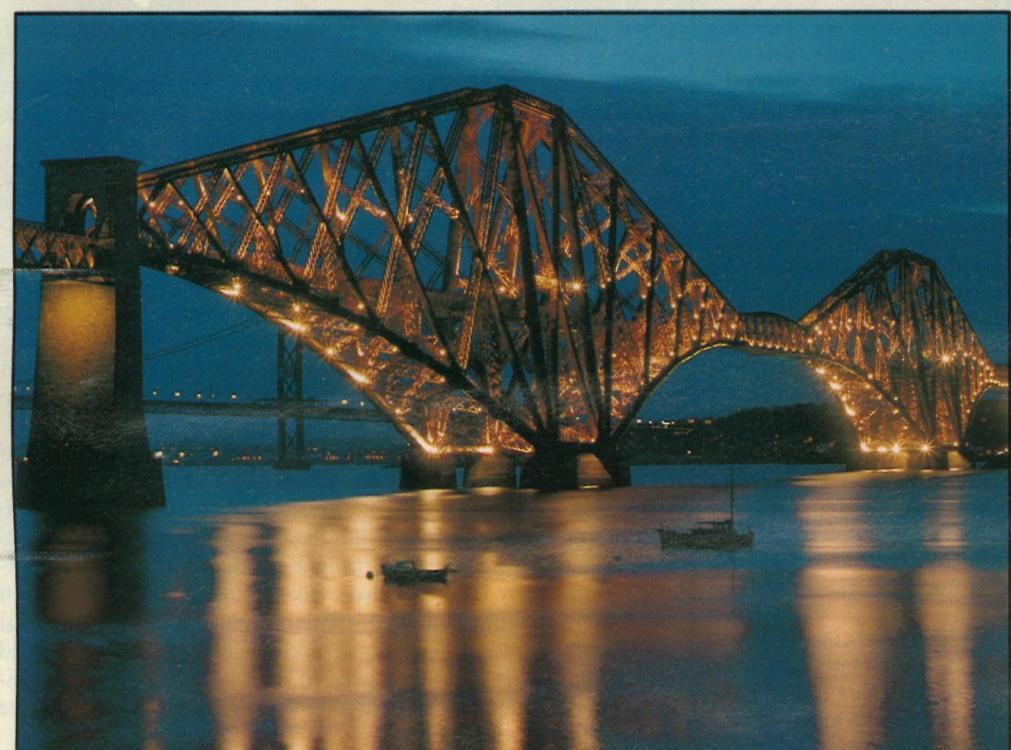


LIGHTING EQUIPMENT NEWS

NOVEMBER 1990



7 October 1990 saw the hundredth birthday of Scotland's most famous engineering structure — the Forth Bridge. The celebrations, attended by 100 000 people, culminated in the switch-on of what is arguably the most spectacular floodlighting scheme ever — the bridge will be entered into the *Guinness Book of Records* as the biggest floodlit structure in the world.

The installation is huge. Lights stretch for some 2.5 km, supplied by over 40km of cable. Each individual luminaire weighs over 50kg — and there are 1054 of them.

And, thanks to modern technology, although the lights give such a spectacular result, the amount of energy needed to power the installation is only equivalent to 150 domestic kettles.

Photo: Scottish Power. See full story page 14.

Offices of the future

A study of the future of the office workplace is to be undertaken by international design consultants DEGW and BRE Technical Consultancy. The increasing importance of green issues, environmental quality, health issues, information technology, and changes in the demography, location and timing of work will be taken into consideration.

There will be three phases to the project: identifying trends, developing design criteria and an appraisal of the existing stock of workplace buildings by the new design criteria developed during the study.

New president for ILE

Michael Hollinhurst, lighting engineer for Avon County Council, has been elected president of the Institution of Lighting Engineers.

In his presidential address, Mr Hollinhurst stressed the need for good lighting to reduce the fear of crime.

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Britain leads the way

The Industry Committee for Emergency Lighting (ICEL) is keeping a step ahead of Europe.

The UK has benefitted from ICEL's standards for emergency lighting since 1967 and as European legislation starts to catch up, ICEL has announced a new scheme which will maintain the UK at the forefront of safety in emergency situations.

Targetti to set up UK subsidiary

Targetti Sankey, one of the larger Italian lighting manufacturers, has decided to set up a subsidiary company in Britain.

Its spotlights and track, sold under the brand name Altalite, used to be available in the UK through C&R Lighting. These, and new products, will be handled by the company, which they

Due to come into force in early 1991, the scheme will ensure for the first time that an ICEL marked luminaire will meet its claimed illumination performance.

To comply with the scheme, luminaires must not only meet the new European safety standards, but extra performance tests will have to be conducted. The scheme is open to all reputable manufacturers who are able to meet the requirements.

A new booklet describing the scheme can be obtained from ICEL Ltd, 207 Balham High Road, London SW17 7BQ.

say will be established in the near future. It is understood they are looking for premises in the north of England.

The company, which is based in Florence, makes a wide range of lighting including decorative and outdoor luminaires. It is active in export markets.

In the meantime, orders, requests for catalogues and other enquiries should be directed to Roberta Morelli, 25 Windsor Road, Town Moor, Doncaster DN2 5BS.

In brief...

- Lumino has been appointed UK distributor for modern decorative lighting by Ladue, Italy (telephone 0279 635411).
- Optikinetics is now the European distributor for stage lighting equipment by Image Pro Inc of Minneapolis, USA, (telephone 081-674 0870).
- Regency Chandeliers has been acquired by Chelsom. Mike Baughan continues as manager.
- Designed Architectural

Concord opens new London showroom

Concord Lighting has opened a new showroom in central London. It is a tall, dramatic space behind a glazed facade in High Holborn.

A special feature of the showroom is a series of large white partitions that either slide or swing on hinges to divide up the space at will, enabling the effect of different luminaires to be demonstrated.

Spotlights, track, linear modular lighting systems and downlights are displayed in wall bays and from a ceiling grid. Visitors can handle and switch these fittings.

Other alcoves contain demonstrations of various lighting techniques. For example, a 'waterfall' of coloured ribbons shows the colour rendering of spotlights using different lamps, while a display of paper roses is used to demonstrate modelling.

In the basement lecture theatre, which seats 35-50 people, more hinged panels on each side of the dais provide extra demonstration facilities for the extensive range of spotlights and downlights. In fact, the whole of the ceiling is used for demonstrations. The demountable ceiling panels support linear fluorescent and modular fluorescent luminaires and a linear lighting system.

Above the showroom, on a mezzanine floor, is the open plan office of the projects division and specials department.

Although predominantly lit by uplights, there is a line of miniature, low voltage downlights recessed into the metal strip ceiling along the centre line of the area.

Special uplight fixtures,



designed in house, take the form of matt black obelisks, each supporting two Toltec wall lights using 150W metal halide lamps.

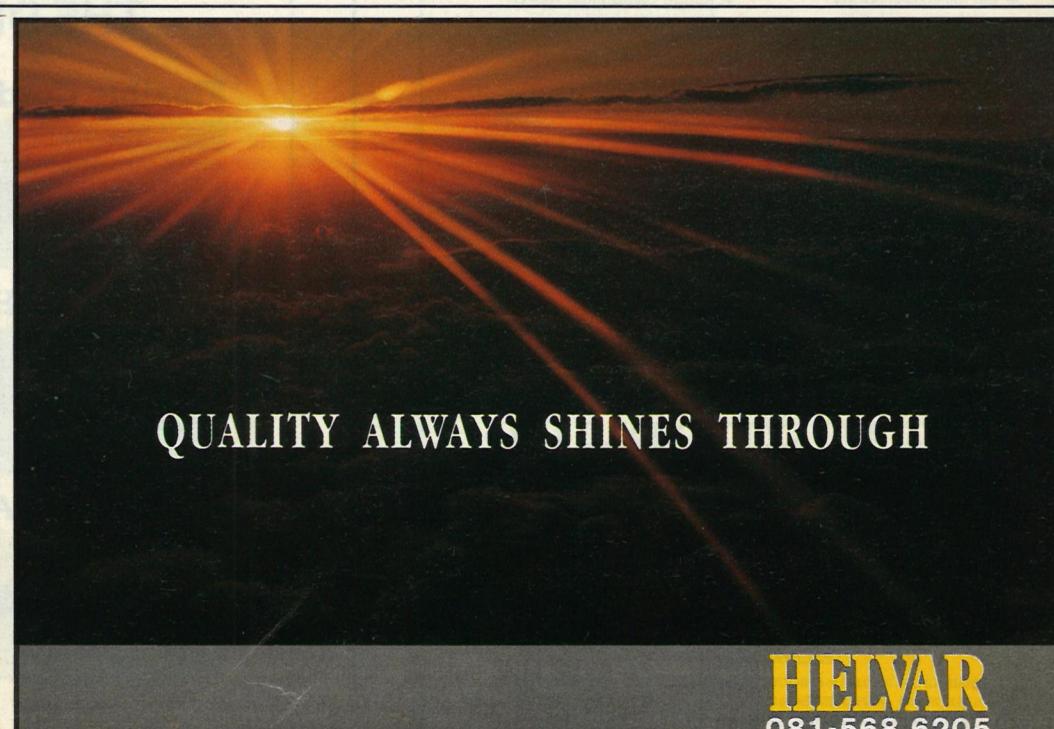
The shaft of the obelisk is hollowed out and houses a low voltage Myriad downlight which provides a degree of accent lighting. The use of 150W lamps keeps contrast on the ceiling to a minimum.

A rooftop garden adjacent to

this area has a display of garden and amenity lighting.

On the ground floor behind the showroom, a row of small management offices is also used for demonstration purposes. Each has a different lighting scheme.

Two Hewlett Packard 375 computers are installed in the new premises and are providing extended design facilities and data for lighting schemes.



HELVAR
081-568 6205

Reader Service No. 1

DIARY

NOVEMBER

7

Hazardous area lighting. Evening meeting at British Gas, Manchester, held by CIBSE North West Region. Details from L Daniels 061-228 2331.

7-9

Lighting design. A three-day course in London for those with little or no formal lighting education, arranged by the Centre for Continuing Professional Education, Institute of Environmental Engineering. Details from A H Fuad, director, 071-928 8989.

8

Exterior lighting. One-day seminar in London for lighting engineers. Details from courses secretary, Mid Career College, 0223 880016.

Uplighting: technique or gim-

mick? Evening meeting at the Institute of Engineers Club, Dublin. Details from Larry Kane, Irish Estates (Management) Ltd, Mespil Estate, Sussex Road, Dublin 4.

13

The application and installation of electrical equipment in major building projects. A one-day colloquium at the Institution of Electrical Engineers, London. Arranged jointly by the IEE, CIBSE, ILE and IMechE. Details of registration from IEE 071-240 1871 extension 294.

Lighting basics 1: light and vision. One-day seminar in Manchester. Details from courses secretary, Mid Career College 0223 880016.

14-15

Manchester Electrical Show at the LCCC Conference and Exhibition Centre. Details from Technology Exhibitions 081-760 0009.

15

Low voltage lighting — the facts. Evening lecture at the College of Technology, Dublin. Details from the Institution of Electronics and Electrical Incorporated Engineers 071-836 3357.

17-19

Lighting Dimensions International, Orlando, Florida. An exhibition and 10 workshops on lighting for all aspects of entertainment. Details from LDI, Florida, 212-353-1951 (fax 212-677-3857).

19

Images of light. Afternoon seminar in London arranged by the National Illumination Committee of Great Britain. Details from I F Davies, NIC, c/o CIBSE, 222 Balham High Road, London SW12 9BS.

20-22

The Office Environment show, Business Design Centre, London. Details from ID Exhibitions 081-429 1777.

20

Facilities management of a modern building. Part of CIBSE's continuing professional development programme. Details from member services department 081-675 5211.

Lighting and architecture. Evening meeting, held by Merseyside and North Wales Region of CIBSE jointly with LASC, at Liverpool University. Details from R W Bell, 8a Fulwood Park, Liverpool L17 5AH.

21

Lighting — engineering or art? Evening meeting at Kegworth arranged by East Midlands Region of CIBSE. Details from S Nicholson, 19 Greythorn Drive, West Bridgford, Nottingham NG2 7GG.

22

Lighting basics 2: lamps and luminaires. One-day seminar in

London. Details from courses secretary, Mid Career College 0223 880016.

27

The CIBSE lighting code and its applications. A one-day seminar as part of CIBSE's continuing professional development programme. Details from member services department 081-675 5211.

Uplighting and an exciting alternative solution. Evening meeting at Glasgow University organised by the Scottish Region of CIBSE. Details from D Corden 041-226 5291.

28

Lighting basics 2: lamps and luminaires. One-day seminar at Manchester University. Details from courses secretary, Mid Career College 0223 880016.

29

Europe 1992 and the Wiring Regulations. One-day discussion meeting in London organised jointly by IEE and NICEIC. Details from IEE 071-240 1871.

Working throughout Europe, staying at home. One-day event in London held jointly by CIBSE and BSRIA. Details from CIBSE member services department 081-675 5211.

DECEMBER

5

Lighting and servicing atria. Evening meeting in Manchester held by North West Region of CIBSE. Details from L Daniels 061-228 2331.

5-6

Bristol Electrical Show at the Crest Hotel. Details from Technology Exhibitions 081-760 0009.

6

The Waldram Lecture: City lights. Evening meeting in London arranged jointly by CIBSE Lighting Division and the ILE. Details from Karl Pike, CIBSE 081-675 5211.

CIBSE



The Chartered Institution of Building Services Engineers

A case for the rubber lumen?

A few months ago in this column I raised the question of the inadequacies of planar illuminance in describing a lit environment. I said then that at best it gave us information about the likely visual performance of a person with normal vision to do a particular task. But what it does not do is describe the light distribution in the space surrounding the position of measurement, nor indeed does it tell us anything about how an object would be lit if placed in this same position.

If planar illuminance is so inadequate why has it been used for so long? There are a number of possible reasons, but probably the main one is that if a regular array of ceiling mounted diffuser type luminaires is used in a space that has relatively high reflectance values, then the planar illuminance will correlate reasonably well with the subjective adequacy of the lighting, and hence there is not a problem.

Lighting today, however, particularly in modern offices with VDU screens, is often provided by recessed luminaires with low brightness louvres. These installations, although they provide an adequate horizontal plane illuminance often cause the space to appear gloomy, due to a lack of light on room surfaces in the normal field of view. There is also evidence today that people prefer an element of light and shade. This provides a degree of visual interest but there is a delicate balance between too much light and not enough shade and vice versa. In both cases the planar illuminance will not necessarily give a good indication of the subjective acceptability of the lighting.

Another good reason for having non-uniform lighting is that it tends to use less energy because it is not lighting everywhere to the same high level. It can be seen therefore that planar illuminance is an inadequate system of describing lighting in that it will not describe the appearance of the lit environment.

Another facet of this subject came up when I was discussing the topic with Louis Erhardt in Baltimore earlier this year. He suggested that the unit of measurement should be the "rubber lumen". His suggestion was a little light hearted, but there was an element of seriousness in what he proposed.

Current light measurements do not take into account the visual adaptation state of people using the space. This is another weakness in the current system, however within certain limits this will be automatically corrected by the visual process of brightness constancy.

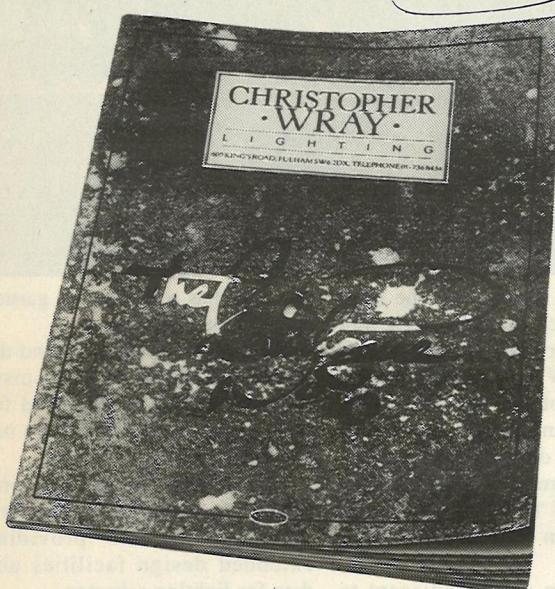
Another aspect of this subject is the instruments used to describe lighting today, ie conventional illuminance and luminance meters. They have improved over the years but they still do not accurately describe lighting as we see it.

