

LIGHTING EQUIPMENT NEWS

OCTOBER 1991



Part of the continuing programme of gallery restoration at London's Victoria and Albert Museum, the Tsui Gallery of Chinese art opened in June. The brief included a requirement to restore many of the building's original features which included a rooflight giving illumination levels of over 30 000 lux! Although it was felt that daylight could play a part in the gallery displays, lighting levels were to be maintained at 50 lux or less to protect items which would be irreparably damaged by bright light.

Project designers Fitch wanted a collection which looked at the way artefacts related to one another and eschewed the conventional approach of displaying like objects, such as ceramics, together. So lighting designers, Equation Lighting, adopted a dramatic approach, showing areas of highlight and accent rather than meeting a strictly technical brief.

The rooflight remains as a building element – it still appears bright on sunny days and dark at night – although most of the light had to go. Heavy masking and other light reduction techniques produced a final ambient lighting level of only 20 lux in the gallery.

Due to the delicate nature of most of the objects on display, UV is controlled at source and at each intervening layer of material. So light is filtered both at the fitting and again as it enters display cases.

Tungsten halogen seemed an obvious light source but many of the objects such as tapestries and furniture are too large for a point source to be really successful. Experiments showed that the smaller compact fluorescent lamps provide the correct level of highlighting. Their relatively small size means that modelling and shadowing remain good, while their low wattage gives reduced energy bills.

A focal point of the design is the enormous canopy which floats over the entire gallery. This proved to be the ideal place for concealing track-mounted spot lighting, providing both ambient and display lighting. It also permits a flow of illumination across the space so that levels in the centre of the gallery are relatively high, falling away in corners and enclosures.



In brief...

- **Nietronix** has been appointed exclusive European distributor for the O C White range of inspection lights.
- **Alpha Lighting** has been awarded the contract to supply luminaires for Ogilvy and Mather's new offices at Canary Wharf in London's Docklands.
- **M S Components** has changed its name to Steatite Power Ltd to reflect the growth of Steatite Power transformers in the last three years.
- **Menvier**'s main lines of emergency lighting have received BSI Kitemark approval.
- **Cryselco Lighting** has received approval to BS5750: Part 2.

Philips clinches sponsorships

1992 will see Philips Lighting sponsoring three major events in the world calendar.

Disney World is coming to Europe next year. The opening of five main theme parks on the Euro Disney site near Paris will take place on 12 April 1992 and some 11 million visitors are expected in the first year. When finished, in an estimated thirty years' time, the site will cover the

equivalent of 20% of the area of the city of Paris!

The Winter and Summer Olympics will be held at Albertville, France between 8 February and 23 February 1992 and Barcelona, Spain, between 25 July and 9 August 1992.

The previous Olympics in Seoul and Calgary saw TV audiences of 10.4 billion and 6.56 billion respectively; the projected figures for 1992 are 15 and 10 billion.

Following the success of the 1990 World Cup, Philips has decided to sponsor the Intersoccer '94 programme which includes the 1992 European Football Championship to be held in Sweden between 10 June and 26 June 1992.

stage is the title of the lecture to be presented by David Brooks, Andrew Collier and Edward Pagett of Strand Lighting, who will explore how effects are achieved in the theatre and how they can be translated to other applications. There will also be a glimpse of new ideas under development.

Tickets should be ordered as soon as possible from Mrs D Barnes, Institution of Lighting Engineers, 9 Lawford Road, Rugby, Warwickshire CV21 2DZ.

2-D warning

GE Thorn has issued a warning that inferior copies of 16W 2D lamps infringing its patent No. 0057974 are being brought into the UK. These Chinese-made lamps are of very poor quality. They are not connected in any way with GE Thorn's own 2D branded products, and the company will not be held liable for any accidents or damage resulting from their use.

Celebrating Waldram with stage lighting

The National Museum of Photography, Film and Television, in Bradford, will be the venue for the second Waldram lecture, which will be held on the afternoon of 2 December.

All the visual world is but a

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Top of the class

The Faculty of Engineering and Computer Technology at Birmingham Polytechnic has just established a new teaching company with Thorn Lighting at Hereford.

This will undertake joint work resulting in the development of a new manufacturing strategy and the complete reorganisation of the Hereford factory. The objective is

to introduce world-class manufacturing practices.

The total value of the project is £224 000, of which 50% is provided jointly by the Science and Engineering Research Council and the DTI, and the other 50% by Thorn itself. The project will last for three years and, at its peak, will employ four research associates.

Thorn expands airport runway lighting

Thorn Lighting and Philips have signed an agreement transferring Philips Lighting's airport runway luminaire activity to Thorn. This becomes effective on 20 September 1991.

Major player

Thorn has a strong market presence worldwide in the airport runway luminaire sector. The company intends to continue Philips Lighting's present range of airport runway luminaire products and

will guarantee obligations towards customers previously made by Philips Lighting.

Philips has decided to sell the activity, with its annual sales of just under £3 million, in view of the company's relatively modest position in this field.

Transfer

The agreement includes the transfer of stock and production machinery from Philips Lighting's French factory in Miribel to

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NEWS

Association villages at Light Fair

The Association of Independent Electrical Manufacturers will be making its first major exhibition appearance with stands at Electri-

cal Products '91 and Light Fair. Both events take place at Wembley, London, from 22-24 October.

Members of the association will be involved in "purpose-built AIEM villages" in each exhibition.

Association members are typically small to medium sized manufacturers of electrical accessories and lighting.

comfort at optimum cost; the design process and calculations for successful installations; factors affecting aesthetically pleasing schemes; VDU guidelines, and electronic equipment and controls.

The presenters will be Roger Gardner, SVM Partnership and Eric Maddock, YRM Engineers.

Details are available from CIBSE, 222 Balham High Road, London SW12 9BS.

Successful office lighting

A one-day course on different facets of office lighting is to be held on 5 November at the Building Services Engineering Centre, London.

Subjects covered will include: integration of natural and artificial light for maximum visual

Learning package on 16th edition

An open learning package called *Applying the 16th edition* has been produced by The Open College in association with the Institution of Electronics and Electrical Incorporated Engineers.

Arranged in three self-study workbooks, the course covers the

scope and status of the IEE *Wiring Regulations* and highlights the main requirements for their use.

The price is £65 plus £4 postage and packing, from IEEIE, Savoy Hill House, Savoy Hill, London WC2R 0BS.

Light FX acquires design consultancy

Light FX, has moved to larger office and showroom premises in London's Docklands. The company has also revamped its corporate image following the acquisition.

tion of product design consultancy, Flag Design. The new address is: Unit 1, Metropolitan Wharf, Wapping Wall, London E1 9SS, tel 071-702 3499.

many will be sending ministers, directors of energy and researchers.

Well known scientists and other workers in this field will present their findings and expectations for use of renewable energy around the world.

Last date for receiving

Renewable energy: world gathering

The second World Renewable Energy Congress will be held at Reading from 13-18 September 1992. Almost 130 countries have already agreed to take part and

four prize categories. The morning singles was won by Tom Cartedge and Noreen Barnes-Hoggett, the afternoon by Bill and Chris Walker. Pairs overall winners were Barry Glazer and Joan Edgington. Prizes were donated by T Smith (honorary secretary), B Watts (match organ-

DIARY

OCTOBER

8

In the light of experience. CIBSE Lighting Division chairman's inaugural address. Evening meeting in central London. Details from CIBSE, 081-675 5211.

Bad lighting means poor productivity. Evening meeting in Ipswich arranged by CIBSE East Anglia region. Details from A N Rands, 0954 32277.

9

Lighting design - a link between engineer and architect. Evening meeting in Manchester organised by CIBSE North West region. Details from L Daniels, 061-248 7272.

10

Low energy lighting and its applications. Evening meeting in Kettering held by East Midlands region of CIBSE. Details from J G Ettison, 0629 580000.

11

What's new in the 16th Edition? Symposium in London organised by the Institution of Electronics and Electrical Incorporated Engineers. Details from 071-836 3357.

14

Light at the end of the tunnel. An evening meeting in Durham held by the North East Region of the ILE. Details from D Blackett, 15 Alnwick Road, Newton Hall, Durham DH1 5NL.

22-24

Light Fair '91. Exhibition and

abstracts of papers is 15 January. Further details of the congress are available from Professor A A M Sayigh, Department of Engineering, University of Reading, Whiteknights, PO Box 225, Reading RG6 2AY.

iser), B Glazer, Bernlite, and B Walker, Parkersell.

First tee gifts were presented to the ladies by B Walker of Parkersell, and to members by D Proctor of G E Thorn, who also hosted the after-match dinner.

The next meeting will be in October at St Georges Hill.

seminar programme at Wembley, London. Details from organisers IML Techpress, 0732 359990. **Electrical Products '91.** Exhibition at Wembley, London. Details from IML Exhibitions, 0732 359990.

23-25

An introduction to lighting design. Three-day course at the Institute of Environmental Engineering, Southbank Polytechnic, London. Details from the director of the Centre, IoEE, 071-928 8989.

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Lighting and crime. Afternoon seminar in London organised by London and South Eastern region of the ILE. Details from F P Ramsay, 0920 870567.

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What's new in the 16th edition? Symposium in Manchester organised by the IEEIE. Details from 071-836 3357.

NOVEMBER

5

Lighting for offices. One-day course in London arranged by CIBSE. Details from 081-675 5211.

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What's new in the 16th edition? Symposium in Glasgow held by the IEEIE. Details from 071-836 3357.

CIBSE on NVQs

Greater investment in vocational subject training in secondary schools is among recommendations made by CIBSE in its response to the government White Paper on *Education and training for the 21st century*. It supported compulsory education and training for 16-18 year olds.

It also urges the government to plan its publicity carefully for the National Vocational Qualifications, to ensure that industry sees NVQs as relevant and acceptable.

CIBSE



The Chartered Institution of Building Services Engineers

The 1991/1992 Sessional Programme

What used to be known as the winter lighting season is upon us, signalling the commencement of another session's programme of lighting meetings and events.

As usual, the sessional programme is the result of many months' hard work by the Divisional Papers Committee, planning a series of lectures, visits etc designed to appeal to a wide cross-section of the membership, and their guests. The downward trend in attendance at these meetings, discerned in recent years, was strongly reversed during the 1990/91 session, due to our holding meetings in the same venue on the same day of each month. This, coupled with stimulating and informative papers, seems to have re-awakened members' interest in this important area of the Division's activities.

There is a danger for most of the professional institutions of becoming largely correspondence bodies, not participating ones. Much of the Lighting Division's vitality derives from the personal contacts that sessional events promote, bringing together the many disparate interests to be found within the discipline of lighting and providing both professional and social exchange.

Traditionally, the session opens with the chairman's address, to be given this year by Alan Wilson on 8 October, his chosen title being 'In the Light of Experience'. The period 22-24 October sees the Lightfair '91 Exhibition and Seminars at the Wembley Conference Centre, with CIBSE making a major contribution to the seminar programme each day. On 19 November the sessional meeting will constitute a paper to be given by Dr Bob Bean on his work on establishing a quality index for office lighting. Dr Bean is a long-serving member of the Lighting Division, and it will be a pleasure to have him addressing a slightly different 'congregation' from the one he is accustomed to now in his role as a Methodist minister!

The end of November brings a seminar on lighting controls, to be held at CIBSE's Building Services Engineering Centre, in London, with contributions from the major players in the design and specification of lighting control systems.

Early December sees two events of note, starting with the 1991 Waldrum Lecture 'All the Visual World is but a Stage', to be given by David Brooks and some of his colleagues from Strand Lighting. The venue is the National Museum of Photography, Film and TV in Bradford; the date 2 December. This annual lecture, a joint activity between CIBSE and the ILE, is fast becoming one of the highlights of the year, with quality speakers commanding large audiences.

A week later, we will have a chance to share in the latest wonders of '3D Imaging' with a paper given by Dr Phillips, of Loughborough University, illustrating the remarkable properties of holograms.

The new year opens with the CIBSE Young Lighters of the Year presentations on 21 January; followed by Gordon Rushden who on 18 February will be talking about BS5469, its introduction and application.

A new speaker on the CIBSE scene will be the British Sign Association, who on 17 March will present a paper on the history, design and specification of internally lit signs, a specialist area that has a marked influence on the lit appearance of our urban environment, but which is sometimes, unfortunately, largely ignored by many practising lighting engineers.

April 1992 brings the biennial National Lighting Conference, being held in Manchester from 5-8 April. This conference, which enjoys an international reputation for the high quality of its lectures, looks set once again to provide a focus for all who are interested in the propagation of good lighting practice. A record number of papers has already been submitted to the conference committee.

The Divisional lunch and AGM take place on 29 April, at Church House, Westminster; 12 May is the date for the Overseas Lecture by Dr Slob, of the Dutch government, who will be giving a paper on environmental aspects of lighting. June sees the last event in the 1991/92 session appropriately scheduled to take place at Kew Gardens, where John Weir, of the Electricity Association, will talk about 'Lighting for Plants'. This meeting will include visits to some of the hot houses and floral displays.

As can be seen from this summary, a wide and varied selection of lighting topics will be covered during the next session. Large audiences are awaited – and will be welcome. A number of events will qualify for CPD certification and, in line with Lighting Division's policy of issuing attendance certificates, these will be available at functions indicated in the Division's associated publicity.

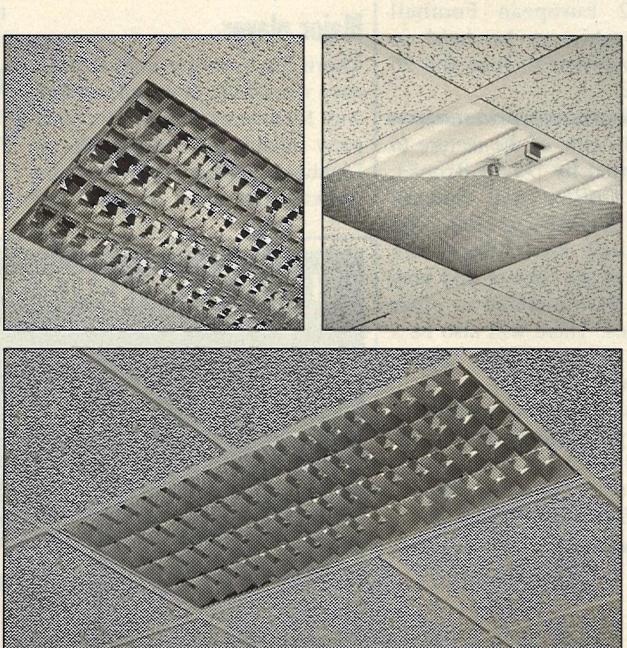
The Division's Papers Committee looks forward to welcoming readers of *LEN* to events during the coming months. CIBSE membership is not an essential requirement for attending; you are welcome to join us as a guest of a CIBSE/Lighting Division member, or just because you have a serious interest in the topics being discussed.

Iain Maclean,

Chairman, Papers Committee, Lighting Division.

Lighting Equipment News, October 1991

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Saying it in neon

Europe's first three-dimensional multi-coloured neon sculpture has been unveiled at Birmingham's

International Convention Centre.

Standing more than 20m tall above the entrance to the new

ICC, the grafted-glass sculpture depicts 82 brightly-coloured exotic birds flying round a tree.



ECA issues guidance

The Electrical Contractors Association (ECA) has registered recommendations, with the Office of Fair Trading, which are designed to assist its members in gaining fair conditions of contract and greater security of payment.

The first recommendation advises ECA members to use standard forms of subcontract which are approved under the Association's Insolvency Protection Scheme. This action supports Confederation of Associations of Specialist Engineering Contractors' campaign within the JCT for a mandatory form of domestic sub-contract and encourages the use of a balanced contract with fair conditions and adequate pay-

ment entitlements.

The second recommendation advises members to request a payment bond from a contractor where they consider that the company has a bad payment record or is considered a bad financial risk. In effect, this reverses the developing practice of clients and main contractors demanding some form of performance from the specialist engineering services contractor.

It is important for electrical contractors to protect themselves as far as possible financially, especially in the present economic climate with a high incidence of main contractor failures. The ECA feels that using standard forms of sub-contract and obtaining payment bonds will assist specialist contractors to obtain payments that are due and will provide a more balanced and equitable contracting framework.

VDU lighting seminar

Most UK office lighting for VDU operation is below the minimum European health and safety standard and there could be serious implications for employers who do not adhere to the minimum requirements laid down in the EC Council Display Screens Directive which comes into force at the end of 1992.

To discuss the health and safety legislation which will be adopted

in the UK and the progress towards an Approved Code of Practice for the workplace, LIF the EEA and Association of Optometrists, will co-sponsor a Seminar organised by SIRA Communications entitled Working with VDU equipment.

The seminar will take place on 5 November 1991 at the Scientific Societies Lecture Theatre, London W1. Further details from Diane McGraw on 081 467 2636.

Some 20 000 of these tiny fairy penguins live on Phillip Island, off Australia's Victorian coast. Thanks to amenity lighting, half a million visitors each year are able to see them as they return through the sand dunes each evening on their way to their burrows.

People's enthusiasm for this endearing sea bird creates special problems, according to staff on the nature reserve. "While the penguins have grown quite used to people - some even living

Its completion marks the culmination of more than two years' design and development.

The sculpture, conceived by Ron Haselden and commissioned by Birmingham's Public Arts Commissions Agency, was built by Sign Specialists.

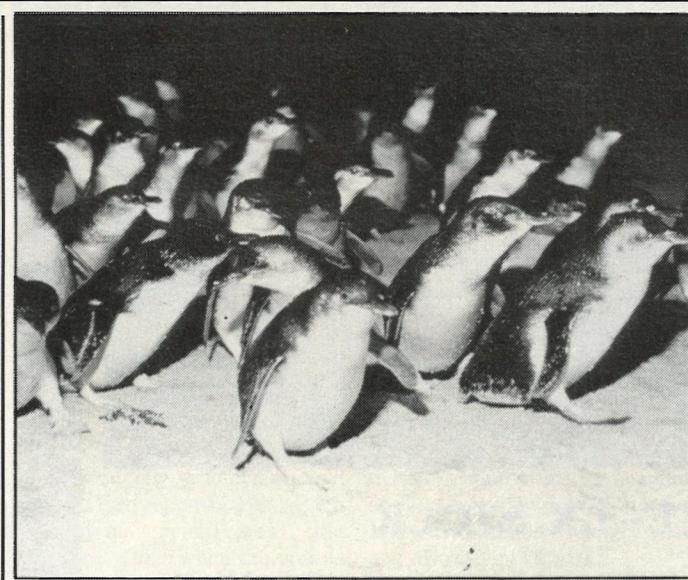
It is believed to be the first time that a three-dimensional neon sculpture has been produced and that multi-coloured neon glass has been grafted successfully in continuous lengths.

At the heart of the creation is a 21-way random electronic-circuitry microchip computer which selects the parts of the sculpture to be illuminated and controls the time sequencing. It has such a large range of parameters that it is estimated the sculpture will reproduce the same sequence of movements only once every five years.

Erecting the sculpture presented some difficulties according to Sign Specialist's Richard Tisdale: "Constructing traditional neon signs is quite straightforward because you can work from drawings. Once we moved into 3-D we had to reproduce a full-scale version of the model and then bend the neon into shape using our life-sized wire template as a basis from which to work.

Even when the sculpture was complete we had to overcome a series of installation problems because the whole thing had to be erected in such a manner that it was safe and secure while, at the same time, ensuring the steel supporting cables were invisible. Suitable access routes had to be left through the centre of the sculpture so that service engineers could gain easy access to all parts of it for routine maintenance and repair."

Installation of the 700-piece sculpture took more than 10 weeks, with teams of neon engineers mostly working at night when they could best see the neon illuminated. Its arrangement required more than 750 metres of wire and rod to create a spider's web of support inside the steel-work which forms the entrance canopy to the ICC.



Night light for Penguins

beneath nearby homes - people get very excited when, at dusk, the penguins start landing on the beaches. So we only allow 3500 people to watch them each night from special viewing platforms", commented the Phillip Island information officer.

Over 100 Thorn Ali fluorescent bollards specially modified with black reflectors to create a 'moonlight' effect have been installed on the platforms and fully withstand the tough marine environment.

COMMENT

Unsafe at any price?

A couple of incidents brought to my attention in the course of the past month give rise to some concern. It would appear that not only are unsafe lamps on the market in increasing numbers and more varied types, but otherwise reputable suppliers seem prepared to source products as cheaply as possible with little regard either for performance or - even more importantly - for safety.

In the first instance, GE Thorn found it necessary to issue a disclaimer about poor quality copies of 16W 2D lamps, manufactured in China, which are finding their way into the UK and could well be dangerous. With the current emphasis on energy-saving compact fluorescents it is especially sad that the safety of this particular light source should be brought into question.

The second occurrence was pointed out in a letter from Robin Davies, a director of Electrolite, which lack of space unfortunately precludes me printing in this issue. Addressing the problem of substandard dichroic lamps on the market, he says:

"A prime example is a retail project we have recently completed where lamps were supplied under an own branded name by a well known wholesaler. Of the forty-seven lamps supplied, within two weeks not only had a high percentage failed but, of greater concern, three lamps had exploded completely shattering crystal and glass over quite an area. Fortunately no-one was blinded."

Although the lamps in that particular chain of shops had since been replaced with reputable manufacturers' products, he went on to spell out the implications of such incidents on the use of low voltage equipment. In short, they could have no other effect than to damage the reputation of suppliers of low voltage equipment and to pose questions about the safety of a versatile and popular light source.

Unsafe electrical products pose hazards which the average consumer cannot be expected to spot. The law permits him to expect that when he purchases products of this type they will be safe for the purposes for which they are intended. So, cheap, unsafe GLS lamps are rightly condemned.

However, when we are talking of advanced light sources we are looking at products where materials are working at higher temperatures and under conditions approaching their limits. This naturally compounds the question of consumer safety. Under these circumstances, not only is the user concerned with electrical safety but the lamp may well fail catastrophically, producing considerable danger both of personal injury and of damage to property.

Of course the consumer may well be exhorted to buy reputable branded goods. But in many cases distributors may not offer him the choice. Retailers, in particular, tend to offer the purchaser one alternative for each type of light source on a 'take it or leave it' basis. And you can bet the lower cost of the unbranded product is not reflected in the price paid by the purchaser.

So, in the end, it is for the industry to put pressure on those who are offending in this way, as it is the reputation of the industry as a whole that suffers from substandard products and cowboy operators. But in order to exert pressure we need to know the extent of the problem. In this respect I am quite prepared to act as a postbox and collect a dossier to present to the safety authorities. So, if you have any properly documented horror stories along similar lines please contact me.

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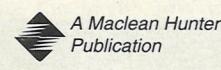
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NEW PRODUCTS

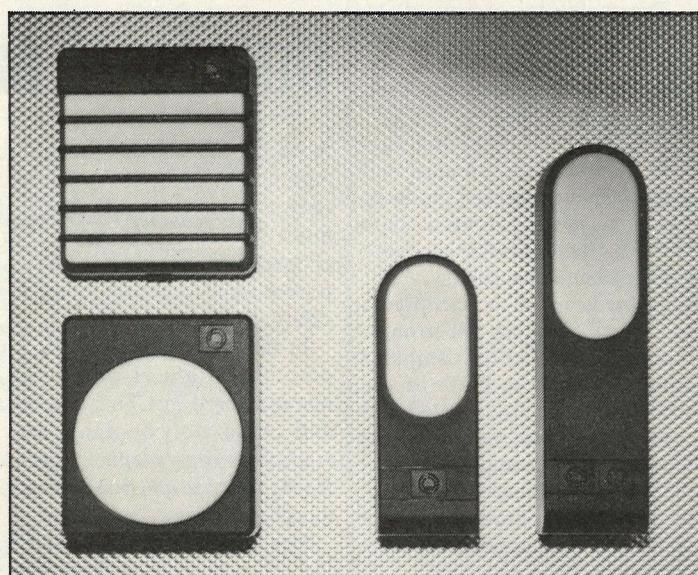
Amenity lights have plug-in options

A range of low energy, outdoor luminaires with the unusual option of plug-in switching controls has been launched by J & G Coughtrie.

Quorum range of four wall lights accepts compact fluorescent lamps and can be used either as basic fittings or upgraded to "intelligent" lighting by plugging in a selected electronic control module.

These modules offer respectively: passive infra-red movement detection within a 90° zone up to a distance of 12m; light from dusk to timed switch-off; dusk to dawn all-night illumination, or push-button control to give light for five minutes when entering or leaving the premises.

A further two dual-control modules can be selected for the largest fitting giving movement detection with manual override for continuous light, or, on-at-



dusk switching changing to movement detection at a pre-set

time. This imaginative combination offers both security and amenity advantages.

Fittings can be upgraded after installation; no tools are needed for this simple conversion. Because the modules are contained inside the fitting their security function is less obvious, therefore accidental damage and vandalism is reduced.

Quorum luminaires will continue to operate by normal switching even in the unlikely event of electronic control failure.

