their accommodations are for you as exhibitors
- how and to what extent they will promote the show.

When you expect less, you get less. Reserving booth space and adopting a "wait and see" attitude won't help your business, or sort this dilemma out.

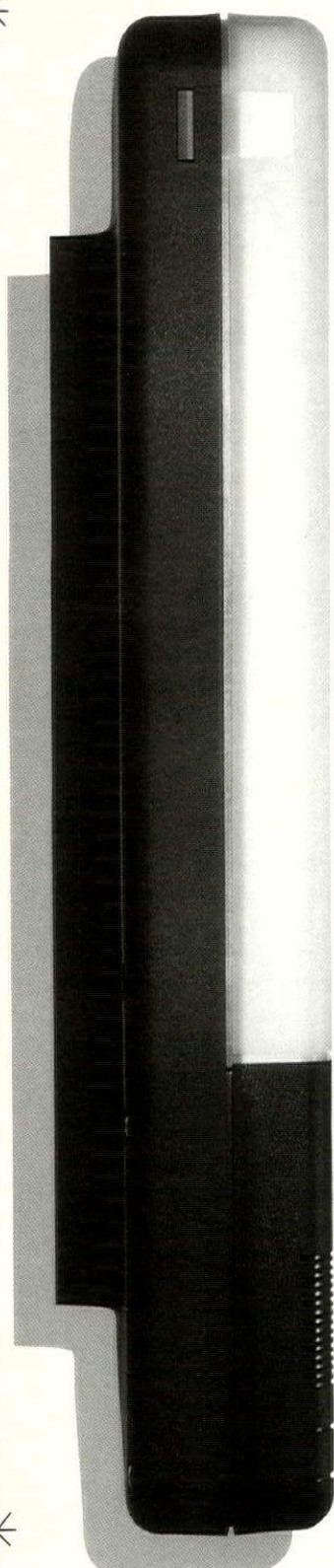
Each trade show management has already put on a show this year. So there's no excuse for them not to have answers to questions on their show's focus, attendance, promotion, etc., right? If they don't have the answers, that tells you something, too.

By speaking out, letting show operators know how you feel, and demanding solid information and data before you commit to exhibiting again, you will help shape the future of lighting trade shows, instead of being at their mercy.

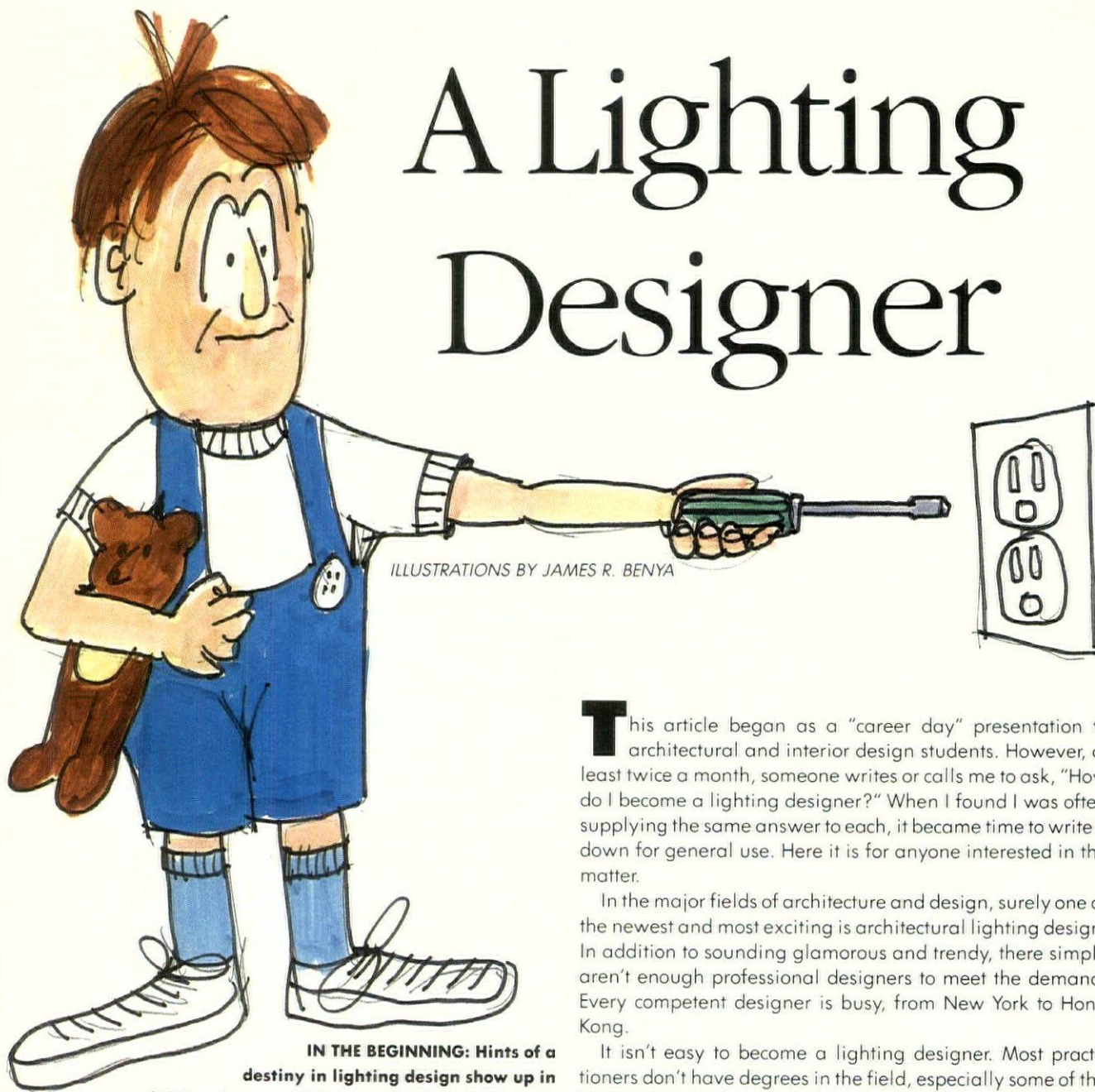
Perhaps the industry is too small to support more than one show. Perhaps one international show, and a few smaller regional shows are the answer. Perhaps one show should be geared toward end users, and another toward specifiers.

But it's up to you, the exhibitors, to take control. If you're fed up with being pushed into a corner, push back.

**WANDA JANKOWSKI**  
EDITOR



# How To Become A Lighting Designer



ILLUSTRATIONS BY JAMES R. BENYA

**IN THE BEGINNING:** Hints of a destiny in lighting design show up in childhood as an avid interest in electrical things.

**BY JAMES R. BENYA**  
PE, IALD

*The author is senior principal and CEO of Luminae Souter Lighting Design of San Francisco. He is on the faculty of the California College of Arts and Crafts, is active in IES and Designers Lighting Forum of Northern California, and teaches lighting design classes for the ASID, IBD, and the American Lighting Association.*

**T**his article began as a "career day" presentation to architectural and interior design students. However, at least twice a month, someone writes or calls me to ask, "How do I become a lighting designer?" When I found I was often supplying the same answer to each, it became time to write it down for general use. Here it is for anyone interested in the matter.

In the major fields of architecture and design, surely one of the newest and most exciting is architectural lighting design. In addition to sounding glamorous and trendy, there simply aren't enough professional designers to meet the demand. Every competent designer is busy, from New York to Hong Kong.

It isn't easy to become a lighting designer. Most practitioners don't have degrees in the field, especially some of the best current designers. So in order to help describe the process, the following steps are recommended.

## 1. BIRTH

This is generally the first step. Although a few of the New York lighting designers skipped this step (they were around for Genesis), most experience this. I'm told a few were actually hatched backstage in Broadway theaters.

## 2. CHILDHOOD

During early childhood, show an interest in electrical things like wires, light bulbs, TVs, and stereos. Learn the



**SIXTEEN CANDLES:**  
A future lighting designer's adolescence brings appreciation of lighting's mood setting capabilities.



difference between thrilling and shocking. Demonstrate acumen for tools and parts. Build sandcastles and play with building blocks. Enjoy Christmas tree lights and rainbows. These are the things of your future.

### 3. ADOLESCENCE

Begin to understand that light creates mood. Notice what happens when you turn down the lights at a party!

### 4. GO TO COLLEGE

Learn to study and think great thoughts. Learn to live on very little money and sleep. Learn to work against impossible deadlines set by uncaring ogres.

*Seriously, though...*

Becoming a lighting designer is a little bit proper education, a little bit luck, a little bit circumstances, and a whole lot of commitment. This seems to be a common element among the most successful lighting designers. Anyone looking for a normal, five-day, forty-hour-a-week job need not apply.

### THE THREE FACETS OF LIGHTING DESIGN

Lighting design can be practiced as part of another major profession, such as architecture or electrical engineering. But for those who wish to practice as independent professional lighting designers, there are three major facets of preparation that must be learned and developed:

- *Technical* One must learn about the technology and

science of light, lighting, and seeing. Implicit in this is all the physical and applied sciences. It is equally important to know how human vision works and how a building is built. Knowledge of electricity, energy, structure, and cost management significantly improves the effectiveness of the lighting designer.

- *Creative and Aesthetic* One must learn and develop acumen and skills in the art of illumination. This includes a broad range of capabilities, from the appropriate rendition of art and architecture to the intuitive creation of spaces and feeling.

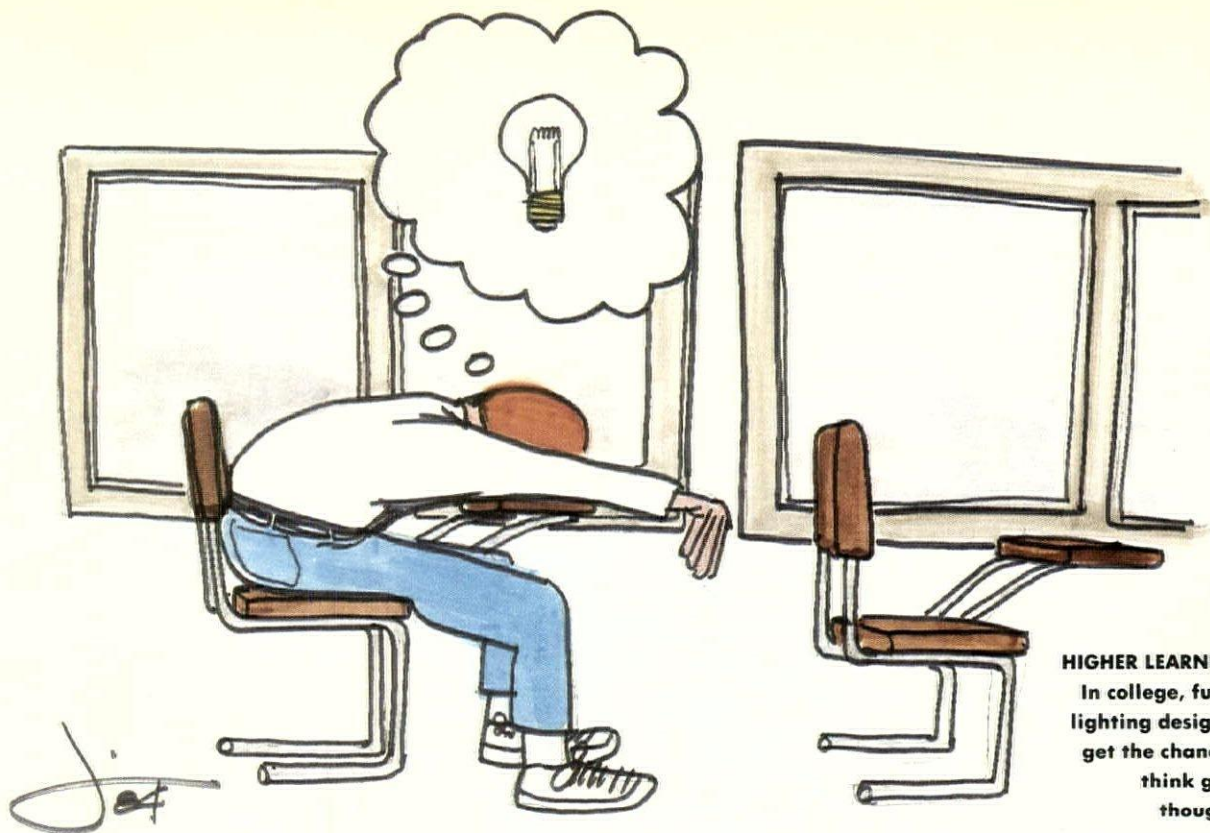
- *Professional* Lighting design is not practiced in a vacuum. The practical elements of role and responsibility, of presentation and personality are part of the work.

### EDUCATION FOUNDATIONS

Lighting design is a multi-disciplinary pursuit well suited for Renaissance men and women. An individual's base degree only begins the course of holistic and broad educational endeavor. The most common base degrees are:

- Architecture
- Interior Design
- Landscape Architecture
- Electrical and Architectural Engineering
- Illuminating Engineering
- Performing and Creative Arts (especially theater)

But remember: each base education is incomplete; to say



**HIGHER LEARNING:**  
In college, future  
lighting designers  
get the chance to  
think great  
thoughts.

any one is superior is not fair or correct. Base educations provide limited viewpoints, and teach as much prejudice as skill. If there was a good degree in "lighting design," it would not be a degree in any of these, but would include considerable exposure to concepts, philosophies, and skills in each.

As a practical matter, one may wish to receive a degree in a major, licensed profession within the realm of construction, such as architecture or electrical engineering. Until lighting design becomes a legally recognized profession, the advantages of professional registration in one of these fields can be significant.

Several undergraduate programs have substantial lighting emphasis in the degrees of architecture, electrical engineering, or architectural engineering. These programs will be attractive to those wanting to develop technical skills, such as computer illumination analysis. Some of these schools include Penn State, and the universities of Colorado, Kansas, New Hampshire, and Illinois. A noteworthy number of successful lighting designers are graduates of these programs.

#### **GRADUATE DEGREES IN LIGHTING DESIGN**

At present, the most comprehensive programs involve master's curricula. Candidates are required to have a base degree in an applicable field; the master's program teaches both lighting design and lighting professionalism. Graduates from the Parsons program have been impressive; Rensselaer Polytechnic's new program also appears excellent.

Graduates with master's degrees will generally be the most "hireable" by lighting design firms, since the graduates have been exposed to studio and professional education.

#### **INTERNING**

The International Association of Lighting Designers (IALD) sponsors an annual summer intern program for students in design professions to serve as interns in lighting design firms.

The experience introduces the student to the professional environment of lighting design, and is an excellent way for a student to learn a lot about lighting design prior to committing to the field as a career. Compensation is paid to the intern. Design firms look upon this program as a non-committal way to take a look at candidates' capabilities.

But many, many lighting designers have begun as volunteer interns to lighting designers, working one or two days a week for the experience. I generally recommend this route for persons otherwise employed and looking to change into the field, or for students willing to make this part of their academic experience. This type of interning trades work for education, and the intern is often not paid. Although this may seem unfair, remember that most lighting designers are besieged with job applications, and only the most diligent and available persons usually get a chance to intern with a major firm. Only well-credentialed candidates should consider looking for a lighting design job the normal way of sending resumes and cover letters.

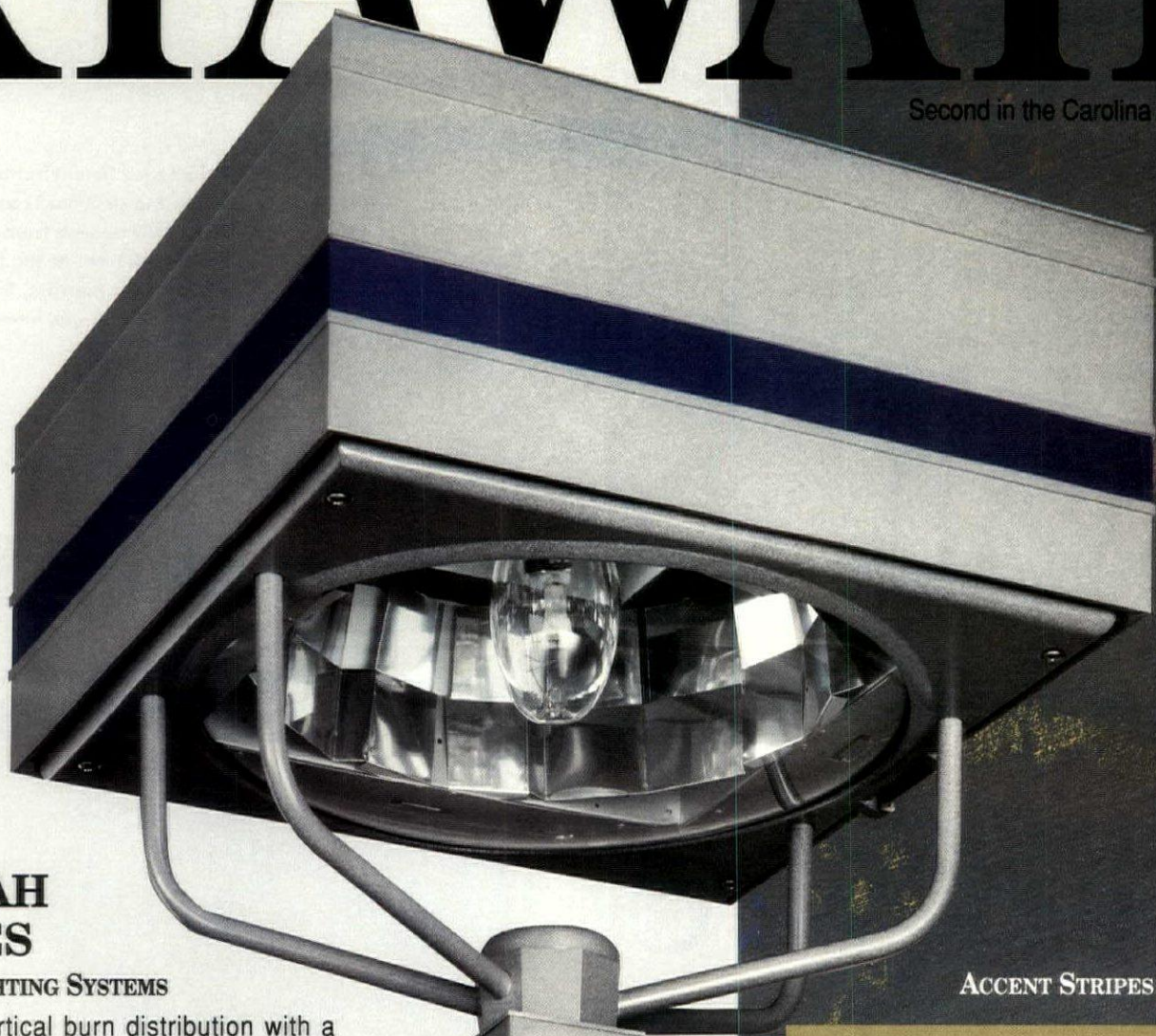
#### **THE PERFECTLY PREPARED CANDIDATE**

I'd suggest that someone who wants to prepare to become a lighting designer consider doing as many of the following as possible:

1. Get a major degree in architecture, interior design, or engineering. Work in your major profession for five years.
2. Get a master's in lighting design.
3. Take courses in theater lighting, and spend time working in college, community, or professional theater.
4. Intern or begin employment in a major metropolitan area with the best firm you can. For now, the best cities are New York, Los Angeles, San Francisco, and Dallas.
5. Topics to study while you're at it: photography, psychology, physiology, botany, and the other major fields you didn't major in. ■

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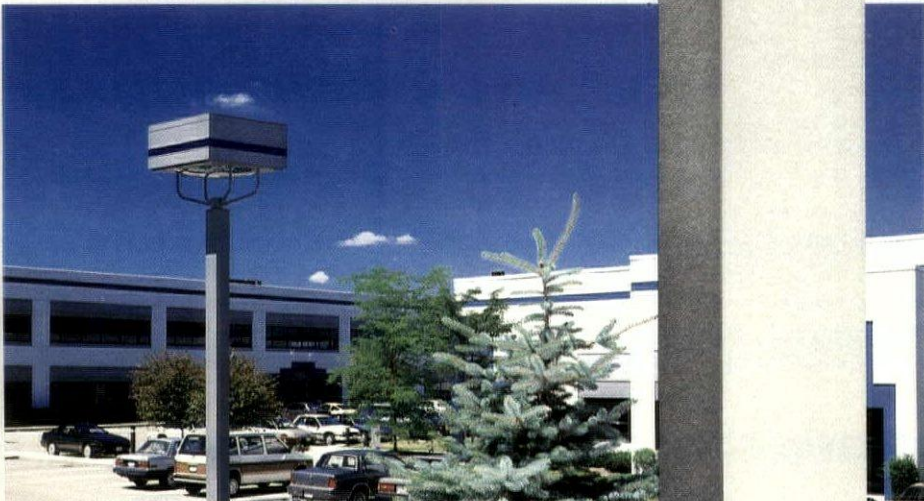
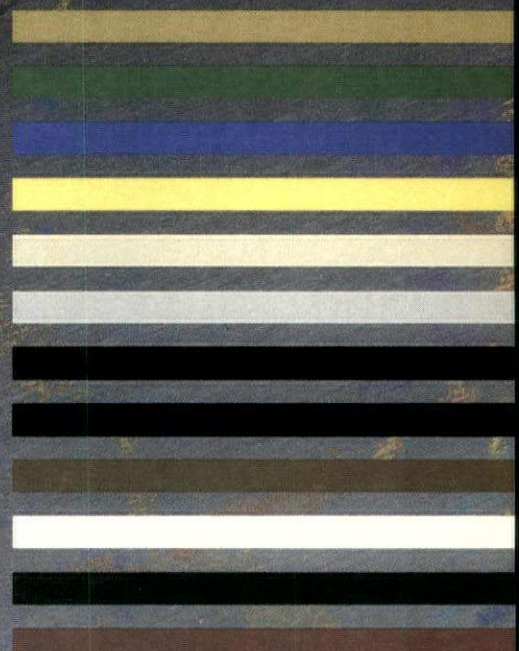


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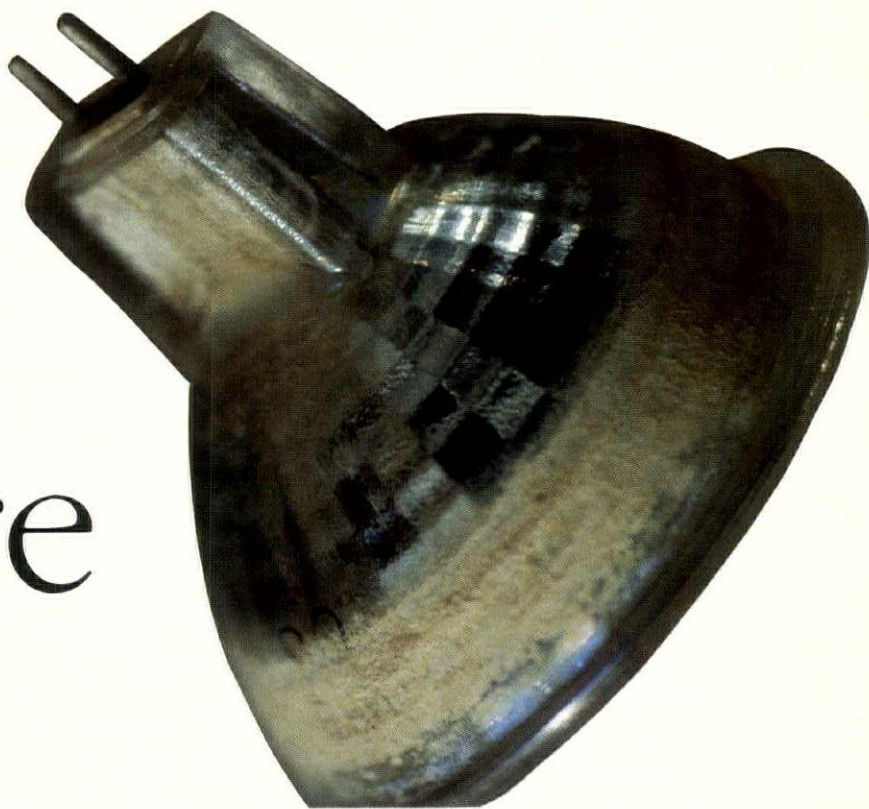
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PHOTO ABOVE COURTESY OF KIM LIGHTING.  
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**TOLLS TAKEN:** Fixtures can be damaged by environmental conditions. This lighting fixture housing (left) had completely disintegrated. This MR 16 (below) was removed from a light fixture that was totally sealed and gasketed. At the time the lamp was removed, no water was in the housing, but the residue on the lamp indicates that the lamp was immersed in water at some point.

# Will This Fixture Last?



**BY JANET LENNOX MOYER**  
ASID, IES

*The author is principal of Jan Moyer Design, Berkeley, CA.*

**M**any factors affect how long an outdoor lighting fixture will last. Most of them revolve around the fixture's ability to withstand environmental conditions. For example, the finish can fade due to an intolerance to ultraviolet light. Water causes corrosion when trapped by debris in a crevice of the fixture. The presence of water causes incompatible metals to fuse together preventing access to fixtures. The list goes on.

This article will address some issues that we all should be familiar with in specifying outdoor fixtures. As lighting professionals it is our responsibility to specify and install systems that will work.