Some research is already being done in this area in the UK and the USA, but we need to put more effort into developing a new system of lighting definition if we are to help designers to provide lighting that is preferred by the user and is energy efficient.

David Loe

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Betting on low voltage

The need to provide adequate illumination for security arrangements while maintaining the quality of a prestige environment was the major problem met by interior designers FIDA and lighting company Light Years in illuminating the interior of a Cairo casino.

For closed circuit television cameras, a horizontal illuminance of 250 to 300 lux was needed at gaming table level. This had to be achieved without causing glare or heat for croupiers and patrons. In addition a maintained standby lighting system was required to avoid theft or movement of chips should mains power fail. There

was to be maximum flexibility so that gaming tables could be repositioned without loss of illumination.

The solution was found using recessed, low voltage, adjustable pinpoint luminaires. Three fittings are positioned over each table, bringing localised illuminance to 500 lux.

One is focused on the roulette wheel with the remaining two over the playing area; one of these luminaires is on an emergency maintained system providing three hours of power and full light output. The lux levels in an emergency situation provide

enough light for continuous CCTV camera coverage.

All the normal lighting can be dimmed and table lighting is separately switched.

For ambient lighting in the gaming areas, low voltage fixed recessed downlights have been positioned around the perimeter walls, in niches and in the adjoining bar, seating, restaurant and reception areas. In the gaming machine areas, low voltage downlights light each machine.

In the bar and reception areas, directional low voltage downlights highlight sculptures of the sphinx.

City lights for Waldram

A special lecture to commemo-

rate the life and work of Jack Waldram, who died in March, will be held on 6 December at the Museum of London. It has been arranged jointly by CIBSE and the Institution of Lighting Engineers.

City lights is the title of the lecture to be given by Derek Phillips, principal of DPA. It will be preceded by a reception.

It is planned to make the event

an annual

celebrity lecture held in

different parts of the country.

During his outstanding career in lighting Mr Waldram was president of both the Illuminating Engineering Society (now the Lighting Division of CIBSE) and the APLE (now the ILE).

Osram, with whom Mr Waldram spent most of his years in lighting, is sponsoring the lecture.

Applications for tickets should be made to Karl Pike, CIBSE, 222 Balham High Road, London SW12 9BS.

efficient high frequency fluorescent lighting. These included, he said, as well as longer lamp life, silent operation, no flickering, and a better working environment.

There were 30 examples of high frequency fluorescent lighting installations in SWEB premises, he added, including retail outlets, vehicle workshops and open plan offices.

A confident prediction was made in the paper that the use of high frequency fluorescent lighting would grow.

first to gain a distinction in the City & Guilds examination for electrical installation work. Eleven candidates from all over the country were then selected to appear in London in front of a final judging panel.

His prizes include a two-week study trip to Germany and Italy, as a guest of Square D Company Europe and BICC Cables, and a £500 cheque from Edmundson Electrical.

Bronze award for Wood-Robinson

South Western Electricity's new energy efficiency manager, Mark Wood-Robinson, has been presented with the Bronze Award of the Institution of Lighting Engineers for the best paper presented to one of its regions during the 1989-90 session.

Mr Wood-Robinson's paper concerned the benefits of energy

Apprentice from Oldham is top

Michael Outram, a 19-year old who works for F T Gordon, Oldham, is the winner of the 1990 Edmundson ECA Award. He won the top apprentice title against competition from the 1500 apprentices eligible for the 1990 award.

To win the award Michael had

Basil Austin bows out

Basil Austin has been made an Honorary Fellow of the Institution of Lighting Engineers in recognition of his services to lighting, an honour conferred on only six people since 1924.

He was president of the institution twice, in its golden jubilee and diamond jubilee years. He has lectured in Britain and abroad on public lighting, as well as writing articles.

Mr Austin has just taken early voluntary retirement from his position as the City of London's chief electrical and mechanical engineer, after 30 years' service with the corporation.

He has also resigned the honorary secretaryship of the National Illumination Committee of Great Britain.

New BS on tubular fluorescent lamps

BS 1853: *Tubular fluorescent lamps for general lighting service: Part 1: 1990 Specification for internationally specified lamps* has just been published.

This covers characteristics, technical requirements and test methods to be used for type, batch or whole production testing. This is an English language version of EN 60 081: 1989, superseding BS 1853: Part 1: 1979.

Copies of this standard are available price £96.00 (£48.00 to BSI members) from BSI Sales, Linford Wood, Milton Keynes, MK14 6LE.

Lighting code and its applications

A seminar on the CIBSE *Code for Interior Lighting* and its applications will be held on 27 November in London as part of the Institution's continuing professional development programme.

The morning session will introduce the code and the basis of its authority. Use of the code in practice will be studied.

In the afternoon, it will be shown that all the information required to design a successful scheme is in the pages of the code. This session will cover other important issues under the headings: architectural influence, personal influence parameters, design influence, practical influence and task influence.

More information and registration forms can be obtained from member services department, CIBSE, 222 Balham High Road, London SW12 9BS.

Update your career

A series of one-day seminars on lighting has been arranged by the Mid Career College, Cambridge. They will be held in London, Manchester and Birmingham between now and February.

Three basic seminars will deal with light and vision, lamps and luminaires, and lighting design principles. Topics on the other days will be exterior lighting, lighting controls and emergency lighting.

Eight of the seminars will be given by Dr Mike Marsden. The other speakers will be Lou Bedocs, Jim Ure and Joe Cavozi.

Applications for places should be made as soon as possible to the courses secretary, Mid Career College, PO Box 20, Cambridge CB1 5DG (telephone 0223 880016).

Images of light

A seminar called *Images of light* has been arranged by the National Illumination Committee of Great Britain for the afternoon of 19 November at the Chartered Institution of Building Services Engineers, London.

The four talks will be: *Images from space*, by Professor R D Davies (Jodrell Bank); *3-D imaging*, by Dr N J Phillips (Loughborough University); *Images, images, images*, by Dr M R Pointer (Kodak), and *The ultimate detector — the eye*, by Professor W D Wright.

Applications for places, which are free of charge, should be addressed to Mr I F Davies, NIC, c/o CIBSE, 222 Balham High Road, London SW12 9BS. Registrations must be received by 9 November.

Attention designers!

Entries for the 1991 annual lighting design awards of the International Association of Lighting Designers must be received by 4 December. Presentation of the awards will be in Chicago next March.

Information and registration forms are available from the IALD, 18 East 16 Street, Suite 208, New York, NY10003 (fax 212-206-1327).

COMMENT

Just tighten our belts

That two of Europe's largest lighting companies have suffered major reverses in the course of the past year speaks volumes about the current state of the lighting industry across the continent.

Only this week it emerged that the Philips Group is to make a 15% across the board reduction in its workforce worldwide, in addition to the loss of 9000 jobs already announced within the computer division. What proportion of this cut-back ultimately devolves to Philips Lighting is at present unclear. Be that as it may, the company certainly looks set to enter its centenary year in leaner, fitter form.

Similarly, the problems of Thorn Lighting have been aired on these pages for months. As one of the smaller players in the global lamp market, they are particularly vulnerable to changes in market conditions, and the most recent joker in this particular pack has been the emergence of the Eastern Europeans — backed by Western finance — on the world scene.

The pattern seems to be one of cutback amounting almost to recession all over Europe. The exception as might be expected, is the German market where the vast amount of capital being ploughed into giving the former Democratic Republic an infrastructure appropriate to an advanced industrial country in the last decade of the twentieth century has inevitably given a boost to the market.

Within the European scenario, we in the British lighting industry have suffered particularly badly, largely due to circumstances beyond our control. Lighting is rapidly following the construction sector into recession, cushioned against the extreme fluctuations of the former only by a more buoyant replacement market.

Especially vulnerable at a time like this are the more advanced sectors of the industry, as lighting designers specify down market and manufacturers are increasingly less able to recoup heavy investment costs.

But firms that made the effort to move into the wider European market and become less dependent on the swings and roundabouts of the domestic economy must be congratulating themselves on their good business judgement just now.

The recently announced one per cent reduction in the bank rate will do little if anything to restore confidence in the industry. However, this, coupled with the fact that we are now entering the run-up to an election may do something to put a little more money into the pocket of the domestic consumer and could help pull the decorative lighting sector which has suffered very badly in the past couple of years round to a more robust state of health.

LIGHTING EQUIPMENT NEWS

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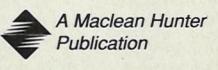
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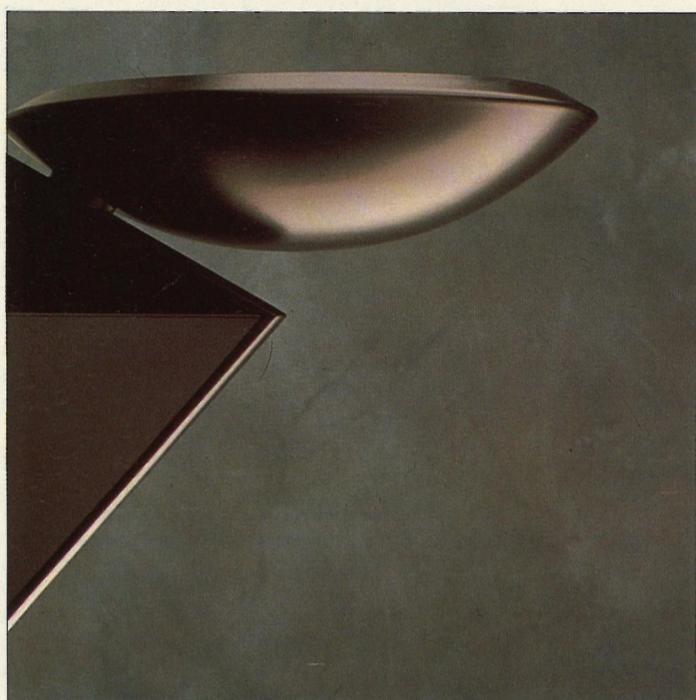


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NEW PRODUCTS



Making a legend

Hitech's new Legend range of uplights comes in two versions: wall mounted or floor standing. The luminaires can be supplied for use with 70W, 150W or 250W double-ended metal halide lamps.

The wall mounted version features integral gear and incorporates an asymmetric reflector to provide even distribution of light and minimise the 'bright spot' effect that occurs above fittings of this type.

Installation is facilitated by the use of a detachable fixing plate which is mounted to the wall in advance of the body of the fitting and control gear being clipped

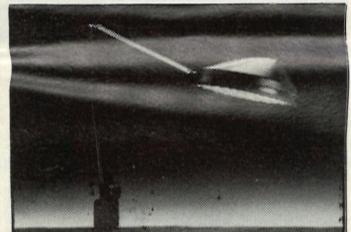
into place.

The floor standing version is offered with a choice of either symmetric or asymmetric reflector to allow flexibility of application. Integral gear is housed in the base to provide a low centre of gravity for stability.

Both versions are available in matt black or white as standard.

For applications requiring instant light the luminaires can be supplied with an auxiliary 150W tungsten halogen lamp which provides illumination until the metal halide lamp has reached full light output.

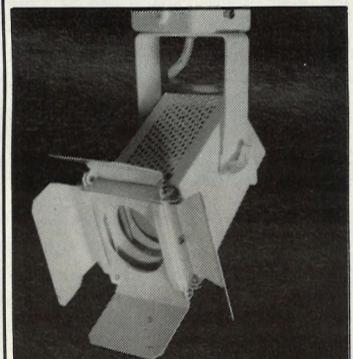
Reader Service No. 151



Spotlight has barndoors

Lee Environmental Lighting has a compact spotlight with barndoors which shape the light beam.

The 85/FIL4 is designed for use with a remote transformer. It



is supplied complete with filter holder to accept a heat absorbing, toughened safety or colour filter.

This low voltage spotlight accepts 20, 50 or 75W lamps. The standard model is either black, white or gold colour.

Reader Service No. 153

Energy saving task light

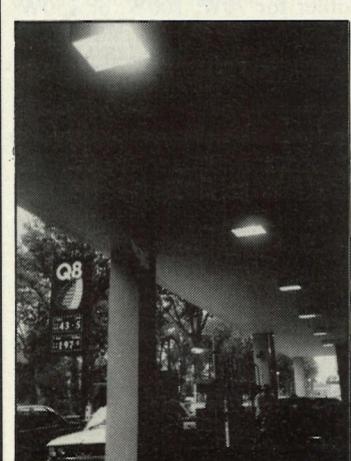
Anglepoise Lighting has added another energy saving task light to its range. The 98T has a reach of 1m.

Used with either a parabolic louvre for sharp light cut-off, or prismatic panel for soft glare-free light, the 98T is useful in office areas with VDU screens and provides comfortable illumination without distracting reflections.

The adjustable head houses a 16W 2D compact fluorescent lamp. There is a choice of Anglepoise arms for either desk or partition mounting.

Reader Service No. 152

Luminaires for forecourts



A range of surface mounted Canolux luminaires for forecourts and similar locations is available from Parkersell Retail Petroleum Services.

Three types use either tubular high pressure sodium, mercury or tubular metal halide lamps. Aluminium louvres are available.

Dimensions of the units are 150mm deep by 550mm long by 300mm wide. The luminaire body is steel, stove enamelled white. The optical system uses a polished aluminium specular reflector.

Control gear is in a separate housing. Units can be rapidly fixed to the underside of a canopy with two bolts. Ingress protection is to IP43 standard.

Reader Service No. 154

Range of display lighting

Myddleton Hall Lighting has a range of spotlights and downlights called Ratlla. There are surface mounted, recessed and track mounted versions. The downlight can be either fixed or adjustable.

The range accepts metal halide, linear tungsten halogen, low voltage tungsten halogen with integral reflector and low voltage capsule lamps.

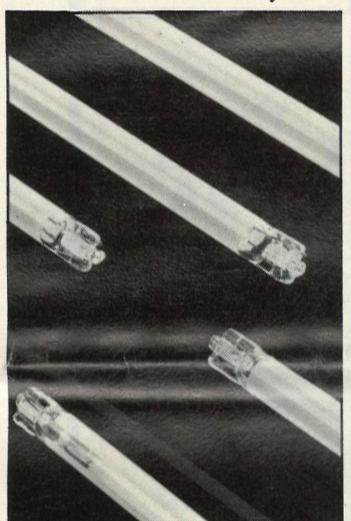
Housings are in cast aluminium finished in a choice of colours including sandblast grey. Barn doors can be fitted to the spotlights if required.

Reader Service No. 155

Sub-miniature lamps

A range of sub-miniature fluorescent lamps, the smallest about the size of a cigarette, has been launched by the Special Products Group of Sylvania.

They offer design opportunities in the field of illuminated equipment such as computers, electronic signs, and instrument panels for cars and aircraft. Sylvania



suggests they could even be used for solar powered lighting out of doors.

Diameter of the lamps is 7mm and lengths range from 100mm to 500mm. Hot or cold cathode versions can be supplied, with respectively 10 000 and 20 000 hour lives.

The hot cathode gives 25-70 lm/W while the cold cathode produces 20-50 lm/W. They are capable of being dimmed.

Reader Service No. 156

Floodlight for zone 2 areas

Simplex Lighting has a floodlight for zone 2 hazardous areas that require electrical equipment with type N protection.

The Sonscan N floodlight has a housing made of GRP with a hinged, polycarbonate front panel. It is BASEEFA certified.

A 70W high pressure sodium lamp is used and the control gear is integral with the luminaire. Either wall or pole mounting is possible.

Reader Service No. 157

Slimlite's UK launch

The Spheros Slimlite fluorescent lighting system by Zumtobel Lighting is now available in the UK.

Designed to give the impression of floating on air, Spheros is a range of luminaires for surface mounting or ceiling suspension.

Designer luminaire

Abacus Municipal has launched the AM490 series of outdoor luminaires.

Featuring a square lantern, the luminaire incorporates an impact resistant ultra-violet stabilised, opaque upper half and clear lower half.