Furthermore, each module will operate up to 1500W of slave lighting, so floodlighting can also be controlled from a single module.

The two square fittings accept 16W 2D compact fluorescent lamps and have an electronic starting device to extend lamp life. The small linear fitting accepts a 13W PL cluster lamp and the larger version a 26W PL cluster lamp.

Reader Service No 173

Emergency budget range

Bradley Lomas Electrolok has introduced Euroglow, an emergency luminaire specifically designed to maintain high quality standards at a budget price.

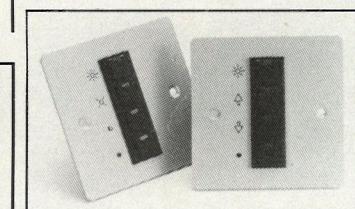
This self-contained 8W fluorescent luminaire is suitable for shops, hotels, meeting halls, leisure centres and general commercial and industrial locations. Its light weight makes it appropriate for suspended ceilings.

Mains cables from the base plate clip into the gear tray, allowing the plate to be fitted initially and gear tray and prismatic diffuser installed later.

Weatherglow, in the same range, has a diecast aluminium case with polycarbonate diffuser and is ingress protection rated IP65.

There is also an exit sign.
Reader Service No 174

Versatile wall mounted dimmer



dimmer, or by changing a switch inside, turned into a raise-and-lower preset unit. Preset light levels are easily adjusted using a screwdriver.

Applications include offices, foyers, boardrooms, shops, conference rooms and homes. It is suitable for dimming low voltage, fluorescent, tungsten and neon lighting loads.

There is the option of infra-red remote control.
Reader Service No 175

Starburst panels for nightclubs

Starburst is a versatile ceiling panel from Lynx Electronics, fitted with lamps to create stunning effects for nightclubs, restaurants and hotels.

Starburst panels are available in either a matt black powder coated finish, or polished aluminium. Each panel is fitted with clear, low voltage lamps in either a random or structured pattern. The lamps, which can be static or sequentially switched, are pro-

tected by a tough plastic lens which is available in red, yellow, green, amber or clear. As well as protecting the lamps, the lens maximises the effect by adding more depth, contrast and luminosity to the illuminated panel.

Panels have been designed to fit standard suspended ceiling grids, but can also be used effectively as wall panels. Special sizes can be produced.

Reader Service No 176

Easy fixing for lighting cables

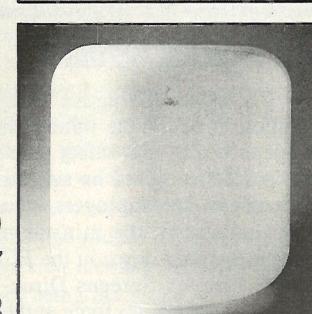
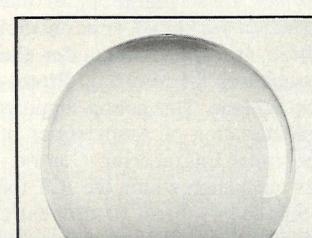
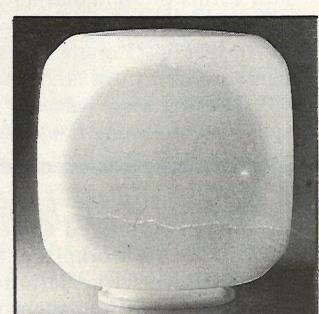
A self-adhesive support for lighting cable has been introduced by Cablefix. It is D-shaped in cross section and slit so that cable can

be easily pushed into it. There is a range of pushfit couplings to neaten corners.

Reader Service No 177

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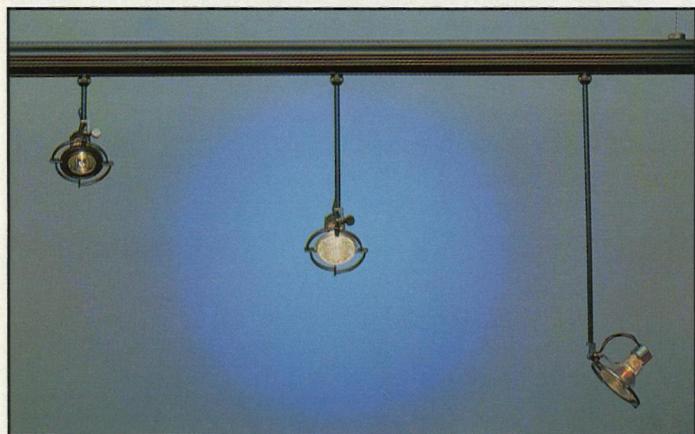
Reader Service No. 3

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Reader Service No. 4

Lighting Equipment News, October 1991

NEW PRODUCTS



LV light bar system

Option-LV is a low voltage display lighting system from ORA. It uses extruded aluminium bars that house the electronic transformers. Luminaires are screwed into the bars on mounting rods at pre-determined points.

The bars range in length from 580mm, which accepts two spotlights, to 2360mm, which carries eight spotlights. Longer lengths can be produced to order.

In addition, there is a choice of electrical capacity: bars can accept either luminaires with 20W lamps, or with lamps up to 50W.

The bars can be mounted on either rods or wire suspensions. The system is stated to be easy to assemble and install. In particular,

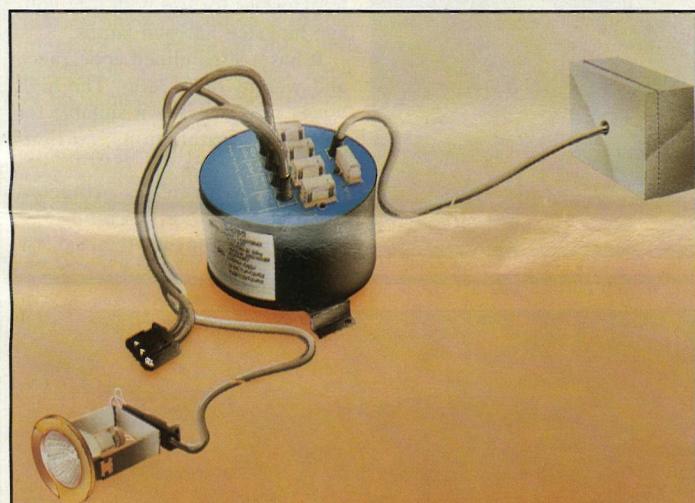
the wire suspension has a quick release mechanism that is adjustable without tools.

Transformers are self-regulating in that they eliminate current surges and ensure that lamps are run at the correct voltage. As they are housed in the light bar, there are no bulky adaptors to be seen and no remotely positioned transformer units. The light bar itself is ribbed and designed to act as a heat sink for the transformers.

Luminaires are available on pendant rods of various lengths, or on articulated arms.

Standard colours are: electric blue, white, black or satin silver, with other colours to special order.

Reader Service No. 151



Low voltage kit avoids problems with wiring

Rasmi Electronics has introduced a complete low voltage lighting system in kit form consisting of transformer, all necessary cabling, cable connectors, and up to six luminaires, together with lamps from either GE Thorn, Philips or Osram.

All connections, other than that made by the installer to the mains, are carried out with pre-fitted Mate and Lok connectors.

There is a choice of downlights (fixed or adjustable), eyeball

spotlight, or wallwasher, finished in either hard metal or powder coat paint. Colour finishes are white, black, chromium, brass, gold and black chromium.

The transformer has individually fused secondary outputs and a fused input, each protected by a transparent polycarbonate cover. In addition there is an internal thermal cut-out and switch-on surge current limiter. A flame retardant case encloses the unit.

The Mate and Lok system is stated to eliminate poor wiring connections and use of incorrect cable.

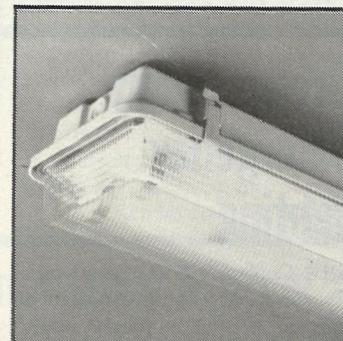
Luminaires from a different source can be used with the kit by adding a connector which is available as an accessory.

Reader Service No. 152

Luminaire is resistant to corrosion

Linolite's Weatherlite range of fluorescent luminaires is for applications requiring a tough, corrosion resistant fitting, such as subways, farms, loading bays, car washes and garage forecourts.

Weatherlite, which has ingress protection rating IP65, is also suitable for damp, steamy, or dirty environments, for example, swimming pool areas, kitchens



and laundries.

There are three lamp options, 18W, 36W and 58W, in single and twin lamp versions.

Reader Service No. 153

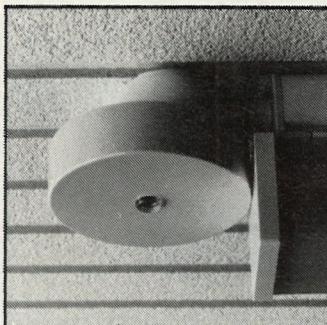
Plug-in controls for lighting

Danlers has a range of modules to control office or factory lighting. These plug-in, ceiling mounted units perform various distinct functions.

Photocell modules switch lights according to the ambient light level. With photocell reset switches, lights are switched off automatically and must be turned on again manually, if required.

Occupancy switches bring on lights only while the room is occupied. An occupancy switch with optional photocell override brings on lights only while the room is occupied and the ambient light level is low.

With a ceiling remote control, lights are switched by sending a signal to a ceiling mounted receiver from a hand held or fixed battery-operated controller.



Advantages of the system include that it can be introduced into a small area of a building as part of a pilot study. It is also easy to experiment with a proposed layout before being finally committed. The plug-in system is easy to understand. If the building layout is later rearranged, modules can be removed, added, interchanged or upgraded.

Electrical wiring is separate from electronic circuitry, simplifying procedures for quotations and allocation of contractual work. Reader Service No. 154

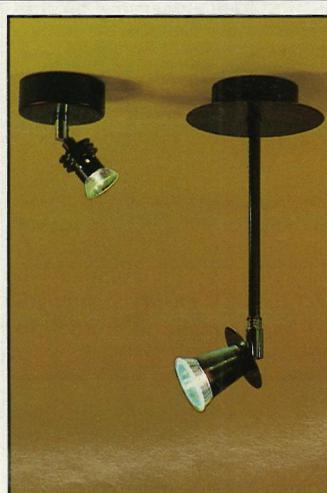
LV spotlights for shops

Fairfield Displays has introduced Highlight, a range of low voltage, retail display lighting.

There are two spotlights: H1 is a conical shape with a decorative, flat, circular back plate, while H2 has a short, cylindrical, perforated housing with three decorative rings around it. They can be rotated through 360° and pivoted through 90°. Both accept lamps up to 50W.

The wide variety of fixing options includes pendant tubes up to 1m long and an extension wall bracket. They can also be used as uplights from the window bed, incorporated into counters or showcases, or mixed with other display lighting systems.

Transformers are available with



capacities from 50W-300W.

Standard colours are black, white or silver, though special adaptations and colours can be easily produced on request, the company says, even in small quantities.

Reader Service No. 155

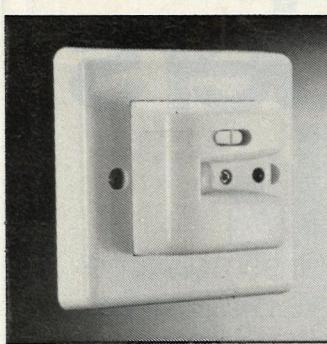
Automatic switch for fluorescent lighting

Infraswitch FL is claimed to be the first automatic lightswitch for fluorescent lighting that is interchangeable with a standard wall switch.

It is designed and made by Tasley and is easy to install to a three-wire switch system. Maximum load is 1200W; there is no minimum.

A passive infra-red device senses body heat and movement, while the additional feature of micro-phonics senses noise.

When the switch detects a person moving into a room the light is automatically switched on, and a timed sequence begins. Each movement reactivates the sequence. Only when the area is vacated and no movement has



been detected within a pre-set time, will Infraswitch FL turn off the light.

The sound detection feature only comes into operation once the infra-red control is activated and it then overrides the timer and prevents the light from being turned off.

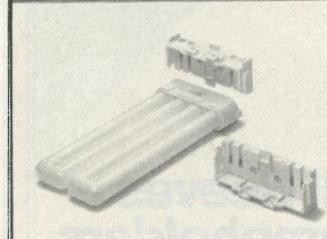
Particularly suitable for the young, infirm, or disabled, it is therefore appropriate for hospitals and elderly people's homes. Infraswitch reduces energy costs and also deters burglars.

Reader Service No. 156

Lampholder for flat compact fluorescent lamps

Vossloh-Schwabe has developed a lampholder for Osram's flat, double Dulux compact fluorescent lamp for shallow surface mounted and recessed luminaires.

A special feature of the lampholder is that it allows the lamp to be inserted laterally, which saves space in short luminaires. The



lamp can also be pushed into the lampholder in the normal way.

The lampholder, type 2G10, can be mounted in a luminaire from the front, rear or side. It weighs 25.5g.

Reader Service No. 157

LIF LINE

All change for safety

On the 2 September 1991, the Industry Committee for Emergency Lighting (ICEL) handed over the Industry Standard ICEL 1001: Part 2 : 1986 to BSI. Members will now use the BSI kitemark to show conformity with the harmonised European norm.

ICEL 1001 : Part 1 : 1986 is a product standard which was created by ICEL in lieu of an available standard for self-contained emergency lighting. It covers the construction and operation of the luminaire but not its performance.

In the latter part of 1990 a European standard EN 60598.2.22 was adopted in Europe and was published as a British Standard (BS 4533. Part 102.22). It reflected much of the content of the ICEL standard, to the credit of the standard makers in the UK, but failed to address two important issues:

- the concept of flame retardant housing (which was, and still is, a requirement of ICEL);
- the issue of photometric performance.

The need for flame retardant housing is explained by the potential hazard of failure of high-discharge batteries. This could cause a fire which would be contained within a flame retardant housing. Moreover, in the event of a fire, flame retardant housing might last longer and be safer where luminaires are spaced along an escape route.

The importance of these two factors has been recognised by ICEL, along with the need for proper maintenance and installation, and hence two new schemes are being hatched by ICEL.

From 2 September, the new ICEL mark showing the company registration number will be reserved for manufacturers that not only meet the EN but have also had their luminaires tested photometrically registered their claimed performance with the ICEL secretariat. This data so registered will then be available for scrutiny by other members and interested parties to ensure claims are within the tested performance. Inspection of conformity will take place on a regular basis by BSI inspectors.

The ICEL mark, by itself, will also indicate that the housing is made of flame retardant material. However, if the luminaire fails to meet the flame retardancy test, the ICEL mark will be accompanied by a letter D struck out diagonally meaning the luminaire only meets the 650°C glow wire test.

A second scheme being developed in co-operation with the ECA, the Home Office and BSI involved an installation and maintenance scheme designed to ensure that systems are designed, installed and maintained in compliance with the 16th edition of the wiring regulations and a spate of European Directives concerning Safety at Work.

ICEL will, in the meantime, continue to make an input into the International and European product and codes of practice standards, aiming always to improve the level of safety in the event of emergencies.

pose-made heat sink to provide cooler wiring and improved lamp life.

The Ribbed range has a simple spring fixing and comes in three finishes: white, gold or silver.

There is a standard downlight, an adjustable downlight, an eyeball, and a clear Perspex drop to add sparkle to the standard unit if desired. A safety glass accessory is also available.

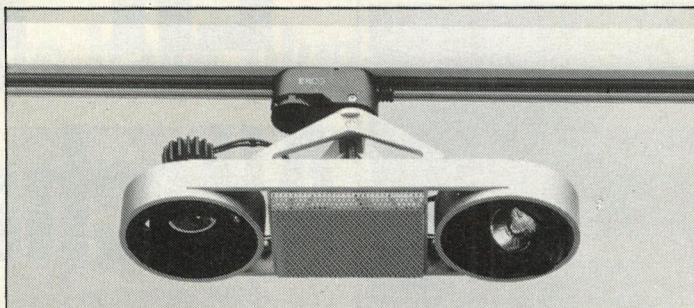
All units accept lamps up to 50W with Gx5.3 caps; the fixed unit accepts a 75W lamp due to additional internal heat sinking.

Reader Service No. 172

NEW PRODUCTS

Twice the spotlight power

Gimbal is a luminaire from Erco with two adjustable, low voltage spotlights. The support frame is permanently aligned parallel to the lighting track; to change the direction of the light beams the spherical spotlights are adjusted



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Reader Service No. 5

within the frame. They can be angled at up to 40° from the perpendicular.

An electronic transformer is positioned in a perforated tray between the spotlights.

Two sizes of Gimbal are available: a 300mm long version accepts lamps up to 35W, the 358mm long model uses lamps up to 50W.

There is a choice of three types of tungsten halogen lamp. Either a clear M32 capsule lamp can be used with a separate reflector, or a dichroic lamp, or a lamp with integral metal reflector.

Reader Service No. 158

Safety push-bar lampholder

Collingwood-VLM has a push-bar lampholder, 945CAB, that fully complies with BS4533. It is guaranteed by the company to meet the 4kV electrical strength test and is made in a BS5750 approved factory.

This B22 lampholder for table lamps has 2m of cable attached. Manufacturers should state when ordering whether 0.5mm or 0.75mm cable is required.

Reader Service No. 159

Floor light is also task light

A multi-purpose floor light from Myddleton Hall Lighting is called Meridiana Terra. It uses a 300W tungsten halogen lamp controlled by a foot-operated dimmer switch.

The shallow dish shaped reflector can be swivelled through 180° so that it becomes an uplight. In addition, it can act as a desk or task light because the two supporting stems of the luminaire can be adjusted to angles between 90° and 45° to direct light over the work. A stop prevents the luminaire from leaning over further and becoming unstable.

Standard finishes are either galvanised metal or black epoxy paint. Other colours can be provided to order.

Reader Service No. 160



Electronic transformer

W J Parry has introduced a 150VA high frequency 12V transformer for use with low voltage tungsten halogen lamps.

It has a streamlined appearance and weighs only 380g. The high power rating makes it suitable for multilamp installations, particularly 3 x 50W or 2 x 75W.

The transformer is protected against lamps short circuiting.

Reader Service No. 161



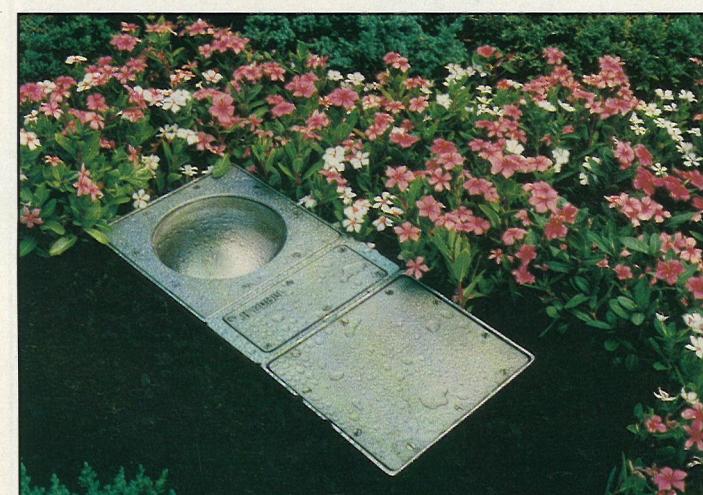
Outdoor uplights for floodlighting

Exterior uplights in the Hydrel range from Lightscape Projects are for burying in the ground and are designed to eliminate glare.

The fittings use a range of PAR56 and discharge lamps, including mercury, metal halide and high pressure sodium.

Applications envisaged are wallwashing building facades, highlighting architectural landscape features and uplighting trees and shrubbery.

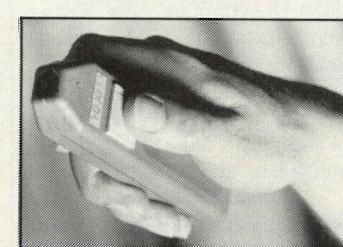
Reader Service No. 162



Remote control added to office switching system

Lightspot office lighting control system by Ex-Or has been made even more user-friendly by the introduction of a hand-held switching device which overrides the presence detection automatic control system.

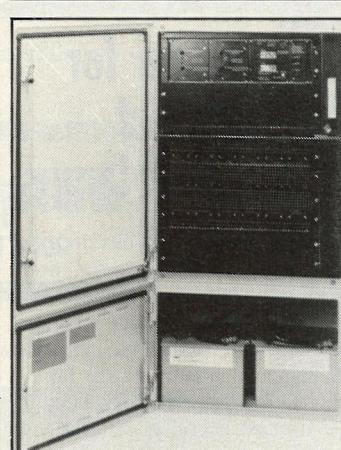
The new remote unit can be used to turn Lightspot-controlled



lights off if lower lighting levels are required, or to override built-in photocells which keep lights off in areas of bright natural light.

The system reverts to automatic detection mode without resetting after the hand-held unit has been used.

Reader Service No. 163



Group supply emergency lighting

ABB Control's GVL group supply emergency lighting system is claimed to offer increased safety levels due to decentralised installation of units, either on separate floors or in separate fire zones of a building, rather than having one central battery system.

Although each system func-

tions independently, up to 64 GVL systems can be connected to a central status monitoring system.

Maintenance costs are reduced by providing constant monitoring of battery charge, a weekly function test cycle, a programmable periodic battery test and specific fault indication in individual group supply systems.

Installation of the system causes minimum disruption to occupants and uses existing standard lighting fittings. Each system is in a sheet steel housing.

Reader Service No. 164



Reader Service No. 6

Page 6

NEW PRODUCTS



Office lighting can be fine tuned

ErgoVision from Philips Lighting is a system for multi-functional, cellular offices. It is supported by a range of design co-ordinated uplights, downlights, wallwashers and desk task lights, all available with end caps in a choice of five accent colours.

The concept is to adapt lighting to the needs of people, whatever task they are called on to perform. During the working day, an individual may be reading, writing, filing, operating a visual display terminal, attending a formal meeting or having an informal discussion with colleagues. Each of these tasks has its own lighting requirements and ErgoVision enables them to be performed with optimum efficiency.

Philips' high frequency fluorescent lighting is used with light output regulation under the control of either desk top or wall mounted, battery-operated infrared handsets.

The brightness of each element of a mixed lighting installation can be adjusted. Up to three scenes can be stored in the memory of the handset and recalled at the touch of a button for changing work patterns.

A major benefit of the system is its inherent flexibility. Lighting design is greatly simplified by the ability to "fine tune" levels of illuminance, uniformity and glare control for VDT operation.

Since the wall mounted or hand-held controllers are battery-

operated, installation costs and subsequent costs of changing office layouts are reduced due to elimination of vertical wiring.

There is a choice of three, surface mounted or recessed downlights with mirrored reflectors, complying with *Lighting Guide 3* categories I, II and III respectively and using linear lamps; surface or recessed wallwashers with linear or PLL lamps; modular downlights with PLL lamps; wall mounted uplights using PLL lamps, and suspended or free-standing up and downlights using PLL or PLC lamps in the downlight elements.

A desk task light with a PLC lamp is also included in the range. **Reader Service No. 165**

Reader Service No. 165

ceiling heights and recessing depths are limited.

Some of these units can also be used in bathrooms, the company states.

Ranging in size from 60-180mm in diameter, the ten luminaires have a variety of either clear or etched decorative glasses.

Shapes include cones and hexagons. A choice of finishes is available for the circular bezels.

Lamp options include 12V tungsten halogen capsule type and 10W 2D compact fluorescent, with alternative versions for d.c. and mains a.c. electrical supplies.

Reader Service No. 166

Sensor control has extra adjustment

Two diecast aluminium sections are connected by a mechanical friction joint giving wide adjustability. This allows the luminaire to be used as a spotlight as well as functioning as an uplight or downlight.

Lamp and control gear have been separated and each given its own housing. Both sections have a ventilation system developed by Reggiani.

Another benefit of this separation is that the lamp section can be used with a remote gearbox to produce a compact luminaire in installations where size is critical.

Polyblok retaining system is incorporated for anti-glare protection glass and accessories such as an ultra-violet filter, louvre, shield and barndoors.

Applications include ambient lighting, accent lighting in window displays and powerful highlighting of architectural features.

Reader Service No. 167

tioned for the most awkward of applications.

For fast installation it has a plug-and-socket connector.

The unit switches up to 500W of tungsten lighting and detects movement up to 15m away through an arc of 100°. Ingress protection rating is IP54.

Reader Service No. 168

Decorative lights for caravans

LightGraphix is introducing a range of enclosed, semi-recessed, low voltage lighting designed for use in yachts and caravans, where

low voltage tungsten halogen lamps with metal or dichroic reflectors. This enables lighting designers to specify the same luminaire form for a variety of tasks in the same interior.

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Applications include ambient lighting, accent lighting in window displays and powerful highlighting of architectural features.

Reader Service No. 167

Watchman 100 passive infra-red detector by Home Automation has a wall bracket which allows movement horizontally and also adjusts vertically by ratchet to enable the detector to be positioned for the most awkward of applications.

