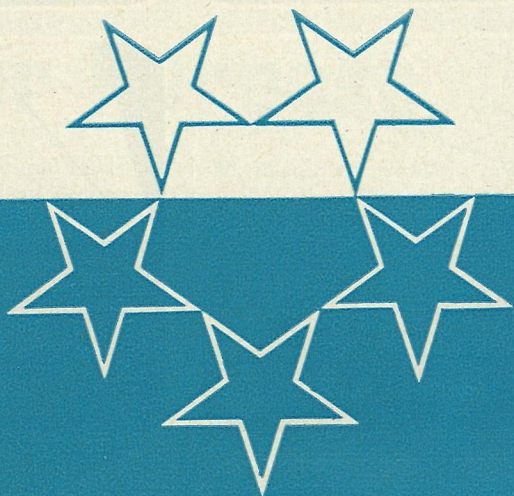


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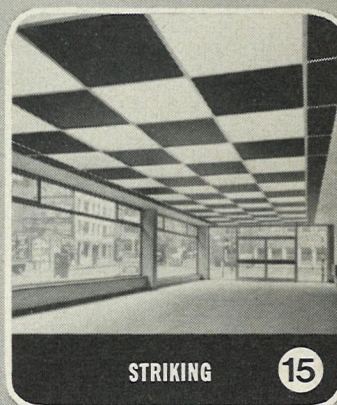
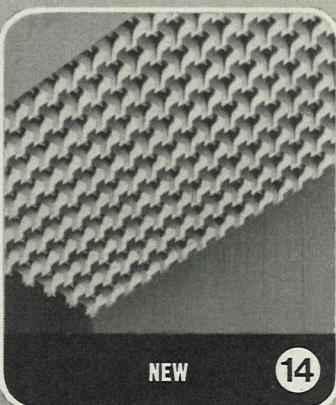
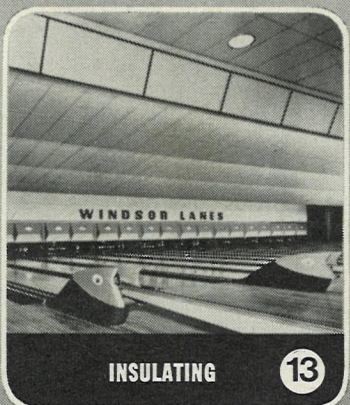
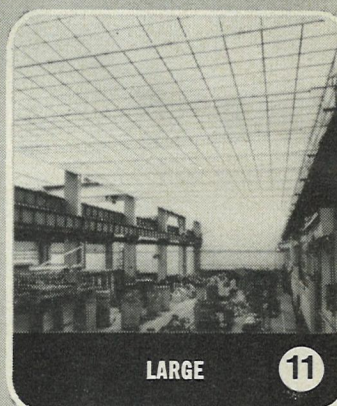
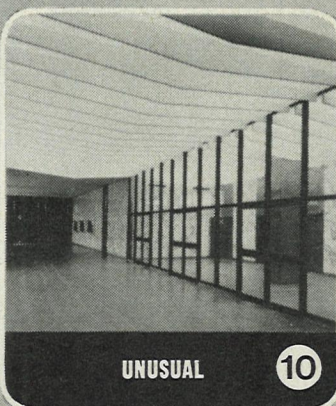
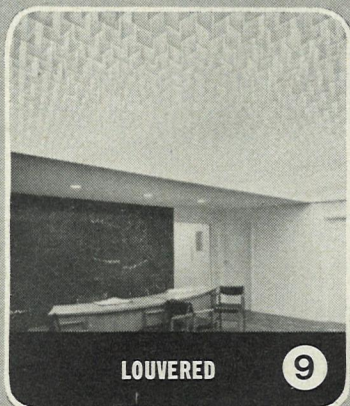
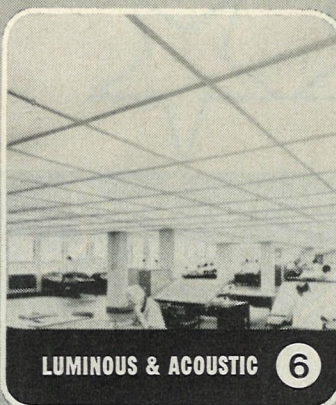
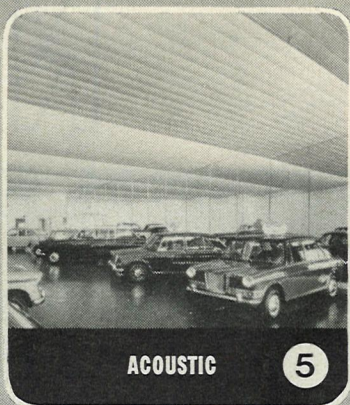
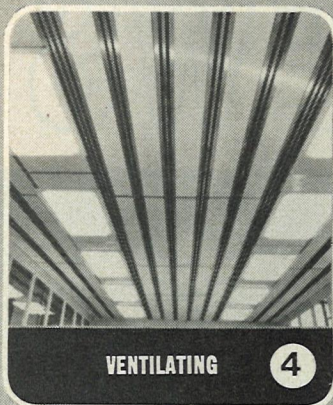
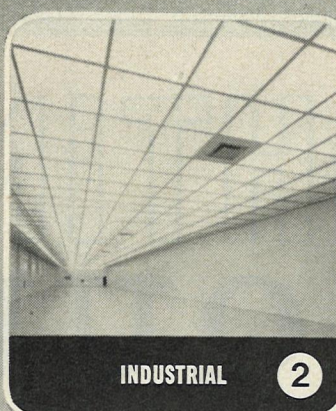
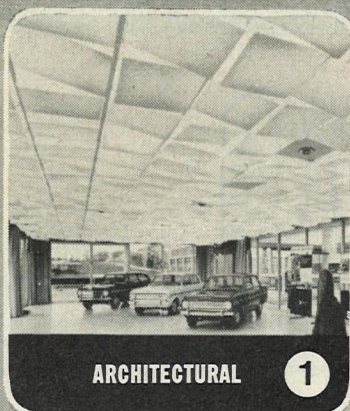
LIGHTING EQUIPMENT NEWS



January 1967

a Troup Publication

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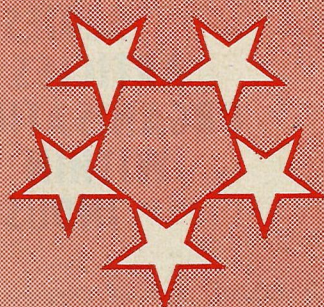
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LIGHTING EQUIPMENT NEWS

Our Purpose

NO-ONE wishes to add unnecessarily to the surfeit of reading matter confronting the busy engineer, executive or professional man today, and therefore no responsible publisher would, or should, dream of launching a new journal unless there was a very clearly defined need for it. However, in our view, such a need exists in the lighting field.

Until now the dissemination of information on new technical developments and techniques in lighting has been largely confined to *Light and Lighting*, the monthly journal of the Illuminating Engineering Society, and the intermittent publications of the British Lighting Council, whilst news of a more commercial nature, particularly in relation to the development of new lighting equipment, has been scattered through a variety of electrical journals, excellent in their own field, but whose main interests have been general electrical rather than specialised lighting equipment.

Our new journal, LIGHTING EQUIPMENT NEWS, makes available, for the first time, a monthly commercial publication devoted wholly and exclusively to lighting and lighting equipment. It is intended primarily for the user, installer or specifier of lighting equipment rather than the lighting industry itself, and is designed both to promote a better knowledge of lighting methods and lighting equipment amongst the potential users of this equipment and in so doing to promote the sales of this equipment both at home and abroad.

It will be apparent, therefore, that the aim of this new journal is to complement the activities of the I.E.S. journal and to bring to the notice of a far wider class of readers details of new developments in the lighting field in a form best suited to their needs as users rather than designers or manufacturers of lighting equipment.

We have taken the decision to launch this new journal since we feel the time has been reached when the lighting industry is of sufficient size and status to be considered as a separate industry, rather than merely a part of the general electrical industry, and as such merits the services of a specialist commercial publication to cover its particular needs. Estimates of the present size of the lighting industry vary, but in his recent I.E.S. Presidential Address, Mr. A. H. S. Olson put its gross turnover at £133 million per annum, and there is no doubt that as lighting standards improve—as improve they must—this figure will increase considerably.

We have been very encouraged by the response to the announcement of LIGHTING EQUIPMENT NEWS by the various organisations in the lighting industry and also by the support given already by some of the leading manufacturers. This response may be gauged by the letters of welcome published in the following pages of this issue. We would like, therefore, to place on record our acknowledgement of, and thanks for, this support, and particularly the co-operation and help received from the British Lighting Council, the Illuminating Engineering Society, the Association of Public Lighting Engineers, the Electric Lamp Industry Council, the Electric Light Fittings Association, the Decorative Lighting Manufacturers Association and the Electrical Sign Manufacturers Association. We would also mention particularly those firms who have supported us by advertising in this first issue.

The organisations mentioned above have already done sterling work in promoting better standards of lighting in this country and in developing the equipment to make this possible. As a result there is now a better awareness of the need for improved lighting, but this awareness is by no means as general as it should be.

It will be our purpose, therefore, in collaboration with all the existing organisations, to develop and foster improved lighting standards, to create an awareness of new lighting methods and lighting equipment, and to act as a source of unbiased, impartial and authoritative information on all lighting equipment matters.

Vol. I No. I

JANUARY, 1967

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LIGHTING EQUIPMENT NEWS

Published Monthly by Equipment News Limited

(a Troup Publications Company)

35 Red Lion Square, London, W.C.1.

Telephone CHAncery 7856/7/8/9



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LIGHTING EQUIPMENT NEWS is a controlled circulation journal, and is sent free of charge each month to qualified readers, i.e., those concerned in an executive capacity with the design, specification, purchase, installation, operation, maintenance, distribution and sale of lamps, lighting fittings and accessories of all types for the lighting of domestic, industrial, commercial and public buildings, including display, street and specialised out-door lighting.

THE WORK OF THE BRITISH LIGHTING COUNCIL

**FIRST OF A
SERIES OF
ARTICLES ON
ORGANISATIONS
WITHIN THE
INDUSTRY**

FOR the last three years, the British Lighting Council's headquarters at Lancaster Place in London, have not only housed a number of different exhibitions, but have been reconstructed gradually to give the place a new look and new usefulness. And so successful has this been that since the work was finally completed last November, many people have assumed that the B.L.C. itself is as new as it now looks and are surprised to know that it is well into its fifth decade, making it, in fact, one of the oldest promotional organisations in the country.

Council Status

Achievements in those early days were many, but ancient history should be the last thing to be emphasised in the first issue of a brand new journal. Suffice it to say that having begun as the Lighting Service Bureau in 1924, the brain child of the lamp industry, the organisation graduated to Council status in 1957 and now has the support of the entire lighting industry—supply, lamps, fittings and the electrical contractors of both England and Scotland.

Many readers of this journal already know the Council well but for those who do not, the following summarises some of its recent and forthcoming activities and the services it can provide.

Firstly, closely linked as it is with the Council of Industrial Design—both through its Design Award winning members and the jointly-run courses for retailers which are now annual fixtures amongst autumn lighting events—it is not only an arbiter of aesthetics but its aim embraces both the function and appearance of good lighting always with the emphasis on "good". And while expansion of the market is a natural corollary it is never allowed to over-ride the aim. If mere doubling-up on existing equipment had been the guiding principle, the B.L.C. would have closed its doors long ago. That this has never been so is one of the reasons that the Council has flourished and is respected everywhere as a source of trustworthy advice and information.

Secondly, it should be realised that although it is the largest

lighting organisation of its kind in the world, even including America, the number of staff is small and the income fixed. It is, therefore, not in a position to finance nation-wide promotions backed by vast advertising budgets. The influence it is able to exert, however, without doing this, is remarkable. Not that it does not encourage support for

Minister of Technology refers, it has organised two office lighting exhibitions, one in Manchester and the other in Southampton, and has run courses for lighting retailers in London, Leeds, Birmingham and Newcastle and Liverpool. It has issued new publications on Industrial Lighting and Applied Lighting and new editions of the well-known

"The promotion of the practical use of the products which derive from the [lighting] industry's work on development and on production techniques is a task of major importance. For this reason I welcome the opportunity of conveying to the British Lighting Council, on the occasion of the opening of its new display centre, my appreciation of the efforts the Council is making to fulfil this promotional task."

**Anthony Wedgwood Benn,
Minister of Technology.**

its various projects from everyone in lighting, it welcomes it. Indeed, without such co-operative support, most of the office and home lighting promotions in provincial centres last autumn would have lacked the necessary focal points, and whatever their connection with the subject of lighting may be, readers of this journal will always find that the B.L.C. is both willing and anxious to involve them in its activities.

To say that these are multifarious is an under-statement. For example, in the last few months, apart from the opening of its reconstructed premises to which the statement from the

Interior Lighting Design Handbook and its text book, *Better Office Lighting*. It has collaborated with the Association of Optical Practitioners, the Furniture Development Council, the British Laundry Research Association and local government authorities on subjects as varied as light and sight in industry and the new lighting regulations under the Offices, Shops and Railway Premises Act. In collaboration with the Electricity Council, it is planning a unique lighting display at the Ideal Home Exhibition in March.

This month sees the results of its collaboration with the organisers of "Liteshow" in a 600 sq ft

exhibit, also at Olympia. And in April, liaison with E.L.F.A. will be in evidence at the Earls Court Lighting Exhibition where it is not only staging a large stand dealing with the latest scientific developments in lamps and light control, but also organising an important five-day series of conferences on lighting and the new Britain and lighting in the U.S.A., which will include such names as Viscount Esher, President of the Royal Institute of British Architects; John Reid and Richard Kelly, the well-known American lighting consultant. In December 1966 its activities included a conference on lighting and productivity which is expected to have a marked effect on deliberations at the Convention of the Commission Internationale d'Eclairage in Washington next June, and meetings as far apart as one for architects in Cornwall and another for public health inspectors in Glasgow. In addition it is planning increased activity in the field of industrial lighting both in connection with Quality and Reliability Year and its own recognition of the part that better industrial lighting can play in national productivity.

Autumn Promotion

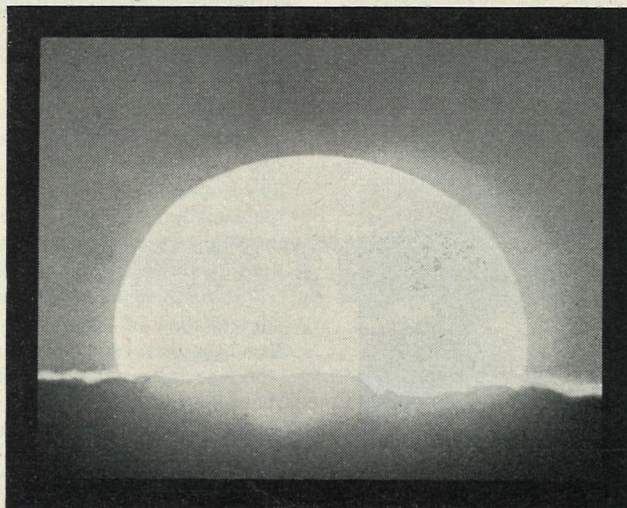
This year, too, pressure will continue to be exerted on the improvement of office lighting. Exterior lighting will also be given greater emphasis and a really major National Home Lighting Week is envisaged for the autumn. But these, as it were, are amongst the highlights, all giving leads to different sections of the industry but do not take into account the day-to-day facilities available at B.L.C. headquarters. These can be summarised as follows:

An exhibition of home lighting is always running. It shows applied lighting ideas and changes in mid-summer of each year. Special displays of lighting fittings are included from time to time and other exhibitions are featured in connection with current programmes. The home lighting exhibitions are responsible for inspiring more published editorial material on this subject than any other source throughout the country.

In these the interest is mainly



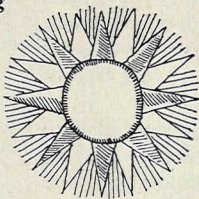
The Information Section at B.L.C. Headquarters. It includes a vast collection of photos, data sheets and international information.



There goes our biggest competitor

If the sun ever got around to working a twenty-four hour day, we would be in trouble. As things are we're doing very well.

Every evening when the sun finishes for the day more and more people turn to Atlas to give them light. So every day the people at Atlas are involved in making sure they get that light.



The sun gets by simply by turning out an awful lot of light. But people ask much more of Atlas than they ask of the sun. They ask not just for a lot of light, but for lots of different types of light for lots of different situations.

Lights for bedrooms and boardrooms, highways and railways, airfields and playing fields. Spotlights, floodlights, bright lights, soft lights, small lights, big lights. It goes on and on, individual people with individual needs in lighting. Needs that can only be met by intelligent research and design. And it's in research and design that Atlas comes out tops. Here are three examples that show you just what we mean.

The first fitting is one from the Atlas Atlantic fluorescent range of fittings which have proved so popular in industry and commerce. The

Atlantic range consists of one basic spine with a huge choice of diffusers and reflectors. From factories to office blocks the versatile Atlantic will fill the bill. There are single tube, double and 4-tube patterns, 4ft., 5ft., 6ft. and 8ft. long—making the Atlantic range the most versatile of its kind.

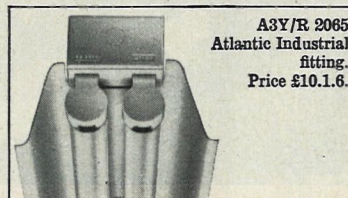
The introduction of the tungsten halogen lamp has enabled Atlas to forge ahead in the field of floodlighting. The completely weatherproof floodlight illustrated is specifically designed to meet outdoor floodlighting needs. The tungsten halogen lamp allows the floodlight to be only half the size of conventional fittings, at the same time giving increased performance.

When you notice a display, but don't notice the lights that light the display, then the lights are probably Atlas. The small spotlight illustrated is designed as a compact spot with a narrow high-intensity beam, ideally suited for highlighting display points unobtrusively and cheaply.



These three fittings are typical of Atlas. If you would like further information on any of them, please write to us and we will be pleased to supply it. Meanwhile, keep your eye on the sun, after the New Year

he's going to have to put in a little extra time each day, just to keep ahead of Atlas.



A3Y/R 2065
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fitting.
Price £10.1.6.



E.T. 500 M 500w
Tungsten halogen
floodlight
completely
weatherproofed
for exterior use.
Price £16.16.0.



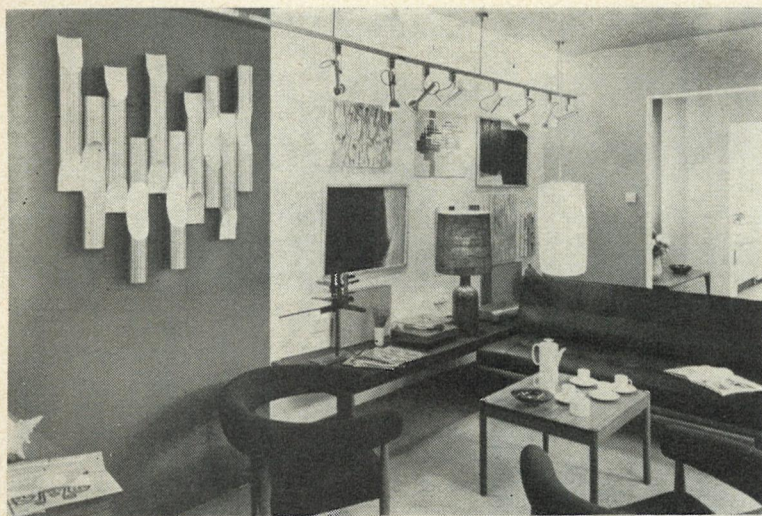
ES. 1050. Low voltage
display spotlight.
Price £5.15.6.

atlas lighting



Atlas Lighting Limited. A British Lighting Industries Limited Company, Thorn House, Upper Saint Martin's Lane, London, WC2. Telephone: TEMple Bar 2444 (Telex: Thorn London 21521)

Atlas design keeps Atlas ahead



Part of the domestic lighting feature provided by the B.L.C. at the Second International Domestic Lighting Exhibition



Students at a course for lighting surveyors held in The Institution of Electrical Engineers. So far some 500 lighting men have taken these courses which are organised from time to time at various centres throughout the country



The Director-General with the principal speakers at an office lighting conference photographed in the B.L.C. exhibition of One Hundred Years of Office Lighting. (Left to right): Mr. J. G. Holmes, A. Wilcock (Director-General), Dr. Beric Wright of the Institute of Directors, and John Reid, the architect

BRITISH LIGHTING COUNCIL

for those concerned with building and the total environment. They include applications of new light sources and fittings, representative types of luminous ceilings and sophisticated systems of integrated lighting/heating/air conditioning, showing how heat from lighting can be usefully transferred to other parts of the building. Illustrations of these demonstration areas can be seen on page 33.

A special area is available for the examination of coloured materials under the full range of fluorescent tubes and for experimental modelling effects with many forms of directional lighting.

Specialists in various lighting fields are available for free consultation—building and architecture; industries, streets and sports; offices, shops and commercial buildings; electric space conditioning, hospitals, decorative exterior lighting and, of course, homes.

The B.L.C. runs a specialised information service including manufacturers' catalogues, photographs and data relating to interesting installations, text books, magazines, technical journals, conference reports and appropriate publications.

The collection of colour transparencies of lighting installations of every description is the largest in this country. Individual slides, or sets of slides covering a given subject may be borrowed free of charge.

The Council is always glad to arrange or to assist with the arrangement of conferences and lectures on any lighting subject. Modern visual aids and sound amplification equipment are available for meetings at the B.L.C.

A wide range of publications is issued by the Council, some of which have already been mentioned. They are on sale at headquarters and at the Manchester and Glasgow offices, or by post. Lists of available material can be obtained on request.

The Council's London headquarters are normally open to visitors from 9.30 a.m. to 5 p.m., Mondays to Fridays and at other times by special arrangement. Admission to exhibitions and demonstration areas is free and visitors are always welcome, but if detailed consultation on any specific topic is desired it is advisable to telephone (TEMPle Bar 7337) in advance to make certain that the appropriate specialist is available.

If lighting is your business or comes within your scope at all, either as user or manufacturer or consultant, the British Lighting Council should certainly be on your visiting list. Through its

contact with lighting authorities all over the world and the vast resources of its supporting members in this country, it is able to make a practical contribution to the entire nation's way of life that cannot be over-estimated.

The British Lighting Council is supported by:

The Electricity Council
The Electric Lamp Industry Council
The Electric Light Fittings Association Limited
The Electrical Contractors' Association
The Electrical Contractors' Association of Scotland

As well as its headquarters at 16-18 Lancaster Place, London, W.C.2, the Council has offices at; 14, Woodlands Terrace, Glasgow, C.3, and 115, Portland Street, Manchester, 1.

For a list of current B.L.C. publications please quote reference LEN 111

New Company Formed

FORMATION of a new company manufacturing, exporting and distributing lighting fittings and appliances has recently been announced. The company is **L. B. Lighting Ltd.**, of 211 Courthope Drive, Bexhill-on-Sea, Sussex (Tel. Cooden 2428). The Directors are D. J. T. Last and J. E. Palmer, both of whom have considerable experience in the trade.

Their intention is to meet fully the trade's requirements in lighting. Already they have taken up the Southern England agency representation for Bushell & Saward and are responsible for the home trade for the recently introduced L. G. Hawkins & Co. Ltd.'s lighting range.

Specialised lines from abroad include the Kristall-Leuchten range of glass fittings from West Germany. L. B. Lighting have also obtained the sole U.K. Distribution rights for Noirot of Paris. (LEN 112)

Security Lighting For Prisons

THE walls of Wormwood Scrubbs and Wakefield maximum security prison, are being floodlit from the inside as a security measure.

Osram-G.E.C. has received a Home Office contract to supply lighting equipment for both prisons.

Floodlights will be situated at intervals around the inside of the prison walls, lighting the way for viewing by closed circuit-television cameras.

NEW LOW COST

REVOduct

2½" x 2½" LIGHTING TRUNKING

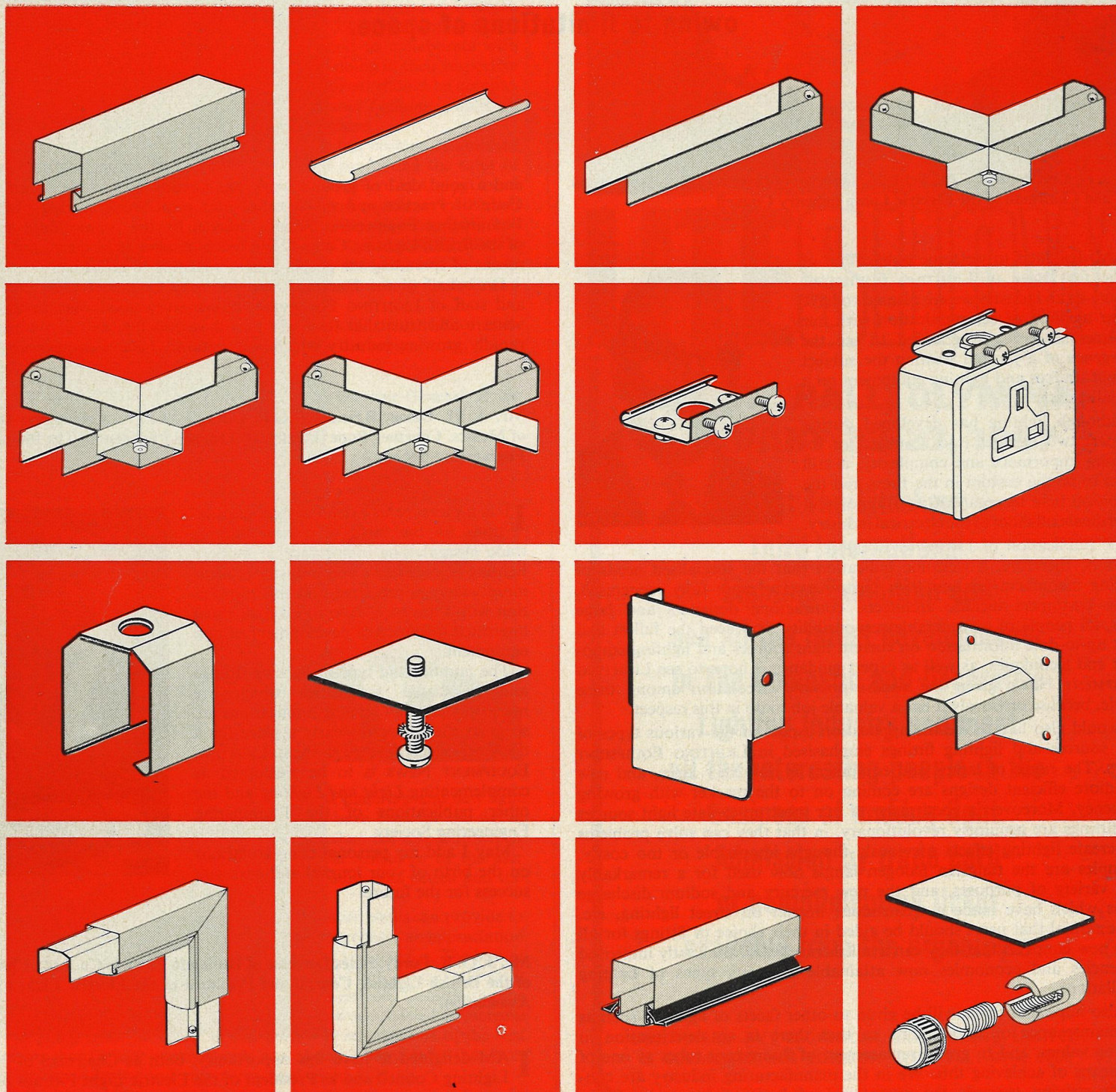
A brand new comprehensive range of top quality trunking and accessories, REVOduct is designed for both industrial and commercial applications. REVOduct has enormous strength and rigidity and is easily capable of taking 15 ft. suspension spans fully loaded with twin fluorescent fittings. Erection couldn't be faster or easier; no drilling required. Here is every trunking advantage at a surprisingly low cost. REVOduct will soon solve all your trunking problems. You can depend on it!