Available in black as standard, or architectural dark bronze, white or aluminium finishes on



request, the AM490 includes a highly polished, anodised aluminium faceted reflector system providing square or asymmetric light distribution.

It is claimed to allow good spacing to height ratios, uniform illumination and reduced glare.

Designed for use with one or two tubular high pressure sodium or MBI discharge lamps up to 400W, the AM490 can be specified with remote or integral control gear, features two spigot attachments and has an IP rating of 54.

Reader Service No. 159

Ceiling system with choice of luminaires

Facette is a ceiling system from Staff Lighting. It is based on a 600mm square module fitted onto a T-bar grid, with the option of concealed or exposed installation. Standard panels are galvanised sheet steel.

Facette luminaires use compact fluorescent, metal halide or low voltage tungsten halogen lamps. Accessories include a mirror louvre and acrylic pyramid diffuser. A mirror tile is available with recessed low voltage downlights.

Facilities for acoustic insulation and air handling can also be incorporated in the system.

Reader Service No. 160



They can also be joined together with connectors that provide angles of 60°, 90°, 120°, 135°, 150° and 165°, plus a connector for linking horizontal to vertical luminaires.

The Spheros range offers a choice of indirect, direct and combined light distribution patterns plus optics for special photometric requirements.

Reader Service No. 158

LIF LINE

The sky at night

The astronomer royal gained much publicity recently knocking local authorities for allowing street lighting to spill into the night sky and obscure the stars.

The Lighting Industry Federation meanwhile out of concern, not for the night sky but for the old and frail who feel trapped in their homes of a winter's evening because of the poor street lighting outside, is trying to persuade local authorities to rectify this spillage by bringing their street lighting up to BSI standard.

Little street lighting complies

The essence of the British Standard (BS5489: Part 3) is to ensure that the light is put where it is wanted, which satisfies both the needs of the ordinary citizen in the inner cities as well as the astronomer royal.

The Federation estimates that the percentage of street lighting complying with the standard is in single figures. The main reason for this low level of compliance is lack of investment over the past 40 years, leaving much of the nation's street lighting in an obsolescent state and wasteful of both light and energy.

A notable exception, in that its lighting is not necessarily so old but certainly inefficient, is Milton Keynes. Here in the centre of the country the lantern in use is in the form of a globe which gives absolutely no control over the light and spills it out in all directions.

Injection of cash

While excesses of this kind are to be deplored, most local authorities are trying to do a good job with ever decreasing resources. The Federation's view is that they should be encouraged in this difficult task and the Department of the Environment should assist with an injection of cash.



Telephone (0635) 36111 Fax (0635) 524507

Reader Service No. 5

NEW PRODUCTS

Fluorescent task light

A dimmable fluorescent task light made in Germany is available from Midland Machinery Services.

It has aluminised parabolic louvres to minimise glare. An articulated arm mechanism allows positive positioning.

Reader Service No. 168



LV lighting transformer

Clairtronic has three ranges of transformers for the voltage sensitive requirements of 12V tungsten halogen lamps.

Two plastic cased transformers provide 50 or 105VA outputs at the critical 11.6 to 11.8V level.

For higher ratings of 150, 225 or 300VA, three metal cased transformers with separately fused outputs provide 11.6V for each 50VA of output.

Two electronic transformers using the latest solid state technology have been designed to provide low weight, small size and cool running at power ratings of 50 and 105VA. The low voltage is obtained by high frequency

switching, which is also stated to provide electronic overload protection with significant savings in energy costs and temperature rise.

Reader Service No. 169

For more information on any of the products listed, circle the enquiry number on the free reader reply service card.

Transformers for LV lighting

A range of small low voltage lighting transformers has been introduced by Lighting Components.

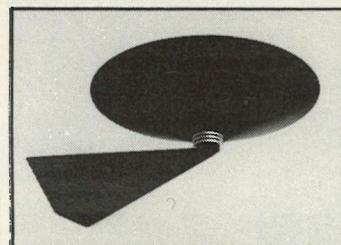
Claimed to be a new generation of transformers, the units range up to 500VA starting with 20, 35 and 50VA units which measure 70mm high by 61mm in diameter and weigh 0.75kg. The 300VA unit measures 86mm high by 146mm in diameter and weighs less than 4kg.

Reader Service No. 170



Metal halide uplight

Wall-Slim, an energy saving, wall mounted uplight from Knight Design uses a metal halide lamp rated at either 70W or 100W.



Murano glass combines with wood

Lighthouse Interiors has expanded its range of lights made by Sergio Terzani, Florence.



Its asymmetric beam pattern directs most of the light towards the centre of the room, making it a space-saving alternative to free standing uplights. It is stated to be particularly effective where ceilings are low (2.3m-2.7m).

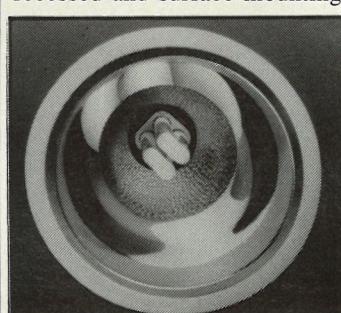
A tungsten halogen version is available for areas where instant light and a dimming capability are important.

Standard colours are charcoal and white, both with textured finishes.

Reader Service No. 171

Computer-aided downlights

A range of downlights from Rada Lighting has recessed, semi-recessed and surface mounting



The Tiffany table lamp illustrated combines Murano glass with a base of coral and amethyst decorated wood. This range has an Art Nouveau feel with stylised natural forms such as leaves, flowers and fruits.

Reader Service No. 173

Skeleton striplight

Tamlite Lighting's skeleton striplight uses a double-ended tungsten lamp and is particularly useful for cabinetmakers, shopfitters, exhibition contractors and bed-room fitment contractors to provide economical concealed lighting.

The fitting is designed to ensure that the live contact is inaccessible when the lamp is removed.

Two sizes are available, 221mm and 284mm, either with or without push switch. Lamps are not included.

Reader Service No. 174

versions to accept double-ended metal halide, or single or twin compact fluorescent lamps mounted either vertically or horizontally.

They are stated to maximise light output and have precise cut-off angles because of the computer designed reflectors, some of which are formed in three stages.

Optional dimming and emergency facilities can be incorporated. All are supplied with power-factor corrected control gear.

Reader Service No. 172

Metal halide downlights

The Circo range of metal halide downlights by Hitech Lighting has been designed to offer a high degree of flexibility for a wide variety of applications.

A design feature is the interchangeable bezels in four finishes: white, black, gold, or satin chrome. A further bezel, with a suspended feature glass, is also available, as are a frosted diffusing safety glass for visual comfort and an ultra-violet filter.

There are two basic types of Circo, one for use with 35W, 70W or 150W single-ended metal

halide lamps and using a spun aluminium reflector to give a defined light cut-off angle, the other for 70W, 100W, or 150W double-ended lamps and with a semi-specular reflector with detachable baffle. This can be supplied in a choice of finishes, including black.

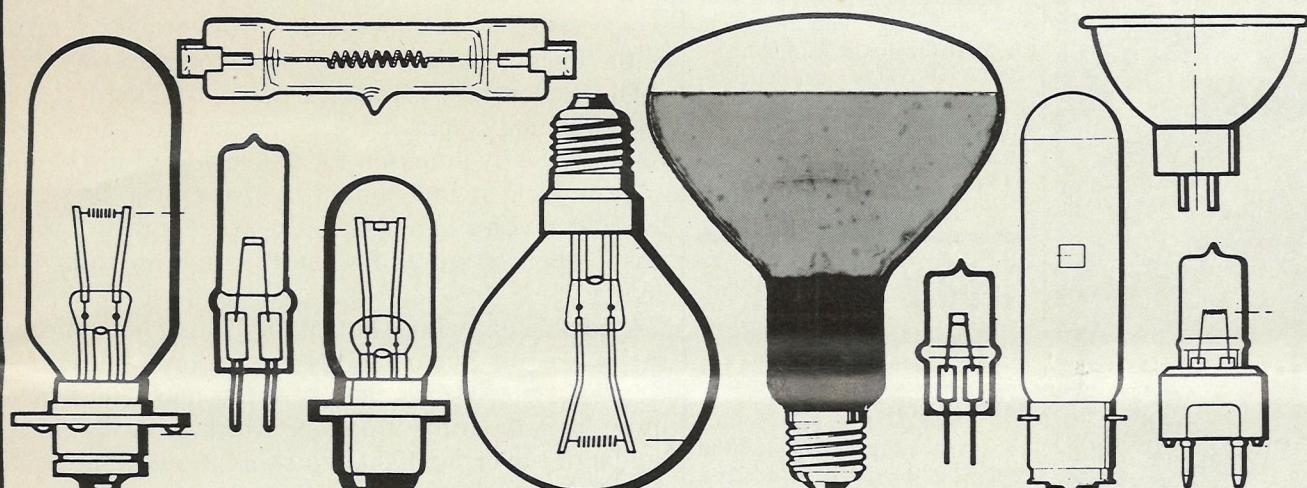
The ignitor is incorporated in the lamp housing, which permits the gear unit to be positioned up to 10m away.

Adjustable brackets enable Circo fittings to be fixed to ceiling of 0.7mm to 30mm thick.

For applications where dimming is required, a matching version uses a 150W tungsten halogen lamp.

Reader Service No. 175

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Reader Service No. 7

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Lighting Equipment News, November 1990

NEW PRODUCTS

Fully enclosed industrial luminaires

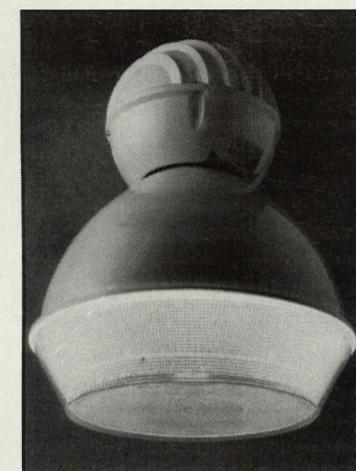
Vanguard is a range of totally enclosed industrial luminaires introduced by Holophane Europe. They are ingress protection rated IP65, making them suitable for use in clean areas such as food factories, or in very dirty atmospheres.

A borosilicate glass refractor gives uniform surface brightness and also controlled vertical illumination.

Two sizes are available to cover discharge lamps from 70W-400W. Options include tubular high pressure sodium, de lux SON types, mercury, elliptical metal halide and multi-vapour lamps.

Control gear is integral with the luminaire, being housed in a capsule above the reflector.

Vanguard Plus gives enhanced protection, for example in food processing areas where precautions must be taken against the



possibility of a lamp or other glass component shattering. This luminaire has an outer, clear polycarbonate enclosure over the glass refractor.

Reader Service No. 161

Hotel bedroom lighting

The Palace range of luminaires is designed with hotels in mind. It consists of a dressing table light, a bedside light, wall light and floor standard. The style offers a compromise between hi-tech and traditional lighting.

The lights have white cotton, card-backed lampshades with metalwork finished in either chromium plate, brass, black or white.

Floor standing and both table versions can be ordered with a dimmer control.

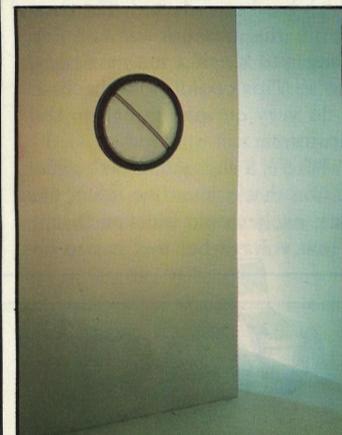
The large table lamp and floor model use 100W GLS lamps with



ES caps; the other models use similar 60W lamps.

They are made by Lumen Center, France, and are available in Britain through Atrium.

Reader Service No. 162

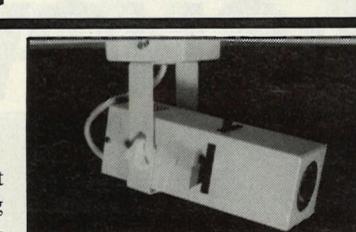


Small framing spotlight

A compact framing spotlight from Lee Environmental Lighting uses low voltage tungsten halogen lamps. Adjustable shutters are held in place magnetically.

The VM-50/75 TS fitting accepts 20W, 50W and 75W lamps and is operated from a remote transformer.

This spotlight is supplied with a yoke for track or rod applications, but can also be provided



with a ceiling plate for surface mounting.

Finishes are black, white, black with chromium, or white with gold colour.

For atmospheric applications, the spotlights can be used with gobos which project silhouettes.

Reader Service No. 163

Low voltage transformer

A 150VA electronic transformer has been introduced by HBH Equipment for use with low voltage tungsten halogen lamps.

The TE151 has a cross section only 45mm by 34mm and is stated to be unobtrusive when

mounted in a line of lighting track.

The transformer gives a controlled output for loads between 10W and 150W. It is protected against mains-borne transients, short circuit or open circuit output and has a supply fuse and a self-resetting thermal cut-out. A dimming version is available.

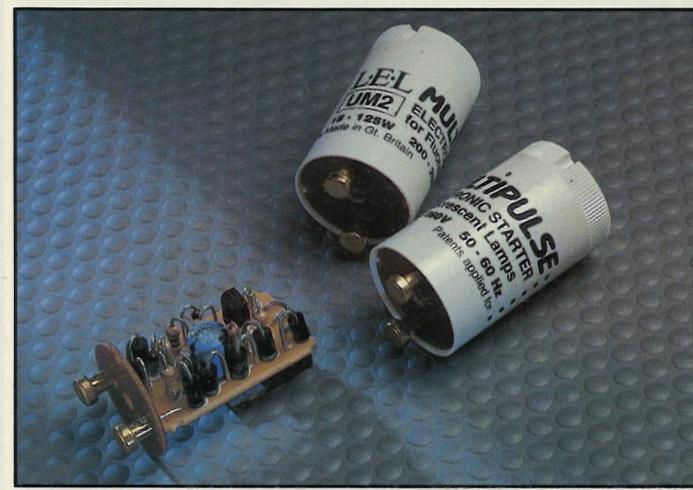
Reader Service No. 165

Electronic soft starter for most fluorescent lamps

Lighting Electronics has a plug-in starter which it claims is the only electronic starter that will soft start the full range of linear fluorescent lamps from 600mm 18W to 2400mm 125W, including 100W krypton energy saving types as well as many compact lamps.

The UM2 is compatible with standard, low-loss and extra low-loss ballasts. It uses the Multi-pulse system which was originally developed by the company for 2400mm 100W lamps.

The system produces timed heating followed by high energy, high voltage ignition to give a very reliable start even under



conditions of low supply voltage and low temperature. An automatic cut-out after a further timed period of pulsing avoids annoying flashing and ballast overheating.

Housed in a conventional starter canister and stated to have an operating life equal to that of a luminaire, it can be either retrofitted into installations or factory fitted into new luminaires.

The advantages of soft positive starting, longer tube life and reduced maintenance are claimed, together with additional advantages of extended operating limits, greater flexibility and the simplified stock holding possible with this universal product.

Reader Service No. 166

Better colour rendering from metal halide

A double-ended 70W metal halide lamp that gives improved colour rendering has been launched by Osram. It also has an improved luminous efficacy of 74 lm/W.

Increasing the light output in the red part of the spectrum has given the WDL Plus a colour rendering index of Ra85 and colour temperature of 3100K, compared with the standard WDL's colour rendering index of Ra80 and temperature of 3000K.

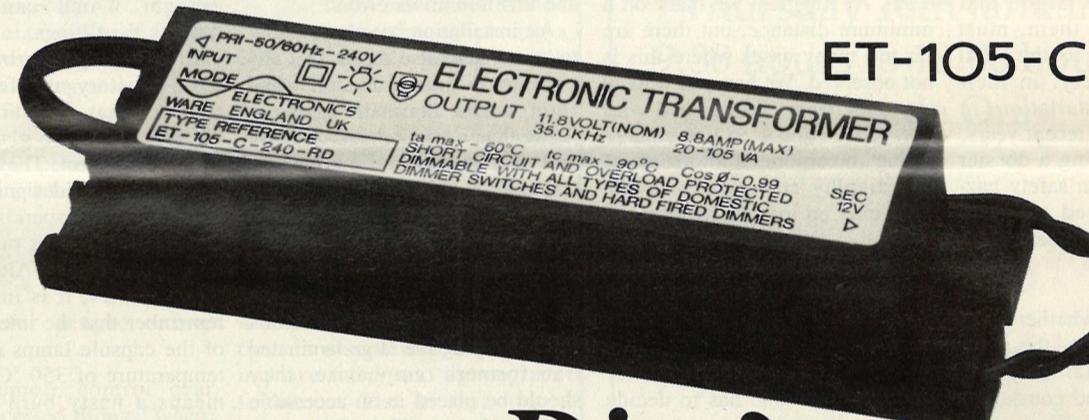
The new lamp is interchangeable with the WDL and uses the same ballast and ignitor.