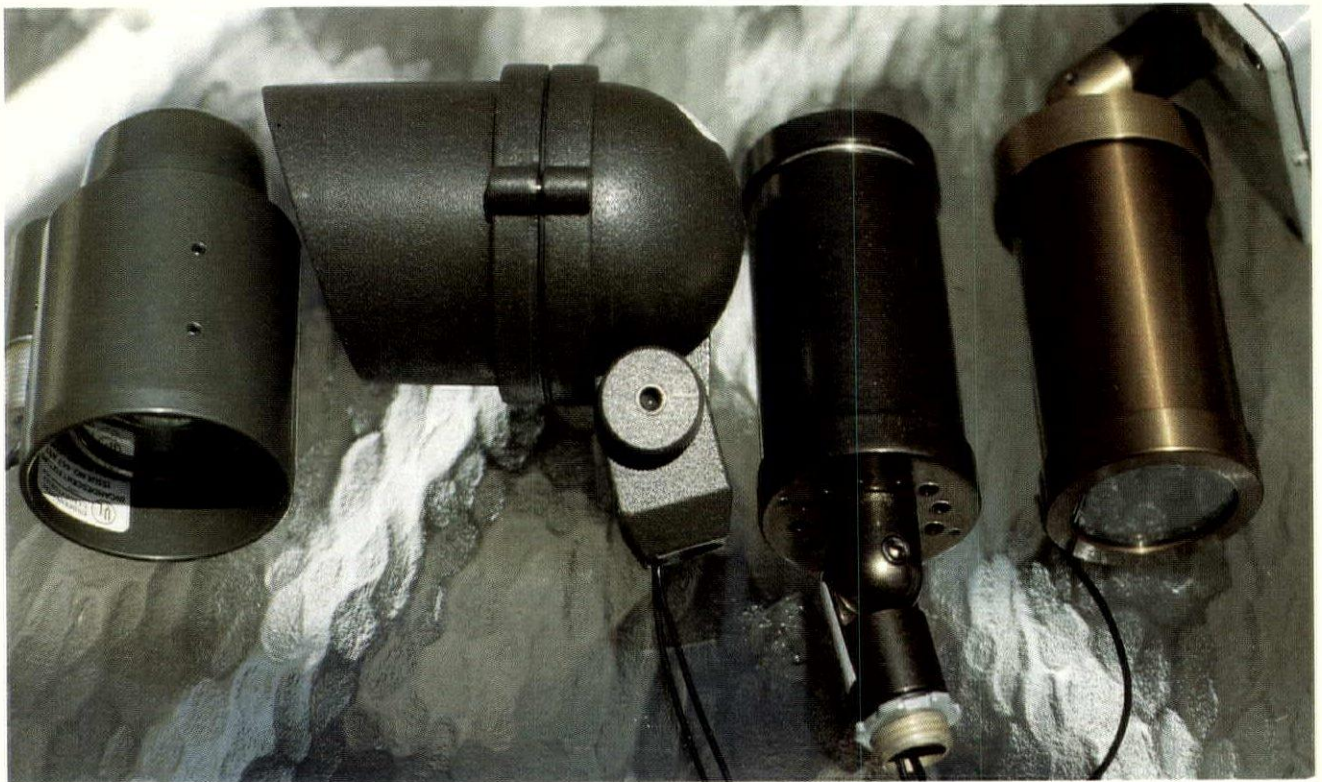
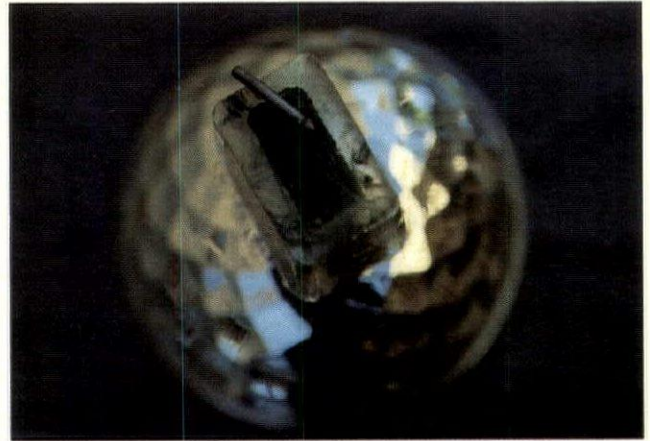
## PREVENTING WATER DAMAGE

Opinions vary in our industry on the subject of water penetration into the body of a light fixture. Some feel that a totally sealed and gasketed fixture provides the best protection against water damage to the fixture. Others feel that no matter how well constructed the fixture, water will enter it, if only in the form of condensation. If you accept this premise, then including drainage or breathing holes provides for removal of water from the fixture body. No conclusive information has convinced me that one or the other approach is exclusively correct.

Water entering the fixture's lamp chamber may cause lamp or socket failure. But any type of failure causes interruption of the functioning of the lighting system.

Failure in MR 11 lamps may have to do with a combination of heat, water, lamp construction, and lamp mounting within the fixture. No conclusive information about the failure of these lamps has been presented.

**PINS AND BRONZE:** When a fixture installed for less than six months was opened, its MR 11 lamp (right) was loose and the pins came out of the socket easily. The end of the pin has a rough break indicating overhardening of the metal during manufacturing. From left to right, the first three MR 16 fixtures (below) have bronze powder coat finishes by different manufacturers. The last has an anodized bronze finish. It is not unusual to have such a disparity in color.



Lamp manufacturers question some fixtures' ability to dissipate enough heat for the proper functioning of the lamps. Small-sized accent fixtures blend into the landscape well and their light weight lessens the impact on trees, but if they shorten lamp life, they become a liability. On an MR 11, according to manufacturers' specifications for proper operation, the bulb wall temperature should meet or exceed 250°C and the pinch seal should not exceed 350°C. Exceeding the pinch seal temperature can cause premature failure. One advantage of drainage or breathing holes may be to allow air movement that adds to the cooling of the lamp compartment.

#### **PIN PROBLEMS**

Lamp manufacturers use a different metal for the MR 11 pins than for the MR 16. At least one manufacturer plates the metal for the pins. In the presence of moisture, this may cause galvanic action resulting in the lamp's socket pins separating

from the lamp base. In this case, the pins remain installed in the fixture socket. If the problem had been arcing, due to water presence, the pins would have been welded into the socket and difficult to remove.

On lamps that I have seen with the pins separated from the lamp body, the filament did not appear to be broken (although, this may not be evident to the eye) and the pins pulled out easily from the fixture socket. In this case, the problem could be caused by overhardening of metal due to excessive heat in manufacturing. This causes the pins to become brittle and break at the base of the lamp during operation. The break will be smooth or clean. In fixtures where the lamp is supported by the pins alone, vibration can cause a work-hardened break, which will show up as a jagged break in the pin at the lamp base. This problem may be lessened by adding some silicone between the socket and lamp bases.

Other water-related problems can occur. Turning off the



lamp causes a partial vacuum that can pull water along a path between the wire(s) and the wire jacketing into the fixture body. The best way to eliminate this problem of wicking is to solidly bond each bare wire and then pot all the wires in epoxy. Manufacturers often provide a separate compartment for this and call it an anti-wicking or anti-siphon chamber. Wicking can also occur by capillary action. In this case, the intrusion of water into the lamp compartment may not be evident immediately.

Many sites have poor drainage, and fixtures mounted above grade on spikes or junction boxes can become submersed. In considering which fixture to specify, evaluate geographical and climate conditions, as well as specific site conditions including valleys in topography at fixture locations. Combining a natural flow of water into an area with poor soil drainage allows water to build up. Regular irrigation spraying onto fixtures can also cause water penetration into fixtures.

#### **DRAINAGE FOR BELOW-GRADE FIXTURES**

Below-grade fixtures introduce a new set of considerations. In debating whether to use an open well type fixture or an enclosed fixture, look at the soil drainage of the site. When the soil retains water (heavy clay soils, for example), rain and irrigation water will be drawn to the hole in the earth. An accepted construction detail in our industry calls for increasing the hole in the earth below the fixture bottom by as much as 18 inches and then filling this additional space with drainage rock. With heavy soils this may simply fill up with water. With poor draining soils of any type, providing several horizontal drainage holes may provide relief to minimize or stop the hole from filling up with water. Test the soil. In any case, the lamp fixture housing within the well compartment must be submersible.

Totally enclosed fixtures eliminate water collecting in the fixture well, but the earth hole will still attract water. This build-up of water can displace the fixture, disturbing its aiming, and it can actually push fixtures up out of the hole. The displacement may be slight or dramatic. It can affect the physical appearance of the landscape during daylight hours and cause potential conflict with lawn mowers.

#### **USING CORROSION-RESISTANT MATERIALS**

Materials used in fixture construction play a large part in the endurance of a fixture. Aluminum well bodies can totally disintegrate. The corrosion occurs from exposure to a combination of water and soil along the fixture mass, as well as the added corrosion potential of salts and chemicals in the soil.

Many wells are now being manufactured from ABS or PVC plastics. These materials offer corrosion resistance to soils, as well as reduced material costs. Some manufacturers are making the bodies of enclosed fixtures out of these plastics, and then using stainless steel on the inside for the lamp compartment. This takes advantage of the corrosion resistance of both materials in protecting the operation of the fixture, with the plastics providing solid corrosion resistance, and stainless steel providing corrosion resistance to condensation or other water intrusion.

Corrosion is the main cause of failure in lighting equipment. It causes lamp failure, but it can also destroy the fixture itself. Complete disintegration of below grade fixtures made of unprotected or improperly protected metal is not unusual. Corrosion will occur between parts of a fixture when dissimilar metals are used in assembling a fixture. An aluminum housing with the brass bezel (face plate) will result in the fusing of the two parts, preventing access to the lamp inside the fixture. Screws of a differing metal from the part it

**FIXTURE FADING AND PLIABLE PLASTICS:** Fading from ultraviolet radiation can be seen on these two fixture bodies (left), which come from the same batch of fixtures. One was left in its original packaging, the other was installed in a garden. After several months, fading on the left fixture had occurred. At that point, the fixture was removed and kept in a dark environment. Construction materials (right) for equipment located in-ground is changing. Many manufacturers are starting to use plastics like PVC and ABS for housings, wells, and below-grade boxes.



attaches to can also cause seizing of the two metals if some kind of protection is not provided. Using galvanized or plastic coated screws eliminates the incompatibility. Often, gaskets or washers will separate the two incompatible metals, but these are easily lost when opening or closing the fixture. The fixtures can discolor due to rusting in steel and aluminum fixtures or chalking in the case of powder coat finishes using epoxy resin.

### DURABLE FIXTURE FINISHES

This brings up the question of durable finishes for fixtures. After researching both anodized finishes and powder-coat paint finishes, current technology leans toward powder coat finishes. Both have varying levels of quality that partially depend on the process followed in cleaning and applying the finish, and partially on the materials chosen for the finish. Both depend heavily on a series of cleaning and pretreatment steps. Inferior finishers often skip steps, use lesser quality materials, or fail to adequately regulate the process. In powder coat, the strongest, most durable finish will be provided when a chromate conversion coating is used during the cleaning and pretreatment process. Other coatings are available, including phosphate and oxide conversion treatments, but they are not as durable or protective as chromate. With chromate, moisture cannot penetrate down to the metal. With other types, moisture will be able to penetrate to the metal causing corrosion that will result in flaking and bubbling of the paint finish, along with other corrosion systems.

Another key to the success of the powder coat finish is the actual powder resin used in the paint. Four basic categories exist: epoxy, urethane, polyester, and hybrid. For lighting fixtures, the characteristics that direct the choice include exterior stability, corrosion protection, and over-bake stability. Polyester is the resin of choice.

In anodized finishes, several factors influence the durability of the finish. The first issue is the actual process chosen. Of all the anodizing processes available, only duranodic or processes equal to duranodic (manufacturers' names may vary) provide the benefits needed for lighting fixtures—UV resistance, corrosion resistance, and permanent color. Some of the lesser processes are not UV resistant or have a lesser penetration depth into the metal.

Ones to avoid include two-step, two-step electrolytic, and overdyeing processes. Also, some manufacturers skip one step called the hot nickel acetate bath, which blocks the pores of the aluminum and extends fade time. Another key to the effectiveness of a duranodic finish is the temperature control of the final hot water bath that seals the finish. If the temperature is not at 200°F, the bath will not protect sufficiently.

In comparing powder coat finishes to anodized finishes, powder coat painting provides more benefits. It is available in many more colors; when done with the chromate conversion process it provides greater finish strength to resist scratching, peeling, and corrosion of the base metal; it provides protection on the inside of the fixture without the actual paint coating because the parts are dipped in the chromate conversion bath and this provides ample protection for parts not directly exposed to weather. For example, it will protect the threads of a bezel and body attachment. Powder coat painting done in-house by the lighting manufacturer will be less costly than anodizing, but when a job shopper does it, anodizing will be slightly less expensive.

Because many factors impact our selection of fixtures, including the harsh and unforgiving outdoors, we need to evaluate fixtures closely to insure that all aspects of the fixture are appropriate for each specific project. Nothing sours a good client relationship faster than a lighting system that doesn't function properly.

# How To Use Photometric Data

BY ALFRED R. BORDEN IV  
IALD

*The author is director of The Lighting Practice, Philadelphia, and an instructor in architectural illumination at Drexel University.*

**T**he best way to decide which type of luminaire you want for a particular project is to get one and look it over. Judgements about visual proportions, quality of materials, and craftsmanship can truly be made only from a sample fixture. The problem with this method of choosing is the time it takes to visit a manufacturer, determine a fixture's availability, cost...the list goes on. The most practical way to narrow down luminaire choices is to use catalogs, which present available products and help narrow our choices to the few we may actually want to see and examine.

The same holds true for determining fixture performance. The fixtures in the best lighting designs distribute illumination to enhance the visual composition, while supporting the functional needs of the users. A full-scale mock-up of the installation with the final furniture and finishes is the best way to judge their effectiveness. You may even want the Users to work in the space for a while and give you a post-occupancy evaluation. The logistical considerations associated with this kind of evaluation process obviously make it a poor way to begin selecting fixtures. The mock-up is usually the place to test the performance of fixtures which have already undergone some careful analysis. Of course you will

want to light up some samples as part of this analysis, but first you must narrow your choices. This is why we all need photometric reports.

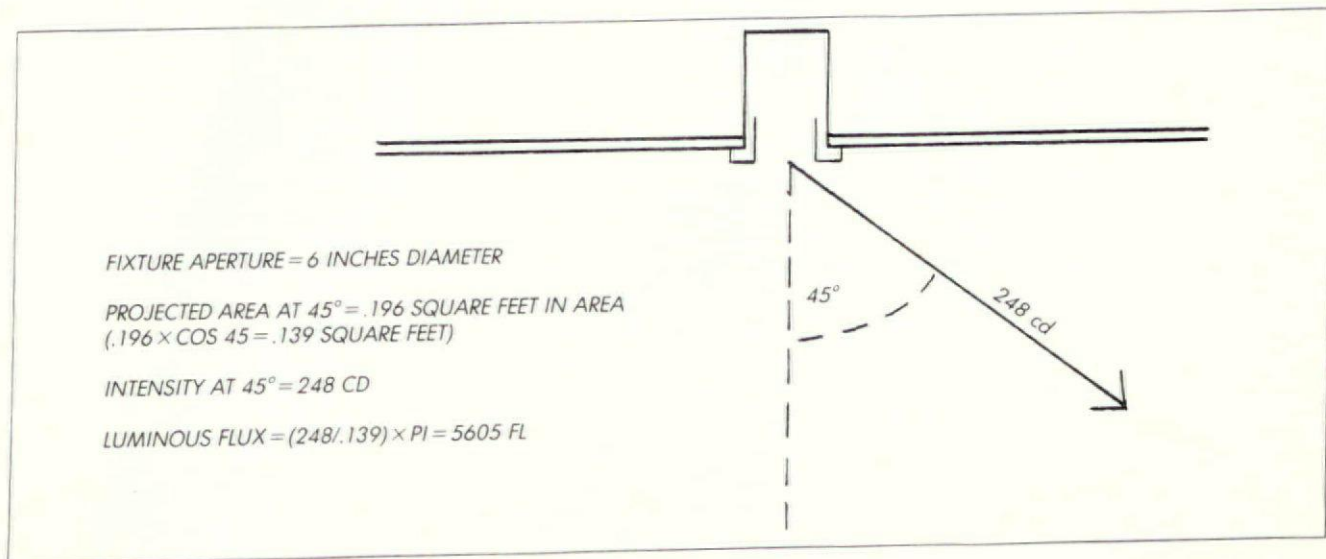
The centerpiece of a photometric report is the candela chart. This is a summary of the luminaire intensities at specific viewing angles. Essentially, measurements are made with an illuminance meter and converted to candela using the inverse square law calculation.

This method is only valid if the fixture is treated as a point source. This means that variations in performance that may occur across a large aperture fixture will not be expressed. According to Illuminating Engineering Society of North America (IESNA) standards, the distance between the fixture aperture and the meter must be at least five times that of the fixture aperture's maximum dimension. For example, a 2-foot x 4-foot troffer must be measured from at least 20 feet away.

The instrument used to take these readings has an appropriately large name—a goniophotometer. It comes in several versions, but the one most commonly used has a system of fixed and rotating mirrors to fold the effective test distance into a manageable space.

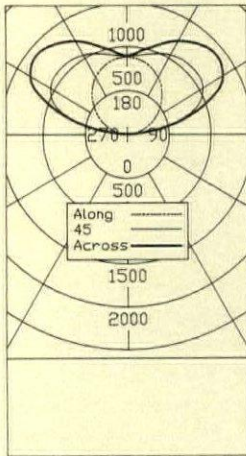
The test luminaire is mounted in a fixed location and the mirror rotates through regular intervals of vertical angles and horizontal planes, bouncing light to the meter. What results is a type "A" chart. It usually lists the candela in 10 degree vertical zones, from 0 degrees (straight down) to 180 degrees (straight up), and in three or five horizontal planes from 0 degrees (along the lamp axis). Fixtures that distribute light

CONTINUED ON PAGE 27





CATALOG NUMBER: LDX-020451-T8  
 LUMINAIRE: 9 1/2" X 3" ROUNDED EXTRUDED ALUMINUM UPLIGHT WITH HAMMERTON  
 AND WHITE PAINTED REFLECTOR  
 LAMP(S): 2F032/31K RATED 2900 LUMENS EACH  
 BALLAST: UNIVERSAL 749-L-SLH-TC-P  
 MOUNTING:  
 LUMEN TO CANDELA RATIO USED = 9.15  
 TOTAL INPUT WATTS = 79.4 AT 120.0 VOLTS  
 THE 0 DEGREE PLANE IS PARALLEL WITH THE LAMPS.



CANDELA DISTRIBUTION					FLUX
	0.0	22.5	45.0	67.5	90.0
90	2	6	5	6	7
95	65	177	191	191	190
105	181	506	688	728	738
115	319	631	989	1174	1218
125	458	727	1079	1311	1381
135	588	798	1084	1302	1379
145	700	848	1063	1224	1283
155	784	869	1012	1117	1155
165	844	881	943	996	1012
175	875	883	895	905	910
180	887	887	887	887	887

ZONAL LUMEN SUMMARY			
ZONE	LUMENS	%LAMP	%FIXT
0- 90	0	0.0	0.0
90-120	1693	29.2	34.8
90-130	2595	44.7	53.4
90-150	4049	69.8	83.3
90-180	4860	83.8	100.0
0-180	4860	83.8	100.0

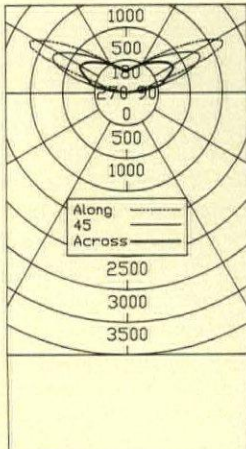
  

TOTAL LUMINAIRE EFFICIENCY =	83.8 %
CIE TYPE - INDIRECT	

THE CANDELA DISTRIBUTION chart above was prepared using far-field photometry; the one below, near-field photometry. Note the candela distribution curves plotted using near-field are flatter and sharper. The actual candela quantities are also significantly different, even though the luminaire tested by each method was the same. (Equivalent candela distribution is a concept in which all the luminous intensity is assumed to be emitted from the photometric center of the luminaire at a given distance from the surface.)

CATALOG NUMBER: LDX-020451-T8  
 LUMINAIRE: 9 1/2" X 3" ROUNDED EXTRUDED ALUMINUM UPLIGHT WITH HAMMERTON  
 AND WHITE PAINTED REFLECTOR  
 LAMP(S): 2F032/31K RATED 2900 LUMENS EACH  
 BALLAST: UNIVERSAL 749-L-SLH-TC-P  
 LUMEN TO CANDELA RATIO USED AT 29.25 FEET FROM LUMINAIRE: 9.15  
 TOTAL INPUT WATTS = 79.4 AT 120.0 VOLTS  
 THE 0 DEGREE PLANE IS PARALLEL WITH THE LAMPS.

DISTANCE FROM LUMINAIRE PHOTOMETRIC CENTER TO CEILING IS 1.00 FEET



EQUIVALENT CANDELA DISTRIBUTION					
	0.0	22.5	45.0	67.5	90.0
90	2	7	5	7	8
95	71	194	209	209	208
105	410	1071	898	694	633
115	803	1915	1394	991	868
125	1476	1473	1163	937	857
135	967	975	858	746	708
145	663	674	648	602	583
155	498	506	507	497	491
165	411	415	419	421	421
175	373	374	373	376	376
180	369	369	369	369	369

TOTAL LUMINAIRE EFFICIENCY =	83.8 %
CIE TYPE - INDIRECT	

# BETTER MEASURES

For certain fixture types, high levels of accuracy in candela distribution charts are now possible with near-field photometry

BY CHARLES LINN, AIA  
 EXECUTIVE EDITOR

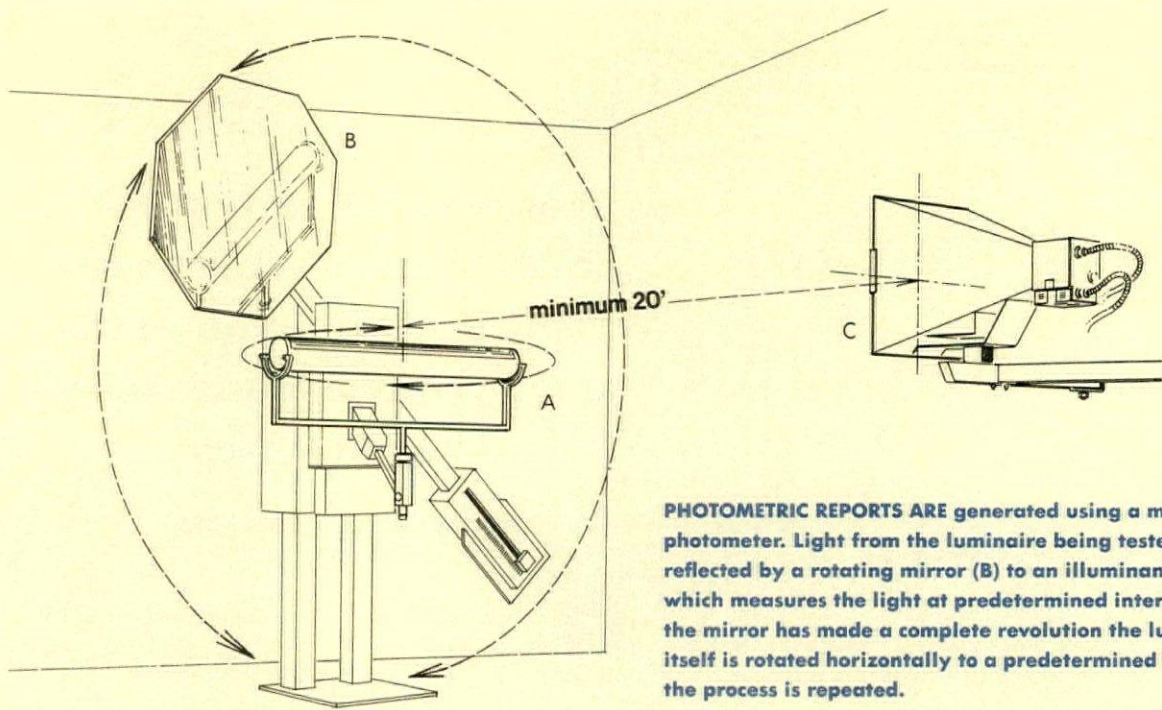
The major purpose of a photometric report is to provide a designer with information on how a luminaire distributes light. A graphical plot included in the report can give a designer a quick idea of the luminaire's pattern of distribution. An accompanying table gives the angles at which the light was measured, as well as the quantity of light at those angles. Designers are able to use this information to assist them in selecting the right luminaire for a lighting application, as well as to give them pertinent data that will help them establish mounting heights, fixture spacings, and so on.

It is obvious that data for candela distribution charts must be extremely accurate. Traditionally, these measurements have been taken using a method known as far-field photometry. One type of photometer commonly in use for far-field testing is a moving mirror photometer. The photometer is placed in a darkened room, where the walls, ceiling, floor,

and other surfaces have been painted black, thus eliminating any reflections that might affect the measurements. All other sources of incidental light are excluded from the room. Once the luminaire is placed on the photometer and stabilized, a large mirror rotates around the luminaire, and its light output is reflected back to a photocell, through which the measurements are gathered. The luminaire itself is outfitted with carefully selected lamps and ballasts, whose light output have been previously laboratory tested, and their electrical input is strictly regulated.

As the mirror rotates continuously around the luminaire, the photocell measures the light output of the luminaire, even up to one-half degree of vertical travel, for a possible total of 720 measurements per rotation. After the mirror has rotated around the luminaire once, the luminaire itself is rotated to another predetermined plane horizontally, and the mirror revolves around the lumi-

CONTINUED ON PAGE 26



**PHOTOMETRIC REPORTS ARE** generated using a moving mirror photometer. Light from the luminaire being tested (A) is reflected by a rotating mirror (B) to an illuminance meter (C) which measures the light at predetermined intervals. After the mirror has made a complete revolution the luminaire itself is rotated horizontally to a predetermined location, and the process is repeated.

**BETTER MEASURES**  
CONTINUED FROM PAGE 25

naire again. When the luminaire has made a complete rotation—its light output has been measured all the way around in up to 720 predetermined increments—the process is complete. The numbers that actually appear in the candela distribution charts are the result of this intensive data gathering process.

