a catalogue of

Mazda lamps & tubes

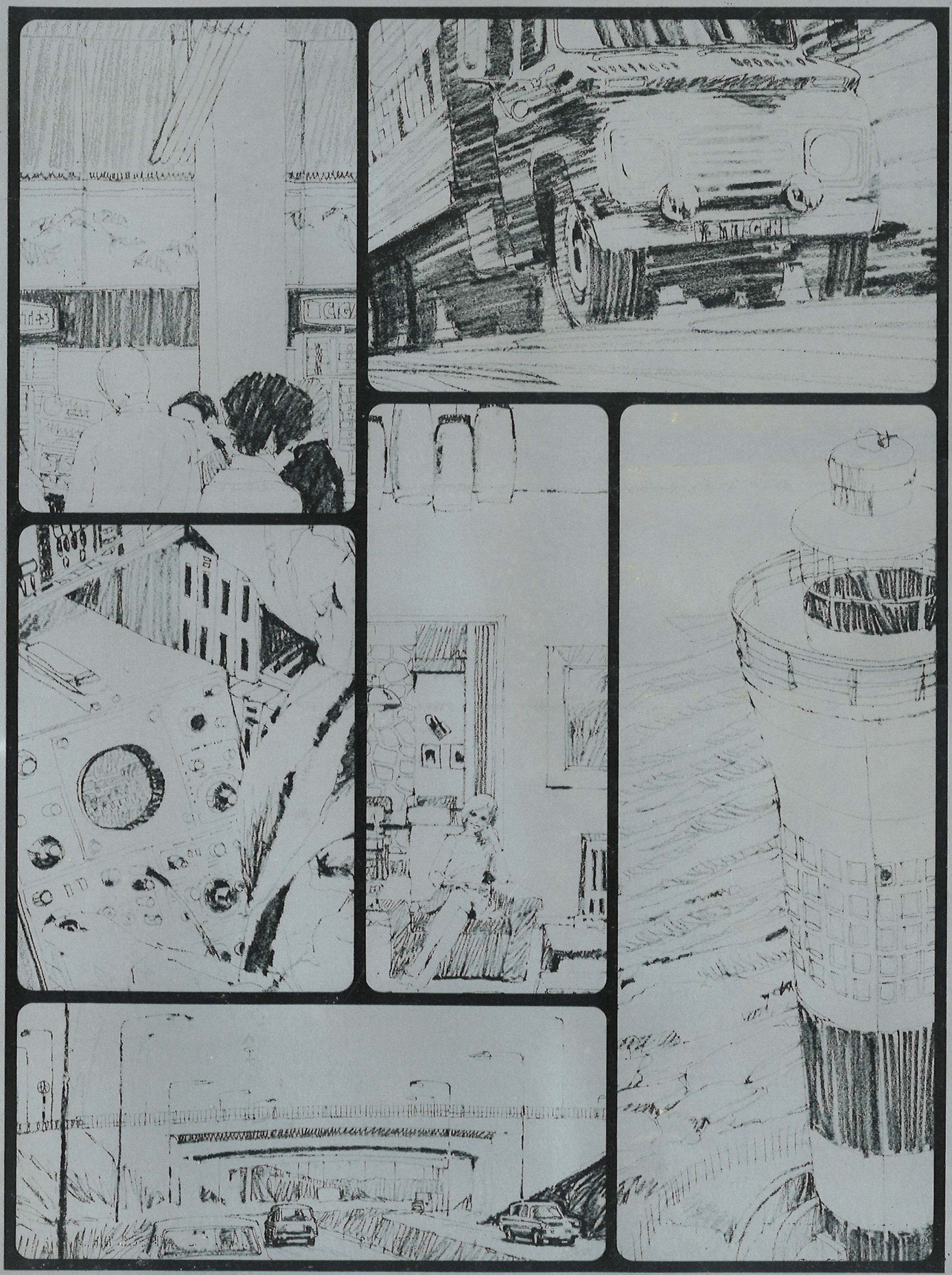
THORN

British Lighting Industries Limited

A member of the Thorn Group

SfB (63)
UDC 621·32

Main Index and Introduction



Main Index & Introduction
Numerical and Alphabetical Indexes

Numerical Index—Section One

Alphabetical Index—Section One

British Lighting Industries Limited

Catalogue no. Nº 05185

Please do not remove this section from catalogue binder

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British Lighting Industries Ltd.

THORN
A member of the Thorn Group

Atlas Lighting Ltd.
EKCO LIGHTING LTD.
A.E.I., Lamp & Lighting Co., Ltd.

The three major lighting companies have amalgamated to form British Lighting Industries which now manufacture and sell Atlas, Mazda and Ekco brands.

A complete range of lamps and tubes is offered in Mazda brand, but Atlas brand are also available for general service and projector lamps and the three brands for most ratings of fluorescent tubes. An indication of the brand availability is given in the introduction of each section which appears on the section inside front cover.

B.L.I. lamps and tubes catalogue

This catalogue lists and describes all lamps and fluorescent tubes normally manufactured by British Lighting Industries, with the exception of projector and photographic which are in separate publications. The main sections of this catalogue are as below:–

Alphabetical and numerical indexes for the complete catalogue are given on pages 107/8 and section indexes appear at the beginning of each section

Main Index & Introduction

B.L.I. Order Offices

SOUTHERN

Atlas Lamps and Lighting Division
Thorn Industrial Estate,
Homesdale Road,
Bromley, BR1 2QP,
Kent.
Tel: 01-460 9966
Telex: Thorn Bromley 25823

Angel Road Works,
402 Angel Road,
Edmonton,
London, N.18.
Tel: 01-807 3050
Telex: Thorn Edmonton 23157

Ekco Lamps and Lighting Division
Fawe Street,
Morris Road,
Poplar,
London, E.14.
Tel: 01-987 2090

Mazda Lamps and Lighting Division
11 Avon Trading Estate,
Avonmore Road,
London, W.14.
Tel: 01-603 3377

Angel Road Works,
402 Angel Road,
Edmonton,
London, N.18.
Tel: 01-807 3050
Telex: Thorn Edmonton 23157

Drury Lane,
St. Leonards-on-Sea,
Hastings,
Sussex.
Tel: Hastings 2734

5 Richfield Avenue,
Reading,
Berks.
Tel: Reading 53257

West Quay Trading Estate,
West Quay Road,
Southampton, SO9 1FF.
Tel: Southampton 27401

SOUTH WEST, SOUTH WALES

Atlas Lamps and Lighting Division
Thorn House,
Penarth Road,
Cardiff, CF1 7YP,
Wales.
Tel: Cardiff 31491
Telex: Thorn Cardiff 49334

Ekco Lamps and Lighting Division
Thorn House,
Penarth Road,
Cardiff, CF1 7YP,
Wales.
Tel: Cardiff 33803/5
Telex: Thorn Cardiff 49334

Mazda Lamps and Lighting Division
6 Gwennyth Street,
Cardiff, CF2 4XY,
Wales.
Tel: Cardiff 27495

1/5 Trinity Street,
Bristol 2,
Somerset.
Tel: Bristol 51494

Chapel Street,
Regent Street,
Plymouth, Devon.
Tel: Plymouth 61915 & 62467

MIDLANDS

Atlas Lamps and Lighting Division
24 Sheepcote Street,
Birmingham 15.
Tel: 021-643 9988
Telex: Thorn Birmingham 33235

Ekco Lamps and Lighting Division
24 Sheepcote Street,
Birmingham 15.
Tel: 021-643 9988
Telex: Thorn Birmingham 33235

Mazda Lamps and Lighting Division
Bolton Street,
Bordesley,
Birmingham 9.
Tel: Victoria 4261

Ashforth Street,
Nottingham, NG3 4BJ.
Tel: Nottingham 51115

NORTH WEST, NORTH WALES

Atlas Lamps and Lighting Division
2 Claytonbrook Road,
Clayton,
Manchester 11.
Tel: 061-223 1322
Telex: BLI Manchester 668642

Ekco Lamps and Lighting Division
2 Claytonbrook Road,
Clayton,
Manchester 11.
Tel: 061-223 1322
Telex: BLI Manchester 668642

Mazda Lamps and Lighting Division
2 Claytonbrook Road,
Clayton,
Manchester 11.
Tel: 061-223 1321
Telex: BLI Manchester 668642

NORTH EAST

Atlas Lamps and Lighting Division
Thorn House,
3 Ring Road,
Lower Wortley,
Leeds 12.
Tel: Leeds 630441
Telex: Thorn Leeds 55110

Earlsway,
Team Valley Estate,
Gateshead, NE11 ORX.
Co. Durham.
Tel: Low Fell 879211

Ekco Lamps and Lighting Division
Thorn House,
3 Ring Road,
Lower Wortley,
Leeds 12.
Tel: Leeds 630441
Telex: Thorn Leeds 55110

Earlsway,
Team Valley Estate,
Gateshead, NE11 ORX,
Co. Durham.
Tel: Low Fell 879211

Mazda Lamps and Lighting Division
41/43 St. Michaels Lane,
Headingley,
Leeds 6.
Tel: Leeds 57001

Earlsway,
Team Valley Estate,
Gateshead NE11 ORX,
Co. Durham.
Tel: Low Fell 878564
Telex: BLI Gateshead 53429

SCOTLAND

Atlas Lamps and Lighting Division
Thorn House,
Lawmoor Street,
Glasgow C.5,
Scotland.
Tel: South 5151
Telex: Thorn Glasgow 77630

Ekco Lamps and Lighting Division
Thorn House,
Lawmoor Street,
Glasgow C.5,
Scotland.
Tel: South 5151
Telex: Thorn Glasgow 77630

Mazda Lamps and Lighting Division
Thorn House,
Lawmoor Street,
Glasgow, C.5,
Scotland.
Tel: South 5151
Telex: Thorn Glasgow 77630

NORTHERN IRELAND

Atlas Lamps and Lighting Division
10 Severn Street,
Belfast, BT4 1FB,
Northern Ireland.
Tel: Belfast 56004/5
Telex: Thorn Belfast 74695

Ekco Lamps and Lighting Division
10 Severn Street,
Belfast, BT4 1FB,
Northern Ireland.
Tel: Belfast 56004/5
Telex: Thorn Belfast 74695

Mazda Lamps and Lighting Division
10 Severn Street,
Belfast, BT4 1FB,
Northern Ireland.
Tel: Belfast 56433/4
Telex: Thorn Belfast 74695

B.L.I. Organisation

B.L.I. has nine regions giving a nation-wide coverage. In each region there is a regional headquarters controlled by a regional manager assisted by trade and technical sales managers.
To obtain the best service, customers are recommended to take action as hereunder:—
For information, advice, lighting schemes, lighting engineers, literature and publications—contact the B.L.I. headquarters in your area.
To place an order or to make enquiries about availability or deliveries—contact the nearest order office, preferably, but not essentially, of the dominant brand in your order.
A list of B.L.I. headquarters is given below and a list of order offices on page 104 opposite.

Head Office and Showrooms:
Thorn House, Upper Saint Martin's Lane, London, W.C.2. Telex: Thorn London 21521

REGIONAL HEADQUARTERS:

LONDON REGION	11 Avon Trading Estate, Avonmore Road, London, W.14. Telephone: 01-603 3377
EASTERN REGION	Angel Road Works, 402 Angel Road, Edmonton, London, N.18. Telephone: 01-807 3050 Telex: Thorn Edmonton 23157
SOUTH EAST REGION	Thorn Industrial Estate, Homesdale Road, Bromley, BR1 2QP, Kent. Telephone: 01-460 9966 Telex: Thorn Bromley 25823
SOUTH WEST REGION	Thorn House, Penarth Road, Cardiff, CF1 7YP. Telephone: CARDIFF 31491 Telex: Thorn Cardiff 49334
MIDLANDS REGION	24 Sheepcote Street, Birmingham 15. Telephone: 021-643 9988 Telex: Thorn Birmingham 33235
NORTH WEST REGION	2 Claytonbrook Road, Clayton, Manchester 11. Telephone: 061-223 1322 Telex: BLI Manchester 668642
NORTH EAST REGION	Thorn House, 3 Ring Road, Lower Wortley, Leeds 12. Telephone: LEEDS 630441 Telex: Thorn Leeds 55110
SCOTLAND	Thorn House, Lawmoor Street, Glasgow, C.5. Telephone: SOUTH 5151 Telex: Thorn Glasgow 77630
NORTHERN IRELAND	10 Severn Street, Belfast BT4 1FB. Telephone: BELFAST 56004/5 Telex: Thorn Belfast 74695

Main Index & Introduction
Standards, Quantities and Purchase Tax

British Standard and International Specifications:

Lamps and tubes in this catalogue conform fully with the relative British Standard and International Specifications where applicable.

British Standard Kite-Mark Licences:

All three companies of B.L.I. hold British Standards Institution licences as below for fluorescent tubes and tungsten lamps.

Company	Equipment	British Standard	Licence Number
Atlas Lighting Ltd.	Fluorescent Tubes	1853	3292
	Tungsten Lamps	161	757
A.E.I. Lamp & Lighting Co.	Fluorescent Tubes	1853	3293
	Tungsten Lamps	161	397
EKCO Lighting Ltd.	Fluorescent Tubes	1853	3297
	Tungsten Lamps	161	2828

Carton Quantities

Standard pack or carton quantities are given against every item in the catalogue.

Minimum Sales Quantities

Orders will not be accepted for certain popular types of filament lamps and fluorescent tubes in less than the minimum sales quantities specified below:—

Quantities of 25

In 110v, 120v and 200 to 260v B.C. and E.S. caps only:—
General lighting service lamps, 15-200w, pear and mushroom shape in clear, pearl, inside white (i.e. excluding coloured lamps).
Rough service lamps, 40-100w.
Traffic signal lamps, 65w.

Quantities of 12

Candle lamps, inside white, 25, 40 and 60w.
General lighting service lamps, 300 and 500w.
5-8 watts Economy lamps.
45 mm. Round bulb—25 and 40w.

Quantities of 6

Candle lamps (standard) other than inside white finish.
General lighting service lamps, 750 and 1000w.

Quantities of 5

Fluorescent tubes as follows:—

1. All straight length tubes, including reflector tubes where applicable in:—
White, Warm White, Daylight, De luxe Warm White, Northlight, Colour Matching Natural, De luxe Natural, °Kolor-rite.
2. All circular tubes.

The quantities refer to identical lamps of one voltage, wattage, cap, finish, etc.
For all other lamps carton quantities are strongly recommended.

Purchase Tax

Purchase tax is given against every lamp and tube in the catalogue, where applicable. Projector and photographic lamps appear in a separate publication. The rates at which the tax is calculated as a percentage of recommended list price are given below:—

Group	Type	Tax %
1	Tungsten Filament Lamps and Fluorescent Tubes (other than Projector and Photographic Lamps).	22.75
1	Class A1 Projector Lamps – according to type (see individual amounts in catalogues).	32.5 or 21.67 or nil
1	Class G Exciter Lamps	NIL
1	All other Projector and Photographic Lamps normally subject to tax.	21.67
2	Vehicle Lamps	21.13
3	Flashlamps	
4	Cycle Dynamo Lamps	
7	Telephone Visual & Telewriter Lamps	
10	Radio Panel Lamps	
5	Miners Lamps	24.38
9	Discharge Lamps	NIL

Prices

The 'recommended price' is that recommended as appropriate for retail sale.
The 'net user price' is that recommended as appropriate for sale direct to users. All net user prices are not subject to normal discount. Some specialised items, such as Xenon lamps and gear, are not subject to any discount. These items are clearly marked and are shown as 'net' (not 'net user').

Main Index & Introduction

Index — Alphabetical

The main sections of the catalogue are arranged in alphabetical order as below and the items in each section are then listed alphabetically under the main headings :—

Discharge Lamps
Fluorescent Lamps
Hytek Lamps
Minitek Lamps
Standard Lamps
Vehicle Lamps

Discharge Lamps

Fluorescent Tubes

Hytek Lamps

Minitek Lamps

Standard Lamps

Vehicle Lamps

Main Index & Introduction
Index – Numerical

Fluorescent Tubes – Section 2

Discharge Lamps – Section 3

Standard Lamps – Section 4

Vehicle Lamps – Section 5

Minitek Lamps – Section 6

Hytek Lamps – Section 7

Conditions of Sale

1 GENERAL. All orders are accepted and executed on the understanding that the Purchaser is bound by the following General Conditions of Sale. Where there is any inconsistency between these General Conditions of Sale and any Conditions which the Purchaser seeks to impose these General Conditions of Sale shall prevail.

2 VALIDITY OF QUOTATIONS. The Company reserves the right to refuse the Purchaser's acceptance of a quotation unless such quotation is stated to be open for a specific period and is not withdrawn in such period.

3 PRICES AND DISCOUNTS. The published prices of and the discounts applicable to the Company's products are those ruling on the date of publication and are subject to alteration without notice.

4 PAYMENT. Unless otherwise agreed in writing, payment in full is due in respect of any goods delivered. $2\frac{1}{2}$ per cent settlement discount will be allowed off accounts (excluding Purchase Tax) paid by the end of the month following that in which the invoice is dated. No other settlement terms will be granted.

5 NEW ACCOUNTS. Where a credit account is desired, a Bank and two trade references are required.

6 CARRIAGE. Unless otherwise specified by the Company goods are delivered carriage free to any part of Great Britain and Northern Ireland. Special fittings and dimming equipment are offered ex-works carriage extra. When special delivery arrangements are requested, the difference between standard delivery and special rates will be charged.

7 PACKING. A charge is made when it is necessary to despatch goods in crates or cases but this amount will be credited in full on the return, within one month, of the crates or cases in good condition carriage paid. No charge is made for any other form of packing and no credit will be allowed for its return.

8 LOSS OR DAMAGE IN TRANSIT. Clear receipts should be given only if goods have been examined, as an unqualified signature may react to the disadvantage of the Purchaser if the consignment should become the subject of a claim. In the event of short delivery or damage in transit, it is essential that the Company's despatching depot and the Carriers be advised within three days of receipt of goods. Irrespective of condition of packing, goods and packing should be held for inspection by Carriers before return. After inspection, Carriers should accept goods or return to sending depot, carriage free. The following details should be sent to the Company :—Advice note number. Condition of package. Date Carrier advised. Carrier's name. Date consignment received. Extent of damage or shortage.

In the event of non-delivery, Carriers and the Company's despatching depot should be advised within ten days of date of advice packing note. The Company will not be responsible for goods lost or damaged in transit unless the above conditions are observed.

9 DESPATCH. Any times quoted for despatch are to be treated as estimates only and the Company shall not be liable for failure to despatch within such time unless the Purchaser has suffered loss thereby and the amount payable in respect thereof shall have been agreed in writing as liquidated damages, in which case the Company's liability shall be limited to the amount so agreed to be paid. In all cases, whether a time for despatch be quoted or not, the time for despatch shall be extended by a reasonable period if delay in despatch is caused by instructions or lack of instructions from the Purchaser or by industrial dispute or by any cause whatsoever beyond the Company's reasonable control.

10 DEFAULT. The Company shall have the right to discontinue delivery and also at its discretion to determine the contract in respect of any undelivered goods if the Purchaser defaults in payment.

11 DEFECTS AFTER DELIVERY. The Company will make good, by repair or at the Company's option, by the supply of replacement, defects which, under proper use, appear in the goods within a period of 12 calendar months after the goods have been delivered and arise solely from faulty design, materials, or workmanship. Provided further that in respect of parts or components not of the Company's manufacture, the Company will give the Purchaser a guarantee equivalent to the guarantee (if any) which the Company may have received from the supplier of such parts or components in respect thereof, but not so as to impose on the Company in respect of such parts or components a liability greater than that imposed on him by the aforesaid period of this clause. Save as aforesaid and as provided in Clause 8, the Company shall not be under any liability in respect of defects in goods delivered or for any injury, damage or loss resulting from such defects, and its liability under this clause shall be in lieu of any warranty or condition implied by law as to the quality or fitness for any particular purpose of such goods.

12 SPECIAL ORDERS. All orders for lamps of non-standard voltages or for types not included in catalogues are considered to be "Special Types"—the production of which is undertaken on the understanding that the Purchaser will accept under or over delivery to the extent of 10 per cent at the price quoted per unit.

13 RETURN OF GOODS. In no circumstances may goods supplied against a firm order be returned without the customer having first applied for and obtained the written consent of the Company. A handling charge amounting to not more than 10 per cent of the invoice value of the returned goods may be deducted from any credit allowed where it is established that the reason for their return is not subject to the provision of Clause 8 or 11 hereof or through any error on the part of the Company.

14 DESCRIPTIVE MATTER AND ILLUSTRATIONS. All descriptive and forwarding specifications, drawings and particulars of weights and dimensions issued by the Company are approximate only, and are intended only to present a general idea of the goods to which they refer and shall not form part of a contract.

15 EXPORT. Goods purchased on the Home Market must not, without previous consent, be offered or sold for export and any enquiries or orders for export must be placed directly with the Export Department of the Company with indication of country of destination.

16 PATENTS. In the event of any claim being made or action being brought against the Purchaser in respect of infringement of British patents by the use or sale of goods supplied hereunder, the Purchaser is to notify the Company immediately and the Company shall be at liberty with Purchaser's assistance if required, but at the Company's expense, to conduct through the Company's own Lawyers and Experts all negotiations for the settlement of the same or any litigation that may arise therefrom ; subject to such notification and provided that no such goods, or any part thereof, shall be used for any purpose other than that for which the Company supply them, the Company will indemnify the Purchaser in respect of any such claims.