For fast installation it has a plug-and-socket connector. The unit switches up to 500W of tungsten lighting and detects movement up to 15m away through an arc of 100°. Ingress protection rating is IP54.

Reader Service No. 168

lighting.

A variety of light sources is used including single-ended metal halide, White SON, and mains or

fluorescent lamps. The range concentrates on the conversion, with extensive options, of low voltage tungsten halogen lamps and the use and conversion of 2D and PL type compact fluorescent lamps.

Reader Service No. 169

Wide choice of emergency lighting

Centric Systems has launched a range of emergency lighting called Helm. It includes a shallow luminaire with prismatic controller, that will blend with office lighting schemes, a rectangular bulkhead and emergency signs.

As well as self-contained units, there are slave versions for central battery systems. Some of the luminaires are available in mains only models.

In addition, there are conversion kits for both tungsten and

Small sensor can be masked

Steinel's passive infra-red sensor incorporates two Fresnel lenses, the main lens with a range of 12m when mounted at a height of 2m and a secondary "creep" detector.

Lens masks are included to enable individual zones of the lenses to be blanked off, so that authorised and expected usage does not activate the sensor. The light duration can be varied from 10 seconds to 15 minutes.

Weighing 230g, the IS140 is extremely compact at 88mm x 71mm x 112mm.

Reader Service No. 170



Footlight for the garden

Footlight, recently introduced by LightGraphix, is suitable for recessing into paving or walls, either for interior or exterior use. Ingress protection rating is IP65.

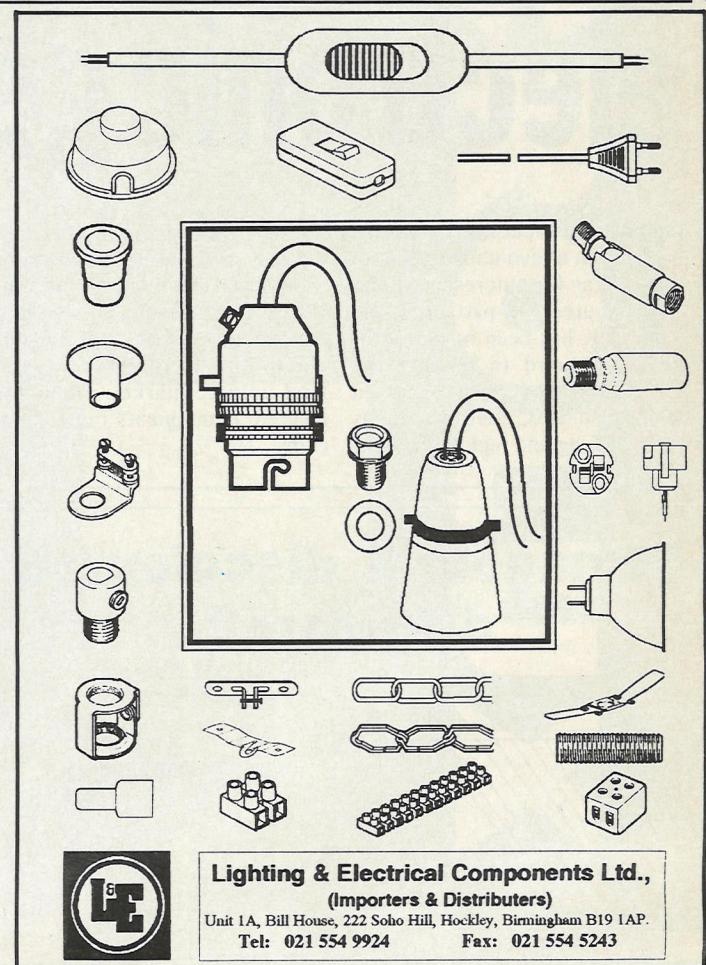
Using a 20W 12V tungsten halogen lamp, either capsule, 35mm diameter reflector, or AR48 metal reflector type, the luminaire provides decorative



amenity lighting for pathways, gardens, alcoves or shrubberies.

It has a diecast aluminium body with black finished bezel and toughened glass cover which may be either clear or diffused. A further option is a cellular louvre to reduce glare.

Reader Service No. 171



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Reader Service No. 8

Page 7

Although HID lamps do not represent a volume market in the same sense as fluorescents or metal halide lamps, nevertheless electronics is making an inroad into the market for control gear. Keith Neilson, of Philips Lighting, looks at likely developments in this field.

Trends in HID electronic gear

The last decade or so has seen a revolution in control gear for fluorescent lamp sources. In particular, the UK has been in the European vanguard in leading the growth in HF electronic gear. In many instances, control systems for switching and regulating light-

ing have been incorporated into the system. Here again, electronics have taken a high profile. But what has happened and what will happen in HID gear? After all, electronics in ignitors was the first volume market, albeit for discrete components rather than chips.

Theoretically, all HID lamps can also be controlled by electronics. Certainly the science is available. The stumbling block is converting science into technology at acceptable market prices. Put crudely, it's a price/volume issue. For while TL lamps have volumes attractive enough to interest electronic component suppliers, this is not yet as sure for HID sources in the main.

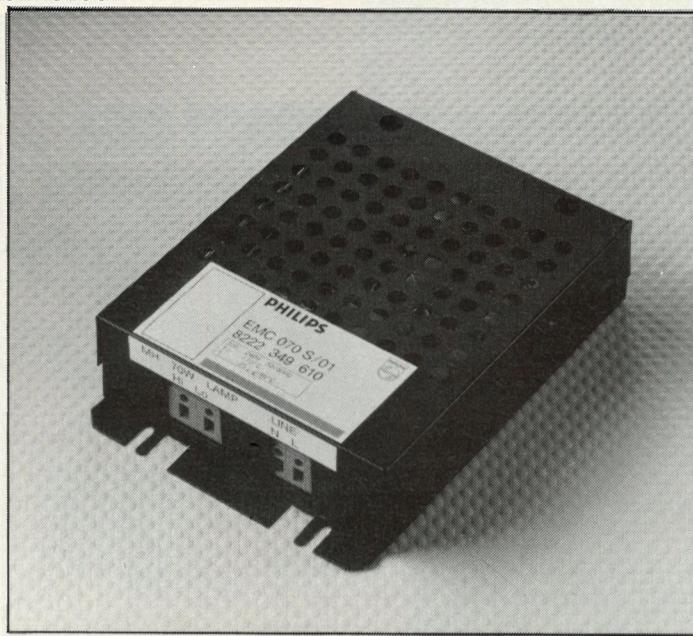
Where market prices are sufficiently high and these are coupled with predictable high market volumes, HID lamps have begun to follow the electronics path. Retail and commercial markets are the prime examples where low voltage metal halide and white SON have grown from zero to well, very large numbers.

Physical volume

It is also true to say that gear size or volume is compatible with this market need; so not only does electronic gear face a price/production volume issue, there is also the physical volume issue.

But the inevitable move into electronics does not mean that copper/iron technology has remained static. Substantial investments have been made in this area. This may be a sailing ship effect - similar to the faster clipper sail ship classes introduced to the China tea routes when steam ships became available. Steam eventually won; but 'state of the art' technology is not always the solution, whereas 'appropriate' technology usually is. In short, copper/iron will retain a substantial chunk of HID business, as, indeed, it does with TL.

In the UK the traditional major markets for HID gear are street and road lighting, amenity lighting, high and low bay and flood-lighting. However, unlike the



A 'state of the art' 70W electronic metal halide ballast.

Despite a prime cost market emphasis, 'cost of ownership' principles are making noticeable inroads into the traditional markets. That is, the owners of lighting schemes are considering total life costs, so quality, serviceability and energy costs are becoming more important.

The notorious first cost street and road lighting market is taking a lead in this aspect. At the forefront of this trend is Control Gear Systems, who produce gear trays for columns using copper/iron gear and who have always stressed quality and serviceability. Despite the financial restraints on local authorities, Control Gear Systems have moved further up-market in the quality of their components. If we compare current gear trays with models only two years old, they show more impact resistant encapsulated ballasts and more professional and expensive terminal blocks. Control Gear Systems are, in effect, advancing the case for electronics

SON electronics units at this time the benefits here are less apparent than for the metal halide market. This does not mean that products will not be test marketed or even introduced. It just suggests that the economics will not command the obvious strength of metal halide. White SON is the exception where both the necessary volumes are met and surface mounted device technology in the printed circuit board coupled to heat sinking by potting compounds has reduced the physical volume. It should be said that the printed circuit board itself is the smallest component and this alone can be incorporated into a luminaire or control box to meet dedicated design.

Improved efficacies

SOX presents a more promising case for electronics, particularly for motorway and motorway access lighting. Improved efficacies are produced by electronics so that higher lumen packages

(suitably controlled) can be generated for wider spacing or, alternatively, lower energy costs can be achieved for the same lumen package.

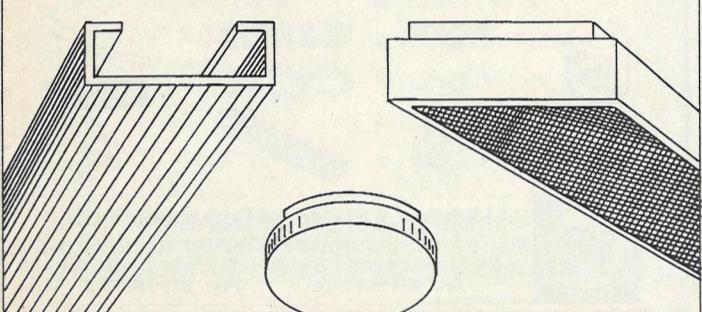
It is expected that the cost of ownership will be attractive and physical size will not be an issue. Indeed, size will be a real bonus for integral gear luminaires because not only will the electronics be lighter but the layout of the printed circuit board is capable of being dedicated to help 'streamline' design. Because of the UK economics for road and street lighting we can expect that in the volume market (35W SOX) it will not be easy to justify electronics unless benefits additional to efficacy can be expected.

Size reduction

The potential advantage of size reduction from using electronics invites one to ask what degree of size reduction is feasible and what sort of temperature regime the gear will operate under. Current luminaire designs using copper/iron gear are a result not only of lamp optics but also of gear constraints. Hence, if gear can be reduced in size the designer has a new degree of freedom, if his company can afford to invest. An early benefit should be substantial reductions in the cost of materials. This is often a considerable benefit in luminaire design. But before designers become too elated at the possibilities they should note that the temperature issue is not at present wholly resolved.

In conclusion, the future for electronics in HID lighting is clear. Size reduction and price will define the markets. At this point in time retail outlets are the most prominent. By definition this means that copper/iron gear will still have a substantial sales, primarily in the 'old' markets.

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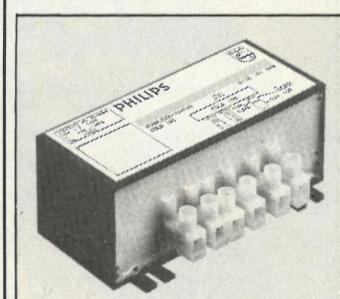
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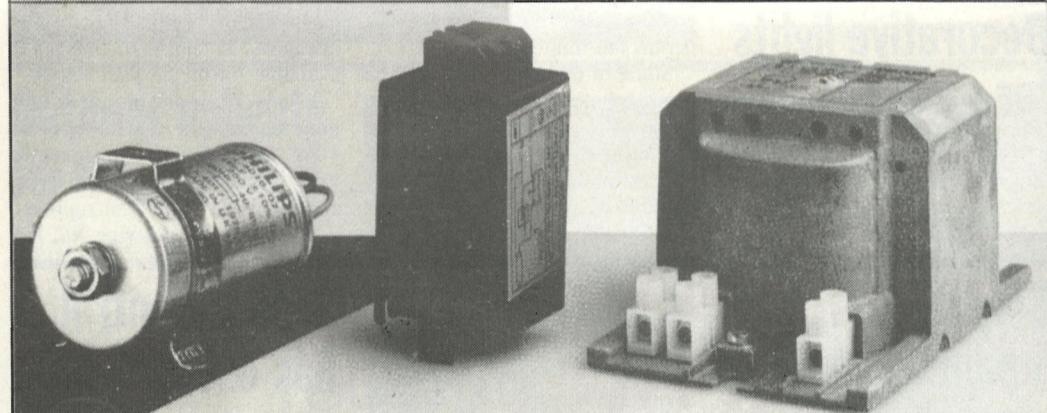
Electronic ballast for 100W white SON.

retail and commercial sector, market growth has been minor. A noticeable product exception has been 70W SON by a combination of substitution of other products and original points. A consequence of such market factors is that price driven market share strategies have ruled for many years. This tends to benefit copper/iron technology if only for the sake of cheapness, but a continued 70W SON substitution will assuredly accelerate a commercial electronics solution.

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Reader Service No. 10

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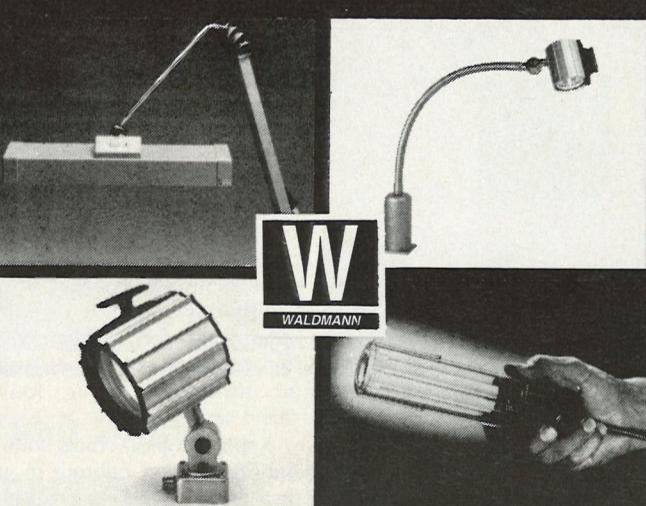
Conventional 70W SON gear: capacitor, ballast and ignitor

by following Japanese system quality principles, thus making first price a less sensitive issue and providing electronics with a more viable price level. Doubtless, this company would spearhead any market advance in electronics.

The move towards Japanese quality, along with BS5750 or EN 20 9000, and market awareness has caused some manufacturers to adopt more flexible, automated systems and practices. This is true at last for volume runs, if not variety in tapped options. As an example, changes for orthocyclic to wild winding without loss in electrical quality encourages more flexible, market-driven manufacturing regimes.

Faced with two volume issues identified above, electronics has to find market needs that can benefit from its introduction. One such area is prolonging lamp life; this is true for TL lamps and low wattage metal halide. The benefit of an increase of more than 30% in 70W metal halide lamp life is invaluable in the retail market. Lamp outages are not merely a lamp manufacturer cost but could also represent lost sales. While it is possible to manufacture 70W

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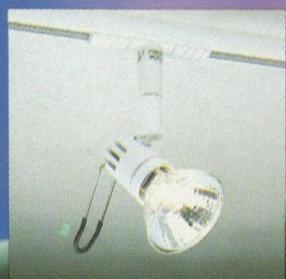
Reader Service No. 11

Lighting Equipment News, October 1991

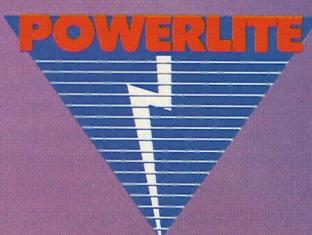
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An increasingly important role

Using an electrical wholesaler can save time and money. Stephen Rose, of WF Electrical Distributors, looks at the function of the distributor in the lighting supply chain.

The traditional view of the electrical wholesaler is far removed from the function of today's distributor who is able to offer an extremely cost-effective service, not only to end users and installers, but also to specifiers and manufacturers.

Many of the traditional functions of the distributor still form the backbone of the operation. The ability to hold stock smooths out fluctuations in both demand and supply. Local availability of this stock means that the installer or contractor can be assured of regular site deliveries and local sales counter collection points. Multi-branch electrical distributors are now able to balance stock between depots in order to maximise this important investment.

... "regular on-site representation ensures that the highest level of communication is maintained" ...

The availability of credit is a vital function and one which is often misunderstood. Standard monthly credit trading terms should allow the contractor to optimise his own cash flow if he adopts regular and firm debt collection procedures. The provision of credit is an expensive operation for the distributor, and it is vastly less expensive for the installer to take advantage of monthly credit terms than to seek additional borrowings from his bank.

Regular deliveries, on suitable transport, of the correct goods are a prime function of electrical distributors, together with their local knowledge of trade, industry and commerce.

Good communication with the distributor serves as an efficient flow of dialogue between manufacturer and distributor, from distributor to customer – and often from customer straight back to the manufacturer.

In the 1990s the professional electrical distributor is playing an increasingly important role within the manufacturer/distributor/end-customer partnership.

A key improvement in the current ability of distributors is their enhanced awareness both of the problems faced by installers and end-users and those encountered by manufacturers. This more open method of operation should serve to strengthen these links further.

Lighting equipment installation is inherently complicated. Planning, design and ordering are often left until late in the timetable of the project. The function of the professional electrical distributor is to coordinate a wide variety of requirements for equipment, and to ensure that delivery schedules are met.

But, we are not just talking about the prestige final components such as luminaires and light

sources, but also about the whole gamut of installation components such as ballasts and chokes, fixings and tools, and wiring and switching systems.

The installer should be able to rely upon his local distributor to provide a cost-effective and steady flow of these vital parts.

Several electrical distributors now operate specialist lighting design and service departments. A handful offer the facility of extensive showrooms or display facilities, designed to ease the objective choice of the correct luminaire and light source. These showroom facilities are often used by the end-customer in conjunction with his installer, the specifier (often an architect or designer) and the lighting equipment manufacturer.

On a more detailed level, the

versely, the knowledgeable distributor will actively market high technology light sources in situations where the installer and client are open to suggestion.

Time and money are saved by the function of the electrical distributor as central contract point. The distributor's stocking and administrative functions ensure that there should be only one point to chase or monitor progress, should the need arise.

This is of major significance to both installer and manufacturer.

On-site representation

Lastly, the distributor offers regular on-site representation in order to ensure that the highest level of communication is maintained.

In my opinion, the arrival of the single European market in



City trade counter, showing some of the lighting stocked.

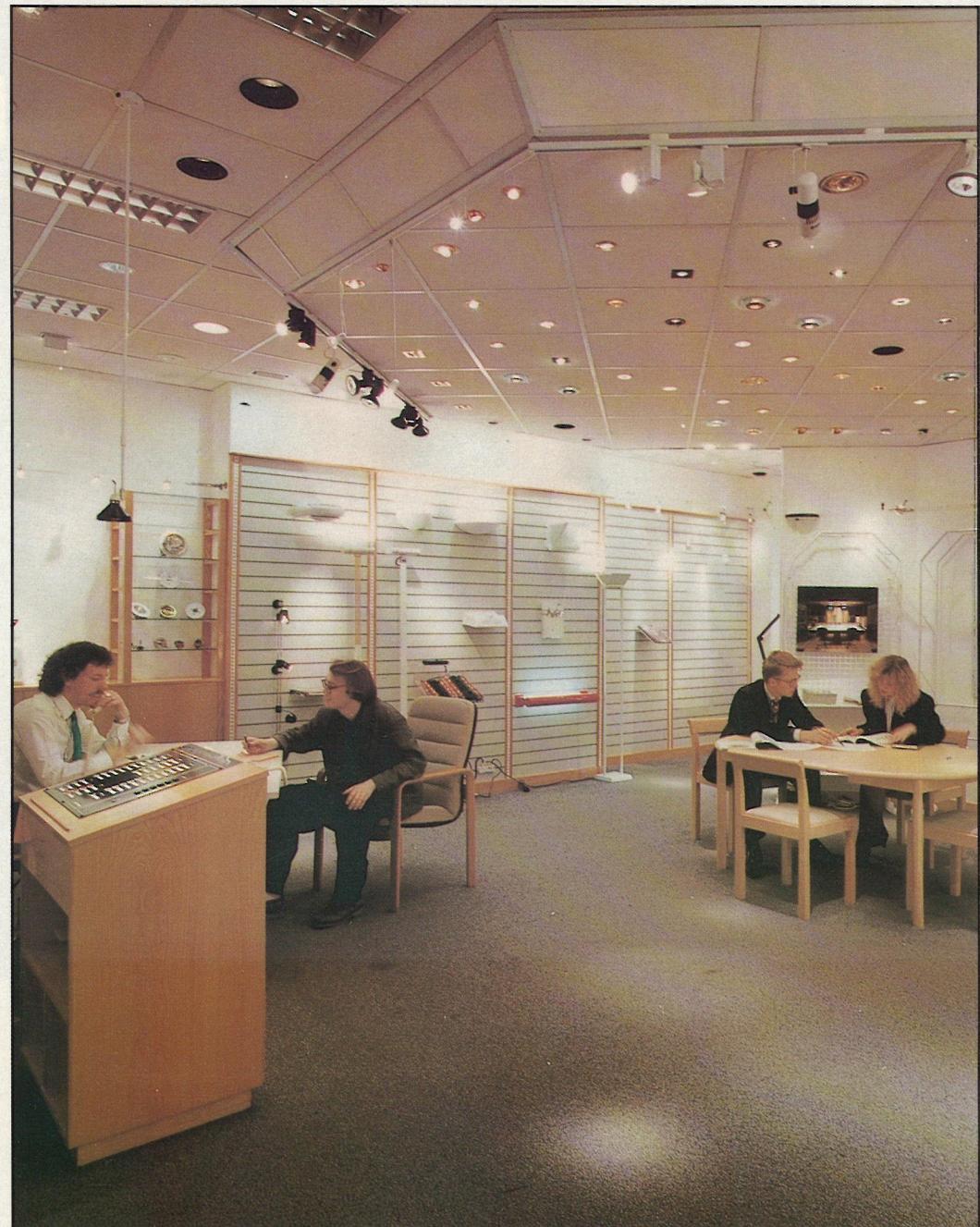
professional distributor of lighting products is able to liaise with the architect, the quantity surveyor, the installer and the client on 'just in time' schedules, both for commercial office and multi-site retail projects.

... "comprehensive stocks of all types of light sources are a prime responsibility" ...

Efficient electrical distributors are often able to offer technically knowledgeable staff who are capable of responding to a client's request for alternative equipment should the original request prove not to be available within the time period specified.

Comprehensive stocks of all types of light sources are a prime responsibility of the lighting equipment distributor. The 'hands on' operator will know that a delivery of fluorescent tubes before the luminaires are consigned is wasteful, inefficient and poor commercial practice. Con-

335 GB



1992 will not herald any sudden or breathtaking changes. One significant development may be that current pricing variations between EEC members will be balanced. The abolition of much time-consuming frontier paperwork could also encourage additional export opportunities.

The majority of continental manufacturers are already represented in Great Britain and – although we are often accused of being insular – the wide variation in technical and design standards both between other European countries, and in many cases within certain countries, reminds us of their own protectionist policies.

The future holds many exciting prospects for the electrical distributor in the UK. I believe that market-leading manufacturers will develop even closer ties with selected distributors – these being the companies who can offer a full range of complementary

Distributors may offer showrooms with display facilities.

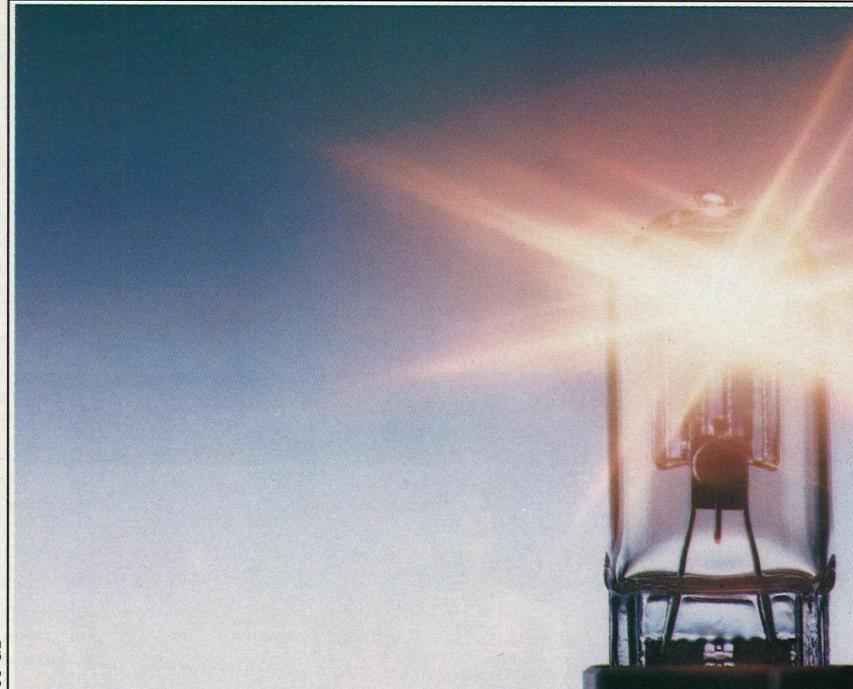
smaller non-franchised wholesalers.