Basic far-field photometry was developed for the testing of incandescent-lamped street lighting, and may even have been used at one time to test gas lights. Although the equipment that is available today is extremely complex, the principal has remained fundamentally unchanged for over 80 years.

The process has remained unchanged for so many decades because it does adequately mea-

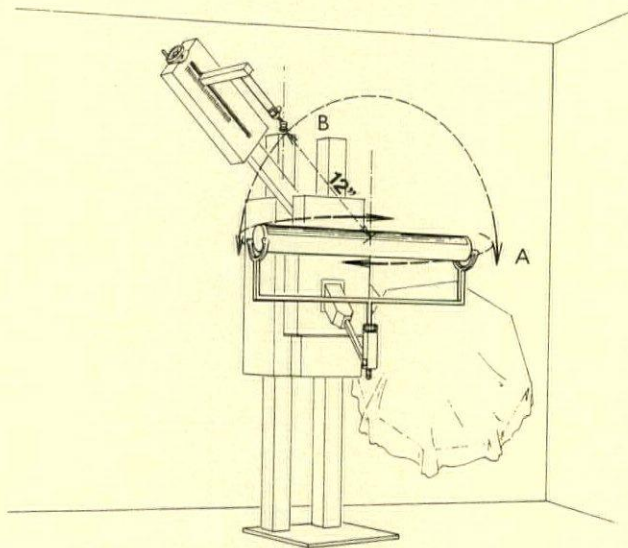
sure the output and distribution of lighting fixtures that, when in use, are normally located some distance away from the surface at which the light is being projected.

Far-field photometry has its limitations, however, when it comes to

measuring the light distribution of fixtures that are intended to be a short distance from the surface they illuminate. This is because the photocell is so far away from the luminaire and the position of the accompanying architectural reflecting sur-

face—which is not used in the testing procedure—that the photocell cannot discern the true photometric characteristics of the luminaire. These fixtures may include wall-washers, sconces, some task lights, and indirect fluorescent luminaires.

Peerless Lighting, of Berkeley, CA, a manufacturer specializing in indirect lighting technology, has long been concerned about improving the accuracy of the photometric reports for indirect lighting products. Under the direction of its vice president for research and development, Peter Ngai, PE, FIES, the firm has spent the last several years conceptualizing and developing a new method of measuring candela distribution, called near-field photometry. Peerless has been using this method for testing its own luminaires since January of this year.



**THIS NEAR-FIELD** photometer uses a photocell (B) to take measurements from only 12" away from the test luminaire. The luminaire is rotated a predetermined distance horizontally after each pass of the photocell (A) is completed.

Basically, near-field photometry uses a photocell to directly measure the light output and distribution of a luminaire at distances that are close to where the luminaire would be directing the light—no mirror is used. By placing the rotation of the photocell as close as 8 inches from the luminaire, ceiling brightness ratios and maximum ceiling luminances can be predicted accurately. This data is critical to predicting the success of indirect lighting applications.

A new type of photometer was required to take these measurements, and was developed in 1985 by Peerless in collaboration with Independent Testing Laboratories, of Boulder, CO, and Lighting Optics, also of Boulder. In addition, Peerless developed a mathematical model for gathering these measurements, and a second mathematical model for interpreting them.

The differences in the candela distribution plots for the same indirect fixture that has been tested with both far- and near-field photometry are readily apparent when compared. The candela distribution plot generated using far-field photometry (see chart on page 25) has three plots: one using measurements taken parallel to the axis of the fixture's fluorescent lamp, one taken at 45 degrees to the lamp, and

one taken perpendicular to the axis of the lamp. All three plots have very rounded curves, with the center plot, where the candela distribution is taken parallel with the lamp, almost circular in shape.

The near-field test plots, also on page 25, are much flatter, and V-shaped, indicating that the fixture actually has a very different light distribution than the far-field plot would indicate, and that significantly less light is distributed directly over the fixture itself. The near-field distribution plot is more accurate than the far-field plot because measurements are made near the fixture—rather than from some 20 feet away—and it is here that the luminaire's performance is critical.

According to Peter Ngai, "The introduction of near-field photometry is important from two different perspectives. From a purely scientific point of view, it gives us a more accurate system of measurement, which is impossible to accomplish with traditional far-field measurement and calculation techniques.

"More important, the photometric reports it yields give designers a more precise picture of what indirect lighting fixtures, and therefore, indirect lighting schemes will—and will not—accomplish." ■

from 0 to 90 vertical degrees are called direct; those distributing light only above 90 degrees are indirect; those emitting light from 0 to 180 degrees are called direct/indirect.

The greater the number of angles and planes reported in the chart, the better the resulting description of the fixture's performance. Fixtures that have a symmetric distribution can be reported in one plane (0 degrees). An asymmetric distribution requires at least three planes (0, 45, 90). Five plane data is superior to three plane, but a highly asymmetric fixture may require measurements in planes at 10 degree intervals.

#### TYPE "A" VERSUS TYPE "B"

Type "A" photometry is most common since it is used for general lighting fixtures. A special case is type "B" photometry. This is often used for floodlighting fixtures. This method places the light center of the fixture at the goniophotometer center (0 degrees vertical by 0 degrees horizontal) and plots the readings in the angular coordinates surrounding these axes. The information that is derived from these readings is very specific to a floodlighting application, so for this discussion we will stay with the more common "A" chart.

#### GRAPHIC REPRESENTATIONS

Often, the photometric data that a manufacturer shows in its catalogue does not list candela values but plots them on a curve. The result is a graphic representation of the fixture distribution. This is great if you need a visual impression of the performance—a valuable aid to conceiving the effect upon a space. However, it is a very cumbersome and inexact way to report the actual performance. Most manufacturers will provide a candela chart if asked, but the "enlightened" ones include it on their standard catalogue sheets.

The candela values are used directly in luminance and illuminance calculations of various kinds. These include simple hand-calculations such as the point-by-point inverse square law type or computer-based flux transfer methods. They are also the sources for other data listed on the report.

#### CANDELA BEGETS OTHER DATA

These data can include zonal lumens, coefficients of utilization, average luminaire luminances, fixture efficiency, spacing-to-mounting height ratio, and visual comfort probability. They each describe a portion of the fixture's performance. Some give us application criteria and numbers to use in calculations, while others quantify the lighted appearance of the fixture. As a total package of information, it provides a good profile on the fixture. Reported separately, or without the candela chart, the individual tables only tell part of the story. They can even be misleading.

#### FIXTURE EFFICIENCY

Fixture efficiency is just such a piece of data. This is the percentage of lamp lumens emitted by the fixture. It is often computed by summing the zonal lumens, dividing by the nominal lamp lumens, and multiplying by 100. Zonal lumens, calculated from the candela chart, are the quantity of

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PHOTOMETRICS  
CONTINUED FROM PAGE 27

lumens emitted by each angular zone on the chart. Simply stated, fixture efficiency tells you how much of the visible energy generated within the fixture is getting out to the space. It relates to electrical efficiency since the wattage consumed by the fixture should be effectively applied as light, not spent as heat.

Efficiency has often been used to select one fixture over another, but it is an incomplete criteria. Based on the calculation, the most efficient fixture will be a bare lamp. How many office lighting applications are best served by bare lamps? Obviously, efficiency must be evaluated along with the candela distribution and luminaire luminances as they relate to the application. Without this data for comparison, it has no meaning to the designer.

#### COEFFICIENT OF UTILIZATION

A coefficient of utilization (CU) is an extremely useful piece of information. This is the fraction of lamp lumens emitted by a fixture that ultimately reaches a task surface located within a room of specific proportions and surface reflectances. It is derived from the candela chart using a flux transfer calculation method. As a quantity, it relates the candela distribution of the fixture to its application. Coefficients used in zonal cavity calculations give designers a shorthand means to test their assumptions and compare the performance of alternate systems.

It is, however, a very narrow basis for comparison. The calculation assumes a symmetrical layout of fixtures in a room finished in Lambertian surfaces. It calculates one average footcandle value for the complete space. It does not address critical details such as surface luminances and brightness ratios. However, it is often good enough for an experienced designer who can intuitively add the details to their mental image of the lighted space.

Like fixture efficiency, the coefficient of utilization can be misapplied. Some specifiers use coefficients as criteria to judge the appropriateness of a fixture selection. That is, they target a coefficient as the minimum performance for fixtures in a specific application. This denies the possibility that fixtures with lower CUs, which may have lower aperture brightness, could produce higher levels of visibility—compare the CUs of lensed and louvered troffers.

#### SPACING CRITERIA

The fixture spacing-to-mounting height ratio is an aid to laying out a pattern of fixtures. Multiply the ratio by the mounting and you will get the maximum fixture spacing that will still provide even illumination.

The mounting height is the distance from the fixture to the surface you are lighting. This may be the office workplane or the floor of a corridor.

The ratio is a useful piece of information to consider if you are using zonal cavity calculations. The calculation will let you do a layout that meets your average footcandle criteria but exceeds the fixtures' spacing ratio—just change those two-lamp fixtures to four-lamp fixtures. The result is shadowy

PHOTOMETRICS  
CONTINUED ON PAGE 30

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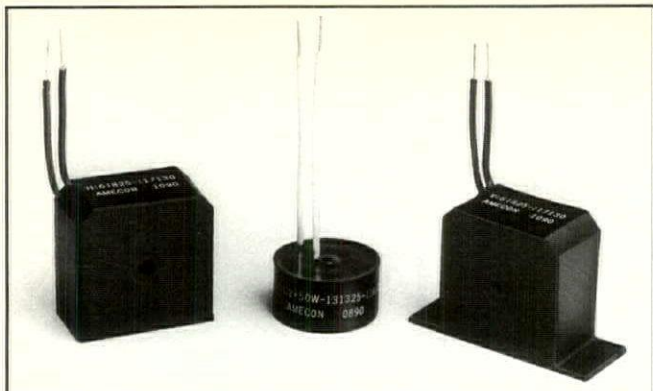
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PHOTOMETRICS  
CONTINUED FROM PAGE 28

lighting. This can be a real pitfall in open-plan offices with low partitions.

But be careful of lighting offices with fixtures having spacing ratios that exceed 1.4. This ratio means the fixture will emit more of its light at high vertical angles, which may produce a glare condition. Alternately, those fixtures with spacing ratios below 1.4 will have less vertical distribution. Perimeter walls will be in shadow unless the last row of fixtures is close by. This can happen with parabolic troffers, especially the small-cell type. You must pay attention to the perimeter spacing of these fixtures or the room could take on a gloomy appearance.

### VISUAL COMFORT PROBABILITY

Visual Comfort Probability (VCP) is the measurement used to evaluate discomfort glare caused by luminaires directly in the field of view. It helps the designer determine whether a room occupant will find the fixture brightness acceptable. VCP values are derived from calculations that relate the candela chart to some room parameters and test data developed on actual lighting installations. The optimum condition scores a VCP of 100. The IES tells us a VCP of 70 or greater is acceptable to avoid direct glare, although a VCP above 80 is recommended for spaces using VDT equipment.

It is important to note that VCP values are presented for very specific conditions. Room reflectances are 80 percent for ceilings, 50 percent for walls, and 20 percent for floors. Horizontal illuminance is 100 footcandles at 30 inches above the floor. The tables list VCP values calculated for a fixed program of room lengths and widths, ranging from 20 feet × 20 feet to 100 feet × 100 feet, and for ceiling heights of 8.5, 10, 13, and 16 feet. Unfortunately, these parameters do not always relate to actual project conditions which may include rooms smaller than 20 feet × 20 feet and illuminances less than 100 footcandles.

VCP is a fairly rigid metric since it cannot be directly converted to other room conditions. It is different from the other data on the photometric report because it does not directly describe the fixture or the room, but rather postulates the occupant's reaction to the lighting system. Consequently it has value only as a means to compare fixtures against a fixed set of criteria, apart from the project application.

### FIXTURE LUMINANCE

With all the current interest in VDT (video display terminal) lighting, fixture luminance has become a prominent item on the photometric report—sometimes notable by its absence. If listed, the table of luminances on the report is generally the fixture's average luminous exitance expressed in lumens per square foot (footlamberts) as viewed from the listed angles. It tells us about the perceived brightness of the fixture from a particular viewpoint. A bright fixture in the field of view makes seeing difficult. A bright fixture aperture will also create an annoying reflection in a VDT screen. It is important to evaluate the apparent brightness of a fixture within the context of its application. Usually you need the seamless

PHOTOMETRICS  
CONTINUED ON PAGE 32

## Light without glare, expanded.

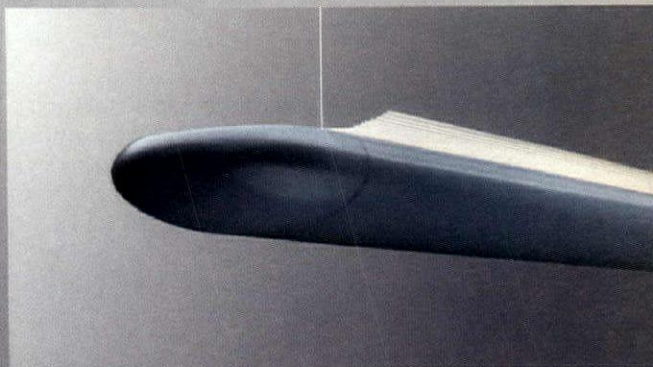
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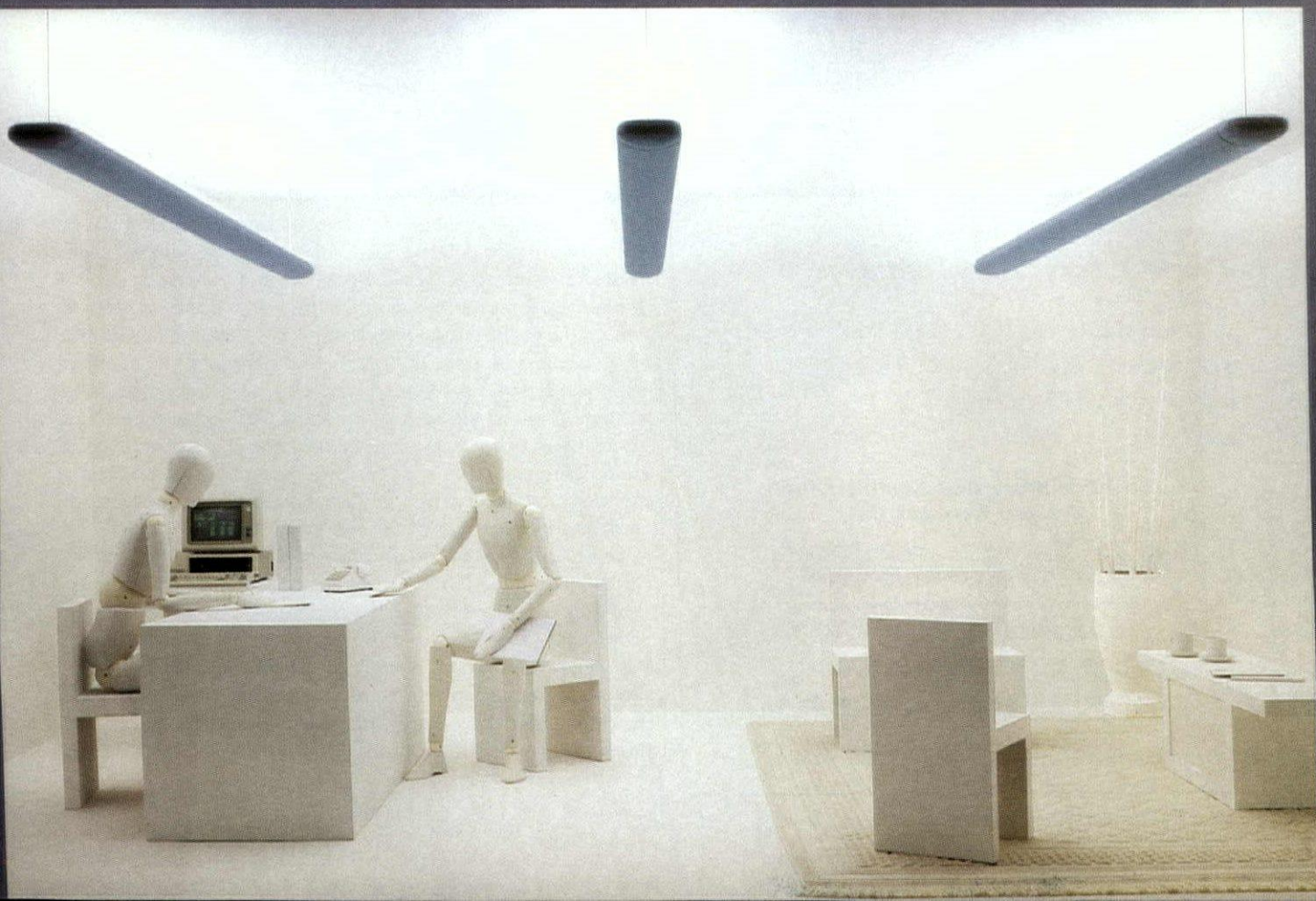
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## PHOTOMETRICS CONTINUED FROM PAGE 30

appearance of "quiet" downlight apertures; sometimes you want things to "pop." You can make this determination with the photometric report.

Even if the manufacturer has not provided a table of average footlamberts, you can calculate them from the candela chart yourself. Candelas per square feet are luminous intensity. You can convert them to luminous flux through multiplication by  $\pi$ . As shown in Figure A, candelas charted for a particular angle should be divided by the fixture's projected area at that angle. Multiply by  $\pi$  and you have footlamberts for that viewing angle.

The biggest problem you will have is determining the actual area of the fixture aperture. Troffer manufacturers, for instance, list only the nominal door size—1 foot  $\times$  4 foot, 2 foot  $\times$  2 foot, etc. This is larger than the actual aperture. If you can not get the actual size, a good estimate is to assume the aperture is about 2.5 inches or 0.2 feet smaller in width and length than the nominal door size—0.8 foot  $\times$  3.8 foot for a 1 foot  $\times$  4 foot. Downlight aperture sizes are normally listed, so your calculation can be quite accurate.

Statements about acceptable fixture luminances become quite specific when you are discussing a VDT space. Current IES recommendations are that the fixture should not present more than 250 footlamberts at 55 degrees and above. European standards are more stringent, calling out a maximum luminance of 200 candelas per square meter (approximately 60 footlamberts) at 55 degrees and above. There are no maximum luminance recommendations yet for fixtures in non-VDT areas, but follow the European standard if you want a very "quiet" look.

### READ THE SUBTEXT

Manufacturers reveal a little about themselves by the way they format photometrics for their catalogues. The cut sheet that shows only a candela curve (without values) and a CU table may come from a manufacturer who does not want to tell you very much about its fixture. A candela chart with a 10-year-old test date portrays a manufacturer who either spends a long time between innovations or is not concerned with getting you the best information. Catalogue sheets that stress fixture efficiency or spacing criteria may indicate a manufacturer who misunderstands current design priorities. A manufacturer who lists VCP's but not luminances does not understand the needs of the designer.

Designers must have complete and accurate information about the lighting fixtures they include in their specifications. It should be presented in a manner that allows them to manipulate the data to study and compare aspects of the fixture as they require. Manufacturers of high-quality products have nothing to fear from this process. It will reinforce their position by allowing designers to prove the quality for themselves. ■



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# Directory

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**T**hank you to all the manufacturers who responded by deadline to our call for DIRECTORY 1990-91 information. The DIRECTORY is a "first" for ARCHITECTURAL LIGHTING.

We tried to develop as useable a format as possible.

The DIRECTORY runs from the general—an alphabetical listing of manufacturers' names, addresses, and phone and FAX numbers, to the specific—listings by product type. For those specialized products which did not fall into any broad categories, we've devised a miscellaneous product-type section for easy reference.

Also included is a compilation of design centers around the country and a brief listing of lighting-related associations.

We hope you will keep this valuable resource on hand through this year and the next. And your suggestions are always welcome as to how we can make it even better in future editions.

**WANDA JANKOWSKI**  
EDITOR

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Fresno Dr. #112, Fresno,  
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FAX: 209-255-2053

Baldinger Architectural Lighting,  
Inc., 19-02 Steinway St.,  
Astoria, NY 11105  
(718) 204-5700  
TELEX: 428656LOBALD  
FAX: 718-721-4986

Louis Baldinger & Sons Inc.,  
19-02 Steinway St., Astoria,  
NY 11105 (718) 204-5700  
TELEX: 428656LOBALD  
FAX: 718-721-4986

J.H. Baxter Lighting, P.O. Box  
10797, Eugene, OR 97440  
(503) 689-3020  
(800) 776-9321  
FAX: 503-689-8319

Beachdog, 21355 Pacific Coast  
Hwy., Malibu, CA 90265  
(213) 456-2608

Bega/FS, Armstrong World Inds.,  
P.O. Box 50442, 1170 Coast  
Village Rd., Santa Barbara,  
CA 93150 (805) 684-0533  
FAX: 805-684-6682

**Beghelli Inc.**, 11221-2 St. Johns  
Indl. Pkwy., Jacksonville, FL  
32216 (904) 646-4416  
FAX: 904-646-1949  
**(see advertisement  
on pages 14-15)**

Norbert Belfer Lighting, P.O.  
Box 2079, 1703 Valley Rd.,  
Ocean, NJ 07712  
(201) 493-2666  
FAX: 201-493-2941

Benjamin Electric Mfg., Co.,  
Thomas Inds., P.O. Box 180,  
Rte. 70 S., Sparta, TN  
38583 (615) 738-2241  
FAX: 615-738-2240

Beta Lighting, 1200 92nd St.,  
Sturtevant, WI 53177  
(414) 886-2800  
FAX: 414-886-2779

Beverly Hills Fan Co., Beverly  
Hills Trading Co., 12612  
Raymer St., North  
Hollywood, CA 91605  
(818) 982-1002  
(800) 826-6192  
FAX: 213-875-0253

The Bodine Co., 236 Mount  
Pleasant Rd., Collierville,  
TN 38017 (901) 853-7211  
FAX: 901-853-5009



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20123 Milano, Corso Magenta 96. Tel. 02/48008716, Fax 02/4813580, Telex 334394 Cosmit I.