Applications envisaged by the company are indoor display lighting and outdoor floodlighting.

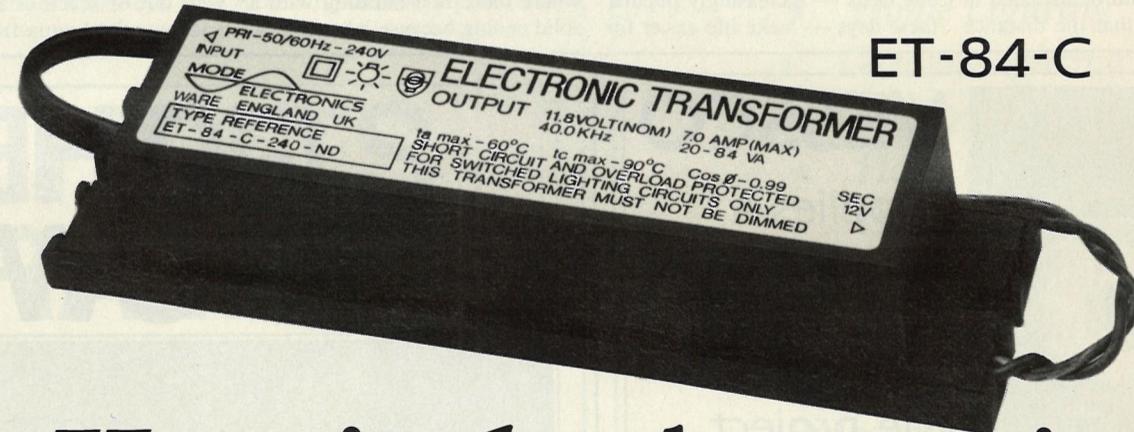
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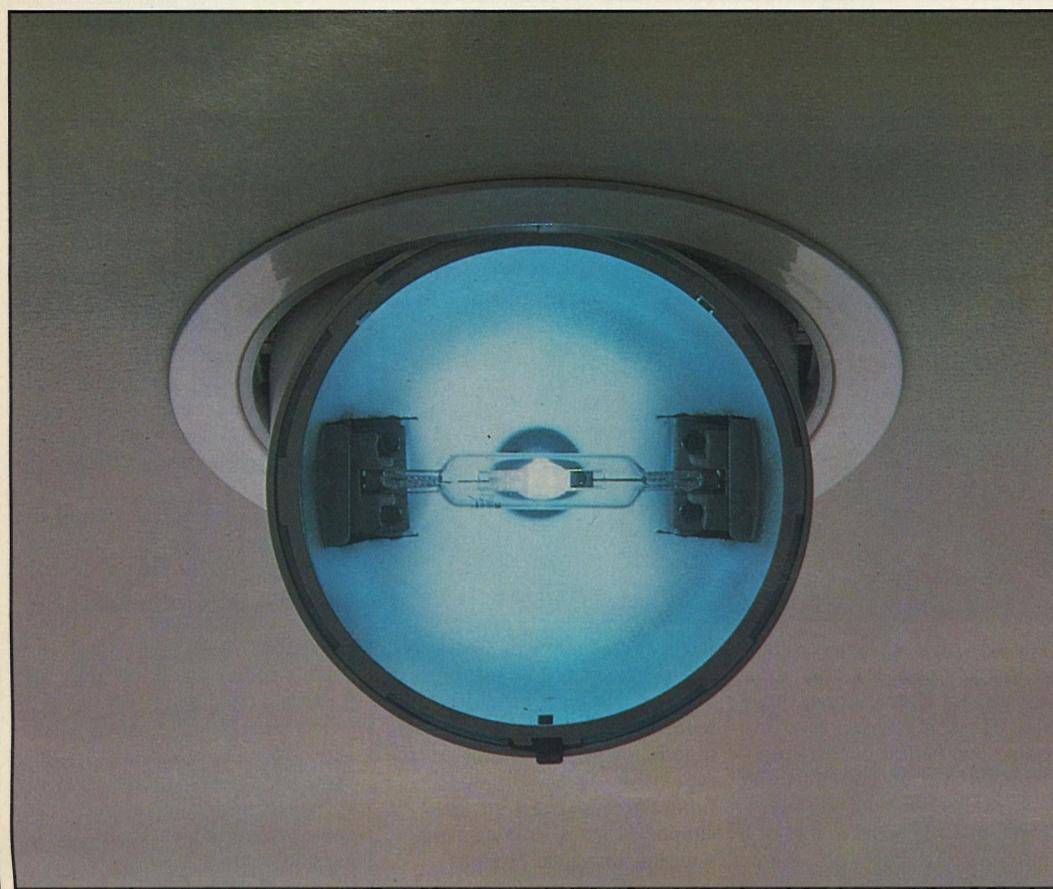
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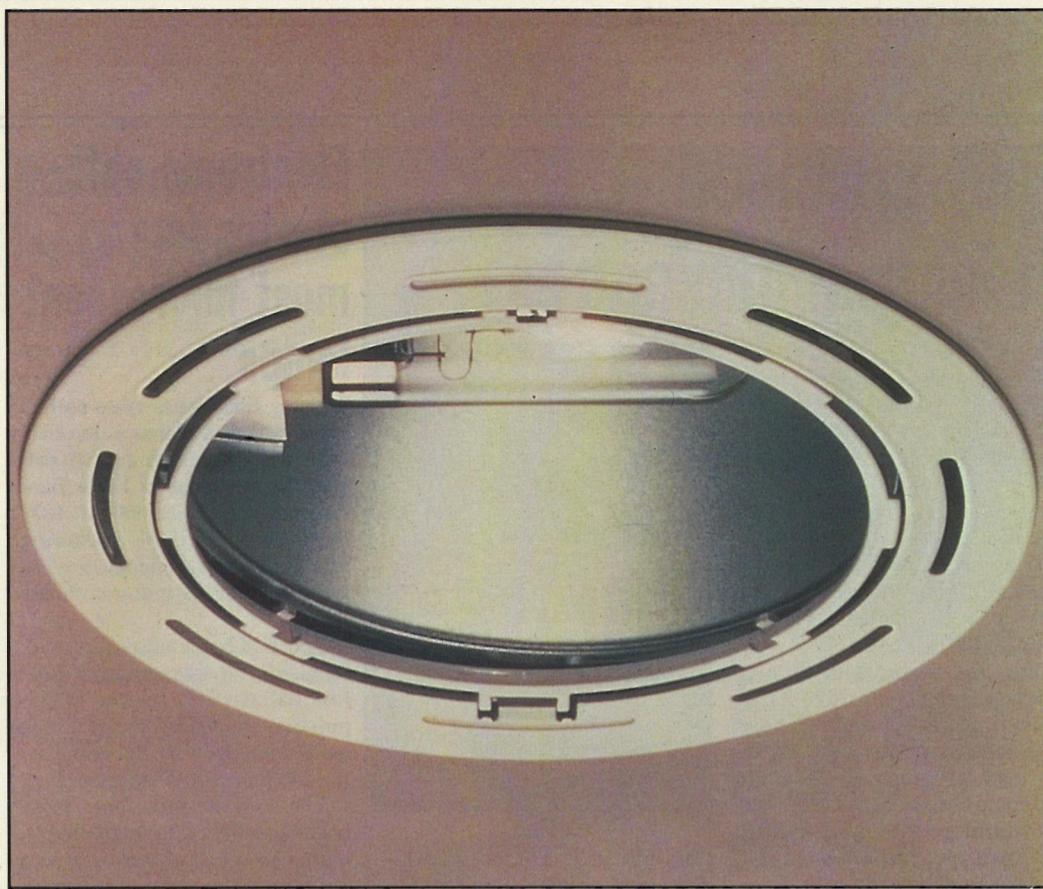
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Downspot luminaire uses a triple ventilation system. In addition, Polyblock system eases relamping and holds a safety glass.



A ring of ventilation slots in the cast aluminium housing disperses the heat from the high pressure sodium lamp in this downlighter.

Safety in luminaires

Ralph Altmann, of Reggiani, looks at some of the common safety hazards created by the choice and installation of lighting fittings and advises how to avoid them.

The vast number of luminaires on the market these days, and the jargon that accompanies them, must not blind us to the vital importance of safety: in their design, in their installation, in their daily use. Over recent years, I have been compiling a dossier of the more common safety hazards I have observed and how best they might be avoided.

Low voltage

With spotlights — whether track or surface mounted — the point to remember is that they are unlikely to be moved constantly once they are set up. Their temperature can, therefore, be higher than, say, a portable desk lamp. A spotlight should be installed in such a manner that the distance

of the fitting from the object being illuminated is not less than 0.8m. At Reggiani we mark on a minimum distance, but there are far too many cases where this is not observed. We have all walked into shoe shops refurbished with low voltage and seen low voltage fittings incorporated into some of the display structure with the light only an inch or so from the shoes.

The selection of the appropriate SELV safety isolating transformer is all-important. With a plaster board or fixed tile ceiling, it is difficult to get above it after installation so one has to decide early on the best type of transformer to use.

Transformers sited on a one-to-one basis — increasingly popular these days — make life easier for

the contractor because he can use standard mains voltage wiring, and this minimises errors.

An installation based on a one-to-one system also means that any problem is limited to individual fittings. One luminaire goes out rather than a whole bank of them, and that one can be maintained through the hole made for the fitting in the first place. Where transformers feeding more than one fitting are concerned, one or two lights going out can over-volt the remainder. Instructions accompanying the large laminated transformers emphasise they should be placed in an accessible position. Invariably they are not.

A recessed fitting with a backbox has particular application where there is a building with a solid ceiling because it provides a

firebreak. Without a backbox, there is always a source of draught which can fan fire through the fittings.

Low wattage starburst lamps have a history of safety, despite the fact that they are exposed because protective glasses would spoil their effect. They are popular with interior designers because they contribute sparkling light to an installation that might otherwise be too bland. Although they are only 12V, it is important to remember that the interior of one of the capsule lamps can have a temperature of 350 °C — which means a nasty burn if anyone touches them.

My recommendations here are two-fold: install them in positions well out of reach of the public; and buy the lamps from recogni-

nised lamp manufacturers. The chances of an explosion showering glass on the people below are extremely remote. This cannot, however, be said for some of the lamps coming in from some Eastern countries.

Dichroic lamps are safe enough — providing the lamp is held in by the rim of the fitting. An unsupported lamp will result in wear to the lampholder, causing it to droop and arc. In the unlikely event of an explosion, a good safety glass will contain the fragments. We have had extensive tests carried out on ours and it does its job.

With dichroics, and with some other fittings, the human factor must be allowed for as safety glasses may be left off after end-users have re-lamped. This is why Reggiani developed the Polyblock system which hinges the safety glass to the fitting.

Track systems

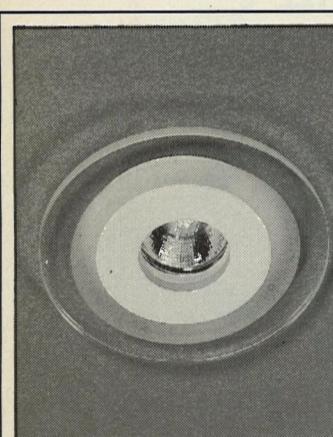
Mains track is, from a safety viewpoint, well covered by international regulations and by BS 4533. Low voltage track presents a very different situation. There are no regulations yet in force for low voltage, although international discussions are cur-

rently taking place. As so often happens when countries debate, there is a lack of agreement on just about everything from amperage to construction.

Despite the warning labels, there will always be the risk of people connecting low voltage track to mains supply, making it a potentially lethal product and one which would not be earthed. Like other responsible manufacturers, we label, we mark, we instruct. It is up the end-user to show similar responsibility when it comes to installation.

A greater danger, in my view, is that of people adapting mains voltage track to low voltage use. The contacts on mains voltage track are not of sufficiently heavy duty to contain the very high amperages that are generated by, say, something as low as a 50W fitting. It is not unsafe to put low voltage fittings on mains track which has been adapted. The danger is the person who comes along and slaps a mains fitting into it. This could blow the fuse or do very curious things to the transformer.

There is a suggestion under discussion that a blue line down the track itself would indicate that it is low voltage but this has to be

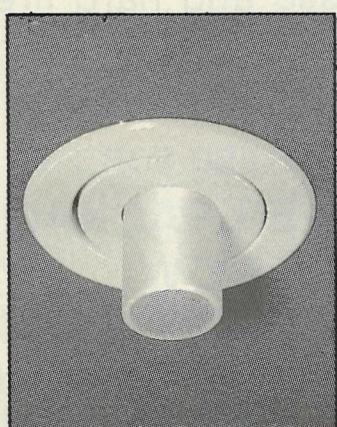


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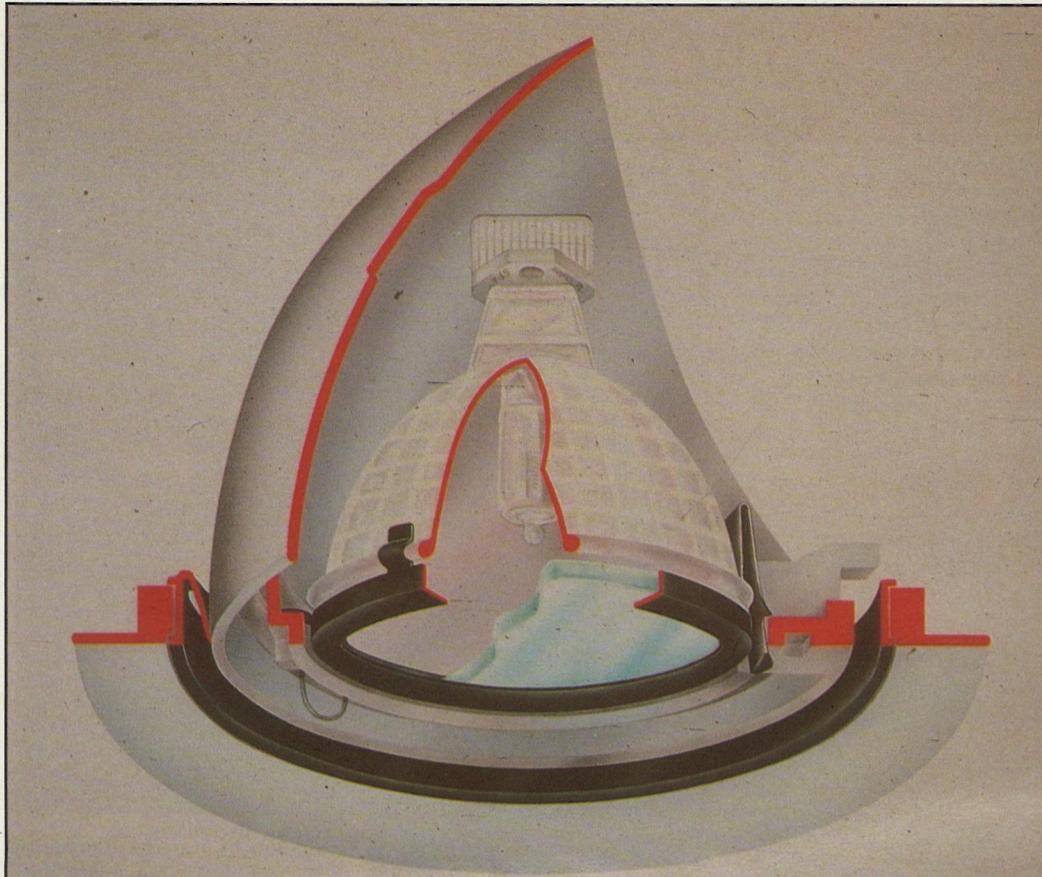
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THE GREAT POWER SHOW:

3.16 GB



An exploded diagram of the Reggiani Polyblock system which retains a protective glass, a filter and the lamp. The triple ventilation system is a feature of the Downspot range.

internationally agreed to have any meaning.