Technical skills will increase and there will be a greater under-

... "the availability of credit is a vital function and is often misunderstood" ...

standing, particularly by manufacturers, that products supplied to a distributor do not represent the end of a sale but instead, a vitally important link in the route to their satisfactory final installation in a client's premises.

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Reloading a typical warehouse bay.

The trading equation

Ron Taylor of BDC's specialist Lighting Division discusses the distributor, end user, manufacturer relationship, its future, and the strains caused by the current economic climate.

The superficial answer to the question – what is the role of the distributor – is standard textbook stuff about providing the right mix of stock, in sufficient quantities, at the time and place where the customer wants it and at a price which enables him to make

money on the deal.

And, there is nothing wrong with this definition as far as it goes – the problem is that it does not go far enough these days.

Looking at it another way, if we ask what the role of the distributor **should** be rather than what it is in many cases, we are

more likely to reach the answers which point the way ahead in distribution rather than those which merely reflect what has happened in the past.

It is important to understand that the distributor is just one part of the equation which is completed by the manufacturers, con-

tractors and end users. Each is dependent on the other and each will benefit from using the strengths and services of the others.

Essential relationship

This tends to happen more when times are good and business is buoyant. Manufacturers are content to concentrate on what they do best and make things, and happy to leave the business of stockholding and delivery scheduling to the distributor, which is what he should be good at.

Meanwhile, the contractor or end user has plenty of business on his books and quite happily uses his one or two regular distributors because they will provide him with what he most needs at that time, namely a fast, assured supply of the mix of products he requires.

So everything in the garden is rosy – or so it seems.

However, change economic conditions somewhat so that

times are not quite so good – or even decidedly difficult, as is the case just now – and what happens? The sensible process of an orderly market breaks down and we have the unedifying sight of manufacturers, who, only recently assiduously courted the distributor because of the benefits of employing a specialist, suddenly going hell for leather to supply end users directly, thus cutting across the established lines of distribution.

Not unnaturally, this can lead to a wall of mistrust being established between distributor, customer and manufacturer, at a time when exactly the opposite is required in order to establish a successful long-term business relationship.

From the contractor's or end user's position a similar transformation can occur. Instead of a seemingly tried and trusted relationship with one, two or a handful of distributors, come the squeeze and you some will turn to any distributor who can offer an additional few pennies off the product. Understandable? Perhaps, but remarkably short sighted.

But for those who do not, the only effect their actions have is to weaken the distribution system. If a distributor cannot plan ahead with any degree of certainty then he is likely to cut stocks rather than hold them. If the distributor does not liaise closely with the manufacturer and keep him informed about what is going on then he, the manufacturer, will be left with excess stocks.

Or, if he too cuts back on production, what happens to the contractors or end users who have work on, or who suddenly need supplies when the economy starts to pick up?

The moral is that without a higher degree of trust between the parties involved, the entire distribution system can be upset relatively easily.

And what this means is that the distributor cannot plan adequately for the future and may not make the investment decisions necessary to provide the level of service that both manufacturers and customers will require, and should demand, in the 1990s and beyond.

This is not a plea for distributors to be given an easier time by manufacturers, contractors and end users. It is a recognition that without a process of orderly marketing within the industry, the levels of investment needed for distributors to do their job properly will not be made, to the detriment of all concerned.

Therefore, in order to build and maintain the level of trust and cooperation needed, a more formal working relationship between distributor, manufacturer, contractor and end user is required.

But, before going on to develop

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this theme, what quid pro quo should the manufacturer and end user seek from the distributor in return for this commitment to loyalty?

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... "a more formal working relationship between distributor, manufacturer, contractor and end user is required" ...

distributor to provide the right goods at the right time and place and at the right price.

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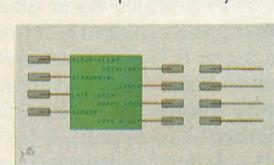
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sent working relationship referred to earlier, will be the introduction of electronic data interchange or EDI.

EDI, which my own company, BDC, is introducing early in 1992, will provide the industry with benefits which can be compared with those achieved since the introduction of electronic point of sale (EPOS) a few years ago.

Manufacturers, distributors, contractors and end users will be able to communicate electronically with each other 24 hours a day.

It will enable us to undertake sales planning and calculate manufacturing and delivery lead times much more accurately than is currently the case. Many administrative procedures will be undertaken automatically, saving time and money.

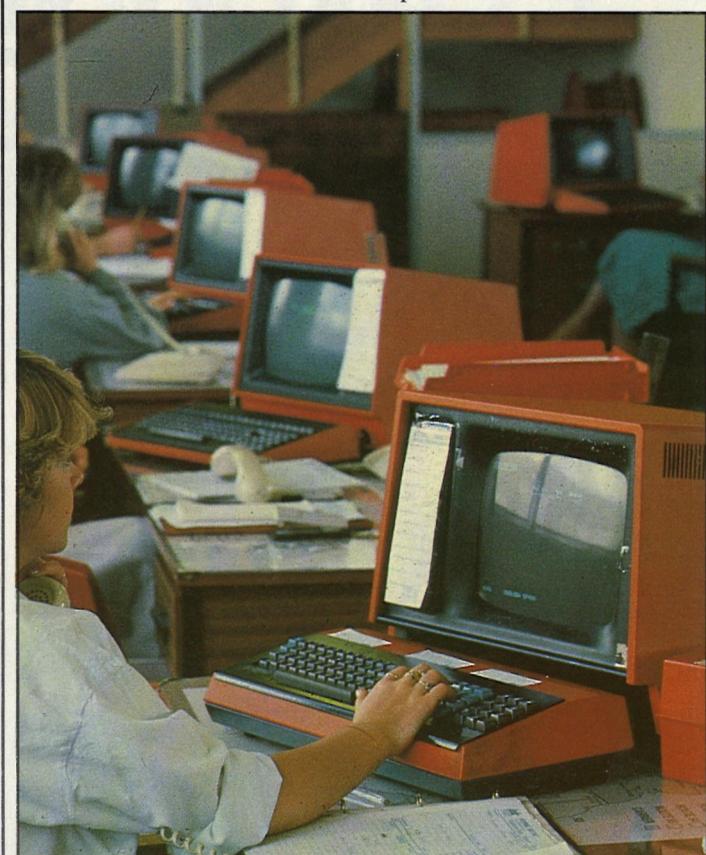
Automatic stock replenishment will come about and distribution patterns will be able to be identified and analysed more quickly and efficiently than now.

Indeed, EDI is worthy of a separate piece itself, but suffice to say that it might prove to be one of the ways in which all the relevant parties have really started to build proper working relationships, because although EDI will increase the use of electronic communication between the parties, at the end of the day it will still require the personal contact necessary to make these relationships work" ...

sent the minimum a distributor should be doing to fulfill his side of the bargain.

This is not enough, however. As time goes on, ever more modern techniques and technological innovations become available, which, if approached in the right way, can improve the levels of service provided in the industry.

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On screen soon - BDC introduces EDI in 1992.

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Victor

The wholesale scene on mainland Europe

In few countries in mainland Europe does the electrical wholesaler dominate the lighting market to the same extend as in the UK. LEN examines the differences.

From the briefest examination of the electrical wholesale market in continental Europe it is possible to discern differences that heighten the vulnerability of the British wholesaler.

Electrical wholesale are not as dominant in the European mainland lighting market as they are in the UK. Whereas an estimated 75% of lighting sales in this country go through wholesalers, in most other European countries the proportion is about 50%; in Norway it is as low as 30%. Nevertheless, lighting sales through wholesalers on the conti-

nent amount in value to an estimated £1650 million.

The differences reflect to some extent the varying structures of the wholesale trade in individual countries; but they are primarily due to the much bigger volume of direct purchases by users. This is especially the case in Germany (at least in the former West German territories) where, although only 50% of lighting sales are through wholesalers, the value of these sales is higher than the 75% of sales going through wholesalers in the UK.

Obtaining what might be called an overall view of the European

wholesale trade is not easy. I sympathise with the American journalist who recently wrote 'trying to get a fix on the European electrical wholesaling industry is about as easy as getting a good firm grasp on a wet water melon seed'.

Figures

Let's start with some statistics prepared by the European Union of Electrical Wholesalers. This represents 14 national electrical wholesale trade associations, including Britain's Electrical Wholesalers Federation. The EWF's 93 member firms, how-

ever, do not account for such a high proportion of the total national business as do the members of the other associations within their own countries. Total electrical wholesale trade in the UK is worth an estimated £2226 million, of which only £1011 million is accounted for by EWF members.

In France the 290 members of the Fédération Nationale des Syndicats de Grossistes Distributeurs en Matériel Électrique et Électronique (FGMEE) were responsible for sales worth £2787 million and the 246 members of the Bundesverband des Elektro-Großhandels (VEG) for £3041 million worth of sales. Total sales by the 1334 continental wholesalers affiliated to the EUEW (ie excluding EWF members) amount in value to £11240 million.

Because of the dominance of the French wholesale market by two groups, Sonepar and CDME, it may seem surprising that of all the European trade associations the French one is the largest. The reason is that the many companies that belong to these two groups have a high degree of autonomy. They are allowed to

operate as individual companies but benefit from centralised purchasing power.

This centralisation has benefited them in other ways – such as where Sonepar, for instance, has supported the setting up of lighting centres by its member companies. In Lyon MAT Electrique is an exhibition centre where manufacturers are able to exhibit samples of their products (including lighting) and make staff available to advise customers on them. There is no pressure on visitors to purchase and no obligation for them to buy – but there is a Sonepar company with a trade counter across the road from the centre.

Market leaders

Between them, Sonepar and CDME have control of just over 50% of the French electrical wholesale market. Two other groups worth mentioning are CGE-D which has 10% of the market and Groupelec, 10%. Reference should also be made to the foothold gained in the French

wholesale trade by one of the UK's largest electrical wholesalers, City Electrical Factors (CEF). This is not, incidentally, a member of the EWF and it has interests in France as well as in Germany, Italy and the Netherlands.

A feature of Sonepar and CDME is that they are also both international companies. Sonepar has interests in Canada, Germany, Spain and the Netherlands. CDME is involved in the USA, Germany and Britain, and earlier this year bought STC Distributors, now known as Senate Electrical Wholesalers.

And could Sonepar by any chance have known what was going to happen in the USSR, having set up an office in Moscow well over a year ago? The group management must really be feeling over the moon with the business potential in a new free market, now even stronger than before.

In Germany only 50% of light fittings are sold via wholesalers. This is due to the huge amount of direct user purchases. This might partly result from the involvement of Siemens in wholesaling and contracting, as many of the companies involved in these activities are owned or controlled by the electrical giant. And Siemens is, itself, Germany's biggest lighting manufacturer.

Germany has marginally fewer wholesaling companies than France and only half the number of outlets. Two French owned international groups, Sonepar and CDME, also operate in Germany, and there are four or five loosely grouped consortia.

Low profit levels

In comparison with other EC countries the German electrical wholesale trade is one of Europe's least profitable. Could this be because they have the highest rate of employment per outlet in Europe? German electrical wholesalers employ more people than those in any other European countries, giving an average of 39 per outlet compared with an average figure for Europe as a whole of 22, and 18 for the UK. However, one might expect the quality of German staff to be above the average.

While the French wholesalers generally claim to operate on higher margins than others – their gross profits are higher – the highest net profits are found in Holland. The market there is dominated by the Otra Group, of which 58% is owned by Sonepar. Otra is a formidable international operation in its own right, embracing nine Dutch companies, 21 German firms and a

clutch of UK companies, previously owned by the Hawthorn Leslie Group.

Largest of the Dutch companies in Otra is Technische Unie which controls between 25% and 30% of the Dutch market. Like other Dutch electrical wholesalers – but unlike the British – Technische Unie handles plumbing, heating and air conditioning, and domestic appliances as well as electrical installation materials and equipment. Indeed, electrical goods take up no more than 25% of the warehouse space, while accounting for 55% of the sales inventory.

A 24-hour delivery to customers anywhere in the Netherlands is offered. This is met by a highly mechanised and well organised central warehouse covering 507 500 sq. m. The company has some 1000 of its 15 000 customers linked to an EDI system.

CEF is not the only UK wholesaler to be in Holland; Edmundson Electrical also has interests in that country.

Italy has more electrical wholesalers than Germany but only nearly half as many outlets. There are no major multi-branch companies there, although Sonepar has a token representation. Yet, 60% of lighting business in Italy goes through the wholesalers, second in Europe only to the UK. Annual sales of all product types amount in value to about £1422 million.

Spain has as many electrical wholesalers as France, fewer outlets. Annual sales are in the region of £1000 million against France's £2676 million. Thus, sales per outlet are about the same.

Sales per outlet

Switzerland has the highest value of sales per outlet with Denmark coming a close second (£6.7 million and £6.2 million, respectively). Germany is third with £5.5 million and Italy fourth with £4.3 million.

In the Scandinavia countries, the wholesale market is shared between a few players in each country. Seventy per cent of the Swedish market, for instance, is in the hands of four companies – ABB ASEA Skandia, SELGA, Skoogs Elektriska and Ahlsell EL. In Finland, three companies – ABB ASEA Skandia, Slo and Suomen Sähkötukku – hold 50% of the market.

For British lighting companies already operating in continental Europe through subsidiaries and associated companies this wholesale scene will be familiar, and they will indeed know more than is contained in this brief article. But what this brief and incomplete review needs to make clear is two points:

There are some very formidable wholesale groups in operation that are already international and are likely to continue to spread their network to become even more global.

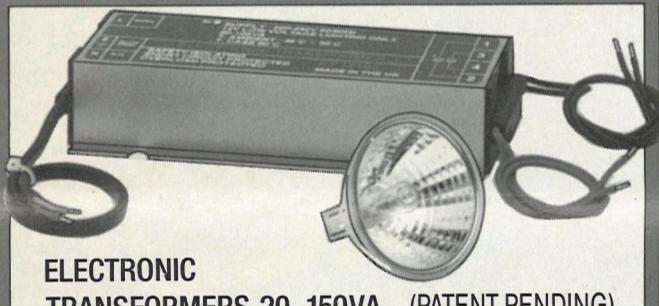
Nevertheless, it is still a very fragmented market, but only those companies that are most efficient and cost effective are likely to survive.

As a consequence there is a possibility of more takeovers occurring across national boundaries and perhaps, after 1992, greater competition in the UK from wholesalers driven from the continent.

How this would affect the lighting market is difficult to predict. Presumably in the UK the practice of most lighting being sold through wholesalers will continue. What is an interesting topic for speculation is whether this practice will ever become more widespread in mainland Europe.

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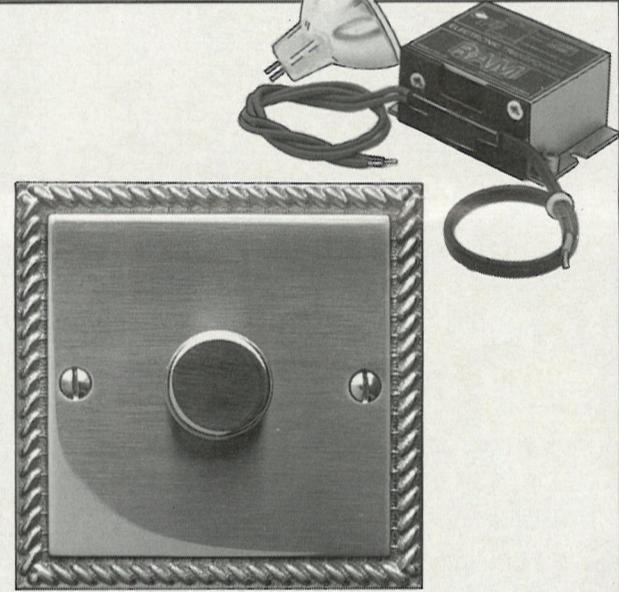
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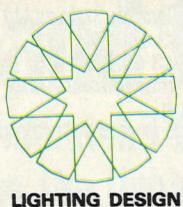
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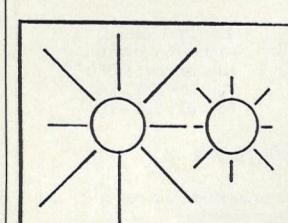
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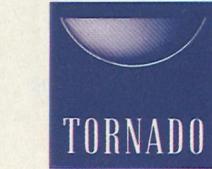
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Application forms are available from Team 1, Department of Personnel Services, Fife House, North Street, Glenrothes KY7 5LT, or by telephoning (0592) 763576/3822 after 5.00 p.m. (Answerphone), to whom completed forms should be returned not later than MONDAY 21st OCTOBER, 1991 Reference No. EQT/28/LEN.

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Please send your full C.V. to:
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Fax No: 0908 617205**

All replies will be acknowledged and treated in the strictest confidence.

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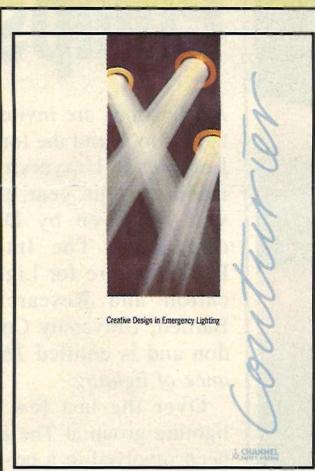
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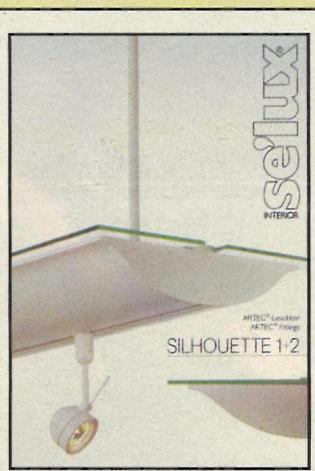
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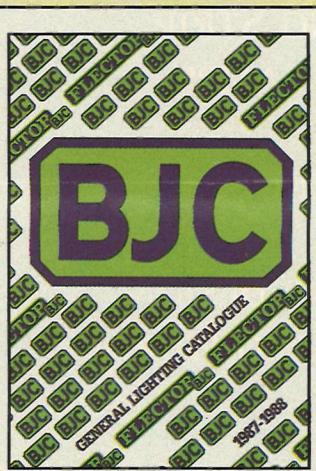
Poole Lighting announces a new catalogue incorporating the most popular products within their range and those from Quest Emess Limited whose business has been consolidated into their own. In a further change, they have entered into an agreement with CSM Lighting Limited to manage the sales and marketing of this enlarged range of popular products:
circle 90



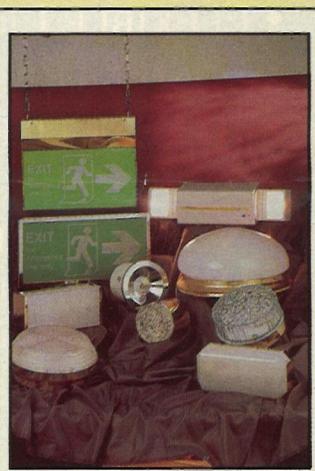
Channel Safety Systems Ltd announce the launch of 'Couturier', a new concept in emergency lighting for the nineties. An innovative range of emergency luminaires designed to present an opportunity to break away from the stolid conventions of the past and apply refreshing creativity to this sector of the market:
circle 91



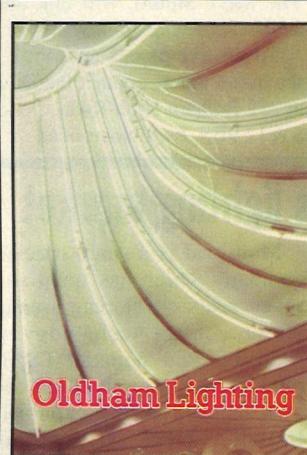
The Artec Lighting System from Se'lux. Subtle combinations of direct and indirect light, arranged in elegant housings designed for contemporary interiors. Artec produces diffused ambient lighting, while the integral 3-circuit tracks allow the attachment of spots for specific display or workplace lighting. Double parabolic louvres make the system ideal for lighting rooms with computer screens:
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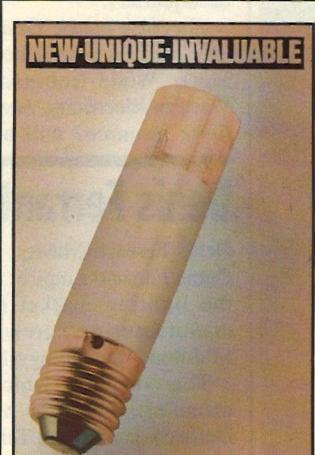
Acorn Lighting are pleased to announce that the BJC product range has been added to their portfolio of products. BJC offer a range that includes street & amenity lighting, industrial lighting, floodlighting & lighting for security. The whole product range is manufactured to the highest quality standards:
circle 93



Catalogue Update
Introduced by JSB Electrical is a range of prestige luminaires which includes the new Carina with crystal glass and a brass body. It is available as an emergency luminaire in maintained, non-maintained and slave options with a matching mains version. All are available with a choice of surface or semi-recessed mounting:
circle 94



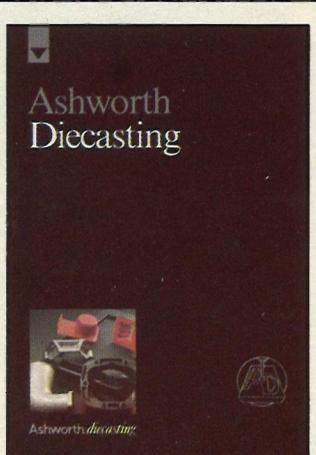
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Oldham Lighting manufacture and install both 20mm cold cathode and 26mm Hi-Slim, long-life, high output, low voltage fluorescent tubing. Any shape can be provided for special lighting effects in cornices, behind pelmets etc, giving the designer complete freedom in the creation of lighting features not possible with standard light sources:
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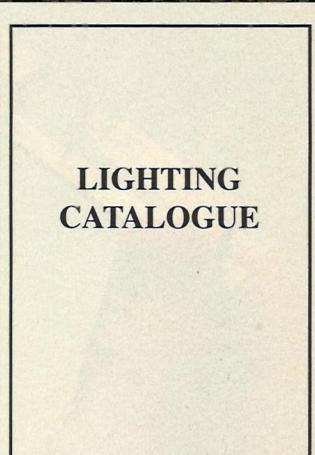
From RADA, the amazing Discharge Lamp Gear Tester. Just screw in to locate faults in seconds. The P.O.C. (Pulse and Open Circuit) Tester saves time, worry and money on maintenance and testing of discharge lamp gear. Robust, compact, perfect for continuous on-site use from leisure to industry:
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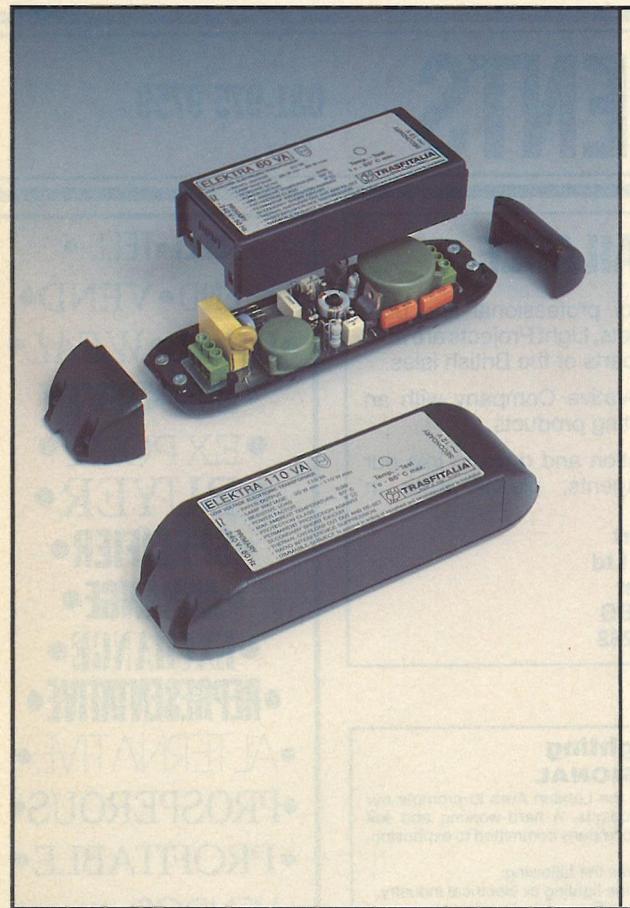
The launch of Kotzolt Lighting (UK) Limited in the UK coincides with the release of its comprehensive price list. Aimed at all specifiers and users, the 92-page full-colour brochure, has been designed to provide a useful and detailed buyers' guide to Kotzolt's extensive range of Tube Systems, Modular, Display and Sports lighting luminaires:
circle 97



Ashworth Diecasting has a history stretching back to the turn of the century. Their new brochure illustrates how an aluminium diecasting company has integrated high technology equipment and quality control systems, with the skills gained over a century. They work for leading names in the defence, automotive, consumer durable and lighting industries:
circle 98

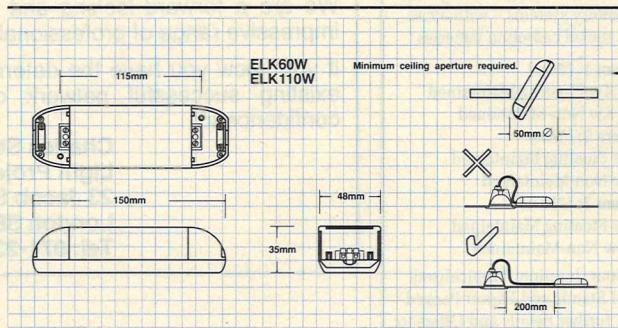


CATALOGUE DIRECTORY
Every year companies spend huge amounts of time developing catalogues and one of the biggest problems they face is publicising and distributing them to specifiers. If you have a catalogue, printed or in production which is targeted at lighting specifiers then this section can help you. Contact: Alastair Moys on 081-975 9759:
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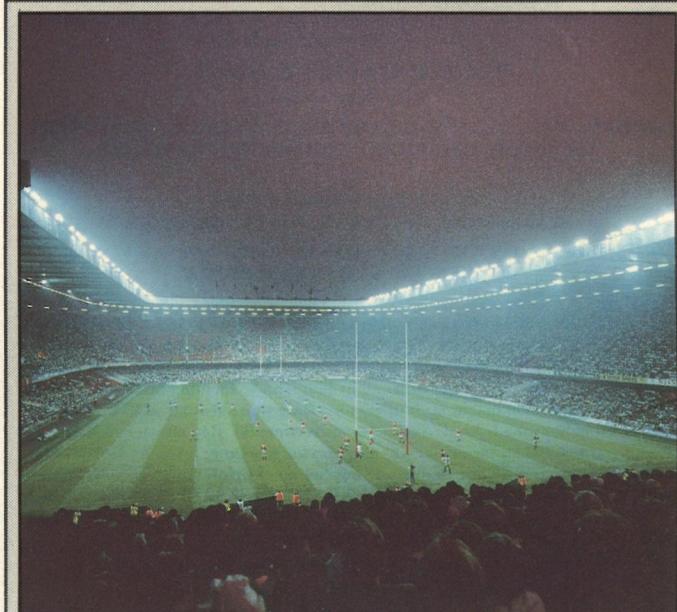
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Reader Service No. 18
Page 20

LIGHTING EQUIPMENT NEWS



Two hundred and ten, 2kW Metaline floods turned night into day when Wales played France at Cardiff Arms Park in the first ever Rugby International to have been played in the UK under floodlights.