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Bonar Kard-O-Lite, 421 Fehely  
Dr., King of Prussia, PA  
19046 (215) 277-2910

Boyd Lighting Co., 56 Twelfth  
St., San Francisco, CA  
94103 (415) 431-4300  
FAX: 415-431-8603

Brass Light Gallery, 131 S. First  
St., Milwaukee, WI 53204  
(414) 271-8300  
(800) 243-9595  
FAX: 414-271-7755

Brass Reproduction, 9711  
Canoga Ave., Chatsworth,  
CA 91311 (818) 709-7844  
(800) 828-5858  
FAX: 818-709-5918

Brilliant Prod., Inc., 611 S.  
Kingsley Dr., Los Angeles,  
CA 90005-2354  
(213) 380-6283

Bristolite Skylights, 401 E. Goetz  
Ave., Santa Ana, CA 92707  
(714) 540-8950  
(800) 854-8618  
FAX: 714-540-5415

Brodwax Lighting, 1325 SW  
30th Ave., Deerfield Beach,  
FL 33442 (305) 360-7033  
(800) 841-4666

Bronzelite, Genlyte, P.O. Box  
606, San Marcos, TX 78666  
(512) 392-5821  
(800) 782-7653  
FAX: 512-353-5822

Byrne Electrical Specialists Inc.,  
725 Byrne Industrial Rd.,  
Rockford, MI 49341  
(616) 866-3461  
FAX: 616-866-3449

## C

CEW Lighting, 4337 Beltwood  
Pkwy. S., Dallas, TX 75244  
(214) 960-1993  
(800) 255-LAMP  
FAX: 214-387-9711

CPI Concrete Prods., P.O. Box  
13324, 1363 Harbor Ave.,  
Memphis, TN 38113  
(901) 775-9880  
(800) BUYCPI-1  
FAX: 901-775-9883



**CSL Lighting Mfg. Inc.**, 25070  
Avenue Tibbetts, Valencia,  
CA 91355 (805) 257-4155  
(800) 642-2286  
FAX: 805-257-1554  
**(see advertisement  
on Cov. 2)**

Capri Lighting, Thomas  
Industries, 6430 E. Slauson,  
Los Angeles, CA 90040  
(213) 726-1800  
FAX: 213-728-1319

Caribbean Worldwide, 2056  
N.W. 23rd Ave., Miami, FL  
33142 (305) 633-2323  
FAX: 305-638-0169

Carlton, Lamson & Sessions, 20  
Commerce Dr., Telford, PA  
18969 (215) 723-6761  
(800) 523-2582

Casablanca Fan Co., Casablanca  
Inds., Inc., 450 N. Baldwin  
Park Blvd., City of Industry,  
CA 91746 (818) 369-6441  
(800) 759-3267  
FAX: 818-330-4636

Casablanca Lighting, P.O. Box  
690, Valley Forge, PA  
19482 (215) 630-2272

Celestial Prod., 425 Fernando  
Ct., Glendale, CA 91204  
(818) 247-3830  
(800) 233-3563  
FAX: 818-247-6815

Chiaro Intl., Chiaro srl, 475 10th  
Ave., New York, NY 10018  
(212) 971-0330  
FAX: 212-967-8869

Chloride Systems, Mallard Ln.,  
North Haven, CT 06473  
(203) 624-7837  
FAX: 203-624-6342

Chronar Corp., P.O. Box 177,  
Princeton, NJ 08542  
(609) 799-8800  
FAX: 609-799-8843

Classic Lamp Posts, Rotocast,  
3645 NW 67th St., Miami,  
FL 33147 (305) 696-1901  
(800) 654-5852  
FAX: 305-836-1296

Clyde Russell & Assocs., 11120  
Pedal St., Dallas, TX 75238  
(214) 348-5000

Coast Light Systems, Jac  
Jacobsen Inds., Inc., 2200  
South Anne St., Santa Ana,  
CA 92704 (714) 549-9765  
FAX: 714-432-1901

Coe Studios, 1214 Fourth St.,  
Berkeley, CA 94710  
(415) 527-2950  
FAX: 415-527-0103

C.W. Cole & Co., 2560 N.  
Rosemead Blvd., South El  
Monte, CA 91733  
(213) 283-6688  
FAX: 818-443-9253

Columbia Lighting, USI Lighting  
Inc., P.O. Box 2787,  
Spokane, WA 99220  
(509) 924-7000  
FAX: 509-924-0931

**Con-Tech**, Conservation  
Technology Ltd., 130 N.  
Waukegan Rd., Deerfield, IL  
60015 (708) 945-0303  
(800) 728-0312  
FAX: 708-945-0096  
**(see advertisement  
on page 55)**

Consolidated Cathode Corp.,  
5716 Third Ave., Brooklyn,  
NY 11220 (718) 439-0294  
FAX: 718-439-0497

Cooper Lighting, 400 Busse Rd.,  
Elk Grove Village, IL 60007  
(312) 956-8400  
FAX: 312-956-1537

Creative Light & Sound Corp.,  
1710 Enterprise Pkwy.,  
Twinsburg, OH 44087  
(216) 425-3388

Crescent Lighting, Genlyte, 120  
Gloucester Pike,  
Barrington, NJ 08007  
(609) 546-5500  
TELEX: 609-546-6275

**Crestron Electronics Inc.**, 101  
Broadway, Cresskill, NJ  
07626 (201) 894-0660  
(800) 237-2041  
FAX: 201-894-1192

**(see advertisement  
on page 53)**

Crouse-Hinds, Cooper Lighting,  
Hwy. 61 South, Vicksburg,  
MS 39180 (601) 638-1522  
FAX: 601-634-9692

Crystalite Fine Lighting, 16811  
Maurice Ct., Cerritos, CA  
90701 (213) 404-7000

Crystorama Inc., 95 Cantiague  
Rock Rd., Westbury, NY  
11590 (516) 931-9090  
(800) 888-4470  
FAX: 516-747-4569

Custom Lighting Concepts,  
Lighting Concepts Inc.,  
6233 N.W. 47th Court,  
Coral Springs, FL 33067  
(305) 345-8213  
FAX: 305-345-8239

## D

Day-Brite Lighting, Thomas  
Inds., Inc., P.O. Drawer  
1687, 1015 S. Greene St.,  
Tupelo, MS 38802  
(601) 842-7212  
FAX: 601-841-5501

Dayton Lighting, Yosgad  
Lighting Inds., Inc., 90  
Dayton Ave., Passaic, NJ  
07055 (201) 471-2858  
FAX: 201-471-2454

Dazor Mfg. Corp., 4483 Duncan  
Ave., Saint Louis, MO 63110  
(314) 652-2400  
(800) 345-9103  
FAX: 314-652-2069

Williams de Baritault, 231 Rio  
Grande St., Ste. 1, Salt Lake  
City, UT 84101  
(801) 363-1339  
FAX: 801-363-1344

Design Lighting Prods. Co., 737  
W. Second Ave., Mesa, AZ  
85210 (602) 464-8366  
(800) 843-1602  
FAX: 602-991-9874

Design Osaka, 1341 Ocean Ave.,  
Ste. 349, Santa Monica, CA  
90401 (213) 398-7649

DesignPlan Lighting, P.O. Box  
271, Milford, NJ 08848  
(201) 995-7111  
FAX: 201-995-7802

Devine Lighting, One Design  
Dr., North Kansas City, MO  
64116 (816) 221-9440  
FAX: 816-221-3868

Dinico Products, Inc., 123 S.  
Newman St., Hackensack,  
NJ 07601 (201) 488-5700  
FAX: 201-488-9139

Dreamscape Lighting, 10610  
Culver Blvd., Culver City,  
CA 90232 (213) 838-7043  
FAX: 212-202-8536

Dual-Lite, General Signal Corp.,  
Simm Lane, Simsbury, CT  
06470 (203) 426-8011  
FAX: 203-426-7486

Dynamic Energy Prods., Inc.,  
3M, 710 Bonnie Lane, Elk  
Grove Village, IL 60007  
(708) 952-8694  
FAX: 708-952-8752

Dynasty Classics, 1035 E.  
Watson Center Rd., Carson,  
CA 90745 (213) 834-3637

# E

- EMR Lighting, 21 Crossways E.,  
Bohemia, NY 11715  
(516) 563-4144  
FAX: 516-563-4106
- ETA Lighting Systems, 1716  
Enterprise Pkwy.,  
Twinsburg, OH 44087  
(216) 425-3388  
FAX: 216-425-9700
- Eastrock Mfg. & Tech. Inc., 13  
Rte. 57, Hackettstown, NJ  
07840 (201) 852-0826  
FAX: 201-852-2816
- Edison Price Lighting**, 409 E.  
60th St., New York, NY  
10022 (212) 838-5212  
FAX: 212-888-7981  
(see advertisement  
on page 63)
- ELA Co., Environmental Lighting  
For Arch., 17891 Arenth  
Ave., City of Industry, CA  
91748-1197  
(818) 965-0821  
(800) 423-6561  
FAX: 818-965-9494
- Elba America Inc., 4435  
Gainsborough Ave., Los  
Angeles, CA 90027-1224  
(213) 544-2180
- Electric Art Co., 1131 N.  
Warson, Saint Louis, MO  
63132 (314) 567-0009
- Electro Elf, HIM, Inc., 10011  
Olive St., Temple City, CA  
91780 (818) 286-5002
- Electronic Ballast Control, 2510  
W. 237th St., Torrance, CA  
90505 (213) 534-1717  
FAX: 213-534-8214
- Elite Software, P.O. Drawer  
1194, Bryan, TX 77806  
(409) 846-2340  
(800) 648-9523
- Elliptipar Inc., 145 Orange Ave.,  
West Haven, CT 06516  
(203) 932-2266  
FAX: 203-932-4899
- Elsco Lighting Prods., Inc., 633  
San Juan Ave., Stockton, CA  
95203 (209) 466-0511  
FAX: 209-466-0324
- Eltech, 181 Gibraltar Rd.,  
Horsham, PA 19044  
(215) 441-0404  
FAX: 215-441-8299
- Emco Environmental Lighting,  
Thomas Inds., Inc., 7300  
50th St., Milan, IL 61264  
(309) 799-3111  
FAX: 309-799-7647
- Emergi-Lite, Emergi Lane,  
Westbrook, CT 06498  
(203) 399-7991  
FAX: 203-399-1996
- Enco Inds. Inc., 6901 Snowden  
Rd., Forth Worth, TX  
76180 (817) 293-7400  
(800) 969-7400  
FAX: 817-551-6053
- Enercon Data Corp., 7464 W.  
78th St., Minneapolis, MN  
55317 (612) 829-1900  
(800) 328-7099
- Energy Saving Devices Inc., 401  
E. Fourth St., Saint Paul,  
MN 55101 (612) 222-0849  
FAX: 612-222-4626
- Engineered Lighting Prod.,  
10768 Lower Azusa Rd., El  
Monte, CA 91731  
(818) 579-0943  
FAX: 818-579-6803
- Eran Lighting-Plastics Ind. Ltd.,  
P.O. Box 878, Beacon, NY  
12508 (914) 831-6500
- Esco Intl., Inc., Duray  
Fluorescent Mfg. Co., 2050  
W. Balmoral Ave., Chicago,  
IL 60625 (312) 271-2800  
FAX: 312-271-1722
- Etta Inds., Inc., 4755 Walnut St.,  
Boulder, CO 80301  
(303) 444-2244  
FAX: 303-444-1222
- Euro-Tech Lighting, Inc., 185  
Monmouth Pkwy., West  
Long Branch, NJ 07761  
(201) 222-9200
- Exitronix**, Barron  
Manufacturing Corp., 4160  
Grove Ave., Gurnee, IL  
60031 (312) 249-4200  
(800) EXIT  
FAX: 312-249-5813  
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General Office: 417-358-4065 Sales: 417-358-4034 FAX: 417-358-6015

**F**

FLOS Inc., 200 McKay Rd.,  
Huntington Station, NY  
11746 (516) 549-2745  
FAX: 516-549-4220

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Feiss Industries, 125 Rose Feiss  
Blvd., Bronx, NY 10454  
(212) 292-2024  
(800) 969-FEIS  
FAX: 212-402-6084

Fiber Optic Systems, Inc., 100  
Park Ave., Gladstone, NJ  
07934 (201) 234-2489  
FAX: 201-234-1510

Fiberstars, 47338 Fremont  
Blvd., Fremont, CA 94538  
(415) 490-0719  
(800) 327-7877  
FAX: 415-490-3247

Fibrelite Corp., 3328  
Towerwood Dr., Dallas, TX  
75234 (214) 247-7770  
FAX: 214-241-4339

Finezze Inc., 241 Fourth Ave.,  
Venice, CA 90291  
(213) 396-5081

Fitzgerald Adv., 1055 St. Charles  
St., New Orleans, LA 70130  
(504) 529-3161

Florida Power & Light, 8700 W.  
Flagler St., Ste. 200, Miami,  
FL 33174 (305) 227-4355

Focus Low Voltage Landscape  
Lighting,  
Focus Industries, Inc., 12117  
E. Slauson Ave., Santa Fe  
Springs, CA 90670  
(213) 696-3993  
FAX: 213-945-8000

Forecast Lighting Co., 500 N.  
Oak St., Inglewood, CA  
90302 (213) 678-5151  
(800) 456-9990  
FAX: 213-671-4987

Foremost Mfg. Co. Inc., 941 Ball  
Ave., Union, NJ 07081  
(201) 687-4646  
FAX: 201-687-4628

Forum, Inc., 214 N. Lexington  
Ave., Pittsburgh, PA 15208  
(412) 244-8780  
FAX: 412-244-9032

Freshman & O'Conner Mktg.,  
425 Martingale Dr.,  
Schaumburg, IL 60173

(312) 240-2400  
FAX: 312-240-2719

Future Classics, 155 E. 23rd St.,  
#410, New York, NY 10010  
(212) 598-0486

**G**

GE Wiring Devices, General  
Electric Co., 225 Service  
Ave., Warwick, RI 02886  
(401) 886-6200  
FAX: 401-886-6250

**GTE Sylvania Lighting**, GTE  
Electrical Prods., 100  
Endicott St., Danvers, MA  
01923 (508) 777-1900  
FAX: 508-750-2152  
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Gammalux Systems, 416 W.  
Maple Ave., Monrovia, CA  
91016 (818) 358-5996  
(800) 356-3275  
FAX: 818-357-1567

Garcy - Major Lighting, Liberty  
Lighting, P.O. Box 39510,  
Chicago, IL 60639  
(312) 384-1000  
FAX: 312-252-4366

Gardco Lighting, 2661  
Alvarado, San Leandro, CA  
94577 (415) 357-6900

Gemma Studios, Inc., 321  
Riverside Dr.,  
Northampton, MA 01060  
(413) 586-8710

**General Electric Lighting  
Business Group**, Nela Park,  
Cleveland, OH 44112  
(216) 266-2121  
(800) 523-5520  
FAX: 216-266-8346  
**(see advertisement  
on pages 10-11)**

General Electric Co./Lighting  
Systems Dept.,  
P.O. Box 4506,  
Spartanburg Hwy.,  
Hendersonville, NC 28793  
(704) 693-2000  
FAX: 704-693-2112

Georgian Art Lighting Design,  
P.O. Box 325,  
Lawrenceville, GA 30246  
(404) 963-6221  
(800) 241-8126  
FAX: 404-963-6225

Gilbert Emergency Lighting,  
Don Gilbert Inds. Inc., 5611

Krueger Dr., Jonesboro, AR  
72401-9102

(501) 932-6070  
(800) 643-0400  
FAX: 501-932-5609

Gilway Technical Lamp, 800 W.  
Cummings Park, Woburn,  
MA 01801 (617) 935-4442  
FAX: 617-938-5867

Globe Lite, Standard Electric  
Fixture Co. Inc., 2150 N.W.  
Miami Court, Miami, FL  
33127 (305) 573-2020  
FAX: 305-576-3758

Great American Lamp, Inc.,  
8636 Graham Ave., Los  
Angeles, CA 90002  
(213) 589-5571

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Hollywood, CA 90038  
(213) 461-0200  
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FAX: 213-461-4308

**Greenlee Landscape Lighting  
Mfg.**, LSI Industries, 1510  
Capital Pkwy., Ste. 200,  
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(800) 331-2425

Guth Lighting, Jacobsen Ind.,  
2615 Washington Blvd.,  
Saint Louis, MO 63103  
(314) 533-3200

**H**

Hacker Inds., 1501 Westcliff Dr.,  
#310, Newport Beach, CA  
92660 (714) 645-8891

**Hadco, Genlyte**, 100 Craftway,  
Littlestown, PA 17340  
(717) 359-7131  
FAX: 717-359-9289  
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on page 32)**

Halo Lighting, Cooper Lighting,  
400 Busse Rd., Elk Grove

Village, IL 60007  
(708) 956-8400  
FAX: 708-456-1537

**Hanover Lantern**, Hoffman  
Prods., Inc., 470 High St.,  
Hanover, PA 17331  
(717) 632-6464  
(800) 233-7196  
FAX: 717-632-5039  
**(see advertisement  
on page 6)**

W.F. Harris Lighting, 4015  
Airport Exit Rd., Monroe,  
NC 28110 (704) 283-7477  
(800) 842-9345  
FAX: 704-283-6880

Hi-Lite Mfg. Co., Inc., 8515  
Chetle Ave., Santa Fe  
Springs, CA 90670  
(213) 945-3608

**Hinkley Lighting**, 12600 Berea  
Rd., Cleveland, OH 44111  
(216) 671-3300  
FAX: 216-671-4537  
**(see advertisement  
on page 60)**

Holophane Co., Inc., 214  
Oakwood Ave., Newark, OH  
43055 (614) 345-9631  
FAX: 614-349-4486

Honeywell, Inc., Residential/  
Bldg. Controls, 1985  
Douglas Dr., Minneapolis,  
MN 55422 (612)  
542-7277  
FAX: 612-542-6982

Hubbell Inc., State St. &  
Bostwick Ave., Bridgeport,  
CT 06605 (203) 333-1181  
FAX: 203-368-6245

Hubbell Lighting, Hubbell Inc.,  
2000 Electric Way,  
Christiansburg, VA 24073  
(703) 382-6111  
TELEX: 23-7407719  
FAX: 703-382-1526

Humphrey Prods. Co., P.O. Box  
2008, Kalamazoo, MI  
49003-2008  
(616) 381-5500  
FAX: 616-381-4113

Hunter Fan Co., 2500 Frisco  
Ave., Memphis, TN 38114  
(901) 743-1360  
FAX: 901-745-9376

**Hydrel**, 12881 Bradley, Sylmar,  
CA 91342 (818) 362-9465  
FAX: 818-362-6548  
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**I**

Idaho Wood, P.O. Box 488,  
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 (800) 635-1100  
 FAX: 208-263-3102

Illuminating Experiences, Inc.,  
 233 Cleveland Ave.,  
 Highland Park, NJ 08904  
 (201) 745-5858  
 (800) 526-6990  
 TELEX: 4970890  
 FAX: 201-745-9710

Illumination Concepts &  
 Engineering, 500 Callahan  
 Rd., North Kingston, RI

02852 (401) 295-2533  
 FAX: 401-295-5984

Indy Lighting Inc., Juno Lighting  
 Inc., P.O. Box 50710, 8431  
 Castlewood Dr.,  
 Indianapolis, IN 46250  
 (317) 849-1233  
 FAX: 317-576-8006

Inlite Corp., 939 Grayson St.,  
 Berkeley, CA 94710  
 (415) 849-1067  
 (800) 346-5932  
 FAX: 415-849-3230

Innovative Electronics of Tampa,  
 Inc., 5126 Le Tourneau Cir.,  
 Tampa, FL 33610  
 (813) 621-7604  
 FAX: 813-623-2229

Interlock, 8774 Monticello Ln.,  
 Maple Grove, MN 55369  
 (612) 493-3133  
 (800) 468-1497

Ioline Corp., 12020 113th Ave.  
 N.E., Kirkland, WA 98034  
 (206) 821-2140  
 FAX: 206-823-8898

Iota Engineering Co., P.O. Box  
 11846, 1301 E. Wieding Rd.,

Tucson, AZ 85734  
 (602) 294-3292  
 FAX: 602-741-2837

Isolite Corp., 110 W. Lancaster  
 Ave., Wayne, PA 19087  
 (215) 688-2800  
 (800) 888-LITE

Italian Trade Commission,  
 Furniture & Lighting  
 Project, P.O. Box 56689,  
 Atlanta, GA 30343  
 (404) 525-0660  
 FAX: 404-525-5112

**J**

JW Lighting Inc., 750 Alameda  
 Genoa, Houston, TX 77045  
 (713) 433-4511

JWP Infracon Inc., 4 Sperry Rd.,  
 Fairfield, NJ 07006  
 (201) 808-9191  
 FAX: 201-808-9208

Jac Jacobsen Ind., P.O. Box  
 4207, 67 Holly Hill Ln.,  
 Greenwich, CT 06839  
 (302) 869-9330

Janmar Lighting, 3700 Eagle  
 Rock Blvd., Los Angeles, CA  
 90065 (213) 254-7501  
 FAX: 213-254-7640

John Watson Landscape  
 Illumination, 1933 Regal  
 Row, Dallas, TX 75235  
 (214) 630-7751  
 (800) 344-4885  
 FAX: 214-638-1811

Joslyn Hi-Voltage Corp., 4000  
 E. 116th St., Cleveland, OH  
 44105-4398  
 (216) 271-6600  
 FAX: 216-341-3615  
 (see advertisement  
 on page 58)

Juno Lighting, Inc., 2001 S.  
 Mount Prospect Rd., Des  
 Plaines, IL 60017-5065  
 (708) 827-9880  
 FAX: 708-827-2925

Justice Design Group, 3457 S.  
 La Cienega Blvd., Los  
 Angeles, CA 90016  
 (213) 836-9575  
 FAX: 213-836-0204

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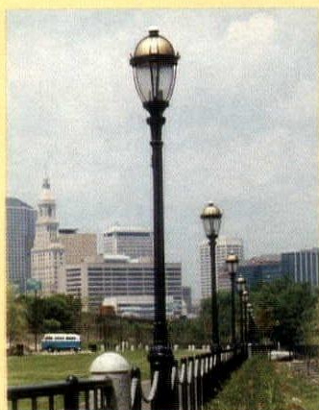
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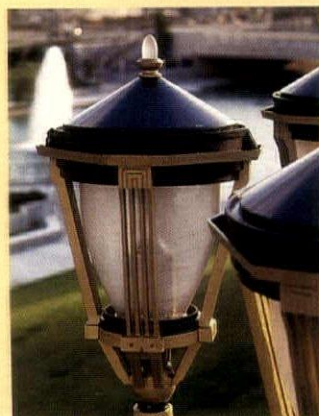
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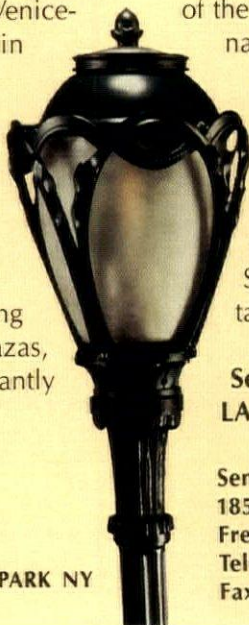
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 185 Buffalo Avenue  
 Freeport, New York 11520  
 Telephone 516-379-4660  
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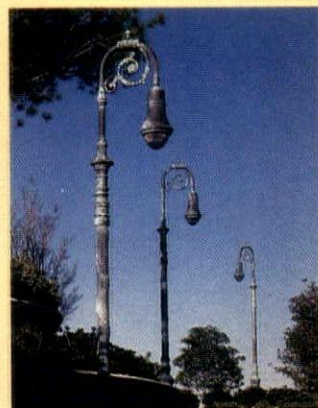
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Kalwall Corp., P.O. Box 237,  
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(800) 258-9777

Keene Lighting Prod., 45  
Industrial Ave., Wilmington,  
MA 01887 (508) 657-7600  
FAX: 508-658-2388

Kelsey-Kane Lighting, 4541 N.E.  
11th Ave., Oakland Park, FL  
33334 (305) 772-3187  
(800) 444-3187  
FAX: 305-772-8468

Kenro Light, Inc., 8687 Melrose  
Ave., #B404, Los Angeles,  
CA 90069 (213) 695-6510  
FAX: 213-659-1768

Kenroy Intl., Hunter-Melnor  
Inc., 11660 Central Pkwy.,  
Jacksonville, FL 32216  
(904) 642-4340  
FAX: 904-642-4150

Kichler Lighting, 1541 E. 38th  
St., Cleveland, OH 44139  
(216) 431-5400  
(800) KICHLER  
FAX: 216-431-4765

Kim Lighting, 16555 E. Gale  
Ave., City of Industry, CA  
91749 (818) 968-5666  
FAX: 818-330-3861

King Luminaire Co., Inc., Stress  
Crete Ltd., P.O. Box 266,  
1153 State, Rte. 46N,  
Jefferson, OH 44047  
(216) 576-9073  
FAX: 216-576-9073

The Kirlin Co., 3401 E. Jefferson  
Ave., Detroit, MI 48207  
(313) 259-6400  
FAX: 313-259-3121

Koch & Lowy, Inc., 21-24 39th  
Ave., Long Island City, NY  
11101 (718) 786-3520  
FAX: 718-937-7968

Kohsund Ind., Inc., 2145 E.  
Sacramento St., Los Angeles,  
CA 90021 (213) 627-9102

Komotech, 447 W. Garvey Ave.,  
Monterey Park, CA 91754  
(818) 571-1729

Kosempel Mfg., Co., 3760 M St.,  
Philadelphia, PA 19124  
(215) 533-7110

(800) 733-7122  
FAX: 215-744-5220

Kreon, 41 E. 11th St., New York,  
NY 10003 (212) 353-3450

## L

LEE Colortran Inc., LEE  
Panavision Intl., Inc., 1015  
Chestnut St., Burbank, CA  
91506 (818) 843-1200  
FAX: 818-954-8520

**LSI Lighting Systems, LSI**  
Inds., 10,000 Alliance Rd.,  
Cincinnati, OH 45242  
(513) 793-3200  
FAX: 513-793-0147  
**(see advertisement**  
**on page 19)**

LTM Corp. of America, 11646  
Pendleton St., Sun Valley,  
CA 91352 (818) 767-1313  
(800) 762-4291  
FAX: 818-767-1442

LUMAX Inds., Inc., Chestnut  
Ave. & Fourth St., Altoona,  
PA 16603 (814) 944-2537  
FAX: 814-944-6413

Lam Lighting, Jac Jacobsen Inds.,  
Inc., P.O. Box 111,  
Wakefield, MA 01880  
(714) 549-9765  
FAX: 714-432-1901

Lamar Lighting Co., 88 Albany  
Ave., Freeport, NY 11520  
(516) 379-4200  
FAX: 516-379-4205

Laser Media Inc., 6383 Arizona  
Circle, Los Angeles, CA  
90045 (213) 338-9200  
FAX: 213-338-9221

Lavery Lighting, Casablanca  
Inds., 15747 Strathern St.,  
Van Nuys, CA 91406  
(818) 786-7850  
(800) 888-8141  
FAX: 818-786-0954

Lazin Lighting, Inc., 53 Greene  
St., New York, NY 10013  
(212) 219-3888  
FAX: 212-219-3948

Leecraft Mfg. Co., Inc., 21-02  
44th Rd., Long Island City,  
NY 11101 (718) 392-8800  
TELEX: 710-582-2897  
FAX: 718-937-4896

Leiter Lites, Elias J Leiter Co.,  
P.O. Box 188, 202  
Bethpage-Sweetthollow Rd.,  
Old Bethpage, NY 11804  
(516) 752-1433

(800) 527-7796  
FAX: 516-752-9127

Letven Diccicco, 455 Business  
Ctr. Dr., Horsham, PA  
19044 (215) 672-4800

Leviton Mfg., Co., Inc., 59-25  
Little Neck Pkwy., Little  
Neck, NY 11362  
(718) 229-4040  
(800) 824-3005  
TELEX: 710-582-2632  
FAX: 800-832-9538

Lexalite Intl., Co., P.O. Box 498,  
Charlevoix, MI 49720  
(616) 547-6584  
FAX: 616-547-5833

Light Design Corp., 4201  
Salzado St., Coral Gables, FL  
33147 (305) 858-6819  
FAX: 305-445-4074

Light Space Design, 2111 Vine  
St., Ste. B, Berkeley, CA  
94709 (415) 843-8430  
(800) 779-8989  
FAX: 415-540-6023

Light Standard By Scholl, P.O.  
Box 704, Bergen St.,  
Bethlehem, PA 18016  
(800) 523-9622  
FAX: 215-867-7147

**Lighting Analysts Inc., 10572**  
Park Mountain Rd.,  
Littleton, CO 80127 (303)  
972-8852  
FAX: 303-972-8851  
**(see advertisement**  
**on page 57)**

Lighting Bug, Ltd., 320 W.  
202nd St., Chicago Heights,  
IL 60411 (312) 755-2100  
(800) 323-3226  
FAX: 312-755-3443

Lighting Innovations by DeBaun  
Lighting, DeBaun Lighting  
Co., Inc., 240 S. Raymond  
Ave., Alhambra, CA 91801  
(818) 289-5160  
FAX: 213-283-3500