17 LEGAL CONSTRUCTION. These General Conditions of Sale shall be construed in accordance with the law of England and if any question, dispute or difference shall arise between the parties in respect of their interpretation or their rights or duties heretofore, the same shall be referred to a single arbitrator in London in case the parties can agree upon one. Otherwise it shall be referred to arbitration in London, under the provision of the Arbitration Acts 1889 to 1950 or any statutory modification or re-enactment thereof which provisions shall also apply to the case of a reference to a single arbitrator.

SfB (63)
UDC 621·32

Fluorescent tubes

Fluorescent tubes
Introduction and brand policy

British Lighting Industries has the finest fluorescent tube works in Western Europe making the extensive range of tubes described in this section of the catalogue, including the de luxe colours which are receiving increasing acknowledgment for interior lighting installations where good colour rendering and colour appearance are important.
The popular ratings of fluorescent tubes are available in Atlas, Mazda and Ekco brands, but the slower selling types are not stocked in all brands. However, any tube shown in this catalogue can be supplied from any B.L.I. Office.

BRITISH LIGHTING INDUSTRIES LTD.
A member of the Thorn Group THORN

Fluorescent tubes
Numerical and alphabetical indexes

Numerical Index—Section Two

Alphabetical Index—Section Two

Fluorescent tubes

The new 'Super Six' 6 ft. 85w. tube

The 5 ft. tube has been established for over a quarter of a century and has been the most popular size. The 5 ft. tube has helped more than any other size in this country to develop fluorescent lighting. In spite of this, progress has been made by the introduction, by the Companies comprising British Lighting Industries, of new fluorescent tubes.

1941 First British fluorescent tube—5 ft. 80w. BC. Daylight.

1951 The 'White' fluorescent tube—now the most popular tube. ***A B.L.I. innovation.***

1955 The bi-pin cap becomes standard in 5 ft. tubes.

1956 The 8 ft. 125w. makes its appearance.

1961 The 8 ft. tube is offered with a lower loading of 85w. ***A B.L.I. innovation.***

1963 The 5 ft. tube is offered with a lower loading of 65w. ***A B.L.I. innovation.***

1966 The 6 ft. 85w. tube is introduced. ***An exclusive B.L.I. innovation.***

1968 6 ft. 85w. S.R.S. Popular Pack batten fitting reduced to the price of 5 ft. 65w. switchstart fitting. ***An exclusive B.L.I. innovation.***

1968 (Sept.) 'Super White'—the development of new phosphor manufacturing techniques gives substantial increases in light output. The improved 'Super White' phosphor is used in 6 ft. 85w. tubes making 6 ft. fittings even greater value for money. Another exclusive B.L.I. achievement.

When comparing lighting installations giving equal illumination the 6 ft. 85w. scheme has the following advantages over the 5 ft. 65w. scheme.

(1) Lower capital cost for fittings

The fittings prices are the same, but fewer 6 ft. fittings are required because of the extra light output for the 6 ft. tubes.

(2) Reduced running costs

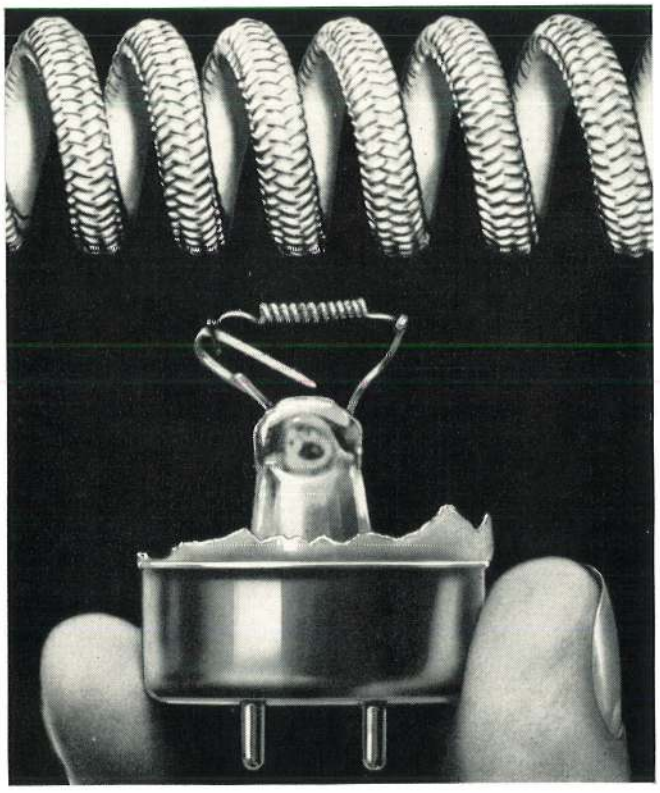
Because of the higher lumens per circuit watt of the 6 ft. 85w. system the electricity costs are reduced.

(3) Smaller maintenance costs

Because of the smaller number of fittings, the maintenance costs are reduced.

(4) Tube costs reduced

With the 6 ft. 85w. tube at 13s without purchase tax, and the 5 ft. 65w. at 10s 6d, plus 2s 5d purchase tax, for a nett user discount of 20%, the actual tube costs are the same. For most users therefore the 6 ft. tube will not cost more than the 5 ft. In addition a smaller number of 6 ft. tubes will be needed. The overall tube cost is therefore reduced.



Braided cathode

The braided cathode filament—British Patent 131059—is now being used exclusively in 5 ft. 65/80w. and 80w. (BC) tubes as well as 6 ft. 85w., 8 ft. 85w. and 8 ft. 125w. tubes.

The exclusive braided cathodes used in B.L.I. fluorescent tubes give more efficient operation, fewer early failures and longer life than conventional coiled coil cathode.

This cathode consists of a hollow mesh cylinder which is formed by braiding eight very thin strands of tungsten wire together. This means that the emitter is held within the hollow cylinder thus forming a solid core.

The release of electrons is better controlled than with a coiled coil filament and this results in the braided cathode having approximately 70% greater electron emission.

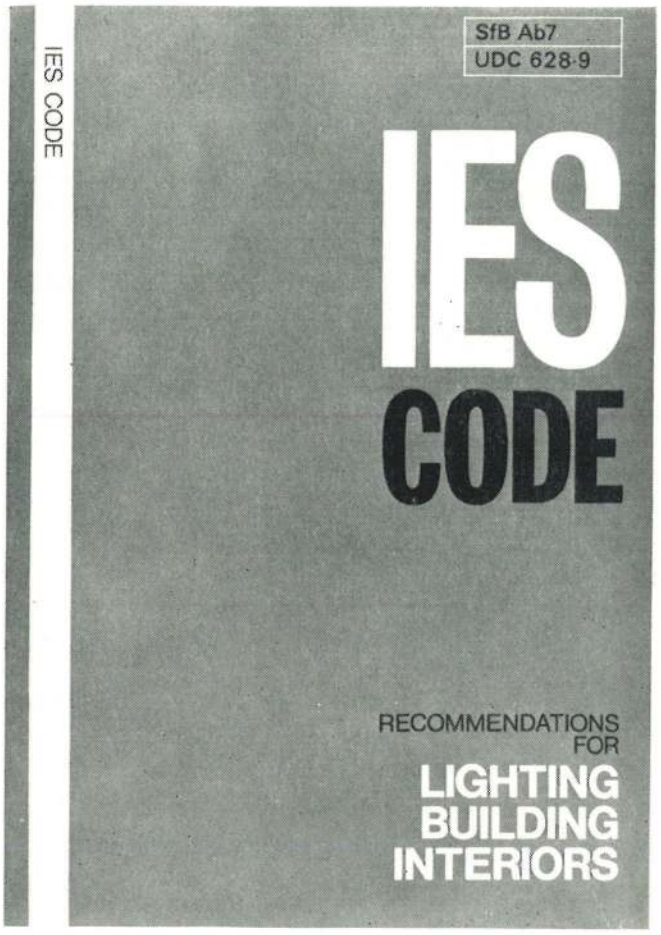
There is a natural tendency to consider the light output of a fluorescent tube as the main criterion but it must be remembered that this is only part of the consideration.
In general, the colours with the highest light output have the poorest colour rendering properties and similarly, the colours with the lowest light output have the best colour rendering properties.
Good colour rendering is a most important factor in creating an acceptable and attractive environment.
There are many situations where the use of a de luxe colour such as °Kolor-rite or De-Luxe Natural can produce a stimulating atmosphere which far outweighs the small additional cost.
The importance of colour appearance and colour rendering properties is recognised in the I.E.S. Code "Recommendations For Lighting Building Interiors" published in March 1968 and below is given an extract from the Code.
Overleaf is a table showing in detail the recommended applications for the standard range of fluorescent tubes.

Colour appearance and colour rendering properties of fluorescent lamps

(Extract from I.E.S. Code)

Colour rendering requirements	Colour appearance	Suitable lamp types	Relative lamp efficacy
Interiors in which advantage must be taken of high lamp efficacy and where some colour distortion is acceptable, e.g. most industrial premises	Cool	DAYLIGHT	100% to 95%
	Intermediate	WHITE	
	Warm	WARM WHITE	
nteriors in which good colour rendering is desirable but where a small degree of colour distortion is admissible, e.g. shops, homes, hotels, restaurants, art rooms	Cool	NORTHLIGHT COLOUR MATCHING	75% to 65%
	Intermediate	NATURAL	
	Warm	De Luxe Warm White	
Circumstances in which particular requirements must be met:			
Where lamps are used to produce special effects, e.g. the lighting of foodstuffs	Intermediate	De Luxe Natural °Kolor-rite	65% to 50%
Where clinical examinations are carried out in hospitals and surgeries	Intermediate	°Kolor-rite (see Note 3)	
Where accurate colour matching depends on simulation of daylight	Cool	Artificial Daylight	45% to 40%

1 The lamp names in capitals are the standard designations as in BS1853.
2 When fluorescent lamps are used to supplement daylight, the choice of lamp colour in the first two categories of colour rendering requirements must be made with special care; the final choice will probably depend upon the amount of daylight in the working area and the length of time in which daylight is dominant.
3 At the time of going to press the use of °Kolor-rite lamps in hospitals is subject to Ministry of Health approval.



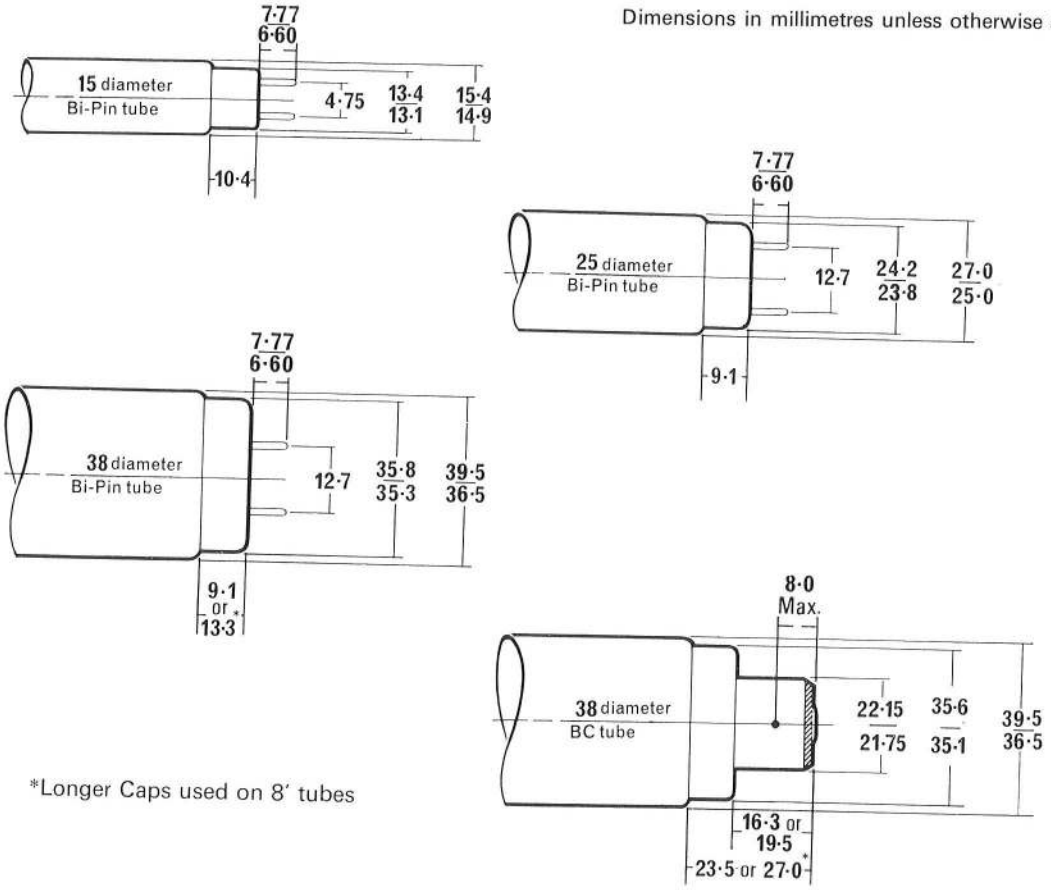
Fluorescent tubes

Colour appearance and colour rendering

Tube colour	Percentage of White Tube lumens	Colour rendering quality	Colour appearance	Application and remarks
Industrial lighting				
White	100	Fair	Intermediate	General illumination at maximum efficiency.
Daylight	94	Fair	Cool	Buildings requiring artificial illumination to blend with natural daylight. Minimum of 300 lux must be provided to avoid an excessively cold appearance.
Artificial Daylight	41	Very Good	Cool	Areas where accurate colour matching is carried out. A minimum of 600 lux must be provided. Conforms to BS950 : Part One
Commercial lighting				
White	100	Fair	Intermediate	General and drawing offices requiring maximum lighting efficiency
Natural	70	Good	Intermediate	General office lighting particularly where required to blend with natural daylight. Minimum of 300 lux necessary.
°Kolor-rite	65	Very Good	Intermediate	Offices, showrooms, studios, colleges, hospitals.
De Luxe Warm White	66	Good	Warm	Office buildings requiring a warm effect, flattering to the complexion.
Display lighting				
Northlight/ Colour Matching	59	Good	Cool	Tailors (colour matching areas), furriers and for wintry effects. Minimum of 600 lux necessary to avoid an excessively cold appearance.
Natural	70	Good	Intermediate	Jewellery, glassware, china, hardware, tailors (main shop areas), summer frocks and departmental stores. Minimum of 300 lux necessary.
De Luxe Natural	49	Very Good	Intermediate	Florists, fishmongers, butchers, grocers, supermarkets and brightly coloured merchandise.
°Kolor-rite	65	Very Good	Intermediate	The first choice where true reproduction of colour is required, gives the effect of a sunny day.
De Luxe Warm White	66	Good	Warm	Furniture, restaurants, lounges and for domestic settings; tungsten filament lamp effect.
White	100	Fair	Intermediate	General display lighting requiring maximum light output, but without the need for good colour quality.
Colours	—	Poor	Poor	Green, gold, blue, red, pink, peach for special effects.
Domestic lighting				
White or Warm White	98	Fair	Warm	Rooms requiring maximum light output.
De Luxe Warm White	66	Good	Warm	Rooms requiring a warmer colour light blending with tungsten filament lamps.
Pink	25	Poor	Warm	Decorative lighting giving a very warm effect.
Peach	65			
Special applications				
Green	95	Poor	Poor	Saturated colours for display, floodlighting, stage lighting.
Peach	60			
Gold	55			
Pink	25			
Blue	20			
Red	5			
Gro-lux	30	—	—	This special tube colour has been developed for plant growth purposes, i.e. its spectral energy is ideally suited to seed germination and rapid plant growth. It is also ideal for aquarium lighting where it stimulates aquatic plant growth. Gro-lux tubes have a lavender colour appearance with a strong red and blue rendering effect. Although yellows are poor, foliage has a rich green appearance. Colouring of tropical fish, plants and flowers looks especially vivid under Gro-lux tubes.
Ultra-violet (Non-filter)	—	—	—	The Utra-violet tube emits a large proportion of its energy as invisible ultra-violet radiation between 300 and 400 nanometres. The tube also emits a small amount of visible light at the blue end of the spectrum but where this light is undesirable it can be filtered out by using Woods glass filters which transmit the invisible ultra-violet only.
Blacklight Blue	—	—	—	Ultra-violet tubes as above (but with black glass bulb) which transmit ultra-violet only, filtering out the visible light.
Radar Red	—	—	—	A bright magenta red colour with a higher light output than Red— originally used for radar rooms but also gives a strong red effect to meat and bacon displays.

Fluorescent tubes
Dimensions

Dimensions in millimetres unless otherwise stated



*Longer Caps used on 8′ tubes

Straight tubes

Rated wattage	Nominal dimensions in.	Nominal dimensions mm.	cap	Length, base face to base face (max.) mm.	Length, base face to end of opposite cap pins mm. max.	Length, base face to end of opposite cap pins mm. min.	Length, overall mm. max.	Length, overall mm. min.
125	96 x 1½	2400 x 38	Bi-Pin	2374·9	2382·0	2378·4	2389·1	—
125	96 x 1½	2400 x 38	BC	—	—	—	2444·7	2432·0
85	96 x 1½	2400 x 38	Bi-Pin	2374·9	2382·0	2378·4	2389·1	—
85	72 x 1½	1800 x 38	Bi-Pin	1765·8	1772·9	1770·4	1780·0	—
65/80	60 x 1½	1500 x 38	Bi-Pin	1500·0	1507·1	1504·8	1514·3	—
80	60 x 1½	1500 x 38	BC	—	—	—	1530·4	1517·6
50	60 x 1	1500 x 25	Bi-Pin	1500·0	1507·1	1504·8	1514·3	—
40	48 x 1½	1200 x 38	Bi-Pin	1199·4	1206·5	1204·1	1213·6	—
40	24 x 1½	600 x 38	Bi-Pin	589 ·8	596 ·9	594 ·5	604 ·0	—
30	36 x 1½	900 x 38	Bi-Pin	894 ·6	901 ·7	899 ·3	908 ·8	—
30	36 x 1	900 x 25	Bi-Pin	894 ·6	901 ·7	899 ·3	908 ·8	—
20	24 x 1½	600 x 38	Bi-Pin	589 ·8	596 ·9	594 ·5	604 ·0	—
15	18 x 1½	450 x 38	Bi-Pin	437 ·4	444 ·5	442 ·1	451 ·6	—
15	18 x 1	450 x 25	Bi-Pin	437 ·4	444 ·5	442 ·1	451 ·6	—
13	21 x ⅝	525 x 15	Bi-Pin min.	516 ·8	523 ·9	521 ·5	531 ·0	—
8	12 x ⅝	300 x 15	Bi-Pin min.	288 ·2	295 ·3	292 ·9	302 ·4	—
6	9 x ⅝	225 x 15	Bi-Pin min.	212 ·0	219 ·1	216 ·7	226 ·2	—
4	6 x ⅝	150 x 15	Bi-Pin min.	135 ·8	142 ·9	140 ·5	150 ·0	—

Circular tubes

Lamp watts	Nominal diameter in.	Inside Lamp diameter/glass mm. max.	Inside Lamp diameter/glass mm. min.	Inside Lamp diameter/base mm. max.	Inside Lamp diameter/base mm. min.	Outside Lamp diameter* mm. max.	Outside Lamp diameter* mm. min.	Bulb diameter mm. max.	Bulb diameter mm. min.
22	8¼	160·4	151·1	155·6	150·8	215·9	203·2	30·9	26·2
32	12	245·3	237·3	246·1	239·7	311·2	298·5	34·1	29·4
40	16	346·9	338·9	347·7	341·3	412·8	400·0	34·1	29·4

*Base and glass dimensions the same

Fluorescent tubes
Electrical data

Electrical data for standard 240v. 50 HZ. tube circuits. Average performance tested at 25°C to BS2818

The figures on this page are for control gear used in Atlantic, Durham, New super Netapack, Troffer, Modular, and similar fittings. For control gear in Popular Pack, Minipack, Arrow-slim, and similar fittings see the British Lighting Industries Fitting's catalogue.