At present, there is nothing to prevent mains track being confused with low voltage track. At Reggiani, we are limiting the current of the track, limiting the length, providing instruction leaflets, and marking the track itself.

Metal halides

The separation of metal halide lamps from the control gear helps to avoid overheating which, although unlikely to lead to an actual explosion, can change the light colour and markedly reduce lamp life.

It is good practice to use remote control gear with recessed fittings. Too often, I have seen the weight of such fittings with heavy integral transformers distorting suspended and soft ceilings. The fitting should be within one metre of the gear, as the cable size has to increase in direct proportion to the distance because of the high voltage required by the igniter.

It is unfortunate that the metal halide lamps, HQI-T 35W, 70W and 150W, all have the same G12 cap. This makes it easy for the end-user to put the wrong wattage

in a fitting, possibly causing a controlled explosion — which is why safety glasses are necessary. Over the period of a lamp life, the distinguishing markings deteriorate so the end-user is frequently left with a guesstimate as to what is being replaced. You get much the same problem with low voltage when a 20W lamp is replaced by a 75W lamp and overtaxes the transformer.

The introduction of the new, lower wattage, discharge light sources of the double envelope type safeguards against explosions and UV emissions but does not require a safety glass.

General safety criteria

When it comes to choosing any light fitting, it is false economy to opt for those poorly constructed from cheap materials. Economy apart, it can also be dangerous. We favour diecast aluminium which is durable, takes a good finish, gives robust construction, and enables us to market high quality products at competitive prices. Some firms are experimenting with advanced plastics but, as these are a by-product of oil, they could run into price problems in the very near future.

Always check a fitting thor-

oughly for good ventilation. This dispels heat from the light source and allows the use of high capacity lamps. It also lowers the surface temperature of the fittings which speeds, and makes safer, maintenance and cleaning. Heavy ventilation is an integral feature of Reggiani design, not just as a 'cosmetic' but as a vital functional factor.

Protective glasses and filters are now compulsory for metal halide fittings, but there is always the human factor to contend with where the glasses are left off after end-users relamp. This is why Reggiani developed the Polyblock system which hinges the safety glass to the fitting.

To sum up, light fittings should be safe enough providing the following steps are taken:

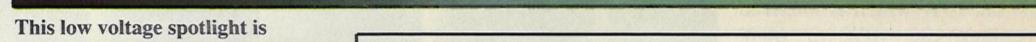
- Choose good quality, well ventilated fittings from a reputable manufacturer.
- Look for hinged safety glasses.
- Use remote control gear with recessed fittings; where the ceiling is solid, use a backbox as a firebreak.
- Take care to ensure that you know the wattage of the

This low voltage spotlight is ventilated to reduce surface temperature and incorporates the Polyblock system.

lamp you are replacing. There is much to be said for staying with the reputable lamp manufacturers. One reason is that their lamp markings are likely to far outlast those on lamps from, say, some Far Eastern maker. That said, the leading lamp companies in my view could, and should, put far heavier markings on their products. The danger of misreading is still there in domestic situations where a 100W or 150W tungsten lamp replacing a 60W can burn a hole in a silk shade and become a fire hazard. The main difference is that low voltage fittings are far more costly.

Conclusion

There is an on-going relationship between luminaire designers and lamp manufacturers. It shows itself in an exchange of information, in discussions on ways to improve safety and lighting performance. The known names offer stability. They don't know everything; they certainly don't get everything right; but they do have a reputation to protect and markets to hold and develop.



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duction areas; or in parks, pedestrian precincts and for floodlighting façades.

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Type	Lamp wattage	Length mm	Diameter mm
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HQI-TS 150	150	132	23
HQI-TS 250	250	163	25

OSRAM Limited, PO Box 17, East Lane, Wembley, Middlesex HA9 7PG

Lighting Equipment News, November 1990

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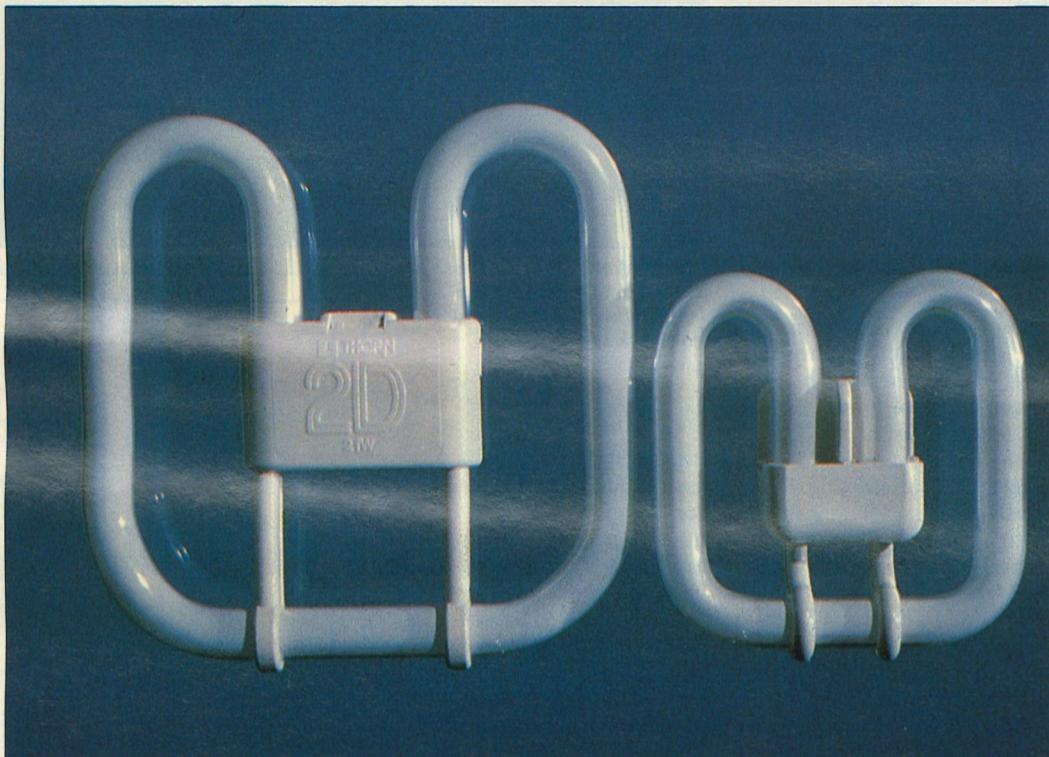
Lighting the way ahead

Lighting techniques and luminaire design are intimately linked to advances in lamp technology. In this article, based on a paper presented at the National Lighting Conference, Brian Morgan reviews recent developments in light sources

The pace of new lamp development has slowed significantly in the past couple of years, but some interesting new types have appeared on the market. There have been further introductions of compact source lamps.

Thorn introduced two more 2D types: the 10W which is intended to replace the 40W or 60W tungsten lamp; and a 21W which replaces the 100W. With all the talk these days of green issues these would be ideal for domestic use, but one suspects that the high initial capital cost will still be the factor that prevents a widespread use of compact source lamps in the home.

In the commercial field, Thorn has introduced a standard wound ballast version of the 40W 2L lamp, the original circuit running lamps in pairs from an electronic ballast. The 2L lamp is optimised at 540mm to suite the 600mm module and GE have followed with a similar lamp, but rated at only 34W. Philips too has a



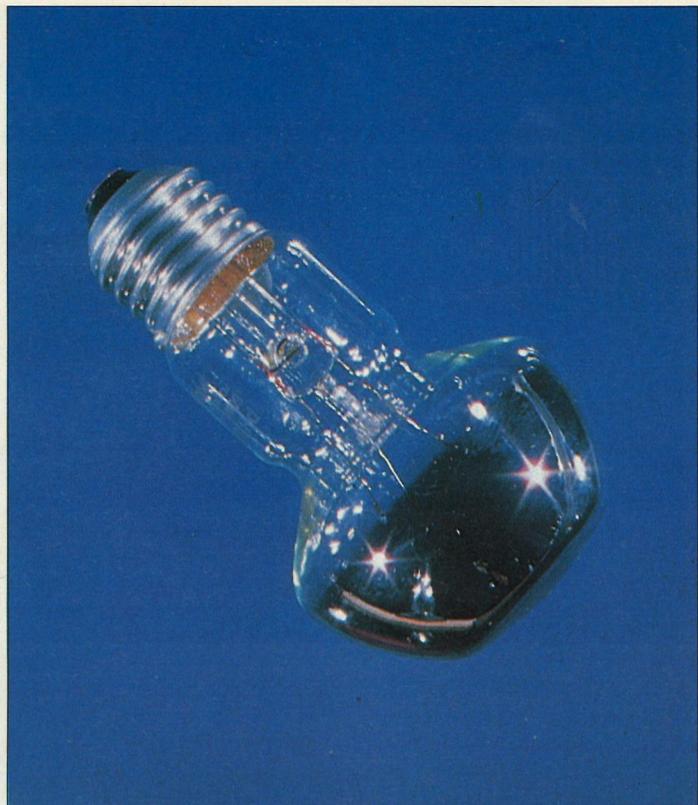
Thorn's range of 2D lamps now includes the 10W version, which has domestic as well as professional applications.

540mm lamp but at 50W and running only from an electronic ballast. It really is a pity that there is not a standard approach to these 540mm lamps to give the user interchangeability.

Another difficulty is the varying performance of all linear compact source fluorescent lamps in air handling fittings and it would seem sensible for the luminaire to be marked to indicate which lamps may be used when replacements are due.

The only additions to main range T8 lamps are the new improved colour rendering versions with a CRI of 95. These are triphosphor lamps with a more sophisticated power technology.

In the display and effect market, Philips has introduced a range of



Philip's R63 blown glass reflector lamp, a crown silvered version.

R63 blown glass reflector lamps with an unusual shaped envelope which gives 25% more useful light. It is a pity that they are not more widely available in the retail stores because they are easier to get a grip on and replace in recessed luminaires.

On the low voltage side there have been more introductions — mainly versions with front protective glasses which should, of course, be used where low voltage dichroic lamps are used for general lighting, desk lighting or where people live or work continuously in areas illuminated by them. Open dichroics emit high levels of ultra-violet radiation, and the warning given in literature or on the packaging is fine

but unlikely to be read by the user. The front glasses absorb the UV.

Other developments are the use of dichroic films to give a range of four colours. The lamps that have the dichroic film on the inside of the front glass produce more saturated colours. Another lamp uses a neodymium front glass to reduce the yellow content and give a whiter light. Other lamps have been introduced in the 35mm diameter size.

Home lighting

In the domestic market, Osram has launched a range of 95mm coloured globe lamps which would be useful in open decorative fittings, and Philips has intro-

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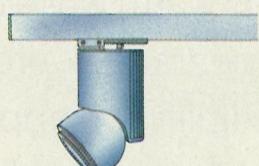
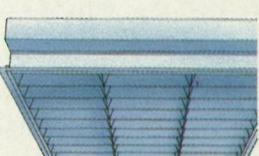
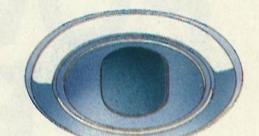
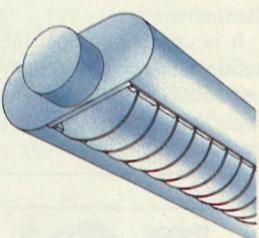
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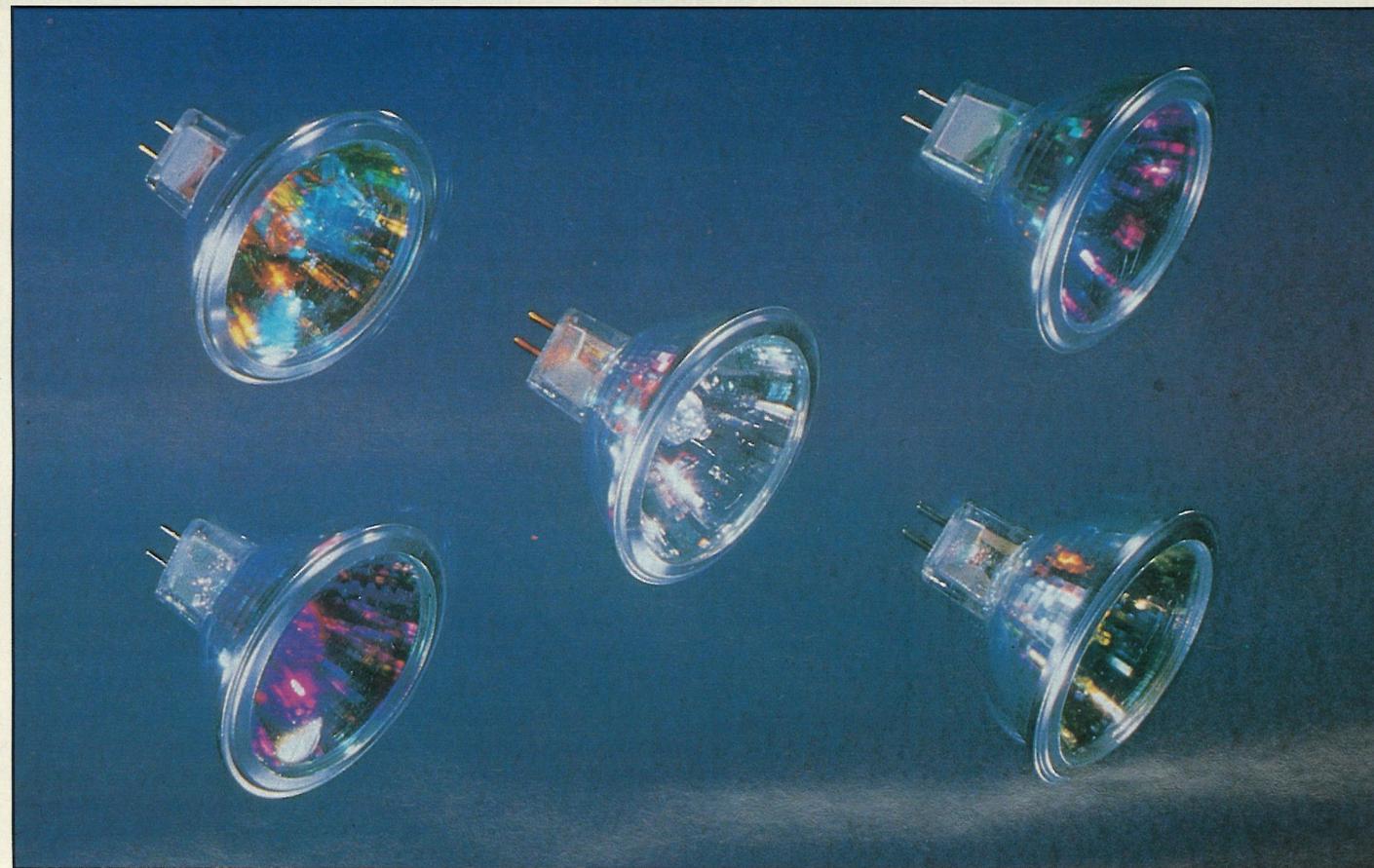
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duced a BC and ES capped tungsten halogen lamp in an envelope which would be useful for areas in the home where fittings are inaccessible, where the fittings are not often used and long life is desirable — as, for instance, in security lighting.

On the industrial side, the only significant introduction are the higher output high pressure sodium lamps from most manufacturers. These lamps trade off colour rendering for higher light output and figures of 20% initially to 30% over life are claimed. The colour temperature is reduced from 2100K to 1900K. When updating old installations, the user should check whether the lamp is compatible with the external ignitor. If it is not, then the ignitor will also need changing.

In the specialist lamp areas there are some interesting developments. An interesting new lamp is the MXR range from GE. These are metal halide lamps at 32W, 100W and 200W where the arc tube is contained in a standard envelope so that they can be used to upgrade existing installations without the need to add protective front glasses. They also differ from European technology in that they are American lamps with a less sophisticated metal halide cocktail which the Americans believe give a better life and a more reliable colour appearance and colour rendering. It should be noted that the American approach gives a lower CRI index of around 65 compared with the European 90. However the CRI index is not a reliable guide to colour rendition with metal halide lamps and it is better to see installations of either lamp before making a choice.