Lighting Ltd., 1524 S. Peoria St.,  
Chicago, IL 60608  
(312) 421-7733

Lighting Sciences, Inc., 7830 E.  
Evans Rd., Scottsdale, AZ  
85260  
(602) 991-9260  
FAX: 602-991-0375

**Lighting Services, Inc.,**  
Industrial Park, Rte. 9W,  
Stony Point, NY 10980  
(914) 942-2800  
FAX: 914-942-2177  
**(see advertisement**  
**on page 12)**

Lighting Technologies, 2540  
Frontier Ave., Ste. 107,  
Boulder, CO 80301  
(303) 449-5791  
FAX: 303-449-5864

Lightolier Inc., Genlyte, 100  
Lighting Way, Secaucus, NJ  
07096 (201) 864-3000  
FAX: 201-392-3784

lImage Inds., Inc., P.O. Box 72,  
Town Indust. Pk., Saint  
Albans, VT 05478  
(800) 367-6801  
FAX: 514-353-2660

Linear Lighting Corp., Linear  
Lighting Corp., 31-30  
Hunters Point Ave., Long  
Island City, NY 11101  
(718) 361-7552  
FAX: 708-937-2747

Lite-Nite Inc., P.O. Box 731,  
Smyrna, GA 30081  
(404) 955-7646

Lite Source Inc., 163 University  
Pkwy., Pomona, CA 91768  
(714) 598-3383  
FAX: 714-598-7815

Litecontrol Corp., P.O. Box 100  
48121, 100 Hawks Ave.,  
Hanson, MA 02341-0100  
(617) 294-0100  
FAX: 617-293-2849

Litelab Corp., 251 Elm St.,  
Buffalo, NY 14203  
(716) 856-4300  
FAX: 716-856-0156

Liteline Ltd., 1524 S. Peoria St.,  
Chicago, IL 60608  
(312) 421-7733  
(800) 24-LIGHT  
FAX: 312-421-5444

LiteTouch, Inc., 3783 S. 500 W.,  
#7, Salt Lake City, UT  
84115 (801) 268-8668  
FAX: 801-268-9200

LiteTronics Intl., RCS Industries,  
Inc., 5317 W. 123rd St.,  
Alsip, IL 60658  
(708) 371-4955  
(800) 323-3392  
TELEX: 140344 LITE  
FAX: 708-371-0627

**Lithonia Lighting, P.O. Box A,**  
1335 Industrial Blvd.,  
Conyers, GA 30207-0067  
(404) 922-9000  
TELEX: 261381  
FAX: 404-922-1841  
**(see advertisement**  
**on Cov. 4)**

Robert Long Lighting, P.O. Box  
770, 427 Allen Ct.,  
Healdsburg, CA 95448  
(707) 431-1050  
(800) 588-3664  
FAX: 707-431-0134

Lowering Systems, Inc., 2050 W.  
Balmoral Ave., Chicago, IL  
60625 (312) 271-4363  
FAX: 312-271-1722

Lucifer Lighting Co., 414 Live  
Oak St., San Antonio, TX  
78202 (512) 227-7329  
(800) 879-9797  
FAX: 512-227-4967

Lumark, Cooper Lighting, Hwy.  
61 South, Vicksburg, MS  
39180 (601) 638-1522  
FAX: 601-634-9692

Lumec, Inc., C.P. 633, Boisbrian,  
PQ Canada, J7E 4K3  
(514) 430-7040  
FAX: 514-430-1453

Lumenyte Intl. Corp., 350 Lear  
Ave., Costa Mesa, CA 92626  
(714) 556-6655  
FAX: 714-556-9329

Lumiere Design & Mfg., Inc.,

31360 Via Colinas, #101,  
Westlake Village, CA 91362  
(818) 991-2211  
FAX: 818-991-7005

Lutron Electronics Co., Inc., 205  
Suter Rd., Coopersburg, PA  
18036-1299

(215) 282-3800  
(800) 523-9466  
FAX: 215-282-3090

Luxo Lamp Corp., 36 Midland  
Ave., Port Chester, NY  
10573 (914) 937-4433  
(800) 222-5896  
TELEX: 137336  
FAX: 800-648-2978

## M

MEROFORM/MERO Structures,  
Inc., N112 W. 18810  
Mequon Rd., Germantown,  
WI 53022 (414) 255-6553  
(800) 323-0072  
FAX: 414-255-6932

ML Systems, Aluminum Co. of  
America, 465-2 Columbus  
Ave., Valhalla, NY 10595  
(914) 741-0400

(800) 245-LITE  
FAX: 914-741-0513

M2 Designer's Studio, Inc., P.O.  
Box 44, West Kingston, RI  
02892 (401) 789-8864  
FAX: 401-789-8865

MWC Lighting, 10870 Kalama  
River Rd., Fountain Valley,  
CA 92708 (714) 962-2286

MWS, Cooper Lighting, Souther  
Field Rd., Americus, GA  
31709 (912) 924-8000  
FAX: 912-924-5570

Macro Electronics Corp., 1611  
Headway Circle, Bldg. #1,  
Austin, TX 78754-5137  
(512) 385-6800  
FAX: 512-385-2203

Magnetek-Triad Div., 1124 E.  
Franklin St., Huntington, IN  
46750 (219) 356-7100  
FAX: 219-356-3148

Marco Lighting, Hubbel  
Lighting, 6100 Wilmington  
Ave., Los Angeles, CA 90001  
(213) 583-6551  
(800) 347-0006  
FAX: 213-583-3155

Marissa Contract Lighting  
Company, Standard Electric  
Fixture Co., Inc., 2150 N.W.  
Miami Court, Miami, FL  
33127 (305) 573-2000  
FAX: 305-576-3750

Mark Lighting Inc., 25  
Knickerbocker Rd.,  
Moonachie, NJ 07074  
(201) 939-0880  
FAX: 201-939-1090  
**(see advertisement  
on page 62)**

Derek Marshall Lamps &  
Accessories, 219 Upper Rd.  
Sandwich, NH 03227  
(603) 284-7000  
FAX: 603-284-6200

Martin Processing, State Rte.  
683, Whitby Acres, Fieldal  
VA 24078 (703) 629-1700

Matthew Lighting Studio Inc.,  
Standard Electric Fixture  
Co., Inc., 2150 N. W. Miami  
Ct., Miami, FL 33127  
(305) 576-2270  
FAX: 305-576-3750



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Way, Brisbane, CA 94005  
(415) 468-2560  
FAX: 415-468-2620

McGraw-Edison, Cooper  
Lighting, Hwy. 61 South,  
Vicksburg, MS 39180  
(601) 638-1522  
FAX: 601-634-9692

Metalloxyd Inc., 207  
Greenwich Ave., Stamford,  
CT 06902 (203) 324-7115  
(800) 325-7115  
FAX: 203-348-1647  
**(see advertisement  
on page 49)**

Metlux Lighting, Cooper  
Lighting, Souther Field Rd.,  
Americus, GA 31709  
(912) 924-8000  
FAX: 912-924-5507

Metropolitan Lighting, Fixture  
Co., Inc., 315 E. 62nd St.,  
New York, NY 10021  
(212) 838-2425

Michaels' Lighting, P.O. Box 192,  
2 Kansas St., Winona, MN  
55987 (507) 454-5560  
FAX: 507-452-1212

Mid-West Chandelier, 100  
Funston Rd., Kansas City,  
KS 66115 (913) 281-1100  
(800) 888-6115  
FAX: 913-281-1967

Millerbernd Mfg. Co., P.O. Box  
98, Winsted, MN 55395  
(612) 485-2111  
FAX: 612-485-4420

Miniature Lighting Technology  
Inc., 4541 N.E. 11th Ave.,  
Fort Lauderdale, FL 33334  
(305) 772-8490  
(800) 666-8490  
FAX: 305-772-8468

Minolta Corp., 101 Williams Dr.,  
Ramsey, NJ 07446  
(201) 934-5346  
FAX: 201-825-4374

Miroflector, 40 Bayview Ave.,  
Inwood, NY 11696  
(516) 371-1111  
FAX: 516-239-8462  
**(see advertisement  
on page 34)**

Miyakawa American Corp., 408  
E. Devon, Ste. 208, Elk  
Grove Village, IL 60007  
(312) 460-0515

Modulightor Inc., 246 E. 58th  
St., New York, NY 10022  
(212) 371-0336  
FAX: 212-371-0335

Monarch Lighting Co., 2670-A  
Walnut Ave., Tustin, CA  
92680 (714) 832-7855

Morrison, 5498 Nave Dr.,  
Novato, CA 94949-6498  
(415) 883-2362  
FAX: 415-883-2315

Mule Emergency Lighting Inc.,  
325 Valley St., Providence,  
RI 02908 (401) 521-6853  
(800) 556-7690  
FAX: 401-521-6856

Multipoint Control Sys., Inc.,  
18212 N. Creek Pkwy., Ste.  
101, Bothell, WA  
98011-8202  
(206) 487-6506  
FAX: 206-486-0294

Multiworld Lighting, 14304  
Sullyfield Circle, Chantilly,  
VA 22021 (703) 817-0300  
(800) 783-6950  
FAX: 703-817-0323

Musco Sports-Lighting Inc.,  
Musco Corp., P.O. Box 289,  
100 First Ave. W.,  
Oskaloosa, IA 52577  
(515) 673-0411  
(800) 367-6219  
FAX: 515-673-4740

Mytech, 6208 Turkey Hollow,  
Austin, TX 78750  
(512) 346-2277

## N

NEMRA, 222 Westchester Ave.,  
Ste. 330, White Plains, NY  
10604 (914) 428-1307

NL Corp., 14901 Broadway,  
Cleveland, OH 44137  
(216) 662-2080  
FAX: 216-662-9069  
**(see advertisement  
on page 59)**

Natl. Lighting Co., 522  
Cortlandt St., Belleville, NJ  
07109  
(201) 751-1600

Natl. Specialty Lighting Co., Inc.,  
333 Exchange Dr.,  
Arlington, TX 76011  
(817) 860-2581  
(800) 527-2923  
FAX: 817-860-9055

Neo-Ray Prods., Inc., 537  
Johnson Ave., Brooklyn, NY  
11237 (718) 456-7400

(800) 221-0946  
FAX: 718-456-5492  
**(see advertisement  
on page 61)**

Neonamericana, 510 Leonard  
N.W., Grand Rapids, MI  
48504 (616) 774-2869  
FAX: 616-774-0382

Neonetics Inc., 9631 Liberty  
Rd., Ste. B, Randallstown,  
MD 21133 (301) 521-1962

Nessen Lamps, Inc., Jac Jacobsen  
Inds. Inc., 36 Midland Ave.,  
Port Chester, NY 10573  
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TELEX: 3766788  
FAX: 914-934-8052

New Horizons Lighting, 3397  
S.W. 42nd Ave., Stuart, FL  
33497 (407) 283-7772

Nightscaping, Loran Inc., 1705  
E. Colton Ave., Redlands,  
CA 92373 (714) 794-2121  
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**(see advertisement  
on page 3)**

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FAX: 216-273-5007

North Star Lighting Inc., 2150  
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60153 (708) 681-4330  
FAX: 708-681-4006

Northern Lighting, A.M.I., P.O.  
Box 917, Deep River, CT  
06417 (203) 526-9755  
FAX: 203-526-5131

Norton Inds., 2239 E. 14th St.,  
Cleveland, OH 44115  
(216) 696-1047  
FAX: 216-696-4684

Nova Lighting, Inc., 1531 W.  
Orangewood Ave., Orange,  
CA 92668 (714) 744-4255  
FAX: 714-744-4377

Novitas, Inc., 1657 Euclid St.,  
Santa Monica, CA 90404  
(213) 452-7890  
FAX: 213-452-6168

Nowell's Inc., P.O. Box 295, 490  
Gate Five Rd., Sausalito, CA  
94966 (415) 332-4933

Marc Nugent, 155 E. 23rd St.,  
New York, NY 10010  
(212) 598-0486

Nulco Mfg. Co., 30 Beecher St.,  
Pawtucket, RI 02862  
(401) 728-5200  
(800) 34-NULCO  
FAX: 401-728-8210

## O

Omega Energy, 30997  
Huntwood Ave., Ste. 103,  
Hayward, CA 94544  
(415) 487-5980

Omega Lighting, MCPHILBEN,  
270 Long Island Expwy.,  
Melville, NY 11747  
(516) 293-8500

O'Ryan Industries, 9400 N.E.  
130th Ave., Vancouver, WA  
98682 (206) 892-0447  
(800) 426-4311  
FAX: 206-892-6742

Osram Corp., Osram, 110  
Bracken Rd., Montgomery,  
NY 12549 (914) 457-4040  
(800) 431-9980  
FAX: 914-457-4142

Otteson Co., P.O. Box 8939,  
Fountain Valley, CA 92728  
(714) 962-4800

## P

P & K Poles, Cooper Lighting,  
Hwy. 61 South, Vicksburg,  
MS 39180 (601) 638-1522  
FAX: 601-634-9692

PEP Lighting, Powered  
Emergency Prods., P.O. Box  
1037, Brattleboro, VT  
05302 (802) 254-6242  
FAX: 802-254-7616

P.R.E. Lighting, Co., 1705 W.  
130th St. #D, Gardena, CA  
90249 (213) 327-6887

Pacific Design Center, P.O. Box  
25325, Nashville, TN  
37202 (615) 726-2773

Paflight, Inc., 239 W. Allen Ave.,  
San Dimas, CA 91773  
(714) 592-1941

Panasonic Inds., Co., Matsushita  
Co., One Panasonic Way  
4A-4, Secaucus, NJ 07094  
(201) 348-6633

Pappi Lighting, Ltd., 940  
Meyerside Dr., Mississauga,  
ON Canada, L5T 1R9  
(416) 670-0068

Paragon Electric, Ranco, 606  
Parkway Blvd., Two Rivers,  
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TELEX: 26-3450  
FAX: 414-793-3736

Paramount Inds. Corp., P.O. Box  
259, 304 North Howard St.,  
Croswell, MI 48422  
(313) 679-2551  
FAX: 313-767-4034

Parke Inds., 2246 Lindsay Way,  
Glendora, CA 91740  
(714) 599-1204  
FAX: 714-599-1208

Peerless Lighting Corp., P.O.  
Box 2556, Berkeley, CA  
94702 (415) 845-2760  
FAX: 415-845-2776  
(see advertisement  
on page 31)

Perfectlite Co., 1457 E. 40th St.,  
Cleveland, OH 44103  
(216) 391-8282

Philips Lighting Co., 200  
Franklin Sq. Dr., Somerset,  
NJ 08875 (201) 563-3000  
TELEX: 219369  
FAX: 201-563-3642

Phoenix Prods., Co., 6161 N.  
64th St., Milwaukee, WI  
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TELEX: 910-262-3389  
FAX: 414-438-1330

Sherman Pole Products Group,  
Sherman Intl. Corp., 2117  
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(205) 252-6995  
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FAX: 205-322-4356

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Ashland Ave., Pittsburgh, PA  
15228 (412) 344-6097

Poulsen Lighting, Inc., Louis  
Poulsen & Co., 5407 N.W.  
163rd St., Miami, FL  
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625-1009  
FAX: 305-625-1213

Power Controls Corp., Sales/  
Marketing Dept., 1067  
Bandera Rd., San Antonio,  
TX 78228 (512) 436-9511  
(800) 531-1012  
TELEX: 767222  
FAX: 512-436-1464

Powerline Comm., Inc., 7 Green  
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(800) SOS-ENRG  
FAX: 802-658-6934

Pre Finish Metals, Material  
Sciences Corp., 2111 E.  
Pratt Blvd., Elk Grove  
Village, IL 60007  
(708) 439-2210  
(800) 346-7587  
FAX: 708-364-1008

Precision Architectural  
Lighting, 9087 Knight Rd.,  
Houston, TX 77054  
(713) 796-8395  
FAX: 713-799-8398

Premiere Chandelier Inc., 5441  
W. 104th St., Los Angeles,  
CA 90045 (213) 216-1333  
FAX: 213-216-4438

Prescolite Controls, USI  
Lighting, 1208 Tappan Cir.,  
Carrollton, TX 75006  
(214) 242-6581  
(800) DIMMERS  
FAX: 214-245-5377

Progress Lighting, 'G' St. & Erie  
Ave., Philadelphia, PA 19134

(215) 289-1200  
TELEX: 834806  
FAX: 215-537-0887

Progressive Tech. in Lighting,  
581 Ottawa Ave., Holland,  
MI 49423 (616) 396-6722  
FAX: 616-396-0686

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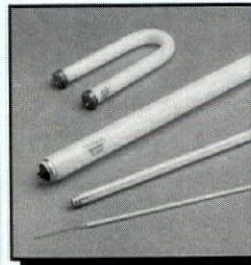
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Promark Corp., 301 College St.,  
Ste. 800, Greenville, SC  
29601

Prudential Lighting, 1774 E. 21st  
St., Los Angeles, CA 90058  
(213) 746-0360  
FAX: 213-746-8838

## R

RBT, 12 Executive Campus,  
Cherry Hill, CT 08002  
(609) 488-5500  
FAX: 609-488-1424

RLS Lighting Inc., 413 S. 21st  
Ave., Hollywood, FL 33020  
(305) 922-3011  
FAX: 305-921-0154

RWL Corp-Welsbach Light, 240  
Sargent Dr., New Haven, CT  
06511 (203) 789-1710  
FAX: 203-776-9644

Radionic Ind., Inc., 2525 W.  
Moffat St., Chicago, IL  
60647 (312) 252-3400  
TELEX: 272742  
FAX: 312-252-3315

**Rambusch Lighting,**  
Rambusch Decorating Co.,  
40 W. 13th St., New York,  
NY 10011  
(212) 675-0400,  
(215) 828-9072  
FAX: 212-620-4687  
**(see advertisement  
on page 1)**

Fredrick Ramond, Inc., 16121 S.  
Carmenita Rd., Cerritos, CA  
90701 (213) 926-1361  
(800) 421-3517  
FAX: 213-926-1015

Raztech Lighting, 1192 Riechert,  
Crete, IL 60417  
(708) 672-4323

Reggiani U.S.A., Lightron of  
Cornwall, 65 River Rd.,  
New Windsor, NY 12550  
(914) 565-8500  
FAX: 914-562-3282

**Rejuvenation Lamp &  
Fixture,** Rejuvenation  
House Parts Co., 901 N.  
Skidmore, Portland, OR  
97217 (509) 249-0774  
FAX: 503-281-7948  
**(see advertisement  
on page 28)**

Ron Rezek Lighting, 4200  
Sepulveda Blvd., Culver  
City, CA 90230  
(213) 836-1572  
FAX: 213-836-1578

**Roberts Step-Lite Systems,**  
P.O. Box 18796, 4501 N.  
Western Ave., Oklahoma  
City, OK 73154  
(405) 528-7738  
(800) 654-8268  
FAX: 405-528-7753  
**(see advertisement  
on page 43)**

Rohm & Haas, Adv. Dept., 4th  
Fl., Independence Mall  
West, Philadelphia, PA  
19105

Rosser Fabrap Intl., 524 W.  
Peachtree St., N.W., Atlanta,  
GA 30308 (404) 876-3800  
FAX: 404-872-9279

Roxter Mfg. Co., 10-11 40th Ave.,  
Long Island City, NY 11101  
(718) 392-5060  
FAX: 718-392-9811

Royalte, P.O. Box 4272,  
Highland Park, NJ 08904  
(201) 846-1212, 846-2199  
FAX: 201-846-5414

**Ruud Lighting, Inc.,** 9021  
Washington Ave., Racine,  
WI 53406 (414) 886-1900  
(800) 236-7000  
FAX: 414-886-1395  
**(see advertisement  
on page 7)**

Ryther-Purdy Lumber Co.,  
P.O. Box 622, 174 Elm St.,  
Old Saybrook, CT 06475  
(203) 388-4405  
FAX: 203-388-9401

## S

SF 12V Inc., 1053 Howard St.,  
San Francisco, CA 94103  
(415) 864-6484  
FAX: 415-255-4703

SPI Lighting Inc., 10400 N.  
Enterprise Dr., Mequon, WI  
53092 (414) 242-1420  
FAX: 414-242-6414

SRB Technologies Inc., 2580  
Landmark Dr., Winston  
Salem, NC 27103  
(919) 659-2610  
(800) 552-0098  
FAX: 919-768-7720

**Saxe-Patterson,** P.O. Box 15,  
Taos, NM 87571  
(505) 758-9513  
FAX: 505-758-4336  
**(see advertisement  
on page 48)**

Schlage Lighting Control, 5452  
Betsy Ross Dr., Santa Clara,  
CA 95054

Scholl Light Standards, Scholl  
Lumber Co., P.O. Box 704,  
Bergen St. & Stanley Ave.,  
Bethlehem, PA 18016  
(215) 867-4131  
FAX: 215-867-7147

Schonbek Worldwide Lighting  
Inc., 4-8 Ind. Blvd., W.,  
Plattsburgh, NY 12901  
(518) 563-7500  
FAX: 518-563-4228

Self Powered Lighting, Inc., 8  
Westchester Plz., Elmsford,  
NY 10523 (914) 592-8230

Sensor Switch, P.O. Box 1088, 81  
School Ground Rd.,  
Brandford, CT 06405  
(203) 483-5057  
FAX: 203-483-1901

Sentinel Lighting, Airey-  
Thompson Co., 3653 Sierra  
Pine Ave., Los Angeles, CA  
90023 (213) 264-1533  
(800) 421-6196  
FAX: 213-265-1929

**Sentry Electric Corp.,** 185  
Buffalo Ave., Freeport, NY  
11520 (516) 379-4660  
**(see advertisement  
on page 41)**

Shakespeare Co., Anthony Inds.,  
P.O. Box 733, Newberry, SC  
29108 (803) 276-5504  
(800) 845-7750  
FAX: 803-276-8940

Shat-R-Shield, Inc., 116 Ryan  
Patrick Dr., Salisbury, NC  
28144 (704) 633-2100  
(800) 223-0853  
FAX: 704-633-3420

Shield Source Inc., 5620 N.  
Kolb, Ste. 171, Tucson, AZ  
85715 (602) 529-1001  
(800) 872-0879  
FAX: 602-529-1325

Siemens Lighting Systems, 100  
Wood Ave., S., Iselin, NJ  
08830 (201) 632-2837

Siltron Illumination, Inc., P.O.  
Box 280, 7915 Center Ave.,  
Cucamonga, CA 91730  
(714) 941-3500  
(800) 874-3392  
FAX: 714-980-4477

Skytrackers, 28007 Front St.,  
Temecula, CA 92390  
(714) 676-2161

Southwall Technologies, 1029  
Corporation Way, Palo Alto,  
CA 94303 (415) 962-9111  
(800) 365-8794  
TELEX: 348337  
FAX: 415-967-8713

Southwest Art Lighting, P.O. Box  
7428, Albuquerque, NM  
87194 (505) 344-7374

Sparkle Plenty, Inc., 101 E.  
Ontario St., Chicago, IL  
60611 (312) 266-1700  
(800) 621-6460  
FAX: 312-266-9446

Spaulding Lighting, Inc., Hanson,  
1736 Dreman Ave.,  
Cincinnati, OH 45223  
(513) 541-3486  
FAX: 513-541-1454

Specialty Lighting Systems, P.O.  
Box 238, New Hudson, MI  
48165 (313) 437-7064  
(800) 365-1505  
FAX: 313-437-7069

Spero Electric Corp., 1705  
Noble Rd., Cleveland, OH  
44112 (216) 851-3300  
FAX: 216-851-0300

Spring City Electric Mfg. Co.,  
Hall & Main Sts., P.O.  
Drawer A, Spring City, PA  
19475 (215) 948-4000  
FAX: 215-948-5577

Spring Lighting Co., Forget Me  
Not Fashions Inc., 182 E.  
Jefferson Blvd., Los Angeles,  
CA 90011 (213) 231-5171

Staff Lighting Corp., P.O. Box  
1020, Rte. W. N., Highland,  
NY 12528 (914) 691-6262  
FAX: 914-691-6289

Standard Electric Fixture Co.,  
2150 N.W. Miami Ct.,  
Miami, FL 33127  
(305) 573-2020  
FAX: 305-576-3758

**Starbrite Lighting,** 145 Sawmill  
River Rd., Yonkers, NY  
10701 (914) 965-7465  
(800) 221-3116  
FAX: 914-965-7483  
**(see advertisement  
on page 47)**

Sternberg Lanterns, Inc., 5801 N.  
Tripp Ave., Chicago, IL  
60646 (312) 478-4777  
FAX: 312-267-2055

Sterner Lighting Systems, 351  
Lewis Ave., W., Winsted,  
MN 55395 (612) 485-2141  
(800) 328-7480  
FAX: 800-328-3635

Stonco Lighting, Genlyte, 2345  
Vauxhall Rd., Union, NJ  
07083 (201) 964-7000  
FAX: 201-964-1404

Stonelights Ltd., 404 West Lake  
St., Barrington, IL 60010  
(708) 381-7551  
FAX: 708-381-0323

Strand Electro Controls, Sub.  
Rank America, 2975 S. 300,  
W., Salt Lake City, UT 84115  
(801) 487-6111  
(800) 453-7435  
FAX: 801-466-1003

Street Lighting Equipment  
Corp., 2099 S. Park Rd.,  
Hallandale, FL 33009  
(305) 961-9140  
FAX: 305-963-5794

Sun Valley Lighting, 7900  
Clybourne Ave., Sun Valley,  
CA 91352 (818) 767-3031  
(800) USPOLES  
FAX: 818-767-4631  
**(see advertisement  
on page 8)**

Sur-Fin Chemical Corp., 1530  
Spence St., Los Angeles, CA  
90023 (213) 262-8108  
(800) 282-3533  
FAX: 213-264-7734

Sure-Lites, Cooper Lighting, 400  
Busse Rd., Elk Grove  
Village, IL 60007  
(708) 956-8400  
FAX: 708-956-1537