Tube size	8 ft.	8 ft.	6 ft.	5 ft.	5 ft.	5 ft.	4 ft.	3 ft.	3 ft.
Diameter	1½ in.	1½ in.	1½ in.	1½ in.	1½ in.	1 in.	1½ in.	1½ in.	1 in.
Nominal tube watts	125w.	85w.	85w.	80w.	65w.	50w.	40w.	30w.	30w.
Lamp cap	Bi-pin	BP Super 8	BP Super 6	BC or BP	BP Super 5	BP	BP	BP	BP
Actual lamp (watts)	123	85	84	76	64	50	39½	29½	30
Average tube (volts)	150	184	120	100	110	165	102	85	98
Average tube (amps.)	0·94	0·55	0·80	0·87	0·67	0·38	0·44	0·39	0·36
Rated life (hours)	7500	7500	7500	7500	7500	5000	7500	5000	5000
Single Tube Switchstart									
Total circuit (watts)	144	—	95	94†	77	62	50	39	39
Lagging power factor	0·64‡	—	0·87	0·85	0·85	0·69‡	0·85	0·85	0·85
Total volt amps.	226	—	108	110	90	90	60	46	46
Mains current at 240v.	0·94	—	0·45	0·46	0·37	0·38	0·25	0·19	0·19
Min. starting temperature	0°C	—	+5°C	0°C	0°C	+5°C	0°C	0°C	0°C
% Harmonics per phase	15%	—	16%	17%	17%	15%	17%	17%	17%
Single Tube Switchless Start									
Total circuit (watts)	154	100	96	99	79	—	53	42	42
Lagging power factor	0·98	0·99	0·86	0·85	0·91	—	0·85	0·85	0·85
Total volt amps.	158	100	110	116	87	—	62	50	50
Mains current at 240v.	0·66	0·42	0·46	0·48	0·36	—	0·26	0·21	0·21
Min. starting temperature	+5°C	+5°C	−5°C	+5°C	−5°C	—	+5°C	+5°C	+5°C
% Harmonics per phase	8%	7%	25%	17%	25%	—	17%	17%	17%
Twinstart									
Total circuit (watts)	—	207	—	—	—	—	—	—	—
Lagging power factor	—	0·95	—	—	—	—	—	—	—
Total volt amps.	—	218	—	—	—	—	—	—	—
Mains current at 240v.	—	0·91	—	—	—	—	—	—	—
Min. starting temperature	—	+5°C	—	—	—	—	—	—	—
% Harmonics per phase	—	17%	—	—	—	—	—	—	—

Tube size	2 ft.	2 ft.	18 in.	18 in.	21 in.	12 in.	9 in.	6 in.
Diameter	1½ in.	1½ in.	1½ in.	1 in.	⅝ in.	⅝ in.	⅝ in.	⅝ in.
Nominal tube watts.	40w.	20w.	15w.	15w.	13w.	8w.	6w.	4w.
Lamp cap	BP	BP	BP	BP	Small BP	Small BP	Small BP	Small BP
Actual lamp (watts)	37	19½	15	15	13	8	6	4
Average tube (volts)	47	58	48	57	92	55	43	30
Average tube (amps.)	0·88	0·37	0·36	0·34	0·17	0·17	0·16	0·15
Rate life (hours)	5000	5000	5000	5000	5000	5000	5000	5000
Single Tube Switchstart								
Total circuit (watts)	58	30	25	25	19	14	12	10
Lagging power factor	0·85	0·34*	0·30*	0·31*	0·46*	0·34*	0·31*	0·28*
Total volt amps.	69	90	85	81	41	41	39	36
Mains current at 240v.	0·29	0·37	0·36	0·34	0·17	0·17	0·16	0·15
Min. starting temperature	0°C	0°C	0°C	0°C	0°C	0°C	0°C	0°C
Series Pair Switchstart								
Total circuit (watts)	94	50	40	40	—	22	18	14
Lagging power factor	0·85	0·85	0·85	0·85	—	0·52*	0·46*	0·39*
Total volt amps.	110	59	47	47	—	41	39	36
Mains current at 240v.	0·46	0·25	0·20	0·20	—	0·17	0·16	0·15
Min. starting temperature	0°C	0°C	0°C	0°C	—	0°C	0°C	0°C
Series Pair QS Switchless Start								
Total circuit (watts)	100	54	44	44	—	—	—	—
Lagging power factor	0·85	0·85	0·85	0·85	—	—	—	—
Total volt amps.	118	63	52	52	—	—	—	—
Mains current at 240v.	0·49	0·26	0·22	0·22	—	—	—	—
Min. starting temperature	+5°C	+5°C	+5°C	+5°C	—	—		

* Uncorrected value. Allow 0·85 if power factor capacitor is fitted.

† Special 80w. cold store circuit operates at 0·91 amps. with 0·49 leading power factor.

‡ 8 ft. 125w. and 5 ft. 50w. starter switch circuits operate with a series type capacitor at a leading power factor of 0·63.

The above circuit watts for control gear tested in accordance with BS2818 may be reduced by up to 5% when operating in some fittings as the circuit watts reduce as the lamp operating temperature rises.

BRITISH LIGHTING INDUSTRIES LTD.
A member of the Thorn Group THORN

Lumen outputs

The lumen outputs quoted in this catalogue are measured at 25°C in accordance with British Standard 1853.

Initial lumens

Initial lumens are measured after 100 hours operation.

Lighting design lumens

The 'Lighting Design Lumens' quoted are the lamp outputs at 2000 hours and are recommended as a guide to lighting engineers planning scheme layouts.

Lumen output beyond 2000 hours decreases by 2% to 3% per 1000 hours use according to the colour and loading.

New 'Super White'

Higher lumen outputs for 6 ft. 85w. 'Super White' tubes are shown in the table below.

Initial lumens

	8 ft. 125w	8 ft. Super 8 85w	6 ft. Super 6 85w	5 ft. Super 5 80w*	5 ft. Super 5 65w*	5 ft. 50w	4 ft. 40w	3 ft. 1½ in. 30w	3 ft. 1 in. 30w	2 ft. 40w	2 ft. 20w	18 in. 1½ in. 15w	18 in. 1 in. 15w
White	9000	7100	**6800**	5400	4900	3500	2800	1950	2200	2000	1200	800	850
Warm White	8800	6900	6050	5300	4800	3500	2800	1900	2150	1950	1200	800	850
Daylight	8500	6600	5900	5100	4600	3300	2700	1850	2100	1900	1150	750	800
Natural	6800	5400	4550	4100	3600	2700	2200	1500	1600	1400	850	580	600
De Luxe Warm White	6700	5300	—	4000	3500	—	2150	1450	1550	1350	850	560	—
°Kolor-rite	6200	4800	4300	3700	3300	2500	2000	—	1500	1350	850	—	—
Northlight/Colour Matching	5800	4500	4000	3400	3000	—	1900	1300	1450	1300	800	540	560
De Luxe Natural	5300	4150	3650	3100	2800	2200	1750	1100	1250	1100	650	450	470
Artificial Daylight	4500	3400	—	2700	2450	—	1450	—	—	—	600	—	—

Lighting design lumens

	8 ft. 125w	8 ft. Super 8 85w	6 ft. Super 6 85w	5 ft. Super 5 80w*	5 ft. Super 5 65w*	5 ft. 50w	4 ft. 40w	3 ft. 1½ in. 30w	3 ft. 1 in. 30w	2 ft. 40w	2 ft. 20w	18 in. 1½ in. 15w	18 in. 1 in. 15w
White	8400	6600	**6300**	4900	4500	3100	2600	1750	1950	1750	1100	720	730
Warm White	8200	6400	5550	4800	4400	3100	2600	1700	1900	1700	1100	720	730
Daylight	7900	6000	5500	4600	4200	2900	2500	1650	1850	1650	1050	690	710
Natural	6200	4800	4000	3500	3100	2300	2000	1300	1400	1150	750	530	530
De Luxe Warm White	6100	4700	—	3400	3000	—	1950	1250	1350	1100	750	500	—
°Kolor-rite	5600	4400	3850	3300	2900	2200	1800	—	1300	1100	750	—	—
Northlight/Colour Matching	5300	4100	3600	3100	2700	—	1700	1100	1250	1100	700	470	480
De Luxe Natural	4600	3600	3150	2600	2400	1800	1500	950	1050	900	570	380	380
Artificial Daylight	3400	2600	—	2000	1850	—	1100	—	—	—	450	—	—

*The Super 5 tube is a dual purpose 65/80w. tube suitable for use in all 65w. or 80w. bi-pin fittings. 5 ft. 80w. BC tubes are still available in standard colours.
Bold figures are for new "Super White" phosphor used in 6 ft. tubes.

Miniature fluorescent tubes

Miniature fluorescent tubes give high lumen output with low power consumption. (Equivalent to a filament lamp five times the wattage.)
Their long life, low temperature and slim shape make them particularly suitable for signs, bollards, displays, bulkheads and appliances.

	Initial Lumens				Lighting Design Lumens			
	21 in. ⅝ in. 13w	12 in. ⅝ in. 8w	9 in. ⅝ in. 6w	6 in. ⅝ in. 4w	21 in. ⅝ in. 13w	12 in. ⅝ in. 8w	9 in. ⅝ in. 6w	6 in. ⅝ in. 4w
White	750	425	290	160	650	360	240	135
Warm White	750	425	290	160	650	360	240	135
Daylight	700	400	275	150	600	340	230	125
Natural	—	325	230	120	—	280	190	100

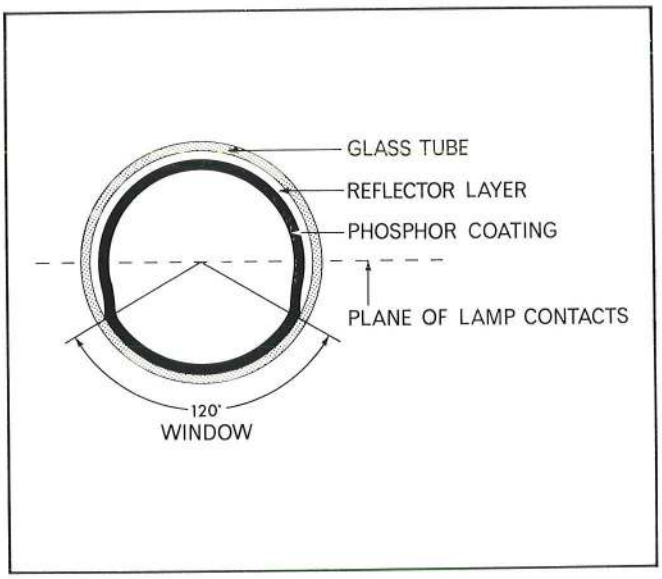
Fluorescent tubes

Light output

Reflector tubes

The reflector fluorescent tubes have an additional highly reflecting coating added between the fluorescent powder and the inside of the glass tube. In this way the majority of light is radiated through an aperture of 120° from the lamp in the preferred direction.
This lamp is particularly useful in the following applications:

Lighting in dusty atmospheres Dust collection on an ordinary tube and fitting rapidly reduces light output. With a reflector tube, light re-direction is independent of dust, and light output is better maintained.
Display lighting This lamp is useful where space is restricted such as showcases where it is difficult to put an external reflector.
High intensity lighting Reflector lamps enable tubes to be mounted in banks where an external reflector may not be convenient or effective.
Replacement lamps can be used in old fittings which have deteriorated so as to give an increase in useful light output.



INITIAL LUMENS

	8 ft. 125w.	8 ft. 85w.	6 ft. 85w.	5 ft. at 80w.	5 ft. at 65w.	4 ft. 40w.	2 ft. 40w.	2 ft. 20w.
White	8100	6400	5600	4900	4400	2500	—	1100
Warm White	7900	6200	5450	4800	4300	2500	1800	—
Daylight	—	—	5350	4600	4200	2400	—	—
Natural	—	—	4100	3700	3200	—	—	—

LIGHTING DESIGN LUMENS

8 ft. 125w.	8 ft. 85w.	6 ft. 85w.	5 ft. at 80w.	5 ft. at 65w.	4 ft. 40w.	2 ft. 40w.	2 ft. 20w.
7400	5800	5000	4300	3900	2300	—	1000
7200	5600	4850	4200	3800	2300	1500	—
—	—	5350	4600	4200	2400	—	—
—	—	3500	3100	2600	—	—	—

Coloured tubes

Five standard colours—Red, Blue, Green, Yellow and Pink are available. These are primarily designed for decorative and effect lighting purposes.

LIGHTING DESIGN LUMENS

	5 ft. at 80w.	5 ft. at 65w.	4ft. 40w.	3 ft. 30w.	2 ft. 40w.	2 ft. 20w.
RED	230	210	125	—	—	50
YELLOW	2600	2400	1400	—	—	600
GREEN	4800	4400	2600	—	—	1100
BLUE	1100	1000	600	—	—	250
PINK	1200	1100	650	425	360	270

Gro-Lux—lighting design lumens

5 ft. at 80w.	5 ft. at 65w.	4 ft. 40w.	*3 ft. 30w.	2 ft. 20w.	*1½ ft. 15w.
1450	1300	810	530	340	200

*1 in. diameter

Tropical Daylight—lighting design lumens

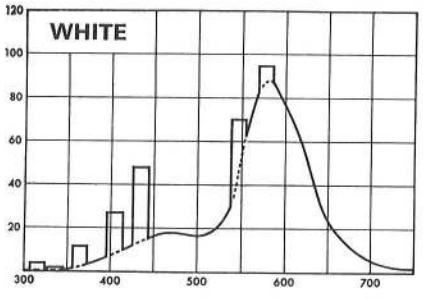
1½ ft. 15w.—525

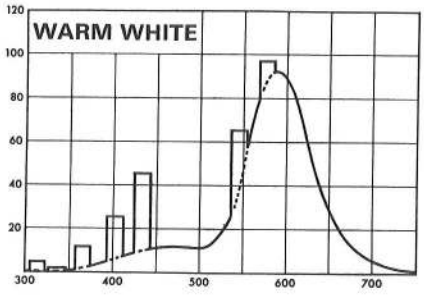
Circular tubes (Warm White only)

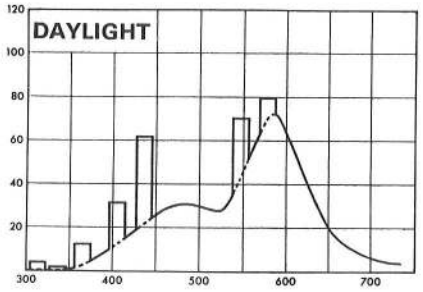
Tube size (diameter)	16 in.	12 in.	8¼ in.
Wattage	40w.	32w.	22w.
Lighting design lumens	2150	1500	850

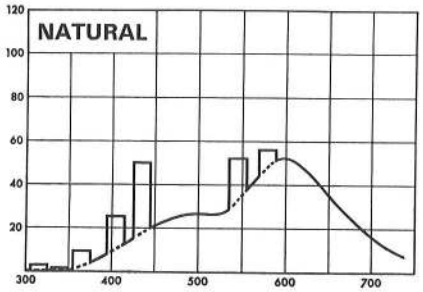
Fluorescent tubes
Spectral distribution

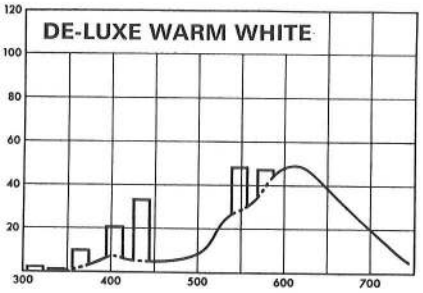
Horizontal scales are for wavelengths in nanometres (10^{-9} metres).
Vertical scales are power in milliwatts per nanometre band width for a 5 ft. tube at 65 watts.

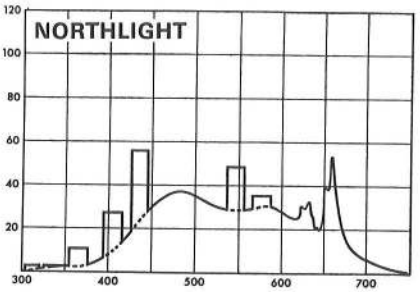


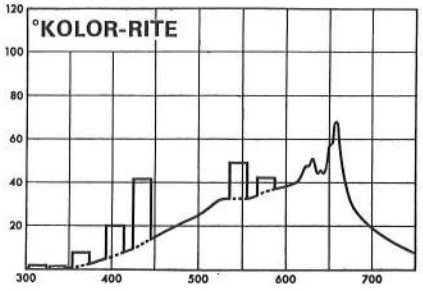


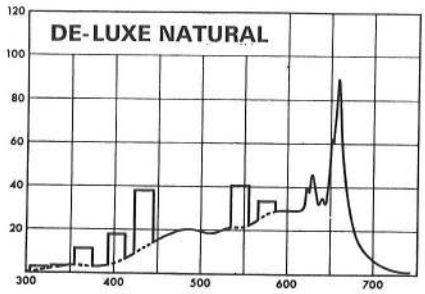


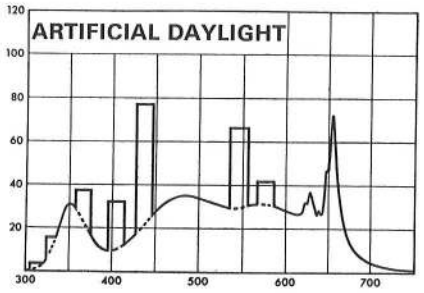


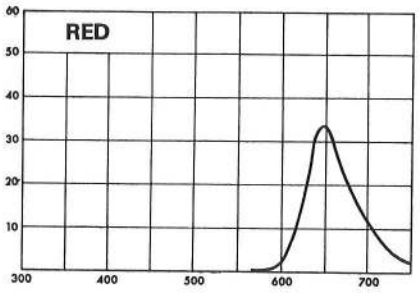


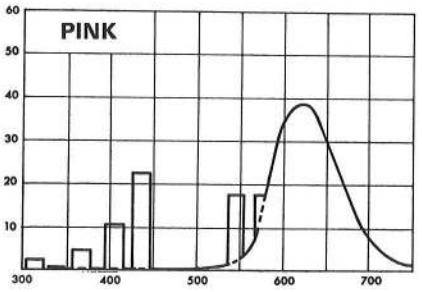


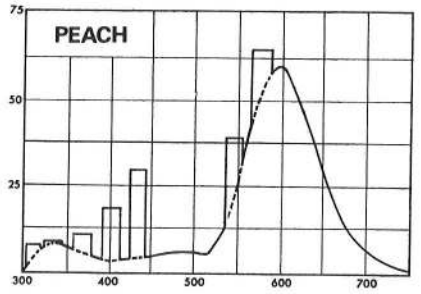


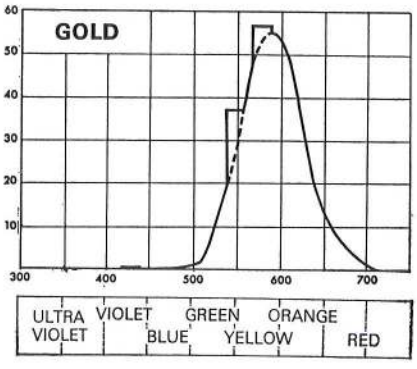


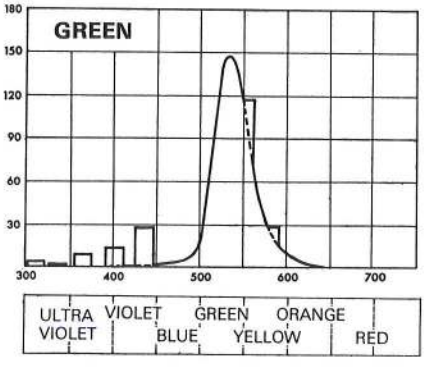


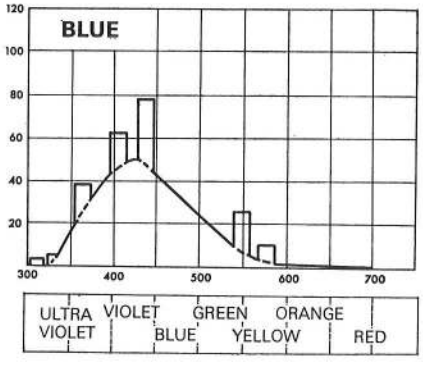






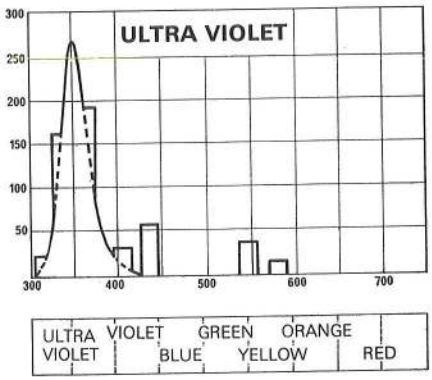


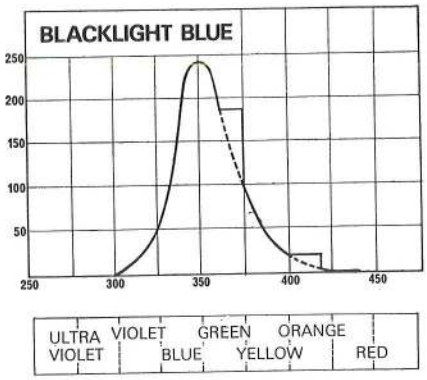


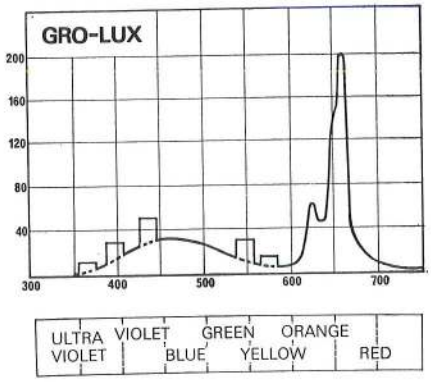


Fluorescent tubes
Spectral distribution

Horizontal scales are wavelengths in nanometres (10^{-9} metres). Vertical scales are power in milliwatts per nanometre band width for a 5 ft. tube at 65w., except for Blacklight Blue which is for a 40w. tube.







Nominal percentage light output for 5 ft. tubes at 65w.