Dichroic lamps with front protective glasses.

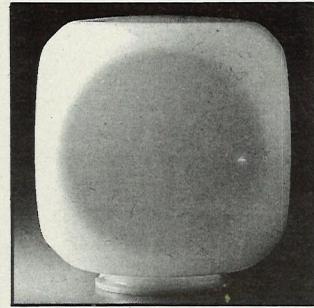
Philips has launched 35W metal halide lamps similar to its white SON lamps. These can be used as an alternative to white SON in the same applications — in shop and store lighting and in downlights in more decorative commercial installations like restaurants. There is, however, one aspect that should be borne in mind with the low wattage metal halide lamps and that is the need to replace them as they reach the end of useful life. There are new



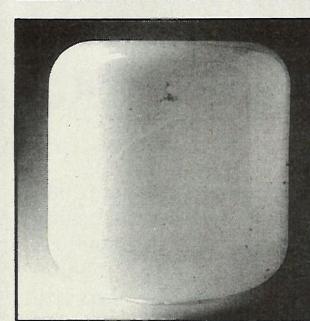
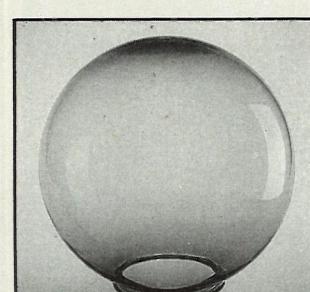
Two versions of Philips' MSR theatre lamps.

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ignitors and other developments that shut down these lamps at end of life and it is important that these sophisticated but more expensive gear packages are used.

Turning to a more specialist field, Philips has a range of dimmable MSR lamps for projectors and spotlights for the theatre, studio and disco work, and Osram has extended the range of high output studio lamps. The 12kW version has an output in excess of 1 million lumens.

In the theatre world as well, Philips has also added two more bi-planar projector lamps at 1 and 1.2kW where the filament structure has been changed to improve performance and give a greater resistance to vibration.

Finally, Thorn have launched a 2kW and Philips a 1.8kW compact metal halide lamp specifically for sports stadia use. The lamps are not interchangeable and are part of a lamp/luminaire combination associated with state of the art floodlights, used for sports arenas and high buildings. A typical installation is the recent new floodlighting of St Paul's Cathedral.

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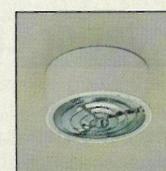
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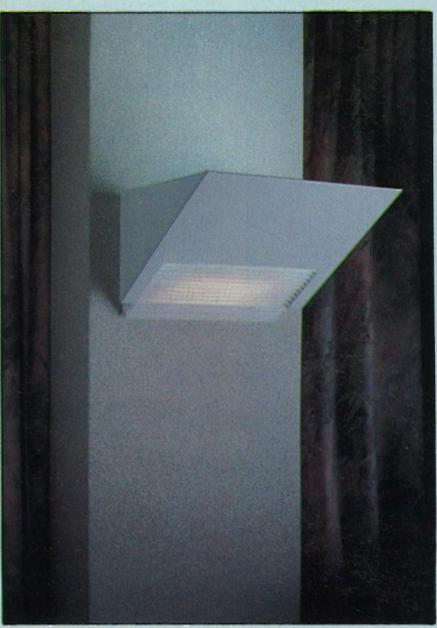


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1 x 13W TCD Surface

RADA
LIGHTING



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The CONNECT range is suitable for all interior commercial and retail applications.

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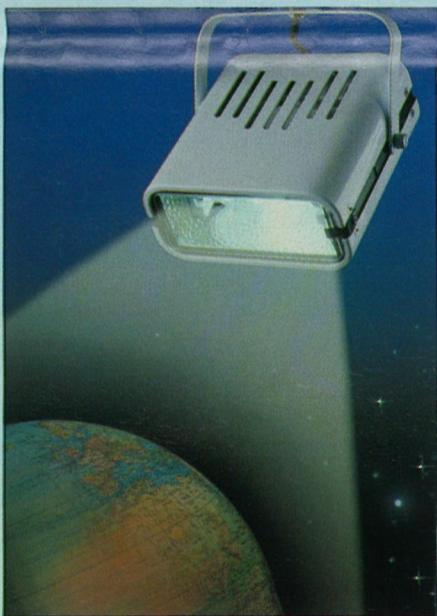


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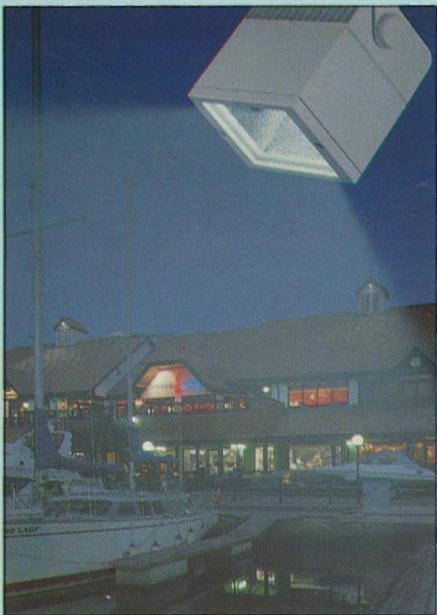
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Interior Metal Halide and White Son

The use of CONNECT directional surface mounted or recessed luminaires is unlimited. With the new colour temperatures of lamps available from the major manufacturers, the use of this product is greatly enhanced, enjoying the benefits of low running costs, low operating temperatures, long lamp life and excellent colour rendition.

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CONNECT are committed to ensuring that new and existing clients have the opportunity to take advantage of new technology as and when it is made available. However, CONNECT acknowledge that there are inherent problems with this ideal.

New technology has inherent problems of proven reliability; with this in mind CONNECT Service was established during 1989 to ensure any possible problems were not left with their clients or contractors.

A small team of engineers are available nationwide to ensure peace of mind and respond with minimal delay to customer problems. This service is designed to ensure lighting schemes are left in good working order without debate as to whether the lamp, component manufacture or CONNECT are at fault — this is established at the manufacturing plant and preventative actions are taken to ensure the problem does not repeat in future.

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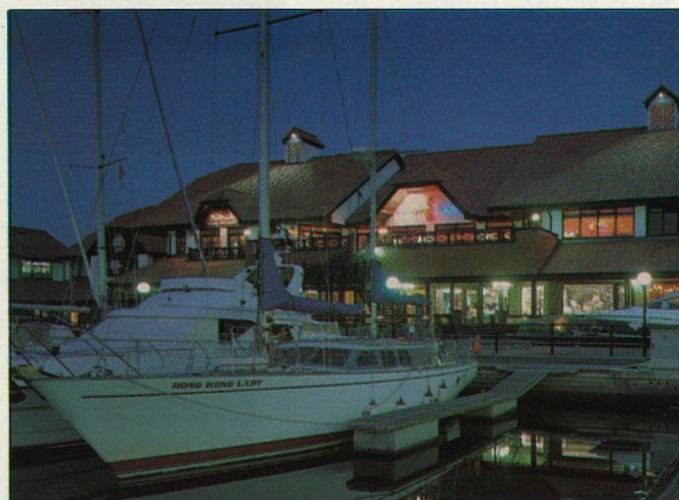
The products are covered by an exclusive guarantee of 3 years to further underwrite CONNECT's confidence in their production systems and integrated components.

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CONNECT has always ensured customer satisfaction, from the point of first contact through to the completion of a project, manufacturing luminaires that are practical and affordable and which can also be delivered within unreasonable time scales.



Connect products at work.

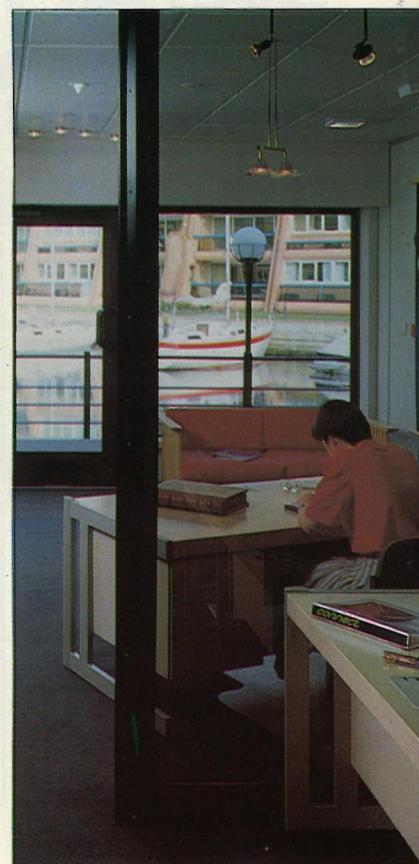


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The CONNECT

Entrance to Connect Lighting Studio



Port Solent Demonstration Area and Lighting Studio

For the opportunity to view CONNECT in action, a visit to their Port Solent demonstration area should be a priority.

Port Solent is the most up to date Marina project in the UK, possibly Europe, a location where CONNECT have grasped

the opportunity to ensure their products are used to the benefit of retailers and commercial enterprises and establish a Lighting Studio to show product and demonstrate their benefits in commercial surroundings.

Reader Service No. 39



The Forth Rail Bridge has been floodlit for the first time during its centenary year. The bridge which took 7 years to build, between 1883 and 1890, and cost £3.5 million even in those days, provides a direct passenger and freight link between England, the Scottish lowlands, and Aberdeen in the north.

The structure itself is huge — it measures over 2.5 kilometres from shore to shore and rises to 110 metres above water level at its highest point. The floodlight-

ing installation is on an equally massive scale — the use of 1054 luminaires makes this the largest floodlighting scheme ever carried out in Europe. The official switch-on, carried out by Prince Edward on 7 October, represented the climax of a year of celebrations centred around the bridge.

Two years ago the Scottish Development Agency commissioned a feasibility study of the Forth Road and Rail Bridges, which run parallel to each other. As a result of this study the road bridge project was shelved, but

Landmarks in lighting

Floodlighting a national monument calls for a sympathetic and conservationist touch as much as design skills. *LEN* reviews three recent installations

the rail bridge scheme was given the green light.

Experience of designing the floodlighting for the Eiffel Tower

in Paris provided Philips Lighting with valuable guidance, because the steelwork was similar to that of parts of the Forth Rail Bridge.

A number of site trials experimented with a variety of luminaires and light sources, and problems with local residents were solved. But the most important consideration was that the installation should not distract train drivers.

The structure comprises two approach viaducts and a central cantilever section. The south approach viaduct is supported by four masonry arches leading to the three main cantilevers; the north approach viaduct is carried on three masonry arches.

High pressure sodium was the light source eventually chosen — giving a total installed load of only 298kW. Three different types of fittings are used.

First, 676 NNF020 fittings, which have either wide or narrow distribution, are used to light the main cantilever sections. These house 400W SON lamps where the structure is at its highest and 250W and 150W SON lamps as the height decreases. Generally they are mounted in clusters of from two to five luminaires. Great care had to be taken in positioning these groupings, both at the lower water levels and, more especially, at higher levels to avoid confusion with the signalling of trains.

In addition, there are 132 HNF003 floodlights, used mainly to light the masonry arches, although several are located on the metal superstructure of the bridge. Finally, 246 SNF100 fittings illuminate the soffits of both approach viaducts. The main aim here was to feature the structure, when viewed side on, in silhouette.

The design also incorporates a computer-based control and monitoring system by JEL. Once fully installed, this will switch all lights on and off, and indicate if any light fittings have failed. It will also assist the work of the maintenance team employed to service the bridge.

The system consists of a network of standalone controllers which are installed locally on the approaches to the bridge and the three cantilevers. These are linked via a communications cable to a central control station which allows the operator to switch the lights on and off at any time of the day or night. When shipping is passing through, the coastguard can command the lights to be switched off via a telephone link to the control system.

Ten JEL PC8600 units linked to current transformers, switch and monitor the lighting controls on the bridge and five MZ3000 unitary controllers which network onto the system have been installed on the approach viaducts.

The use of 1054 luminaires makes this the largest floodlighting scheme ever carried out in Europe.

Another historical landmark — the Tower of London — has been floodlit by Thorn. The scheme, which by contrast uses only metal halide lamps, has been designed to enhance the features of the building from all viewing angles, and in particular from the River Thames.

The central White Tower is lit with 250W lamps in projector-type fittings. A combination of wide and narrow beam reflector options has been used to create an even light distribution and overcome positioning limitations. The building has also been lit from within the quadrangle so that the entire structure can be seen.

St Thomas' Tower, above Traitors' Gate, has been lit with

150W Arcstream compact metal halide lamps in the new 4000K colour temperature.

Nearly 30 Arcstream floods light the entire outer moat wall above the bank of the River Thames. The warmer 3000K version was chosen here to provide a contrast with the cooler light used elsewhere in the installation.

Spirits got out of hand during the New Year celebrations at Berlin's Brandenburg Gate last December — little more than a month after the city's other landmark, the Wall, was opened by the East German authorities. The gateway itself was daubed with political slogans, the existing lighting installation was smashed, and souvenir hunters made off with parts of the Quadriga, the sculptural group depicting victory, which tops the triumphal gate. The Quadriga is, in fact, still undergoing restoration and will not be replaced until early 1991.

Soon afterwards Philips Licht GmbH approached the city and offered to design stage and install a new floodlighting scheme free of charge. The major problem in producing this scheme was to fit the lighting into the conservation requirements of the building.

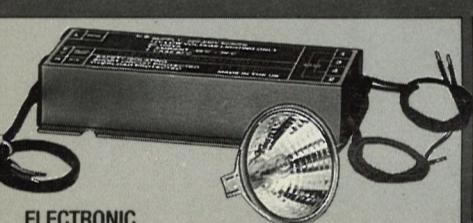
More than thirty schemes were taken to sketch design stage and developed in consultation with the Berlin authorities and their conservation staff and, when the final scheme was eventually agreed and installed, some 15 kilometres of cable and 230 luminaires were needed for its implementation.

It was not possible to reinstate the previous lighting. This installation had grown up over thirty years with border security in mind, so the major consideration had been to provide as much light as possible rather than concentrating it on important building elements.