Swivelier Co., 33 Rte. 304,  
Nanuet, NY 10954  
(914) 623-3471  
FAX: 914-623-1861

Sylvan Designs, Inc., 8921  
Quartz Ave., Northridge,  
CA 91324 (818) 996-6868  
FAX: 818-998-7241

## T

T.I.R. Systems, 3935 Second  
Ave., Burnaby, BC Canada,  
V5C 3W9 (604) 294-8477

TLA Lighting Cnslts., Inc., 72  
Loring Ave., Salem, MA  
01970 (508) 767-6870

Targetti Inc., 625 Broadway,  
New York, NY 10012  
(212) 982-8390  
FAX: 212-982-8548

Tech Lighting Inc., 300 W.  
Superior, Ste. 1, Chicago, IL  
60610 (312) 486-6464  
FAX: 312-252-4264

Techna Prods., 16430 Manning  
Way, Cerritos, CA 90701  
(213) 926-3636

Technical Glass Prods., 2425  
Carillon Pt., Kirkland, WA  
98033 (206) 822-4514  
(800) 426-0279  
TELEX: 152613  
FAX: 206-822-4684

Tek-Tron Ent., Inc., 637 S. Palm  
St., Ste. I, La Habra, CA  
90631 FAX: 213-697-4653

Tennessee Valley Authority, Mail  
Stop SP3S 50D,  
Chattanooga, TN 37402  
(615) 751-0011

Teron Lighting Corp., 124 W.  
66th St., Cincinnati, OH  
45216 (513) 242-7004  
(800) 776-7780  
FAX: 513-242-4928

Thomas Inds.  
Inc.(Corporate), 4360

Brownsboro Rd., Ste. 300,  
Louisville, KY 40207  
(502) 893-4600  
(800) 626-2847

**(see advertisement  
on page 33)**

Thomas Inds. (Residential),  
Lighting Division, 950  
Breckenridge Lane, Ste.  
G50, Louisville, KY 40207  
(502) 894-2400

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④ + ⑥ = 720 WATTS → (T)  
① + ⑤ = 821 WATTS → (T)  
② + ⑦ = 992 WATTS → (T)  
⑤ ARE 1000 WATT CAPACITY EACH

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Thorn Lighting Ltd., Thorn EMI,  
Lincoln Rd., Enfield,  
Middax England, EN1 1SB  
01-366-1166  
TELEX: 915891

**3M Construction Mkts.** 3M,  
Center - 225-4S-08, Saint  
Paul, MN 55144  
(612) 736-2388  
**(see advertisement  
on page 63)**

**Times Square Lighting**, Rte. 9  
W., Stony Point, NY 10980  
(914) 947-3034  
FAX: 914-947-3047  
**(see advertisement  
on page 60)**

Tivoli Inds., Inc., P.O. Box  
11523, 1513 E. St. Gertrude  
Pl., Santa Ana, CA 92711  
(714) 957-6101  
(800) 854-3288  
FAX: 714-957-1501

Toki American Technologies  
Inc., 1278 E. Katella Ave.,  
Anaheim, CA 92805  
(714) 937-8995  
FAX: 714-937-5410

Tokistar Lighting, Inc., 1278 East  
Katella Ave., Anaheim, CA  
92805 (714) 937-8995  
(800) 448-2512  
FAX: 714-937-5410

Topcon Instrument Corp. of  
America, 65 W. Century  
Rd., Paramus, NJ 07652  
(201) 261-9450  
FAX: 201-387-2710

Tortran, 24 Crescent Ave.,  
Bridgeport, CT 06608  
(203) 335-6805

Trimblehouse Corp., 4658 S.  
Old Peachtree Rd.,  
Norcross, GA 30071  
(404) 448-1972  
(800) 241-4317  
FAX: 404-447-9250

UNENCO, Inc., 2555 Nicholson  
St., San Leandro, CA 94577  
(415) 351-1802  
(800) 227-0452  
FAX: 415-895-5753

USI Lighting, Inc., Hanson, 1251  
Doolittle Dr., San Leandro,  
CA 94577 (415) 562-3500  
(800) 824-2709

U.S. Pole Co., Inc., 7900  
Clybourne Ave., Sun Valley,  
CA 91352 (213) 875-1136  
(800) USPOLES  
FAX: 818-767-4631

Union Metal Corp., P.O. Box  
9920, Canton, OH 44711  
(216) 456-7653  
FAX: 216-456-0196

Urban Archaeology, 285  
Lafayette St., New York, NY  
10012 (212) 431-6969  
FAX: 212-941-1918

Valmont Electric, Valmont Inds.,  
1430 E. Fairchild, Danville,  
IL 61832 (217) 446-4600  
FAX: 800-922-3412

Valmont Inds., West Hwy. 275,  
Valley, NE 68064  
(402) 359-2201  
(800) VALMONT  
FAX: 402-359-4025

Vantage Controls, Inc., 4415  
South 500 West, Salt Lake  
City, UT 84123  
(801) 266-2165  
FAX: 801-266-2562

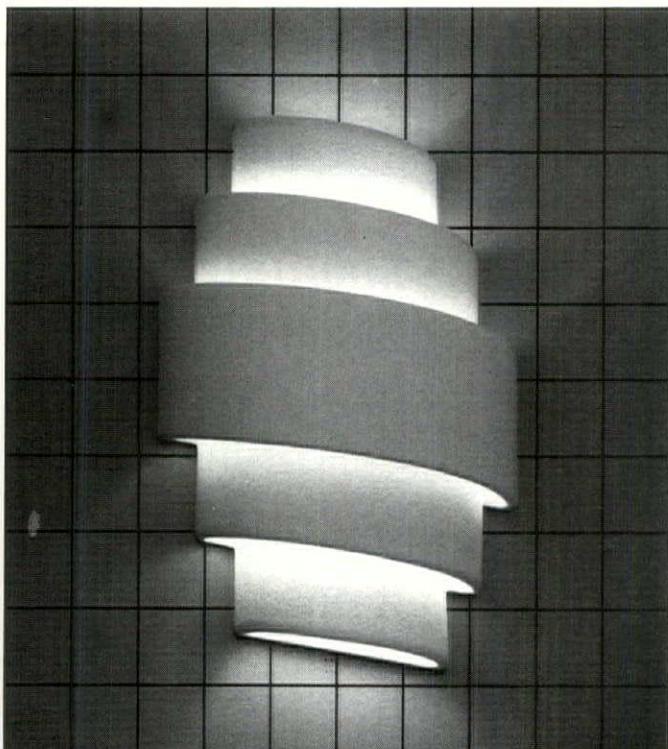
Velux-America Inc., 450 Old  
Brick Yard Rd., Greenwood,  
SC 29648 (803) 223-3149  
FAX: 803-223-6248

Venture Lighting Intl., Inc.,  
32000 Aurora Rd., Solon,  
OH 44139 (216) 248-3500  
(800) 437-0111  
FAX: 216-349-7777

Verax Corp., 1425 N. Crescent  
Heights Blvd., Los Angeles,  
CA 90046-3855  
(213) 656-9330  
FAX: 213-656-3384

## U

## V



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Second St., 4th Fl., San  
Francisco, CA 94105  
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(800) 688-2799  
FAX: 415-957-2699

Visa Lighting Corp., 8600 W.  
Bradley Rd., Milwaukee, WI  
53224 (414) 354-6600  
FAX: 414-354-7436

Vista Mfg., Co., P.O. Box 428,  
F.M. 2449E, Ponder, TX  
76259 (817) 479-2787  
FAX: 817-479-8139

Visual Comfort Lighting,  
Aluminum Louvre Corp.,  
161 Sweet Hollow Rd., Old  
Bethpage, NY 11793  
(516) 756-1850  
FAX: 516-756-1856

Voltarc Technologies Inc., P.O.  
Box 688, 186 Linwood Ave.,  
Fairfield, CT 06430  
(203) 255-2633  
FAX: 203-259-1194  
(see advertisement  
on page 45)

## W

Waldmann Lighting Co., 9 W.  
Century Dr., Wheeling, IL  
60090 (312) 520-1060  
(800) 634-0007  
FAX: 312-520-1730

The Watt Watcher, 296 Brokaw  
Rd., Santa Clara, CA 95050  
(408) 988-5331  
(800) 879-8585  
FAX: 408-988-5331

Weirton Steel Corp., 400 Three  
Springs Dr., Weirton, WV  
26062 (304) 797-2941  
(800) 624-5480  
FAX: 304-797-2267

Wendelighting, Jacksen  
International, 2445 N.  
Naomi St., Burbank, CA  
91504 (818) 955-8066  
(800) 528-0101  
FAX: 818-848-0674

Western Circle, 6700 Northwest  
36th Ave., Miami, FL 33147  
(800) 842-8251

Western Lighting Inds., Inc.,  
3540 W. Valhalla Dr.,  
Burbank, CA 91505  
(818) 841-7896  
FAX: 818-841-8910

Westron Corp., 75 Ninth Ave.,  
New York, NY 10011

Wide-Lite, Genlyte, P.O. Box  
606, San Marcos, TX 78667  
(512) 392-5821  
(800) 782-7653  
FAX: 512-353-5822

John Wiley & Sons, Inc., 605  
Third Ave., New York, NY  
10158 (212) 850-6748

H.E. Williams, Inc., P.O. Box  
837, 831 W. Fairview,  
Carthage, MO 64836  
(417) 358-4065  
FAX: 417-358-6015

(see advertisement  
on page 39)

Winona Lighting Studio, P.O.  
Box 1205, 3760 W. Fourth

St., Winona, MN 55987  
(507) 454-5113  
FAX: 507-452-8528

WoodForm Inc., 9705 N.E.  
Colfax St., Portland, OR  
97220 (503) 253-9626  
(800) 624-5091  
FAX: 503-253-1210

## X

Xenotech Inc., 11229 Vinedale  
Ave., Sun Valley, CA 91352  
(818) 767-0365  
(800) 266-XENO  
FAX: 818-767-0395

## Y

Yorklite Electronics Inc., JSB  
Electrical Ltd., 3161 State  
Rd., Bensalem, PA 12020  
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FAX: 215-244-4208

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Dayton Ave., Passaic, NJ  
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FAX: 201-471-2454

## Z

Zinkohn Higgins, #2 Henry  
Adams St., #M95, San  
Francisco, CA 94103  
(415) 621-7345

Zumtobel Lighting Inc., 141  
Lanza Ave., Garfield, NJ  
07026 (201) 340-8900  
(800) 537-7802  
FAX: 201-340-9898

### PRODUCT TYPE

## BALLASTS

fc — fluorescent, compact  
fd — fluorescent, dimming  
fem — fluorescent,  
electromagnetic  
fet — fluorescent, electronic  
hem — HID,  
electromagnetic  
hen — HID, electronic

ARC Sales, Inc.  
Advance Transformer Co.,  
North America Philips  
Corp.  
(fc,fd,fem,fet,hem,hen)

BKL Inc.  
The Bodine Co.  
CEW Lighting (hem)  
Chloride Systems (fc)  
Day-Brite Lighting, Thomas  
Inds., Inc. (fet)  
Dynamic Energy Prods., Inc.,  
3M (fc,fd,fem,fet)  
ElSCO Lighting Prods., Inc. (fc)  
Etta Inds., Inc. (fc,fd,fet,hen)  
GE Lighting Systems, General  
Electric (hem,hen)  
Globe Lite, Standard Electric  
Fixture Co. Inc. (fc)  
Holophane Co., Inc. (hem)  
Honeywell, Inc., Residential/  
Bldg. Controls  
Hubbell Lighting, Hubbell Inc.  
(fc,fd,fem,fet,hem,hen)  
Innovative Electronics of Tampa,  
Inc.  
Iota Engineering Co. (fet)  
Janmar Lighting (fc,fem,hen)  
Kenro Light, Inc. (fc,fem)  
Kichler Lighting (fem)  
Linear Lighting Corp., Linear  
Lighting Corp. (fem)

Lucifer Lighting Co. (fc,fem)  
Lutron Electronics Co., Inc.  
(fd)  
ML Systems, Aluminum Co. of  
America (fem,fet)  
Macro Electronics Corp. (fd)  
Magnetek-Triad Div. (fc,fet)  
Maximum Tech. (fem,fet)  
Osram Corp., Osram (hen)  
Phoenix Prods., Co. (hem,hen)  
Progressive Tech. in Lighting  
(fc)  
Radionic Ind., Inc. (fc,fd,fem)  
Siltron Illumination, Inc. (fc)  
Specialty Lighting Systems (fc)  
Strand Electro Controls, Sub.  
Rank America (fd,fet)  
Tek-Tron Ent., Inc. (fc,fd)  
Thomas Inds. Inc.(Corporate)  
(fet)  
Thorn Lighting Ltd., Thorn EMI  
(fc,fd,fem,hem,hen)  
Times Square Lighting  
USI Lighting, Inc., Hanson  
(fc,fd,hem)  
Valmont Electric, Valmont Inds.  
(fd,fem,fet,hem)  
Wide-Lite, Genlyte

## CONTROLS SYSTEMS

b — building energy  
management systems  
dcm — dimming controls,  
manual  
dcp — dimming controls,  
preset  
dcw — dimming controls,  
wallbox  
os — occupancy sensors  
pc — photoelectric controls  
s — switches

Advanced Control Technologies  
Inc. (b,dcm,dcp,os,pc,s)  
American Electric (pc)  
Area Lighting Research Inc. (pc)  
Carlson, Lamson & Sessions  
(dcm,dcw,os,pc,s)  
Crestron Electronics Inc. (dcm,dcp)  
Dynamic Energy Prods., Inc.,  
3M (pc,s)  
ETA Lighting Systems (dcm,dcp,dcw)  
Enercon Data Corp. (b,os,pc,s)  
Energy Saving Devices Inc.  
Etta Inds., Inc. (dcm,dcp,pc)  
GE Wiring Devices, General  
Electric Co. (b,os)

Globe Lite, Standard Electric  
Fixture Co. Inc.  
The Great American Market  
(dcm,dcp)  
Holophane Co., Inc. (b,pc)  
Honeywell, Inc., Residential/  
Bldg. Controls  
(dcm,dcp,dcw,os,pc)  
Hubbell Lighting, Hubbell Inc.  
(b,os,pc)  
Kenro Light, Inc. (dcm,dcp)  
LEE Colortran Inc., LEE  
Panavision Intl., Inc. (dcm,dcp)  
Laser Media Inc.  
Lazin Lighting, Inc.  
Leecraft Mfg. Co., Inc. (s)  
Leviton Mfg. Co., Inc.  
(dcm,dcp,dcw,os,s)  
Lighting Services, Inc. (dcm)  
Lightolier Inc., Genlyte  
(dcm,dcp,dcw,os,pc)  
Litelab Corp. (dcm,dcp)  
LiteTouch, Inc. (dcp,s)  
Lithonia Lighting  
(b,dcm,dcp,dcw,os,pc,s)  
Lutron Electronics Co., Inc.  
(dcm,dcp,dcw,s)  
ML Systems, Aluminum Co. of  
America (os)  
Macro Electronics Corp.  
(dcm,dcp,pc)  
Maximum Tech. (os)  
Monarch Lighting Co.  
Multipoint Control Sys., Inc.  
(b,dcm,dcp,dcw,pc)  
Novitas, Inc. (os)  
Paragon Electric, Ranco  
(b,dcm)  
Power Controls Corp., Sales/  
Marketing Dept.  
(dcm,dcp,dcw)  
Powerline Comm., Inc.  
(b,dcm,dcp,pc)  
Prescolite Controls, USI Lighting  
(dcm,dcp,dcw)  
Sensor Switch (os)  
Specialty Lighting Systems  
(dcm)  
Sternier Lighting Systems  
(b,dcm,dcp,os,pc)  
Strand Electro Controls, Sub.  
Rank America  
(b,dcm,dcp,os,pc,s)  
Times Square Lighting  
(dcm,dcp,dcw)  
UNENCO, Inc. (os)  
USI Lighting, Inc., Hanson  
(dcm,dcp,dcw)  
Valmont Electric, Valmont Inds.  
(dcm,dcp,dcw)  
Vantage Controls, Inc. (dcp,s)  
The Watt Watcher (b,os)  
Wide-Lite, Genlyte  
(dcm,dcp,dcw,os)

## COMPUTER SOFTWARE LIGHTING PROGRAMS

d — design

Abolite Lighting, Inc., LSI Inds. (d)  
Advanced Control Technologies  
Inc. (d)  
American Electric (d)  
Capri Lighting, Thomas  
Industries (d)  
Day-Brite Lighting, Thomas  
Inds., Inc. (d)  
Design Osaka (d)  
Elite Software (d)  
GE Lighting Systems, General  
Electric (d)  
GTE Electrical Lighting, GTE  
Silvania Prods. (d)  
Holophane Co., Inc. (d)  
Ioline Corp.  
The Kirlin Co.  
Laser Media Inc. (d)

### Lighting Analysts inc.

speaking of lighting  
design software...

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fax 303/972-8851

Lighting Analysts, Inc. (d)  
Lighting Sciences, Inc. (d)  
Lighting Technologies (d)  
Lightolier Inc., Genlyte (d)  
Lithonia Lighting (d)  
Raztech Lighting  
Rosser Fabrap Intl.  
Sentry Electric Corp. (d)  
Sternier Lighting Systems (d)  
Strand Electro Controls, Sub.  
Rank America (d)  
Thorn Lighting Ltd., Thorn EMI  
(d)  
Vantage Controls, Inc. (d)  
Vertex Design Systems (d)

## DECORATIVE LIGHTING

a — antique reproductions  
f — floor lamps  
p — pendant  
s — sconces  
tl — table lamps  
t — task

Abolite Lighting, Inc., LSI Inds. (p)  
American Fluorescent Corp. (t)

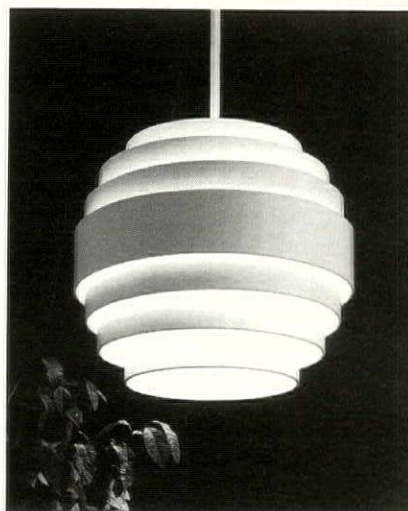
American Lantern Co. (p,s,t)	Future Classics (s)
Antique Street Lamps Inc. (a)	GE Lighting Systems, General Electric (a)
Appleton Lamplighter, Aries Fabrication Corp. (p,s)	Garcy - Major Lighting, Liberty Lighting (t)
Architectural Cathode Lighting	Gemma Studios, Inc. (f,p,s,t)
Architectural Lighting Systems (p,s)	Georgian Art Lighting Design (a,p,s,t)
Ardee Lighting/USA (t)	Gilway Technical Lamp
Arroyo Craftsman Lighting (a,p,s)	Gross Chandelier Co. (a,p,s)
Art Directions Inc. (a,p,s)	Hadco, Genlyte (a)
Art Specialty Co., Inc. (a,f,t,t)	Halo Lighting, Cooper Lighting (p,s,t)
Artemide, Inc. (f,p,s,t,t)	Hanover Lantern, Hoffman Prods., Inc. (a,p)
Atelier Intl. Ltd., Steelcase Inc. (f,p,s,t,t)	Hinkley Lighting (p,s)
Baldinger Architectural Lighting, Inc. (p,s)	Holophane Co., Inc. (p,s,t)
Louis Baldinger & Sons Inc. (a,f,p,s)	Hunter Fan Co. (s,t)
Bega/FS, Armstrong World Inds. (p,s)	Idaho Wood (p,s)
Norbert Belfer Lighting (s)	Illuminating Experiences, Inc. (a,f,p,s,t)
Beverly Hills Fan Co., Beverly Hills Trading Co.	Justice Design Group (s)
Boyd Lighting Co. (f,p,s,t)	Kenro Light, Inc. (f,p,s,t)
Brass Light Gallery (a,f,p,s,t)	Kenroy Intl., Hunter-Melnor Inc. (f,p,s,t,t)
Brass Reproduction (a,f,p,s,t)	Kichler Lighting (p,s)
CSL Lighting Mfg. Inc. (p,s,t)	Koch & Lowy, Inc. (f,p,s,t,t)
Caribbean Worldwide (s)	Kosempel Mfg., Co. (p)
Casablanca Fan Co., Casablanca Inds., Inc. (f,t)	Lamar Lighting Co. (s)
Chiaro Intl., Chiaro srl (f,p,s,t,t)	Lavery Lighting, Casablanca Inds. (f,p,s,t)
Classic Lamp Posts, Rotocast (a)	Lazin Lighting, Inc. (p,s,t)
C.W. Cole & Co. (a,p,s)	Leiter Lites, Elias J Leiter Co. (f,p,s,t,t)
Columbia Lighting, USI Lighting Inc. (p,s)	Light Design Corp. (s)
Crystorama Inc. (a,f,p,s)	Lighting Bug, Ltd. (f,p,s,t,t)
Custom Lighting Concepts, Lighting Concepts Inc. (a,f,p,s,u,t)	Lighting Innovations by DeBaun Lighting, DeBaun Lighting Co., Inc. (a)
Dayton Lighting, Yosgad Lighting Inds., Inc. (p,s)	Lightolier Inc., Genlyte (a,p,s,t)
Dazor Mfg. Corp. (f,t,t)	L'Image Inds., Inc. (f,p,s,t,t)
Design Lighting Prods. Co. (f,p,s,t)	Lite Source Inc. (f,t)
Dreamscape Lighting (p,s,t,t)	Litecontrol Corp. (s)
Dynasty Classics (f,p,s,t)	Liteline Ltd. (f,t)
ELA Co., Environmental Lighting For Arch. (a,p,s,t)	Robert Long Lighting (a,f,p,s,t)
Elliptipar Inc. (s)	Lucifer Lighting Co. (t)
Elsco Lighting Prods., Inc. (a)	Luxo Lamp Corp. (t)
Enco Inds. Inc. (f,t,t)	M2 Designer's Studio, Inc. (p,s,t)
Esco Intl., Inc., Duray Fluorescent Mfg. Co. (s)	Marissa Contract Lighting Company, Standard Electric Fixture Co., Inc. (a,f,p,s,t)
FLOS Inc. (f,p,s,t,t)	Derek Marshall Lamps & Accessories (s,t)
Feiss Inds. (f,p,s,t,t)	Matthew Lighting Studio Inc., Standard Electric Fixture Co., Inc. (a,p,s)
Feiss Industries (a,f,p,s,t,t)	Metalux Lighting, Cooper Lighting (t)
Forecast Lighting Co. (p,s,t)	

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### GUARANTEEING:

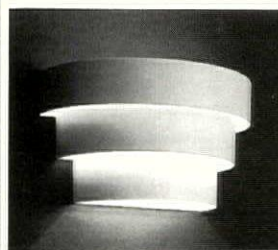
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- Engineering • Quality materials & products
- American craftsmanship • Affordability
- North American wide representation
- Delivery



**AL 615 CC**

2'6" x 2'6"

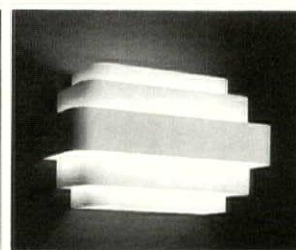
Painted aluminum, acrylic lens  
Six A-19 amps



**AL 405 WS**

1'0" x 6.5" x 6"

Painted steel  
One PL-13 lamp



**AL 402 WS**

1'2" x 8.5" x 6"

Painted steel  
Two PL-13 lamps



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**Circle No. 31 on product card.**

Metropolitan Lighting, Fixture Co., Inc. (a,p,s)  
 Michaels' Lighting (a,f,p,s,t,l)  
 Miniature Lighting Technology Inc. (t)  
 Modulightor Inc. (p,s,t)  
 Morrison (f,p,s,t,l,t)  
 Multiworld Lighting (f,p,s,t,l)  
 Neonamericana (s)  
 Neonetics Inc. (f,s,t,l)  
 Nessen Lamps, Inc., Jac Jacobsen Inds. Inc. (f,p,s,t,l,t)  
 Noral Lighting, Inc. (a)  
 Nova Lighting, Inc. (s)  
 Nulco Mfg. Co. (p,s,t)  
 O'Ryan Industries  
 Peerless Lighting Corp. (s)  
 Poulsen Lighting, Inc., Louis Poulsen & Co. (p,s,t,l)  
 Premiere Chandelier Inc. (a,p,s)  
 Progress Lighting (a,p,s,t)  
 Prudential Lighting (s)  
 Rambusch Lighting, Rambusch Decorating Co. (a,p,s,t)  
 Fredrick Ramond, Inc. (f,p,s,t,l)  
 Reggiani U.S.A., Lighttron of Cornwall (p,t)  
 Rejuvenation Lamp & Fixture, Rejuvenation House Parts Co. (a,f,p,s,t,l)



Ron Rezek Lighting (f,p,s,t,l,t)  
 Roxter Mfg. Co. (f,t,l,t)  
 Ruud Lighting, Inc. (s)  
 SF 12V Inc. (t)  
 SPI Lighting Inc. (p,s,t)  
 Saxe-Patterson (s)  
 Schonbek Worldwide Lighting Inc. (p,s)  
 Sentry Electric Corp. (a,p)  
 Siltron Illumination, Inc. (p,s)  
 Spaulding Lighting, Inc., Hanson (s,t)  
 Spero Electric Corp. (f,p,s)  
 Spring Lighting Co., Forget Me Not Fashions Inc. (a,p,s)