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MESSAGES OF WELCOME

Below are reproduced some of the messages sent to us by leading figures in the industry and its official organisations. To these we express our appreciation as well as to those whose greeting we are unable to include here owing to limitations of space.

Mr. J. G. Christopher, T.D., F.I.E.S., Director of British Lighting Industries Ltd. and Chairman of the Electric Lamp Industry Council.

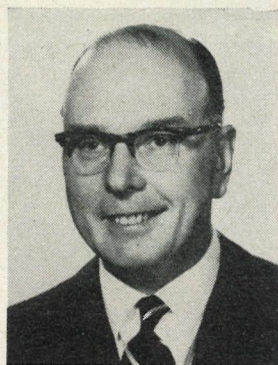
I AM delighted to welcome publication of the first issue of LIGHTING EQUIPMENT NEWS—as an industry we are pleased to have a new medium of communication with our customers. I am also gratified to see the emergence of a journal treating the subject of light sources and lighting equipment on a specialist basis.

Although lighting has developed during the past two decades into a subject of increasing importance and complexity, it still seems to be the custom in the Press and the exhibition field to regard it as a minor and subordinate offshoot of the electrical industry.

The publication of LIGHTING EQUIPMENT NEWS is, therefore, a welcome indication that the specialised needs of lighting manufacturers and their customers are more fully recognised. These customers include architects, contractors, designers and large users, all people of considerable responsibility who need the fullest and most up-to-date information on current light sources and lighting equipment and techniques, as well as expert guidance. I hope to see LIGHTING EQUIPMENT NEWS given the widest possible circulation among these people, because obviously it has a valuable job to do in this respect.

I would also like to see the application aspect of the various types of light sources and lighting fittings emphasised in LIGHTING EQUIPMENT NEWS. The range of lamps and equipment is now very large, and new and more efficient designs are coming on to the market with growing frequency. Moreover, a good many of our most up-to-date light sources and fittings are genuinely revolutionary, in that they can solve problems and create lighting effects previously thought impossible or too costly. Examples are the tungsten halogen lamps now used for a remarkably wide variety of purposes, and the new mercury and sodium discharge lamps which have made a tremendous impact on street lighting, etc. It is essential that users should be aided in their choice of fittings for all these new lamps so that they can avail themselves of the vastly improved efficiencies and economies now attainable in many types of lighting installations.

I also hope that space will be given to other facets of lighting, such as the maintenance of installations so that there is no deterioration in lighting values, and to group replacement of fluorescent tubes as one of the means of achieving this. We in the manufacturing industry are constantly striving towards the acceptance of better lighting standards,



and a good deal of ground work has already been done based on the Code of Practice and much other important work carried out by the Illuminating Engineering Society, backed by the promotional activities of the British Lighting Council. But much remains to be done, and another means of spreading the gospel is very welcome to all of us.

On behalf of the Electric Lamp Industry Council I offer the Editor and staff of LIGHTING EQUIPMENT NEWS every good wish in their new venture and trust that they will play a worthwhile and active part in a rapidly growing industry which will certainly have a prosperous future.

Mr. A. H. Olson, B.Sc., A.C.G.I., C.Eng., M.I.E.E., Managing Director of Messrs. Courtney Pope (Electrical) Ltd. and President of The Illuminating Engineering Society.

IT is a pleasure to extend my congratulations on the birth of a new lighting trade journal. The importance of modern lighting in commerce and industry is being more widely appreciated and this publication will, I am sure, help to keep all those interested informed of development of new equipment.

The number and type of lighting fittings and associated accessories which are needed to cover all lighting applications are so great that there is clearly a place for a trade periodical devoted to them. LIGHTING EQUIPMENT NEWS is to be welcomed as complementing *Light and Lighting* and the other publications of the Illuminating Engineering Society.

May I add my personal congratulations on the birth of your journal and wish you success for the future.



Mr. J. O. K. Purdy, Sales Director of Benjamin Electric Co. Ltd., Chairman of the British Lighting Council and President of the Electric Light Fittings Association.

I AM delighted to have this opportunity, both as Chairman of British Lighting Council and as President of the Electric Light Fittings Association, of welcoming this first issue of LIGHTING EQUIPMENT NEWS.

The introduction of this Journal, devoted solely to news about lighting equipment, draws attention to the fact that the lighting industry has now achieved the status of a separate industry. Its activities today justify production of this specialised journal, as well as a separate exhibition, 'The Lighting Exhibition', being sponsored by E.L.F.A. at Earls Court in April 1967.

Continuous and reliable communication between manufacturers and their customers in so many trades and professions is important. I therefore welcome the emergence of a specialised journal which helps people find out what is available, where they can see the equipment, where they can obtain advice on how to use it, and from whom they can buy.

Equally important is the opportunity which the journal will provide for users, consultants, and others to learn of the benefits in productivity and amenity that the proper use of well-designed equipment can provide. The journal might also expend some effort in condemning the mis-use which regrettably is so frequently a denial of all that has gone into the design of the equipment in the first place.

Those concerned with lighting already have their established societies, and organisations, such as the Illuminating Engineering Society, The Association of Public Lighting Engineers, The British Lighting Council, The Electric Light Fittings Association and The Electric Lamp Industry Council, and I am glad that the publishers intend to collaborate with these organisations in the valuable work they are doing in their respective fields. It is particularly desirable that this new Journal should be complementary to, and not in competition with, *Light and Lighting*, published by the I.E.S. and held in such high esteem everywhere.

I hope that when LIGHTING EQUIPMENT NEWS has become established in the Home Market, it will direct its efforts to promoting the sales of British lighting equipment overseas. I believe that there is a great need to spread regular news abroad about the range and excellence of British lighting fittings. The cost of overseas publicity is high—generally too high for all except the largest manufacturers—but it may well be possible to achieve useful coverage through the medium of this Journal. E.L.F.A. will, I know, be only too willing to co-operate in choosing markets and making lists.

I have great pleasure in wishing the Journal well on behalf of both the organisations I have the honour of leading at the present time.

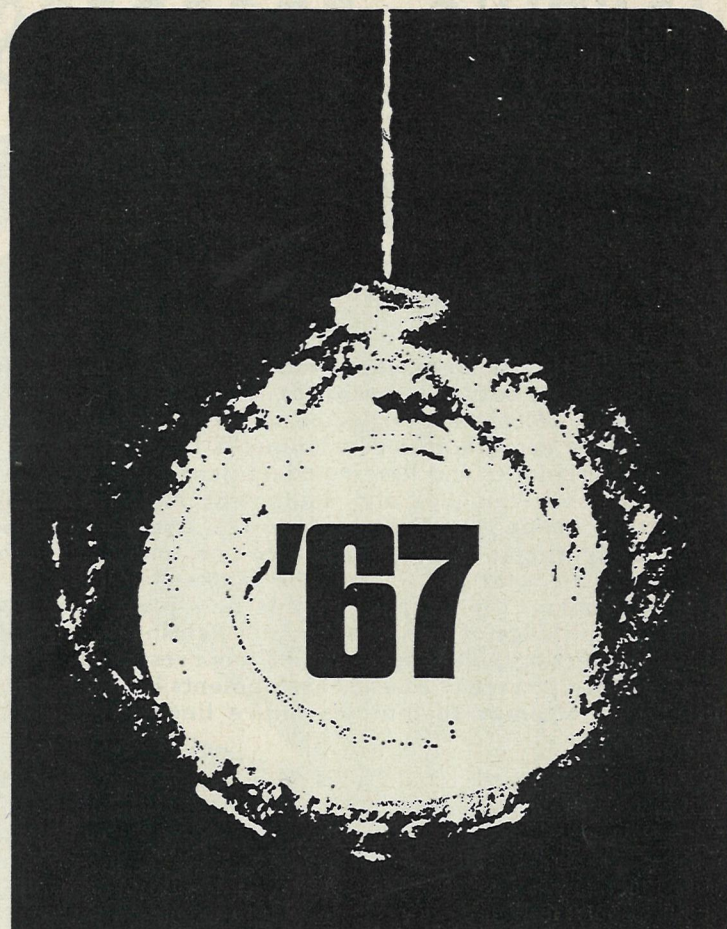
Mr. A. Wilcock, C.Eng., A.M.I.E.E., F.I.E.S., Director-General of the British Lighting Council.

I VALUE the opportunity of welcoming the introduction of this new journal. British Lighting Council draws support from all sections of the industry, including many who will be advertising in the pages of LIGHTING EQUIPMENT NEWS. And just as the journal promises to provide an opportunity for those companies to communicate information about their products, so, I hope, it will enable B.L.C. to bring to the reader information on the better uses to which these products can be put.

Lighting equipment today is very different from what it was only ten years ago. Many of the changes have been for the better, notably the way in which new materials and new light sources have been introduced. But, sadly, some have been for the worse and in this connection, nothing is more striking than the extent to which lighting quality has suffered through an apparent insistence by the user and the architect on the crudities of the bare fluorescent batten and the like.

Perhaps the best service that LIGHTING EQUIPMENT NEWS can provide to the lighting industry is to instil into the ultimate purchaser an appreciation that in lighting, as in everything else, you get what you pay for. The best of lighting may be more expensive than the other kind but you can still get it in most factories and offices for about 1% of the payroll. Considering the productivity benefit it can bring—recent German work showed an increase of 7% in going from 30 lm/ft² to 100 lm/ft²—it remains one of the best investments that factory managements can go for. Today, more than ever before, British industry and commerce need good lighting.

I wish the journal every success.



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LIGHTING PROGRESS

By

A.D.S. ATKINSON, C.Eng., A.M.I.E.E., F.I.E.S.

Consultant Editor

GOOD lighting is an essential factor of any comfortable environment, but the means to achieve an adequate standard have often been neglected in the past. In the last few years very considerable developments have taken place in lighting techniques and lighting equipment, but the knowledge of these techniques and equipment has not spread sufficiently outside the lighting industry itself. Thus the concept of lighting is often an out-dated one, and bears little resemblance to what can, in fact, be achieved today.

It is, of course, the purpose of this new journal to disseminate knowledge of improvements in lighting techniques and lighting fittings, and the object of this present article is to give a broad picture of recent developments in the lighting field and to attempt to indicate future lines of progress.

AS time goes by, people want more and more light. It is an appetite which has grown with the means of satisfying it and seems certain to continue doing so until people feel that they have enough. At what stage full satisfaction will eventually be reached it is difficult to say, but probably it will be when illumination values for ordinary working interiors reach some hundreds of lumens per sq. ft and so approach the order of value which would be provided by daylight with the roof rolled back.

At present a working space such as an office is considered moderately lighted at an illumination around 30 lm/ft², well lighted at 50 lm/ft² or so. Thirty years ago the corresponding figure was 8-10 lm/ft². If this rate of increase is continued we should reach some 200 lm/ft² in the next 30 years, but this assumes that the technology of generating and applying light will improve only at the same rate as in the past; and in these fields advances are now so rapid that this is perhaps a conservative assumption.

I.E.S. CODE

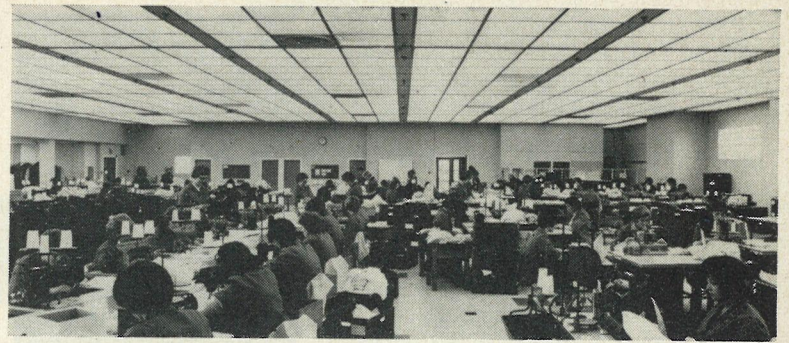
The acceptability of even present levels of illumination are, however, dependent on the lighting system being competently planned to avoid visual discomfort from glare, and this will become ever more essential as more and more light is applied. Nearly six years have passed since the Illuminating Engineering Society, in the 1961 I.E.S. Code, first published data which enabled installation designs to be checked for visual comfort but for one reason or another, such

as cutting cost in a desire to get the contract, the data are still often ignored and glare is left to look after itself, with unfortunate results. In most cases it is up to the user, by specifying adherence to the IES recommendations, to ensure that his installation will be visually comfortable, and though it may cost him something extra, the excess if any is amply justified.

GLARE-FREE FITTINGS

All the leading manufacturers can now quote in respect of their own fittings the photometric data required for glare calculations to be made, and the publication of the IES data has indeed stimulated the design of new types of fittings inherently more glare-free than in the past. In particular they have widely adopted a prismatic system of light control, the lower part and perhaps also the sides of the fitting comprising a panel of clear glass or plastic fashioned into an optically designed pattern of prisms arranged to distribute the light in a desired manner. Normally such a panel will not look unpleasantly bright when seen at ordinary viewing angles but gives a strong punch of light near the downward vertical.

The Public Health departments of Local Authorities are charged with administering, in offices under their jurisdiction, the provisions of the Offices Shops and Railway Premises Act 1963. By Section 8 the lighting is required to be "sufficient and suitable", the meaning of which will presumably be clarified if, as some expect, statutory regulations are issued in due course. In the meantime Local Authorities are interpreting the requirement as best they can; most of them are being guided by the IES recommenda-



Berlei factory at Portsmouth with a controlled environment excluding daylight

tion for an illumination of 30 lm/ft².

Of the lamps currently in use the fluorescent type is the most efficient, yet at the best less than 20% of the input energy is converted into light and the remainder into heat. Corresponding figures for tungsten lamps are nearer 10% and 90%. Even the proportion converted into light will degenerate into heat as it becomes absorbed in the room, so for practical purposes it may be taken that the entire wattage of the lighting installation, whatever type of lamp or fitting is used, will generate heat.

In the past the heating effect of lighting has generally been small enough to be ignored except in intensely lit enclosures such as shop windows. But now with illumination levels ever rising higher it is something very much to be reckoned with. For example, fluorescent lighting to a level of 100 lm/ft² will require an electrical load of about 4-5 watts per sq.ft. Add the body heat of the occupants of the building (equivalent to perhaps 1 watt/ft²) and the heat output of plant and equipment other than normal heating apparatus, and it may be found that the total heat liberated in the building will balance the heat losses so that no heating installation as such should be required. In an experimental building—St. George's County Secondary School, Wallasey—with exceptionally good heat insulation and means of making the best use of solar heat gain, this kind of result has already been achieved with a tungsten lamp installation giving only about 10 lm/ft² illumination.

It is fortunate that high levels of illumination and air conditioning are both becoming more readily accepted, for they are complementary to each other. Due to the common use of air conditioning in the U.S.A. and the higher levels of lighting which the American economy demands they are ahead of us in this field and have already installed a number of successful installations of heating by lighting, and there is no doubt that we shall profit

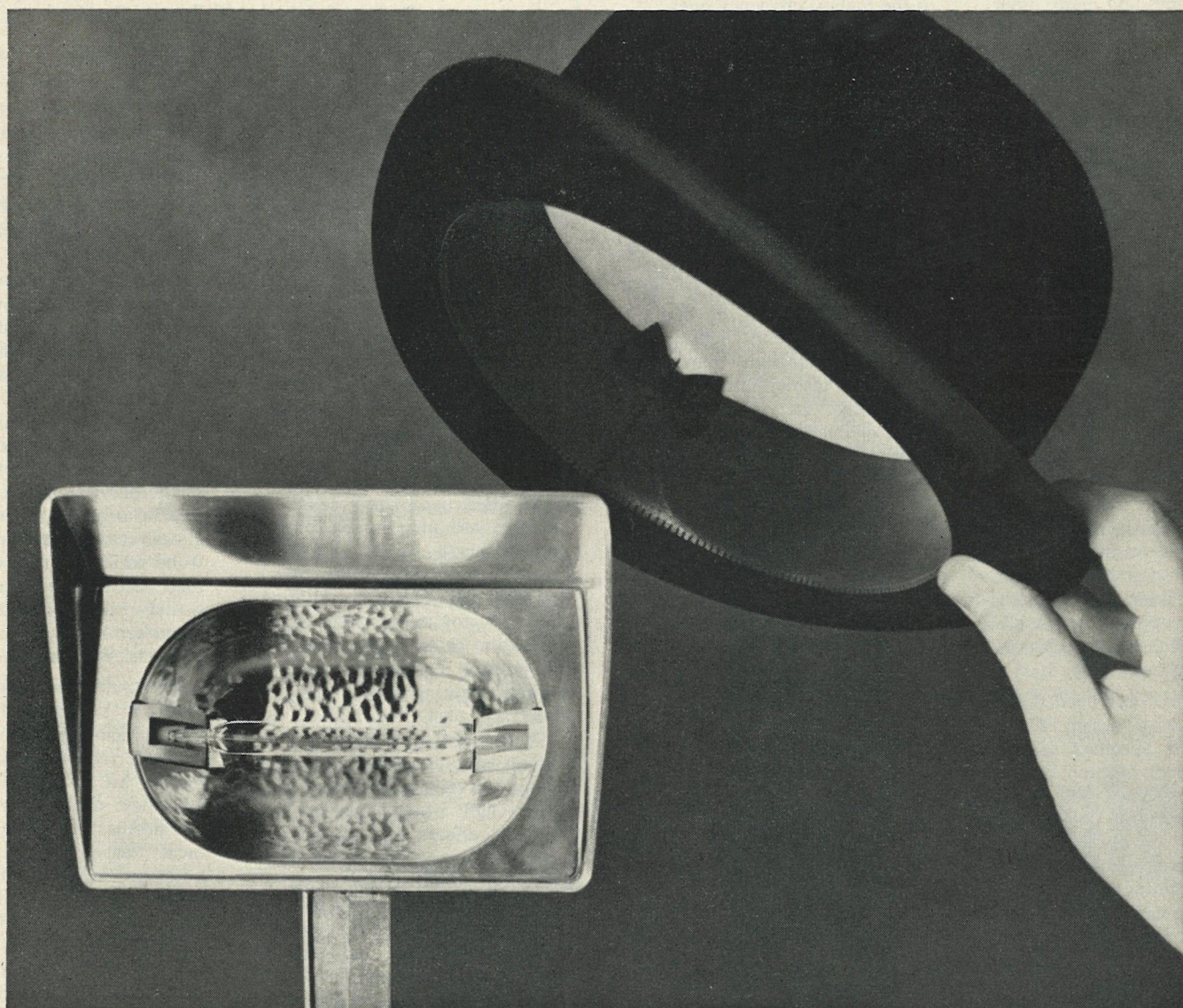
by their experience. In a fully integrated system air is drawn out of the room through or over the tops of the lighting fittings so as to extract heat from them—and incidentally to prevent loss of lighting efficiency through overheating—and the air is then filtered, mixed with a proportion of fresh air, heated or cooled as necessary and returned to the same or another part of the building; or a water system may be used to effect some of the heat transfer.

The problems of getting adequate light to the far side of wide rooms lit by windows at one side are well known. Principal difficulties are that the windows need to be tall and the ceiling therefore high, but high ceilings add to cost; also that there will be sky glare to contend with and the loss of heat through large glazed areas in winter must somehow be made good. Pre-occupation with problems of daylighting has certainly been one of the reasons for modern office blocks being tall thin constructions with low narrow rooms piled on top of each other, but this is not necessarily the most economic building form as regards either capital or running costs.

SUPPLEMENTARY LIGHT

Lighting costs are now so low in relation to building costs that substantial economies may be made by designing for the parts of rooms remote from windows to be artificially lit in daytime to a value sufficiently high to provide an acceptable balance of brightnesses throughout the room which, however, still appears to be predominantly lit by daylight. The technique of Permanent Supplementary Artificial Lighting of Interiors (PSALI) is well established and in most cases an illumination of the order of 50/60 lm/ft² at the back of the room will be needed to obtain the desired effect; this is more than might be provided simply to enable the office work to be done, but PSALI has wider objectives than the mere provision of a working light.

Hats off to Mazda



New SUN 500w halogen floodlight only 8 inches by 6½

As you can see, this new Mazda open-type floodlight fitting is extremely compact. The main body (of aluminium alloy) is only 8" long, 6½" wide, 4" deep overall. The cooling chamber is 4¾" × 1¾" × 1½" overall.

The Sun fitting is designed for smaller applications from medium mounting heights. It is ideal for lighting such outdoor areas as forecourts, parking lots, flower beds, building sites and other open work areas. Use it in unobtrusive, elevated locations for facade lighting. Or indoors for work-sheds and so on.

There are at least nine different methods of fixing,

using four different accessories (optional extras).

Big value. Because of its size and construction, the Mazda Sun gives a better distribution of light than a forward-throw, conventional open-type fitting, which can be four times as large and cost much more.

Long-lasting lamp. The 500w tungsten halogen lamp has double the life of a conventional tungsten filament lamp. Blackening is prevented. 100% lumen maintenance throughout life. The lamp has been specially designed to withstand rough wear.

Prices: fitting only: £5. 10s. 0d. Lamp £4. 7s. 6d.

For more information on this and other floodlighting fittings in the wide Mazda range please contact A.E.I. Lamp & Lighting Company Limited, Melton Road, Leicester, England. A British Lighting Industries Limited company.



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Lighting Progress

Probably in time we shall come to agree with the American attitude to windows. They think of windows as nice things to look out of but unreliable and uneconomical sources of light. American offices and many other buildings are planned to be lighted entirely by artificial light, any daylight which comes through windows being treated as a kind of bonus which affects a small area near the windows for some of the working day.

Traditionally, lighting design has been based on the provision of a required illumination on the "working plane" such as the level of work benches, office desks, displays and so on; and recently, as has already been noted, it has been possible to make a glare calculation to ensure that the lighted scene is visually comfortable. But illumination design on these lines tells us little or nothing of what the interior will look like when the lights are on. As in many other activities good results can be obtained by experience and flair but for many interiors, especially those whose appearance is all-important, the method leaves much to be desired.

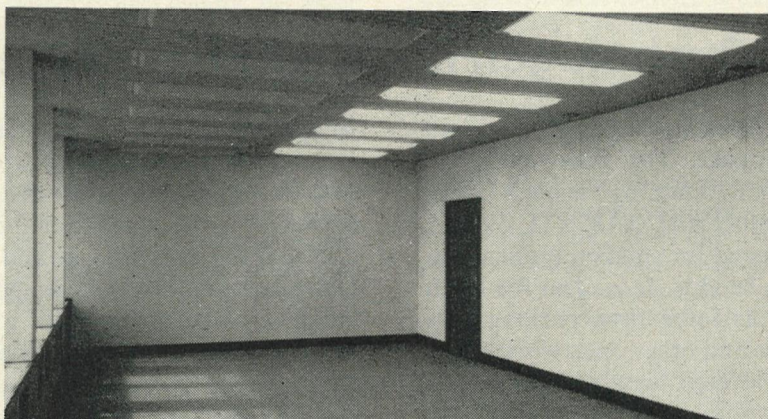
What has long been needed is a simple scheme of design which will produce a specified brightness (luminance) of each of the major room surfaces, the walls, the ceiling and the floor area; and methods of obtaining the desired results are publicised by the British Lighting Council and the I.E.S. Unfortunately a gap in our knowledge still exists—we do not yet know enough about what luminances there ought to be in this or that kind of location in order to produce a sensation of interest, pleasure, relaxation or whatever is aimed at. This question is being energetically studied but is full of difficulties for it concerns human reactions which are largely unpredictable.

Two or three years ago there seemed to be nothing in sight which would interfere with the continuous forward march of fluorescent lamps, which in a quarter of a century had grown from nothing to become the predominant light sources. Giving discharge lamps a large share of exterior lighting and some share of high-bay industrial lighting, and giving tungsten lamps a good deal of display and decorative lighting, all the rest was fluorescent or in due course seemed likely to be. The high-efficiency types of fluorescent lamp were much the most efficient sources suitable for interior lighting. For most applications fluorescent lamps were in the long run—and

not so long at that—the cheapest; and cost is a powerful argument. There was already a wide variety of colours of lamp to choose from and every now and then optimists—in the aesthetic sense—thought they could detect traces of a swing towards the use of the better-colour varieties in place of the highest-efficiency ones.

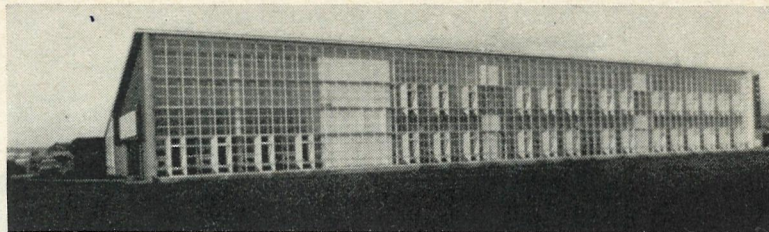
All the research and development work put into these lamps, and still being put into them, had trebled their efficiency and only a year ago the rated lives of the larger sizes were increased to 7,500 hours compared with the 2,000 hours of the original lamps. In the last few months yet another type has been introduced—the 6 ft 85W—designed to fit into a 6 ft module and claimed to effect a further reduction in lighting costs. Fluorescent lighting is going more strongly than ever; yet in his Presidential Address to the I.E.S. last October Mr. Olsen claimed that we were now entering the discharge lamp era, for novel and exciting things have been happening in that direction too.