Sadly the lighting, designed by Thorn to achieve over 2000 lux, didn't help the host nation see their way to victory, but it did make for good colour TV broadcasting so thousands were able to watch the match from the comfort of their homes. The new lighting means that Cardiff is the only national ground able to host televised evening matches during the forthcoming World Cup Series. The high lighting levels also make the Welsh Rugby Union's national ground one of the best lit sports grounds in the UK. Lighting design was by Thorn's Cardiff Office and installation was by Celtic Contracting.

Philips Lecture

Applications are invited for invitations to attend the fourth Philips Lecture at University College London. This year, the lecture will be given by David Loe, director of The International Philips Centre for Lighting Education and Research at The Bartlett, University College London and is entitled *The appearance of lighting*.

Over the last few years the lighting group at The Bartlett has been involved in a programme of research concerned with the appearance of lighting and how

this relates to physical measurements. The lecture will describe these studies and will examine the results in terms of lighting design and its relationship to people and architecture. The work is to be extended to consider the lighting of objects in addition to the lighting of spaces and this theme will also be explored.

Applications should be made in writing to Eve Anderson, The Bartlett, University College London, Wates House, 22 Gordon Street, London WC1H 0QB.

Lighting in the green age

An afternoon seminar called *Green highlights* has been arranged by the National Illumination Committee of Great Britain. It will be held on 20 November at CIBSE London headquarters.

The first paper, *Good lighting - less energy*, will be given by Mark Wood-Robinson, South Western Electricity. *Materials - a finite resource?* will be the sub-

ject of Brock Hoaran, Thorn, followed by Nigel Pollard of Westminster City Council speaking on *Light Pollution - a wasted resource*.

Finally, Deidre Janson-Smith, The MET Studio, will talk about *Light and living things*.

To reserve places and book for the buffet lunch, contact Ian Davies at 222 Balham High Road, London SW12 9BS, by 8 November.

Denis Ferranti enters lighting market

Denis Ferranti Meters, part of the Denis Ferranti empire, is entering the lighting market through a manufacturing agreement with Multiload Technology Ltd.

The company, which already manufactures for the Ministry of Defence and British Telecom, has been searching for a compatible partner to assist its entry into the lighting industry for some time.

Multiload is a small specialist company which has spent some seven years developing a unique phase control technology for lighting, and demand for the product now exceeds Multiload's own manufacturing capability. Initially, DFN will produce a range of intelligent lighting control products developed by Multiload.

IN YOUR NEXT ISSUE

The quality of the nighttime environment, particularly in our towns and cities, has improved immeasurably in recent years, largely due to imaginative floodlighting and amenity lighting schemes.

Even street lighting is rapidly becoming a major political issue with the growing concern about urban crime. So a review of outdoor lighting in all its forms is the major theme of November's *LEN*.

Lighting Equipment News, October 1991

SHOP

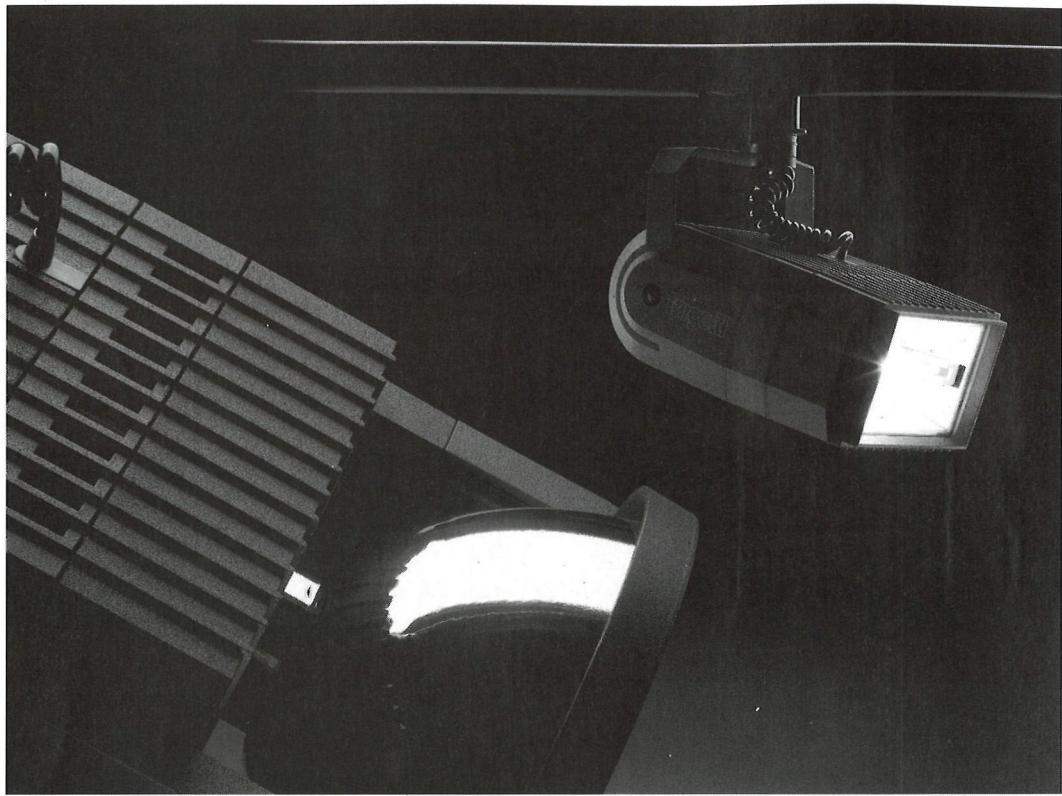
Lighting

SUPPLEMENT TO LIGHTING EQUIPMENT NEWS

OCTOBER 1991



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HQI-T 150W



HQI-T 70W



HQI-TS 70W



HQI-TS 150W

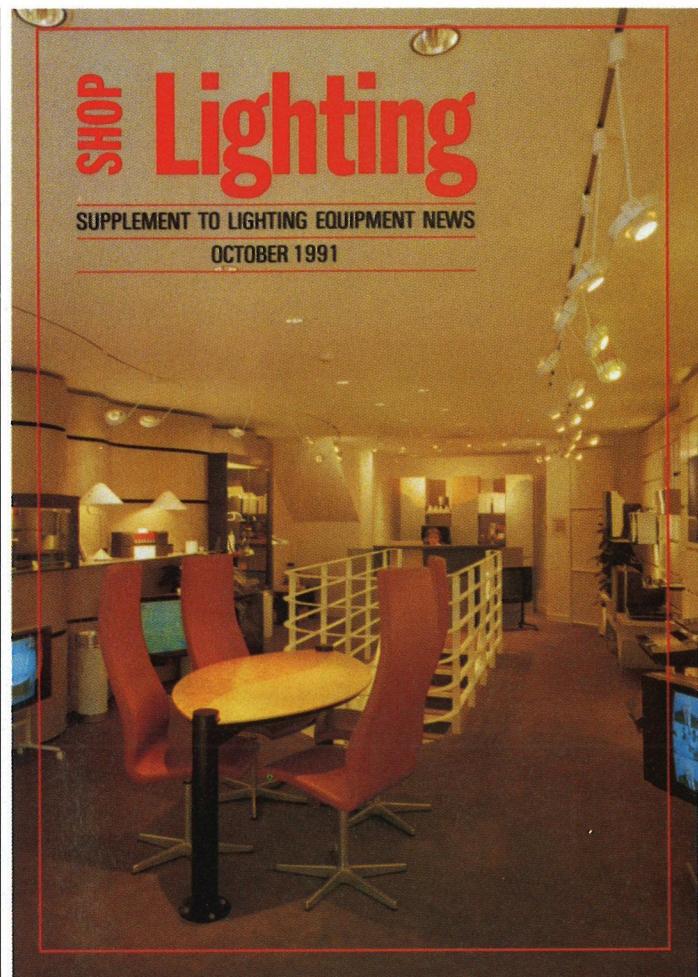
Targetti, the creator of the internationally renowned Structura spaceframe has adopted for this particular system a new luminaire known as RAY. RAY, a complete and versatile range of luminaires from Targetti, applies the most recent developments in discharge lamp technology, offering the lighting designer a wide variety of beam spreads, lighting intensity and colour temperatures. Solid diecast aluminium housing and glare-free high vacuum metalised reflectors characterise RAY. A disconnect system at the end of lamp life, low operational temperatures and a very high degree of protection (IP41 and 1P54) are only some of the advanced technical solutions which have allowed RAY to meet all European Safety Standards. Ray provides ideal lighting for public spaces, commercial areas, stores, offices and museums. RAY fittings can be surface mounted, adapted to track or to Targetti's Structura system.

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Reader Service No. 301



The front cover of this supplement features Bang and Olufson's central London showroom. In this installation the visual impact of the luminaires was as important as their lighting technology. White Discus spotlights from Staff Lighting enhance the crisp colour scheme, while the track curves, echoing the form of the showroom walls. For more information, please see page 8.

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Lighting is one of the most useful marketing tools available to the retailer. The large multiple retailers are well aware of this; lighting levels two to three times those encountered in the average office are commonplace. The retail sector has been to the forefront in using new high-technology lamps and luminaires.

If lighting is such an important marketing tool to the large multiple retailers, the same benefits can be reaped from effective lighting in smaller shops. There is considerable scope here for lighting designers and electrical contractors.

Apart from its purely functional role of enabling people to see the merchandise, the role of retail lighting is, first, to attract customers' attention and draw them into the premises. Once inside, it must show off the merchandise to best effect. This may sound obvious, but how many florists' shops have lighting which really brings out the correct hues of the flowers?

At the same time the lighting has to create the right ambience, appropriate to both the merchandise and the clientele (a shop selling beachwear will have different requirements from a jeweller's shop, and an exclusive men's tailor will have very different requirements from a do-it-yourself store).

Colour rendering is a major consideration in the retail sector, pointing to the use of modern light sources with a high colour rendering index.

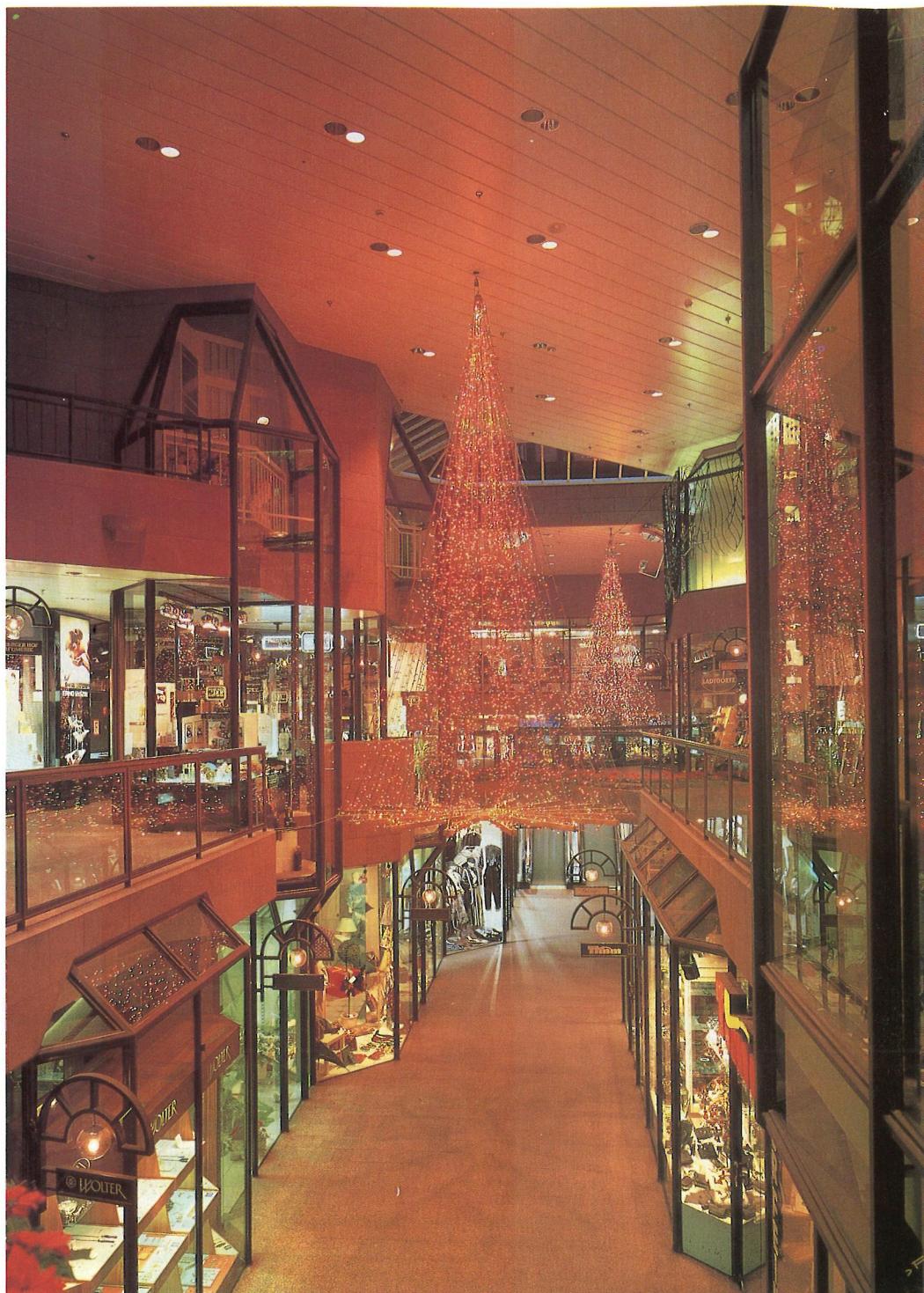
Economics also has an important part to play, and it is here that the large multiple retailers have shown their acumen in the use of new lighting techniques. Installation costs can represent as little as 10% of the total operating cost of lighting; and with the high levels of lighting employed in large stores, any savings in energy and maintenance costs can be considerable.

LAMPS

Three modern light sources are of major significance to the retail lighting sector:

- metal halide;
- compact fluorescent;
- low voltage tungsten halogen.

The essential features which make these the natural choice are their excellent colour rendering



Low voltage tungsten halogen and metal halide lamps are ideal for shopping precincts.

Lighting for sale

SMALLER SHOPS CAN LEARN FROM THE MULTIPLES — THEY KNOW HOW IMPORTANT LIGHTING IS IN DRAWING CUSTOMERS INTO THEIR PREMISES.
IAN CERFONTYNE OF SIEMENS AND GRAHAM SKELDON OF OSRAM SHOW HOW.

and high energy efficiency.

Conventional double-ended tubular fluorescent lamps — albeit in their latest T8 and triphosphor forms — also have a role. Other lamps such as high pressure

sodium and mains voltage tungsten halogen may have certain specialist applications, but the above lamps satisfy the vast majority of modern retail lighting requirements.

Fluorescent lighting

The modern triphosphor lamp should always be the preferred choice over halophosphate lamps for retail lighting because of its good colour rendering. A colour

LAMPS AND LUMINAIRES



Fluorescent lamps are ideally suited for the display of meats and other foodstuffs as can be seen in this Gateway supermarket.



Compact metal-halide lamps produce a distinct beam with high luminous efficacy and excellent colour rendering which is ideal for this men's clothing department.

rendering index of 85 is far superior to the 50-55 which is typical of normal halophosphate lamps.

Coupled with this is the higher luminous efficacy. As a general guideline the efficacy of the T7 (26mm diameter) triphosphor lamp is about 20% higher than that of the equivalent T8 halophosphate lamp and 30% higher than that of the older T12 (on 38mm diameter).

For existing installations, replacement of the T12 lamps by T7 types will effect a reduction in the consumption of electricity while maintaining luminous

output because the lamps have a lower rating for the same tube length. A switch from halophosphate to triphosphor types results in a useful increase in lighting levels because tube ratings are the same.

In new installations, the improved luminous efficacy of triphosphor T8 lamps compared with halophosphate and/or T12 types means that fewer luminaires can be used.

Where modern compact fluorescent lamps are used, including the longer versions which are now available up to 55W, there will be no question of

choosing between halophosphate or triphosphor as these lamps all use triphosphor technology.

One of the main advantages of fluorescents, apart from their relatively high luminous efficacy and low unit cost, is the vast range of colours which is available. The main choice is between the three basic colours, Cool White, White and Warm White, but special colours such as Natura de Luxe are available which emphasise reds and, for instance, enhance the texture of meat in a butcher's shop.

Fluorescent lighting is still the main choice for ambient lighting. It is also suited to concealed

lighting (in display cabinets for instance,) and for some forms of spotlighting where the accurate beam control of 1V tungsten halogen is not required.

One of the earliest applications for compact fluorescent lamps was as energy-efficient substitutes for GLS filament lamps — offering an 80% reduction in energy use and up to eight times the lamp life. This is still a major application.

An interesting development is the advent of compact fluorescent reflector lamps designed to replace the old PAR 38 reflector lamps. These are available in 11W, 15W and 20W ratings to replace 60W, 75W and 100W PAR 38 lamps respectively.

Metal halide

Of the high intensity discharge sources, the metal halide lamp is the main choice for retail lighting although high pressure sodium may be used for canopy lighting and external areas. Like the triphosphor fluorescent lamp, its key features are excellent colour rendering and high luminous efficacy.

Originally developed in ratings from 250W to 3500W, its use in interior lighting was severely restricted, but the range of ratings has been coming down progressively. Double-ended lamps are now available in the 70-250W range and single-ended lamps in 35W, 70W and 150W versions. Consequently, an increasing range of narrow, medium and wide beam luminaires is becoming available to take advantage of these newer lamp types for display lighting.

The astute use of phosphors and rare earth additives has made it possible to offer a choice of colour temperatures (including a Warm De Luxe lamp with a 3000K temperature, similar to incandescent lighting) while maintaining a high colour rendering index and luminous efficacy.

Metal halide lamps have limited applications in general ambient lighting but come into their own where a spot or floodlight with a high lumen package is required. Applications include window lighting, which must compete with natural daylight, and accent and display lighting.

Metal halide is especially popular with boutiques and clothes shops because it offers a compact, high intensity source



Low voltage dichroic lamps bring a sparkle to watches, rings or other items of jewellery.

which is ten times as efficient as the equivalent tungsten filament lamp and offers excellent colour rendering. For spot lighting, the single-ended metal halide lamps offer excellent beam control.

Low voltage lighting

Low voltage tungsten halogen lighting has had a major impact on retail lighting over the past decade. It offers a highly controllable point light source giving crisp white light with twice the light and up to three times the efficacy of the equivalent GLS lamp. The compact lamps are far less obtrusive than the old GLS reflector lamps and luminaires and yet they introduce a sparkle which has made them popular.

The modern lv tungsten halogen lamp is available in a much wider range of types and sizes than the old GLS display lamps. There are three main types:

- Capsule lamps (similar to those used in projectors) which are incorporated into luminaires with separate reflectors and/or lenses or used bare to give sparkle.
- Metal reflector lamps with a factory prefocussed lamp and reflector combination for precise beam control.
- Glass dichroic reflector lamps with a prefocussed lamp and a dichroic glass reflector which transmits infra-red and other selected wavelengths, reducing heat in the beam by up to two-thirds.

Dichroic lamps have enjoyed particular success. Originally

introduced as cool beam lamps for lighting foodstuffs and other heat-sensitive merchandise, they have become popular as decorative lamps but where the cool beam is not essential, metal reflector lamps can offer virtually double the light intensity.

Although there is little forward production of heat in this lamp type large amounts of heat are projected backwards. Thus, only fittings specially designed for dichroics can safely be used with these lamps and, when building them into shallow suspended ceilings or bulkheads the need to dissipate heat from these fittings must always be considered.

The advent of sealed dichroic reflector lamps has introduced the advantages of easier handling and freedom from reflector soiling. All that is necessary is to wipe the front glass from time to time. Other advantages are protection in the unlikely event of non-passive lamp failure and uv filtering.

Recently, a range of coloured dichroic lamps have been introduced in which a coloured beam is achieved by filtering out the unwanted colours through the reflector. This imparts an attractive decorative glow to the rear of the reflector.

LUMINAIRES

For general ambient lighting, fluorescent luminaires are still far and away the most popular types of fitting.

Many large retailers see the lighting as part of the image of the shop. Consequently, many have

opted for high-technology luminaires with louvre controllers. A few still use bare batten or diffuser fittings for preference where they feel that this is more in keeping with a value-for-money image.

But it is not just a concept of image that dictates the preferences for high-technology luminaires. Louvre controllers are more efficient than opal diffusers and offer control of lighting distribution. The vertical component of lighting is as important, if not more so, than horizontal illuminance in many retail outlets and so careful use of luminaires with a batwing distribution can give improved lighting on display shelves.

Luminaires with electronic control gear have found a ready market amongst some larger retailers. In this application, the extended tube life (up to 50 per cent longer) which enables relamping intervals to be extended, can be as important as the saving in energy due to lower control gear losses. Another significant advantage is the fact that a faulty tube is automatically disconnected, thereby preventing annoying flicker and allowing tube replacement to be carried out when convenient.

Multiple-tube luminaires with separate supplies to different tubes enable ambient lighting levels to be adjusted according to the time of day. Typical would be an installation of triple-tube luminaires where the centre tube

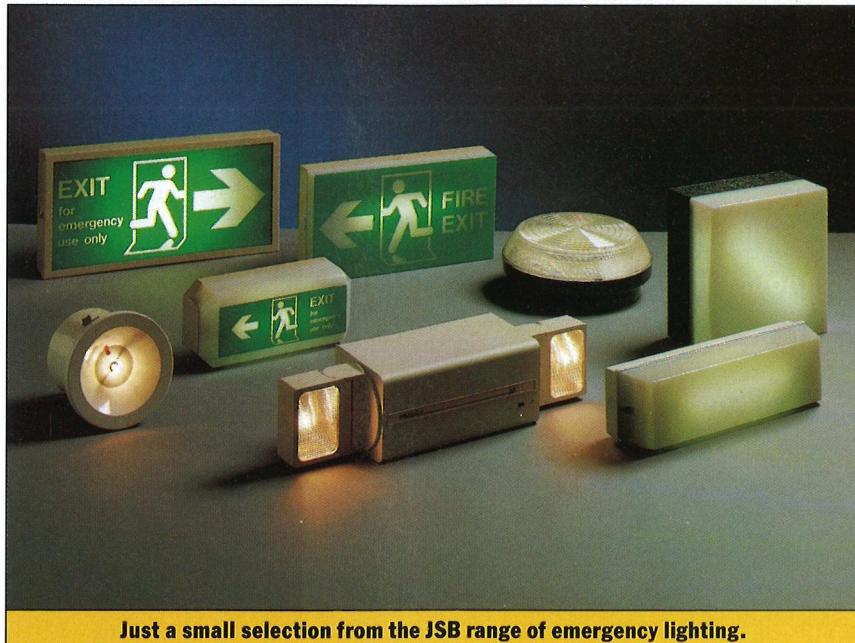
in each luminaire is on a separate circuit from the two outer tubes, giving the option of one, two or three tubes. Some large stores differentiate between times when business is brisk, requiring full lighting, and the quieter times when some energy saving is possible by reducing lighting. Switching can be manual or automatic.