Considerable attention was given to the multiple demands of conservation. An axiom of the design approach was that building elements had to be seen to bear the same relationship to each other under floodlighting as they

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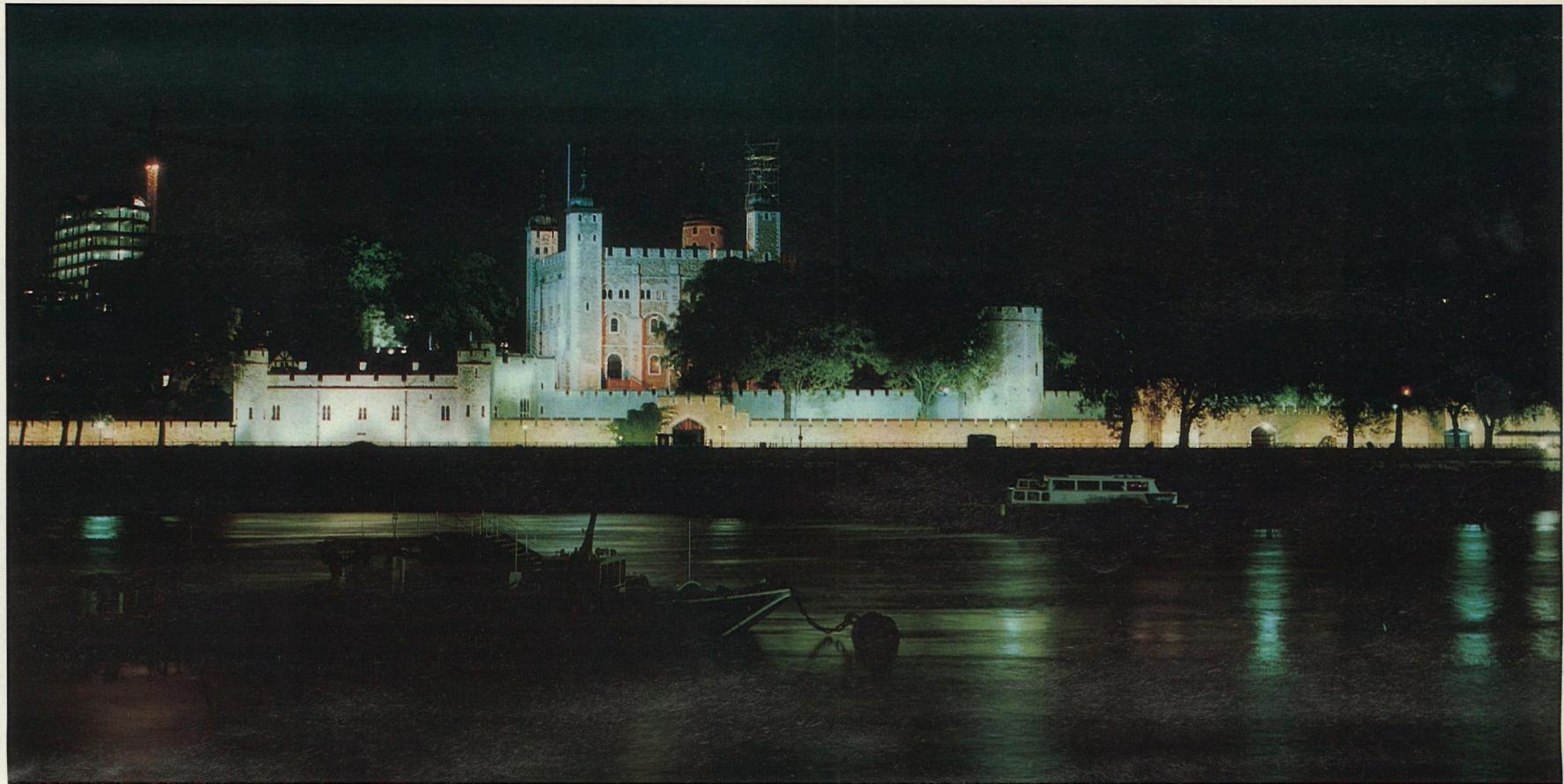
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Lighting Equipment News, November 1990

The Forth Rail Bridge celebrates its centenary with a firework display and a new floodlighting installation.

Floodlighting for the Tower of London was designed to enhance the view from the River Thames.



do by day. Thus, the walls had to be seen as a background to the columns and could not be allowed to dominate because of their mass. Carriageways should not register as black holes or ceiling and soffits disappear into the darkness.

'Building elements had to be seen to bear the same relationship to each other under floodlighting as they do by day.'

From the beginning, conservation considerations ruled out the fixing of luminaires to the face of the building. The Brandenburg Gate is currently located in a detached position, apart from other buildings, as a result of the wartime destruction of Paris Platz. It was equally unacceptable, therefore, to mount luminaires on posts and the decision was taken to sink many of the elements of the lighting scheme below ground. However, it has been accepted that the gateway was originally designed to provide access to a square and, with urban redevelopment now on the cards, the building could once

more find itself in an enclosed position one day.

In contrast to its former situation, the gateway is now in the middle of a pedestrian area and a large number of passers-by may be expected to wander in and around the building. So both the lighting installation and the location of luminaires must present no possible hazard to pedestrians. Finally, the New Year's Eve debacle stressed the need for an installation that was vandal resistant.

In the final scheme, the columns to the main gateway are lit only by the uplight from 12 narrow beam spotlights provided with 400W metal halide lamps. Luminaires are sunk into the ground in front of the gateway to give the correct angle of elevation and located in specially designed concrete light boxes. These units protect the fittings from vandalism and exclude water; metal louvres in their top provide protection to the fitting from above and direct the light where it is required.

The effect of uplighting the columns is that the cornice throws all building elements over the carriageway into shadow. For this reason it was necessary to provide additional high level lighting. One hundred fittings taking 50W and

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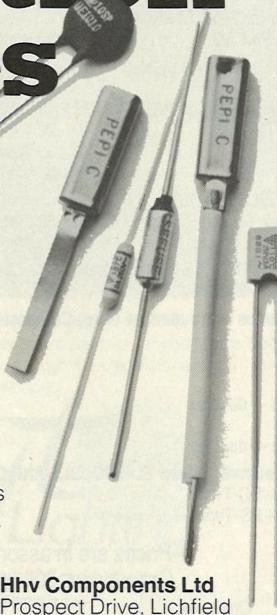
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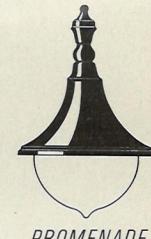
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FLOODLIGHTING



Testing the new floodlighting scheme for the Brandenburg Gate, Berlin's famous landmark (left). Fluorescent lighting being installed at the upper level to light the building above the cornice (right).

18W high frequency fluorescent lamps have been adapted for mounting on lighting track at this height. The fittings, with their custom-built reflectors, are provided with dimmers so that the brightness of this part of the installation can be modified after testing. This light band illuminates the central relief panels and the stepped masonry sides of the gateway.

Focal point

After its replacement, the Quadriga with the goddess of victory, the laurel wreath and the eagle will become the central feature of the lighting scheme, gaining greater prominence than before. Compact spotlamps have been used to light the sculpture, and to emphasise its patina metal halide lamps have been chosen



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		50 Watt	x	x		
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		35 Watt	x	x		
		50 Watt	x	x		
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Lighting Italian style

Italian lighting is famous for its design flair. In part one of a two-part feature we review some of the new products on display at Euroluce 1990

Italian lighting has a designer trend image. Stylish rack systems; high technology uplights; a marked preponderance to use glass fittings (this was, after all, the technology that led many companies into the lighting field in the first instance). This is the image the British interior designer has of Italian lighting — and to a large extent it is a fair one. Companies that export visibly tend to be the producers of high quality and expensive designer-label products. More modest fittings pop up in the country of import as 'own brands' in the DIY sheds and supermarkets.

Largest exporter

But, be that as it may, the lighting industry is big business Italy. The country remains Europe's second largest producer of lighting equipment after West Germany with a production equivalent to £1118 million in 1989 — the corresponding figure for UK production for that year was only £663 million. A hefty 28.2% of this is exported, making the country the largest European lighting exporter. This is backed up by a domestic market that is Europe's third largest, (after Germany and France), giving Italy an enviable high per capita consumption of lighting products.

Given the high design content of the fittings, they tend to be used where luminaires are a prominent feature of design. So products are particularly suited to display and decorative lighting in the interior design field, and street and amenity lighting outdoors.

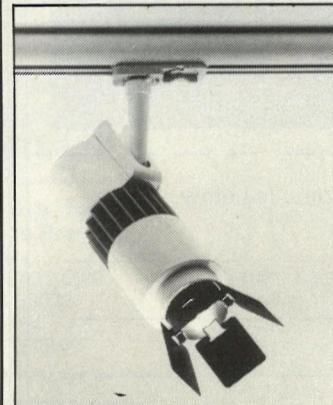


Uplighter in the Targetti Shark range.

Display lighting

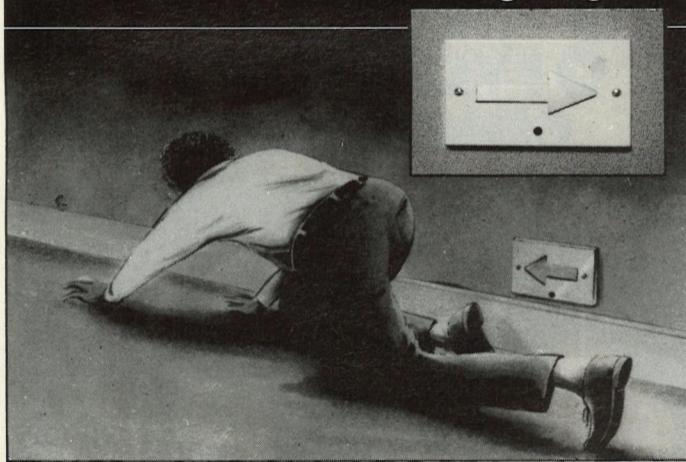
Among a number of comprehensive ranges of display lighting systems introduced at Milan, Targetti was much to the fore in the number of new systems it featured. These included Ray, professional luminaires finished to IP50 or IP54, which have been specially developed for public buildings and commercial spaces. The fittings comprise a diecast aluminium housing, finished in black or white epoxy powder paint. The

system employs HZQI and high pressure sodium lamps and is available in three versions: for fixing directly to walls and ceilings, for single circuit track using a Klik adaptor, or with a UNI adaptor for multi-circuit track. Combining clean modern design with excellent lighting performance is a further range of spotlights, Galaxy. These luminaires are formed from self-extinguishing moulded polycarbonate in black or white. The hallmark of this range is versatility: it can combine a variety of mains and low voltage halogen lamps with a range of reflectors. Additional features include adjustable focus on all versions and an optional frame projector version for precise cut-off.



Eidos spotlight with integral transformer.

SAFEX - "The Guiding Light"



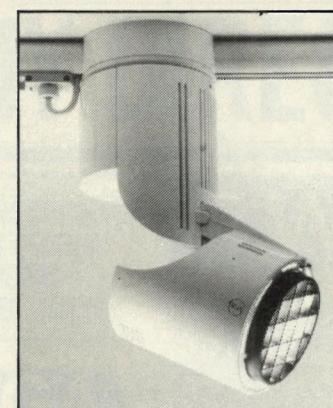
If there was a fire in your building, how would you find the way out? Conventional emergency lighting systems which rely on the use of overhead fittings have limited effectiveness in heavy smoke conditions. Now, through the use of pioneering electroluminescent technology, G T Lighting have developed Safex, designed to operate at a lower level.

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Sunlight spotlight, designed for single ended metal halide lamps.

are connected by a stiff mechanical joint that permits a wide range of different angles — up to 360° on the horizontal axis and 130° on the vertical axis, so that light can be directed where it is needed.

The spotlight forms a cylinder, 125mm in diameter and 250mm in length, to which a range of accessories including an anti-glare louvre can be fitted. The range can accept other light sources such as mains voltage tungsten halogen (150W-250W); low voltage halogen lamps up to 100W, and dichroic lamps up to 75W. This flexibility permits a wide variety of lighting effects while maintaining design continuity.

Low voltage range

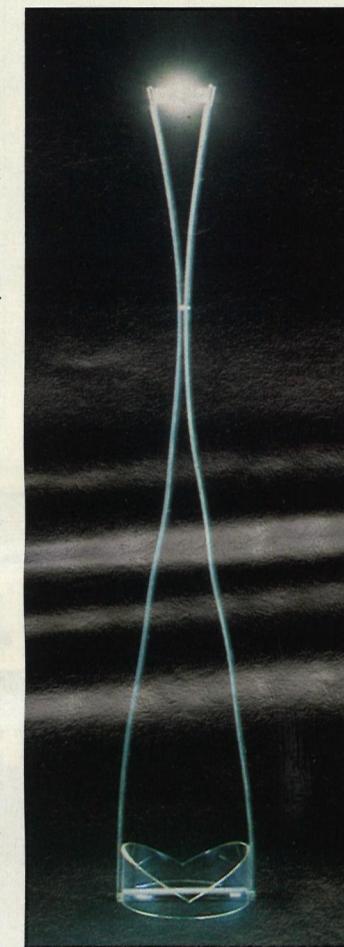
The same company has introduced Eidos, a new spotlight range for low voltage tungsten halogen lamps with metal or dichroic reflectors. Transformers may be incorporated or remote, making the range suitable for ceiling or track mounting.

The body of the lamp is constructed of diecast aluminium. With models incorporating a transformer, a radiator designed for high thermal dissipation separates

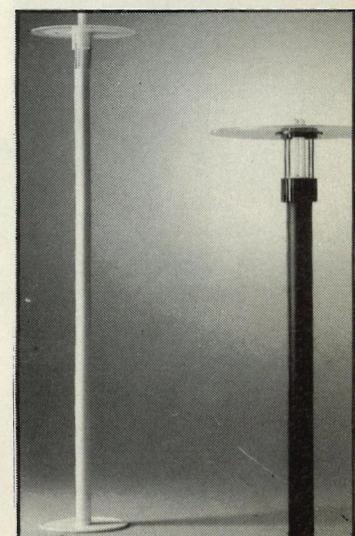
the lampholder from the transformer, improving reliability and safety. The fittings can take a full range of accessories, including framing projectors, shields, barn doors and colour or UV filters.

Decorative fittings

Lighting tool or work of art? Skipper uses the lightness and transparency of Plexiglass for the 1910mm high Bi-Arp floor-standing lamp. The 250W halogen lamp comes with a reflector in sanded Pyrex. Design is by



Bi-Arp lamp uses the lightness and transparency of Plexiglass.



Regolux makes a feature of the compact fluorescent lamp.

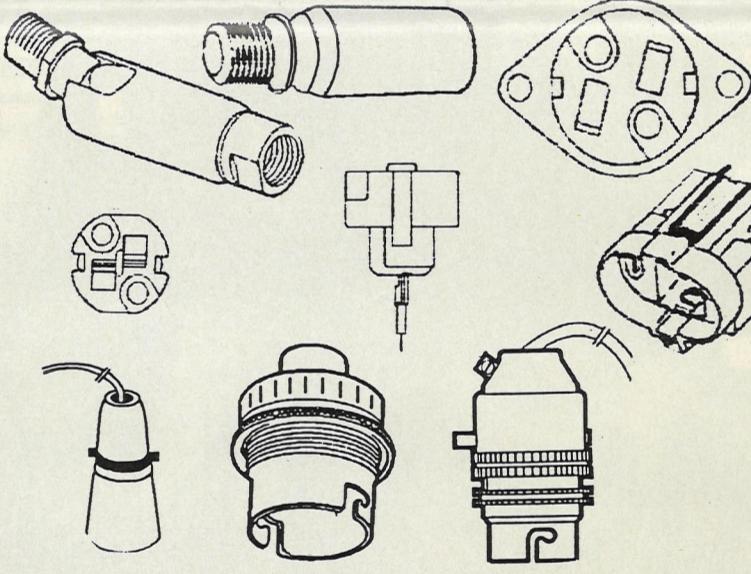
Enrico Bona.

Unusually, MFS Lamp exploits the decorative possibilities of the E27 compact fluorescent lamp in a range of fittings. Tavolux (a table lamp), Scobolo (an adjustable ceiling pendant or bracket lamp), and Regolux (a floor standing model), feature a polycarbonate body in black or white topped by a bare fluorescent tube circled with a diffuser

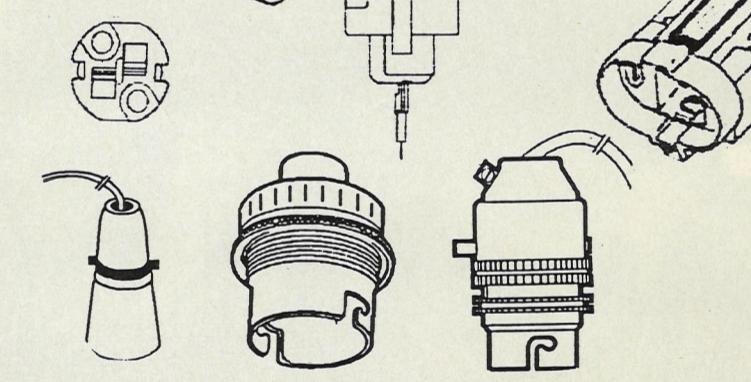


Scobolo ceiling or bracket wall lamp.