8 BANDS											
CIE BANDS		nm.	Artificial Daylight	Northlight/ Colour Matching	Daylight	Natural	De Luxe Natural	White	Warm White	De Luxe Warm White	°Kolor-rite
1	Violet	380–420		0·017	0·014	0·014	0·011	0·010	0·007	0·007	0·017
2	Violet-Blue	420–440	1·06	0·42	0·31	0·33	0·37	0·26	0·25	0·30	0·13
3	Blue	440–460		0·65	0·38	0·37	0·39	0·22	0·17	0·10	0·48
4	Blue-Green	460–510	9·6	9·7	5·3	5·6	6·1	3·1	2·5	2·4	7·9
5	Green	510–560	44·9	44·5	37·2	38·0	38·7	32·3	29·5	35·8	38·0
6	Yellow	560–610	33·8	34·1	48·9	44·1	37·5	54·9	57·3	45·8	39·5
7	Light Red	610–660	9·9	10·0	7·8	11·2	15·8	9·1	10·2	14·9	13·0
8	Dark Red	660–760	0·63	0·63	0·17	0·69	1·2	0·19	0·21	0·81	1·06
Ultra-violet (watts per 65w. tube, between 300 and 400 nanometres)											
			1·30	0·47	0·53	0·41	0·42	0·44	0·40	0·40	0·32
Colour appearance 'X' and 'Y' colour co-ordinates											
X			0·313	0·317	0·373	0·378	0·390	0·414	0·435	0·437	0·3804
Y			0·329	0·324	0·380	0·365	0·356	0·397	0·401	0·400	0·3767

Additional Colour Data

The above colour rendering and colour appearance data is on the same basis as the values specified in BS1853, but there is a trend towards other methods of colour specification, e.g. 6 band values for colour rendering and the CIE uniform chromaticity scale for colour appearance in which the co-ordinates are expressed in u and v values. With this in mind we provide the following additional data:

6 BANDS											
		nm.	Artificial Daylight	Northlight/ Colour Matching	Daylight	Natural	De Luxe Natural	White	Warm White	De Luxe Warm White	°Kolor-rite
1	Violet-Blue	400–455	0·79	0·83	0·57	0·58	0·62	0·41	0·34	0·36	0·435
2	Blue-Green	455–510	11·2	11·0	5·3	6·3	6·3	3·3	2·7	2·6	8·03
3	Green	510–540	23·1	19·9	12·6	15·0	14·8	9·3	8·3	13·5	19·8
4	Green-Yellow	540–590	43·7	48·0	59·9	52·7	50·0	61·3	60·7	53·2	44·7
5	Orange	590–620	14·4	13·1	17·5	18·1	16·5	20·7	22·4	20·6	17·7
6	Red	620–760	6·8	7·2	4·1	7·3	11·8	4·9	5·6	9·8	9·4
Colour appearance – Nominal u and v colour co-ordinates.*											
u			0·1978	0·203	0·219	0·228	0·240	0·239	0·251	0·252	0·2251
v			0·3122	0·311	0·335	0·331	0·329	0·343	0·347	0·347	0·3344

*CIE uniform chromaticity scale

Colour Temperatures for Fluorescent Tubes

The term 'colour temperature' should strictly only be applied to spectral distributions close to the black body distributions. Thus in fluorescent tube colours the 'colour temperature' is merely an indication of the location of the chromaticity co-ordinates on a colour chart.

The 'colour temperatures' should not be used as a guide for photographic purposes.

Artificial Daylight	6500°K
Northlight/Colour Matching	6500°K
Tropical Daylight	6500°K
Daylight	4300°K
°Kolor-rite	4000°K
Natural	4000°K
De Luxe Natural	3600°K
White	3400°K
Warm White	3000°K
De Luxe Warm White	3000°K

Fluorescent tubes
Price list and availability chart

Straight Tubes

Watts	125w.	85w.	85w.	80w.	65/80w.	50w.	40w.	30w.	40w.	20w.	15w.	13w.	8w.	6w.	4w.
Length	*8 ft.	8 ft.	6 ft.	5 ft.	5 ft.	5 ft.	4 ft.	3 ft.	2 ft.	2 ft.	18″	21″	12″	9″	6″
Diameter	1½″	1½″	1½″	1½″ B.C.	1½″	1″	1½″	1″ & 1½″	1½″	1½″	1″ & 1½″	⅝″	⅝″	⅝″	⅝″
White	16/–	16/–	13/–	10/6	10/6	10/6	9/9	9/9	9/9	9/3	8/9	11/6	7/6	7/6	7/6
Warm White	16/–	16/–	13/–	10/6	10/6	10/6	9/9	9/9	9/9	9/3	8/9	11/6	7/6	7/6	7/6
Daylight	16/–	16/–	13/–	10/6	10/6	10/6	9/9	9/9	9/9	9/3	8/9	11/6	7/6	7/6	7/6
Purchase Tax Extra	—	—	—	2/5	2/5	2/5	2/3	2/3	2/3	2/1	2/–	2/8	1/9	1/9	1/9
Natural	18/–	18/–	15/–	12/6	12/6	12/6	11/–	11/–	11/–	10/6	9/9	—	8/–	8/–	8/–
Northlight/Col. Match	18/–	18/–	15/–	12/6	12/6	—	11/–	11/–	11/–	10/6	9/9	—	—	—	—
De Luxe Warm White	18/–	18/–	—	12/6	12/6	—	11/–	11/–	11/–	10/6	9/9	—	—	—	—
°Kolor-rita	18/–	18/–	15/–	12/6	12/6	12/6	11/–	11/–†	11/–	10/6	9/9	—	—	—	—
Tropical Daylight	—	—	—	—	—	—	—	—	—	—	9/9	—	—	—	—
Purchase Tax Extra	—	—	—	2/10	2/10	2/10	2/6	2/6	2/6	2/5	2/3	—	1/10	1/10	1/10
De Luxe Natural	21/–	21/–	17/6	14/6	14/6	14/6	12/9	12/9	12/9	12/3	11/6	—	—	—	—
Purchase Tax Extra	—	—	—	3/4	3/4	3/4	2/11	2/11	2/11	2/10	2/8	—	—	—	—
Artificial Daylight	30/–	30/–	—	—	19/–	—	18/–	—	—	16/–	—	—	—	—	—
Purchase Tax Extra	—	—	—	—	4/4	—	4/1	—	—	3/8	—	—	—	—	—
Reflector Tubes															
White	19/–	19/–	15/6	12/6	12/6	—	11/9	—	11/9	11/3	—	—	—	—	—
Warm White	19/–	19/–	—	12/6	12/6	—	11/9	—	—	—	—	—	—	—	—
Daylight	—	—	15/6	12/6	12/6	—	11/9	—	—	—	—	—	—	—	—
Purchase Tax Extra	—	—	—	2/10	2/10	—	2/8	—	2/8	2/7	—	—	—	—	—
Reflector Tube															
Natural	—	—	—	—	14/6	—	—	—	—	—	—	—	—	—	—
Purchase Tax Extra	—	—	—	—	3/4	—	—	—	—	—	—	—	—	—	—
Colours															
Pink, Green, Blue, Red, Gold, Peach	—	—	—	—	17/6	—	17/–	16/6‡	16/–‡	15/–	—	—	—	—	—
Purchase Tax Extra	—	—	—	—	4/–	—	3/11	3/9	3/8	3/5	—	—	—	—	—
Radar Red	—	—	—	—	60/–	—	56/–	—	—	—	—	—	—	—	—
Purchase Tax Extra	—	—	—	—	13/8	—	12/9	—	—	—	—	—	—	—	—
Ultra Violet (Non Filter)	—	—	—	—	17/6	—	17/–	—	—	15/–	14/9†	—	10/–	—	—
Purchase Tax Extra	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Blacklight Blue U.V.	—	—	—	—	—	—	135/–	—	—	—	55/–†	—	35/–	33/–	30/–
Purchase Tax Extra	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gro-lux	—	—	—	—	32/–	—	30/–	27/–†	—	25/–	20/–†	—	—	—	—
Purchase Tax Extra	—	—	—	—	7/3	—	6/10	6/2	—	5/8	4/8	—	—	—	—

* 125w. 8 ft. B.C. tubes now obsolete. Limited stock available. † Available 1″ diameter only. ‡ Pink only.

Circular Tubes

Dia.	Watts	Price	£	s	d	P.T.
16″	40		1	7	6	6/4
12″	32		1	5	0	5/8
8¼″	22		1	5	0	5/8

Tube Grades

There are different grades of tube to suit various types of control gear and the correct type must be used to obtain satisfactory starting performance.

GP (General Purpose Quickstart) grade tubes (MCFE/U)

The GP Quickstart tube is manufactured to give satisfactory starting with all switch or switchless start control gear and is now supplied as the standard tube for use in all fittings. For switchless start circuits the metal chassis must extend the full length of the tube and be bonded to earth. The metalwork must not be more than half-inch from the tube. Quickstart, Resonant-start and other switchless start circuits must only be used on 200–250v. 50 cycle supplies where the neutral conductor is at earth potential.

MS (Metal Strip) grade tubes (MCFA/U)

This tube is only necessary for special conditions, e.g. where earthed metalwork is not adjacent the tube. it has a metallic conducting strip cemented to the outside of the tube, connected to both caps, which must be earthed

A limited range of the more popular tubes in 2 ft.–5 ft. lengths can be supplied with metal strip (MCFA/U). Price 6d extra per tube plus 1d Purchase Tax.

Fluorescent Tube Packing Quantities

8 ft. and Circles: 12
Blacklight Blue : 24
All others: 25

Rated Life

The rated life of all B.L.I. 4 ft., 5 ft., 6 ft. and 8 ft. 1½ in. diameter lamps is 7500 hours. The rated life of all other ratings is 5000 hours. In many situations it is advantageous to replace lamps in bulk (Group Replacement) rather than as individual lamps fail.

Among the benefits are:

● A saving in initial cost ● a higher average level of lighting ● more uniform lighting ● less interruption to work ● a saving in running cost

Further information on Group Replacement is available from our Regional Offices.

Bi-Pin/BC Adaptor

AME B1515 Adaptor converting bi-pin lamp cap to BC. The overall length of a 5 ft. bi-pin tube with these adaptors does not exceed the length of a BC tube. 1s 9d each.

Guarantee

Any fluorescent tube failing within 12 months from the date of purchase by the user (or prior to 3000 hours burning whichever is the shorter) except through misuse, will be replaced free of charge.

SfB (63)
UDC 621·32

Discharge lamps

Discharge lamps
Introduction

Mazda has been one of the leading major brands since the inception of discharge lamps in the early 1930's and Mazda is now the British Lighting Industries brand of sodium and high pressure mercury discharge lamps.
The outstanding development in mercury lamps is the recent introduction of °Kolorlux versions in all the fluorescent coated lamps, giving an improved colour appearance at a higher luminous efficiency.
In the sodium lamp field Mazda has a unique high efficiency linear sodium lamp in 200w. 140w. and 60w. ratings.
Details of these and many other interesting discharge lamps are given in this section.

BRITISH LIGHTING INDUSTRIES LTD.
A member of the Thorn Group THORN

Numerical Index—Section three

Alphabetical Index—Section three

Discharge lamps

Mercury reflector lamps Types MBFR and MBFR °Kolorlux

Supply voltage 200/250v.—Life 7,500 hours—Cap G.E.S.

Description

Mercury lamps with quartz arc tubes loaded below 100w/cm. arc length and operating at a pressure of 8/10 atmospheres. The quartz tube is mounted in an outer bulb coated with a reflector material and a fluorescent phosphor. The reflector coating directs light downwards and also transmits some 20% upwards. The fluorescent phosphor converts some of the ultra-violet radiation from the arc tube into red light, thus improving the overall colour of the lamp light. The crown of the bulb is frosted.

The lamps can be operated in any position and require control gear consisting of a choke and power factor correction capacitor —*see pages 307 and 308.*

Application

The range of reflector lamps is primarily for medium and high bay locations and also for floodlighting applications. The reflecting surface is on the inside of the bulb and is not affected by dust or atmospheric grime. Hard glass outer bulbs make the lamp ideal for operating under exposed conditions.

The introduction of the °Kolorlux version of the MBFR lamp extends its useful range of applications into some commercial and display areas, such as car parks and shopping centres. Because of the advantages of increased lumens and improved colour appearance, the °Kolorlux version is superseding the standard MBFR type.

Colour

The colour appearance improvement with the °Kolorlux MBFR lamp is shown in the table below :—

Percentage luminance in spectral bands (400w. lamps)

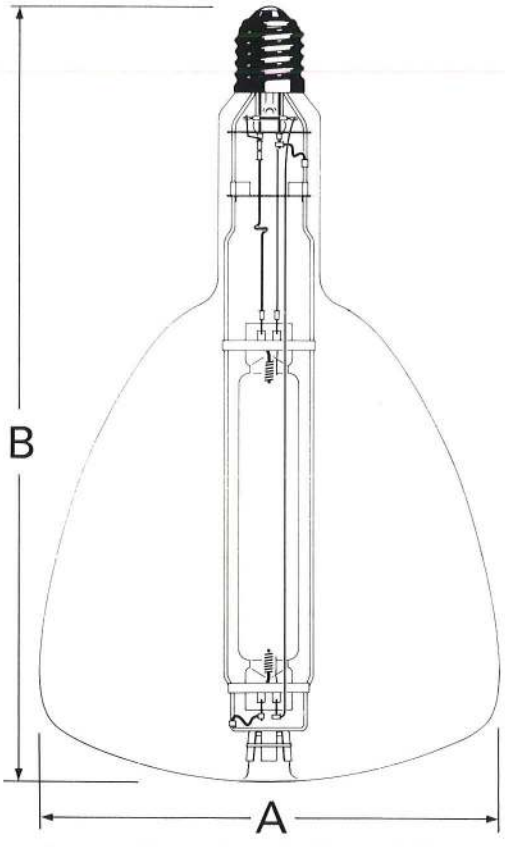
Band	Waveband (micron)	Colour	% Luminance Std. MBFR	% Luminance °Kolorlux
1	0·38–0·42	Far Violet	0·01	0·01
2	0·42–0·44	Violet	0·27	0·48
3	0·44–0·46	Blue	0·06	0·10
4	0·46–0·51	Blue Green	0·73	0·71
5	0·51–0·56	Green	41·9	37·9
6	0·56–0·61	Yellow	48·7	49·3
7	0·61–0·66	Light Red	7·46	11·4
8	0·66–0·76	Dark Red	0·89	0·10

Watts	Price* £ s. d.	Std. Pack	Lighting Design Lumens Std. MBFR	°Kolorlux
250	5 10 0	1	9,500	10,000
400	7 10 0	1	16,600	17,500
700†	12 18 0	1	30,000	—
1000	15 16 0	1	42,000	45,000

These lamps are not subject to Purchase Tax.
*Price is for both °Kolorlux and standard lamps.
†Standard MBF only available in this rating.

Photograph showing appearance of MBFR—400w. lamp illustrated.

Drawing showing construction of MBFR—1000w. lamp illustrated.



	A (mm)	B (mm)
250w.	130±2	220±7
400w.	165±2	280±6
700w.	200±2	320±8
1000w.	236±2	360±10

BRITISH LIGHTING INDUSTRIES LTD.
A member of the Thorn Group THORN

Mercury fluorescent lamps Types MBF and MBF °Kolorlux

Photograph showing appearance of MBF 400w. lamp illustrated.

Supply voltage 200/250v.—Life 7,500 hours.

Description

Mercury lamps with quartz arc tubes loaded below 100w/cm. arc length and operating at pressures of 8/10 atmospheres. The quartz tubes are mounted in elliptical shaped bulbs whose interior surface is coated with a fluorescent material which converts some of the ultra-violet radiation into visible light, thus improving the overall colour of the lamp light.

The lamps can be operated in any position and require control gear consisting of a choke and a power factor correction capacitor—*see pages 307 and 308.*

Application

The standard MBF lamp is suitable for industrial and street lighting and also floodlighting. Its red ratio is some 7%. The °Kolorlux lamp has a red ratio of some 10% and can be used for the same applications, but because of its improved colour appearance, is also suitable for some commercial and display areas, such as service stations, car parks, shopping centres and certain shop windows. The °Kolorlux lamps give up to 10% more light output.

Because of the advantages of increased lumens and improved colour appearance, the °Kolorlux version is superseding the standard MBF type.

Colour

The colour appearance improvement with the °Kolorlux MBF lamp is shown in the table below:—

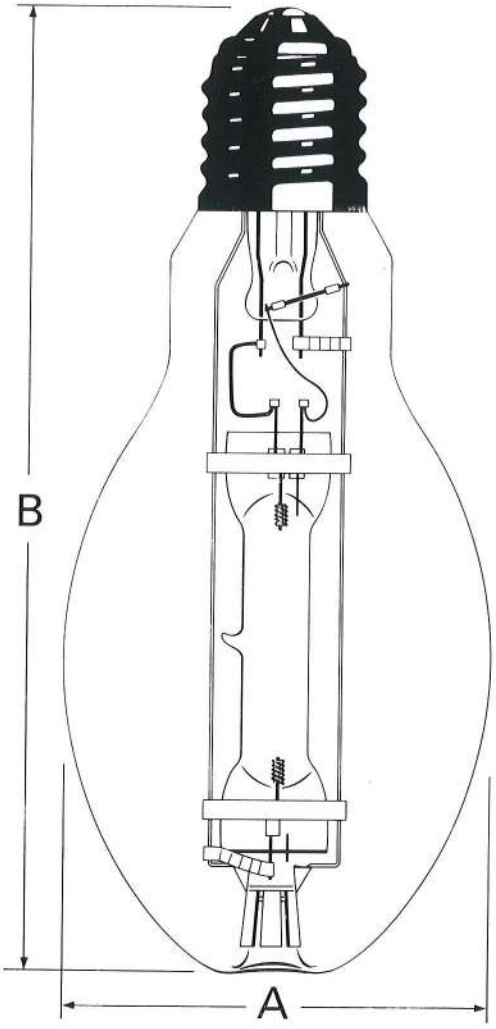
Percentage luminance in spectral bands (400w. lamps)

Band	Waveband (micron)	Colour	% Luminance Std. MBF	% Luminance °Kolorlux
1	0·38–0·42	Far Violet	0·01	0·01
2	0·42–0·44	Violet	0·40	0·44
3	0·44–0·46	Blue	0·05	0·80
4	0·46–0·51	Blue Green	0·80	0·67
5	0·51–0·56	Green	46·0	37·7
6	0·56–0·61	Yellow	45·5	47·3
7	0·61–0·66	Light Red	6·00	13·7
8	0·66–0·76	Dark Red	0·50	0·12

Watts	Price‡ £	s.	d.	Std. Pack	Cap	Lighting Design Lumens Std. MBF	°Kolorlux
50	1	13	0	50	E.S.	1,750	1,900
80	2	5	0	24	E.S.*	3,200	3,350
125	2	13	0	24	E.S.*	5,200	5,500
250	4	5	0	9	G.E.S.	11,500	12,000
400	6	10	0	9	G.E.S.	19,600	21,500
700†	11	5	0	1	G.E.S.	34,500	—
1000	14	0	0	1	G.E.S.	49,000	54,000

These lamps are not subject to Purchase Tax.
*3 pin B.C. cap also available.
†Standard MBF only available in this rating.
‡Price is for both °Kolorlux and standard lamps.

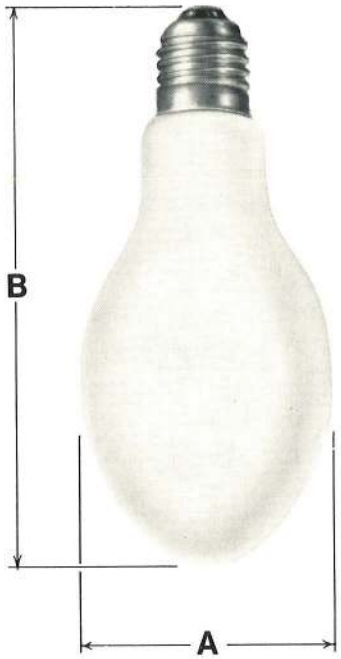
Drawing showing construction of MBF 400w. lamp illustrated.



	A (mm)	B (mm)
50w.	55±1	125±4
80w.	70±1	150±4
125w.	75±1	170±5
250w.	90±1	220±7
400w.	120±2	280±6
700w.	140±1·5	320±8
1000w.	165±1·5	400±10

Discharge lamps

Mercury lamps Type MB



	A (mm)	B (mm)
80w.	70±1	150±4
125w.	91 max.	183 max.

Supply voltage 200/250v.—Life 7,500 hours.

Description

Mercury lamps with quartz arc tubes loaded below 100w/cm. arc length and operating at pressures of 8/10 atmospheres.
For the 80w. and 125w. sizes, the quartz tubes are mounted in elliptical or pear shaped Pearl bulbs. The 250w. and 400w. lamps have clear tubular hard glass outer bulbs.
The lamps can be operated in any position and require control gear consisting of a choke and a power factor correction capacitor—*see pages 307 and 308.*

Application

For use where mercury lamp source size is of primary importance and where colour appearance is not the first consideration.