In boutiques and shops where the idea of fashion is important (and this includes such non-clothing as hi-fi stores) the lighting is an important part of the internal decor. Lighting track and spotlights have been popular for some years and the constantly-changing styles of luminaire and track have brought lively business to the luminaire manufacturers.

Metal halide lamps tend to dictate the parameters of the luminaire because of the need for control gear housings and, protective covers, so metal halide spotlights have changed less than other types. In contrast, the constantly-evolving range of lv tungsten halogen lamps and the versatility of capsule lamps has given luminaire manufacturers a wide range of options.

There is, however, a discernible trend away from the use of prominent fittings suspended from the ceiling towards the use of adjustable downlighters installed within the ceiling. This demand can be met by semi-recessed metal halide or lv tungsten halogen luminaires with a tilt-and-swivel lamp and reflector system.

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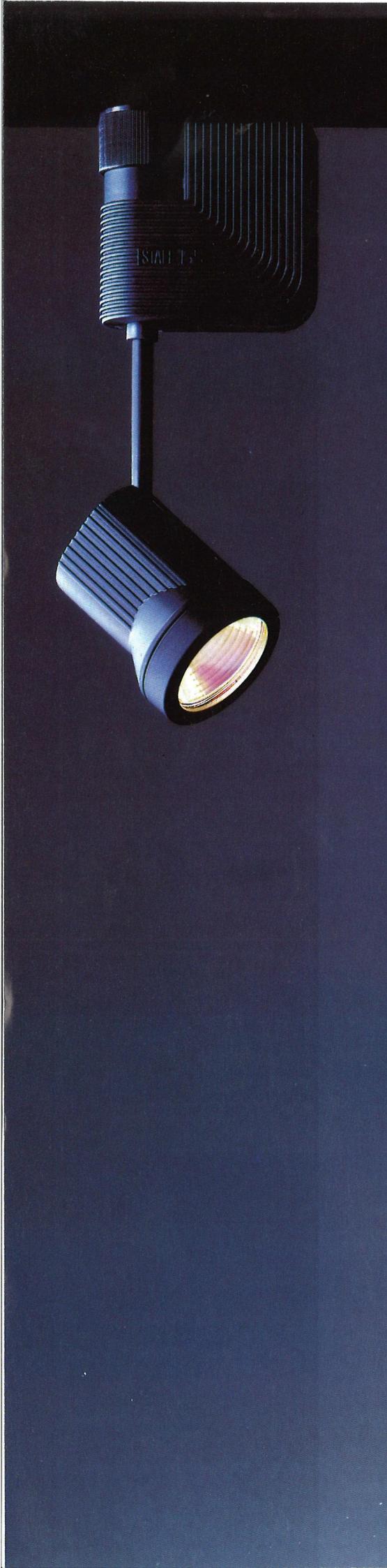
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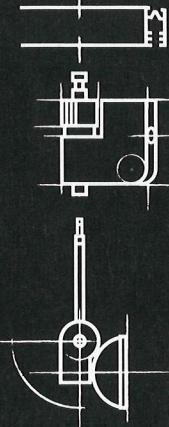
TRACK SYSTEMS ENTER A NEW PHASE

Multitec. A low voltage system for mains voltage tracks which facilitates the conversion and planning of lighting installations.

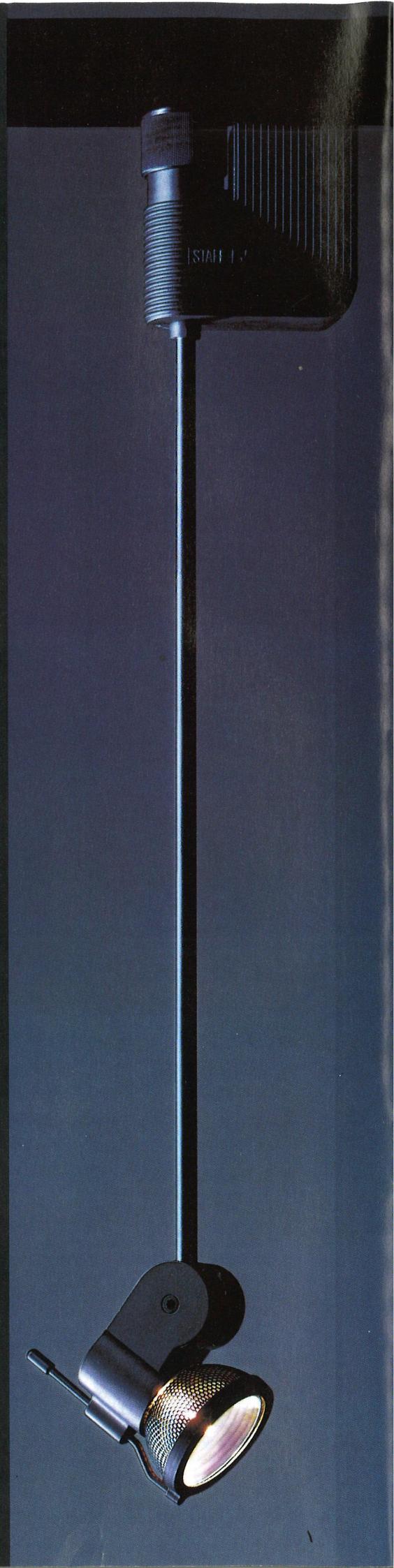
Multitron, the small electronic transformer, changes the voltage directly at the track and takes the Multitec spotlights without integral transformer by means of a plug-in connection system.

For example, PICO 50 and UNO 55, two extremely small spotlights, which can be easily connected and interchanged by slight pressure of the fingers.

Therefore, many opportunities are available with the new system from STAFF. Detailed information can be obtained from STAFF Lighting Ltd., Basingstoke, Hampshire RG 24 OWH, phone (0256) 707007 or telefax (0256) 707018.



Low voltage lighting on mains voltage tracks



STAFF 

Reader Service No. 303



Metal halide lamps can bring out the best in retail displays.

The matching and connection of low tungsten halogen lamps and transformers is an ongoing problem. The ideal is for each luminaire to have its own transformer but economics dictate that several lamps are frequently supplied through one transformer. Problems arise where transformers are overloaded by having too many lamps connected. Another problem is poor lamp performance where excessive cable length produces unacceptable voltage drop. Yet another problem with several lamps connected to one transformer, is the chain reaction that occurs if one lamp fails.

Continental manufacturers have tackled these problems with a variety of protection modules and multi-way connectors for low voltage lighting but these are not yet available in the UK. However, pre-wired connectors, which would limit cable lengths and the number of fittings connected to one transformer, could be available here soon.

TECHNIQUES

Two major areas in shop units require the application of lighting design — the display window and the actual sales area. Within the sales area, there are two main types of lighting — general ambient lighting and accent and display lighting. In addition there is, of course, a need for emergency lighting.

The window display is frequently the first point of contact with the potential buyer and plays a vital part in attracting attention. Lighting must compete effectively — and yet without offence — with the brightness of natural daylight or the rival attractions of neighbouring windows. Around 1500-2000 lux is a typical value for window lighting.

Metal halide lamps up to 150W rating, in ceiling-mounted or recessed spotlights, will produce bright and yet very economic sources of general lighting in windows. Careful overlapping of the light enables the number of fittings to be reduced at night.

Alternatively, for smaller displays or applications where a lower level is acceptable, compact fluorescent lamps in specular louvre luminaires with asymmetric reflectors can provide general lighting.

High-power low tungsten halogen spotlights can be used with either of these arrangements to highlight important features.

Sales areas will generally require ambient lighting that is in keeping with the atmosphere and character of the store. Light sources should have a high colour rendering index so that the colours of the merchandise are reproduced faithfully, but the choice of a cool, intermediate or warm colour appearance will depend on the nature of the merchandise. This will be backed up by the choice of accent and display lighting.

It may be found desirable to have higher levels of general lighting close to the entrance doors during daytime, graded back into the interior.

Dimming facilities are sometimes requested — but rarely used — in retail premises. Straight switching of groups of luminaires, or tubes, to suit different occupancy patterns is a more practical and economic solution in most cases.

Dynamic lighting of specific displays can, however, prove very effective. This could involve sequential switching of different spotlights to draw attention to different items in a display; changing colour to produce different effects; or fading between narrow, medium and wide beam spotlights.

Islands of light can be created by metal halide lamps and a reassuring sense of correct colour perception can be conveyed in the interior, even after dark, with an island of fluorescent light in a 'Daylight' colour.

APPLICATIONS

Different lighting techniques are relevant to different types of shop. A selection of typical applications

gives some indication of the principles and types of equipment available:

Furniture

Furniture and furnishings look their best in the right setting. Pendant lamps over a dining table, elegant table lamps and standard lamps next to a sofa simulate ideal conditions in the home. In the sales area, general lighting will probably be subdued, making use of Warm White fluorescent lamps in wide-angle specular louvre fittings. Metal halide lamps in tilt-and-swivel recessed luminaires or track-mounted luminaires can provide pools of light to break up large areas or simulate the effect of a window. Where fabrics could be bleached by ultra violet light, metal halide spotlights should be fitted with uv filters.

Fashion

Boutiques and fashion shops evoke much of the atmosphere of the theatre, making extensive use of high-technology spotlighting effects in the process. These effects must be tempered by a conscious effort to enable customers to see what they are buying and to avoid excessive heating. As a rule, PAR 38 and other mains voltage tungsten filament lamps should be avoided and modern light sources such as metal halide and low tungsten halogen which combine high luminous efficacy with excellent colour rendering are to be preferred.

Dichroic reflector lamps will reduce the heating effect compared with other types of low tungsten halogen lamp while producing plenty of "sparkle".

Jewellery

In general, the more concentrated and white the light, the more precious metals and stones will glisten and sparkle. Consequently, for jewellery, 70W or 150W metal halide spotlights in Natural De Luxe colours will be effective. Low voltage tungsten halogen lamps in narrow beam widths will spotlight individual items or displays. Dichroic reflector lamps should be used for heat-sensitive goods.

Florists

Florists require lighting with the best colour rendering properties to avoid distorting the colour of the flowers and, at the same time, very low heating effect. Warm De Luxe tubular fluorescent lamps and metal halide lamps will meet these demands. Low voltage tungsten halogen spotlights can be used to pick out special displays but should use dichroic reflector lamps to reduce the amount of heat in the beam.

Butchers

Fresh meat needs to be protected from undue heat and yet lit so as to bring out the colour and texture. Special fluorescent tubes such as the Natura De Luxe are designed for this purpose and are particularly appropriate where the lamps have to be close to the meat, in windows, display shelves or cabinets. 70W Warm De Luxe halide lamps fitted with pink filters can provide general lighting of shop windows.

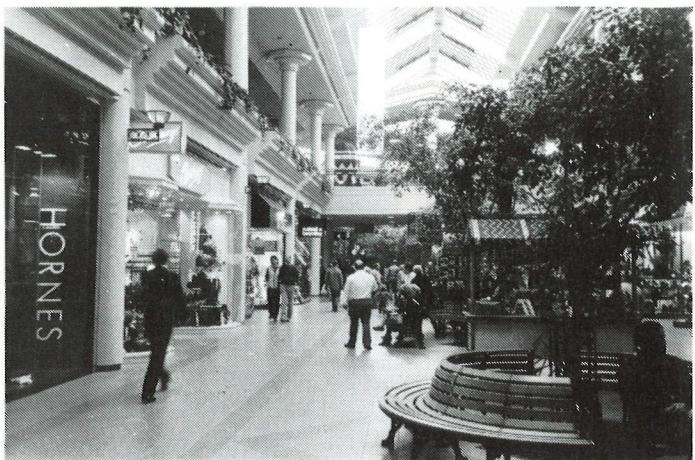
Cosmetics

Cosmetics shops generally require an intimate and refined ambience while the large number of vertical shelves filled with bottles and other small containers require bright vertical lighting. Downlighting or indirect lighting using light sources with a warm colour temperature is ideal for ambient lighting. Low voltage tungsten halogen spots and floodlights will produce sparkle as well as excellent illumination of the shelves.

In conclusion, while the large retailers are already making full use of modern 'high technology' lamps and luminaires, these same advantages are available to be exploited in the smaller high street shop. The same benefits of improved running costs and greater customer appeal can be realised by well-planned and carefully chosen lighting.



The Burlington Arcade — a successful example of an Edwardian arcade in London.



The Metrocentre, Gateshead, shows similarities to the method of daylighting used in the Burlington Arcade.

The importance of the individual shop has been overtaken by the shopping centre built in the centre of a town or the shopping park outside; likewise the problem of retail lighting. This short article concentrates, therefore, on the architectural implications and the associated lighting problems of the shopping complex.

Over the past ten or fifteen years there has been a revolution in shopping habits and the growth of the supermarket, the hypermarket and the shopping centre has been at the expense of the individual High Street shop. This has as much to do with the ability to park a car as the quality, of the shopping experience.

Once the problem of transport to the complex has been solved, the next most important aspect is the quality of the environment and the facilities offered.

Daylight

You cannot talk about the quality of the environment without talking about daylight. Some of the earlier shopping centres attempted to ignore daylight and produce 'blind boxes', due to an unholy alliance between mechanical and electrical engineers and the quantity surveyor who — generally ignoring the advice of the architect — concentrated only on the cost element, or cost per square metre of shopping space. This was rather like the designer of a restaurant using fluorescent lighting — great economics but no diners!

An interesting comparison can be made between Victorian arcades and modern shopping centres. For instance the Burlington Arcade in London can be compared with the Metrocentre in Gateshead. Both have daylight as a determining factor of the lighting strategy — and both are commercially very successful.

The lighting strategy for any shopping complex must start with the daylighting element. Daylight provides not just light — sometimes eliminating the need for artificial

Centre point

A WIDE RANGE OF AMENITIES AND EASE OF ACCESS PUT THE SHOPPING CENTRE AHEAD OF THE HIGH STREET IN TERMS OF CONVENIENCE.

DEREK PHILLIPS LOOKS AT THE ROLE PLAYED BY LIGHTING IN CREATING A SENSE OF PLACE.

lighting during the day in public areas — but also goes a long way towards generating the 'quality' of environment a sophisticated shopping public demands.

Daylight provides much more than just light. Perhaps one of the most important elements is 'orientation'. Due to the path of the sun over the 24 hours the direction of the light will change from darkness to early morning with its easterly flow, towards

midday with light mainly from overhead this declining in the afternoon towards the west and finally night again. The direction and colour of daylight varies with the seasons like the nature of the sky itself, cloudy, sunny etc, providing a necessary dynamic sense of time, and orientation within the complex — essentially providing a sense of well being. This is most important when it is missing.

Daylight is a functional element of building planning, and needs to be carefully considered by the architect. The most common means of introducing daylight in large complexes is by means of overhead rooflights. These may be associated with atria or malls, atria generally emphasising important elements in the plan, such as changes of direction of malls, entrances or elements of vertical circulation. Atrium floors



The Food Hall of the Potteries Centre, Hanley, which takes its theme from its local industry.

may be used for restaurants or food halls, they form useful meeting places.

Night-time lighting

While the nature of the shops themselves demands that they are lit artificially, and shops themselves have learnt what particular lighting suits their business best, the night-time lighting of the shopping centre itself is of critical importance to its success.

There should be a difference of atmosphere after dark (and in, the winter this will be for a larger proportion of the day) people's expectation of the appearance of spaces after dark will differ from that during the day. In well daylit spaces the differences will be obvious, in colour, in intensity and in direction. But in those areas, such as multilevel malls, where daylight is limited and artificial lighting is required during the daylight hours a change of lighting by colour of intensity can be provided by modern lighting technology and control systems.

It is important for the shops units to dominate the appearance of the centre itself. It must be a part of the brief to the lighting designer that, the 'setting' into which the shops are placed should be such as to put 'the shop' on display, in the same manner that the shops themselves emphasise the goods they are selling.

The architecture and its associated artificial lighting must, therefore, be a background to the main function of the building — the shops and other facilities that it contains.

For this reason it would be quite inappropriate to have similar illuminance levels in the malls to those in the shops, and it has been found that levels of 150-200 lux are quite appropriate when shops are lit internally to levels of 500-1000 lux. Further emphasis is given to the shops, which tend to be 'warm' in colour, if the lighting provided in the public areas is cool.

Architectural implications

A great deal of architectural ingenuity has been expended in the large number of shopping centres which have been built in the UK over the past ten years. The best of these can stand beside the shopping centres of the USA, Canada or Hong Kong.



The Egyptian Hall at Harrods carries on the tradition of a theme.

The design tends to develop in two ways. The first is a straightforward modern approach such as that for Milton Keynes

Centre. The alternative is the 'theme' approach such as for instance as the 'potteries' centre in Hanley where the client has

requested that the architect should take note of the local industry and location to produce a design which added details reminiscent of the nineteenth century.

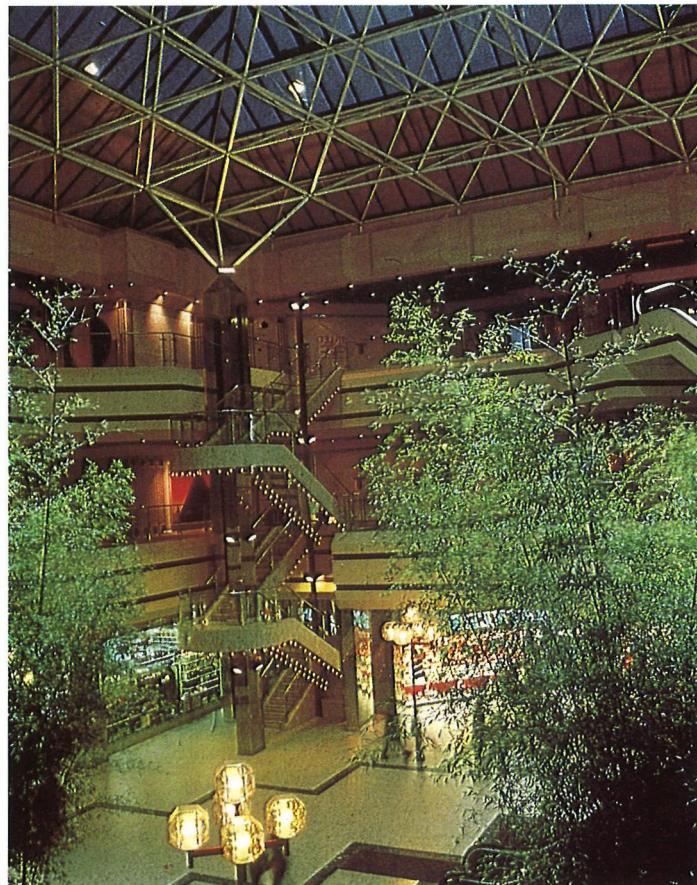
Typical of this latter approach is the new Egyptian Hall in Harrods, almost a shopping centre in itself. This was recently completed and clearly captures the public imagination.

It is not the purpose of this article to support one approach rather than the other, but it is important to emphasise that lighting must play an important role in support of whichever approach is undertaken.

Shopping centres no longer house shops and department stores alone, and one of the reasons for their success is the wide variety of facilities offered.

It is not uncommon for any or all of the following facilities to be provided:

- Ice skating;
- Bowling and other sports facilities such as squash;
- Restaurant and food halls;
- A multiscreen cinema;
- Library;
- Leisure centre;
- Medical centre;
- Children's play park;
- One centre even has a church.



The central atrium court of the Treaty Centre at Hounslow uses powerful metal halide sources at high level to ensure growth to the three clumps of bamboos. A high level of artificial light is required in spite of good natural lighting.

It is clear that the shopping centre is not somewhere you rush into to buy a pound of sausages, it is somewhere you go with your family to spend half a day or a full day and enjoy the atmosphere and the many facilities it offers.

The Metrocentre in Gateshead has its own rail and bus stations, in addition to car parking for 9000 cars. Once you're there you tend to stay.

Planting

Trees and other plants have become just as much a part of the modern shopping centre as the scenic lift, but these should be treated with care and in the knowledge of the costs involved. Ideally they should be limited to those areas where daylight is available in sufficient quantity, and the species selected to try to ensure that it will survive without recourse to expensive additional artificial light.

However, the effects can be delightful and in the Treaty Centre in Hounslow — a shopping centre which won both a European and National Award — a conscious decision was made to use clumps of bamboo, a species requiring levels of light of 3-4000 lux. This was provided by means of 2kW metal halide floods in deep cans from a special platform at roof level — an expensive decision but one which, having been taken on aesthetic grounds, gives the central square atrium a quality it would not otherwise have.

Exteriors

The exterior appearance of shopping centres will vary from the



Surrey Quays, Docklands, a development by Tesco, illustrates the care now paid to the external appearance of shopping centres.

town centre — where the walls of the building are the curtilage of the site — to the out of town centre where there may be acres of car parking surrounding the building, which will be set in its own landscape. The latter is the more interesting problem for the lighting designer, since he must reduce the visual impact of the sea of cars, while making this area safe for shoppers. At the same time he must give appropriate significance to the building by a combination of internal lighting at entrances and subtle floodlighting.

The exterior of the Tesco shopping centre at Surrey Quays is a good example of this. The

architect has surrounded the building with water basins along the line of the original Canada dock. Those with lit fountains add foreground to the gentle floodlighting of the brickwork building. This is associated with lit entrances containing the centre logo, which act as advertising from some distance away.

The town centre shopping centre is often criticised by planners for offering totally blank walls to the urban landscape. Much can, and should be done to ameliorate the poor quality of townscape afforded by such an approach, and the lighting designer can assist here.

Economics

The economics of the lighting centres lies not so much in the initial cost of the lighting equipment as in its subsequent running and maintenance costs.

Experience of running a recently completed shopping centre in the West Country, suggested that the annual costs for lighting alone were working out at £80 000 per annum, an unacceptable figure. A close investigation of the lamp types used, the circuitry and switching showed that this could be reduced by 43%.

This is just one example among no doubt many more, where thought at the design stage and some extra cost in wiring and in switching controls would have been repaid in 12 months. It did the client no favours to save pennies where pounds would be required to operate the system.

Modern means of lighting control through the BMS computer not only can provide economic running costs but can monitor lamp life to ensure that replacement is carried out on a planned maintenance system.

Summary

Little has been said here about the techniques of lighting shopping centres; this will be dealt with elsewhere; the purpose of this short article is to emphasise the important strategic principles behind the lighting designer's contribution to the design team.

First, in the integration of daylight with artificial lighting, there is a need for early discussions with the architect where the designer should be able to contribute to the dialogue on daylight strategy as well as providing the necessary technical knowledge of artificial lighting.

Next, he needs to understand the architect's concepts for the spaces he wishes to create and be able to enhance these with light in such a manner that the architecture provides a civilised background to the main function of the building — the shops and other facilities.

Finally, he must design in such a manner that the economics of the lighting fit the client's budget.

Lighting makes the difference between the barely adequate and the really successful architectural solution, in which the interior provides variety through the day and throughout the year, so that shopping becomes a pleasure.

REFLECTION D·E·S·I·G·N·E·D REFLECTION

THE NEW AF910.31 PRE ANODISED HIGH PURITY SPECULAR FINISH
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The High Street Revolution is the popular press's way of emphasising the dramatic changes that have taken place in recent years in the retail sector. The corner shop is all but extinct and nowadays over 90% of our retail purchases take place either in the High Street or in purpose built shopping centres. The revolution has also seen the demise of the small independent retailer and the ever-increasing growth of the large multiple store.

Irrespective of the state of the economy — buoyant or depressed — the competition for your custom remains severe! The enigma for the retailer is what makes you, the customer, select one store from another when making the first tentative steps towards a purchase.

The first response to this question might be **price**, but how many people actually know the price of an article when first thinking about a new TV, a new suit or even a packet of cornflakes. Price is an important, but by no means the only factor. It has been shown that equally important is the public awareness of the store and the style and image it creates. This need for style and image has resulted in an industry for the creation and continued development of store design.