Something To Look Forward To: Retail Lighting in Superior AL

Staff Lighting Corp. (s,t)  
 Starbrite Lighting (t)  
 Sternberg Lanterns, Inc. (a)  
 Sterner Lighting Systems (p,s)  
 Stonelights Ltd. (s)  
 Sun Valley Lighting (a,s)  
 Sur-Fin Chemical Corp. (p,t)  
 Swivelier Co. (p,t)  
 Tech Lighting Inc. (f,p,s,t,l)  
 Teron Lighting Corp. (s,t,l,t)  
 Thomas Inds. Inc. (Corporate) (a,p,s,t)  
 Thorn Lighting Ltd., Thorn EMI (f,p,t,l,t)  
 Times Square Lighting (t)  
 Tivoli Inds., Inc. (t)  
 Trimblehouse Corp. (p,s)  
 USI Lighting, Inc., Hanson (p,t)  
 Union Metal Corp. (a)  
 Urban Archaeology (a,s,t,l)  
 VISCO (a)  
 Visa Lighting Corp. (p,s)  
 Visual Comfort Lighting, Aluminum Louvre Corp. (p,s)  
 Waldmann Lighting Co. (t)  
 Western Lighting Inds., Inc. (t)

**EXTERIOR ARCHITECTURAL**

b - bollards  
 bf - building floodlighting  
 ed - exterior downlighting  
 hf - HID & fluorescent parking lot/area lighting  
 hr - HID roadway  
 i - incandescent strip lighting  
 l - landscape lighting  
 s - submersible

ABEC Lighting, Inc. (b,l)  
 ARC Sales, Inc. (bf)  
 Abolite Lighting, Inc., LSI Inds. (ed)  
 Accent Lite, Linear Lighting Corp. (i)  
 American Electric (bf,hf,hr,l)  
 American Fluorescent Corp. (hf,i,l)  
 American Lantern Co. (l)  
 Antique Street Lamps Inc. (b,hf,hr,l)  
 Appleton Lamplighter, Aries Fabrication Corp. (b)  
 Architectural Area Lighting, Hanson Inds. (b,hf,hr)  
 Architectural Cathode Lighting  
 Arroyo Craftsman Lighting (ed,l)

B-K Lighting (l)  
 Baldinger Architectural Lighting, Inc. (ed)  
 Louis Baldinger & Sons Inc. (ed)  
 Bega/FS, Armstrong World Inds. (b,bf,ed,hf,l,s)  
 Beta Lighting (b,bf,ed,hf,hr,l)



lighting

Bronzelite, Genlyte (bf,l,s)  
 CPI Concrete Prods. (b)  
 Caribbean Worldwide (b,bf,ed,hf,l)  
 Carlton, Lamson & Sessions (bf,ed)  
 Celestial Prod. (i,l)  
 Classic Lamp Posts, Rotocast (b)  
 C.W. Cole & Co. (b,ed,hf,i,l)  
 Columbia Lighting, USI Lighting Inc. (i)  
 Crouse-Hinds, Cooper Lighting (bf,hf,hr)  
 Custom Lighting Concepts, Lighting Concepts Inc. (i)  
 Dayton Lighting, Yosgad Lighting Inds., Inc. (b,l)  
 DesignPlan Lighting (b,hf)  
 Devine Lighting (b,hf,l)  
 Dinico Products, Inc. (hf)  
 Dreamscape Lighting (b,ed,i,l)  
 Day-Brite Lighting Inc., Thomas Inds., Inc. (bf)  
 Dynasty Classics (ed)  
 ELA Co., Environmental Lighting For Arch. (ed,hf)  
 Elliptipar Inc. (bf)  
 ElSCO Lighting Prods., Inc. (bf,ed,hf,hr)  
 Emco Environmental Lighting, Thomas Inds., Inc. (b,bf,hr,l)  
 Engineered Lighting Prod.  
 Esco Intl., Inc., Duray Fluorescent Mfg. Co. (ed,hf)  
 Feiss Inds.  
 Feiss Industries (ed,l)  
 Fiberstars (i,l,s)  
 Fibrelite Corp. (bf,l)  
 Forecast Lighting Co. (i)  
 Forum, Inc. (hf)  
 GE Lighting Systems, General Electric (bf,hf,hr)  
 GTE Sylvania Lighting, GTE Electrical Prods. (bf,ed,hf,hr,l)

Garcy - Major Lighting, Liberty Lighting (b,ed,hf,i)  
 Greenlee Landscape Lighting Mfg., LSI Industries (b,l)

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 The Leader in Lighting

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 W.E. Harris Lighting (bf,ed,l)  
 Hinkley Lighting (l)  
 Holophane Co., Inc. (b,bf,ed,hf,hr,l)  
 Hubbell Lighting, Hubbell Inc. (b,bf,ed,hf,hr,l,s)  
 Hunter Fan Co. (ed)  
 Hydrel (l,s)

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 Underwater Lighting & Fountains  
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Idaho Wood (b,hf,i,l)  
 Janmar Lighting (ed,l)  
 John Watson Landscape Illumination (l)  
 Kelsey-Kane Lighting (bf,hf,l)  
 Kenro Light, Inc. (b,i,l)  
 Kim Lighting (b,bf,ed,hr,l,s)  
 King Luminaire Co., Inc., Stress Crete Ltd. (b)  
 The Kirlin Co. (ed)  
 Kosempel Mfg., Co. (ed,hr)  
 LSI Lighting Systems, LSI Inds. (b,ed,hf,l)  
 LUMAX Inds., Inc.  
 Laser Media Inc. (bf,ed,l)  
 Light Design Corp. (ed,l)  
 Lighting Innovations by DeBaun Lighting, DeBaun Lighting Co., Inc. (l)  
 Lightolier Inc., Genlyte (b,bf,ed,l)

L'Image Inds., Inc. (b,ed,hf,l)  
 Litelab Corp. (i)  
 Lithonia Lighting (b,bf,ed,hf)  
 Lowering Systems, Inc. (hf)  
 Lumark, Cooper Lighting (bf,ed,hf,l)  
 Lumenyte Intl. Corp. (l,s)  
 Lumiere Design & Mfg., Inc. (b,bf,l,s)  
 M2 Designer's Studio, Inc. (i)  
 Marissa Contract Lighting Company, Standard Electric Fixture Co., Inc. (b,bf,ed,hf)  
 Matthew Lighting Studio Inc., Standard Electric Fixture Co., Inc. (b,bf,ed,hf,l,s)  
 McGraw-Edison, Cooper Lighting (b,bf,ed)  
 Miroflector (b,bf,ed)



Musco Sports-Lighting Inc., Musco Corp.  
 Natl. Specialty Lighting Co., Inc. (l)  
 Nightscaping, Loran Inc. (l)



Noral Lighting, Inc. (l)  
 North Star Lighting Inc. (b,bf,hf)  
 Northern Lighting, A.M.I. (b,l)  
 Nova Lighting, Inc. (i,l)  
 Paramount Inds. Corp. (hf)  
 Phoenix Prods., Co. (bf,ed,hf,hr,l)  
 Popovitch Assocs. Inc. (l)  
 Poulsen Lighting, Inc., Louis Poulsen & Co. (b,l)  
 Progress Lighting (b,bf,ed,hf,i,l)  
 RLS Lighting Inc. (b,bf,ed,hf,l)  
 Rambusch Lighting, Rambusch Decorating Co. (bf,ed)  
 Roberts Step-Lite Systems (i,l)  
 Ruud Lighting, Inc. (b,bf,ed,hf,hr,l)  
 Ryther-Purdy Lumber Co. (b,l)  
 Saxe-Patterson



Scholl Light Standards, Scholl Lumber Co. (l)  
 Sentinel Lighting, Airey-Thompson Co. (i)

Sentry Electric Corp. (b,bf,ed,hf,hr,l)  
 Siltron Illumination, Inc. (ed,l)  
 Southwall Technologies  
 Spaulding Lighting, Inc., Hanson (b,bf,hf,hr)  
 Specialty Lighting Systems (ed,hf,i)  
 Spring City Electric Mfg. Co. (b,hf,hr,l)  
 Staff Lighting Corp. (b,hf,l)  
 Starbrite Lighting (i)

Sternberg Lanterns, Inc. (b,hf,hr,l)  
 Sterner Lighting Systems (b,bf,ed,hf,hr,l,s)  
 Stonco Lighting, Genlyte (b,bf,hf,hr,l)  
 Street Lighting Equipment Corp. (b,ed,l)  
 Sun Valley Lighting (b,l)  
 Swivelier Co. (bf,i)  
 Sylvan Designs, Inc. (b,l)  
 Technical Glass Prods.

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Circle No. 32 on product card.

Tek-Tron Ent., Inc. (bf,i)  
 Teron Lighting Corp. (bf,ed)  
 Thomas Inds. Inc. (Corporate)  
 (b,bf,ed,hf,hr,i,l)  
 Thorn Lighting Ltd., Thorn EMI  
 (b,bf,ed,hf,hr,i,l)  
 Times Square Lighting (i)  
 Tivoli Inds., Inc. (i,l,s)  
 Tokistar Lighting, Inc. (i)  
 Trimblehouse Corp.  
 (b,bf,ed,hf,hr,l)  
 USI Lighting, Inc., Hanson  
 (b,bf,ed,hf,l)  
 U.S. Pole Co., Inc.  
 (b,bf,ed,hf,hr,l)



VISCO (b)  
 Velux-America Inc.  
 Visa Lighting Corp. (b)  
 Vista Mfg., Co. (i,l)  
 Wendelighting, Jacksen  
 International (ed,i,l)  
 Western Lighting Inds., Inc.  
 (bf,ed,hf,l)  
 WideLite, Genlyte (b,bf,hf,hr)  
 WoodForm Inc. (b,l)  
 Xenotech Inc.

**FIXTURE  
 COMPONENTS/  
 ACCESSORIES**

lb — louvers/baffles  
 pd — plastic lenses/diffusers  
 rm — reflectors & reflector  
 materials  
 r — replacement glass  
 lenses/diffusers

A.L.P. Lighting & Ceiling Prod.,  
 Inc. (lb,pd,rm)  
 ARC Sales, Inc.  
 Aluminum Coil Anodizing Corp.  
 (rm)  
 American Louver Co. (lb,pd)  
 Amerlux (lb)  
 Art Specialty Co., Inc.  
 (lb,rm,r)  
 Brass Reproduction (r)  
 Dayton Lighting, Yosgad  
 Lighting Inds., Inc. (pd)  
 Dynamic Energy Prods., Inc.,  
 3M (lb,rm)  
 Emco Environmental Lighting,  
 Thomas Inds., Inc.  
 (lb,pd,rm,r)

Foremost Mfg. Co. Inc. (lb,rm)  
 Garcy - Major Lighting, Liberty  
 Lighting (lb,pd,rm,r)  
 The Great American Market  
 Holophane Co., Inc. (pd,rm,r)  
 Interlock  
 K-S-H, Inc., ICI (pd)  
 Kosempel Mfg., Co. (rm)  
 Lexalite Intl., Co. (pd,rm)  
 Light Space Design (lb)  
 Lighting Services, Inc.  
 (lb,pd,rm,r)  
 Litelab Corp. (lb,pd)  
 Lumark, Cooper Lighting  
 MEROFORM/MERO Structures,  
 Inc.  
 ML Systems, Aluminum Co. of  
 America (rm)  
 Maximum Tech. (pd,rm)  
 Metalloxyd Inc.  
 Mid-West Chandelier (lb,rm)  
 Norton Inds. (lb,pd)  
 Otteson Co. (r)  
 Parke Inds. (rm,r)  
 Pre Finish Metals, Material  
 Sciences Corp. (rm)  
 Ruud Lighting, Inc. (lb,r)  
 Siltron Illumination, Inc. (r)  
 Specialty Lighting Systems  
 (lb,pd,rm)  
 Spring Lighting Co., Forget Me  
 Not Fashions Inc. (r)  
 Standard Electric Fixture Co.  
 (lb,pd,r)  
 Sterner Lighting Systems  
 (pd,rm,r)  
 Swivelier Co. (lb)  
 TLA Lighting Cnslts., Inc. (rm)  
 Technical Glass Prods.  
 Tek-Tron Ent., Inc. (rm,r)  
 Teron Lighting Corp. (pd,rm)  
 3M Construction Mkts., 3M  
 (rm)  
 Times Square Lighting  
 (lb,pd,r)  
 Trimblehouse Corp. (pd)  
 USI Lighting, Inc., Hanson  
 (lb,pd,rm,r)  
 VISCO (pd)  
 Visual Comfort Lighting,  
 Aluminum Louvre Corp. (lb)  
 Voltarc Technologies Inc.  
 Weirton Steel Corp.

**INTERIOR  
 ARCHITECTURAL  
 LUMINAIRES**

fc — fluorescent, compact  
 downlights

fi — fluorescent, indirect  
 fs — fluorescent, surface  
 mount  
 ft — fluorescent, troffers  
 fm — fluorescent,  
 miscellaneous  
 hh — HID high-bay  
 hi — HID indirect  
 hr — HID recessed & wall  
 washers  
 ht — HID track  
 hm — HID miscellaneous  
 it — incandescent, track  
 ii — incandescent, indirect  
 ir — incandescent, recessed  
 & wall washers  
 il — incandescent, linear/  
 strip  
 ih — incandescent, high-bay  
 im — incandescent,

ARC Sales, Inc. (hr,hm)  
 Aamsco Group (fm,ii,il,im)  
 Abolite Lighting, Inc., LSI Inds.  
 (hh,hi,ih,im)  
 Accent Lite, Linear Lighting  
 Corp. (il)  
 Alkco, JJI (fs,ft,hr,it,il)  
 American Electric (hh)  
 American Fluorescent Corp.  
 (fc,fi,fs,ft,fm)  
 Amerlux (fi,fs,fm,hr,ht,hm,it)  
 Appleton Lamplighter, Aries  
 Fabrication Corp. (fi,fs,hi,ii)  
 Architectural Area Lighting,  
 Hanson Inds. (hm)  
 Architectural Cathode Lighting  
 (fi,fs)  
 Architectural Lighting Systems  
 (fi,fm,ii)  
 Ardee Lighting/USA (ii,ir,il)  
 Arroyo Craftsman Lighting  
 (im)  
 Art Directions Inc. (fc,hi)  
 Art Specialty Co., Inc.  
 (fi,fs,fm,hi,hm,ii,im)  
 Baldinger Architectural Lighting,  
 Inc. (fi,fs,fm,ii,im)  
 Louis Baldinger & Sons Inc.  
 (fi,fs,fm,hi,ii,im)  
 Bega/FS, Armstrong World Inds.  
 (fi,fs,fm,hi,hr,hm,ii,ir,im)  
 Norbert Belfer Lighting  
 (fc,fi,ii,il)  
 Beta Lighting (fc,fi,fs,hh,hi,hr)  
 Brass Reproduction (ii)  
 Brodwax Lighting (fs)  
 CSL Lighting Mfg. Inc.  
 (it,ii,ir,il,im)

Capri Lighting, Thomas  
 Industries (fc,fs,hr,ht,it,ir)  
 Caribbean Worldwide (fs)  
 Celestial Prod. (it,ii,ir,il)  
 Chiaro Intl., Chiaro srl  
 (fi,fs,fm,it,ii,im)  
 Coast Light Systems, Jac  
 Jacobsen Inds., Inc.  
 (fi,fs,fm)  
 C.W. Cole & Co.  
 (fi,fs,fm,hi,hr,hm,ii,ir,il,im)  
 Columbia Lighting, USI Lighting  
 Inc. (fc,fi,fs,ft,fm,hr)  
 Con-Tech, Conservation  
 Technology Ltd. (it,im)



Crescent Lighting, Genlyte  
 (fs,ft,fm)  
 Crouse-Hinds, Cooper Lighting  
 (hh,hr)  
 Crystorama Inc. (im)  
 Custom Lighting Concepts,  
 Lighting Concepts Inc.  
 (fm,ii,ir,il,im)  
 Day-Brite Lighting, Thomas  
 Inds., Inc.  
 (fc,fi,fs,ft,fm,hh,hi,hr,hm)  
 DesignPlan Lighting  
 (fc,fs,fm,hm)  
 Dreamscape Lighting (fs,il)  
 Dry-Brite Lighting Inc., Thomas  
 Inds., Inc.  
 (fc,fi,fs,ft,fm,hh,hi,hm,im)  
 Dynamic Energy Prods., Inc.,  
 3M (fc,fi,fs,ft,fm)  
 Dynasty Classics (hr,it)  
 Eastrock Mfg. & Tech. Inc.  
 (fs,fm)  
 Edison Price Lighting  
 (fc,fs,hr,it,ir,im)  
 Elliptipar Inc.  
 (fi,fs,fm,hi,hr,ii,ir,il)  
 ElSCO Lighting Prods., Inc.  
 (hh,hi,hr,ht,hm)  
 Enco Inds. Inc. (hr,ht,it,ir,im)  
 Energy Saving Devices Inc.  
 (fc)  
 Engineered Lighting Prod.  
 (fi,fs,fm,ii,ir)  
 Esco Intl., Inc., Duray  
 Fluorescent Mfg. Co.  
 (fs,ft,fm,hi,hr,hm)  
 FLOS Inc. (fs,it,ii)  
 Feiss Industries (it,ii)  
 Fiberstars (il)  
 Fibrelite Corp. (hm)



Forecast Lighting Co. (fs, fm)	Inlite Corp. (it, ir, im)	Linear Lighting Corp., Linear Lighting Corp. (fi, ft, fm)
Forum, Inc. (fi, fm, hi, hm)	Janmar Lighting (fc, fs, hr, ht)	Litecontrol Corp. (fi, fs, fm)
GE Lighting Systems, General Electric (hh, hr, hm)	Juno Lighting, Inc. (fc, fm, hr, it, ir, im)	Litelab Corp. (it, ii, il, im)
Gammalux Systems (fi, fs, fm, it)	Kenro Light, Inc. (fm, it, ii, ir, il, im)	Liteline Ltd. (il)
Garcy - Major Lighting, Liberty Lighting (fc, fi, fs, ft, fm, hi, hr, hm, ii, ir, il, im)	The Kirlin Co. (fc, fm, hi, hr, hm, ii, ir, im)	Lithonia Lighting (fc, fi, fs, ft, fm, hh, hr, hm, it, ir, il, im)
Globe Lite, Standard Electric Fixture Co. Inc. (fc)	Koch & Lowy, Inc. (fi, fm, it, ii)	Lumark, Cooper Lighting (hh, hr, hm)
Gross Chandelier Co. (fm, im)	Kosempel Mfg., Co. (hh)	Lumiere Design & Mfg., Inc. (it)
Halo Lighting, Cooper Lighting (fc, fs, it, ii, ir, ih, im)	LTM Corp. of America (it)	MEROFORM/MERO Structures, Inc. (fm, it, im)
W.F. Harris Lighting (fc, fs, fm, hm, im)	LUMAX Inds., Inc. (fs, ft, fm)	ML Systems, Aluminum Co. of America (fc, fs, ft, hh)
Hinkley Lighting (im)	Lam Lighting, Jac Jacobsen Inds., Inc. (fi, fs, hi)	M2 Designer's Studio, Inc. (hi, ii, il, im)
Holophane Co., Inc. (fs, ft, fm, hh, hr, hm, ih, im)	Lamar Lighting Co. (fi, fs, ft, fm)	Marco Lighting, Hubbel Lighting (fc, fs, hr, it, ir)
Hubbell Lighting, Hubbell Inc. (fc, fi, fs, ft, fm, hh, hi, hr, ht, hm, it, ii, ir, ih, im)	Leiter Lites, Elias J Leiter Co. (it, im)	Marissa Contract Lighting Company, Standard Electric Fixture Co., Inc. (fc, fi, fs, ft, fm)
Hunter Fan Co. (it, ii, il)	Light Design Corp. (it, ii, ir, im)	Maximum Tech. (fc, fi, fs, ft)
Idaho Wood (fc, fs, il)	Light Space Design (fi)	McGraw-Edison, Cooper Lighting (hr)
Illumination Concepts & Engineering (fc, fi, fs, ft, fm, ii, im)	Lighting Bug, Ltd. (fc, fm, hi, hr, ht, hm, il)	Metalux Lighting, Cooper Lighting (fc, fi, fs, ft, fm)
Indy Lighting Inc., Juno Lighting Inc. (fc, fm, hr, ht, it, ir, im)	Lighting Services, Inc. (it, ii, ir, il, im)	
	Lightolier Inc., Genlyte (fc, fi, fs, ft, fm, hr, it, ii, ir)	
	LImage Inds., Inc. (fc, fi, fs, fm, hi, ht, hm, im)	



Michaels' Lighting (fc, fi, fs, ii, ir, im)
Mid-West Chandelier (fc, fi, fs, ft, fm)
Miroflector (fc, hi, hr, ht, hm, it)
Modulightor Inc. (fi, fs, it, ii, il, im)
Morrison (fc, fi, fm, ii, ir, im)
Natl. Specialty Lighting Co., Inc. (ii, il, im)
Neo-Ray Prods., Inc. (fi, fs, ft, fm)
Noral Lighting, Inc. (im)
North Star Lighting Inc. (fs, hh, hr)
Norton Inds. (fs)
Nova Lighting, Inc. (il)
Paramount Inds. Corp. (fs, ft, fm, hh, hm)
Parke Inds. (fc, fi, fs, ft, fm)

PRODUCT TYPE

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FAX: 708/945-0096

Circle No. 33 on product card.

Peerless Lighting Corp. (fi)  
 Phoenix Prods., Co. (fi,fm,hm,im)  
 Poulsen Lighting, Inc., Louis  
 Poulsen & Co. (fc,fi,fs,hr,ii,im)  
 Precisiion Architectural Lighting (fi,fs)  
 Progress Lighting (fc,fi,fs,ft,fm,hr,ht,it,ii,ir)  
 Progressive Tech. in Lighting (fc,fs,fm)  
 Prudential Lighting (fi,fs,ft,fm,hm)  
 Rambusch Lighting, Rambusch  
 Decorating Co. (fi,fm,hh,hi,hr,hm,ii,ir,il,ih,im)  
 Fredrick Ramond, Inc. (ii,il)  
 Raztech Lighting (ii)  
 Reggiani U.S.A., Lighttron of  
 Cornwall (hi,hr,hm,ii,ir,im)  
 Ron Rezek Lighting (hi,it,im)  
 Roberts Step-Lite Systems (ii,il,im)  
 Roxter Mfg. Co. (it,ir,im)  
 Ruud Lighting, Inc. (fc,fs,hh,hr,hm,it,im)  
 SPI Lighting Inc. (fi,fs,hi,hm,ii,im)  
 Saxe-Patterson (fi,ii)  
 Schonbek Worldwide Lighting  
 Inc. (im)  
 Sentinel Lighting, Airey-  
 Thompson Co. (fi,fs,fm,ii,ir,il,im)  
 Siltron Illumination, Inc. (fc,fi,fs,ft,im,ir,im)  
 Spaulding Lighting, Inc., Hanson  
 (hi)  
 Specialty Lighting Systems (ft,hh,hr,it)  
 Spring Lighting Co., Forget Me  
 Not Fashions Inc. (fs,fm)  
 Staff Lighting Corp. (fc,fi,fs,it,ii,ir)  
 Standard Electric Fixture Co. (fi,fs,ft)  
 Starbrite Lighting (il)  
 Sterner Lighting Systems (fi,ft,hh,hi,hm,ii,ir,ih,im)  
 Stonco Lighting, Genlyte (hh)  
 Strand Electro Controls, Sub.  
 Rank America (it,ii,ir)  
 Swivelier Co. (fc,fi,fm,hr,ht,hm,ii,ir,il,im)  
 Sylvan Designs, Inc. (ir,il,im)  
 Targetti Inc. (it)  
 Tek-Tron Ent., Inc. (fm)  
 Teron Lighting Corp. (fc,fi,fs,fm,hh,hi)  
 Thomas Inds. Inc.(Corporate)  
 (fc,fi,fs,ft,fm,hh,hi,hr,ht,hm,it,  
 ii,ir,il,ih,im)

Thorn Lighting Ltd.,  
 Thorn EMI (fc,fi,fs,ft,fm,hh,hi,hr,ht,hm,it,  
 ii,ir,il,ih,im)  
 3M Construction Mkts., 3M (ft)  
 Times Square Lighting (it,ii,ir,il,ih,im)  
 Tivoli Inds., Inc. (it,ii,il,im)  
 Tokistar Lighting, Inc. (il)  
 Trimblehouse Corp. (hi,hm,ii,im)  
 USI Lighting, Inc., Hanson (fc,fs,ft,fm,hr,hm,it,ir,im)  
 Visa Lighting Corp. (fi,hi,ii)  
 Visual Comfort Lighting,  
 Aluminum Louvre Corp. (fc,fi,fs,ft,fm,im)  
 Wendelighting, Jacksen  
 International (it,ir,il)  
 Western Lighting Inds., Inc. (fm)  
 Wide-Lite, Genlyte (hh,hr)  
 H.E. Williams, Inc. (fs,ft,fm,hh,hr)  
 Zumtobel Lighting Inc. (fc,fi,fs,ft,fm,hr,ir)

### LAMPS

c — cold cathode  
 fr — fluorescent, regular  
 fc — fluorescent, compact  
 i — incandescent  
 lv — low-voltage  
 mv — mercury vapor  
 mh — metal halide  
 m — miniature  
 mn — modular neon  
 sh — sodium, high-pressure  
 sl — sodium, low-pressure  
 t — tungsten halogen

Aamsco Group (i,lv,sh)  
 Architectural Cathode Lighting (c,mn)  
 Art Specialty Co., Inc. (fr,i,lv,t)  
 Artemide, Inc. (fr,i)  
 Atelier Intl. Ltd., Steelcase Inc. (fr,fc,i,lv,t)  
 BKL Inc.  
 Brass Reproduction (i)  
 CEW Lighting (lv,mv,mh,sh,sl,t)  
 Carlon, Lamson & Sessions (lv,mv,sh,sl)  
 Consolidated Cathode Corp. (c)  
 Custom Lighting Concepts,  
 Lighting Concepts Inc. (fr,fc,i,lv,mh,m,sh,sl)  
 Design Lighting Prods. Co. (i)  
 DesignPlan Lighting (fc,mv,mh,sh,sl)  
 Dynasty Classics (i)

Eastrock Mfg. & Tech. Inc. (fc)  
 Elscro Lighting Prods., Inc. (fr)  
 Eltech  
 Feiss Inds. (lv)  
 Feiss Industries (t)  
 Fibrelite Corp. (mh,t)  
 GE Lighting Systems, General  
 Electric (fr,fc,i,lv,mv,mh,m,sh,t)  
 GTE Sylvania Lighting, GTE  
 Electrical Prods. (fr,fc,i,lv,mv,mh,m,sh,t)  
 Globe Lite, Standard Electric  
 Fixture Co. Inc. (fc)  
 Humphrey Prods. Co.  
 Janmar Lighting (fc,sh)  
 Kenro Light, Inc. (fc,i,lv,m,t)  
 Kenroy Intl., Hunter-Melnor Inc. (lv,t)  
 Laser Media Inc.  
 Leecraft Mfg. Co., Inc. (t)  
 Lite Source Inc. (t)  
 Liteline Ltd. (lv)  
 LiteTronics Intl., RCS Industries,  
 Inc. (i,lv,t)  
 Lumenyte Intl. Corp. (lv)  
 MEROFORM/MERO Structures,  
 Inc. (mn)  
 M2 Designer's Studio, Inc. (lv,m,t)  
 Maximum Tech. (fr)  
 Miroreflector (fc,i,lv,mv,mh,sh,t)  
 Modulightor Inc. (lv,t)  
 Morrison (fc,i,lv,t)  
 Neonetics Inc. (mn)  
 Osram Corp., Osram (fr,fc,lv,mh,sh,sl,t)  
 Panasonic Inds., Co., Matsushita  
 Co. (fr,fc,t)  
 Philips Lighting Co. (fr,fc,i,lv,mv,mh,m,sh,sl,t)  
 Phoenix Prods., Co. (i,mv,mh,sh)  
 Fredrick Ramond, Inc. (fr,fc,i,lv,t)  
 Roxter Mfg. Co. (i,lv,m,t)  
 SRB Technologies Inc.  
 Shat-R-Shield, Inc. (fr,i,mv,mh,sh)  
 Siltron Illumination, Inc. (fr,lv)  
 Specialty Lighting Systems (fr,i,mv,mh,sh,t)

Sylvan Designs, Inc. (i,lv,m,t)  
 Tek-Tron Ent., Inc. (fc)  
 Thorn Lighting Ltd., Thorn EMI (fr,fc,i,lv,mv,mh,m,sh,sl,t)  
 Times Square Lighting (i,lv,t)  
 Tivoli Inds., Inc. (i,lv,m)  
 Trimblehouse Corp. (sh,sl)  
 Venture Lighting Intl., Inc. (mv,mh,sh,t)  
 Vista Mfg., Co. (lv)  
 Voltarc Technologies Inc. (c,fr)  
 Wendelighting, Jacksen  
 International (lv)  
 Xenotech Inc.