On grounds of economy the bluish-green light of the original mercury lamps was accepted for a time for street lighting and industrial applications where the bad colour appearance of people and things was considered of minor importance. By now, however, plain mercury lamps of this type have been virtually abandoned in favour of the recent colour-corrected (MBF/U) types which give a more acceptable colour of light with no loss of efficiency. These lamps and their reflectorised (MBFR/U) versions are at present making a strong challenge for industrial installations at medium and high mounting.



A typical office showing interior lights at full brightness for bright day conditions

But now mercury halide (or mercury iodide) lamps too are available. These contain mercury plus additives in the form of iodides, and even at this early stage offer a worth-while increase in efficiency as well as better colour of light than the corresponding MBF/U type. Larger



St. George's School at Wallasey in Cheshire

sizes than the present 400 W lamp are sure to appear in due course, but whether much smaller sizes can be made remains to be seen. The lamps have obvious applications for street lighting and also for industrial interiors where it is practicable to use a few high-output single sources against the possible alternative of a much larger number of fluorescent tubes.

An entirely new form of sodium discharge lamp is also on the way. Hitherto sodium lamps working at low pressure have always been the most efficient of all but their monochromatic yellow light has completely destroyed one's sense of colour. Everything looked yellow, grey or black; it has been said that they made people look 'dead and dug up'. For street lighting this may not matter very much in relation to saving of cost, but for interior lighting it has put sodium lighting right out of court.

The new high-pressure type of sodium lamp expected to become generally available this year still gives a light which looks yellow, but its effect on colours is entirely different. No longer does everything look yellow or grey, but the entire range of colours can be seen much as they would appear under the light of a vacuum tungsten lamp. The 400W lamp will have an efficiency

sodium lighting will at last come indoors.

It is remarkable to what an extent tungsten halogen (tungsten iodine) lamps have caught the public imagination, perhaps partly because nothing much seemed to have happened to tungsten lamps for some years.

Ordinary tungsten lamps burn out because continuous evaporation from the incandescent filament eventually leads to failure. In the new type a halogen such as iodine or bromine is added to the gas filling and this sets up a regenerative cycle which in effect returns evaporated material back to the filament. If it could somehow be arranged that the material always returned to the exact spot from which it was evaporated, then perhaps the life of the lamp would be unlimited and the manufacturers would go out of business. We shall see.

The cycle does, however, allow lamps to be designed to have a much higher performance than ordinary tungsten lamps; typical figures are a 25% increase in efficiency coupled with double the normal lamp life. For technical reasons the lamps are necessarily small in size and this brings with it the advantage of accurate light control being possible with small fittings, and optical systems in projectors etc. being more compact and more efficient. For many applications these factors outweigh the greater cost of the lamp.

PAR lamps are now available with dichroic filters. The filter is made up of very thin layers of two different transparent substances applied alternately, and it can be constructed either to reflect light and transmit heat, or to reflect heat and transmit light.

In addition to display work, dichroic lamps seem also to be suitable for 'black hole' ceiling fittings used for room lighting.

It is not possible in a brief article of this nature to deal in any detail with specific lighting developments. However, it is hoped that this article has given a general picture of the present state of progress, and it is intended to deal both with some of the developments referred to above as well as future developments as they occur, in a more comprehensive manner in future issues of this journal.

around 90-100 lumens per watt, which is substantially ahead of any other good-colour source, and the physically small discharge tube offers better opportunities for accurate light control than with the physically larger low-pressure types.

There can be no doubt that

SIMPLIFIED LIGHTING AND GLARE CALCULATION

Described here are two devices which have been specifically designed to provide quick and accurate answers to glare and lighting calculation problems

IT is becoming increasingly recognised that the evaluation of glare is most essential during the design of any lighting installation if the maximum working efficiency is to be achieved and discomfort avoided. The normal determination of glare is by means of the I.E.S. data, which, whilst presented in a conveniently compact form, in most cases requires anything up to twenty minutes or more for even an experienced person to work out, mainly because there are various interpolations to be done in different directions at the same time.

Realising these difficulties, the British Lighting Council put forward some little time ago a simplified version of the I.E.S. data, which is sufficiently accurate for day-to-day purposes. M. H. Mear & Company, the Huddersfield calculator designers and manufacturers, have now produced an ingenious circular slide rule, which simplifies the calculation very considerably and permits the calculation of the glare index by means of only four successive slide settings, which means that even a comparatively unskilled operator can produce the answer within half a minute or so, and always within 0.2 and usually within 0.1 of the B.L.C. figure.

The calculator gives the glare index in accordance with the B.L.C.'s method, and gives a measure of the glare experienced by an occupant of a room seated at the mid-point of one wall and looking horizontally at the centre of the opposite wall.

One side of the calculator determines the Basic Glare Index by a simple setting of equivalent

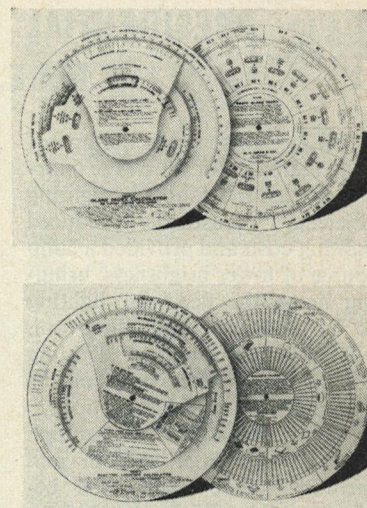
Width of Room to equivalent Length. This portion of the calculation is made so extremely simple by an ingenious design which provides a separate pair of scales for each type of fitting (B.Z. number) and by using different colours for symmetrical fittings, non-symmetrical fittings viewed endways and non-symmetrical fittings viewed crossways. The scales are fully calibrated so that the exact equivalent length and width can be brought together and the laborious business of interpolation from tables is eliminated and increased accuracy obtained.

The other side of the calculator shows the allowance to be made for other factors, i.e. wall and ceiling reflectances, flux fraction ratio, downward flux from fitting and the luminous area and height of the fitting. The setting of two dials to these quantities permits this allowance to be read off and adding it to, or subtracting it from the basic index gives the Final Glare Index. If this exceeds

the allowable figure for the particular type of building and process, modification is indicated to reduce the glare to acceptable limits.

The calculator is 7½ in dia., and is strongly constructed from opal white and clear perspex, with scales engraved in four colours. It is priced 54/- post free and comes complete in attractive case with instruction booklet.

The same company have also produced a companion Electric Lighting Calculator for commercial and industrial installations, which has been designed to give quickly and accurately the number and size of lighting fittings for any installation by the lumen method. It indicates a logical and easily followed design sequence,



(Top) Glare Index Calculator and (bottom) Lighting Calculator

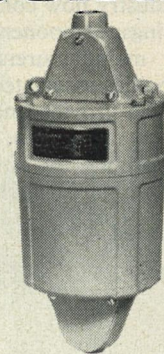
with each step dealt with by an individual section of the instrument. It is intended for room sizes from 8 ft x 10 ft to 400 ft x 600 ft.

On the front of the calculator two dials are simply set to the length of room, width of room, required illumination and coefficient of utilisation, and the size of each fitting can be read immediately opposite the chosen number of fittings or vice-versa. The total installed flux can also be read off at the same setting.

On the reverse side of the

(Concluded on page 15)

auxiliary control gear for discharge lamps

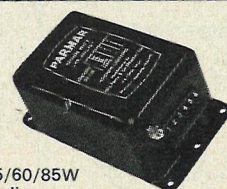


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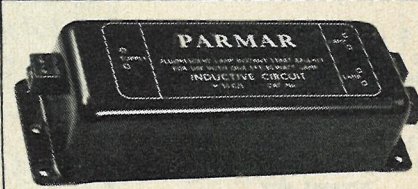
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PRESIDENTIAL ADDRESS DELIVERED BY A. H. OLSON B.Sc., A.C.G.I., C.Eng., M.I.E.E., TO THE ILLUMINATING ENGINEERING SOCIETY

THIS second age was the age of enlightenment, in which the fluorescent lamp doubled lighting efficiency, drastically reduced lighting costs and provided a lamp source of lower brightness, bringing home the need for lighting to be used as a production tool. Nevertheless, tungsten lighting still had its place, both on its own and in mixed installations.

Today, the advent of the high pressure discharge sodium and mercury halide marks the beginning of the third age of light—the age of refinement. There is a new break-through in the colour quality of light, with increased efficiency of lamps and a better knowledge of the integration of lighting, heating and ventilation. All this is combined with a more efficient use of building structures and forms, and a greater understanding of colour and vision resulting from increased study and research.

Figure 1 shows the diagram of the main light sources in use, and is divided into two classes—those light sources with acceptable and those with poor colour rendering qualities. Under each are tabulated the efficiency in lumens/watt, the lumen hours per lamp and the life. The most striking example is in comparison of the two sodium lamps, the L.P. version with unacceptable colour of light for use in interiors, and the H.P. version with very good colour.

The lighting industry now consists of lamp, fittings, component and equipment manufacturers, as well as other bodies associated with lighting, which provide and sell related products or services.

In order to determine the size of the lighting industry, a schedule

RELATIVE PERFORMANCES				
LAMPS WITH GOOD OR REASONABLE COLOUR RENDERING				
SOURCE	LUMENS/WATT	LIFE	LUMEN HOURS	
TUNGSTEN	15	1,000	15,000	
TUNGSTEN HALOGEN	25	2,000	50,000	
MERCURY CORRECTED	30	2,000	60,000	
H.P. MERCURY - HALIDE	40	2,000	80,000	
FLUORESCENT TUBE	50	2,000	100,000	
H.P. SODIUM	60	2,000	120,000	
LAMPS WITH POOR COLOUR RENDERING				
MERCURY	30	2,000	60,000	
SODIUM	60	2,000	120,000	

THE ABOVE TABLE IS BASED ON PERFORMANCE OF AVERAGE OVER RANGE

Fig. 1 (top) shows the main light sources in use and distinguishes between those with acceptable and those with poor colour rendering. Fig. 2 (right) plots the lighting load from 1920 right up to the present day

The Growth Of Lighting

THE age of the filament lamp was simply one of meeting necessities and dispelling darkness, and the electric lamp merely replaced flame sources. Carbon lamps appeared in 1878, osmium filament lamps in 1902, tantalum in 1902, tungsten came a year later and the first gas-filled lamp in this country was about 1917. These changes led to a long period of improvement and the introduction of a wide variety of lamps, culminating in the appearance of the fluorescent lamp in 1939, which marked the onset of the second age.

of six groups has been listed and the product value of each estimated; the sum of all six being called the total value of the lighting industry.

The first public supply of electricity in Great Britain was given in 1881 when current generated by the water of the River Wey was used to light the streets of Godalming in Surrey. The lighting load was 100% of the total power generated. At the turn of the century, with the development of the electric motor and its use in manufacturing processes, the proportion of lighting load to total load began to fall.

From 1920 onwards, the figures of the total load became available, but it has been necessary to compute the proportion of that load which is attributable to lighting. This has been done by averaging the results of two methods of approach where applicable, the first being to take a percentage of each category of load and the second to base an estimate of lighting load on the annual sales of lamps.

Figure 2 plots the lighting load from 1920 to the present day. Two prognostications for 1971/2 are indicated. The curve of total consumption based on the Government National Plan for 1964/70 fore-

cast a demand of 225,000 million kWh in 1971/2. The lower curve indicates the rate of growth from 1965 to be expected from past experience; the upper curve plots the growth based on the National Plan. If this is to be achieved, all elements of the industry will have to promote lighting far more vigorously.

A comparison of costs of wiring over the last sixty years is shown if we take for example a home; a lighting point cost approximately 35/- with wood casing in 1892; 20/- in 1902; 12/- in 1908; 18/- in 1938 and £3-£4 in 1965. In commercial and industrial installations a figure of £5 and upwards applies today.

The value of the electrical installation for lighting is a difficult figure to obtain, as lighting forms part of the main installation. The following estimates are based on turnover:

	£ million
ECA turnover £150 million say 20% attributable to lighting	30
Supply Company installation turnover of £24 million say 20% attributable to lighting	4.8
Retail turnover £56 million say 5% attributable to lighting	2.8
	37.6

The increase in the sale of lamps is one method of assessing growth of lighting, but it conceals to a remarkable extent the real increase in lighting that has occurred, which is significantly faster than the growth in population.

When the E.L.I.C. was formed in 1957 more accurate figures of lamp sales

became available. Figure 3 shows the recent growth which we have expressed as a percentage of the 1957 figure.

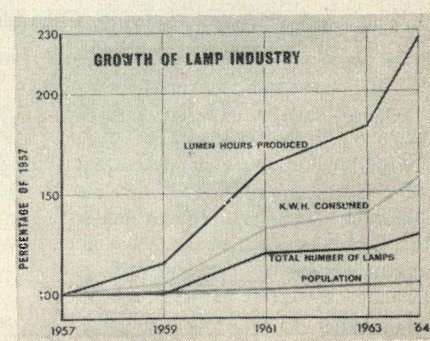
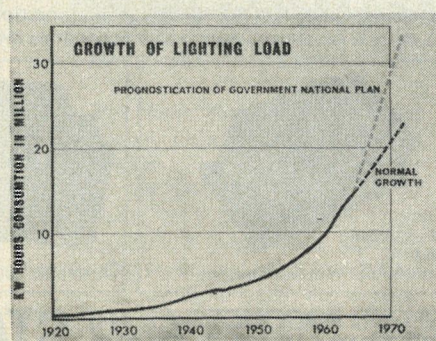
The graph of lumen hours of light produced, has more than doubled since 1957, due to the increased efficiencies of light sources, whilst the energy consumed has only increased 50% by 1965 for just over twice the amount of light. At the same time, the doubled amount of lumen hours was produced by only 29% more lamps in use, and during this period the rate of growth of population was 5%.

Tungsten sales have risen from 160 to 194 million—an increase of 34 million representing 21%. It is difficult to appreciate that the relative figures for fluorescent are from 5 to 19 million—an increase of approximately 400%, and for mercury and sodium, 0.6 to 1.5 million, which is a growth of 300%, especially when we consider that the small growth of tungsten, i.e. 34 million, is still larger than the combined production of 30 million for fluorescent, mercury and sodium in 1965.

Mention should be made of the tremendous increase in production of tungsten lamps, which was only made possible by the investment of large capital sums and mechanisation and automation, which is now in turn applied to the manufacture of fluorescent lamps.

This has been an important factor in keeping lamp prices low, particularly in relation to the Retail Price Index, which has risen continuously since the last war. The variation in costs is shown in the graph. Figure 4 shows that in spite of the cost of living increases, the price of lamps has been declining throughout the years. The first fluorescent lamps sold were 35s. each in 1939 as against the present-day price of 10s. 6d. plus 2s. purchase tax and surcharge, totalling 12s. 6d., whilst the lamp life has increased more than threefold, and the

Fig. 3 (below) shows the recent growth of the lamp industry as a percentage of the 1957 figure



average lumens more than doubled. But there is no doubt that for its low initial costs, ease of maintenance, replacement and colour rendering, the filament lamp is still the most popular source of light for domestic lighting.

Fitting sales rose from £12 million in 1951 to £34 million in 1965. But latest figures for 1965 given by Board of Trade are much higher: the sales being 38½ million, including in their figures approximately £3.9 million for export. Since there is a possibility of some duplication, for auxiliary gear the value taken for the industry is £34 millions.

In a breakdown of these figures, approximately 6 million lamp-ways for fluorescent were sold, valued at £18.6 million; whilst the value of discharge lighting equipment was nearly £4 million; in effect over 60% of the monetary sales are fluorescent.

Street lighting equipment totals nearly £3.4 million, which is surprising, as the energy consumed has grown 25 times since 1920 and is now about 1% of the total consumption and 1½% of the total revenue.

The wholesalers are the stockists and distributors for manufacturers, and they handle lighting equipment, wiring and installation accessories, switchgear and lamps. In 1964/5 they were trading on an approximate turnover of £130 millions.

MAINTENANCE

The post war years have seen the emergence of lighting maintenance companies. The growth has been slow, but as the levels of illumination are raised, so the need for better maintenance is greater. Replacement of individual lamps on failure is an emergency operation, but with the longer life of fluorescent lamps, group lamp replacement schemes are proving to be economical, bearing in mind the high cost of labour.

Many large commercial, industrial and public authorities have a maintenance or cleaning department which deals with this matter, and in addition, large office cleaning companies are now including in their contracts a cleaning service for lighting fittings and lamps.

It is difficult to arrive at a figure for the work under this item but the value set on this part of the industry is assessed at £15 millions.

The approximate value of the electric lighting industry embracing all sections, comes out to

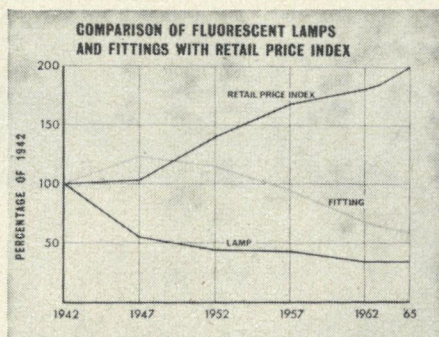


Fig. 4 shows the declining price of lamps despite of cost of living increases

£133 millions. In addition, the lighting revenue for energy is £155 millions, making a total of £288 millions, which is slightly over 1% of the gross domestic product.

The impact of the High Pressure Sodium and Mercury Halide groups of lamps will be considerable when they have been further developed, and production of many different sizes is in full swing, achieving the even higher levels of illumination needed for optimum seeing, and which will be demanded.

The eventual use for outdoor lighting, producing higher levels of illumination and better colour rendering qualities and brightness control, together with a new freedom commercially in interior design, will require new techniques.

The tungsten lamp will still have its place in the home for many years to come, with improved fluorescent lighting will be used either singly or in mixed installations. There is also need for progress in design for air handling to bring lighting heat under control, which will become standard practice.

Higher levels of lighting in public and commercial installations may raise a need for some movement in directional light which is supplementary to the main lighting. It is visualised that this movement of light should be very gradual in the same way as directional rays of light vary with the position of the sun, thus simulating many of the effects obtained from sunlight. This form of dynamic lighting would be a means of introducing some lively interest to an otherwise static installation.

THE FUTURE

Electro-luminescence, which in theory has a higher optimum efficiency than fluorescent sources is still waiting for a breakthrough. When this comes, new techniques for lighting large flat areas and back grounds should open up many new fields of application.

Our Society is now faced with a changing pattern in the lighting industry and we have to formulate

a policy for our future to ensure that full advantage is taken of these changes, thus maintaining the Society in its prominent position in service to the field of lighting. We must surely elevate our status as a learned, scientific and technological Society, seeking to expand our interests beyond the confines of artificial lighting engineering in order to attract a wider range of membership.

Hitherto the growth of lighting has been based on the physiological needs of the eye, on science, engineering and art. We must improve our knowledge and understanding of all these things as they concern us and we must go even further by learning to appreciate the needs and difficulties of those involved in other environmental services, with whom we shall have to work.

CONCLUSION

In conclusion I want to express my appreciation of all the help which I have received in the preparation of this address, not only from the various scientific societies and trade associations who have supplied me with information and figures, but also from my colleagues who have given me the benefit of their advice and comments.

LIGHTING AND GLARE CALCULATION

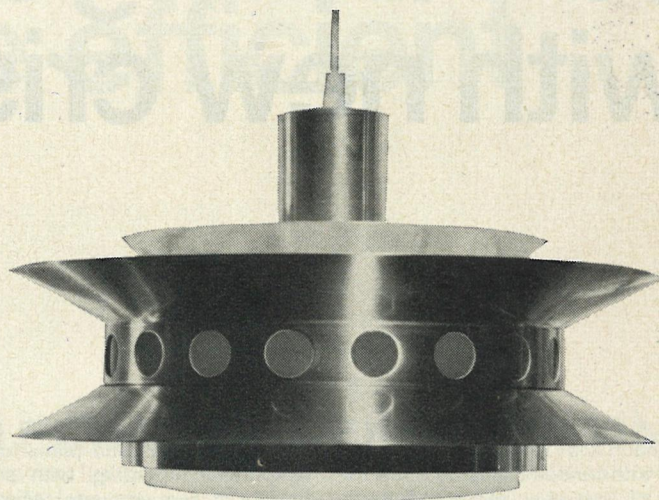
(from page 13)

instrument are engraved for easy reference, by permission of the British Lighting Council, the coefficients of utilisation for a wide range of standard lighting fittings.

To find the coefficient of utilisation for any fitting it is necessary to know the room index, and scales are provided on the front of the calculator to rapidly determine this index for any size of room and height of fitting. Information is also given on the calculator for determining the spacing and mounting height of the various types of fitting.

The calculator is 7½ in dia., and is again strongly constructed from opal white and clear perspex with multi-colour engraved scales. It is priced at 38/- post free, and comes complete in attractive case with instruction booklet.

These calculators are well worth their initial purchase price in terms of the time, trouble and effort they save and with correct use they provide an accuracy which often eludes human mathematical calculation. They can be ordered by using the form provided on page thirteen.



Model No. EG400

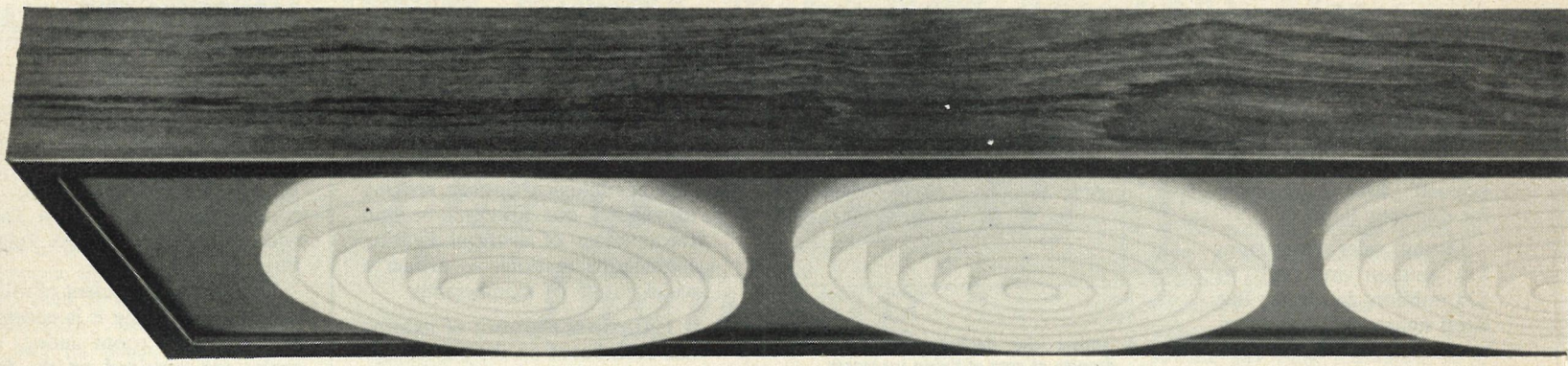
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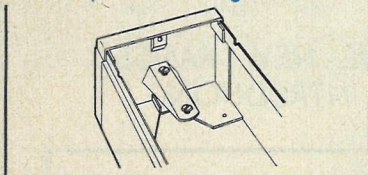
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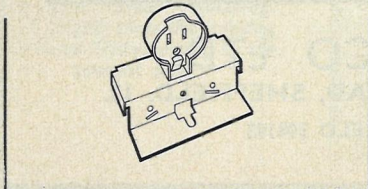
Osram-GEC's brilliant new

Behind the pretty faces (33 and reflectors) are the cut running and maintenance with new crisp styling to give lighting at

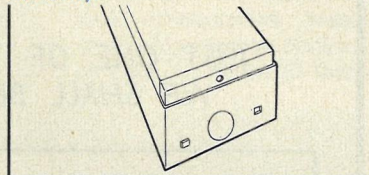
$\frac{3}{4}$ " conduit entry provided in each end-plate with conduit clamping screw for ease of assembly and good earth continuity. Polypropylene wiring channel protects through cables.



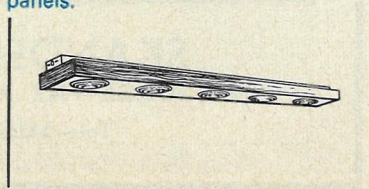
Exclusive new spring-loaded bi-pin holder with wiping contacts ensures clean, positive electrical contact.



Exclusive die-cast end-plates for rigid lampholder mounting, with positive keying to give accurate register for in-line continuous mounting without difficulty.



Revolutionary tray attachments in real teak veneer or white melamine decorative laminate with five new diffusing panels.



WHY THE NEW 103 LINE IS SUCH

103 LINE — a new approach to fluorescent lighting

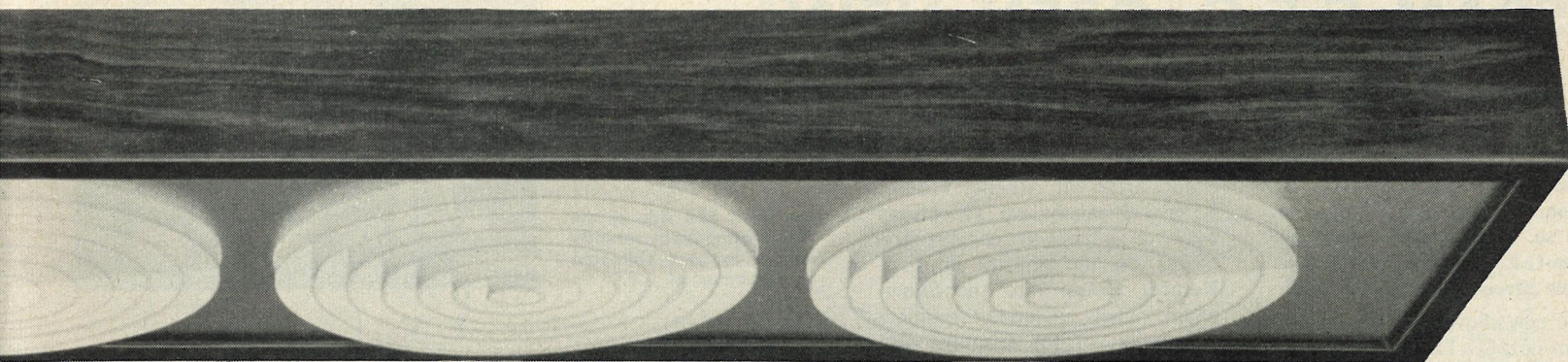
103 LINE is a big step forward. It offers a complete family of fittings suitable for every commercial use, from factory to boutique. The diffusers and reflectors include many designs completely new in concept. They represent an entirely new approach to the possibilities of fluorescent lighting.

New design for channels

Osram-GEC went right back to basics in planning the 103 LINE. The result is a new channel design which is better fitted to the job. It makes fixing and maintenance easier. The strong steel channel is finished to a very high standard in white acrylic paint to give greater resistance to damage and yellowing than ordinary stove enamel. Die-cast end-plates are used to give extra rigidity and have interlocking keyways to make accurate continuous mounting simpler.