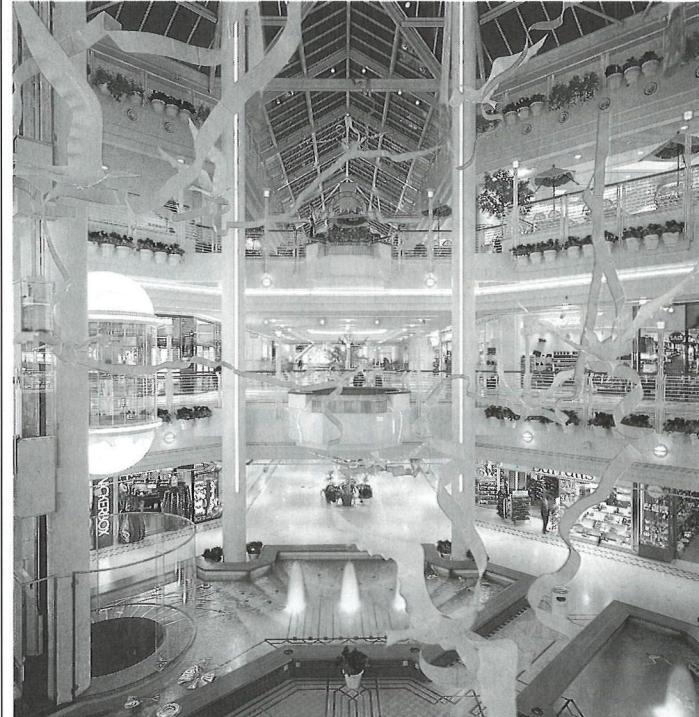
Lighting is a major element in the design of a retail store and it's no mean achievement that the lighting industry has met the continued challenge to develop new light sources and luminaires to satisfy the needs of the retail designers.

The shop window has many similarities with a theatre set. The purpose of theatre lighting is to highlight the actors while keeping a balance of light with the surrounding scenery. The luminaires and lamps themselves must not intrude into the scene. It is the performance that the audience come to see, not the mechanics of theatre.

Similarly, in a shop window good lighting will direct and attract the shopper to the merchandise and not the lighting installation. Obtrusive luminaires or badly positioned fittings resulting in glare will distract the potential customer from the display.

It has been estimated that there are just a few initial seconds when a passer by might be attracted to a display and, hence, become a potential customer. The traditional

DAVID DANBY OF ELECTROSONIC LOOKS AT HOW LIGHTING CONTROLS CAN BE USED TO ATTRACT THE CUSTOMER INTO A STORE OR SHOPPING CENTRE.



Thurrock Lakeside is one of Europe's largest purpose-built, out of town shopping centres and uses Electrosonic dimming and switching systems throughout. Control is a combination of photoelectric and BMS.

way of maximising the chance of attracting this customer in lighting terms was to use as much light as practical to flood the display. This often meant using banks of fluorescent fittings purely because of the luminous efficiency of the light source. The end result, although bright, was flat.

The development of low voltage light sources has, in itself, led to a revolution in shop window lighting, and it is probably true that shop windows are the major application for low voltage light sources. The compact size of the lamps and luminaires, combined with the ability to control the directional qualities of the light by a range of lamps with varying beam widths, makes them

ideal for display lighting applications. The use of such sources allows the designer to experiment with lighting introducing highlights and shadows to a display and thus creating the theatre set in the store window.

It would be unthinkable to have a stage lighting installation that did not also include a dimming installation. By dimming, not one lighting scene but many can be created. This same thinking is being adopted in the retail display sector. The designer has found that, by using purpose made architectural lighting control dimming systems, he can introduce a range of lighting scenes to his displays. He can produce changes to suit different

shop window layouts or he can effect variations in intensity and colour within a given display. If required, movement can be rapid or, more usually, it will be slow subtle changes using lighting to change the emphasis from one part of a display to another.

Unlike the theatre that has a lighting technician at the control desk during a performance, the retail application must be automatic and easy to reprogramme when required. This has been achieved by the development of programmable memory controlled dimmer systems. Lighting scenes are created using a simple hand held programmer and then stored in a memory unit. Scenes are then normally selected by a time clock with a facility if required for local pushbutton override. The lighting effects can then be selected at any time of day or night extending the application of control long after normal store opening hours.

In many cases the concept of lighting from a central programmable dimming system, such as the Electrosonic Sceneset system, is developed beyond the window lighting and the store interior lighting is also linked to the system. A single memory unit is capable of retaining different scenes for different areas of the store and therefore, it is possible to automate the lighting installation fully. It then becomes possible to provide different lighting scenes based on the time of day or even day of the week to suit varying trading conditions.

A most important consideration for owners of multiple retail stores is the ability to repeat the style and image of the store from one town to another. Programmable lighting control systems can help in this respect. A designers' brief can be translated into a lighting programme and the effects can be repeated from one store to the next. It

QUESTION & ANSWER

Del answers your lighting queries and solves your problems.



LAMP TROUBLE

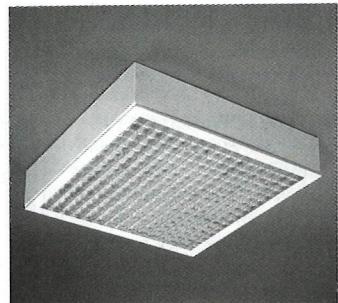
Dear Del,

I am at the end of my tether looking for a fitting suitable for a food factory or hospital.

The fitting has to be dust proof and cope with being constantly wiped down, and conform to all BSI and IEC regulations.

Yours Desperate.

Del Answers – Try **Davis Alumex** excellent Arduous conditions luminaire (IP 54/65), it conforms to all BS and IEC specs., so ring today and ask for a brochure of their full range of interior lighting.



RETAIL HORROR!

Dear Del,

My colleagues and I are in constant disagreement over who scored the winning goal in the 1969 Charlton Athletic v Millwall semi-final, I think it was Frank Mayfield, can you clear this up?

And Del, could you recommend a high efficiency luminaire for my chain of retail outlets, it must provide high levels of illuminance with maximum spacing between luminaires, and be suitable for use in a suspended ceiling.

Yours Confused.

Del Answers – I'm sorry but I haven't a clue about who scored that goal, but **Davis Alumex Lighting** manufacture an excellent recessed high efficiency deep wedge luminaire that conforms to all LG3 specs, ring them today for a copy of their excellent brochure covering their whole range of interior lighting.

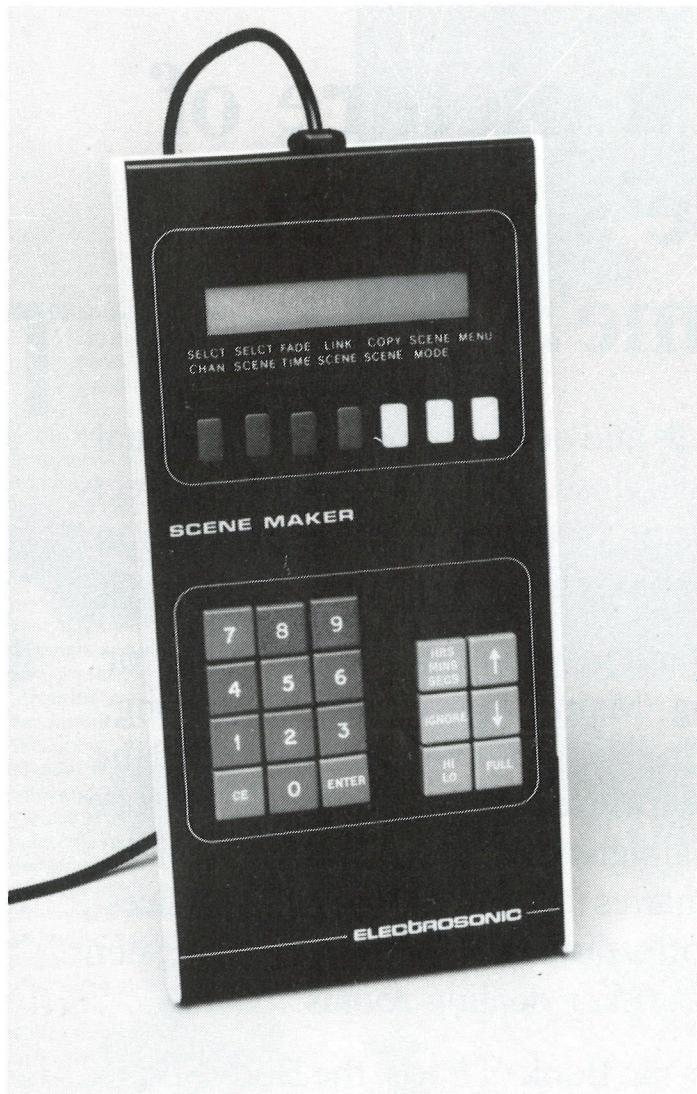


WRITE TO DEL AT:

It's an advert,

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TEL 0268 534777, FAX 534771





'Scenemaker' is a hand held programmer which allows the design or modification of lighting scenes and effects, by plugging into the local programming point.



would theoretically be possible to programme a store in London and then send the programme to an identical store in Glasgow and simply download the London programme into the Glasgow installation.

Recent years has seen a major development in purpose built shopping centres. Many of these are located in out town sites built on several levels and normally accommodate a number of atria.

The object is to meet all the customer's needs in a single location and to enable him to shop in comfort in a pleasing and attractive environment so that he will return again and again. Ample car parking, rest areas, cafeterias and restaurants all form part of this total shopping experience. Central atria, indoor gardens and seating all contribute to producing the right environment.

The public areas in these shopping centres have now become the point of attention for the designers. Developers are more than aware of the importance of good

lighting design in these spaces and most developers and architects will employ the services of a professional lighting designer. If the shop window has similarities to the

proscenium stage then the shopping centre atrium could well be compared to the theatre in the round. Indeed, it is not unusual to see theatre lanterns being used as part of the effects lighting in these applications.

The principle of programmable memory controlled lighting is again employed in the control of the public space lighting installations. A combination of dimming and switching of light sources enables different scenes to be created. A wide range of light sources are used in such applications. These include tungsten, fluorescent, cold cathode and the newer discharge HID and HPS lamps. Dimming is not recommended for discharge lamps but these can be switched within a scene.

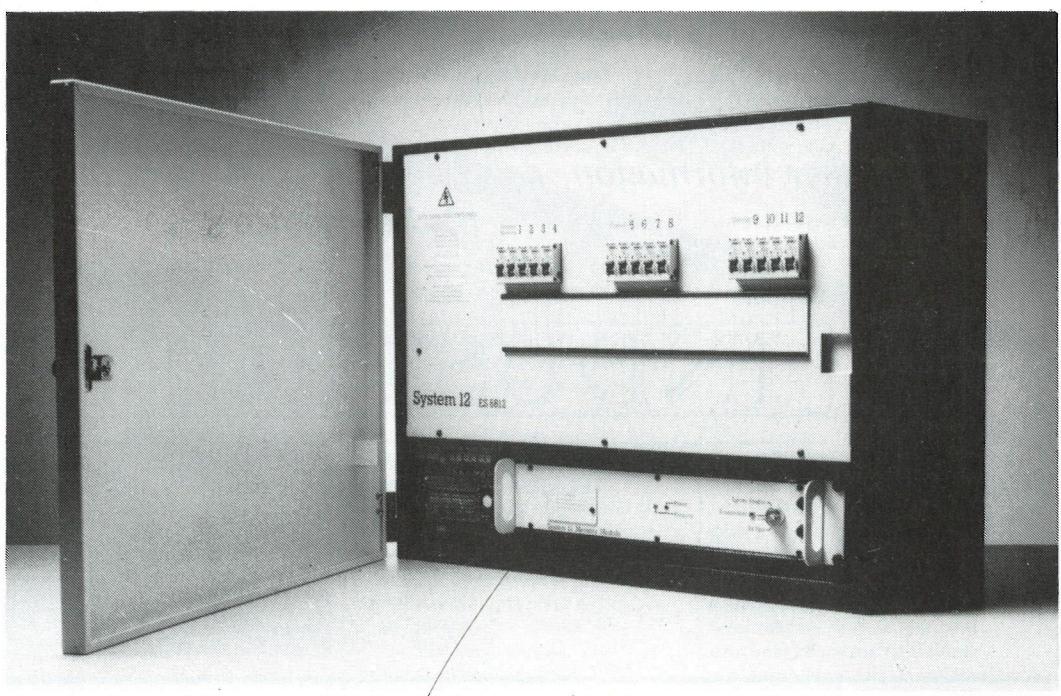
The size of such shopping centres will normally mean that the electrical distribution to the space is from several locations. The solution is to construct distribution boards that contain the appropriate amount of dimmers, contactors and a programmable memory unit for each distribution board. Communication between each distribution board can be achieved using a datalink, thus enabling the complete installation to be treated as a single entity and even programmed from a single location if required. Programming can again be carried out using a hand-held

programmer, or for larger installations, a portable computer.

Selection of lighting scenes can again be fully automatic by time clock or by commands from a building management system. Additionally, as many of these shopping malls have extensive glazing in the atria, photocell control is also commonly employed. New lighting scenes are selected as the daylight level falls below set points. Typically four changes would be programmed in between dark and bright daylight. This may be further varied by having different scenes for morning and afternoon — or even summer and winter.

As well as the sales and marketing benefits gained from the use of lighting control systems in retail applications there is the added bonus that such systems promote good energy management and reduced maintenance costs. Modern thyristor dimming products reduce energy consumption and can extend the life of certain lamps.

In the same way that the importance of good lighting is now seen as essential to the retail industry, lighting control has also now been established as an essential element in the design of the retail space from applications ranging from a single shop window through to the total lighting control of some of Europe's largest shopping centres.



System 12 is a compact 12 channel dimming system with programmable memory control.

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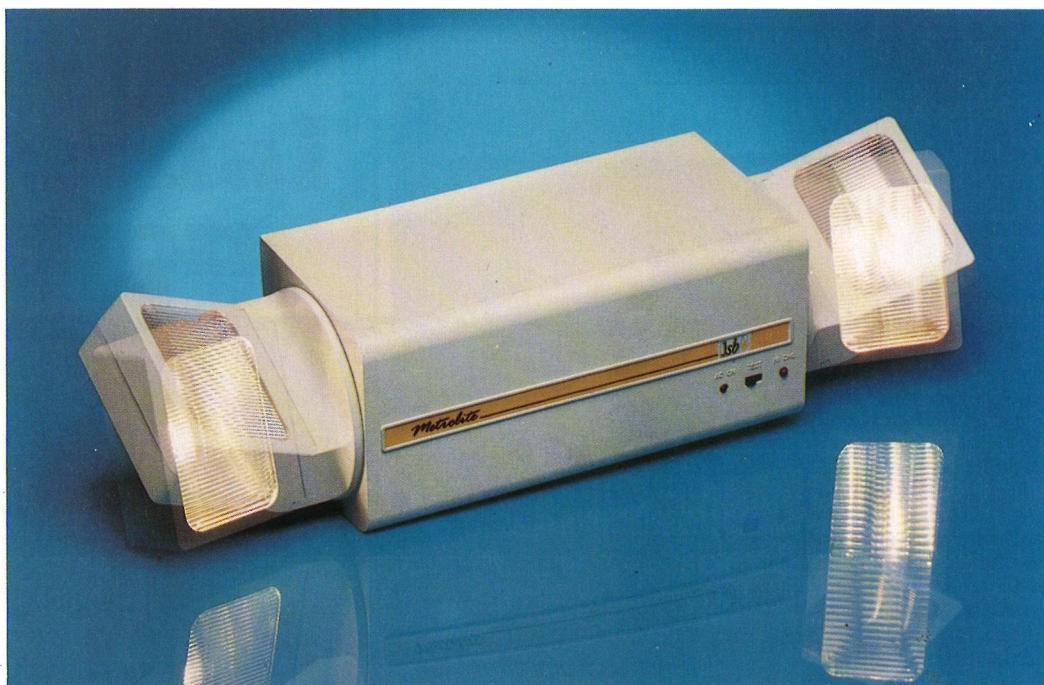
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For further information, details or a discussion about your requirements please contact:

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Showing the safe way out

EMERGENCY LIGHTING ALLOWS FOR SAFE ESCAPE IF MAINS LIGHTING FAILS. JOHN MITTON, OF JSB, OUTLINES ALTERNATIVE APPROACHES.

Increased publicity related to safety matters has enhanced public awareness of the need to build safety features into buildings and brought pressure on local and central government. The recent changes to British Standard BS 5499 have been introduced to enable the clearer marking of safe exit routes by using green coloured

signs with pictograms to indicate the direction of the exit. This is further evidence of increasing concern over safety.

Given the need for an emergency lighting installation the choice has to be made between the three basic types of system, available: self contained; central battery; and sine wave inverter systems.

Self contained systems

These comprise luminaires with a built in battery, charging system, and mains failure relay/semiconductor system often incorporating an inverter for operating a fluorescent tube.

Luminaires and conversion control gear are available for operating tungsten lamps with outputs of 2.4W through miniature fluorescent tubes up to 65W and 80W fluorescent tubes. In certain circumstances 125W fluorescent tubes may be used. The ability to convert PL and tungsten halogen luminaires for emergency use means that a display lighting scheme can be carried out and the same style of fittings adapted for emergency use.

In large open areas self contained systems offer a number of advantages.

Installation is simple. The circuit is usually wired in PVC insulated cable as a cable fault, for

instance due to fire, will bring the emergency lighting on. Correctly installed it will operate on failure of the local lighting circuit. It is inherently proof against supply failure due to the integral battery.

Minimal maintenance is required, and any failure will be confined to one luminaire.

There are however other, less favourable considerations, including cost. The luminaires are relatively expensive. Batteries are susceptible to high ambient temperatures, they have a limited life and should usually be replaced at least every five years. In addition, maintained and sustained systems have temperature limitations which tend to reduce battery life.

Central battery system

The second alternative is the central battery system. These systems usually consist of a large vented (wet or flooded) battery, with a capacity ranging between ten and several hundred ampere hours. This is charged by a sophisticated charging system to minimise electrolyte loss, and controlled by a mains failure contactor. However, maintenance free gas recommendation cells



Green coloured signs with pictograms indicate the direction of exits. The Royalex exit sign complies with BS 5499.

► (GRCs) are now proving to be very reliable and offer savings in terms of space, initial outlay and maintenance cost. The expected life for a GRC type is 10-12 years, as opposed to 20-25 years for a conventional Plante Cell.

The advantages of such a system include a low battery cost per watt and low system cost, together with a long battery life. Battery charging can be precisely controlled. Maintained systems are easy to arrange, can give a high light output, and high temperatures do not create problems.

By contrast, a central battery system incurs a high distribution cost due to the need to segregate or wire in MIC or similar fire resistant cable. The system is not maintenance free. Batteries require routine topping, except for systems with gas recombination sealed lead acid cells. Battery failure will disable the whole system, and local mains failure protection is more difficult to arrange except with maintained systems. Plant cannot be located anywhere, as the system requires a ventilated area.

Sine wave inverters

These are reliable central battery systems in which the DC battery power is converted to AC at the appropriate voltage and frequency. Their main advantage compared with a conventional battery system is that standard mains luminaires may be used, thus giving specifiers complete flexibility of design. Lamps from miniature fluorescents, through compact types such as 2D and PL to large fluorescents up to 1800mm are suitable. As with all centrally supplied systems, fire protected cables should be used but as the luminaires can be power factor corrected and the supply voltage is normally 240V, the voltage drops in cables will be minimised.

Choice of system

The choice between self contained, central battery and sine wave inverter systems usually depends on an assessment of relative equipment, installation and maintenance costs.

In general small units with 10 or 12 points tend to be suitable for self contained installations. With a larger number of points, the equipment costs of a central



Emergency signs form part of the interior design at the Tontines Shopping Centre in Stoke-on-Trent.

battery system tend to be lower than that of self contained systems.

Maintenance should always be considered in relation to the anticipated life of the shop and its installation. It must be remembered that sealed nickel cadmium batteries have to be changed at regular intervals of between five and seven years and vented batteries must be inspected, topped up and cleaned every six months. This work is in addition to routine testing, with which it may be combined.

When designing and installing a central system, care must be taken that the voltage drop between the battery system and the slave luminaire is not excessive. So, fairly large cables will usually be needed to keep the voltage drop down to acceptable levels.

BS 5266, the code of practice for emergency lighting, states that the voltage drop should not exceed 10% of nominal but at JSB we recommend that designers aim for

about 5% voltage drop to allow for temperature, terminations and future extensions.

Many emergency lighting companies are prepared to provide a worked sample on a specific installation comparing the costs of different systems.

Maintenance

But, whichever type of installation is eventually chosen the key to safe reliable operation is regular testing and maintenance.

To ensure that testing and maintenance are properly carried out the occupier should nominate a responsible person who will keep adequate records of the inspection details, test reports and maintenance records. Routine testing will usually be carried out by this occupier, but many local authorities require an independent test.

The following test methods are recommended by BS 5266.

The standard also recommends that testing which involves

extensive discharging of the batteries should, wherever possible, be undertaken at time of least risk, should an emergency situation or mains failure occur immediately after a test period.

For example, on a 3-hour system a 1-hour test may be carried out immediately after normal trading hours to allow the system to recharge overnight, whereas a 3-hour discharge may be made most safely on a Saturday night, when the building will not be in use during the period of recharge.

This consideration is complicated by the increase in 7-day trading and longer opening hours which leave the premises unoccupied on fewer occasions.

To conclude, there is no mystique about emergency lighting. Choose the right system for the type and size of shop unit, after taking expert advice. And ensure the combined safety of both customers and employees by its regular testing and maintenance.