## SYLVANIA



THE POWER IS ON

### MAINTENANCE

m — maintenance  
 equipment

Hubbell Lighting, Hubbell Inc. (m)  
 MWS, Cooper Lighting (m)

### METERS

i — illuminance  
 l — luminance

CEW Lighting (i)  
 Emco Environmental Lighting,  
 Thomas Inds., Inc. (l)  
 GE Lighting Systems, General  
 Electric (i,l)  
 Lighting Sciences, Inc. (i)  
 Minolta Corp. (i,l)  
 Topcon Instrument Corp. of  
 America (i,l)

### MISCELLANEOUS LUMINAIRES

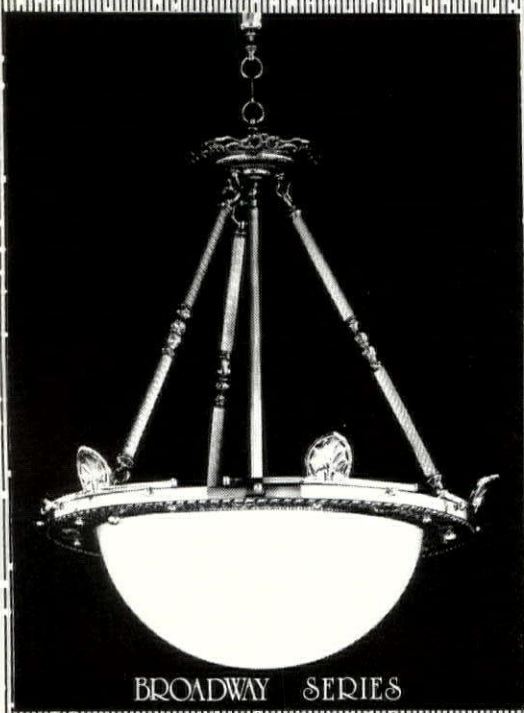
f — fiber optics  
 lm — lighting, emergency  
 le — lighting, exit  
 lh — lighting, handrail  
 ls — lighting, security

ARC Sales, Inc.  
 Accent Lite, Linear Lighting  
 Corp.  
 Alkco, JJI  
 American Electric (ls)  
 American Fluorescent Corp. (ls)  
 Amerlux (lh)  
 Appleton Lamplighter, Aries  
 Fabrication Corp. (le,lh)  
 Architectural Area Lighting,  
 Hanson Inds.  
 Ardee Lighting/USA  
 Beghelli Inc. (lm,le)



Norbert Belfer Lighting	Fiberstars (f)	Lighting Bug, Ltd. (lm,ls)	RLS Lighting Inc. (ls)
Beta Lighting (ls)	Fibrelite Corp. (f,lh)	Lighting Innovations by DeBaun Lighting, DeBaun Lighting Co., Inc.	Rambusch Lighting, Rambusch Decorating Co.
Bristolite Skylights	GE Lighting Systems, General Electric (ls)	Litecontrol Corp.	Roberts Step-Lite Systems (lm,lh)
CEW Lighting (ls)	Gilbert Emergency Lighting, Don Gilbert Inds. Inc. (lm,le)	Lithonia Lighting (lm,le,ls)	Ruud Lighting, Inc. (ls)
Carlton, Lamson & Sessions (lm,ls)	Globe Lite, Standard Electric Fixture Co. Inc. (lm,le)	Lumark, Cooper Lighting (ls)	SPI Lighting Inc. (lm)
Chloride Systems (lm,le)	The Great American Market	Lumenyte Intl. Corp. (f,lh)	SRB Technologies Inc. (lm,le)
C.W. Cole & Co. (le,lh,ls)	Gross Chandelier Co.	Lumiere Design & Mfg., Inc. (lh,ls)	Shield Source Inc. (le)
Crouse-Hinds, Cooper Lighting (ls)	Halo Lighting, Cooper Lighting (lm,le,ls)	McGraw-Edison, Cooper Lighting (ls)	Siltron Illumination, Inc. (lm,le,ls)
DesignPlan Lighting (ls)	W.F. Harris Lighting (lm,ls)	Miniature Lighting Technology Inc.	Sparkle Plenty, Inc. (lm,le,ls)
Devine Lighting (le)	Hinkley Lighting	Morrison	Specialty Lighting Systems (lm,le,ls)
Dual-Lite, General Signal Corp. (lm,le)	Holophane Co., Inc. (lm,le,ls)	Mule Emergency Lighting Inc. (lm,le)	Starbrite Lighting
Eastrock Mfg. & Tech. Inc. (le)	Hubbell Lighting, Hubbell Inc. (lm,le,ls)	Natl. Specialty Lighting Co., Inc.	Sterner Lighting Systems (lh,ls)
Elliptipar Inc.	Idaho Wood (lh)	Neonetics Inc.	Sure-Lites, Cooper Lighting (lm,le)
Elsco Lighting Prods., Inc. (le,ls)	Illumination Concepts & Engineering	Northern Lighting, A.M.I.	Teron Lighting Corp. (lm,le,ls)
Emergi-Lite (lm,le)	Isolite Corp. (lm,le)	Nova Lighting, Inc. (f,lh)	Thomas Inds. Inc. (Corporate) (lm,le,ls)
Enco Inds. Inc. (ls)	Kim Lighting	PEP Lighting, Powered Emergency Prods. (lm,le)	Thorn Lighting Ltd., Thorn EMI (ls)
Energy Saving Devices Inc. (le)	The Kirlin Co. (le,ls)	Paramount Inds. Corp. (ls)	Times Square Lighting (f,lh)
Engineered Lighting Prod. (le)	LUMAX Inds., Inc. (le,ls)	Phoenix Prods., Co. (ls)	Tivoli Inds., Inc. (lm)
Exitronix, Barron Manufacturing Corp. (lm,le)	Lamar Lighting Co. (lm)	Progress Lighting (lm,le,lh,ls)	Trimblehouse Corp. (ls)
Fiber Optic Systems, Inc. (f)	Laser Media Inc. (f)		

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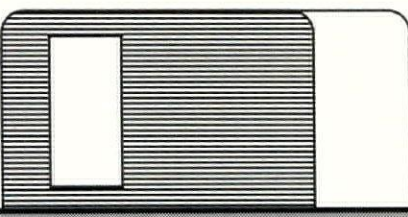
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USI Lighting, Inc., Hanson (lc,ls)  
 Verax Corp. (lh)  
 Vista Mfg., Co. (lh)  
 Western Lighting Inds., Inc. (ls)  
 H.E. Williams, Inc. (lm)  
 Yorklite Electronics Inc., JSB Electrical Ltd. (lm,le)



lighting

Day-Brite Lighting, Thomas Inds., Inc. (c)  
 Dayton Lighting, Yosgad Lighting Inds., Inc. (s)  
 Devine Lighting (c,s)  
 ELA Co., Environmental Lighting For Arch. (s)  
 Emco Environmental Lighting, Thomas Inds., Inc. (c,s)  
 Feiss Industries (c,ld,s)  
 GE Lighting Systems, General Electric (h,ld,s)  
 Hadco, Genlyte (c,s)  
 Hanover Lantern, Hoffman Prods., Inc. (c,s)  
 Hinkley Lighting (s)  
 Holophane Co., Inc. (c,h,ld,s)  
 Hubbell Lighting, Hubbell Inc. (c,h,ld,s)  
 Joslyn Hi-Voltage Corp. (c,h,ld)

**MOUNTING DEVICES**

c—custom poles  
 h—high-mast poles  
 ld—lowering devices  
 s—standard poles

Abolite Lighting, Inc., LSI Inds. (s)  
 American Electric (s)  
 Antique Street Lamps Inc. (c)  
 Architectural Area Lighting, Hanson Inds. (c)  
 J.H. Baxter Lighting (c)  
 Bega/FS, Armstrong World Inds. (c,s)  
 Beta Lighting (c,s)  
 CPI Concrete Prods. (s)

Kim Lighting (s)  
 King Luminaire Co., Inc., Stress Crete Ltd. (c)  
 Kosempel Mfg., Co. (h,ld)  
 LSI Lighting Systems, LSI Inds. (s)  
 Lithonia Lighting (h,s)  
 Lowering Systems, Inc. (c,h,ld,s)  
 Millerbernd Mfg. Co. (c,h,ld,s)  
 North Star Lighting Inc. (s)  
 P & K Poles, Cooper Lighting (c,h,s)  
 Sherman Pole Products Group, Sherman Intl., Corp. (c,s)  
 Progress Lighting (s)  
 RLS Lighting Inc. (c,s)  
 Ruud Lighting, Inc. (c,s)  
 Ryther-Purdy Lumber Co. (c,s)  
 Sentry Electric Corp. (c,s)  
 Shakespeare Co., Anthony Inds. (c,s)  
 Spaulding Lighting, Inc., Hanson (s)  
 Specialty Lighting Systems (s)  
 Spring City Electric Mfg. Co. (c,s)  
 Spring Lighting Co., Forget Me Not Fashions Inc. (c,s)  
 Sternberg Lanterns, Inc. (s)  
 Sterner Lighting Systems (c,s)  
 Sylvan Designs, Inc. (c)  
 Thomas Inds. Inc.(Corporate) (c)  
 Times Square Lighting (s)  
 Trimblehouse Corp. (c,s)  
 USI Lighting, Inc., Hanson (c,s)  
 U.S. Pole Co., Inc. (c,s)  
 Union Metal Corp. (c,h,ld,s)  
 Valmont Inds. (c,h,s)  
 WideLite, Genlyte (s)

ming), Radionic Ind. Inc. (wall plug-in types), USI Lighting, Inc. (HQI)

**Blacklights**—Times Square Lighting

**Bulk heads**—Caribbean Worldwide

**Chandeliers**—Tivoli Industries, Inc.

**Cleaners**—Sparkle Plenty, Inc. (lense & crystal)

**Cold Cathode**—Architectural Cathode Lighting

**Components**—A.L.P. Lighting & Ceiling Products, Inc. (Wraparound replacements)

**Computer program services**—Honeywell, Inc. (payback analysis), Ioline Corp. (pen plotting systems for CADD), The Kirlin Co. (point by point lighting), Lighting Technologies (analysis), Lithonia Lighting (point by point, economic analysis, luminaire schedules), Macro Electronics Corp. (lighting management systems), Rosser Fabrap Intl. (fixture schedules), Vertex Design Systems (drawing & management systems)

**Concealed track lighting**—Alkco

**Controls**—Area Lighting Research Inc. (time clocks), Carlson (touch controls), Crestron Electronics Inc. (power switching systems), Enercon Data Corp. (low voltage), Holophane Co., Inc. (hi-lo aiming for HID), Honeywell, Inc. (ballast dimming controls, low-voltage switching), Lazin Lighting (floor & table lamp portable dimmers), LiteTouch, Inc. (micro-processor based), Lithonia Lighting (relay panels, digital controls), Monarch Lighting Co. (flame effect), Paragon Electric (electromechanical & electronic), Wide-Lite (HID dimming)

**Custom fixtures**—Appleton Lamplighter, Architectural Area Lighting, Design Osaka (fixture design), ELA Co., Gross Chandelier Co., Lumiere Design & Mfg. Inc., Michaels' Lighting, Mor-

**ADDITIONAL MISCELLANEOUS PRODUCTS**

(Product types not included in other categories)

**Anodized aluminum sheets & coils**—Metalloyd Inc.

**Ballasts**—Bodine Co. (emergency HID & fluorescent), Innovative Electronics of Tampa, Inc. (low voltage electronic transformers), Iota Engineering Co. (fluorescent emergency), Macro Electronics Corp. (HID dim-

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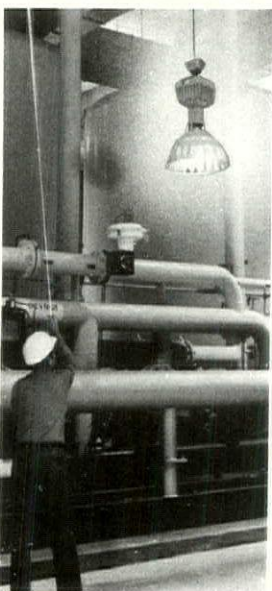
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 Cleveland, Ohio 44105



Circle No. 36 on product card.

risson, Paramount Industries, Rambusch Lighting, Sterner Lighting Systems

**Decorative fixture finishes**—Sur-Fin Chemical Corp.

**Electroluminescence**—Eltech

**Emergency**—Holophane Co., Inc. (power supplies, inverters), Siltron (emergency & exit signs, power supplies, inverters)

**Entertainment**—GE Lighting Systems (photo, stage & studio), Laser Media Inc., Litelab Corp., O'Ryan Industries

**European lamps in U.S. voltage**—Aamsco Group

**Exterior decorative fixtures**—American Lantern Co., Appleton Lamplighter, ARC Sales Inc. (accent) Louis Baldinger & Sons Inc., Bega/FS (low voltage), Celestial

Products (interior also), Dayton (globes), Dinico (residential), Feiss Industries, Forecast Lighting Co. (commercial hospitality), Hadco, Hanover Lantern, King Luminaire Company Inc., L'Image Industries Inc., Lighting Innovations by DeBaun Lighting, Saxe-Patterson, Sun Valley Lighting

**Fans, ceiling**—Beverly Hills Fan Co., Casablanca Fan Co., Feiss Industries

**Fluorescent track luminaires**—Janmar Lighting

**Glass, filters**—Lighting Services, Inc. (glass color filter), Technical Glass products (high-clarity & high-temperature uv filtration glass), Times Square Lighting (color gel).

**Halogen**—CSL Lighting Mfg. Inc., Gilway Technical Lamp (halogen lamp sockets), Lite Source Inc., Panasonic Inds.

**Lampholders**—ARC Sales, Inc., Voltarc Technologies Inc.

**Low-voltage**—Accent Lite, Ardee Lighting/USA, Norbert Belfer Lighting (strips), Focus Low Voltage Landscape Lighting (also security lighting; compact fluorescent, miniature, and tungsten halogen light sources), Lumiere Design & Mfg., Inc., Miniature Lighting Technology Inc., National Specialty Lighting Co., Inc. (light rope), SF 12V Inc. (cable systems), Starbrite Lighting (tubes), Vista Mfg., Co. (exterior)

**Materials**—Dayton Lighting (marbleized sheets, formed products), Light Design Corp. (weather-proof concrete blocks), Weirton Steel Corp. (tin & steel products, plates)

**Neon**—Architectural Cathode Lighting, Neonetics Inc. (art)

Non-modular systems—Norton Industries

**Plastic-coated lamps**—Shat-R-Shield, Inc.

**Power reducers**—Energy Saving Devices Inc., Globe Lite

**Projectors and related equipment**—ARC Sales, Inc., The Great American Market, Philips Lighting Co.

**Retrofit equipment**—CEW Lighting, GTE Sylvania Lighting

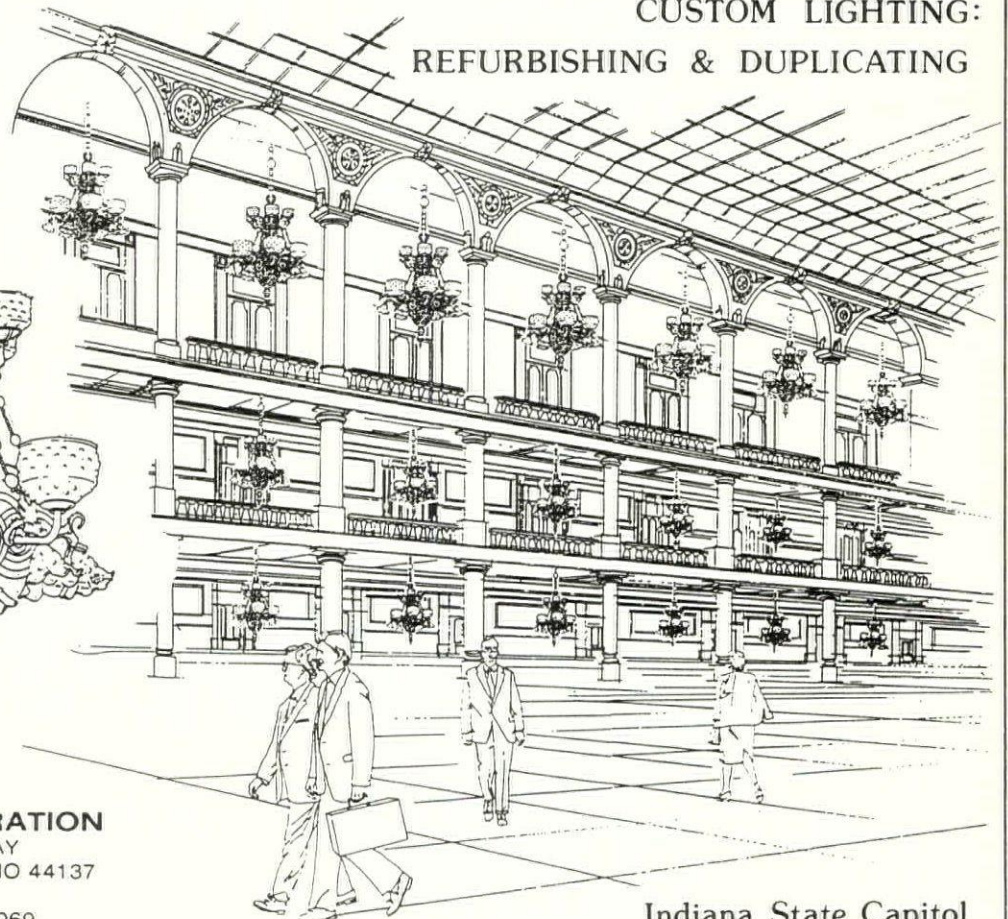
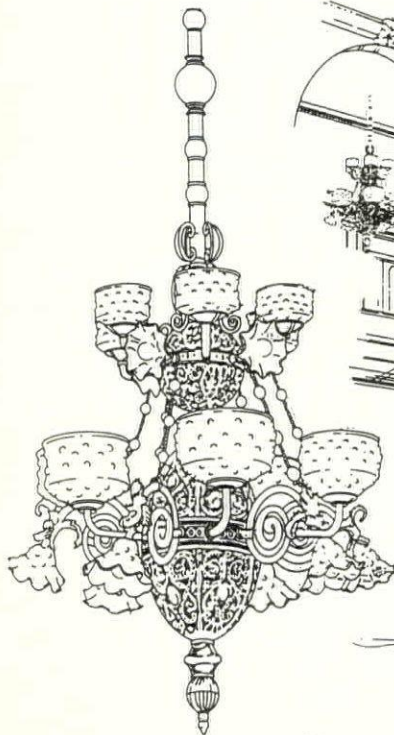
**Self-powered lamps**—SRB Technologies Inc.

**Sign lighting**—Holophane Co., Inc. (explosion proof), Kelsey-Kane Lighting

**Skylights**—Bristolite Skylights, Southwall technologies (windows), Velux-america Inc.

**Sports lighting**—Hubbell Lighting, Musco Sports-Lighting Inc. (systems)

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**Trusses & frames**—Interlock, Meroform/Mero Structures, Inc.

**Vandal-resistant fixtures**—DesignPlan Lighting

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**Xenon**—Xenotech Inc.

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American Institute of Plant Engineers, 3975 Erie Ave., Cincinnati, OH 45208  
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American National Standards Institute, 1430 Broadway, New York, NY 10018  
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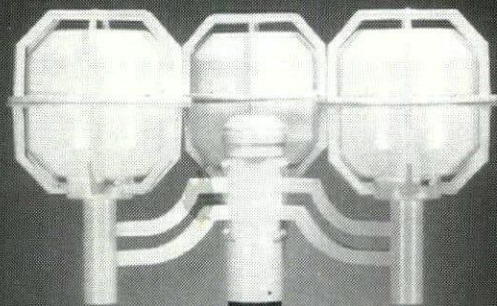
## ASSOCIATIONS

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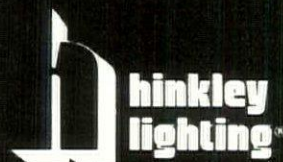
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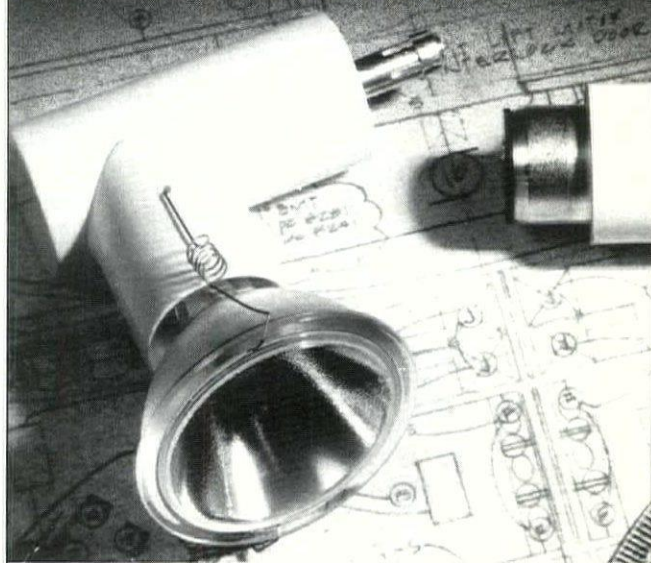
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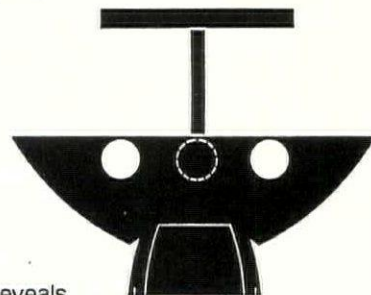
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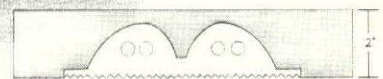
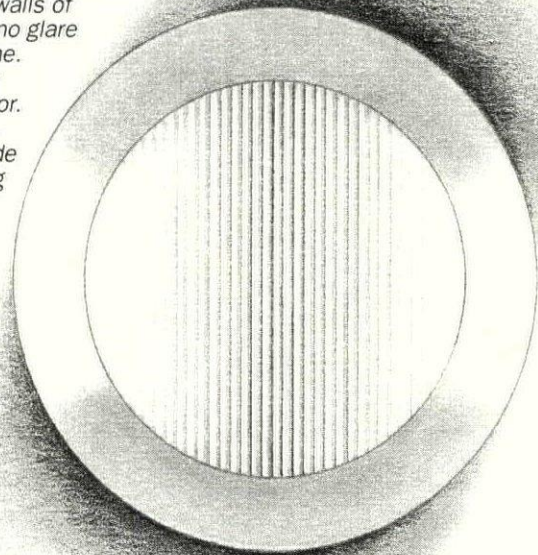


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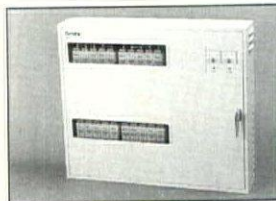
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