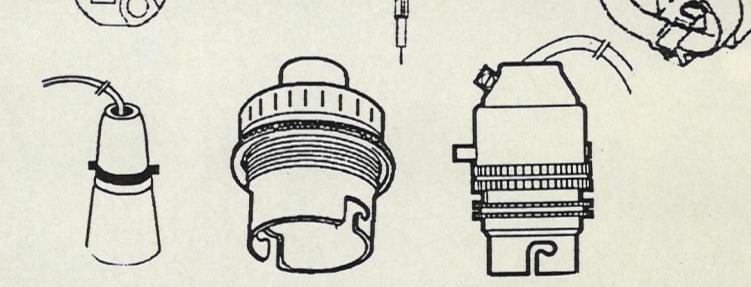
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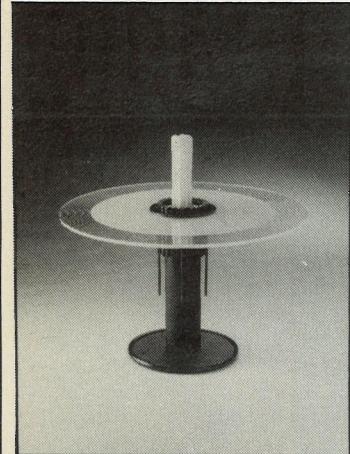
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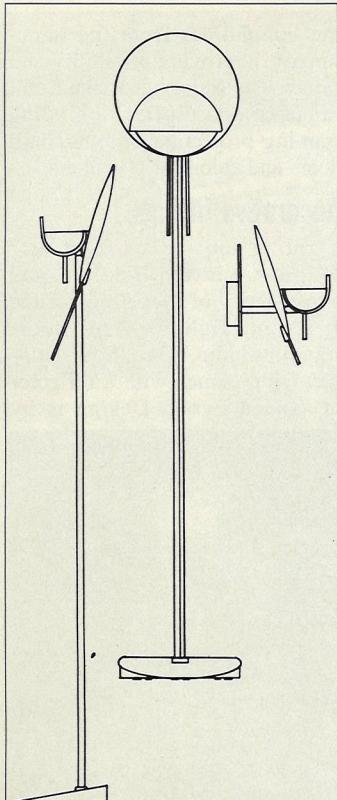
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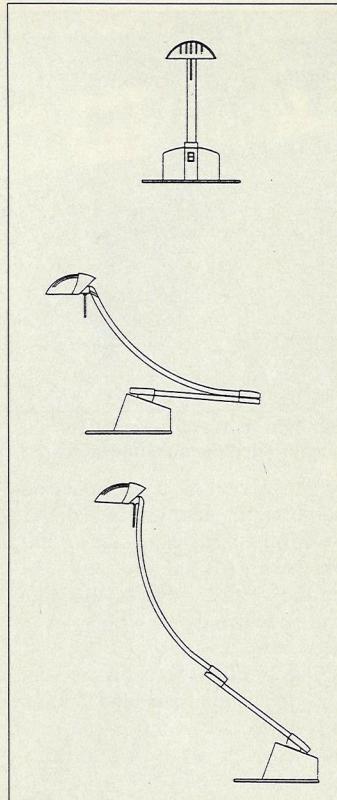
Tavolux is MFS Lamp's table lamp version of the fitting.

plate in silk screen printed methacrylate. All fittings use up to a 20W lamp.

Light control is another key element in 1990s luminaire design. The Oriente fitting from Stilnovo is available either as a free-standing model or a wall mounted fitting. Its main characteristic is that the intensity of the light source can be varied by using a circular disc which opens or closes the light transmitted from the lamp. The light source is



Oriente from Stilnovo features a moveable reflector.



Arione, from Stilnovo. The light source can be rotated through 360°.

a mains voltage tungsten halogen lamp. The fittings are designed by Alberto Fraser.

Also from the same stable is Arione, a table lamp with two rotating arms in anodised aluminium which permit light to be positioned exactly where it is needed. Two mechanical hinges allow continuous rotation of the polycarbonate arms through 360°. The luminaire uses a 50W 12V tungsten halogen lamp. An electronic transformer is incorporated into the base of the fitting.

Bird lamps

Finally from the German studio of Ingo Maurer comes a series of lively and controversial designs for everything from cable systems to a brace of bird lamps. Tujica is a low voltage cable lighting system operating at 24V and designed for flexibility. The parallel cables are spaced 96mm apart and must not exceed 6m in length. Luminaires are constructed of metal and plastic, and each takes a 50W halogen lamp. The system can be adjusted in four different ways: the lighting elements can slide horizontally on



Giving the table lamp the bird — Scaragoo from Ingo Maurer.

the cables, the lamp rotates on its ring within an angle of 360°, the height of the shade can be adjusted through the axis on the ring, and the shade itself swivels through an angle of 240°. A matching wall lamp is available, and this is fixed to the wall place by two asymmetrical conical metal rods.

Scaragoo, by Stefan Lindfors, is

a light fitting in the form of a jointed, anodised aluminium bird, whose height varies between 380mm and 820mm according to position. The fitting is 330mm wide with a body length of 500mm. It takes a 50W 12V halogen lamp and, as with other Maurer low voltage fittings, comes with a Touchtronic electronic transformer, sensor-dimmer.



Tujica wall lamp from Ingo Maurer has matching cable system.

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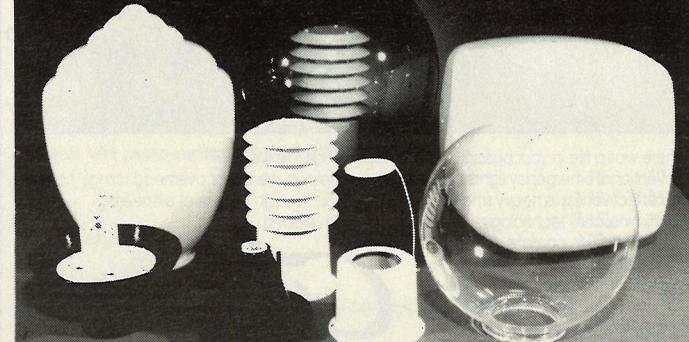
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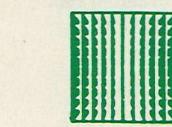
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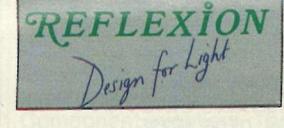


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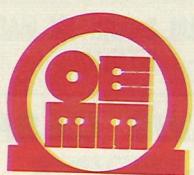
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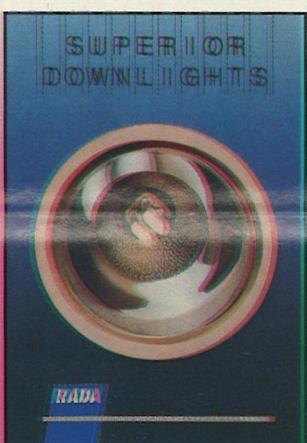
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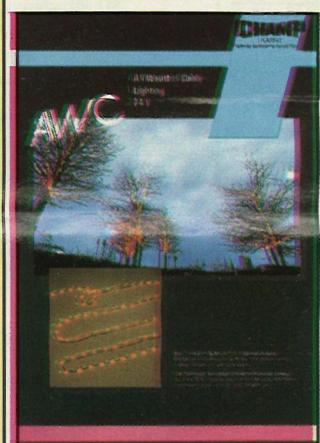
Channel Safety Systems Limited: The LASER PACK Low Voltage Conversion Kit presents the opportunity to convert selected luminaires in a low-voltage tungsten halogen installation to emergency operation, whilst retaining their primary role as an integral part of the overall designed lighting scheme: circle 91



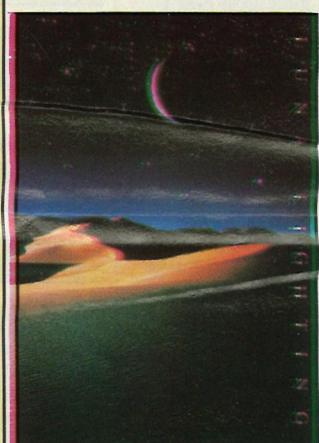
Polestar is a new low-voltage, low energy spotlight incorporating a miniature transformer. No recharging is required. It can be wall/ceiling mounted with most existing lighting tracks. Colour rendering is unlike any other light of this type. Can use 50 or 75W dichroic reflector lamps: circle 92



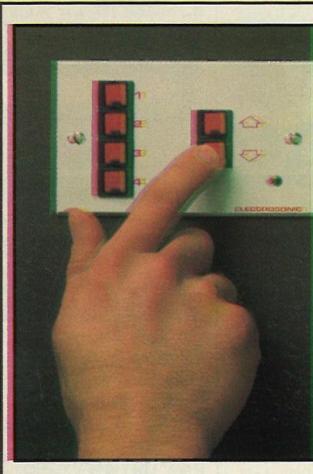
Rada Lighting introduce a new range of advanced reflector design downlights for superior lighting efficiency. The Rada Downlight range includes recessed, semi-recessed and surface mounted models with computer designed multiple form reflectors — some with a rare three-stage reflector. A 6 page colour leaflet reveals all: circle 93



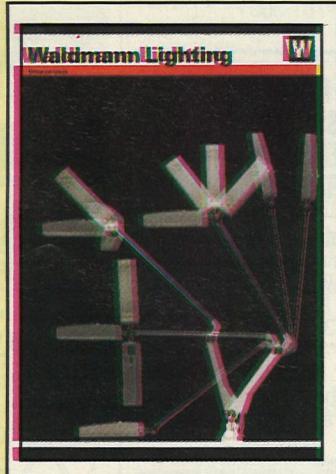
NEW 24V All Weather Cable with clear 0.85W lights from **LUXSPAN Ltd.** offers a range of decorative applications Indoor and Outdoors. A 3mm centre strip for screws, pins or adhesive tape fixing — assures easy installation. The twin 1.5mm sq cable can be cut to length with lights at 5mm to 33mm intervals. 25 to 100mm rolls: circle 94



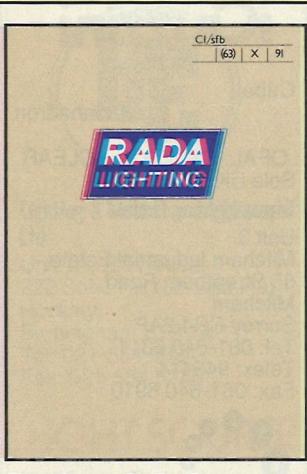
A new brochure from **Luna Lighting** illustrating their exciting collection of high quality luminaires especially designed and manufactured for retail display and interior design. **Luna Lighting** also provide design consultancy covering all aspects of lighting design from initial concept through to full technical specification including manufacture of special luminaires: circle 95



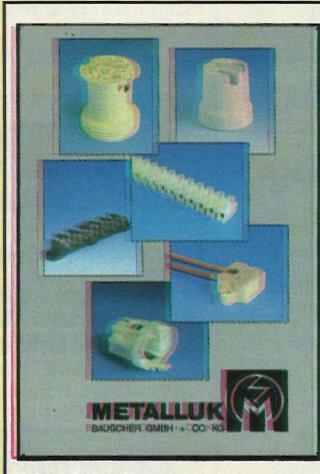
Sophisticated lighting control for the smaller user. Now **Electrosonic** have brought the benefit of scene-setting into the smaller retail and leisure installation with their new **System 12**, to provide 128-scene memory control on 12 dimmer channels. All these features are packaged in a compact wall-mounted unit. circle 96



The new catalogue from **Waldmann Lighting** is available through UK distributors **Midland Machinery Services**. It shows a comprehensive range of functional task lighting, workshop machinery lighting and specialist magnifier lamps: circle 97



The 48 page **RADA Lighting 1991 Catalogue** covers top quality commercial luminaires for every ceiling system; air handling, continuous lighting, emergency, vandal resistant and compact fluorescent and LG3, Category 2 luminaires. Plus a specifiers guide to the luminaire appropriate to the ceiling system: circle 98



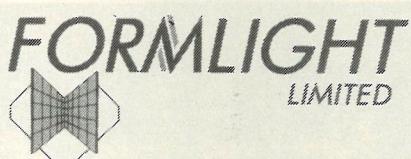
Metalluk offers a complete range of lighting components from mains and low voltage lampholders through to fused terminal blocks and plug-connectors. **Acorn Lighting Products** and **Metalluk** are able to offer a solution to most termination problems: circle 99

CATALOGUE DIRECTORY

Every year companies spend huge amounts of time developing expensive, stylish catalogues and one of the biggest problems they could be faced with is publicising and accurately distributing them to specifiers. If you have a catalogue, either already printed or in production which is targeted at lighting specifiers then this section can help you.

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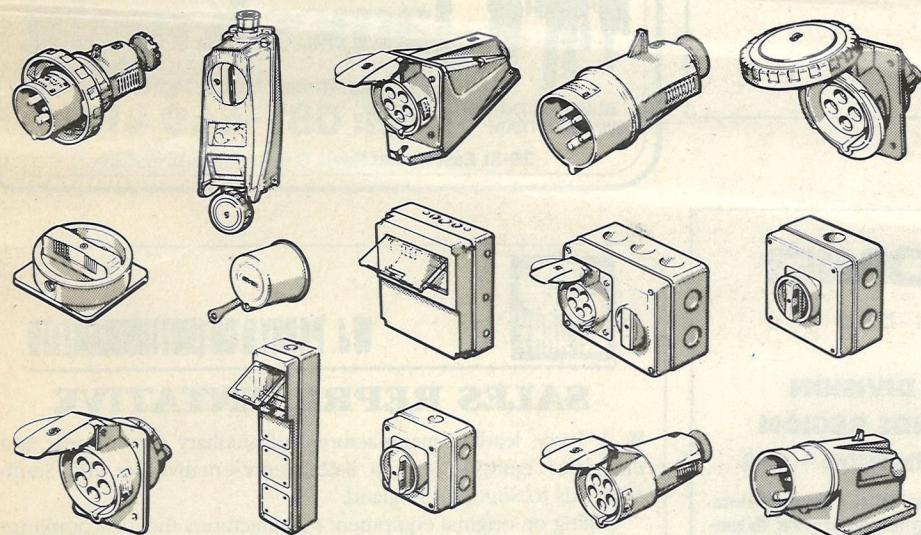
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LIGHTING EQUIPMENT NEWS



Retailers fight back with lighting

The European Merchandising Masters 1990 competition, held in Paris, was won by Dutch architects Jos de Vries Projektmanagement for their innovative concept that helped a group of independent retailers in the Netherlands.

Since the introduction of fresh produce into supermarkets the retailers had been faced with increasing competition.

The winning project took a 500m² site and brought together five retailers who sold fresh produce: a fruit and vegetable shop, a butchers, a bakers, a dairy products shop and a florist.

The open plan layout effectively created a fresh produce, one-stop shopping area which for the general public had the same advantages as a supermarket. Much thought went into creating a quality environment.

This atmosphere owes much to lighting made in England by Microlights.

Low voltage, energy saving fittings emitting minimum heat are used throughout the sales areas.

Recessed, fixed beam dichroic downlights give general lighting, while recessed adjustable dichroic eyeball fittings are used behind counters to light produce.

The line of the counters is emphasised using 20W capsule type Twinkle downlights.

The florists, an open plan sales area, is selectively lit to create pools of light on the flowers. This was achieved using dichroic adjustable downlights below a canopy and Microflood fittings with barndoors, suspended on rods.

Not only has the image of the shops been upgraded, but there has been a marked increase in sales.



McDonald's has created a lighthouse and beach scene to sell its hamburgers in Castle Marina, Nottingham. The "lighthouse" throws light up into a coffered ceiling bowl using three metal halide uplights from Prima Lighting. Recessed fluorescent fittings with diffusers create the impression of three beams from the lighthouse. Suspended, curved aluminium canopies with recessed low voltage spotlights are arranged in concentric circles to give a pulsating effect. Other features of the decor are accented by Reggiani wall washers.

Updating for pedestrian subways

The Institution of Lighting Engineers has revised its technical report on the lighting of pedestrian subways to satisfy present day requirements.

Recommended levels of illumination and lighting objectives are given for subways, ramps, stairs and approaches.

Luminaire types are surveyed

and attention drawn to desirable features of a completed installation for effective operation, economic maintenance and the safety of people using subways.

The report recommends that lighting engineers should be involved at the initial concept of subway lighting design, to achieve a high quality installation.

Technical report No 13, price £7.50 (£5 to ILE members) can be obtained from the ILE, 9 Lawford Road, Rugby, Warwickshire CV21 2DZ.

IN YOUR NEXT ISSUE

A preview of Lightshow, concentrating on new and interesting lighting to be seen at Olympia in January, will be the main feature of the December issue of *LEN*. Over 140 companies will be

exhibiting at this showcase of decorative and contract lighting.

On the European scale, we will report on more of the exciting designer lighting shown at Euroluce.