New Bi-pin Holder makes tube replacement easy and safe, ensures reliable contact

One important feature of 103 LINE is the wiping contact in the



103 LINE

**exclusive channels, diffusers
important features that
costs and combine reliability
you better, more efficient
lower cost.**

AN IMPORTANT DEVELOPMENT IN FLUORESCENT LIGHTING

new spring-loaded bi-pin holder. This wiping contact "scrapes" the tube pin to ensure clean positive contact. All troubles associated with poor contact are eliminated. This holder, combined with another new feature—high quality GEC intermediate section, polyester-filled control gear—ensures correct tube performance, low-loss, cool, silent, trouble-free operation.

Switch or switchless — Three lampholder positions

103 LINE is available either switch or switchless, in 4 ft (40w), 5 ft (65w), and 8 ft (125w) channels. The 8 ft size is available also in 85w switchless version. In addition to the normal single and twin lampholder arrangement, there is a wide spaced version of the twin tube type with lampholders on either side of the channel. When used with the wider diffusers, this allows shallow close-to-the-ceiling mounting with improved optical performance and better overall appearance.

Teak Veneer and circular louvres

Among the many diffusers and reflectors unique to 103 LINE are some that completely revolutionise previous thinking on

fluorescent lighting. Most notable is an entirely new type of fluorescent diffuser incorporating 5 concentric circular louvres set in a satin aluminium panel supported by a teak veneer frame. This elegant pattern marries with circular tungsten fittings and makes it ideal for use in shops, hotels and restaurants. The teak veneer tray which won't warp is another interesting innovation. As an alternative, the tray is also offered with white melamine decorative laminate finish. These trays carry varied and original diffusing panels—prismatic low brightness, minicell louvres, opal plastic with unusual circular apertures. In addition to these unique attachments there is a full range of trough reflectors and 4 ft, 5 ft and 8 ft opal and prismatic diffusers.

It pays to see it's Osram-GEC

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OSRAM-G.E.C. OPEN NEW LIGHTING CENTRE

ONE of the largest lighting manufacturers' showrooms in London, covering an area of some 4,000 sq. ft, has been opened by Osram-G.E.C. at Kemble House, Kemble Street, London, W.C.2.

The new showroom, called the Osram-G.E.C. Lighting Centre, was officially opened by Lord Aldington, Chairman of The General Electric Company Ltd. The 300 lighting fittings on display illustrate the wide variety of types produced by Osram for domestic, commercial and industrial use. They range from a low-priced bulkhead unit with a vandal-proof cover, to the latest high pressure sodium lamp for street and floodlighting.

Outlining the purpose of the Centre, an Osram-G.E.C. spokesman said: "It will not only enable members of the trade and public to see and compare our products with those of competitors, it will be an ideal place for working discussions between our engineers and customers".

The new Lighting Centre occupies the entire ground floor of G.E.C.'s Kemble House and over-

looks the site of the old G.E.C. headquarters at Magnet House, Kingsway. Extensive alterations were necessary to convert the offices on the ground floor of Kemble House into the Showroom. They included complete renovation of the frontage and the construction of a new "shell" inside the building. One of the most striking external features is a 120ft long by 3ft high illuminated fascia, reading, "Osram-G.E.C. Lighting Centre", installed above the entrance by Claudgen Ltd.—another G.E.C. company. The lettering is in red and white Perspex and illumination is by 1,000 ft of Alpine white tubing.

The layout of the Centre consists basically of two large display areas, one for decorative and commercial fittings, the other for industrial and street lighting fittings. The areas are joined by a small passage in which the only lighting is provided by illuminated colour transparencies on the walls. Throughout the Centre, the lighting fittings have been arranged against backgrounds of black, white and natural timber, with "busy" areas of visual interest

The front and side of the new Lighting Centre recently opened by Lord Aldington Chairman of G.E.C.



being broken by more relaxing areas.

The commercial and decorative section has a glittering array of fittings for every conceivable application, surface ceiling and pendant fittings from the new Raak architectural range, units for display purposes, pendants from the company's "C" ranges and a varied selection of recessed fittings. Also in this section are examples of Osram's recently introduced Super Jet range of fluorescent fittings with diffuser attachments and the low-cost 5-80 pack fitting. The "103 line" range of fluorescent fittings are also represented by 15 examples of fittings and tray attachments.

Of special interest is a ceiling display illustrating special low-brightness lighting panels which give high levels of illumination without glare. For outdoor lighting there are porchlights of the latest design, fluorescent bulkhead units and Supalite sealed beam garden spotlights.

The industrial and street lighting section well illustrates Osram's advances in these fields. The street lighting equipment includes main and side road lanterns of all types for tungsten, sodium and colour corrected mercury lamps. Of particular interest here

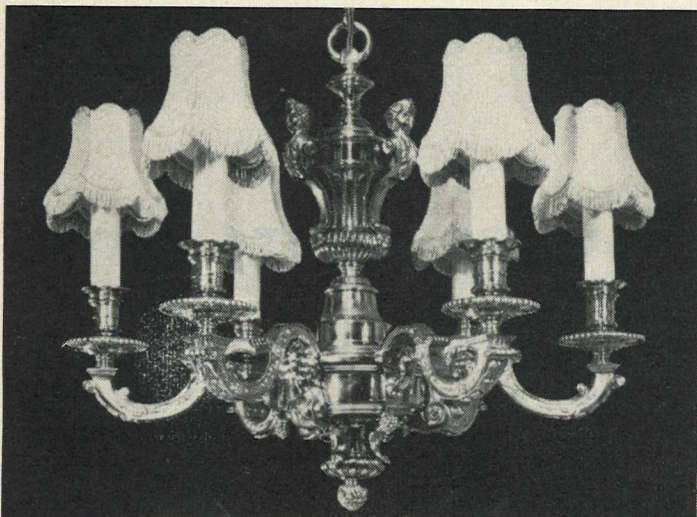
is a 1kW mercury lantern used in most of Osram's high-mast lighting projects. A mobile display stand contains a fascinating display of post-top street lanterns designed by Osram for such locations as Oxford Street, Brighton Seafront and the Birmingham Inner Ring Road.

Outstanding in the industrial exhibits are examples of the new 400W Solacolor high pressure sodium lamp developed by Osram-G.E.C. This lamp has undergone successful trials and is now being marketed generally.

Also in this section is Osram's Double 8 fluorescent fitting primarily intended for school classroom lighting, but equally suitable for large offices, dust-tight and flameproof fittings for hazardous areas, and a display of the versatile Topline trunking.

The designer of the Lighting Centre is Mr. Derek Durrant, F.I.E.S., Osram-G.E.C.'s Design Manager. There is a receptionist at the Centre, and the Manager is Mr. Donald Battie, Dip.M.I.E.S., A.M.I.T.E., A.M.A.S.E.E., a former lighting engineer who has been with G.E.C. for 38 years. The Centre is open from 9 a.m. to 5 p.m. from Monday to Friday. For more information use Reader Service Form quoting LEN 009

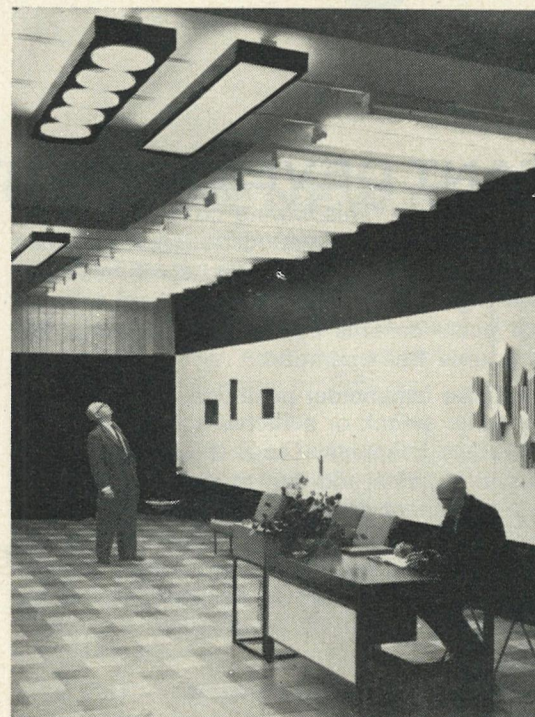
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A view of some of the fluorescent fittings on display. On the right of the picture is Mr. Derek Durrant, designer of the showroom. On the left is Mr. Donald Battie, Showroom Manager



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through ceilings, some people thought we were joking**

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e.g. Cumberland Hotel, London. Step into the Cumberland Hotel. Take a quiet walk down those corridors in which we have designed and built the Lamina acoustic ceilings and integral lighting. Note the difference.
(Architect: Cumberland Hotels Premises Dept.)

e.g. Norgas House, Killingworth. The special metal tray ceiling built for Northern Gas Board at Killingworth (Lighting, Air-Conditioning, and Acoustics). Norgas House won the regional award for architectural design in 1966.
(Architect: Ryder and Yates & Ptnrs.)

e.g. The Billingham Sports Forum. HT Ceilings are supplying a special Lamina suspended ceiling for the ice-rink and swimming pool at the Billingham Sports Forum. This will be one of the largest suspended ceilings in the country, incorporating acoustics, lighting and ventilation grilles.
(Architect: Elder and Lester).

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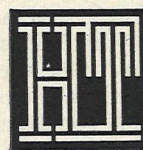
Heat through 'em. HT 'STRATOHEAT' Heating Ceiling Systems, with unique new electrical element built right in, give gentle, uniform warmth at low running cost. The ceiling, operating at around 100°F, has an exceptional safety margin. There are no unsightly dust-collecting radiators or pipes. And what's more – no maintenance.

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Ventilate through 'em. Another HT Ceiling ace up our sleeve. Multiple invisible slots give controlled air-injected ventilation with absolute freedom from draughts, even at 120 air-changes per hour. Given the air-change requirements, our experts will calculate the rest to ensure complete mixing above head-height. If you want to introduce humidified or conditioned air, HT Ceilings are the boys for that as well.

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DESCRIBING THE LIGHTING CHOSEN FOR LONDON'S HIGHEST BUILDING

THE Post Office Tower is now a familiar landmark of the London scene. With a height of over 580 ft it is the tallest building in the country. The superb view that is obtained from the observation and revolving restaurant floors might itself be regarded as sufficient justification for the tower's existence. However, the building was erected primarily for a functional purpose. The original micro-wave aerials on the roof of the Museum telephone exchange in Howland Street were of insufficient height to maintain effective communication links over the many new buildings in the central London area. The new aerial systems are mounted at heights of up to 475 ft and easily top all surrounding structures.

Following the division of the tower into public and private areas it was logical that those regions to which the public have access should have a more decorative aspect to their lighting treatment. Nevertheless in all parts of the structure the lighting has been designed with practical consideration of illumination, glare and such special factors as window reflection and external appearance.

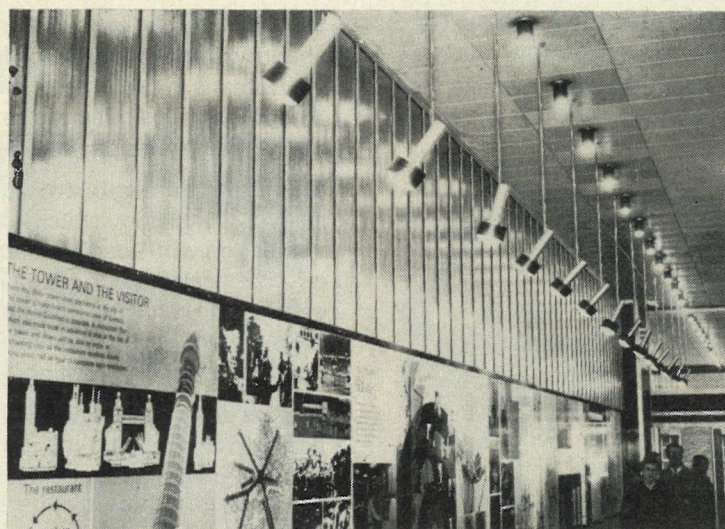
lights serve to display this in a striking manner. Seventeen Atlas spotlights are used to highlight the souvenir shop. From considerations of safety the access stairs needed additional lighting, provided unobtrusively by 20 Churchouse type 873 "brick"

intermittently as required by standard Post Office 60 W Bulk-head units. Floors 7 to 9 are used for the ventilation machinery, standard Post Office fluorescent units are mounted in a distribution to suit the plant layout. These, and all the windowed

LIGHTING THE POST OFFICE TOWER

THE power supply is derived from the Telephone Exchange Extension Main Building to which the tower is joined. Duplicate 11 kV mains supplies are transformed to 415/240 V by duplicate sets of transformers. Standby plant for essential lighting and other services consists of five English Electric 500 kVA diesel alternator sets, all automatically started on mains failure. A medium voltage switchboard at the base of the tower is connected to three separate distribution systems by rising bus-bars in metal trunking. An important consideration in the design was to provide for the linear expansion of the bus-bars.

The main entrance to the tower is in Maple Street from which members of the public may enter the Foyer to the lifts which take them to the revolving restaurant and viewing galleries. The lighting in the Foyer was designed to emphasise the central column of the tower structure and for this reason the general level of illumination is kept low, while the column itself is brightly lit. Much of the general lighting is here provided by 3 in type 1937



The Entrance Foyer showing fittings by Merchant Adventurers

recessed drum fittings from Merchant Adventurers Ltd. and by the Isora Thermalucet ceiling around the perimeter of the central column. This column is lit with 61 Atlas Slimline units in lengths of 3 ft and 5 ft. A feature of this area that called for special treatment was the large mural depicting the function of the tower, 38 of Merchant Adventurers' type 2366A spot-

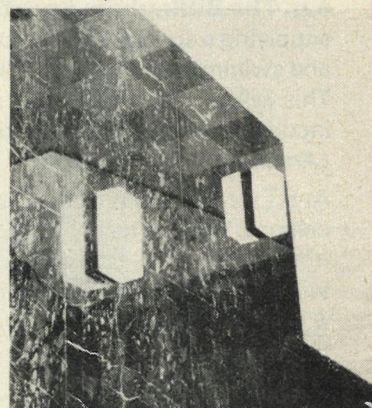
fittings. A simple shallow style of opal glass unit was considered most appropriate for the toilet illumination and a decision made to employ the type MA 1553 by Merchant Adventurers. Ten Rotaflex Downlighters are used in the restaurant reception area.

Floors 1 to 6 of the tower are of windowless construction and are at present used mainly for storage purposes and are lit

floors are also equipped with fluorescent periphery lighting to enable a degree of illumination to be maintained between dusk and midnight, so that an evenly lit exterior is presented. A minimum of 36 Harris and Sheldon's fittings are used for this purpose on each floor.

The main electronic equipment is sited on floors 10 to 23. The equipment racks have been designed to incorporate their own lighting, with fittings provided by the equipment manufacturers.

Churchouse Brick fittings on the Entrance Stairway

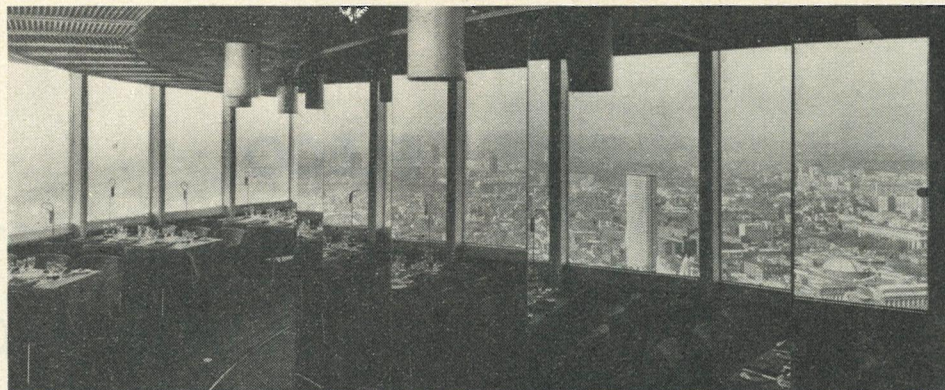


In addition a further 8 standard fittings supply general lighting on each floor.

Floors 24 to 30 are without external walling and are occupied by the transmitting and receiving aerials. Little light is called for here and this is supplied by a small number of strategically placed bulkhead units with a two-way switching system. Floor 31 is the open observation gallery. Eighteen MA2191C 3 in miniature drum fittings and five 2130 10 in fittings provide the lighting here, giving close control over distribution without glare.

Floor 32 is a semi-enclosed observation room. The sharp cut-off MA 3 in drums mounted on a Luxalon Isora ceiling are used here to prevent undue reflection from the window glass. In the lobby area where this factor does not apply the 10 in diameter drum fittings are employed. The main observation gallery, which is enclosed, is situated on the thirty-third floor. As on the lower floor small drum fittings on a Luxalon aluminium panel ceiling were chosen for general lighting, a total of 41 being installed. Six of the larger drums were also used in the lobbies. A mineral insulated ring main cable by British Insulated Callender Cables supplies the 13 A fused spur-boxes for 44 2 ft fluorescent periphery lights on this floor. Ring mains were regarded as a particularly logical choice for periphery lighting due to the tower's circular plan.

Floors 34 to 36 inclusive have been leased by the Post Office to Messrs. Butlins Ltd. whose architects Garnett, Cloughley, Blake-more and Associates designed their lighting installation. Floor 34 is the Restaurant whose revolving floor, built by Ransomes and Rapier Ltd., rotates at between 2 and 3 revolutions per hour. Power for lighting and heating is obtained by B.I.C.C. current collection equipment fixed to the underside of the restaurant floor. The equipment consists of three copper conductors with two collectors each, attached to the steel girders to form closed circles of 48, 49 and 50 ft in diameter. Two of the conductors, insulated and guarded with



The Restaurant showing Rotaflex Downlighters and Atlas table lamps
Photo by courtesy Sander Mirror Co.

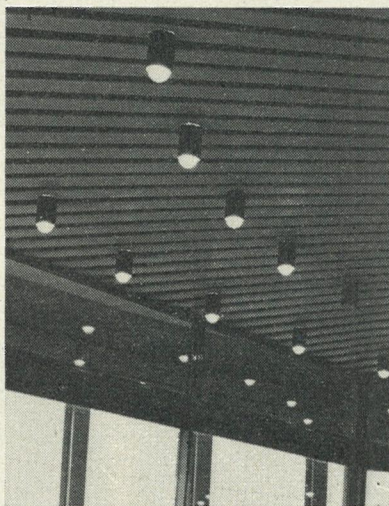
Below:—
Fluorescent battens
on the equipment
racks

P.C.P., carry a continuous load of 100 A at 240 V single phase; the third conductor being uninsulated and earthed.

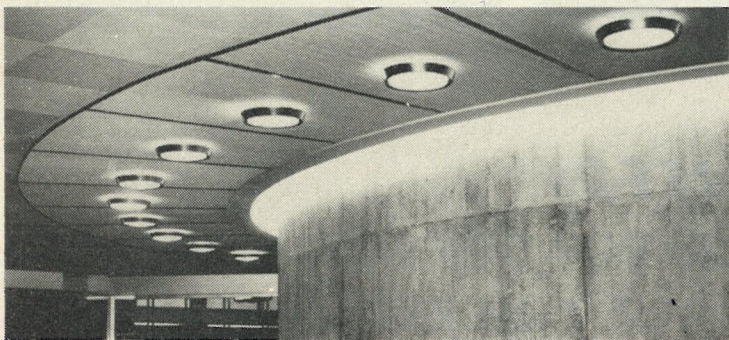
Viewing requirements from the Restaurant demanded much the same considerations of lighting design as in the observation galleries, with the additional need for low-level table lighting. It is interesting to note how a different designer has approached these problems and has employed alternative fittings in their solution. The basic lighting is by Rotaflex type 8301 Downlighters. These fittings are used with silvered bulbs to provide a very high degree of lighting control. The pre-cast ceiling panels on which they are set were specially designed to blend with these units, the overall effect being that it is impossible to look directly at the light source from normal viewing angles.

In order to maintain even

Luxalon aluminium ceiling on Observ-
ation Floor



Merchant Adventurer's fittings around central Column



illumination over the dining tables it was essential for the light sources to move with them rather than be attached to the ceiling, which is fixed. To preserve the overall low-glare characteristics of the installation and to minimise window reflections, it was further felt desirable to mount the table lamps below the eye level of the diners. The architects finally decided on a special design and fittings were built to this specification by Atlas Lighting Ltd. Each unit consists of a small cylinder containing a 12 V, 24 W lamp and mounted on a slim stem. The necessary transformer is housed in the table and power is supplied to it via a flexible cable to a socket in the floor.

The 35th floor is the Cocktail Lounge where the intimate atmosphere is again enhanced by the use of Rotaflex Downlighters for general illumination. Floor 36 accommodates the kitchens which were wired by Butlin's contractors and lit by Rotaflex fluorescent fittings. Floors 37 to 41 consist of a continuation of the central core of the building, capped by rooms for lift-motors and service tanks. The 40 ft lattice mast on the tower roof is equipped with Osram-G.E.C. and A.E.I. neon aircraft warning beacons. Additional G.E.C. 250 W tungsten beacons are mounted on floors 24 and 31.

One of the requirements for lighting the staircase of the tower's central core was that there should be a 3-hour battery reserve available for use in the event of mains failure. The bulkhead fittings employed are normally fed from the main a.c. supply but if this supply fails the "Keepalite" system automatically provides a supply from storage batteries on the 4th floor. This system was supplied by the Chloride Battery Division of Electric Power Storage Ltd.

The tower is connected to the Telephone Exchange Extension Main Building at the 4th floor level. This area contains the cinema which is lit mainly by an Ionlite, Two-Ray illuminated ceiling. Sixteen 5 ft 80 W white fluorescent tubes are mounted in four rows above this ceiling. These



lamps provide an average illumination of 10 lumens per sq ft under the luminous area. A ceiling of this type tends to throw the light forward towards the screen thus minimising glare. Additionally Harris and Sheldon type 50567 spotlights are installed over the stage. The Cinema Foyer is lit by four Rotaflex type 5526 circular fluorescent units while the pay-

(continued on page 36)

Equipment References

For more information on the equipment mentioned in this article, quote the relevant LEN Reference Number on the Reader Service Form.

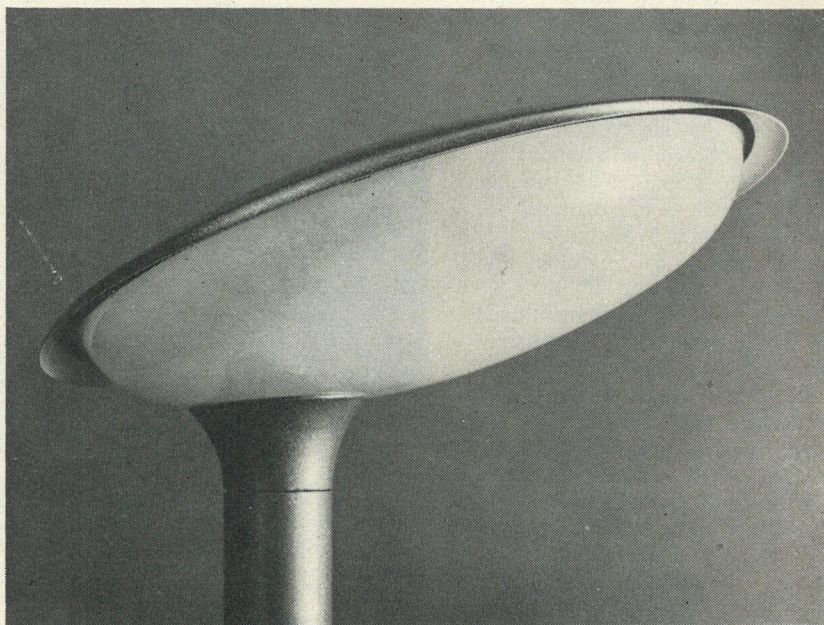
English Electric	LEN 012
Merchant Adventurers	LEN 013
Atlas	LEN 014
Churchouse	LEN 015
Rotaflex	LEN 016
Harris and Sheldon	LEN 017
Isora	LEN 018
B.I.C.C.	LEN 019
Osram-G.E.C.	LEN 020
A.E.I.	LEN 021
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Ionlite	LEN 023
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Horstmann	LEN 025
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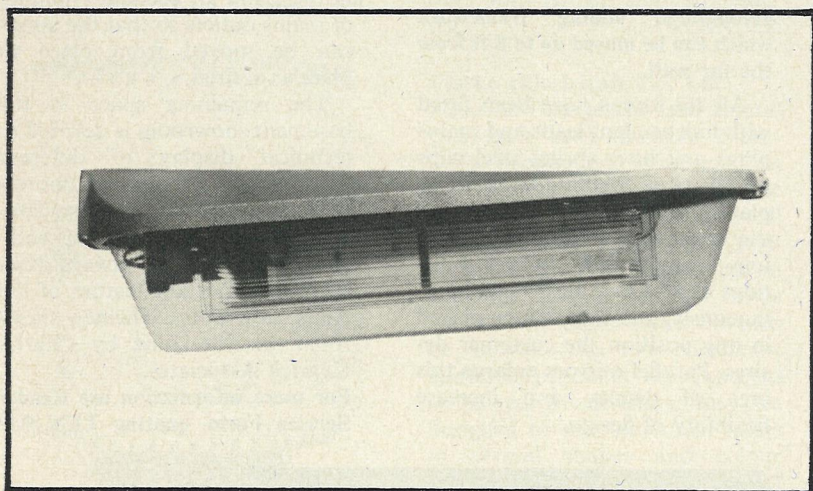
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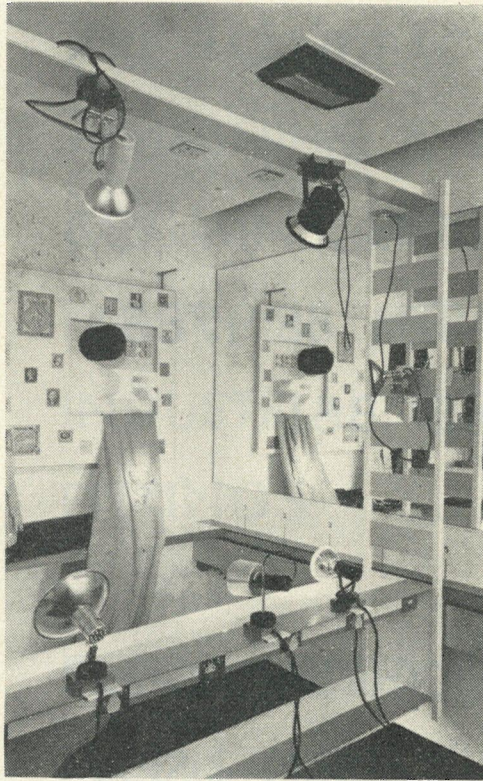
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For more information use Reader Service Form quoting LEN 030

Redesigned Atlas Showroom Area At Thorn House



A terraced area which shows off some of the bulkhead, wellglass and patio fittings



Spotlight display area

The new showroom is divided into five main sections. First there is an attractive terrace where the bulkhead and wellglass fittings and patio light are displayed, second a 20 ft x 10 ft area designed as a living room, third an all-round wall-display area where the complete range of Modern, Glassware and Arrowslim decorative tungsten and fluorescent fittings are shown, and fourth the special spotlight display lighting area mentioned above. Finally there is a "technical" section containing tube circuit displays and a colour comparator.