Colour

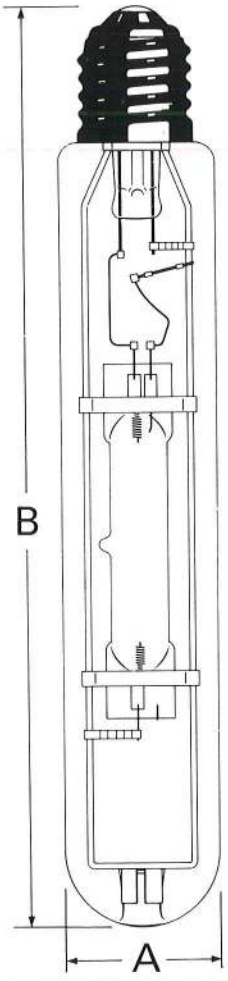
The colour appearance characteristics are shown in the table below :—

Percentage luminance in spectral bands (400w. lamps)

Band	Waveband (micron)	Colour	% Luminance Std. MB
1	0·38–0·42	Far Violet	0·02
2	0·42–0·44	Violet	0·61
3	0·44–0·46	Blue	0·18
4	0·46–0·51	Blue Green	0·83
5	0·51–0·56	Green	47·7
6	0·56–0·61	Yellow	49·7
7	0·61–0·66	Light Red	0·84
8	0·66–0·76	Dark Red	0·07

Watts	Price £ s. d.	Std. Pack	Cap	Lighting Design Lumens
80	2 5 0	24	E.S.*	2,720
125	2 13 0	24	E.S.*	4,900
250	3 8 0	12	G.E.S.	11,000
400	3 16 0	12	G.E.S.	18,800

These lamps are not subject to Purchase Tax.
*3 pin B.C. cap also available.



	A (mm)	B (mm)
250w.	51±1	290±8
400w.	51±1	330±8

Striking voltage with temperature
Mercury lamps are provided with an auxiliary electrode to initiate starting. Diagram 1 shows the lamp will start readily under all normal operating conditions.

Effect of mains voltage variation
Diagram 2 shows the effect of mains voltage variation on lumens, lumens per watt and lamp watts.

Run-up characteristics
These are shown in diagram 3. The time taken will vary slightly depending upon the location and the type of fitting housing the lamp.

Control gear
The control gear for a mercury lamp comprises a choke and a power factor correction capacitor. Gear suitable for 240v. 50HZ is summarised in the table.
Details of 240v. gear and gear suitable for other voltages are given in the British Lighting Industries Fittings Catalogue.

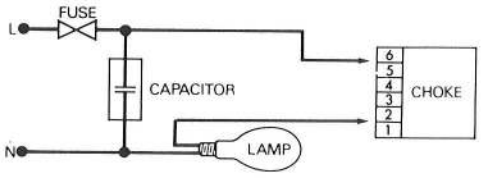
240v. 50HZ

Lamp Rating	Choke Cat. No.	Choke Nett User Price £ s. d.	Capacitor Cat. No.	Capacitor Nett User Price £ s. d.
50w.	AME53184.4	1 6 0	AMEC2203	10 6
80w.	AME53162.4	1 5 3	AMEC2234	12 6
125w.	AME53159.4	1 14 3	AMEC2234	12 6
250w.	AME53158.4	3 0 3	AMEC2214	17 0
400w.	AME53193.4	3 3 0	AMEC2218	1 4 6
700w.	AME53158 T	3 7 6	AMEC2218	1 4 6
	+AME53157 T	4 2 6	+AMEC2214	17 0
1000w.	2×AME53164.4	3 14 0ea.	2×AMEC2236	1 7 9ea.

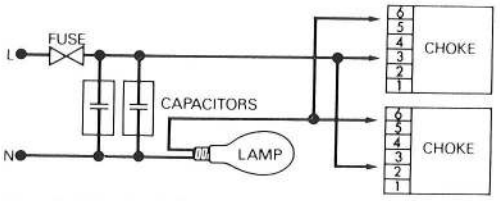
Control gear for 400w. MBI & 400w. MBIF °Kolorarc lamps

Component	Nett User Price £ s. d.
Ballast AME53195T	6 11 0
Capacitor 2×AMEC2278	1 9 6 each

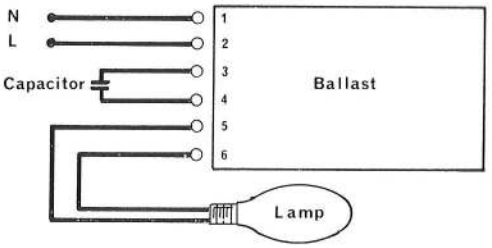
Circuit diagrams



(1) 50 TO 400W



(2) 700 AND 1000W



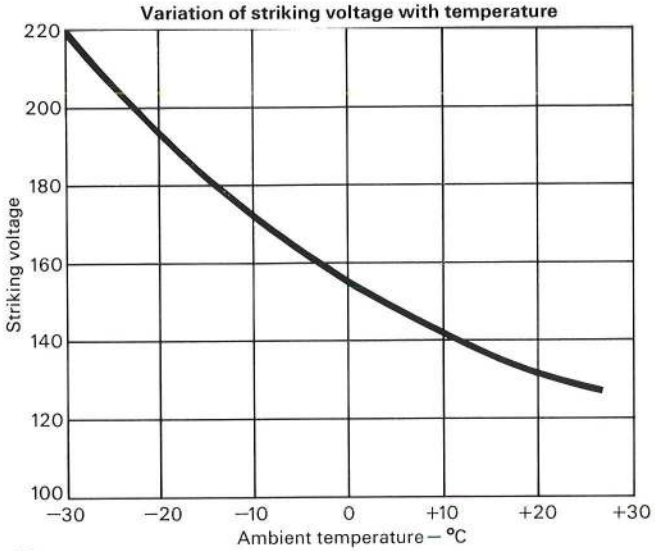
(3) 400 watt °KOLORARC

Discharge lamps

Mercury lamp information For Types MBFR, MBF and MB.

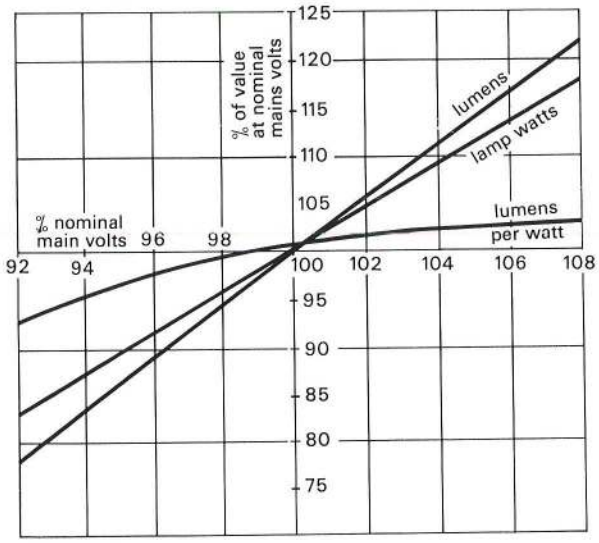
1

Variation of striking voltage with temperature



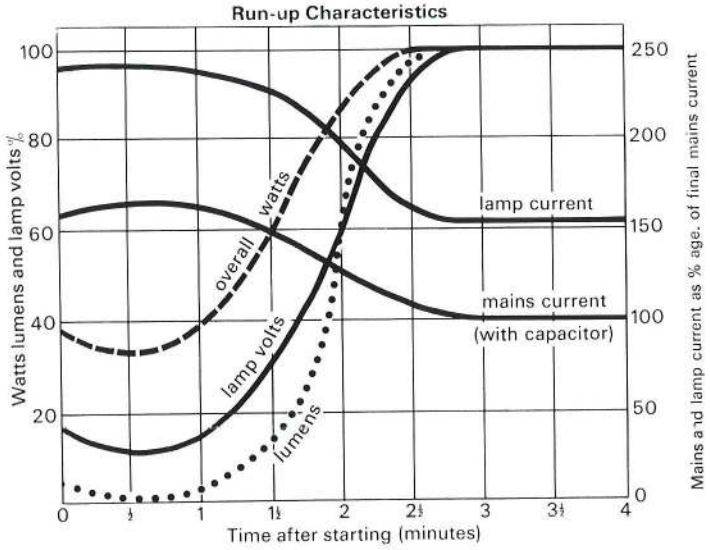
2

Effect of variation of mains voltage on the lamp Characteristics of Mercury Discharge lamps



3

Run-up Characteristics



Mercury tungsten lamps

Supply voltages 220/230v. and 240/250v.—Life 6,000 hours.

Description

Mercury tungsten lamps with quartz arc tubes loaded below 100w/cm. arc length and operating at pressures of 8/10 atmospheres. Mounted coaxially with the arc tube and connected in series with it is a coiled tungsten filament which provides light and colour correction to the output from the mercury discharge and acts as a ballast to the arc. No control gear is required.
In the 160w. MBTL/U the arc tube and the tungsten filament are enclosed in a pear shaped outer bulb whose interior surface has a diffuse coating. In the 250w. and 500w. lamps there is a similar arrangement, except that the outer bulb has an interior fluorescent coating which converts some of the ultra-violet radiation into red light thus improving the overall colour of the lamp light.
These lamps are designed for operating in the cap-up position. They will only operate in other positions providing there is negligible fluctuation in the supply voltage. Sudden reductions in voltage will cause the lamp to extinguish.

Application

The average rated life is six times that of a normal tungsten lamp. The mercury tungsten lamps may be used in place of an equivalent tungsten filament lamp, particularly where long lamp life is important and/or the labour costs of lamp replacement are high.

Colour

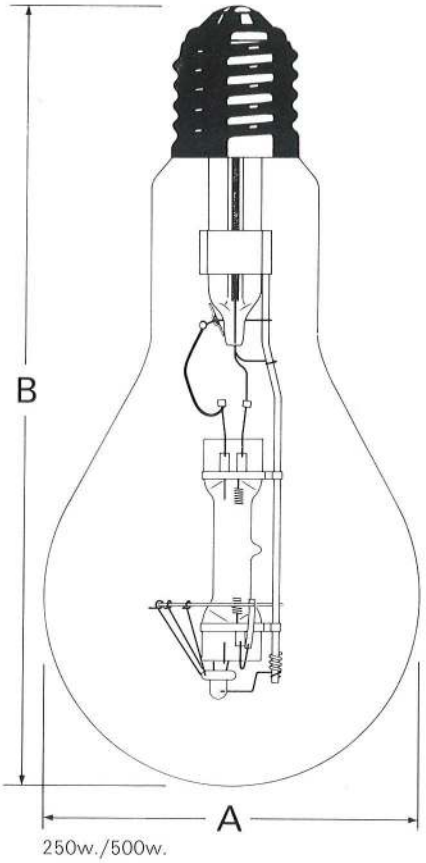
The colour appearance improvement with the MBTF °Kolorlux lamp is shown in the table below:—

Percentage luminance in spectral bands

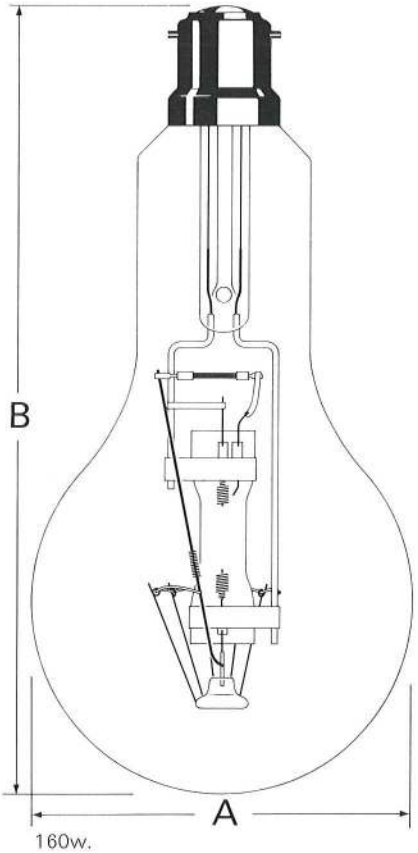
Band	Waveband (micron)	Colour	% Luminance 160w. MBTL	160w. MBTF °Kolorlux	250w. MBTF*
1	0·38–0·42	Far Violet	0·01	0·01	0·01
2	0·42–0·44	Violet	0·46	0·44	0·38
3	0·44–0·46	Blue	0·19	0·14	0·12
4	0·46–0·51	Blue Green	2·37	1·23	1·38
5	0·51–0·56	Green	46·8	41·9	46·6
6	0·56–0·61	Yellow	42·6	41·7	40·5
7	0·61–0·66	Light Red	6·86	14·2	9·86
8	0·66–0·76	Dark Red	0·68	0·37	1·11

* The colour distribution of the 500w. MBTF Lamp is similar to that for the 250w. Lamp given in the table above.

Type	MBTL	MBTF °Kolorlux	MBTF	MBTF
Watts	160	160	250	500
Std. Pack	12	12	12	6
Price	£2 12 0	£2 17 6	£3 0 0	£5 10 0
Cap	E.S. or B.C.	E.S. or B.C.	G.E.S.	G.E.S.
Lamp Current (Amps.)				
220/230v.	0·70	0·70	1·10	2·20
240/250v.	0·65	0·65	1·05	2·10
Lighting Design Lumens	2,560	2,700	4,840	11,000



250w./500w.



160w.

	A (mm)	B (mm)
160w.	90±1	173±5·5*
250w.	110±1·5	233±7
500w.	130±1·5	267±8

*For E.S. Cap add 5mm.

Discharge lamps

Mercury iodide lamps Types MBI and MBIF °Kolorarc

Supply voltage 200/250v.—Life 7,500 hours

Description

Mercury lamps containing metallic iodide addition, in quartz tubes loaded below 100w/cm. arc length and operating at pressures of 8/10 atmospheres.

The quartz tubes are mounted in elliptical bulbs. For the MBI version the bulb is clear, but for the MBIF °Kolorarc version its interior surface is coated with a fluorescent material which converts some of the ultra-violet radiation into visible light, thus improving the overall colour and efficiency of the lamp.

The lamps require control gear consisting of a resonant choke current comprising inductances and a capacitor. **It will not operate on standard MB control gear—*see pages 307 and 308.***

Application

The MBI lamp, with its clear outer bulb, is a lamp of higher efficiency and better colour appearance than the standard mercury lamp. Its primary applications are industrial and street lighting and its relatively compact arc tube permits the maximum optical use to be made of its high light output.

The MBIF °Kolorarc lamp is a very high efficiency mercury lamp with good colour appearance. Again its primary applications are industrial and street lighting, but its better efficiency and colour make it acceptable on a greater number of locations.

Colour

The colour improvement with the MBIF °Kolorarc lamp is shown in the table below :—

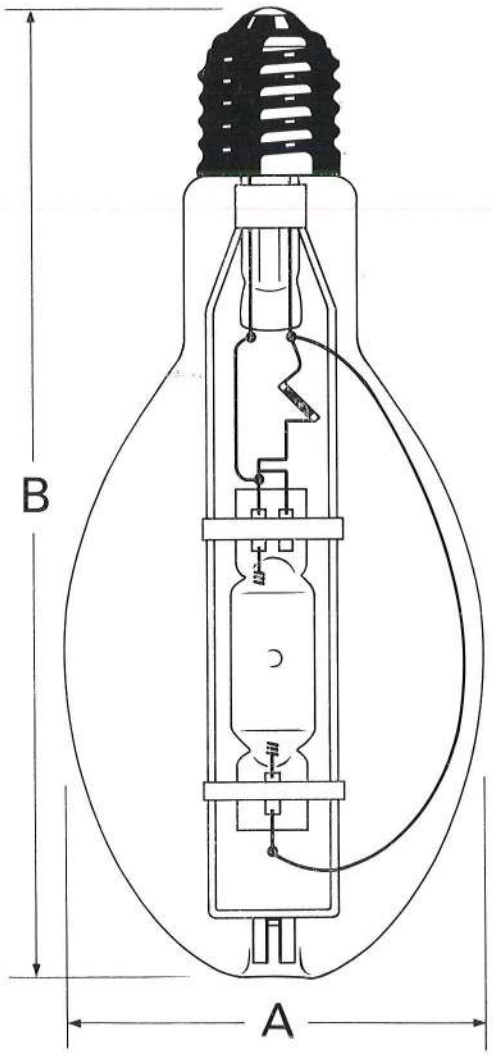
Percentage luminance in spectral bands (400w. lamps)

Band	Waveband (micron)	Colour	% Luminance	
			Std. MBI	MIBF °Kolorarc
1	0·38–0·42	Far Violet	0·03	0·02
2	0·42–0·44	Violet	0·24	0·18
3	0·44–0·46	Blue	0·30	0·27
4	0·46–0·51	Blue Green	5·55	8·96
5	0·51–0·56	Green	41·1	34·8
6	0·56–0·61	Yellow	46·0	47·0
7	0·61–0·66	Light Red	6·66	8·24
8	0·66–0·76	Dark Red	0·15	0·56

Watts	Price £	s.	d.	Std. Pack	Cap	Type	Lighting Design Lumens
400	8	10	0	1	G.E.S.	MBI	24,000
400	8	18	0	1	G.E.S.	MBIF °Kolorarc	27,000

Photograph showing appearance of MBIF °Kolorarc lamp.

Drawing showing construction of MBI lamp.



A (mm)	B (mm)
120±2	280±6

Supply voltage 200/250v.—Life 4,000 hours guaranteed—6,000 hours average—Caps bi-pin.

Description

Low pressure sodium lamps consisting of a discharge tube of unique cross section containing metallic sodium in an inert gas. An electrode is sealed into each end of the tube, terminating in bi-pin caps. The discharge tube is enclosed in an outer envelope whose inside surface is coated with a reflector coating which provides thermal insulation.

The lamps operate in a horizontal position ±20° and require control gear consisting of a high reactance transformer and a power factor correction capacitor—*see page 315.*

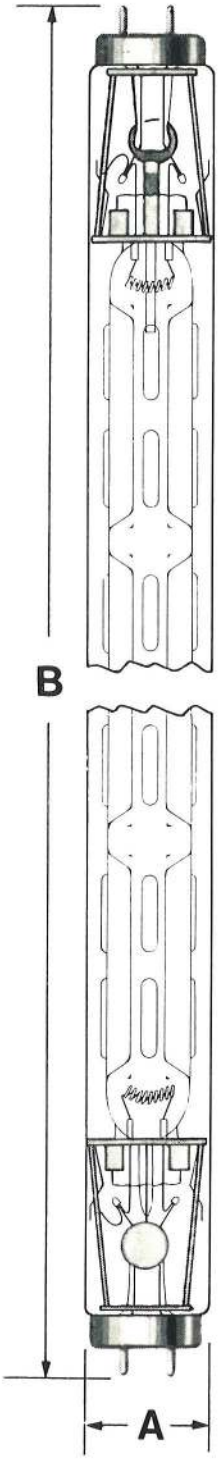
Application

The primary application of these lamps is street lighting.

They have the following unique and outstanding advantages:—

1. Lumen maintenance is 100% throughout life.
2. The individual guaranteed life is 4,000 hours, with an average of 6,000 hours.
3. With light outputs of 20,000 lumens (140w.) and 25,000 lumens (200w.) the lamps are eminently suitable to meet M.O.T. requirements for major street lighting schemes.
4. The construction of the lamp—a tube of outside diameter of only some 38mm with bi-pin caps at each end—materially assists the design of street lighting lanterns.

Watts	Price £ s.	d.	Std. Pack	Lighting Design Lumens	Lamp Volts	Lamp Current Amps.
140	5 15	6	1	20,000	175	0·9
200	6 5	0	1	25,000	135	1·6



	A max (mm)	B max (mm)
140w.	39·5	908·8
200w.	39·5	908·8

Discharge lamps
140w. and 200w. SLI/H linear sodium lamps

Research and Development.

This new high efficiency sodium lamp is made possible by intensive development work on the fundamentals of sodium discharges which has enabled us to reduce to a minimum the energy input to the lamp which in the past has been wasted. Energy is lost within the discharge through collisions between atoms, ions and elementary particles which do not generate light, and by the absorption of light by sodium atoms themselves. These losses can be minimised by reducing the cross-sectional area of the discharge tube.
In order to achieve a high output the surface of the discharge tube must be large. Within limits therefore a high ratio of surface areas to cross-sectional area will make possible a high lamp efficiency. A study of the shape of the discharge tube of the new lamp will show how these principles have been applied in a practical form to give a high performance with guaranteed reliability. It will be seen also that there is a direct linear path between the electrodes of the lamp which is an aid in the achievement of a low basic starting voltage.
The low pressure sodium lamp requires a sodium reservoir temperature of approximately 250°C to give the optimum vapour pressure for the efficient radiation of sodium resonance light. A considerable portion of the power in the discharge is used to raise the tube temperature to this value. Increased luminous efficacy has been achieved by reducing the power required to do this through the use of a carefully controlled infra-red reflecting coating, basically composed of tin oxide, on the inside of the outer bulb. This reflects most of the heat back into the discharge tube while absorbing only a few per cent of the sodium light. The reflecting film is made so that its electrical resistance is suitable for its use as a starting aid for the lamp; by connecting it to one cathode it acts in much the same way as external starting aids for fluorescent tubes.
Due to its electrical characteristics and low starting voltage this new 140 watt lamp is ideally matched to control gear previously used for the old 140 watt and 100 watt "U" shaped lamps, and will give completely reliable operation under normal and adverse conditions.
An important requirement for any street lighting source is its reliability and performance through life. The cathodes used in this lamp have been tried and proved over many years in the Mazda 140 watt "U" shaped lamp. This new lamp is therefore guaranteed for 4,000 hours life with a rated life of 6,000 hours.
A further examination of the discharge tube shape will reveal the sodium retention sinks along each section, there are eighty in all. Each one is a few degrees lower in temperature than any other part of the discharge tube wall. Small quantities of sodium will condense in these to produce a uniform distribution of light and a 100% maintenance of light output throughout the rated life of the lamp. The 20,000 lumens produced by this 140 watt lamp are emitted uniformly from an arc length of 78 cm. and an arc width of only 2·9 cm. (This small source size and uniform distribution are advantageous to the realisation of lantern distributions necessary to achieve the standards of modern lighting practice).
Finally but not the least important the lamp is simple in construction, it has no glass heat screens and is rugged and light, being less than one pound in weight. It is therefore easy to transport and handle during installation and re-lamping.
The 200w. lamp is of the same construction and overall dimensions. It has a higher loading and gives a light output of 25,000 lumens with 100% maintenance throughout life.