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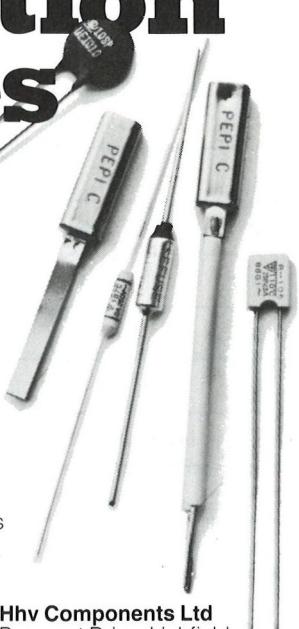
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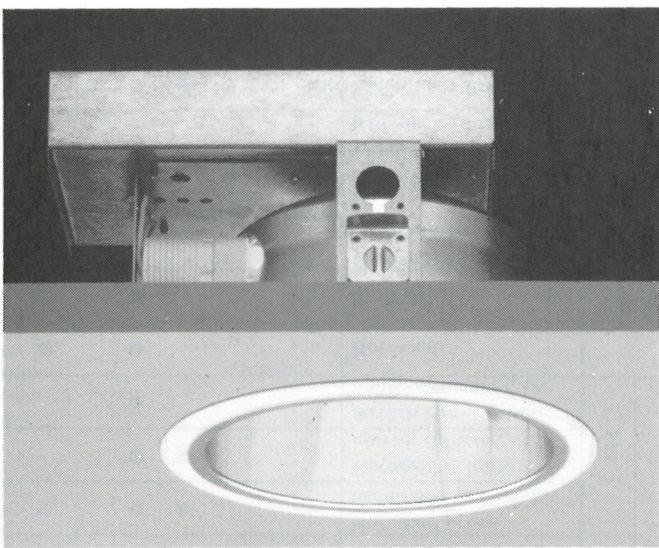
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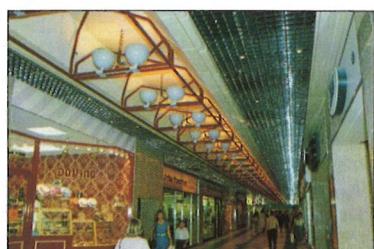
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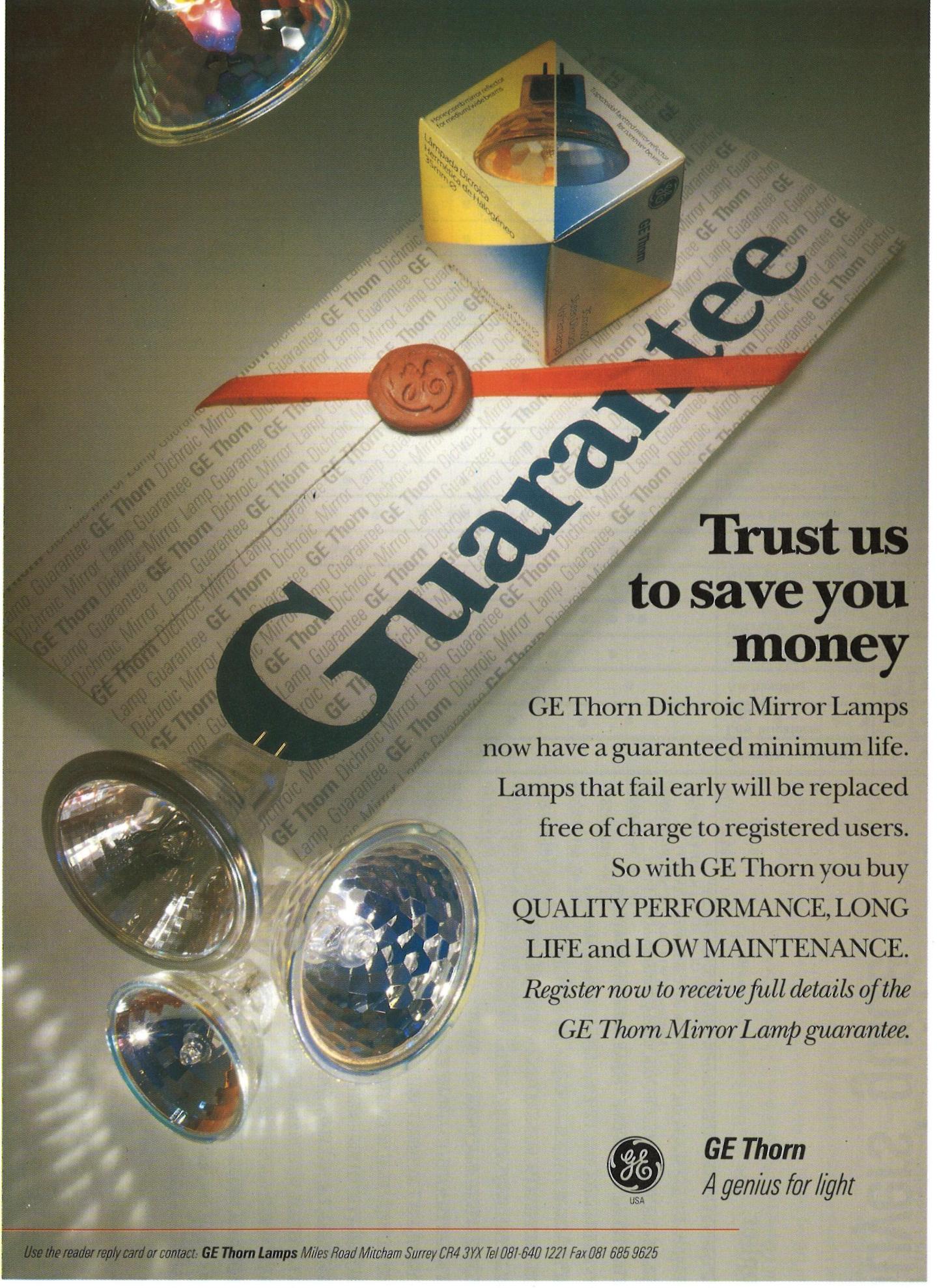
Supplier

Supplier	Fluorescent fittings	Incandescent fittings		HID fittings	Other items
		Adjustable	Fixed		
ABB Control Ltd, Grovelands House, Longford Road, Exhall, Coventry CV7 9ND					Highintg track
ADB Lighting Systems, 585 Leuvensesteenweg, 1930 Zaventem, Belgium.					General purpose
Absolute Action Ltd, Mantle House, Broomhill Road, Wandsworth, London SW18 4JQ.	●				
Accent Lighting Ltd, 46-48 East Street, Stanwick, Northamptonshire NN9 6PX.	●				
Acorn Lighting Products Ltd, 27 Marlyns Drive, Guildford, Surrey GU4 7LJ.	●	●	●		
Anglepoise Lighting Ltd, 51 Enfield Industrial Area, Redditch, Worcestershire B97 6DR.	●	●	●		
Astra Lighting, Unit 2, Abbotsford Farm, Blackberry Lane, Four Marks, Hampshire GU34 5BN.	●	●	●		
Bernlite Ltd, Wamac House, Unit 3, The Business Centre, Colne Way, Watford, Herts. WD2 4ND.	●	●	●		
Beta Lighting Ltd, 383/387 Leeds Road, Bradford BD3 9LZ.	●	●	●		
Bradley Lomas Electrolok Ltd, Manor House, Church Street, Eckington, Sheffield S31 9BH.	●	●	●		
Brilliant International Ltd, Crow Arch Lane, Ringwood, Hampshire BH24 1NZ.	●	●	●		
CCT Lighting Ltd, Hindle House, Traffic Street, Nottingham NG2 1NE.	●	●	●		
CU Phosco, Lower Road, Ware, Hertfordshire SG12 9TA	●	●	●		
Carl森 Lighting, The Old Cider Works, Bell Lane, Smarden, Kent TN2 7PP	●	●	●		
Chalmor Ltd, 1 Albert Road Industrial Estate, Luton, Bedfordshire LU1 3QF	●	●	●		
Channel Safety Systems Ltd, 9 Petersfield Business Park, Bedford Road, Petersfield, Hampshire GU32 3QA. Tel. No: 0730 68231	●	●	●		
Chelsom Ltd, Heritage House, Clifton Road, Blackpool, Lancashire FY4 4Q.A.	●	●	●		
Chloride Bardic, Southgate Way, Orton Southgate, Peterborough PE2 0YG.	●	●	●		
Concord Lighting Ltd, 174 High Holborn, London WC1V 7AA	●	●	●		
Connect Lighting Systems Ltd, Murrills Estate, East Street, Porchester, Fareham, Hampshire PO16 9RD. Tel. No: 0705 375140	●	●	●		
Crescent Lighting, 8 Rivermead Industrial Estate, Papers Lane, Thatcham, Berkshire RG13 4NA	●	●	●		
Crompton Lighting, Woodlands House, The Avenue, Cliftonville, Northampton NN1 5BS	●	●	●		
Crompton Targetti, PO Box 74, Doncaster DN2 4ND.	●	●	●		
Cryselco Ltd, Cryselco House, 274 Ampthill Road, Bedford MK42 9QJ	●	●	●		
					Tel. No: 0234 273355

Buyers' guide

Supplier

Supplier	Incandescent fittings			HID fittings			Other items		
	Fluorescent fittings	Adjustable	Fixed	Incandescent fittings	HID fittings	Other items	Incandescent fittings	HID fittings	Other items
Donmar Ltd, Donmar House, 54 Cavell Street, Whitechapel, London E1 2HP Tel. No: 071-790 1166									
ECS Energy Conservation Systems Ltd, Enterprise House, Central Way, Feltham, Middlesex TW14 0RX. Tel. No: 081-751 6514									
EDL Industries Ltd, Redbrook Lane, Brereton, Rugeley, Staffordshire WS15 1QY Tel. No: 0889 582112									
Edison Halo Lighting, Delaware Drive, Tongwell, Milton Keynes MK15 8HG Tel. No: 0908 617617									
Edison Volta Distributors, Units 1 & 2, Eastern Road, Aldershot, Hampshire Tel. No: 0252 336555									
Electrak International, 45 High Street, Kingston, Surrey KT1 1LQ Tel. No: 0322 222211									
Electrolite Ltd, Entrance A, Rembrandt House, Whippendell Road, Watford, Hertfordshire WD1 7PN. Tel. No: 0923 816099									
Electrosonic Ltd, Hawley Mill, Hawley Road, Dartford, Kent DA2 7SY Tel. No: 0322 222211									
Eco Lighting, 38 Dover Street, London W1X 3RB Tel. No: 081-547 72121									
Erskine Systems Ltd, Lee De Forest House, Eastfield, Scarborough, Yorkshire YO11 3DU Tel. No: 0723 583511									
Ex-Or Ltd, Haydock Lane, Haydock, Merseyside WA11 9UG Tel. No: 0942 719229									
Existalite Ltd, Project House, 18 Tallon Road, Hutton, Essex CM13 1TZ Tel. No: 0277 263600									
Fairfield Displays Ltd, 127 Albert Street, Fleet, Hampshire GU13 9RP Tel. No: 0252 812211									
Fitzgerald Lighting Ltd, Normandy Way, Bodmin, Cornwall PL31 1HH. Tel. No: 0208 75611									
Fluorel Ltd, Riverside Works, 312 Broadmead Road, Woodford Green, Essex IG8 8PG Tel. No: 081-504 9691									
Futimis Ltd, 11 Mead Park, River Way, Harlow, Essex CM20 2SE Tel. No: 0279 411131									
GFC Lighting Ltd, Westminster Business Square, Durham Street, London SE11 5JA Tel. No: 071-735 0677									
GTE Lighting Ltd, Otley Road, Charlestow, Shipton, West Yorkshire BD17 7SN Tel. No: 0274 595921									
Gent Ltd, Waterside Road, Hamilton Industrial Park, Leicester LE5 4JF Tel. No: 0533 462000									
Gewiss UK Ltd, Bumpers Farm Industrial Estate, Bumpers Way, Chippenham, Wiltshire SN14 6LH. Tel. No: 0249 444734									
Glamox Electric (UK) Ltd, Glamox House, California Lane, Bushey Heath, Hertfordshire WD2 1EZ. Tel. No: 081-950 0046									
R Hamilton & Co Ltd, Quarry Industrial Estate, Mere, Wiltshire BA12 6LA Tel. No: 0747 860088									
Helvar Ltd, Unit 1, Ealing Road Trading Estate, Ealing Road, Brentford, Middlesex TW8 6QY Tel. No: 081-568 6205									
Hitec Lighting Plc, Tower House, Lea Valley Trading Estate, Edmonton, London N18 3HR Tel. No: 081-884 3333									



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	Adjustable	Fixed	Adjustable	Fixed	Suspended	Uplighters - fixed or freestanding	
Home Automation Ltd, Bumpers Way, Chippenham, Wiltshire SN14 6LF.							Emergency lighting
							Lighting for stores and stock rooms
Harvey Hubbell Ltd, Ronald Close, Woburn Road Industrial Estate, Kempston, Bedford MK42 7SH. Tel. No: 0249 443422	●	●					Dimmers and other controls
							General purpose
Ideal Concepts International, Woburn Lodge, Waterloo Road, Linslade, Leighton Buzzard, Bedfordshire. Tel. No: 0525 853221	●	●					Lighting track
iGuzzini UK Ltd, Unit 3, Mitcham Industrial Estate, 85 Streatham Road, Mitcham, Surrey CR4 2AP. Tel. No: 081-646 4141.	●	●					
Iluma Lighting Ltd, 24-32 Riverside Way, Uxbridge, Middlesex UB8 2YF	●	●					
Ilume, 285 Ecclesall Road, Sheffield S11 8NX.	●	●					
Interlux Ltd, Unit 1A, Bean Road Industrial Estate, Tipton, West Midlands DY4 9AQ	●	●					
JSB Electrical Plc, Manor Lane, Holmes Chapel, Cheshire CW4 8AB	●	●					
Knight Smith Lighting, The Factory, 14 West Street, Weedon, Northampton NN7 4QU	●	●					
LB Lighting Ltd, The Metro Centre, St Albans Road, St Albans, Hertfordshire AL4 9QT	●	●					
LDMS Lighting Ltd, 19 High Road, South Benfleet, Essex SS7 5HY	●	●					
Lampways Ltd, Allenby House, Knowles Lane, Wakefield Road, Bradford, West Yorkshire BD4 9AB. Tel. No: 0274 686666	●	●					
Light Ideas Ltd, Peartree Industrial Estate, Upper Langford, Bristol, Avon BS18 7DW	●	●					
Light Industry, 94 Tottenham Court Road, London W1P 9HE	●	●					
Lights Years, 4 Hutton Grove, London N12 8DS	●	●					
LightGraphix Ltd, Vauxhall Place, Lowfield Street, Dartford, Kent DA1 1HU	●	●					
Lighting Import Agent Ltd, 3 Somers Crescent, London W2 2PW	●	●					
Lightsource Electrical, Lightsource House, Scrubs Lane, London NW10 6RD	●	●					
Litemode Ltd, Unit 3, Maple Industrial Estate, Maple Way, Feltham, Middlesex TW13 7AW	●	●					
Luckswitch Ltd, St Columb Industrial Estate, St Columb, Cornwall TR9 6SF	●	●					
Lumiance (GTE Lighting), Otley Road, Charlestow, Shipley, West Yorkshire BD1 1HW	●	●					
Lumitron Ltd, Chandos Road, London NW10 6PA	●	●					
Luton, 6 Sovereign Close, Wapping, London E1 9HW.	●	●					
Luxonic Lighting Plc, Unit 15, Moniton Industrial Estate, West Ham Lane, Basingstoke, Hampshire RG22 6NQ. Tel. No: 0256 630900	●	●					

Buyers' guide

Supplier

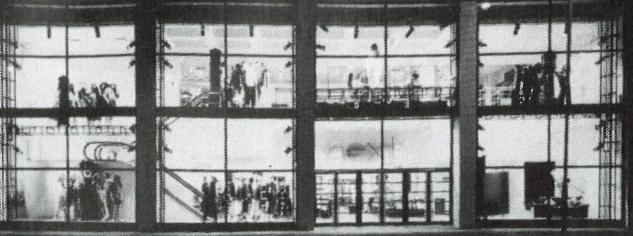
Supplier	Fluorescent fittings		Incandescent fittings		HID fittings		Other items					
	Prismatic controllers	Adjustable	Fixed	Recessed	Suspended	Uplighters - fixed or freestanding	Emergency lighting	Lighting for stores and stock rooms	Security lighting	Dimmers and other controls	General purpose	Highline track
MK Electric, Shrubbery Road, Edmonton, London N20 0LU												
M & M Lighting Ltd, 110 Gloucester Avenue, London NW1 8JA												
Masonie (P J Mason & Co Ltd), 36 Second Avenue, Chatham, Kent ME4 5AX	●											
Maylectro, Lower Moon Way, Tiverton, Devon EX16 6SS												
Menvier (Electronic Engineers) Ltd, Southam Road, Banbury, Oxon OX16 7RX	●											
Microlights Ltd, Elcot Lane, Marlborough, Wiltshire SN8 2BG												
Micromark, 550 White Hart Lane, London N17 7RQ												
Mode Electronics Ltd, Chelsing Lodge, Tonwell, Ware, Hertfordshire SG12 0LB												
Moorlite Electrical Ltd, Burlington Street, Ashton-under-Lyne, Lancashire OL7 0AX												
Middleton Hall Lighting, Myddleton Hall, Almeida Street, London N1 1TD												
NI Lighting (UK) Ltd, Unit F2, Birmingham Business Park, Enterprise Way, Luton, Bedfordshire LU3 4BU. Tel. No. 0582 491955												
Novopress Ltd, 11-14 Tenby Street North, Birmingham B1 3EN												
Orbik Electronics Ltd, Orbik House, Northgate, Aldridge, West Midlands WS9 8TH												
Orgatech Lighting, Pendle Mill, Pendle Road, Clitheroe, Lancashire BB7 1JQ												
Oxtron Digital Systems, Sucklings Yard, Church Street, Ware, Hertfordshire SG12 9EN												
Panorama Lighting Ltd, Unit 9, Willersey Industrial Estate, Willersey, nr Broadway, Worcestershire WR12 7PR. Tel. No. 0386 852171												
Philips Lighting, 420-430 London Road, West Croydon, Surrey CR9 3QR												
Poselco Ltd, Walmgate Road, Perivale, Middlesex UB6 7LX												
Powerlite Ltd, 122 North Street, Leeds, West Yorkshire LS7 1AF												
Profile Lighting Services, 7-8 The Links Business Centre, Raynham Road, Bishop's Stortford, Hertfordshire CM23 5NZ. Tel. No. 0279 757595												
Project Line Ltd, 80 Duncombe Road, Hertford, Hertfordshire SG14 3BZ												
RAM Electronics (UK) Ltd, Wharfedale House, Iron Row, Burley-in-Wharfedale, West Yorkshire LS29 7DB. Tel. No: 0943 863884												
RYD Design Ltd, Poplar Road, Wittersham, Kent TN30 7NT												
Rada Lighting Ltd, Hollies Way, High Street, Potters Bar, Hertfordshire EN6 5BH												
	Tel. No: 0707 434011											

Buyers' guide

Supplier

Supplier	Fluorescent fittings		Incandescent fittings		HID fittings		Other items
	Adjustable	Fixed	Adjustable	Fixed	Adjustable	Fixed	
Reggiani Ltd, Giltland House, 12 Chester Road, Borehamwood, Hertfordshire WD6 1LT Tel. No: 081-953 0855	●	●	●	●	●	●	Highbay lighting track
Ring Electronics Ltd, Gelerd Road, Leeds, West Yorkshire LS12 6NB Tel. No: 0532 798887	●	●	●	●	●	●	General purpose
C Sandberg & Son Ltd, Feinex Road, Cross Green Industrial Estate, Leeds, West Yorkshire LS9 0SS. Tel. No: 0532 492755	●	●	●	●	●	●	Dimmers and other automatic controls
Selite Ltd, 19 Stafford Road, Croydon, Surrey CR0 4NG	●	●	●	●	●	●	Emergency lighting
Siemens Lighting Ltd, Siemens House, Windmill Road, Sunbury-on-Thames, Middlesex TW16 7HS. Tel. No: 0932 752000	●	●	●	●	●	●	Security lighting
Silvertown Lighting Ltd, Springwood Industrial Estate, Braintree, Essex CM7 7QX Tel. No: 081-686 9919	●	●	●	●	●	●	Emergency lighting
Simplex Lighting, Grove Lane, Tipton, West Midlands DY4 7XB Tel. No: 0376 434344	●	●	●	●	●	●	Emergency lighting
Son et Lumiere, Lantern House, The Priory, East Farleigh, Kent ME15 0EX Tel. No: 021-557 2828	●	●	●	●	●	●	Emergency lighting
Staff Lighting Ltd, Hampshire International Business Park, Crockford Lane, Chineham, Basingstoke, Hampshire RG24 0WH. Tel. No: 0256 707007	●	●	●	●	●	●	Emergency lighting
Strand Lighting Ltd, Unit 2, Grant Way, Isleworth, Middlesex TW7 5QD Tel. No: 081-560 3171	●	●	●	●	●	●	Emergency lighting
Superswitch Electric Appliances, Houldsworth Street, Reddish, Cheshire SK5 6BP Tel. No: 0622 729292	●	●	●	●	●	●	Emergency lighting
Taison Lighting, Taison Industrial Park, Great Horton Road, Bradford BD7 4EN Tel. No: 0274 521550	●	●	●	●	●	●	Emergency lighting
Tally House Lighting Co Ltd, Unit 31, Cam Centre, Wilbury Way, Hitchin, Hertfordshire SG4 0TW. Tel. No: 0462 438336	●	●	●	●	●	●	Emergency lighting
Teblon Equipments Ltd, Springwell Road Works, off Whitehall Road, Leeds, West Yorkshire LS12 1BG. Tel. No: 0532 455644	●	●	●	●	●	●	Emergency lighting
Thorn Lighting Ltd, Elstree Way, Borehamwood, Hertfordshire WD6 1HZ Tel. No: 081-905 1313	●	●	●	●	●	●	Emergency lighting
Thousand & One Lamps Ltd, 4 Barneston Road, London SE6 3BN Tel. No: 081-698 7238	●	●	●	●	●	●	Emergency lighting
Transform Lighting Systems Ltd, 842 Ecclesall Road, Sheffield S11 8TD Tel. No: 0742 670777	●	●	●	●	●	●	Emergency lighting
Uni-Com Group, Enterprise Way, Edenbridge, Kent TN8 6EW Tel. No: 0732 865238	●	●	●	●	●	●	Emergency lighting
Valiant, 20 Lettice Street, London SW6 EH Tel. No: 071-736 8115	●	●	●	●	●	●	Emergency lighting
H Vesshoff & Co GmbH, PO Box 100725, 2800 Bremen 1, Germany Tel. No: (010) 421 321 373	●	●	●	●	●	●	Emergency lighting
Wila Lighting UK, Nursteed Road, Devizes, Wiltshire SN10 3DY Tel. No: 0380 725302	●	●	●	●	●	●	Emergency lighting
Zon International Ltd, 12 Fairway Drive, Greenford, Middlesex UB6 8PW Tel. No: 081-575 5755	●	●	●	●	●	●	Emergency lighting
Zumtobel Lighting Systems Ltd, Unit 5, The Agent Centre, Pump Lane, Hayes, Middlesex UB3 3BL. Tel. No: 081-573 3556	●	●	●	●	●	●	Emergency lighting

HELIOS



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Reader Service No. 314

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Reader Service No. 315



Marks and Spencer plc, Lakeside retail park

the soft sell

Marks and Spencer plc, foodhall



H.R. Owen, Jaguar showroom



Retail sales are critically dependent on product display and in-store ambience. Lighting plays a vital role in creating the right environment.

Softlighters' wide diffuse beam gives excellent general lighting reducing harsh modelling and providing the perfect partner to effect lighting.

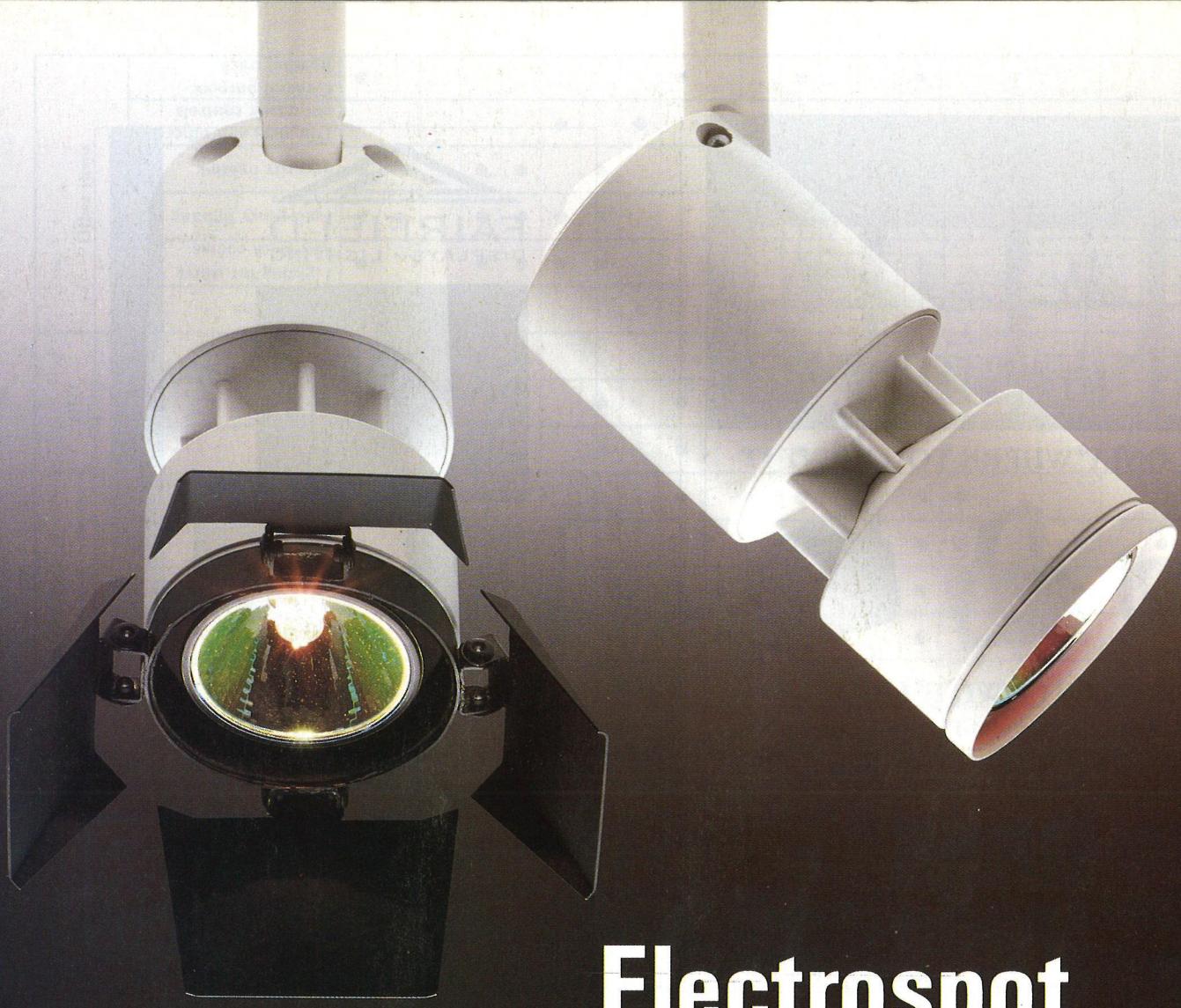
Our design team can use Softlighters to create the right environment – whatever your requirements, large or small, you should know more about Softlighters.

Softlighters

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Reader Service No. 316



Electrospot

12V Electrospot Low Voltage Spotlight with Integral Transformer

Elegant design – Brilliant performance.

Electrospot is attractive, compact and very competitively priced. Incorporating the latest in electronic transformer technology, this lightweight spotlight is easy to install, avoiding the limitations of low voltage wiring and providing the flexibility of being able to add or remove track spotlights as required. Electrospot offers all the advantages of low voltage lighting – energy savings, precise beam control, cool white light and endless design opportunities. Whether you require track lighting or surface mounted spotlights, Electrospot will add quality and style to any installation.

Design features:

- Suitable for 20W, 35W or 50W dichroic and capsule lamps.
- Soft start electronic transformer extends lamp life.
- Short circuit and thermal overload protection.
- Colour filter and barn door accessories available.



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