An attractive feature of the terrace is a display of cacti, African violets and other indoor plants used to demonstrate the new Gro-lux tube. Concealed in a recess behind sliding doors is the complete range of BLI street lanterns.

With their expanding range of domestic and decorative lighting fittings, Atlas have created a display area, designed like a modern "flatlet", in which the fittings can be seen in an appropriate setting.

This area, which is imaginatively furnished is used to display the Atlas Korean grass standard lamp, the Occasional lamp, the acrylic rise-and-fall pendant and the Minipack fluorescent fitting, exactly as they might be used in a modern interior. Effective use is also made of 100W sealed beam spotlights to show how they can be employed in lighting pictures and objects d'art.

The all-round wall-display area is also designed to make demonstration and examination of the lighting fittings particularly easy. There are independent time switches on most of the fixed fittings, and an adequate number of mains outlets so that the lamps can be moved from place to place as desired.

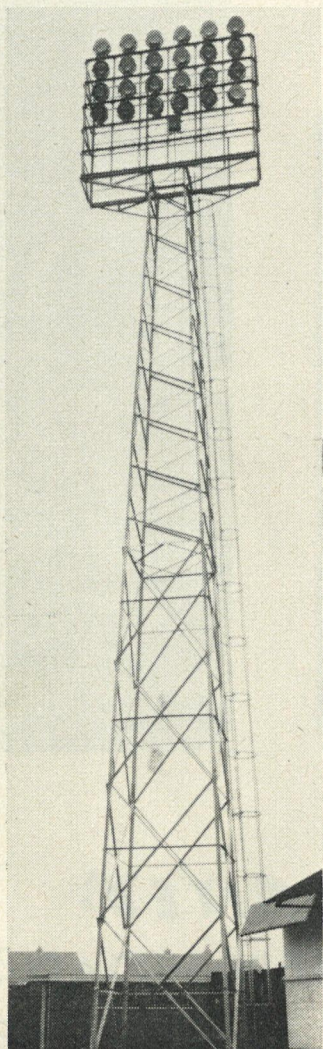
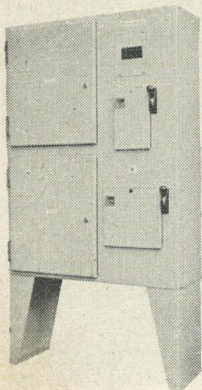
The remaining space in the basement showroom is devoted to technical display of different types of tube circuits and fluorescent tube colours and also contains the full scale colour comparator which has always been such an important feature of the Atlas showrooms. The new showroom was designed by Charles Kenrick Associates.

For more information use Reader Service Form quoting LEN 032

FLOODLIGHTING

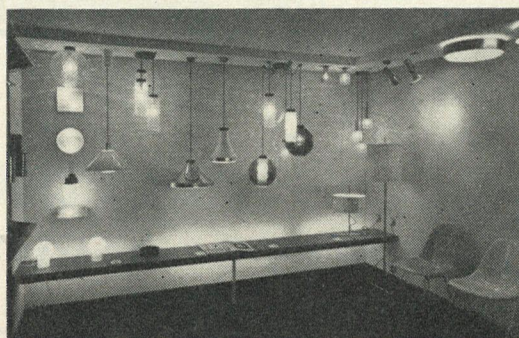
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A COMPLETELY redesigned showroom area has recently been completed at Thorn House, the headquarters of Atlas Lighting Ltd. A particularly interesting feature is a special section devoted exclusively to low voltage and display spotlights, where an unusual degree of flexibility has been obtained by mounting a series of mains outlets on a full-width ceiling-high sliding framework which can be moved up to 8 ft from the far wall.

All the lamps have been fitted with independent leads and mains plugs and have spring steel clips on the base enabling them to be placed at random on any part of the framework. With this ingenious arrangement, up to 14 fittings can be demonstrated simultaneously, and thus can be placed in any position the customer desires. Parallel mirrors enlarge this area of display and increase flexibility of design.



This part of the showroom facilitates the demonstration and examination of the Atlas range of domestic fittings

Christy Bros Ltd

CHELMSFORD, ESSEX. Tel: Chelmsford 53414-7
IPSWICH, SUFFOLK. Telephone 75202
BRISTOL, GLOUCS. Telephone 663518

For more information use Reader Service Form quoting LEN 031

LITESHOW '67

PREVIEW

Atlas Lighting Ltd.

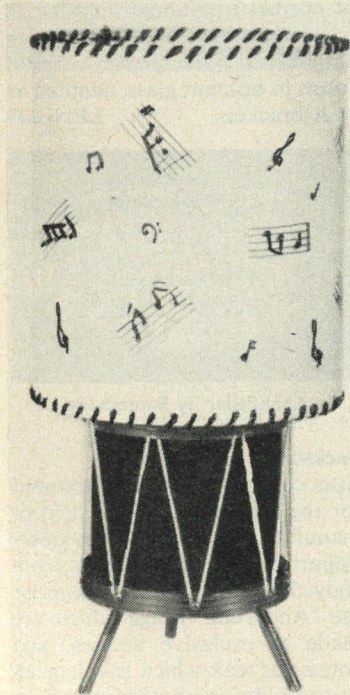
THE company will be showing an extensive range of their latest equipment. The Atlas stand occupying nearly 700 sq ft, will be unusual in that the domestic lighting display units (recently designed by Atlas for use in stores and showrooms) will be an integral part of the design. This means that dealers will be able to see both the fittings and units on which they may display the fittings. Equipment shown will include the very popular Arrow-slim fluorescent fittings, diffusers, the Diffuserlight reeded diffuser fitting, the versatile Minipack and the "Modern" range of decorative light fittings.

LEN 033

Barons Court Products

THE range of wood and pottery table lamps will be on display, also wooden ceiling fittings, wall lights, and floor standards. Also shown will be shades in a variety of shapes, sizes and materials, mainly of a rigid nature. Notable types are 'Deeds', maps, waxed parchments, decorated and plain parchments, dubarry, plasticised fabrics, spongeable material and plain. Other shades are the ranges of wine and spirit lable shades, and skin shades.

LEN 034



Novelty Drum Lamp by Barons Court Products.

Bellhouse & Binney Ltd.

THIS company is exhibiting their long established range of hand painted table lamps and shades with the addition of some interesting new designs with striking new pottery lamp bases. Following the introduction of plain laminated fabric shades last July, the company is now showing a much extended range of fabrics including some specially imported materials.

LEN 035

Chrysaline Ltd.

A NUMBER of brand new designs are being shown at the exhibition. Among the existing types is the Facella range which embodies a rigid plastic material with a built-in anti-static agent which is not removed by washing. The attractive, white faceted material has excellent light transmission qualities and a pleasant satin finish. This range is intended for use with pearl lamps. The range of spotlights has been specially developed for display use, where a small, fully adjustable and good looking unit is required. Four versions of the basic unit are available comprising standard and long projection models. The Apollo range is of Scandinavian glassware and is supplied complete with suspensions and complies with British standard practice.

LEN 036

Clarke (Electrical) Co. Ltd.

FOUR new ranges in lead crystal glass have been added to Clark-lite's production, Finlite, Can Can, Autumn Leaves and Maylite are being supplied in wall brackets, flush fittings and pendant fittings. Single pendants in Bohemian lead crystal drops worked in modern styles will also be shown. The new Goldkant Ceramic pendants are expected to be real trend-setters; they are designed to suit individual tastes in several shapes and colour combinations.

LEN 037

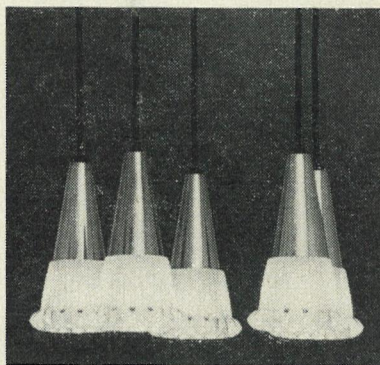
Conelight Ltd.

As originators of the pin-up principle for surface-fixed wall lights, Conelight have now introduced an extended bracket stem, which carries the flex down to a point below the normal sight line, so that it becomes barely noticeable. Given an adjacent wall socket, fixing these lamps be-

The 1967 International Lighting Exhibition will be held at Olympia—London, from January 23 to 27.

Liteshow '67 is the successor to the International Lighting Exhibitions held at Alexandra Palace in 1965 and 1966. Admission is to the Trade only by trade card or complimentary tickets issued by the organisers or by exhibitors.

Below we list those exhibitors who have sent us details of their stands, together with brief details of their products on show.

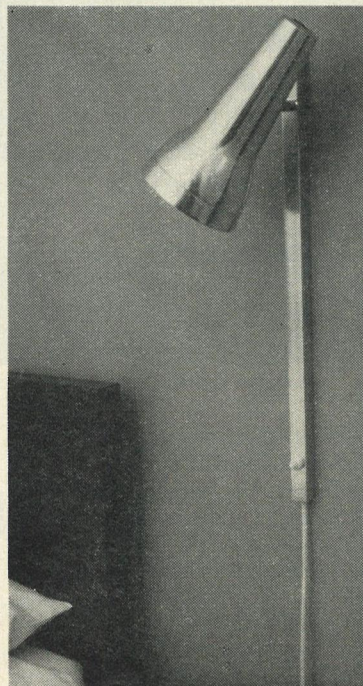


Clarke pendant fitting.

comes an interesting job that may be tackled with ease. Also of 1967 inspiration are the new table lamps—virtually contemporary candleabra—for which there is a wide choice of distinctive glass shades, in either cut glass, flashed white opal, or in clear amethyst glass. The metal work of anodised aluminium, comes in copper, satin silver or polished gold finish, to create interesting different effects. In addition to these models, Conelight are presenting an entirely new collection of suspended units and wall brackets designed for taking these new shades; or alternatively, the decoratively shaped lamps that are particularly popular at the moment.

LEN 038

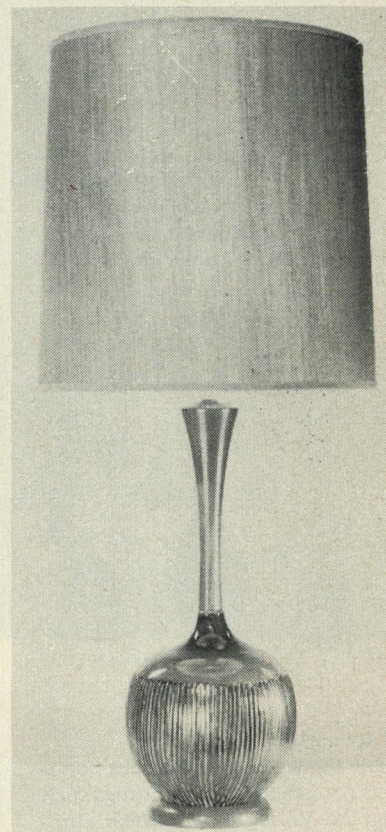
Conelight pin-up fitting.



W. R. Cresswell & Co. Ltd.

MANY new designs are to be seen for the first time on this stand. Following the success of the Bernard Rooke stoneware lampbases, a new range of exclusive glazed stoneware pottery from Portugal is receiving its premiere. This pottery combines a method of production which has not changed for centuries with an expression of contemporary art form and colour. The lampshade materials on display include dyed slub hessian, coloured woven grass, slub linen, and the original Japanese grasses.

LEN 039



Cresswell Shades ceramic and wood unit.

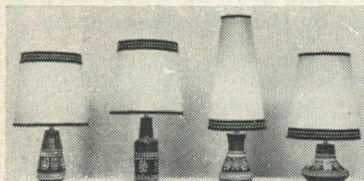
Crookston, Royle & Co. Ltd.

THIS company is noted for its range of raised plaster and decorated wood lamps with matching shades. The display will also include hand painted nursery lamps, contemporary wood lamps and shades and a large range of pottery base lamps with shades in various materials and colours, embossed parchments, plasticised liners, rayon acetates and other laminates, some with hand painted decorations to match the base or to suit plain bases. The popular Empress

LITESHOW '67

range will be on show together with a new Egyptian range.

LEN 040



The Empress Range from Crookston Royle.

ETD Ltd.

THE Tremaen pottery range of tablelamps is inspired by the weathered stones which come from the rugged granite rocks forming the Cornish coast line. Moulds are made from the original stones exactly reproducing the shape and the texture. Casts having been taken from the mould are then hand decorated to reproduce the original colourings and markings. The lampshades are specially designed and made in shapes and materials complementary to the pottery bases. In addition to the Tremaen pottery range will be many new numbers in other types of pottery, also ranges of separate shades including hanging louvred shades in laminated fabrics, stretched fabrics and silk screen printed designs. Also shown will be new ranges of spun metal desk lamps, table lamps and bed lamps.

LEN 041



ETD table lamps

Fancy Metal Goods Ltd.

THE Famego range includes popular designs in modern fittings such as the Viking Suite, which combines Burmese teak with polished gilding metal. The Planet Suite is said to provide ideal lighting for the modern flat or small house and is especially designed for low ceilings. The company also manufactures bedlights, clock-lamps and an illuminated make-up mirror.

LEN 042

Fenella Lampshades

THE Fenella stand will show the stock range of lampshades and bases. Also shown will be the contract department display of lampshades in customers' own selected materials and the new range of soft lampshades with removable fabric covers. The

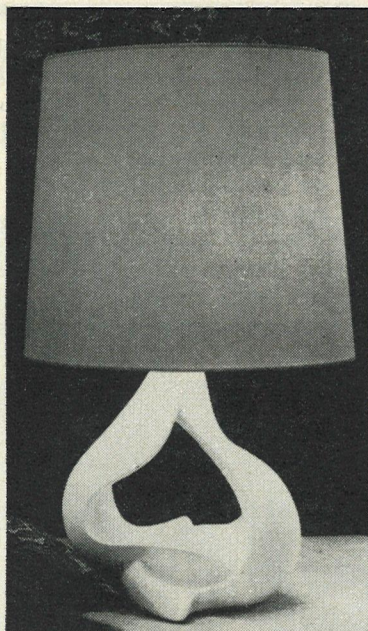


Table lamp by Fenella

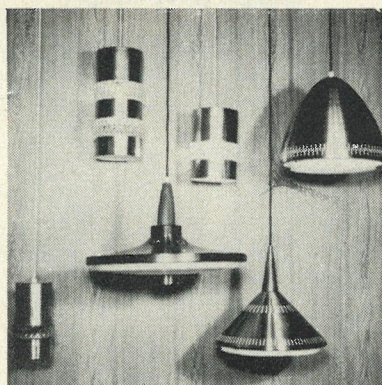
entire lampshade is washable including the frame, by complete immersion. Covers are in cambric with broderie anglaise, plain poplins and printed cottons.

LEN 043

Grampian Lighting Ltd.

THE display includes items from several of Grampian's ranges. The Oslo Range consists of Scandinavian style pendant lamps which reflect the trend towards simple designs executed in striking materials which complement modern interiors. The Alpine range of ceiling and pendant fittings with matching wall brackets and table lamps is specially designed to give sparkle and efficient illumination in the home, they are of chrome and crystal or amber and smoked glass. The Monolight glassware 4210 series comprises inner and outer glasses in Opal and tinted colours for single or multi-light pendants.

LEN 044



Grampian Lighting Oslo Range

Grubert of Copenhagen Ltd.

SOME of Grubert's newest designs will not be released until just before the show but some of the numbers recently introduced are the 8711/7083/6989 pendant using Stromboli glass amber; the 8647 pendant with a rosewood top and a choice of either a copper colour or stainless steel colour

canopy and pendant 8508/7030/6924 available in smoke or amber for use with a 100W lamp.

LEN 045



Pendant fitting by Grubert.

E. J. Guy Ltd.

THE new range of fittings, introduced last September, is being shown. In addition there is a new model, type GL4, which is a pillar mounting lamp designed for mounting on gate posts, brick piers etc. The complete lamps and lamp standard are constructed on zinc coated sheet metal and painted one undercoat and one top coat, stove enamelled for protection against the weather, whilst the 'windows' are formed of plastic to avoid cracks or breakage. Each lamp is individually packed in a carton, the wall bracket lamp being supplied completely assembled, the standard lamp being in sections which can easily be quickly assembled.

LEN 046



G.L.I. standard lamp by E. J. Guy.

Henk Schwimmer Studios

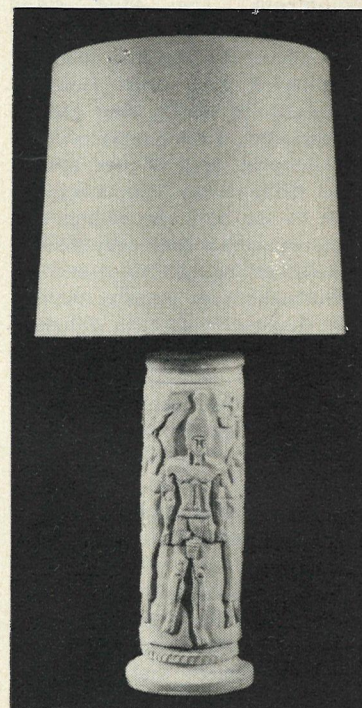
A RANGE of unique shades is manufactured by special techniques. The firm's catalogue lists over seventy-five regular items in twenty-five standard sizes; in addition a wide variety of custom shades are made for the trade. Among the more unusual designs are effects in gilding, translucent glazes, mouldings in relief, silk screen prints, shades incorporating real plants, basket weaves and brilliantly dyed corks. Also offered are fine quality shades in a very wide range of silks, hessians, grassweaves, fibre-glass and parchments. This year also sees the introduction of hanging lamps with pierced brass galleries together with several other unusual items.

LEN 047

Hiscock, Appleby and Co. Ltd.

HISCOCK, APPLEBY will be extending their popular range of pottery lamps with four new designs and are also introducing several pendant fittings especially suited to nurseries and morning rooms. Their range of sculptured resin bases has been extended and are expected to remain popular for their exclusive design and because they are virtually unbreakable. New shade materials will be included in their extensive range. Delivery of practically all exhibits is within 7-10 days.

LEN 048

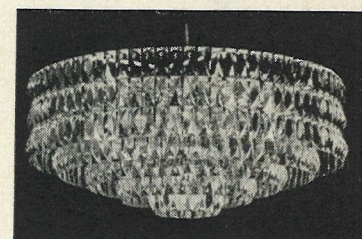


Hiscock Appleby pottery lamp.

Homeshade Co. Ltd.

THE company will display a complete range of modern and traditional crystal chandeliers and wall brackets from Vienna and Czechoslovakia as well as models of normal traditional lighting. A particular range that is being emphasised comprises crystal forms in brilliant glass, adapted as wall brackets.

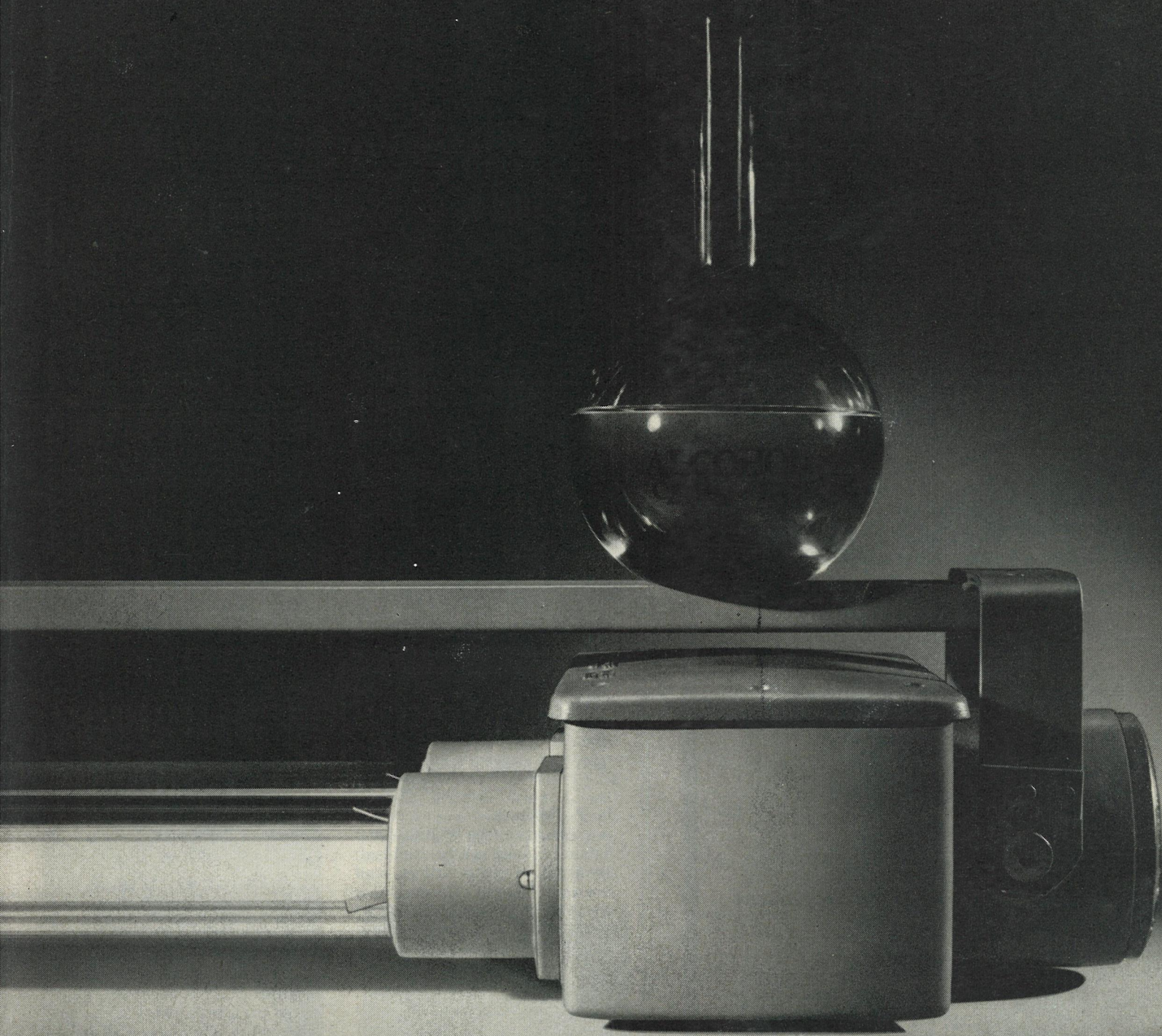
LEN 049



Chandelier by Homeshade

Jackson & King Ltd.

THIS company has now ventured for the first time into the field of manufacture, having previously imported all its table lamps from Italy. The new products comprise the 'And-Teak' range which are made to exclusive designs, and consist of teak which is enhanced by the addition of other materials. Production has started with teak and mosaic and will shortly be



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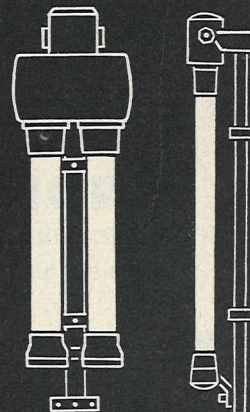
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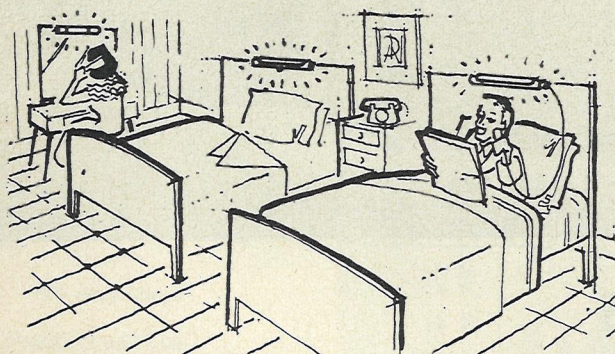
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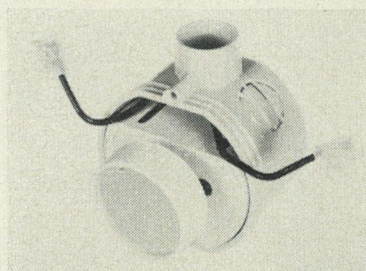
118 BAKER STREET, LONDON, W.1

Telephone: Welbeck 1159 & 1150

LITESHOW '67

extended to include marble and alabaster. **LEN 052**

Karl Altenburger KG Electronic EXHIBITED on this stand will be some of the company's range of wall dimmers, dimmer boards, motorised dimmers, photo-diode equipped dimmers and studio dimmers. **LEN 053**



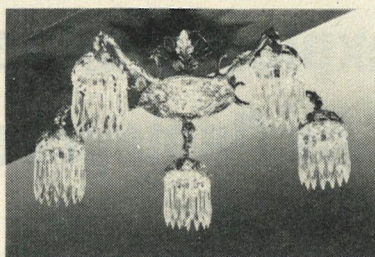
Karl Altenburger wall dimmer

Litalite Ltd.

A LARGE new range of items is being introduced, including soft drawn fabric shades in satin, satin prints, traditional floral designs and brocade. Also shown will be hard shades in laminates, natural fabrics and silk. Other items will be single pendant lamp shades consisting of segmented diffusers and various forms of flush and hanging single fittings. **LEN 054**

L. R. Products

A COMPLETE range of traditional lighting fittings will be exhibited, consisting of centre fittings, wall brackets, lanterns, standard and table lamps. Special features of the exhibits will be the M458 traditional style downward centre fittings in solid brass specially designed to fit low ceilings, available in 3 light and 5 light form. Also shown will be an extensive range of alabaster and brass table lamps. **LEN 055**



L.R. Products M458/5 centre fitting

Midland Bank Ltd.

FULL banking services will be provided by the Midland Bank during the hours of the Exhibition. All exhibitors and visitors are invited to use these facilities, whether customers of the Bank or not. For those concerned with trading abroad special services will be provided by the Overseas Branch. A representative from the Overseas Trade Promotion Department will be in attendance to

discuss all matters connected with overseas trade and its finance.