General Description.

A low pressure sodium lamp incorporating the following essential factors:

1. A discharge tube of unique cross section containing metallic sodium in an inert gas.
2. An electrode sealed into each end terminating in bi-pin caps.
3. An outer envelope containing the discharge tube, with the intervening space evacuated to maintain thermal insulation to maintain the sodium in a fully vaporised condition.
4. A heat reflecting coating on the inside surface of the outer envelope to provide further thermal insulation.

Supply voltage 200/250v.—Life 4,000 hours guaranteed —6,000 hours average—Caps B.C.

Description

Low pressure sodium lamps consisting of a U-shaped arc tube containing metallic sodium and an inert gas. The discharge tube is enclosed in a tubular bulb whose inside surface has a reflector coating to provide thermal insulation. This construction provides a lamp of considerably higher efficiency than the separate discharge tube and vacuum jacket.

The 135w. and 90w. lamps operate from 5° above the horizontal cap down to 20° above the horizontal cap up and the 55w. and 35w. lamps from 5° above the horizontal cap down to vertical cap up. All lamps require control gear consisting of a high reactance transformer and a power factor correction capacitor—*see page 315.*

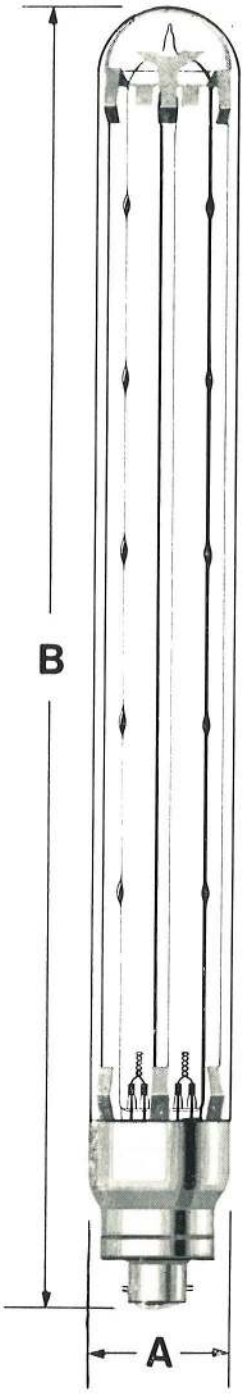
Application

The SOX lamp is a high efficiency integral lamp and replaces the SOI/H and SO/H lamps as below :—

Sodium lamp equivalents

1. The 90w. SOX lamp replaces the 140w. SOI/H integral lamp and the 140w. SO/H lamp and jacket. All three lamps have the same dimensions and can be operated from the same control gear.
2. The 55w. SOX lamp replaces the 85w. SOI/H integral lamp and 85w. SO/H lamp and jacket. All three lamps have the same dimensions and can be operated from the same control gear.
3. The 35w. SOX lamp replaces the 60w. SOI/H integral lamp and the 60w. SO/H lamp and jacket. All three lamps have the same dimensions and can be operated from the same control gear.

Watts	Price £	s.	d.	Std. Pack	Lighting Design Lumens	Lamp Volts	Lamp Current Amps
35	3	12	0	9	4,300	70	0·6
55	4	5	0	9	7,150	104	0·6
90	4	17	0	9	12,250	112	0·95
135	6	0	0	9	20,500	164	0·95



	A max (mm)	B max (mm)
35w.	52	310
55w.	52	425
90w.	67	528
135w.	67	775

Discharge lamps

Sodium lamps Types SO/H and SOI/H

Supply voltage 200/250v.—Life 4,000 hours guaranteed—6,000 hours average—Caps B.C.

Description

In the SO/H type the lamp is in two parts, an inner and a removable outer. The inner consists of a U-shaped arc tube containing metallic sodium and an inert gas. The outer is a double walled vacuum jacket to provide heat insulation for the lamp.
The SOI/H lamp is of similar construction, except that the inner and outer parts are permanently sealed together resulting in a higher light output.
The 140w. and 85w. lamps operate from 5° above the horizontal cap down to 20° above the horizontal cap up and the 60w. and 45w. from 5° above the horizontal cap down to vertical cap up. All lamps require control gear consisting of a high reactance transformer and a power factor correction capacitor.

Application

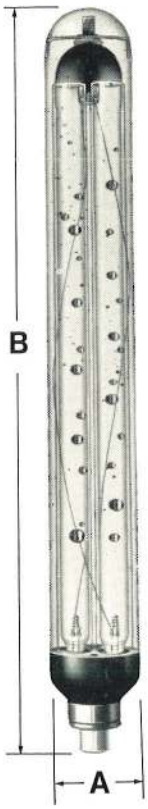
Both types of lamps are for replacement purposes in existing installations. In the SO/H lamp the outer jacket can be re-used several times, but whether this is a cheaper and better method than using the SOI/H lamp depends upon the training and organisation of the maintenance staff making the replacements. The SO/H and the SOI/H lamps have now been superseded by the SOX type sodium lamp. Details of interchangeability and equivalents are given on page 313.

SO/H Sodium lamps

Watts	Price Lamp £	s.	d.	Jacket £	s.	d.	Std. Pack Lamp	Jacket	Lighting Design Lumens	Lamp Volts	Lamp Current Amps.
45	2	7	6	1	5	6	18	12	2,600	65/90	0·6
60	2	12	0	1	9	6	18	12	4,200	95/125	0·6
85	3	10	0	1	15	0	18	12	7,000	150/180	0·6
140	3	15	0	2	1	6	18	12	12,200	155/190	0·9

SOI/H Sodium lamps

Watts	Price £	s.	d.	Std. Pack	Lighting Design Lumens	Lamp Volts	Lamp Current Amps.
45	3	5	0	9	3,100	65/90	0·6
60	3	12	6	9	4,700	95/125	0·6
85	4	4	0	9	7,000	150/180	0·6
140	4	14	6	9	12,200	155/190	0·9



Max. dimensions for SO/H and SOI/H

	A mm	B mm
45w.	52	257
60w.	52	310
85w.	52	425
140w.	67	528

Effect of mains voltage variation
Diagram 1 shows the effect of the variation of mains voltage on lumens, lumens per watt, total watts and mains current.

Circuit diagrams
The circuits for all rating of sodium lamps are given in diagrams 2, 3 and 4.

Spectral distribution
The discharge has a characteristic yellow, all the visible energy being concentrated at 5890/5896 Angstroms.

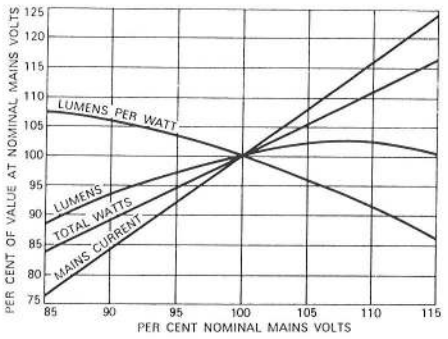
Run-up time
This varies between 10 and 20 minutes according to type, but there is no delay in starting if the lamp is switched on while hot.

Control gear
The control gear for a sodium lamp comprises a high reactance transformer and a power factor correction capacitor. Gear for 240v. 50HZ is summarised in the table.

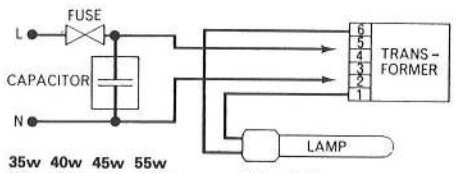
Details of 240v. gear and gear suitable for other voltages are given in the British Lighting Industries Fittings Catalogue.

Lamp Rating	Lamp Type	Transformer Catalogue No.	Transformer Nett User Price £ s. d.	Capacitor Catalogue No.	Capacitor Nett User Price £ s. d.
35w.	SOX			AMEC2281	1 0 9
45w.	SO/H				
45w.	SOI/H				
55w.	SOX	AME53182.4	2 19 6	AMEC2216	1 0 9
60w.	SO/H				
60w.	SOI/H				
85w.	SO/H			AMEC2214	17 0
85w.	SOI/H				
90w.	SOX				
140w.	SO/H	AME53178H	4 1 3	AMEC2236	1 7 9
140w.	SOI/H				
140w.	SLI/H				
135w.	SOX	AME53166T	6 3 6	AMEC2280	1 8 9
200w.	SLI/H	AME53172H	6 12 3	AMEC2235	1 9 6

Effect of variation of mains voltage on sodium lamp characteristics. 1

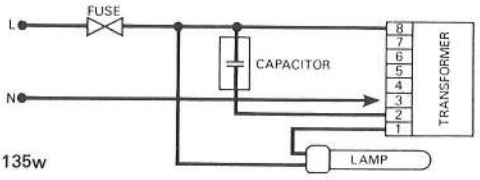


Circuit Diagrams 2



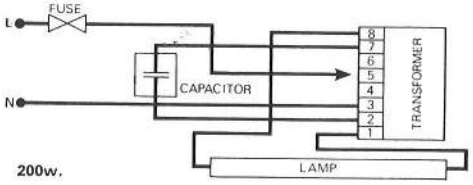
35w 40w 45w 55w
60w 85w 90w 100w — 140w all types

3



135w

4



200w.

SfB (63)
UDC 621·32

Standard lamps

Standard lamps
Introduction

Three major lighting companies have amalgamated to form British Lighting Industries which now manufacture Atlas and Mazda brands of tungsten filament lamps.
Mazda has always had a complete range of all types of lamps and will continue so to do, but Atlas brand are also available for general service and similar lamps.

BRITISH LIGHTING INDUSTRIES LTD.
A member of the Thorn Group THORN

Numerical Index—Section four

Alphabetical Index—Section four

Standard lamps
Lamp caps

Lamp cap code

B.C. Bayonet
S.B.C. Small Bayonet
S.C.C. Small Centre Contact
E.S. Edison Screw
S.E.S. Small Edison Screw
M.E.S. Miniature Edison Screw
G.E.S. Goliath Edison Screw

The dimension code indicates, first by letter, the type of cap. The first two figures indicate the nominal outer diameter of the cap barrel or screw thread in millimetres. The next two figures indicate the overall length and the last two, the diameter of the flange.

Extras

Special capping. Where standard types of lamps are suitable for recapping, the following extras to the recommended retail prices will apply, when any of the caps below, are fitted in place of the standard caps listed:

B.C., 3 Pin B.C., S.B.C., E.S., S.E.S.: 1s. each, G.E.S.: 2s. each

Colour spraying, frosting or bowl frosting. On any lamp suitable for colour spraying, frosting or bowl-frosting, for which prices are not shown in the catalogue, the following extras to recommended retail prices will apply, for carton quantities only.

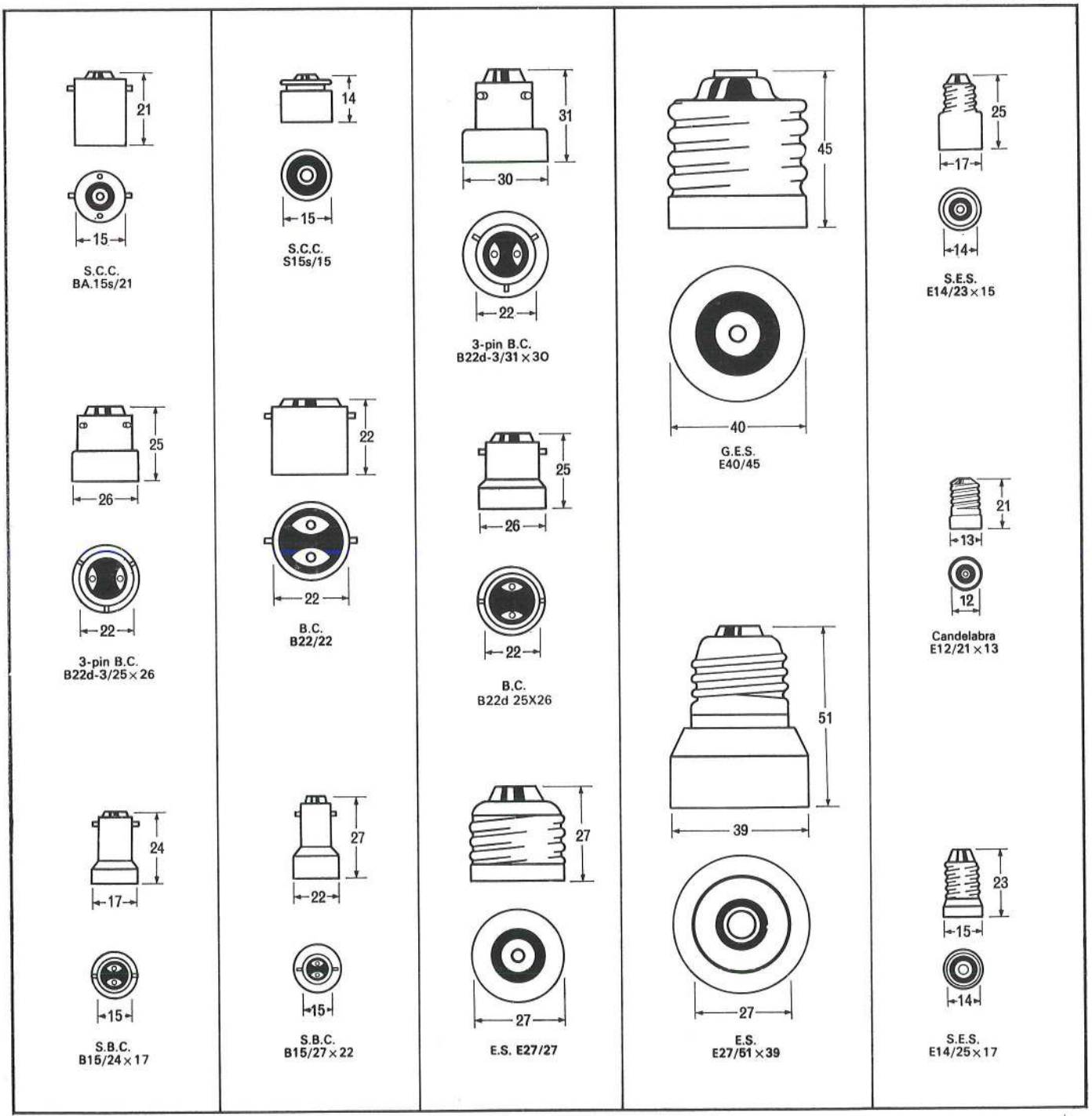
Up to and including 100w.: 1s., 150w. and 200w.: 1s. 6d., 300w. and 500w.: 3s., 750w. and 1000w.: 5s.

Special marking. Where general service or similar lamps are required to be etched with the user's name, initials or symbol, the following extras to recommended retail prices will be made.

Up to 2,000 identical lamps
for delivery in one consignment: 3d. each

Over 2,000 identical lamps
for delivery in one consignment: no extra charge

All dimensions in mm



Plus lamps—High efficiency coiled coil.

Watts	Price s. d.	Pur. Tax d.	Std. Pack	Cap	Finish
40	1–6½	4½	25	B.C.,E.S.	Pearl
60	1–6½	4½	25	B.C.,E.S.	Pearl
100	1–6½	4½	25	B.C.,E.S.	Pearl
150	2–0	5½	25	B.C.	Pearl
300	7–3	—	24	E.S.	Clear

Voltages: 200/210, 220/230, 240, 250
300w.–240 and 250 only

Single coil—High and low voltage.

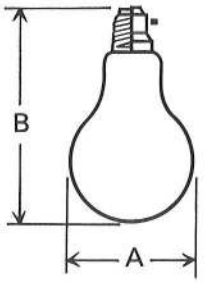
Watts	Price s. d.	Pur. Tax d.	Std. Pack	Cap	Finish
25	1–6½	4½	25	B.C.,E.S.	Pearl
40	1–6½	4½	25	B.C.,E.S.	Pearl
60	1–6½	4½	25	B.C.,E.S.	Pearl
75	1–11	5½	25	B.C.,E.S.	Pearl
100	1–6½	4½	25	B.C.,E.S.	Pearl
150	2–0	5½	25	B.C.,E.S.	Pearl or Clear
200	2–9	7½	25	E.S.,B.C.	Pearl or Clear
300	7–3	—	24 & 12	G.E.S.	Clear
500	10–0	—	24 & 12	G.E.S.	Clear
750	17–0	—	12	G.E.S.	Clear
1000	17–0	—	12	G.E.S.	Clear
1500	24–0	—	6	G.E.S.	Clear

Voltages: 110, 120, 200/210, 220/230, 240, 250
75w. and 1500w.–200/210, 220/230, 240, 250 only

Single coil—Extra low voltage.

Watts	Price s. d.	Pur. Tax s. d.	Std. Pack	Cap	Finish
25	3–6	9½	25	B.C.,E.S.	Pearl
40	3–6	9½	25	B.C.,E.S.	Pearl
60	3–6	9½	25	B.C.,E.S.	Pearl
100	4–6	1 0	25	B.C.,E.S.	Pearl
150	7–0	1 7	25	B.C.,E.S.	Pearl or Clear
200	10–0	2 4	25	E.S.,B.C.	Pearl or Clear
300	13–0	—	12	G.E.S.	Clear
500	17–3	—	12	G.E.S.	Clear

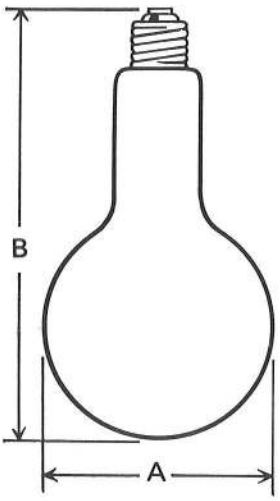
Voltages: 25/100w.–25, 50
150/500w.–50 only



GENERAL LIGHTING SERVICE

	A	B
25—100W BC	60	105
150—200W BC	80	160

For ES caps add 1.5mm. to length



GENERAL LIGHTING SERVICE

	A	B
300W ES	88	173
300W & 500W GES	110	233
750W & 1000W GES	150	300
1500W GES	170	335

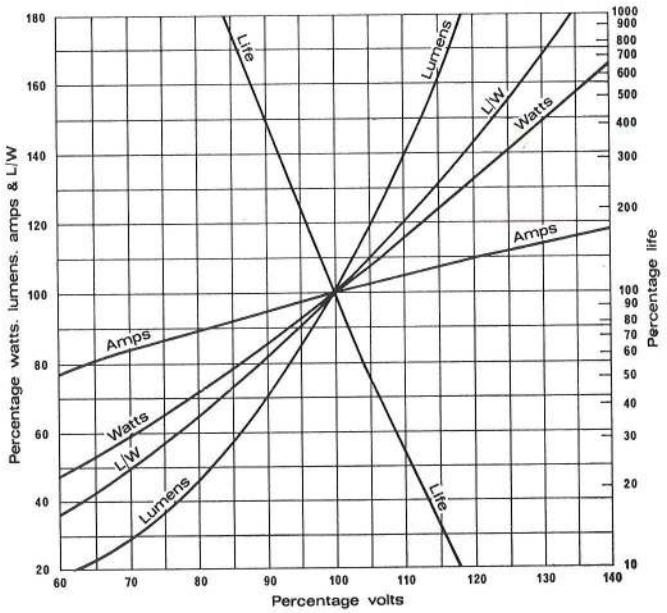
COILED COIL

	A	B
40—100W	60	105
150W	68	125
300W	88	173

All dimensions in mm.

Standard lamps
Tungsten filament lamp information

Voltage variation characteristics
The set of curves are for a typical lamp.



Variation in watts, lumens, amps, l/w and life of lamps with variation in voltage.

Light output
Lighting design lumens are given in the table. These are average through life values for the practical guidance of lighting engineers.

Watts	Plus Lamps 240v.	Netabulb 240v.	G.L.S. Lamps 240v.	G.L.S. Lamps 110v.
25	—	—	200	205
40	390	360	325	400
60	665	610	575	695
75	—	—	780	—
100	1260	1160	1160	1280
150	2075	1770	1960	2090
200	—	—	2720	2900
300	4300	—	4300	4700
500	—	—	7700	8500
750	—	—	12400	13800
1000	—	—	17300	19000
1500	—	—	27500	—

British Standards
Lamps described in this catalogue comply with the following British Standards, where applicable.

BS161 Tungsten Filament General Service Electric Lamps.
BS555 Tungsten Filament Miscellaneous Electric Lamps.
BS98 Dimensions of Screw Lamp Caps and Lampholders.
BS52 Bayonet Lamp Caps, Lampholders and B.C. Adaptors.