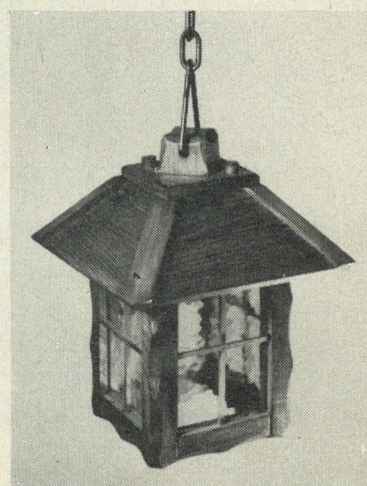
LEN 056

J. Millet [Electrical] Ltd.

A VERY large range of lighting is again being shown on this stand, which this year will be over 1,500 sq ft in area. Wall brackets, table lamps and other fittings will be displayed in period, contemporary and modern designs. Also shown will be lighting glassware and lampshades in all forms. **LEN 057**

E. N. Morgan Ltd.

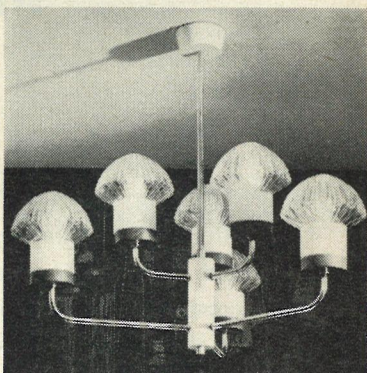
THE company has an extensive range of rustic fittings which are being exported to many countries. Fittings are available in teak, dark oak, natural waxed oak, copper and polished brass. **LEN 058**



E.N. Morgan rustic fitting.

The Osborn Manufacturing Co. Ltd.

THE company produces a number of multiple unit light fittings including a 3 light unit with satin brass metal work and white 'fireman's pole' centre body; a 2 light bracket with satin brass metal work and white centre back, and a 6 light fitting with upward and downward facing lights. **LEN 059**



Osborn multiple light unit.

Osram G.E.C. Ltd.

ULTRA-MODERN additions to the Raak range of architectural lighting fittings add an even more luxurious variety to this comprehensive range. The additions include pendants, ceiling fittings,

LITESHOW '67

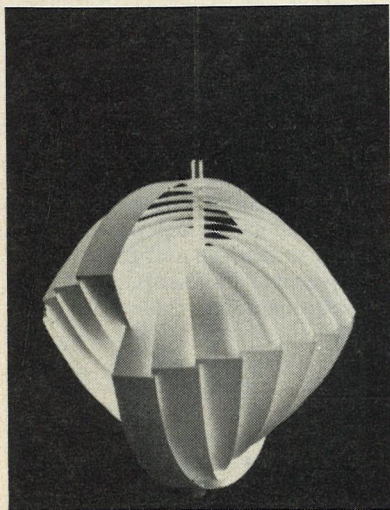
recessed fittings and brackets to cater for a more sophisticated taste in lighting. The complete range of designs now offers a choice of nearly 300 variations to cater for every demand in the home. The colour Cabaret range is available in seven colours, flame red, crystal, orient blue, white opal, aqua green, amber and smoke grey. Each fitting has a satin finished aluminium canopy and is designed for use with a 100 W lamp. Also on the Osram stand will be examples of the company's polished Carousel range and a 3-light conversion kit which allows any standard lamp to be converted to "mood" lighting.

LEN 060

Otmerod Ltd.

SHOWN on the Otmerod stand will be a very comprehensive range of Scandinavian lighting fittings including pendants, table lamps, floor standards and wall lights in copper, brass, aluminium and stainless steel. On exhibition for the first time will be a range of contemporary fittings for domestic and contract use imported exclusively from LYFA of Copenhagen; the largest factory in Scandinavia for lighting fittings.

LEN 061



Danish Lyfa pendant from Otmerod.

Plus Lighting Ltd.

THE extensive variety of fittings on display include Opal pendant lighting cylinders with aluminium caps, designed by John Brown MSIA. These are the latest variation of the familiar Plus Lighting pendant. The polished aluminium caps are used on 4 in diameter cylinders either 8 in or 12 in long. The MTL table lamp with a base of weighted aluminium, can be fitted with any cylinder. It has a torpedo switch and 3 yards of flex. The H80 and Onion type fittings have shades of satin aluminium or satin copper finish. They are topped with teak caps, have louvred diffusers to

reduce glare and take 150W lamps. An inexpensive dual purpose light fitting called the Plus-Lamp can be used as a desk and table lamp or, by hanging on a hook, as a wall lamp.

LEN 062

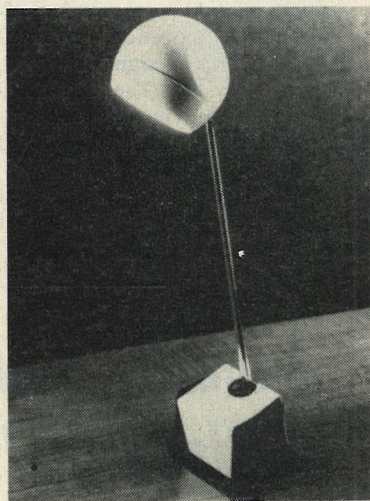


Plus Lighting Q6/9 shade fitted to table lamp.

Rotaflex (Great Britain) Ltd.

IN addition to the very popular light fittings and the well-known Lytespan lighting track, Rotaflex will be featuring new style pendants and the first all British high intensity desk/wall lamp. As well as other new lines shortly to be released, will be shown the new Rotaflex bedside lamp.

LEN 063



Rotaflex desk lamp.

Sublime Lighting Ltd.

KNITTED lampshades are being introduced this year, available in a wide colour and pattern choice in various textures. Also new will be a textured cotton, flush ceiling light, completely washable and simple to install. The company also has a display of gathered top shades in what they describe as 'utterly impractical materials at naturally way out prices'. The Sublime range includes simple gathered top

(continued on Page 31)

HENK SCHWIMMER STUDIOS

MANUFACTURERS OF LAMP SHADES IN VOLUME FOR RETAIL BUYERS AND LAMP MANUFACTURERS - FOR ARCHITECTS AND INTERIOR DESIGNERS

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KPE Transfer To Larger Premises

KPE Controls Ltd. announce that they have moved to larger premises. Their new address is KPE Controls Ltd., Progress Road, Leigh-on-Sea, Essex.

KPE has saturated the facilities available at its present site in Tonbridge, Kent. It has now moved to Leigh-on-Sea in order to be in close association with its parent Company MTE Control Gear Ltd., and also to make greater use of the advanced MTE Group facilities.

The move, is regarded as a logical development in the growth history of KPE, which is one of the fastest growing concerns in the field of industrial process instrumentation and controls.

The larger premises and improved facilities will enable KPE to continue to provide the quality, reliability, delivery and performance for which it is well known in the Industry.

Better Service

VEGA Designs Ltd. have moved into their new factory in the expanding town of Mildenhall, Suffolk. These larger and newly equipped premises allow them to offer increased production in all aspects of architectural glass-fibre including light fittings in their standard range and to special order. Enquiries should be sent to Mildenhall Industrial Estate, Mildenhall, Suffolk, telephone Mildenhall 3357 or to the London office 166, Walton Street, S.W.3. KEN 7521.

A New Showroom Marks . . .

HALF A CENTURY OF 'NATIONAL' PROGRESS

IN the fast growing electrical industry there are not many organisations that can look back over nearly 50 years of steady progress. The National Electrical Supplies Group of Companies is one of this select number, not that "National" do much looking back; they are a progressive company, as is immediately clear from their new Headquarters occupying 40,000 sq ft at National House, 136, King Street, Hammersmith, London, W.6.

The Group, controlled by National Electrical Supplies Co. Ltd., includes Fluorescent and General Supplies Ltd., H. A. Taylor (London) Ltd. and A. Seage Ltd. The last two companies are manufacturing units and, as an adjunct to the Group's comprehensive wholesaling service, offer every type of specialised and custom-built panels, trunking and sheet metal work of every description — with engineering facilities also available. Transport is in the hands of Jean's Transport Ltd., another subsidiary, working exclusively for the Group.

At the new premises, as Ron Evans the Group Chairman points out with some pride, vast stocks of electrical supplies are held for the promptest possible

delivery. Everything is geared to this end.

A specialist section with qualified personnel deals exclusively with the problems of motorised control gear, circuit breakers and microgap switches. Very extensive stocks of Square D, Crabtree, Honeywell-Brown, Burgess, etc. are held.

To handle an average of 700 accounts a day on a 24-hour

turn-round basis clearly requires something special in the way of organisation. "National" have achieved it by supporting a strongly personalised service with all the aids that modern efficiency techniques can give; computerised accounting is being rapidly adopted, rationalised stock control, storage and handling systems are used and there are 40 telephone lines to Hammersmith.

Post Graduate Courses For Advanced Students

THE first of the new post-graduate courses at the Ministry of Technology's Building Research Station has been announced. The course, in Environmental Design and Engineering, is suitable for lecturers and advanced students in the field, and will be held at the Station from April to June, 1967. It is divided into five sections of a fortnight each dealing with: Acoustics; Thermal Research and Design; Lighting, Meteorology and Thermal Comfort; the Aerodynamics of Building; and Piped and Ducted Services.

The syllabus is being circulated to Universities and Schools of

Architecture and to Technical Colleges providing building education to graduate level. Sufficient acceptances have already been received, for the full ten weeks and for the separate fortnights, to ensure the success of the course.

The course, a new development for B.R.S., arises from a proposal put forward by the Presidents of the Institution of Civil Engineers and of the Royal Institute of British Architects and accepted by the Ministry earlier this year. The syllabus for the course owes much to the help and guidance of University Professors and the Department of Education and Science.

WAR ON CRIME

A War-on-Crime and Recruitment Exhibition staged by the police at Surbiton, Surrey, included a display of Dominit emergency lighting equipment that G. A. Stanley Palmer Ltd. the manufacturers, had been invited to organise as part of a general demonstration of police work. Photo shows Mr. N. L. Lloyd-Jones, Sales Engineer, operating one of the Dominit lamps (LEN 065) watched by a police diver and another member of the Thames River Police.



Success Follows A.P.L.E. Blackpool Conference

FOLLOWING their first participation in the exhibition arranged in conjunction with the conference of the Association of Public Lighting Engineers, which was held recently at Blackpool, M&B Plastics Ltd. report great interest in their plastics sheet materials which are produced for the lighting industry.

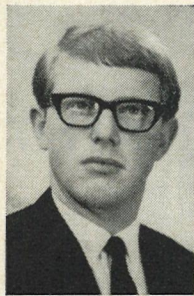
Various applications for the two materials, "Cabulite" butyrate sheet and "Rhiamer" polycarbonate sheet were shown including several types of lighting bowls. "Cabulite" is offered where vandal resistance is required and "Rhiamer" PC 7066 where the

lighting unit has to operate under very severe and testing conditions.

The use of "Cabulite" for traffic applications such as Worboys-type internally illuminated road signs and pedestrian beacons was also demonstrated by examples from various manufacturers' ranges.

The latest folder on the application of "Cabulite" for lighting had been widely distributed before the exhibition to interested people and additional copies can be obtained.

For further information use Reader Service Form quoting LEN 113



L. Johnson



B. F. Osborne



J. B. Self

Town and Around

Herbert Terry & Sons Ltd., the spring specialists, have recently appointed 3 new representatives. Mr. Leslie Johnson, North Western Counties will be based on the Manchester office; Mr. J. B. Self is covering the South London area and will be operating from the London office; and Mr. B. F. Osborne, Eastern Counties who will be covering territory formerly covered by the late Mr. R. H. Chambers.

★ ★ ★

Atlas Lighting Ltd. have appointed two new Field Sales Managers for the North Eastern and South Western areas. Mr. K. Willis, formerly Atlas Field Sales Manager in the South West, is returning to the North East to take up a similar appointment, operating from the Atlas Leeds



Ken Willis



C. D. Walker

Office. Ken Willis, born in Sheffield 41 years ago, married with one daughter, joined Atlas as a representative in the North East in 1956, after serving an apprenticeship in the electrical industry. To take his place in Cardiff, where he has recently been operating, Mr. C. D. Walker, an Atlas Sales Engineer in Scotland, has been appointed Field Sales Manager, South Western area.

★ ★ ★

Mr. D. L. Tabraham, a member of British Lighting Industries Ltd., has been appointed a Director of Claudgen Ltd.



D. L. Tabraham

THIRTY-THREE - year - old John Mullis who joined Sheerlite Shades Ltd., a member of the Creators Group of Companies, on June 13th, 1966 has been appointed Group Sales Director.



John Mullis

This position of responsibility now gives him sole charge of sales for all the companies within the group both at home and abroad. He was previously employed as Sales Director by Styla Accessories Ltd., of Birmingham, a member of the BSR Group of Companies.

★ ★ ★

Mr. Peter Clapham is the Company Head of J. P. Clapham (Ceilings) Ltd.,



J. P. Clapham

formed recently to design and install integrated ceiling systems.

★ ★ ★

Mr. A. E. Page has retired from the Chairmanship of Osram (G.E.C.) Ltd., having completed more than 50 years' service with the G.E.C. He is succeeded as Chairman by Mr. D. Lewis, and Mr. P. R. Sansom will continue as Managing Director. Mr. Page will remain on the Board of Osram and of several of the associated companies.

★ ★ ★

Two new appointments are announced by Pope's Electric Lamp Co. Ltd. Mr. G. P. A. Elborough, who has managed the Company's Birmingham branch for the past three years, has now been appointed Area Sales Manager of the recently inaugurated Midlands sales area. Mr. Ian F. Moodie, who has previously managed sales areas in the Midlands and Home Counties, has been appointed Area Sales Manager for North West England and will be based at Manchester.

A.E.I. Lamp & Lighting Co. Ltd. have announced the following staff retirements:

Mr. H. E. W. Collins of the factory cost office at Melton Road, Leicester, has retired for health reasons, after 26 years' service. Mr. Collins is resident in Leicester.

Mr. H. C. Stewart has retired after 27 years' service. He joined the Company as a Sales Representative in 1939 at Taunton and has been Exeter Area Manager and Guildford Depot Manager. Since the closure of the

Guildford depot in 1963 he has been a representative based at London and Croydon. Mr. Stewart is a Guildford resident.

Mr. F. C. Dean has retired after 33 years' service. He joined the Ipswich office of the then Edison Swan Electric Ltd. in 1933. After the war he became Manager of the Ipswich depot and Area Superintendent for Suffolk and has been a Senior Sales Representative for the Colchester and Bishop's Stortford areas. Mr. Dean is resident in Ipswich.

Bader Machinery Land Big Jap Order

Bader Machinery Co. Ltd., the Weybridge Company specialising in the design and manufacture of machinery for all types of electric lamps, has received an order valued in the region of £200,000 from Japan.

The electrical manufacturing firm of Hitachi Lamp Co. Ltd. has signed a contract with Bader for a complete group of Fluorescent Lamp making machines.

Hitachi is a new customer for Bader and the machinery will be

specially designed to suit their particular requirements. The order was negotiated on behalf of Hitachi Lamps Co. Ltd. by Marubeni-Iida Co. Ltd., the Japanese purchasing organisation in London.

Between 70% and 80% of Bader's output is exported and recent orders have been delivered to lamp manufacturing companies in North America, Malaysia, India, Sweden, France, and Italy.

Mazda Netabulb Sales Aid

AN attractive sales aid for the Mazda Netabulb has been designed and produced by Abbey Goodman Displays Ltd. for A.E.I. Lamp & Lighting Company Ltd.

An inflatable Netabulb mobile has been made from a P.V.C. material in the actual shape of a Mazda Netabulb. The mobile

when inflated is 24 in high by 15 in wide, is suspended from the ceiling by a cord and bears two sales messages.

The pump which is used for inflation will also completely deflate, making it practicable for convenient storage or despatch through the post.

LITESHOW '67

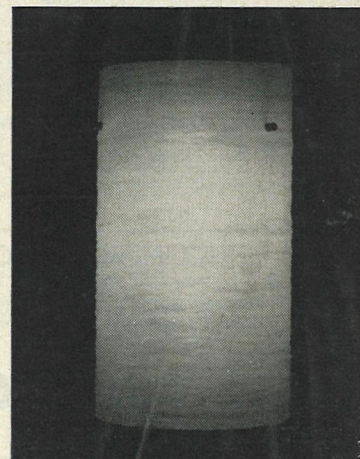
(Continued from page 28)

shades in new original nursery and furnishing prints, also available in pvc for kitchens and bathrooms. There is an extended range of bedroom table lamps in six colours and a very select range of modern, hand thrown, sculptured, Swedish pottery lamps. Each lamp is an original and is finished rough, with various designs and colour glazes. The Futura wood shades are said to be the most decorative wooden pendants to date. They are in eight different shapes and are now being offered at a much reduced price. LEN 066

Samols Latimer Ltd.

A RANGE of pendant shades will be shown. Produced from glass fibre, the shades are said to com-

bine the tough, lasting, heat resistant properties of this medium with attractive, sophisticated and modern design. Colours available are white, orange, green, yellow and red. LEN 067



Samols Latimer glass fibre pendant shade.

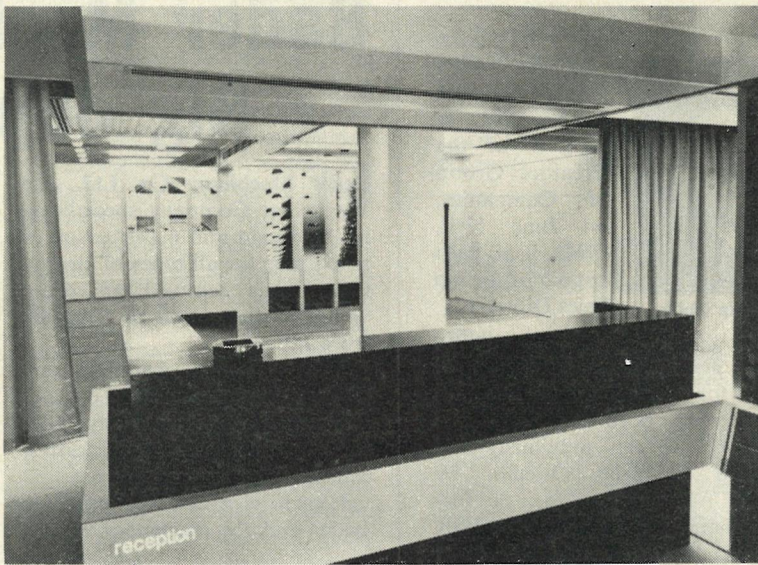
Reconstructed British Lighting Council Headquarters

COMPLETE ENVIRONMENTAL CONTROL THROUGH INTEGRATED LIGHTING, HEATING AND AIR CONDITIONING

The unusual feature of this particular system is that all the heating requirements of the entire premises are met by the heat generated by the lighting. The whole system is served by a main supply duct from which contributory ducts branch off to feed individual zones.

The premises have been divided into 10 demonstration areas to suggest something of the ingredients of applied lighting which are now available. The entrance area has a plastic membrane ceiling carrying two rows of recessed fittings for 150W PAR 38 filament reflector lamps. This type of unit is often known as a "black hole" fitting — a reference to its low brightness from normal angles of view. General illumination in the reception area is provided mainly by two new types of discharge lamp. The installation is the first of its kind in this country. Mercury iodide and high pressure sodium lamps are used together in an indirect

COMPLETELY fresh air every 3 minutes and heating provided by lighting are features of the "tailor-made" air-conditioning system at the British Lighting Council's reconstructed headquarters in Lancaster Place. In employing this technique the B.L.C. is emphasising the contribution that lighting can make to the control of the total environment.



system employing the 400W ratings of each lamp.

Four examples of luminous ceiling show some of the characteristics of this lighting treatment. Three have an open construction, permitting the extraction of air from the room below to the plenum above, while the fourth has important acoustic properties. The two similar spaces side by side at the back of the demonstration area illustrate a number of contrasts in lighting technique. Recessed fluorescent fittings are used for general illumination. Interior illumination levels comparable to those produced by daylight out of doors have an importance in permitting detailed tasks to be tackled with confidence. The sixth demonstra-

(Left) The view from the entrance to the back of the new demonstration area. The canopy above the reception desk contains dichroic cool reflector, mercury iodide and high pressure sodium lamps. This is the first time the latter two have been used indoors in the United Kingdom.

DAVIS, CASH & CO LTD

THE *Lighting Specialists*

SORRY!

ESTB. 1862

We have nothing to sell except our brains and manufacturing skills

we make ANYTHING to your specification

We are manufacturers of all types of special tungsten and fluorescent lighting fittings and specialists in sheet metal and lighting engineering

NOTHING IS TOO LARGE OR SMALL

Architects and consultants specially catered for

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Recently completed Tower Bridge Lanterns
Suppliers of monitor stands and consol desks to the Electronic Industries



The Conference room seen here is provided with simulated daylight, examples of various industrial equipment and dimmer-controlled ceiling inset black-hole fittings.

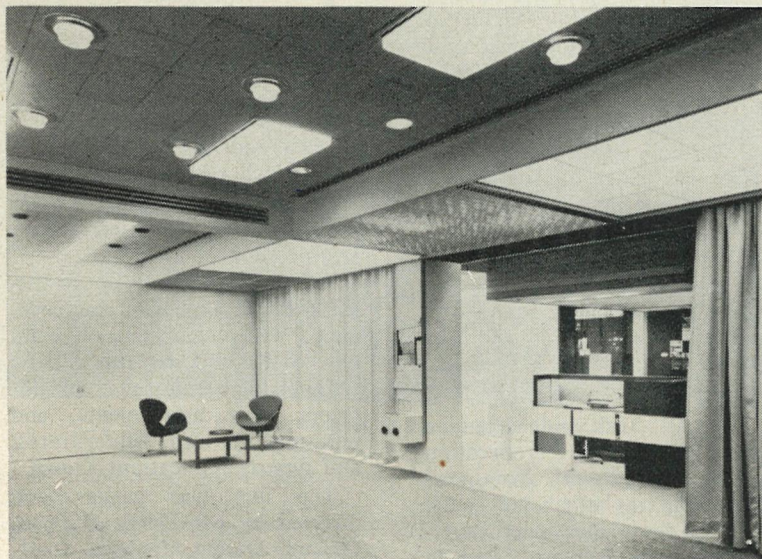
tion area allows for such high intensity illumination. The system represents an installed lamp wattage of approximately 4,400W in an area of less than 120 sq ft a loading approaching 40W per square foot.

The lighting installation for the shop window area is simple in principle, but is capable of great variety in application and supplement. A continuous sequence of slow colour changes may be produced automatically. Floor outlets permit portable fittings such as table lamps to be used with furniture in a domestic room-setting display. The suspended soffit has drop-in tiles giving easy access to the structural ceiling above, where small-sectioned trunking provides the electrical supply for pendant fittings. The conference room is intended to provide a functional interior for meetings while at the same time housing permanent and changing exhibits and demonstrations. The major part of the general illumination is pro-

vided by recessed, dimmer controlled filament fittings with a symmetrical and predominantly vertical light distribution.

The studio section at the end of the basement area can effectively extend the conference room when necessary or be separated from it by folding doors. It is here that the effects of lighting on colour, modelling, and texture may be investigated experimentally. The area also provides space for photographic displays and scale model studies. The latter are of particular relevance in the development of the ideas of permanent supplementary lighting of interiors and in other fields where subjective appraisal is an important factor in reaching the optimum solution.

The provision of this permanent exhibition is one expression of the Council's purpose, the wider dissemination of information on lighting, and one aspect of the service it provides to everyone with a professional interest in the subject.



Four luminous ceilings form an important part of the demonstrations. A view of the reception area can be seen through the mechanically-operated curtains.

JCB : BRITAIN'S BIGGEST INDUSTRIAL LIGHTING PROBLEM

SOLVED BY CIRCULUME!

£10,000 CAPITAL SAVING achieved with Circulume mercury fluorescent.

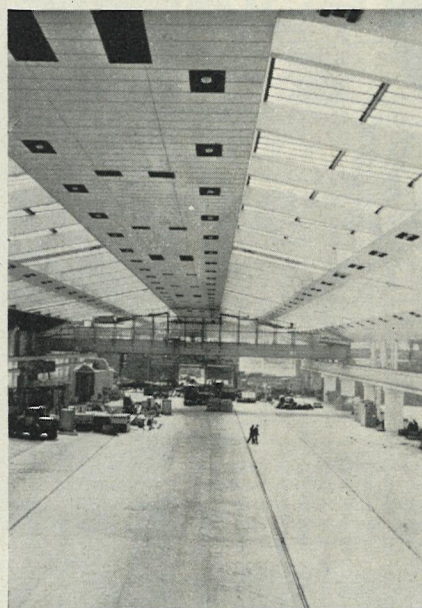
One of the most modern and efficiently-lit factories in Europe, the new J. C. Bamford plant at Rotherham proves without a shadow of doubt the superiority of Circulume mercury fluorescent lighting for all industrial applications. Superior in efficiency, superior in economy. Why?

Only 560 Circulume 1000-watt units are required—as opposed to 2,100 twin fluorescent fittings—to illuminate every single square foot of the 174,000 sq. ft. production area with 110 lumens of white, even light. Fewer Circulume units give greater illumination using far less electrical energy!

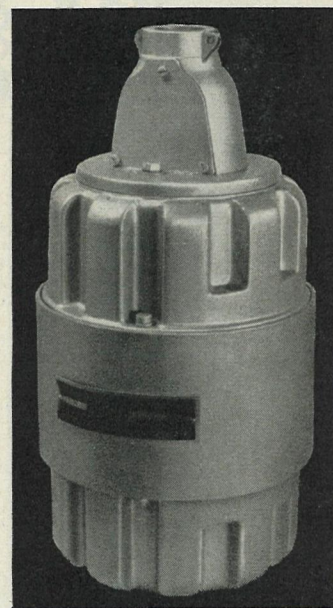
J.C.B. will make substantial savings on replacement and maintenance costs too. Reflector mercury vapour lamps have a much longer life-span, and the internal reflector makes regular cleaning unnecessary. How do Circulume achieve such drastic economies? Thanks to the Circular Integral Ballast—invented by Circulume—which is coupled directly to existing lighting fittings or supplied as an integral part of new units, thus doing away with cumbersome, expensive brick-type control gear.

With Circulume you achieve economies all round: 60% saving on electricity over tungsten, 50% saving on replacement and maintenance, reduced installation costs plus higher, more efficient illumination. J.C.B. did!

Write today for full information on the modern, economic way of lighting all industrial premises.



The vast, new J.C.B. plant at Rotherham—one of the most efficiently-lit factories in Europe!



The Circulume Circular Integral Ballast—fastest and most efficient way of converting Tungsten Filament lighting to Mercury Fluorescent.

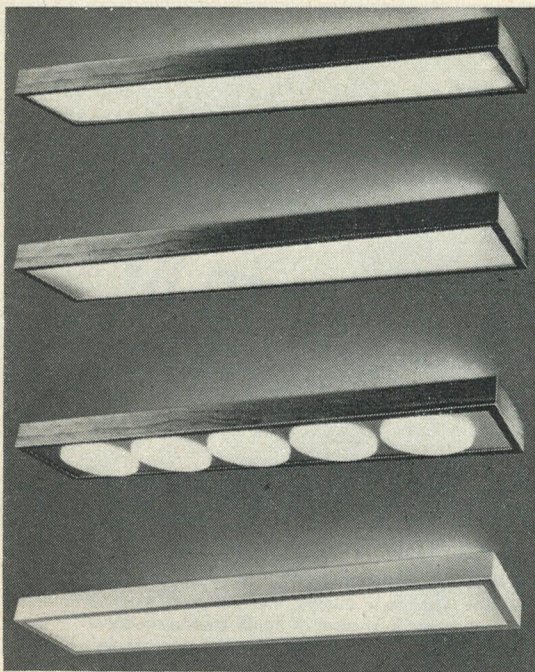
CIRCULUME UNITS USED BY: The Admiralty · A. V. Roe & Co. Ltd. British Railways · Clayton Aniline Co. Ltd · English Steel Corporation Ltd. Ford Motor Co. Ltd · Imperial Chemical Industries Ltd · Lancashire Steel Mfg. Co. Ltd · National Coal Board · Richard Thomas & Baldwins Ltd · Stewarts & Lloyds Ltd.

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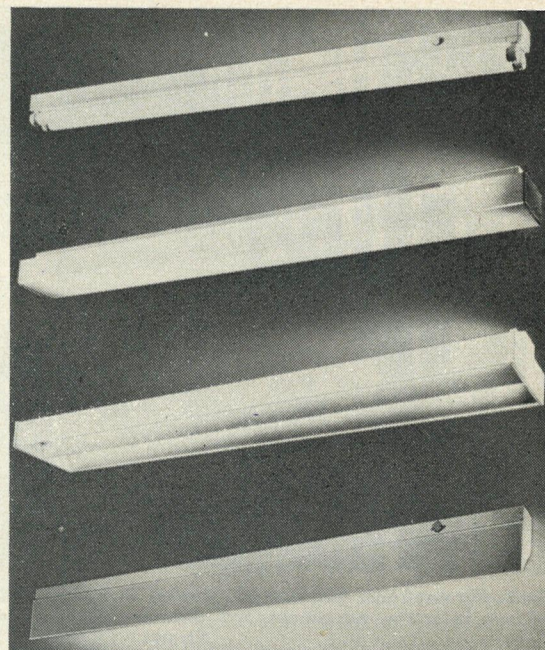


(Top to Bottom) (1) Opal Perspex reversed cone louvre with teak veneer tray. (2) $\frac{3}{8}$ in minicell louvre with teak tray. (3) Five concentric louvres set in aluminium panel with teak tray. (4) Prismatic low brightness panel.

CRISP ULTRA SMART STYLING IN A LUXURIOUS BUT PRACTICAL RANGE OF FLUORESCENT FITTINGS IN SWITCH OR SWITCHLESS START...

THE OSRAM 103 LINE

WITH TRAY ATTACHMENTS FINISHED IN TEAK OR IN WHITE MELAMINE LAMINATE



(Top to bottom) (1) Twin-tube 5 ft 65W channel. (2) Twin-tube 5 ft 80W opal polystyrene diffuser fitting. (3) A special aluminium 'Comfort' attachment for the 5 ft channel. (4) The clean-edged look of the new 5 ft angled reflector.

UNUSUAL departures in diffuser design are important features of a new range of quality fluorescent fittings recently announced by Osram (G.E.C.) Ltd. Described as the 103 Line, it replaces the Company's 102 range.

The new range, comprising 33

new channels, diffusers and reflectors is both luxurious and practical—crisp modern styling being allied to functional design aimed at easy erection and the minimum of maintenance.

The 103 Line is available in either switch or switchless start

in 4 ft 40W, 5 ft 65W and 8 ft 125W versions. The 8 ft unit is available, also, in an 85W switchless version.

A special feature of 103 Line is the tray attachments. These are finished in either a warm teak veneer or in functional white Melamine decorative laminate.

As well as the normal single and twin tube positions, there is a wide spaced version of the twin tube type with lampholders on either side of the channel. When used with the new wide diffusers, this position allows close to the ceiling mounting. It also improves optical performance and gives a much better appearance.

Prices vary from £4.15.0d for a single 4 ft 40W switch start channel (£5.5.0d instant start) to £11.17.0d for a twin 8 ft 125W switch start channel (£14.7.0d instant start version).

Diffuser prices (subject to P.T. surcharge) range from £1.17.10d (inc. P.T.) for a 4 ft one light clear prismatic diffuser, to £15.19.4d (inc. P.T.) for a 5 ft twin diffuser with circular louvres and real teak veneer finish.

This particular diffuser is one of the unique new designs which characterise the 103 Line. Its five circular polystyrene louvres have been incorporated so that the fitting can be "married up" with tungsten fittings in such settings as shops, restaurants, hotels etc.

The basic teak and Melamine frames for twin tube 5 ft operation can be teamed with five interchangeable tray attachments—the five circle design mentioned above, a plain opal Perspex panel, a clear prismatic low brightness panel, a $\frac{3}{8}$ in mini-cell white

polystyrene louvre, and pairs of reversed cone opal Perspex louvres (again for matching up with similar tungsten units).

There are also one and two light clear prismatic diffusers—which may be mounted in continuous runs using appropriate mounting brackets—and single and twin opal polystyrene diffusers.

Osram's famous Comfort range of fittings are now represented in the 103 Line by a specially designed two-light 5 ft aluminium attachment.

Four open and closed end reflectors are available in the range. One of particular note is the 5 ft angled reflector for lighting all vertical surfaces.

Exclusive to the new range are the spring-loaded bi-pin holders with wiping contact.

Facilities for installation are comprehensive. Three sets of B.S. fixing slots are provided. There are two $\frac{3}{4}$ in conduit entry knockouts in each end plate and conduit is held in place by a clamping screw which, in addition, gives good earthing. The die-cast ends have key-ways to ensure accurate in-line mounting.

Ceiling mounting is by two screws and easy-fix slotted washers are included.

A 20 minute colour film featuring the 103 Line has been produced which describes in detail how to fix and wire up a basic channel. The full range of diffusers, tray attachments, and reflectors are also demonstrated, and typical applications shown.

The film was written and directed by Mr Derek Durrant, Osram's Design Manager.

For more information use Reader Service Form quoting LEN 070

Brilliant JEWELL like chandelier lighting

INDISTINGUISHABLE FROM GENUINE CUT GLASS AND ONLY A FRACTION OF THE COST!

Martin CHANDELIER

... for Regal splendour—

or domestic elegance!

Martin Chandeliers are manufactured from high grade optical quality polystyrene and acrylic resins. They are a brilliant reproduction of cut glass chandeliers, and the lustres and crystals are linked together with pins or rings in the same way as the glass type. Easily assembled, dust resistant, easy to keep clean and specially treated to prevent discoloration, Martin Chandeliers are of an extremely high quality. Range includes superb large chandeliers for ball-rooms, restaurants, sa'ons, etc., and many attractive smaller designs to enhance the beauty of the home.

MARTIN CHANDELIER LTD.
RAINFORD, ST. HELENS, LANCs.
Tel.: Rainford 2011 (10 lines, S.T.D.)

Illustrated booklet and F.O.B. Price list on request.

NEW INSTALLATIONS

Integrated Heating and Lighting



Toton Diesel Shed with integrated heating/lighting system.

THE Toton Diesel Shed of British Railways, London Midland Region at Toton, near Long Eaton, Derbyshire, is equipped with the Copperad-Benjamin Raylite integrated heating and lighting system which combines the even distribution of radiant heat from Raystrip with the same characteristic in lighting—continuous tubular—type fluorescent lighting mounted on Taskmaster trunking. In this case 159 "Crysteel" vitreous enamelled Taskmaster fittings were supplied, each with 2 x 125W lamps spaced

ment stimulates a flow of cooling air over the lighting equipment, thus ensuring long life and the maintenance of illumination efficiency.

The work carried out is maintenance of diesel locomotives. The installation was by S. H. Heywood of Manchester. LENO 071

Tungsten halogen installation at Beckton

A FLOODLIGHTING scheme of an unusual nature and which provides increased safety



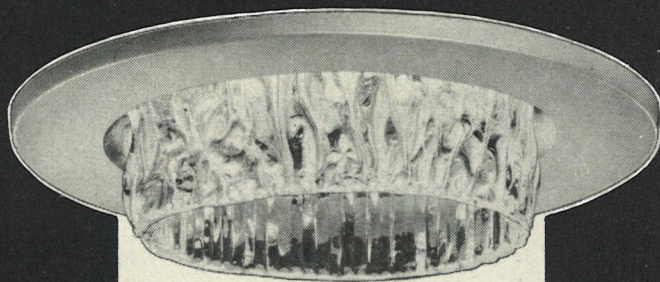
Coke ovens at Beckton lit by Atlas floodlights.

a 20 ft and at a height of 24 ft (21 ft above working plane) giving a value of 15 lm/ft².

The heating medium in the installation is high pressure hot water while the support arrange-

has recently been completed by Atlas Lighting Ltd. at the Beckton Gas Works, London.

The requirement was to illuminate the 200 ft face of the 40 ft high coke ovens and the 6 ft



SONDIA DOWNLIGHTS

Write now for the Sondia Catalogue describing their full range of Downlights. Recessed, semi-recessed and surface mounted fittings in a variety of superb designs.

ILLUSTRATED ABOVE

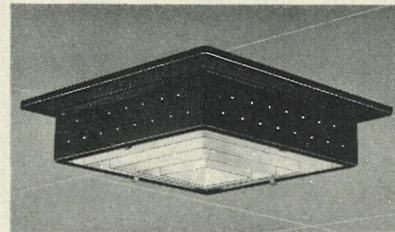
7190G Crystal Glass

A fully recessed downlight with crystal glass projection. This fitting is available with a Alux reflector if intense light is required. The clear crystal glass can be diffused with colour from the interior of the fitting. Please state the colour required when ordering. The recessed depth is 8½" and cut out diameter 6" with an overall diameter of 7½". Lamp 100 watt clear.

ILLUSTRATED BELOW

W406

Sondia recessed downlights offer exciting decorative effects with anti glare baffles in any British Standard colour giving the effect of a coloured source whilst retaining a white downward light.



Full design and advisory service available. Write now to:

SONDIA LIGHTING

De Grey Street, Hull.
Tel (OHU2) 42940

For more information use Reader Service Form quoting LENO 072

ALL THE BETTER TO SEE WITH...

proved by thousands of satisfied users of Sheerlite light fittings.

These exclusive fittings, sculptured in glass fibre to give high light transmission factor with good diffusing properties, produce an effect of luxury and attractiveness of their own.

Extremely durable and fire resistant, they are available in seven colours and will blend into any decor, especially where architectural originality is required.

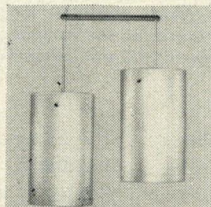
Complimentary to the range of light fittings are the original Illuminated Rameses Wall Panels also sculptured in glass fibre and made in various designs.

sheerlite

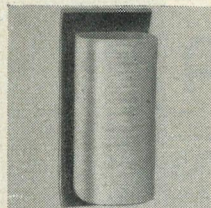
shades Ltd.



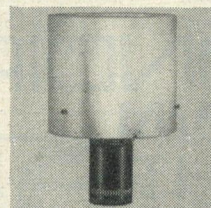
PF610/N nursery pendant



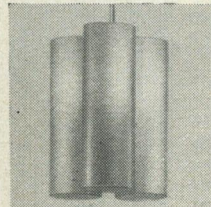
PF/2 multiple pendant



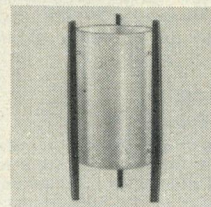
WTF449 wall fitting



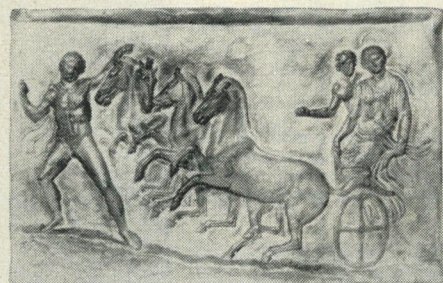
TF414 table lamp



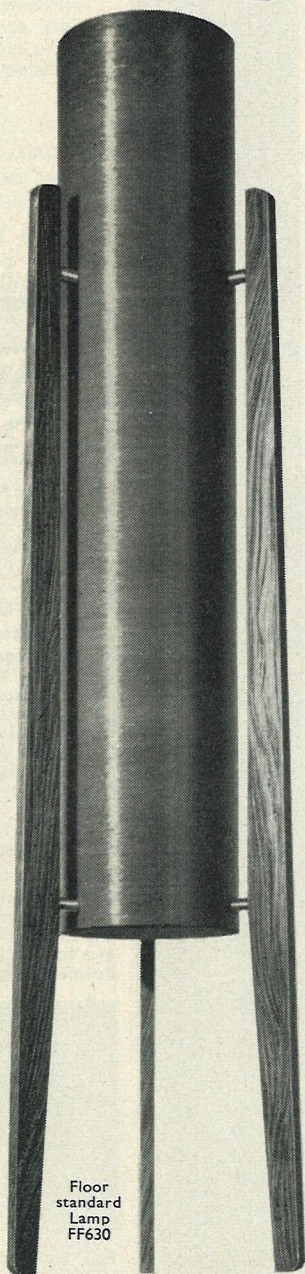
RSF4412/3 rigid pendant



TF48 table lamp



Echelos: Relief illuminated wall panel made from sandstone coloured glass fibre.



Floor standard lamp FF630

Write for full colour brochure on Sheerlite fittings.

sheerlite shades Ltd

Sheerwater, Woking, Surrey, England.

Tel: Woking 5981 (15 lines)

CE a member of the creators group of companies

walkway in front of them. To achieve the required level of illumination, twelve 1,500W TIS tungsten halogen floodlights were mounted on top of a 100 ft building running parallel to the ovens. Although this building, the nearest suitable, is 300 ft away, the light level obtained is eminently satisfactory to the oven operators. Their job is also considerably safer, the edge of the walkway and the extremely hot surfaces of the oven faces being clearly illuminated.

Completed in 1868, the Beckton Gas Works has been producing gas for nearly 100 years and until quite recently had the distinction of being the largest gas works in Europe.

LEN 074

Hangar lighting at Gatwick

EACH of the British United Airways VC.10s flies more than 5,000 miles a day on average to destinations in Europe, Africa and South America, operating from London-Gatwick right round the clock. To meet these heavy demands on the aircraft, servicing and checks have to be carried out both day and night in a specially constructed hangar at Gatwick Airport, which can accommodate the high tail unit of the VC.10.

Because of the very high hangar roof, the lighting has to be powerful enough to permit intricate and important maintenance work to be undertaken and this required level of illumination has been successfully obtained by employing Ekco mercury vapour discharge high bay lighting equipment.

Sixty Ekco high bay reflector fittings have been installed 50 ft above ground floor level with a spacing of 15 x 30 ft centres. The fittings have each been equipped with an Ekco MBFR/U 400W mercury vapour reflector lamp which has an internal fluorescent phosphor coating to ensure satisfactory colour rendering properties.

The rated average life of these lamps is 5,000 hours, and they have an average output of 16,600 lumens, which is well maintained throughout lamp life due to the internally coated reflector.

A lighting level averaging 25 lumens per sq ft when measured a few feet above the floor has been uniformly achieved throughout the entire hangar area. Assistance in planning this important installation was provided by the Ekco-Ensign Electric Ltd. Illuminating Engineering Department.

LEN 075



Hangar lighting at Gatwick with high bay fittings

Lighting the Post Office Tower — continued from page 21

desk and office area uses 2 Horstmann Simplus H24 bracket fittings.

External to the Cinema the general lighting is by Harris and Sheldon Miniflector fittings, these are shallow reflector units, chosen by the Post Office for providing strong downward emphasis with their standard fluorescent tubes as opposed to the alternative of using commercial reflector tubes.

Revo die-cast aluminium circular bulkhead units are used to light the external areas at the base

of the tower and in the garden area, monk's cap fittings by Rowlands Electrical Accessories are employed. This firm also supplied the flood-lanterns used in the attractive garden pool.

The tower was designed for the G.P.O. by the Directorate-General of Works of the Ministry of Public Building and Works. Peter Lind and Company were the main contractors. The Electrical contractors were Graham and White Ltd.

LIGHTING CONTROL UNIT

Completely Transistorised Device

THE Fisher Zodion lighting control by **Process Units (Halifax) Ltd.** has been designed to fulfil all that is required for the control of artificial light. The circuitry of the unit is fully transistorised using cadmium sulphide cells. Positive switching is achieved by the circuit having an in-built hysteresis using a differential which prevents searching after the light has switched.



The functioning section is housed within the cone and this is plugged into the base of the unit which is in effect a socket/terminal box with fully insulated terminals. The unit features three cadmium sulphide cells positioned at 120° to each other in the cone. In the event of any part of the cone becoming obscured by foreign matter the control will continue to operate. Zodion is fail-safe since the relay is normally energised to open the load circuit contacts.

Tests have indicated that the point of time at which artificial light is required can vary as much as 30 minutes within any given week. This means wastage or inadequate light. By catering for these marginal differences the Fisher lighting control ensures maximum economy within the context of maximum safety.

The control does not need re-setting in the event of power failure nor does it require seasonal adjustments. Each Zodion unit is individually boxed and is complete with installation instructions.

Price: £6 each with discount for quantity.

Delivery: ex stock or by arrangement.

For more information use Reader Service Form quoting LEN 076

MOON LIGHT NIGHT LIGHT

In Pearlescent Polystyrene

VALVIC (ELECTRICAL PRODUCTS) LTD. have launched their Moon Light night light. The light is made of polystyrene and mounted on a non-tip base. A 15 W pigmy bulb is fitted and the 6 ft flex incorporates a click-on/off switch.

Price 39s 11d.

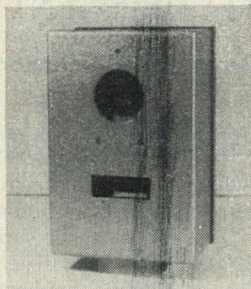


For more information use Reader Service Form quoting LEN 077

PHOTO-ELECTRIC LIGHT PROJECTORS

Small Units for Mains Operation

HIRD-BROWN LTD. have produced new light projector and receiver units. There are two new pairs. All are enclosed in a gasketed sheet steel case size 9 in x 6 in x 4 in. Normal beam length is 20 ft but a 30 ft version is available. VP projectors and VR receivers have their lens apertures in the box lid. OP and OR units have the viewing lens in the base of the case. All units feature alignment adjustment by three screws.



Price and delivery: on application.

For more information use Reader Service Form quoting LEN 078

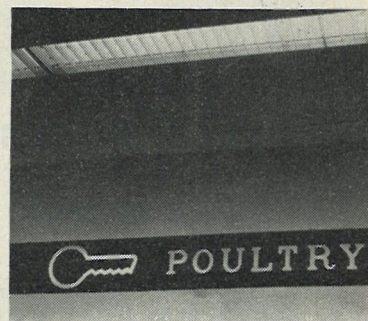


IN THE LIGHT OF MODERN MARKETING

Aimed at giving the maximum lighting on shelves, but at the same time minimising glare, the lighting system used in Key Market's St. Leonards-on-Sea food store was devised in close co-operation with the architects, Thomas Mitchell and Partners.

Although designed to harmonise with their surroundings, it is intended that the lighting fittings themselves should be as inconspicuous as possible leaving the goods as the visual focus. Continuous rows of troughing with deep baffles sit easily in the ceiling. The lines of troughing are at 4' centres, using continuous single tube 8' fittings. The louvre baffles are at 2' centres. Pelmet lighting and suspended trays over food counters are unobtrusive and efficient. De luxe natural fluorescent tubes emphasise the colours on display shelves, whilst over the Butchery and Delicatessen counters pink circlgrid louvre assist in colour correction. A specially designed illuminated key motif is used throughout the store with great effect.

This interesting installation gives an average illumination of 65 lumens a square foot—75 lumens a square foot when supported by special lighting—which makes it just as easy to read the labels on goods displayed in lower bins as those on top.



The S.L.R. technical staff is always available to advise on lighting problems and to design special fittings to meet special needs. The full range of S.L.R. fluorescent and tungsten fittings is illustrated in List 55 which will be sent on request.

Special lighting fittings by

S L R

S.L.R. ELECTRIC LTD

CRANBORNE ROAD INDUSTRIAL ESTATE, POTTERS BAR, HERTS, ENGLAND

Telephone: Potters Bar 58121-7

For more information use Reader Service Form quoting LEN 079

LIGHTING COLUMNS AND FITTINGS

Approved Designs

CONCRETE Utilities Ltd. and their associate company, Phosco Ltd., are marketing a range of new lighting columns and fittings.

The Lightweight 20 for 20 ft mounting height is a tubular steel column, with a new base shoulder shape and a modified access door. This is one of a range of tubular steel columns for mounting heights of from 15 ft to 40 ft, all approved by the Council of Industrial Design. The Highway XL, which is a modified version of the standard Highway X type, and gives a 30 ft mounting height, with a standard Highway series concrete bracket is also a C.O.I.D. approved design.

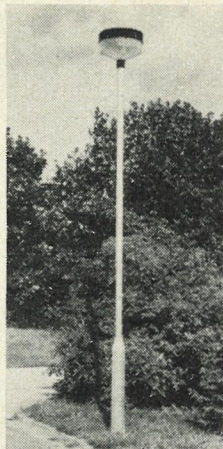
Phosco fittings are available for use with 100 W and 150 W SOX lamps. The 100 W unit is a semi-cut-off lantern for side entry mounting and, in an alternative version, for pendant suspension. Gear for the lamp can be supplied fixed into the lantern hood but is available for side entry mounting only.

A new range of glass-fibre subway units, include units for two 13 W fluorescent lamps, two 20 W or 40 W fluorescent lamps and for one or two 65 W or 80 W 5 ft MCF/U lamps. This range is designed for subway lighting and includes a cornice fitting for continuous runs in a module of 50 in.

Additionally there is now a complete range of bulkhead fittings which includes a 2 ft unit for one or two 20 W or 40 W fluorescent lamps, approved by the Council of Industrial Design for inclusion in their Design Index.

Price and delivery: on application.

For more information use Reader Service Form quoting LEN 080



TUNGSTEN HALOGEN FLOODLIGHT

Sunflood Open Unit

A NEW open type floodlight has been announced by **British Lighting Industries** and will be marketed under the Atlas, Ekco and Mazda brands. Known as the Sunflood, the compact fitting uses a 500 W tungsten halogen lamp and achieves results similar to that of the 500 W vitreous enamelled floodlight reflector at less than half the price. The Sunflood has many applications where general floodlighting is required, a few examples being car parks, factory yards, building sites, sports grounds, halls and churches. Sixty of these fittings have been used for the interior lighting of the Chapel in the Meeting House recently opened at Sussex University. The Chapel is circular, using an unusual staggered concrete wall block construction with panels of coloured glass alternating with the blocks. With its conical ceiling this attractive building is well suited to the advanced lighting technique possible with the Sunflood fitting.

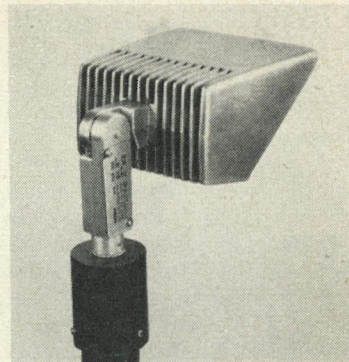
The floodlight achieves wide-angle light distribution by a specially designed specular dimpled reflector and has a die-cast aluminium body. The lampholders are of porcelain with contacts of silver. Overall dimensions of the Sunflood are $6\frac{1}{4}$ in x $8\frac{1}{2}$ in x $6\frac{3}{8}$ in.

The lamps are available in two voltages, 240 V and 120 V, the latter being particularly useful on building sites and where excessive vibration occurs. For mounting, a range of accessories will be available for securing the Sunflood in most locations. The unit has a natural aluminium finish.

Price: £5 10s. Lamp, £4 7s 6d (240 V), £4 15s (120 V).

Delivery: on application.

For more information use Reader Service Form quoting LEN 082





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For more information use Reader Service Form quoting LEN 081

INDUSTRIAL EXIT SIGN

Self-Luminous Unit

THE SRNE Industrial Exit Sign by **Saunders-Roe Nuclear Enterprises Ltd.** is a self-powered illuminated sign designed for use in such public places as cinemas, theatres and dance halls, in places of work and in hotels and ships. No power supply is required and there are no batteries. The sign remains visible under all ambient conditions.

Price and delivery: on application.

For more information use Reader Service Form quoting LEN 083



HIGH BAY MERCURY/FLUORESCENT LAMP

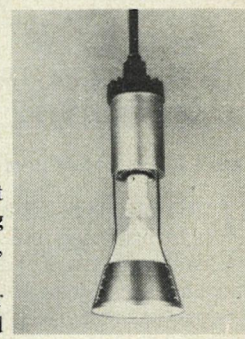
For Reduced Maintenance

A NEW high-bay mercury/fluorescent light fitting has been developed by **British Lighting Industries** and will be marketed under the Atlas, Ekco and Mazda brands.

The fitting can be supplied for use with either 250 W or 400 W MBFR/U lamps, and is designed for industrial applications where mounting heights of between 15 ft and 30 ft are available. The fitting is intended for replacing existing tungsten fittings, where higher illumination levels with reduced maintenance are required.

Prices: £11 7s 0d (400 W), £10 7s 0d (250 W)

For more information use Reader Service Form quoting LEN 084



RECESSED MODULAR RANGE

Fluorescent Troffer Fittings

A RANGE of fully recessed troffer fluorescent fittings to modular design has been introduced by **Courtney Pope (Electrical) Ltd.** The new range is manufactured in two distinct groupings, one for ceilings of a 1 ft module (MOC) and those for 2 ft ceiling modules (MOD) and both are designed for a wide variety of interiors including offices, schools, hospitals, libraries, hotels, restaurants and shops.

In both groupings, two different types of underside appearance are available. One is a dish diffuser of just over 1 in depth, and the other, a completely new design, is a regressed metal frame which is an exclusive feature of the new range. In the 2 ft module series the lengths available are 2 ft, 4ft, 6 ft, and 8 ft; whilst those in the 1 ft module range are 2 ft, 4 ft, 5 ft, and 8 ft.

Price and delivery: on application.