Cap temperature rise
Lamps described in this catalogue conform to the maximum average lamp cap temperature rise above ambient specified in BS161 as follows: –

Watts	Cap Max.	Temp. Rise
25/60	B.C.	125°C
100/150	B.C.	135°C
200	E.S.	130°C
300/1500	G.E.S.	130°C

Operating position
In accordance with the British Standards lamps are tested in the vertical position, cap up and the average life of 1,000 hours applies to operation in this position.
Lamps may be operated in any position but a greater variability of life is likely to be experienced in positions other than vertical cap up.

Netabulb—Coiled coil in mushroom shaped bulbs.

Watts	Price s. d.	Pur. Tax d.	Std. Pack	Cap	Finish
40	1–11	5½	25	B.C.	Silverlight
60	1–11	5½	25	B.C.	Silverlight
100	2–1½	5½	25	B.C.	Silverlight
150	2–5	6½	25	B.C.	Silverlight
150	2–0	5½	25	B.C.	Pearl

Voltages: 200/210, 220/230, 240, 250

Pink Pearl Netabulb—Coiled coil in mushroom shaped pearl bulbs.

Watts	Price s. d.	Pur. Tax d.	Std. Pack	Cap	Finish
60	2–5	6½	25	B.C.	An internal light pink diffuse coating with a Pearl window on the crown.
100	2–5	6½	25	B.C.	

Voltage: 240/250

Pink Pearl—Single coil pearl bulbs with an external light pink ceramic coating.

Watts	Price s. d.	Pur. Tax d.	Std. Pack	Cap	Finish
40	2–4	6½	25	B.C.	Pink
60	2–4	6½	25	B.C.	Pink
100	2–4	6½	25	B.C.	Pink
150	2–11	8	25	B.C.	Pink

Voltages: 240, 250

Clear—Single coil or coiled coil for decorative fitting.

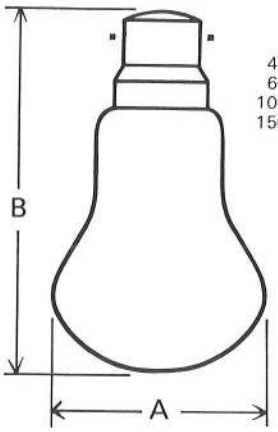
Watts	Price s. d.	Pur. Tax d.	Std. Pack	Cap	Finish
40	1–6½	4½	25	B.C.	Clear
60	1–6½	4½	25	B.C.	Clear
100	1–6½	4½	25	B.C.	Clear
150	2–0	5½	25	B.C.	Clear

Voltages: 200/210, 220/230, 240, 250

Economy Nightlight—Long life, low consumption. For children's and invalids' bedrooms and similar.

Watts	Price s. d.	Pur. Tax d.	Std. Pack	Cap	Finish
5-8	2–0	5½	12	B.C.	Pearl

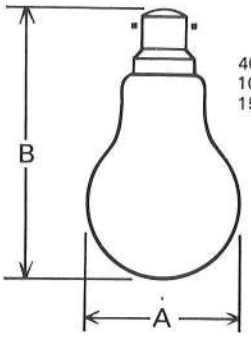
Voltage: 200/250



NETABULB

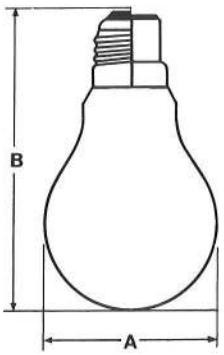
	A	B
40W	55	93
60W	55	93
100W	65	109
150W	75	120

The above dimensions are also applicable to Pink Pearl Netabulbs.



PINK PEARL

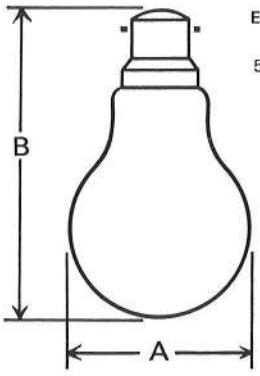
	A	B
40 & 60W	60	105
100W	68	125
150W	80	160



CLEAR

	A	B
40–100W	60	105
150W	80	160

For ES caps add 1.5mm. to length



ECONOMY NIGHTLIGHT

	A	B
5-8w	60	105

All dimensions in mm.

Standard lamps
Decorative and coloured lamps

Candle—Olive plain.

Watts	Price s. d.	Pur. Tax d.	Std Pack	Finish
25	3 0	8	12	Clear or Silverlight
25	3 9	10	12	Frosted, Coloured or Pearl
40	3 0	8	12	Clear or Silverlight
40	3 9	10	12	Frosted, Coloured or Pearl
60	3 9	10	12	Clear or Silverlight
60	4 3	11½	12	Frosted, Coloured or Pearl

Voltages: 200/220, 230/250
Caps: 25w. and 40w. B.C., S.B.C., S.E.S.—60w. B.C. and S.B.C.

Candle—Olive twisted.

25	3 9	10	12	Clear
25	4 3	11½	12	Frosted, Coloured or Pearl
40	3 9	10	12	Clear
40	4 3	11½	12	Frosted, Coloured or Pearl
60	3 9	10	12	Clear
60	4 3	11½	12	Frosted, Coloured or Pearl

Voltages: 200/220, 230/250
Caps: 25w. and 40w. B.C., S.B.C., S.E.S.—60w. B.C. and S.B.C.

Candle—Pink Pearl.

40	3 9	10	12	Pearl bulbs with an internal light pink diffuse coating
60	4 3	11½	12	

Voltage: 230/250
Caps: B.C., S.B.C.

Round bulb

25	2 6	7	12	Silverlight
40	2 6	7	12	Silverlight

Voltage: 230/250
Caps: B.C., S.B.C., S.E.S.

Round bulb festive

15	2 9	7½	100	Amber, blue, green, red, white, yellow
25	2 9	7½	100	

Voltage: 200/250
Caps: B.C., E.S.

Internally coloured G.L.S.

15	2 1½	5½	25	Amber, blue, green, pink, red, white, yellow
25	2 1½	5½	25	
40	2 5	6½	25	
60*	2 5	6½	25	

Voltage: 200/250
Caps: 15/25 B.C., E.S.—40/60 B.C.

*Not suitable for use outdoors unless enclosed for protection against rain.

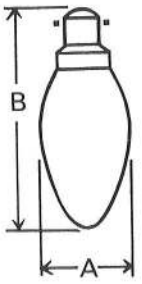
Gala internally coloured

25	2 1½	5½	25	Pink, yellow, amber
40	2 5	6½	25	Red, green, blue
25/40	27 3	6 2	12	Assorted colours in a box

Voltage: 200/250

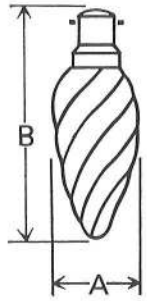
Gala lighting set

A string of 12 waterproof lampholders for gala lamps.
Cat. No. AME1089 Lamp Ref. No. 30-9995. Price £4 9s. 0d. No Purchase Tax



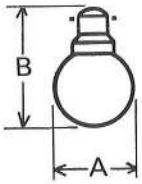
PLAIN CANDLE

	A	B
25W—40W BC	35	92
SBC	35	96
60W BC	45	123
SBC	45	128



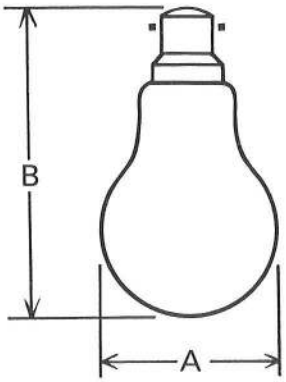
TWISTED CANDLE

	A	B
25W BC	35	95
SBC	35	99
40W—60W BC	46	123
SBC	46	128



45mm ROUND BULB

	A	B
BC	45	65
SBC	45	70
SES	45	74



INTERNALLY COLOURED & GALA

	A	B
15w 25w 40w & 60w	60	105

All dimensions in mm.

BRITISH LIGHTING INDUSTRIES LTD.
A member of the Thorn Group THORN

Architectural curved—$\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$ circle.

Watts	Length	Price s. d.	Pur. Tax s. d.	Std. Pack	Finish
60	—	**35 0**	8 0	1	Opal

Voltage: 240/250 Tube diameter
Caps: Peg 30 mm.

Architectural straight

Watts	Length	Price s. d.	Pur. Tax s. d.	Std. Pack	Finish
35	12″	**14 0**	3 2	25	Opal
53	18″	**20 0**	4 8	1	Opal
60	20″	**22 0**	5 0	1	Opal
75	24″	**26 0**	6 0	1	Opal
110	36″	**35 0**	8 0	1	Opal
150	48″	**40 0**	9 4	1	Opal

Voltage: 200/250 Tube diameter
Caps: Peg 30 mm.

Double cap—Striplites.

Watts	Length	Price s. d.	Pur. Tax s. d.	Std. Pack	Finish
30 or 60	221mm	**6 3**	1 5	25	Clear
30 or 60	284mm	**6 3**	1 5	25	Clear
30 or 60	221mm	**6 9**	1 7	25	Opalised
30 or 60	284mm	**6 9**	1 7	25	Opalised
30 or 60	221mm	**7 3**	1 8	25	Frosted, Pink, Amber
30 or 60	284mm	**7 3**	1 8	25	

Voltages: 200/230, 240/250
Caps: Centre contact

Single cap

Watts	Length	Price s. d.	Pur. Tax s. d.	Std. Pack	Finish
25 or 40	82mm	**4 3**	11½	50	Clear
25 or 40	82mm	**5 3**	1 3	50	Frosted
60	302mm	**11 0**	2 6	50	Opal (Long-Lite)

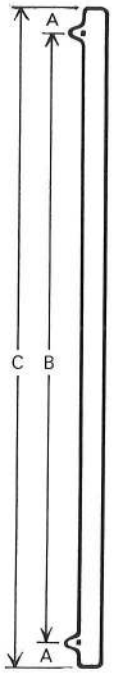
Voltages: 25/40w.–110, 200/230, 240/250
Caps: B.C., S.B.C., E.S., S.E.S.

Voltages: 60w.–200/230, 240/250
Cap: B.C.

Maxtrip

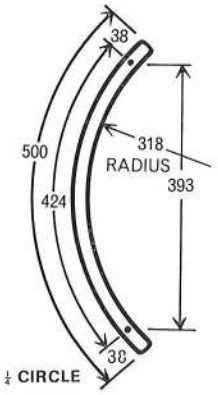
Watts	Length	Price s. d.	Pur. Tax s. d.	Std. Pack	Finish
40 or 60	252mm	**6 3**	1 5	1	Clear
40 or 60	252mm	**6 9**	1 7	1	Opalised

Voltages: 200/230, 240/250
Cap: Peg

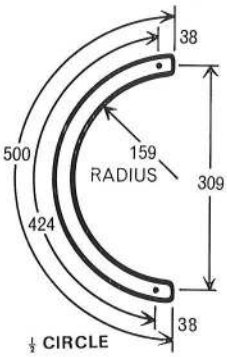


ARCHITECTURAL

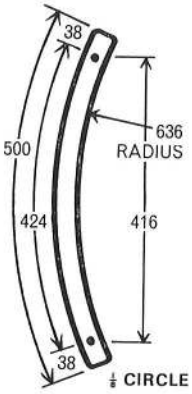
	A	B	C
12 inch 35W	38	229	305
18 inch 53W	38	382	457
20 inch 60W	38	424	500
24 inch 75W	38	534	610
36 inch 110W	38	839	915
48 inch 150W	38	1144	1220



¼ CIRCLE



½ CIRCLE



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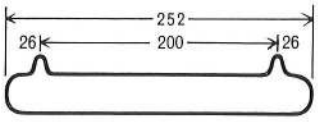

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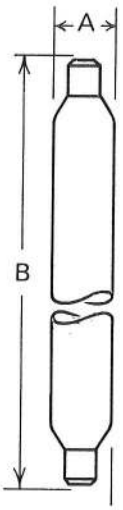
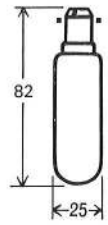
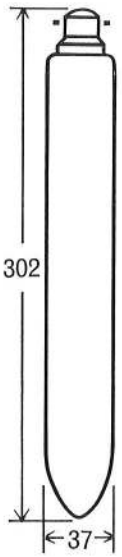


DOUBLE CAP TUBULAR

	A	B
40W	25	221
60W	25	284



25W TUBULARS



LONG-LITE

All dimensions in mm.

Standard lamps
Decoration sets and spare lamps

Decoration sets for 200/250v. operation

Fairy-Lites

The ever-popular family favourite. Twelve gaily coloured Mazda lamps and a spare, with flex, holders and B.C. connector.

Recommended price
19s. + 4s.4d. P.T.

Festive-Lites

A brand new set with the sparkle of cut crystal.
Twelve new coloured crystal coated lamps and a spare with flex, holders and B.C. connector.

Recommended price
21s. + 4s.10d. P.T.

Satin-Lite

The soft, silky sheen of satin.
Twelve coloured Mazda lamps plus a spare with flex, holders and B.C. connector.

Recommended price
19s.11d. + 4s.6d. P.T

Fireflies

Brilliant points of colour, tiny specks of dazzle for that continental fiesta atmosphere.
New capless Fortylites and Twentylites sets with spare, flex and B.C. connector.

Recommended price
Twentylites capless 22s. + 5s. P.T.
Fortylites capless 39s. + 8s.11d. P.T.

Firefly

Similar to Fireflies, but with L.E.S. capped lamps.
Fortylites and Twentylites sets with flex and B.C. connector.

Recommended price
Twentylites L.E.S. cap 22s. + 5s. P.T.
Fortylites L.E.S. cap 39s. + 8s.11d. P.T.

Jack Frost

An icy, brilliant sparkle with twelve frost coated coloured lamps and a spare plus flex and B.C. connector.

Recommended price
21s. + 4s.10d. P.T.

Spare lamps

Fairy-Lites

Three 20 volt 3 watt Mazda lamps of different colours for use in twelve lamp sets.

Recommended price
3s. (3 lamps) + 8d. P.T.

Festive-Lites

Three 20 volt 3 watt Mazda lamps in a bubble pack in various colours with a crystal finish.
Suitable for replacement in Fairy-Lites sets.

Recommended price
3s.6d. (3 lamps) + 9½d. P.T.

Satin-Lite

Three 20 volt 3 watt Mazda lamps in various attractive satin finished colours.

Recommended price
3s. (3 lamps) + 8d. P.T.

Fireflies

Bubble packs containing five different coloured new Mazda capless lamps.
6 volt lamps for Fortylites sets and 12 volt lamps for Twentylites sets.

Recommended price
3s.6d. (5 lamps) + 9½d. P.T.

Firefly (L.E.S. Capped)

Bubble packs containing five different coloured Mazda lamps.
6 volt lamps for Fortylites sets and 12 volt lamps for Twentylites sets.

Recommended price
3s.6d. (5 lamps) + 9½d. P.T.

Jack Frost

Three 20 volt 3 watt Mazda lamps with frosted finish in different gay colours.

Recommended price
3s.3d. (3 lamps) + 9d. P.T.

Pom Pom

Individually packed 12 volt 7 watt S.E.S. spares in gay cartons.

Recommended price
2s.6d. (one lamp) + 7d. P.T

BRITISH LIGHTING INDUSTRIES LTD.
A member of the Thorn Group THORN

Interior display spotlights and floodlight

For display areas and interior floodlighting.

Type	Watts	Price s. d.	Pur. Tax s. d.	Std. Pack
Spotlight	**100**	**8 6**	1 11	12
Spotlight	**150**	**12 9**	2 11	12
Floodlight	**150**	**12 9**	2 11	12
Spotlight	**250**	**23 6**	5 4	12
For Chelsea glass*	**60**	**2 9**	7½	12
For Albany Ftgs.*	**75**	**8 6**	1 11	12

Voltages: 110, 200/230, 240, 250
*60w. and 75w. not 110v and B.C. only—75w. 95 x 135mm.
Caps: E.S., B.C., except 250w. which is E.S. only

150w. PAR 38 sealed beam

For outdoor and indoor application.

Type	Price s. d.	Pur. Tax s. d.	Std. Pack
Clear Spotlight	**17 6**	4 0	10
Clear Floodlight	**17 6**	4 0	10
Clear Floodlight—24v.	**24 6**	5 8	10
Color-Ray Spot-Red	**33 0**	7 6	10
Color-Ray Spot-Yellow	**33 0**	7 6	10
Color-Ray Spot-Blue	**33 0**	7 6	10
Color-Ray Spot-Green	**33 0**	7 6	10
Cool-Ray Spotlight	**37 6**	8 6	10

Voltages: Color-Ray and Cool-Ray 240 only
Others 110/120, 200/230, 240, 250 (except 24v. flood)
Cap: E.S.

High bay reflector

Watts	Price s. d.	Pur. Tax s. d.	Std. Pack	Cap
500	**60 0**	—	6	G.E.S.

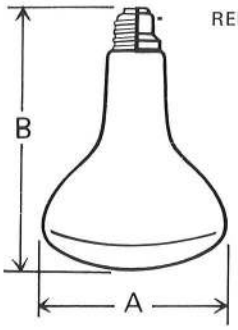
Voltages: 240, 250

Mains voltage display lamp

For use in Atlas fittings VM100 and DM100.

Type	Watts	Price s. d.	Pur. Tax s. d.	Cap	Std. Pack
Crown silvered	**100**	**6 6**	1 6	3 pin B.C.	25

Voltage: 240/250

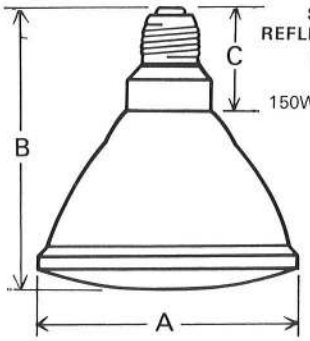


REFLECTOR FLOODLIGHT AND SPOTLIGHT

	A	B
100W	95	135
150W	126	178
250W	126	178

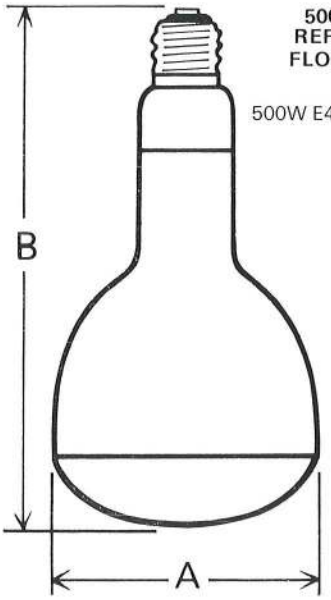
CHELSEA FITTINGS

60W	55	93



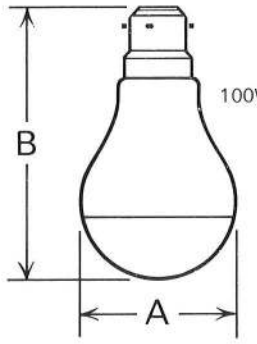
SEALED BEAM REFLECTOR FLOODLIGHT & SPOTLIGHT

	A	B	C
150W	121·5	135	51



500 WATT REFLECTOR FLOODLIGHT

	A	B
500W E40/45	165	312



DISPLAY LAMP

	A	B
100W 3-Pin BC	60	105

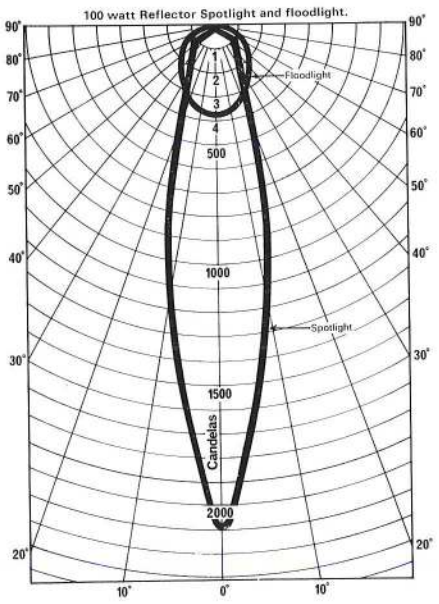
All dimensions in mm.