For more information use Reader Service Form quoting LEN 085

ALUMINIUM LOUVRE PANELS

New Isora Range

THE illustration shows a new range of high-quality lighting panels by **Isora Illuminating Ceilings Ltd.**

The panels, which are designed to comply with the 1965 Building Regulations, consist of stove-enamelled aluminium louvres available in a variety of cell and panel sizes, blade thickness, colours and lower-edge configuration. One of the particular benefits of the aluminium louvres is that they remain free from static electricity, greatly reducing the frequency of cleaning.

Apart from their use as lighting louvres, the new panels are equally suitable for use as decorative grilles, room dividers, and air conditioning or ventilating diffusers.

Price and delivery: on application.

For more information use Reader Service Form quoting LEN 086

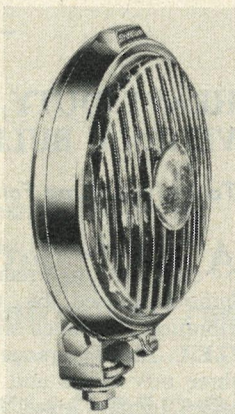
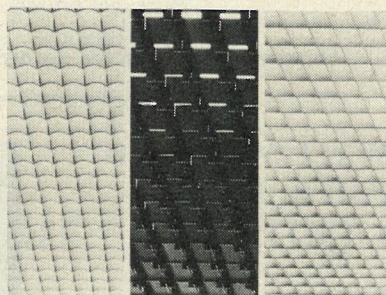
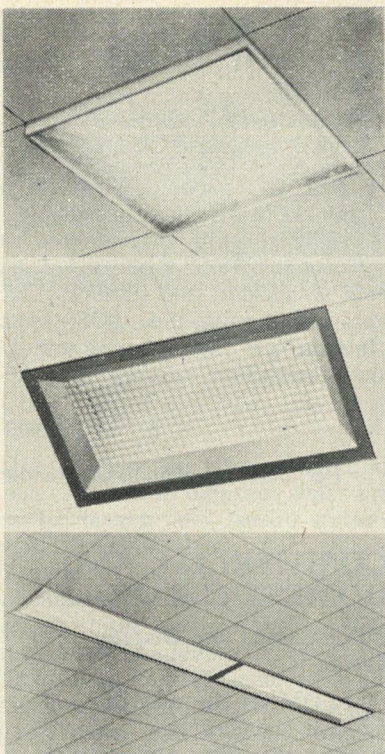
QUARTZ IODINE DRIVING LAMPS

Five Position Switching

STADIUM Ltd. are manufacturing spot lamps and fog lamps with a five position Vario switch control dial. The full power quartz iodine concentrated beam is used for normal driving and the four alternative settings are used to suit varying fog and driving conditions. In the thickest fog the lower settings are said to counteract the mirror effect of water droplets.

Price: Spot lamp, £6 10s 0d, Fog lamp, £6 10s 0d

For more information use Reader Service Form quoting LEN 087



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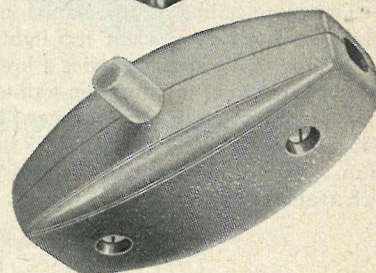
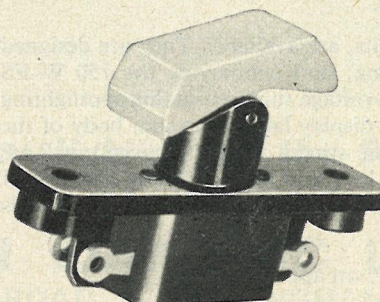
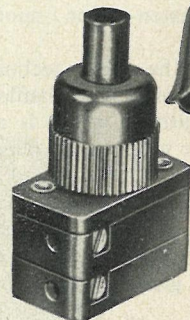
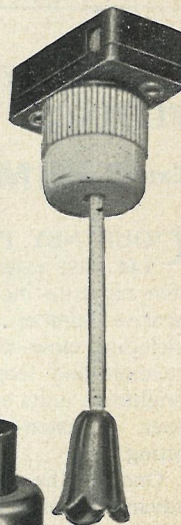
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OLD WOKING, SURREY.

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For more information use Reader Service Form quoting LEN 089

PORTABLE DAYLIGHT

Adjustable Fluorescent Light

THE Allen A3 Work Light by P. W. Allen and Co. is a portable fluorescent light using a 2 ft, 20 W tube in a fully adjustable mounting designed to give shadow and glare free on-sight lighting for Maintenance Engineers, Fitters, etc.

Although a great deal of attention is now paid to general lighting in industrial premises there are still a number of jobs that require specialised local lighting. This portable light has been designed with such jobs in mind. It can be positioned to shine in any direction and provide cool shadow-free illumination for plant and machinery maintenance or any operation which has to be carried out where standard lighting is useless.

The light can be suspended from the top of the lamp unit. The base is so constructed that a single hook fixed on a wall can suspend the lamp horizontally from the wall.

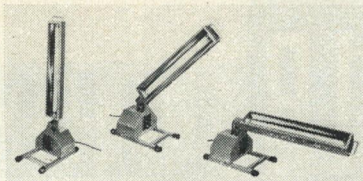
A 2 ft fluorescent tube with an electro-brightened aluminium reflector behind it to ensure maximum light output is mounted in a sheet metal lamp housing with a clear Perspex protective cover. The whole lamp housing assembly can be rotated through 350°. Friction joints enable the lamp to be set in any position from vertical to horizontal without the use of tools or locking devices. The control gear is fitted inside the base on which is also mounted a three-pin 5 A plug socket, providing power take-off for hand tools. The unit is strongly constructed and finished in silver grey hammerton enamel. Standard models are for 200/250 V or 110/115 V a.c. supply. Low voltage a.c. and 12 V or 24 V d.c. models are also available as "specials".

Dimensions are: height (max.) 36 in; height (min.) 12½ in; base 15 x 9 in. The total weight of the unit is 18 lb.

Price: £23 for standard models.

Delivery: 2—3 weeks.

For more information use Reader Service Form quoting LEN 090



COURTNEY POPE FITTINGS

Extension of Tungsten Range

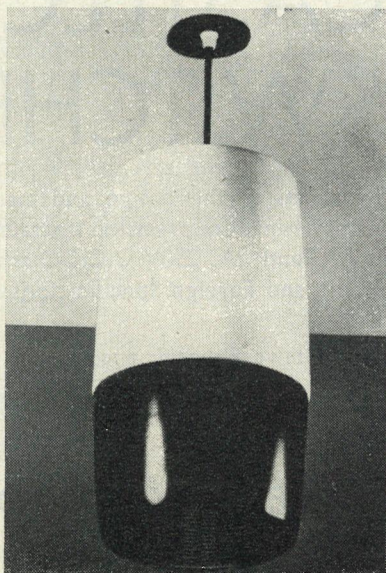
CCOURTNEY Pope (Electrical) Ltd. have extended their tungsten range to include a comprehensive number of new fittings including close-ceiling spotlights, pendant and semi-recessed low-brightness units and a neat compact, tungsten-iodine spotlight fitting.

One of the more technically advanced groups is the baffle-grid family of fittings which is available in four versions for pendant, close-ceiling mounting and semi and fully recessing. The unique formation of the integrally mounted baffle pattern is so designed as to ensure a highly efficient control of glare and high brightness.

Two close-ceiling, drum shaped units, are available. They are designed for high levels of efficient top lighting, both employing the 150 W ES type lamp. Also in the range is a low-voltage tungsten-iodine spotlighting fitting employing the tungsten-iodine display lamp. The slim body of the unit incorporates the transformer. The stirrup fixing is finished in RAF blue and off white. The fitting is 7 in long and has a reflector diameter of 6 in. A 48W, 12V lamp is employed. Both wall and floor mounted models are available.

Prices and delivery: on application.

For more information use Reader Service Form quoting LEN 091



SIX FOOT FLUORESCENT TUBE CONTROL UNITS

85W Devices for Modules

A RECENT major development in fluorescent lighting is the introduction of a 6 ft tube running at 85 W, which has many advantages, including its facility of going into a 6 ft module leaving no dark ends.

Smart and Brown Lighting Ltd. have made available control units for both switch-start and starterless circuits for this lamp. For the switch-start circuit using their PGS8 switch there is an HPF ballast unit of "Intermediate" cross-section and LPF chokes of both "Intermediate" and "Super-Slim" sections.

Price and delivery: on application.

For more information use Reader Service Form quoting LEN 092

COMMERCIAL AND DOMESTIC RANGES

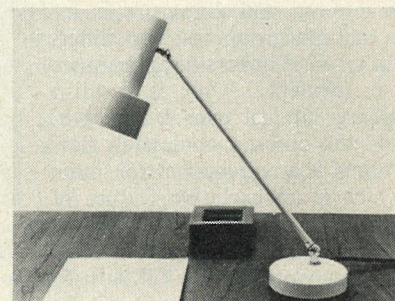
Table Lamps and Display Series

ALLOM Heffer and Co. Ltd. have launched new ranges of fluorescent ceiling fittings, table lamps and display fittings.

The recessed 707 frameless series of fluorescent fittings is available in standard modules with opal or prismatic diffusers. Table lamps are available with standard base or with a table clamping device.

Price and delivery: on application.

For more information use Reader Service Form quoting LEN 093



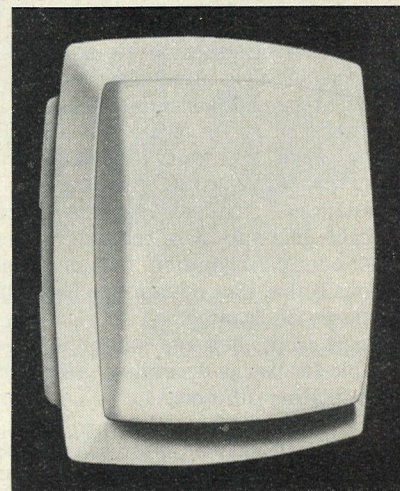
WALL-MOUNTED EMERGENCY LIGHTING

Self-Powered Units

G. A. Stanley Palmer Ltd. have produced a new range of Dominit wall-mounted emergency lighting units. The lights operate automatically on mains failure, and the batteries are recharged when the mains current is restored.

Price and delivery: on application.

For more information use Reader Service Form quoting LEN 094



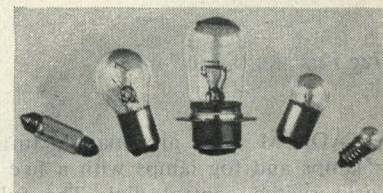
HEAVY DUTY VEHICLE BULBS

To Reduce Lamp Failures

A NEW range of vehicle bulbs designed to reduce lamp failures caused by the severe vibration associated with heavy vehicles has been announced by **Osram-G.E.C. Ltd.** The range is for vehicles using 24 V systems and consists of three new lamps and five improved versions of existing types. All the lamps in the range have new long-life filaments and filament supports.

Price and delivery: on application.

For more information use Reader Service Form quoting LEN 095



400 SERIES OF FLUORESCENT FITTINGS

Suitable for Continuous Mounting

THE recently announced 400 series of fluorescent light fittings by **Frederick Thomas** combine clean attractive design with superior finish and a number of useful practical features. Suitable for single or continuous mounting in single or twin lamp versions, with or without diffusers, the units are available in 4 ft, 5 ft and 8 ft lamp lengths. They provide efficient, well distributed light for schools, offices and general use where quality of design and manufacture are equally important.

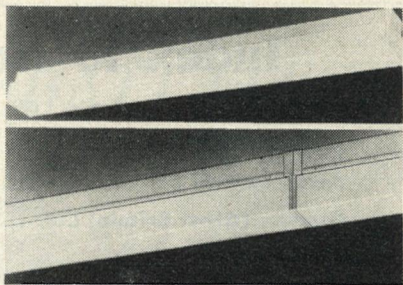
As battens only, the units are suitable for use in any location where an unshielded fluorescent tube is acceptable. Those with diffusers, which are extruded in white polystyrene and which have a finely reeded surface, provide unobtrusive lighting for general commercial use. To facilitate mounting, an adequate number of fixing holes in knock-out form, have been incorporated in the top of the channel. The end caps, which are welded on, are provided with indents to ensure that the battens align correctly when mounted in continuous runs. The quickstart control gear is mounted on the channel and can be easily and quickly removed whenever it is necessary. Welded-in screw studs and spring clips facilitate gear replacement. The illustrations show the twin-lamp 400 fitting with diffuser, and a continuous run of single units.

Spring mounted lampholders ensure that lamps can be fitted or removed, safely and efficiently, from either end of the units. For protection in transit the lampholders are packed inside the batten.

Other features include the provision of spacing channels. These parts, which have the same form and cross-section as the battens, can be inserted between the battens so as to increase the spacing centres of the battens as desired.

Price and delivery: on application.

For more information use Reader Service Form quoting LEN 096



AUTOMATIC EMERGENCY LIGHT

Nife-Lite Series 2

AN EMERGENCY light which is designed to blend with any form of existing decor has been added to their Nife-lite range of fully automatic maintenance-free units by **Nife Batteries** of Redditch. Known as the Nife-lite 305 Series 2, it replaces the earlier model, and is intended for installation in hotels, hospitals, clubs, schools, old people's homes, as well as private houses and flats.

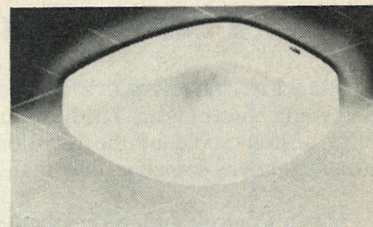
The main external alteration is a completely restyled one-piece moulded Perspex cover to match the latest developments in interior design, and which also gives an improved light output. Owners of the earlier model can fit the new cover to their existing units. Contained under the translucent white cover are two bulbs of high illumination efficiency connected in parallel to give an all-round light in any emergency. A further feature is a d.c. contact that enables the user to switch the bulbs off, so that it is possible to have emergency lighting only when it is needed. Alternatively, the Nife-lite 305 Series 2 will light automatically as soon as there is an interruption to the mains supply, and when the mains supply is restored it automatically switches itself off and the battery is recharged. The cells are housed in a sealed compartment, together with the automatic battery charger and mains failure supply.

Dimensions of the Nife-Lite 305 Series 2 are 10½ in wide by 9½ in high by 5 in deep. The unit weighs approximately 6½ lb.

Powered by three Nife sealed nickel cadmium alkaline cells, which never need topping up or other maintenance, the unit gives up to two hours of emergency lighting.

Price and delivery: on application.

For more information use Reader Service Form quoting LEN 097



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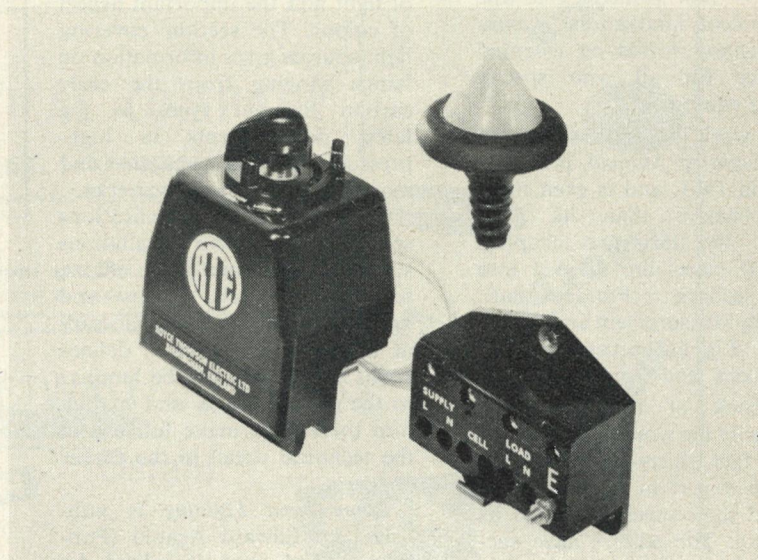
227 R.T.E. units control all roadway lighting on the Severn Bridge

Details from:

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Trade Publications

Ionlite Ltd. have issued a descriptive booklet on their cold cathode tubing and control gear. The introduction has been written in such a way as to answer some of the questions that might be asked about cold cathode tubes by someone *other* than an electrical engineer. **LEN 099**

Photain Controls Ltd. of Leatherhead have issued a new price schedule which applies from the beginning of this month. The new schedule shows a number of price reductions that have been made possible by the increase in the sale of semiconductors during the past 12 months. **LEN 100**

Holophane Ltd. have issued a new 6-page, 2-colour folder giving details of their range of Industrial Reflector Bowl Cast Pendant lighting fittings. The folder contains a full description of construction, electrical characteristics and special applications and is well illustrated with both half-tone and line diagrams. Full photometric data is also given including polar curves, British Zonal Classification data and co-efficients of utilization. **LEN 101**

A pocket-size catalogue covering the entire range of Crompton commercial and industrial lighting equipment has been produced by **Crompton Parkinson Ltd.** The data provided includes prices, dimensions and performance details for the Crompack 2, Star range and Modular Recessed fluorescent fittings, also the totally-enclosed Clenlite vapour and dust-proof fitting; other items covered include corrosion-resistant and flame-proof fittings; lamp prices and a large number of fluorescent and filament fittings for special applications. The catalogue also contains conversion tables for British and metric measurements and a complete list of Crompton branches in the U.K. **LEN 102**

The **British Safety Council** has produced a simple 24-page booklet entitled *Safety Code for the use of Electricity in Industry*, written by W. Fordham Cooper, former Deputy Head of the Electrical Branch of H.M. Factory Inspectorate. One chapter is devoted exclusively to building and construction sites and this is particularly interesting in the light of recommendations made in November 1965 by the National Joint Council for the Building Industry. Other chapters in the booklet deal with electrical measurements, hazards including fire, installations and maintenance. The booklet, price 3s. 6d. is available from the British Safety Council, 163-173 Praed Street, London W.2.

Book Reviews

LAMPS AND LIGHTING

A BOOK which gives an authoritative description of lighting from first principles to the most recent innovations, *Lamps and Lighting* forms an essential reference for all who specify lighting equipment.

This work is a successor to the *Atlas Lighting Manual*, first published in 1961, and is even more comprehensive than its forerunner. Its thirty-two chapters and 560 pages are divided into four sections; Fundamentals, Lighting Measurement and Calculations, Light Sources, Lighting Equipment and Applications.

A book of this nature is necessarily the work of specialists, and in fact, thirty-seven authors, each an expert in his field, contributed their special skills to its make up. The editors have succeeded to a notable degree in combining these individual efforts to form an integrated work that is readable yet which does not evade essential detail.

Lighting means nothing without seeing, and the first two chapters by the late H. C. Weston, *Light and Sight*, and *Looking and Lighting* describe those

characteristics of light radiation and of the eye that give our visual sense its particular ability to extract information from the environment. Later chapters deal with the production and control of light and the important aspect of colour. The section covering light sources gives information on lamps ranging from the early carbon filament types to the latest developments in high-pressure sodium vapour and metal-iodide discharge varieties.

Chapters in the Applications section describe the installations suitable for industry, offices, schools, hospitals, shops and other situations. A useful glossary at the end of the book, defines terms which may not be familiar to the general reader and enables him thereby to make full use of the technical detail in the earlier chapters.

Lamps and Lighting is published by Edward Arnold (Publishers) Ltd. and is edited by Mr. H. Hewitt and Mr. A. S. Vause. The price is 52s. 6d.

LEN 103

ARTIFICIAL LIGHT IN HORTICULTURE

THIS well illustrated book gives a clear, simple treatment of the technical and commercial results which can be obtained by growing

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Manufacturer of distinctive range of medium-priced lampshades and table-lamps, exhibiting Blackpool and Harrogate, requires representation on generous commission basis to department stores, and wholesale and retail trade, in London and the South East, Lancashire, Yorkshire, Northern England and North Wales. Box No. C.001, "Lighting Equipment News", 35 Red Lion Square, London, W.C.1. **C001**

plants with the aid of artificial light. Full details are given of the ways in which artificial light can be used for growing plants that are principally intended for food, e.g. tomatoes, and those grown for their flowers, e.g. chrysanthemums.

In recent years, knowledge of the influence of light on plant growth and yield has increased, while new sources make it economic to employ artificial lighting for plants under glass and even in the open air. Scientific research has now made it possible for the commercial grower to use artificial

lighting to increase the productivity of his enterprise in an increasingly competitive market.

The book is not only useful for those who are connected with commercial horticulture but also offers a wealth of information for research workers, and for lighting contractors concerned with the design of efficient installations.

Artificial Light in Horticulture is published by the Centrex Publishing Company N.V. and is distributed in the U.K. and Eire by Macmillan & Co. Ltd. The price is 42s. **LEN 104**

Copies of books reviewed in **LIGHTING EQUIPMENT NEWS** may be obtained by quoting the relevant **LEN** reference number and enclosing the appropriate remittance.

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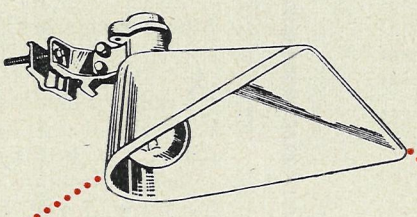
Famous Service-

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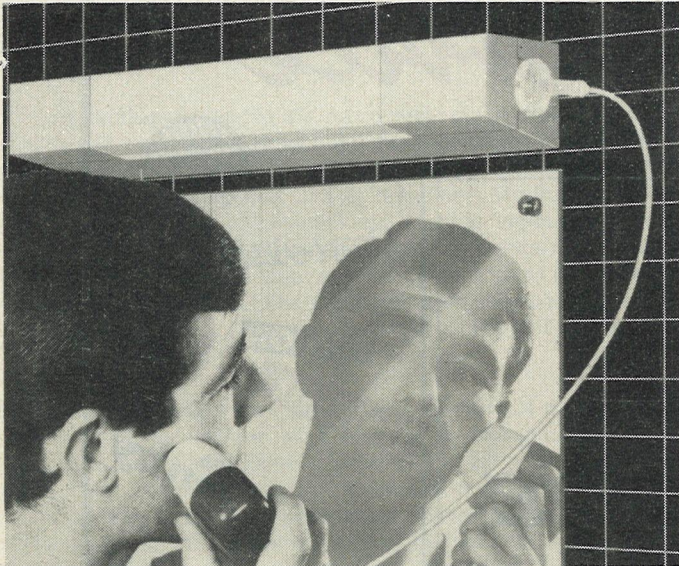
BATT ELECTRICAL COMPANY

'LITESHOW' STAND No. DI

See the award-winning

H LIGHT'nSHAVE

the bathroom—shaver-socket



The first and only shaver-socket-striplight for the bathroom produced to conform to the stringent safety requirements of B.S.S. 3052 and I.E.E. regulations. Razor socket takes English, Continental and American plugs, and is isolated from mains via double-wound built-in transformer. Also available in Dual Voltage (115v/230v) versions.
First award winner A.S.E.E., 1966.
Selected by the Design Centre, 1966.

Cat. 7066

Cat. 7066 DV. (Dual Voltage)

Price £4.15.7 (plus P.T.)

Price £5.10.0 (plus P.T.)

Shave and read with the

H STRIPLITE

IN THE BEDROOM



The all-insulated de luxe wall fitting, ideal for over-the-bed lighting. With built-in double pole micro safety switches and universal razor-socket. Complete with opal 60 watt lamp, cord operated switch and diffusing shade in crystal, white or pink.

Cat. 700/Sa

Price 38/6 (plus P.T.)

"Clip-on kit" optional—for bed-heads and mirrors, etc.

SEE THEM ON STAND No. DI

(Associate company, Clarke (Electrical) Co. Ltd.)

H. H. ELECTRICAL (London) LTD.
216 KENSINGTON PARK ROAD, W.11.

Telephone: PARK 0046

GOLD COLOURED TUBING

For Lighting Fittings

RECENTLY developed and patented by LaBurn Ltd., specialists in the manufacture and plastic covering of small diameter light gauge steel tubing, 'Burcol' gold coloured tubing consists of a high frequency electric welded CRCA steel tube polished to a mirror finish

and covered with a translucent tinted pvc film as shown in the accompanying illustration of a wall light by Hume Atkins Ltd. Light reflecting from a polished tubing through the tinted film gives a true resemblance of a polished brass tube.

This gold tube can be handled and manipulated in its finished state without damage and the flexible film allows any normal bend to be made without wrinkles or roll marks, and the tube may be screwed to take standard light fittings. It is suitable for the manufacture of table and standard lamps, suspension rods and numerous other lighting fittings.

'Burcol' gold tubing resembles brass tubing in appearance and at the same time combines the strength of steel with the well-known insulation and corrosion resistant properties of pvc. It is warm and pleasant to handle, will not tarnish or scratch, and is unaffected by moisture. As with steel conduit it complies with the earth-continuity conductor regulations and is electrically insulated on the outside by pvc sheathing.

A full range of tubing from $\frac{3}{8}$ in to 1 in diameter is supplied in either long random lengths or cut to exact requirements and at prices said to be competitive with brass tubing. LaBurn also produce a large range of pvc covered tubing in attractive colours.

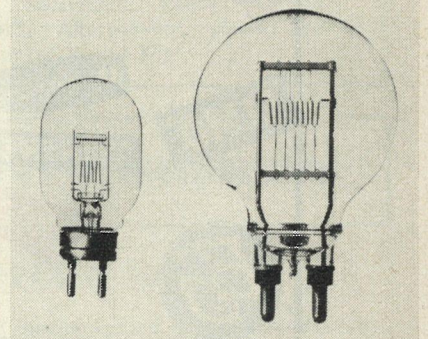
Price and delivery: on application.

For more information use Reader Service Form quoting LEN 107

FILM AND T.V. STUDIO LAMPS

Bipost Range in C.P. Class

A COMPREHENSIVE range of bipost lamps has been announced by Osram-G.E.C. Ltd. In the C.P. class of lamps, there are new long-life 1 kW, 2 kW, 5 kW and 10 kW ratings. A special feature of this class is that the 2 kW, 5 kW and 10 kW versions have tungsten granules, enabling evaporated tungsten to be cleared from the bulb wall.



Price and delivery: on application.

For more information use Reader Service Form quoting LEN 108

LAMP FOR DAYLIGHT FILM PROJECTION

Cigarette-Sized Quartz Unit

A NEW projection lamp developed by the General Electric Company of the USA permits showing of films without the necessity of drawing window shades in daytime or extinguishing lights at night.

This 300 W, cigarette-sized quartz arc lamp, known as the MARC-300, has a performance up to 400% better than 1000 W incandescent systems. The light source, about the size of a drop of water, gives an increase of up to four times in screen brightness. It is being used in a projection system manufactured by Inflight Motion Pictures Inc. Other applications are in 35 mm slide and film projectors.

Price and delivery: on application.

For more information use Reader Service Form quoting LEN 109