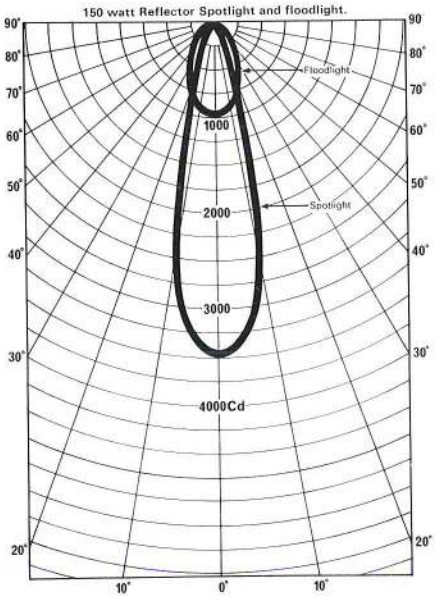
Standard lamps
Reflector lamp information

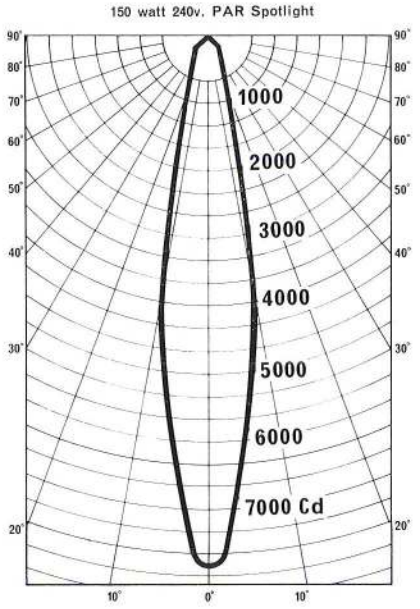
150w. PAR 38 sealed beam spotlight and floodlights

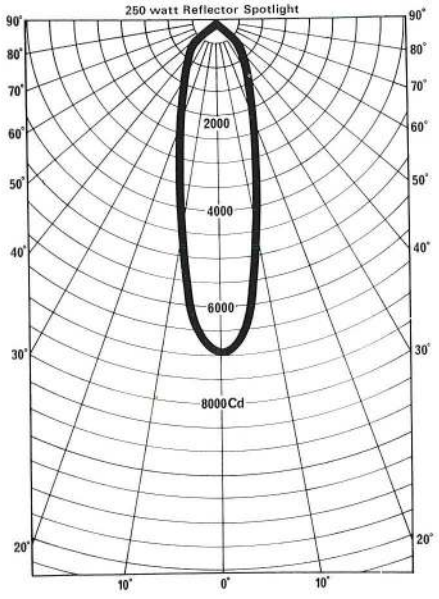
These lamps, with the exception of the Cool-Ray lamp, are for indoor and outdoor applications.
The Color-Ray spotlights have internal thin film dichroic lenses which have a high transmission factor and maintain constant colour through life.
The Cool-Ray lamp has a dichroic reflector, allowing much of the heat to pass through the back of the lamp without loss of light. This lamp is for use in special fittings only, indoors. Its primary use is for the illumination of food displays, including meat and fish.

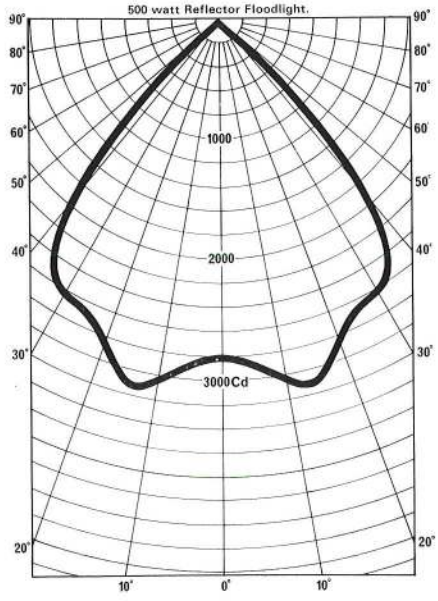
Polar Curves

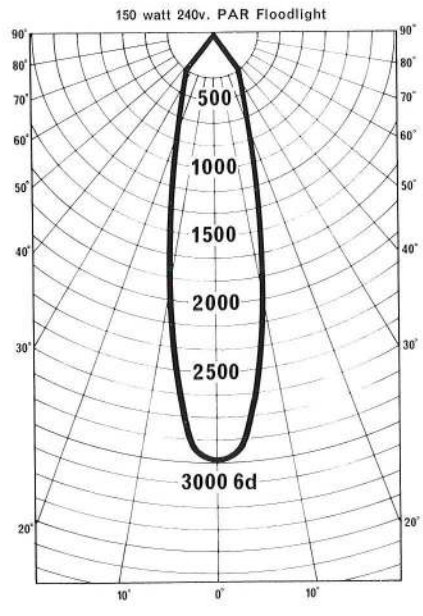








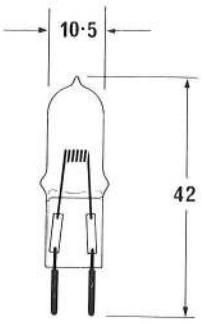




1. The compact tungsten halogen lamp THD/50/12 has been developed for use in the low voltage display lighting fitting. This lamp has all the advantages of tungsten halogen lamps with a long life of 2,000 hours, high efficiency and nearly 100% lumen maintenance. The fitting (Cat. No. ES.1050) has an integral transformer and, therefore, offers a compact combination for shop window display accent lighting.
2. The 38mm lamp is spherical in shape and is used in the DB.1050 and DS.1050 fittings. It is internally crown silvered and gives a non-spill narrow beam of light.
3. The mushroom-shaped 64mm sealed beam lamp with Bosch cap is used as a lamp replacement in the DA.1050, DC.1050 and DAM.1050 fittings. It is internally silvered with a diffusing front face and gives a soft edge beam of high intensity.
4. The 12v. 50w. lamp has a clear front, and an internal reflector aluminised to the parabolic bulb. This gives a narrow beam of light and is used in the DAS.1050 and DCS.1050 fittings. The lamp has an E.S. cap.
5. The 12v. 24w. sealed beam lamp is used as a replacement in the DC.0024 fitting and gives a high intensity soft edged beam.
6. The 24v. 150w. lamp is used in the DEW.1150 (weatherproof) long range narrow beam projector.

The 12v. lamps have a nominal life of 1,000 hours (except THD/50/12 which has a rated life of 2,000 hours), whilst the 24v. 150w. lamp has been designed to give a life of 500 hours.

All dimensions in mm



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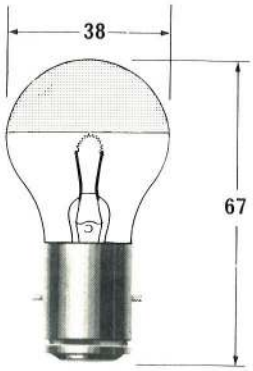

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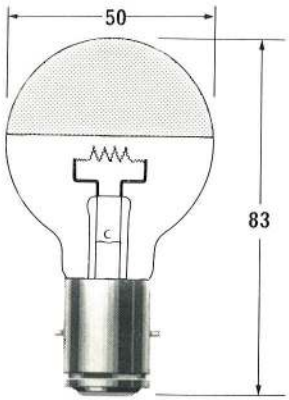
3

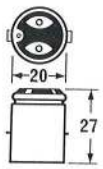
4

5

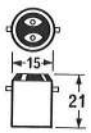


6

E27/30
(E.S.)



B20d/27
(D.C.Bosch)



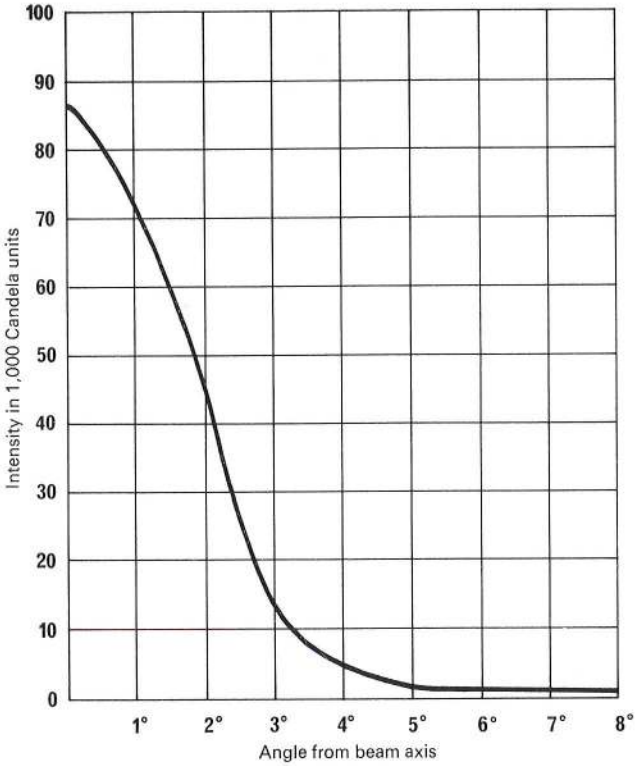
B15d/21
(S.B.C.)

Illus.	Volts	Watts	Lamp Ref. No.	Price s d.	Pur. Tax s. d.	Std. Pack	Type	Cap
1	12	**50**	11–8015	**21 6**	5 0	1	Tungsten Halogen	Bi-pin
2	12	**50**	11–7015	**6 0**	1 5	25	Crown Silvered Clear Back	Bosch
3	12	**50**	11–8012	**9 0**	2 1	25	Internal Reflector Diffusing Front	Bosch
4	12	**50**	11–7014	**11 9**	2 8	25	Internal Reflector Clear Front	E.S.
5	12	**24**	11–7005	**8 3**	1 11	25	Internal Reflector Diffusing Front	S.B.C.
6	24	**150**	11–7040	**10 6**	2 5	12	Crown Silvered Clear Back	Bosch

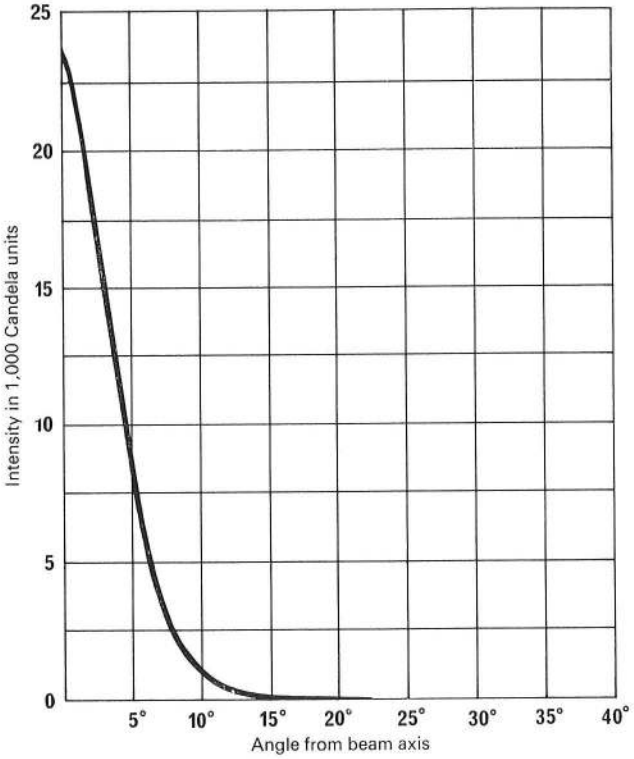
A transformer is normally required for the operation of these lamps.

Standard lamps
Low voltage display lamp information

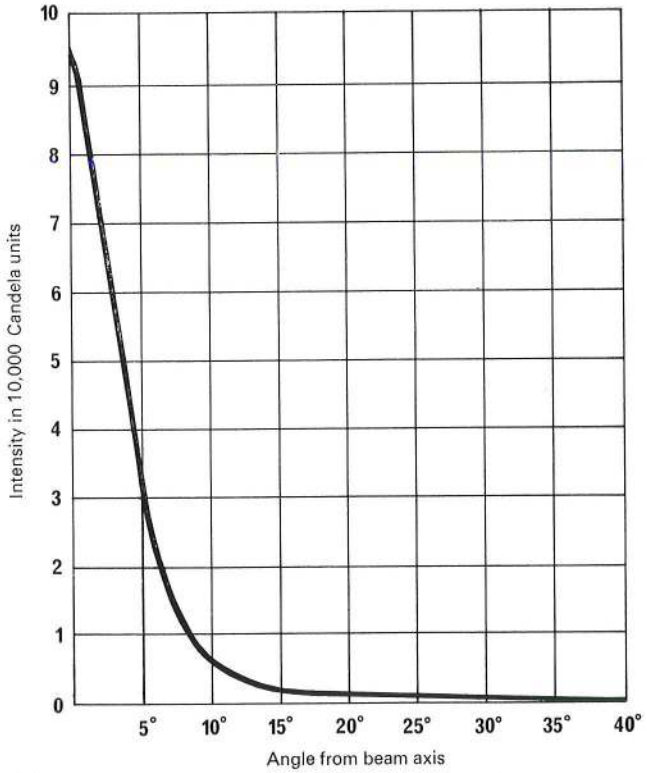
The figures in brackets refer to the illustrations overleaf on page 413.
Performance data for lamps nos. (3) and (5) is not given as these lamps are for replacement only.



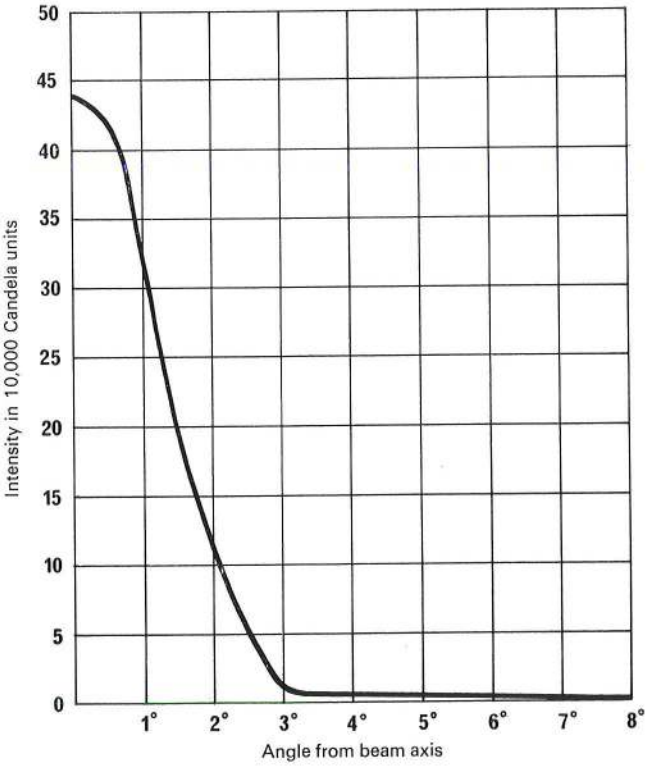
(1) Light intensity distribution 12v. 50w. (THD/50/12) tungsten halogen display lamp when used in Atlas ES.1050 fitting.



(2) Light intensity distribution curve for 12v. 50w. crown silvered round lamp when used with Atlas DB.1050 fitting.



(4) Light intensity distribution curve of 12v. 50w. lamp with parabolic bulb.



(6) Light intensity distribution curve for 24v. 150w. lamp when used with Atlas DEW.1150 fitting.

Infra-red reflector

Watts	Price s. d.	Pur. Tax s. d.	Std. Pack	Cap	Finish
150	**13 0**	3 0	12	E.S.	Clear Front
275	**21 0**	—	12	E.S.,B.C.	Clear Front
275	**21 0**	—	12	E.S.,B.C.	Satin Front
275	**25 0**	—	12	E.S.,B.C.	Red Front

Voltages: 100/130, 200/250

Infra-red round bulb

Watts	Price s. d.	Pur. Tax s. d.	Std. Pack	Cap	Finish
250	**10 6**	2 5	25	E.S.	Pearl

Voltages: 100/130, 200/250

Infra-red tubular quartz

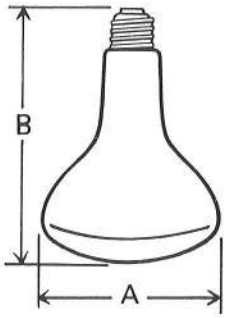
Watts	Price £ s. d.	Pur. Tax s. d.	Std. Pack	Cap	Finish
1,000	**4 4 0**	—	1	Special	Clear

Voltages: 230, 240

Carbon

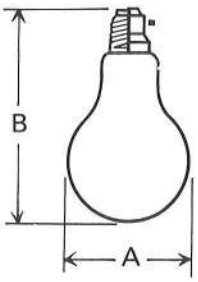
Watts	Price s. d.	Pur. Tax s. d.	Std. Pack	Cap	Finish
65	**6 6**	1 6	25	B.C.	Clear
130	**7 0**	1 7	25	B.C.	Clear

Voltages: 220/230, 240/250



INFRA-RED REFLECTOR

	A	B
150W	126	178
275W	126	178

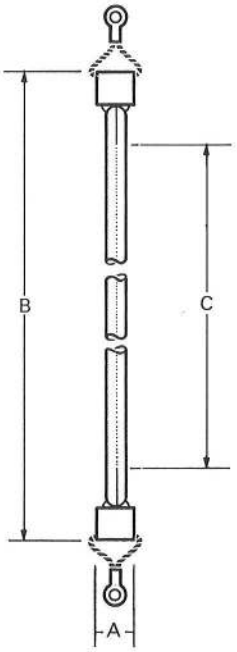


CARBON HEATERS

	A	B
65WBC	60	110
130WBC	65	117

INFRA-RED ROUND BULB

250w ES	88	180



TUNGSTEN HALOGEN INFRA-RED TUBULAR

	A	B	C
1000 W	10	350	290

All dimensions in mm.

Standard lamps
Heating lamp information

Infra-red reflector lamps

Reflector–Parabolic portion of bulb aluminised.

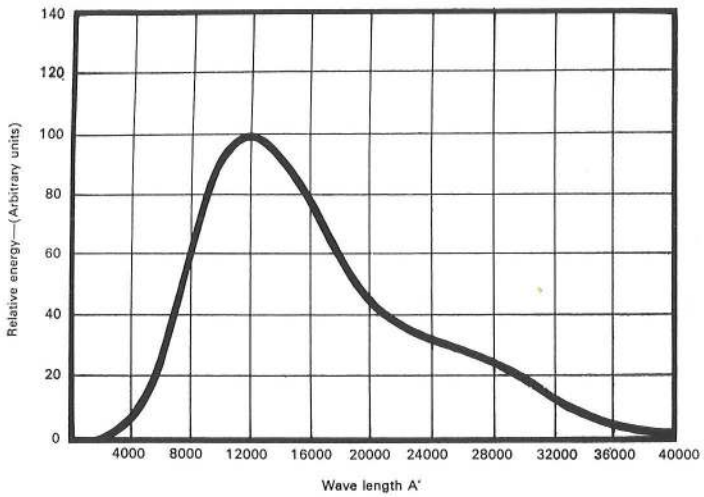
Colour temperature–Approximately 2,500°K.–peak radiation 11,500A°–see below.

Applications–Industrial, drying, stove enamelling paint baking and also as a source of gentle heat for poultry rearing and animal breeding.

Operating position–Any.

Operating conditions–Drops of moisture or condensation must be prevented from falling on the hot bulb.

Typical radiation characteristic Infra-red drying lamp



Infra-red quartz tubular heater

Construction–Gas filled tube of transparent quartz with tungsten filament supported by tantalum discs.

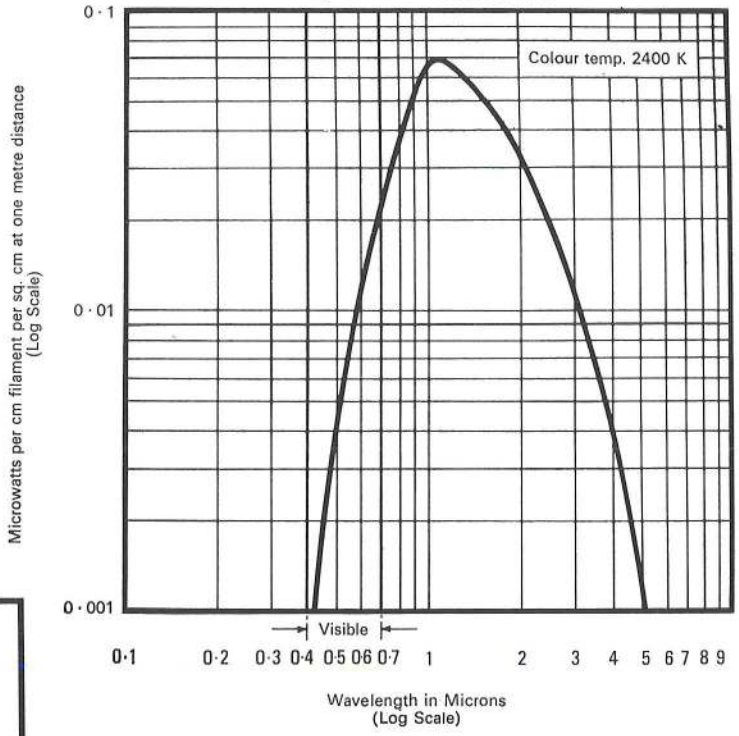
Colour temperature–Approximately 2,400°K.–see spectral radiation curve opposite.

Applications–Where high concentratio n of radiant heating is needed, such as:–

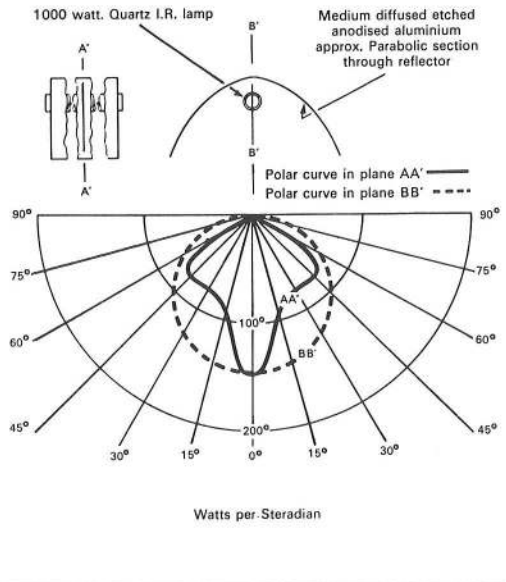
1. Evaporation of water and solvents.
2. Mass heating.
3. Baking (of paints etc.)
4. Short time cyclic heating.

Operating position–Horizontal–cap temperature must not exceed 300°C.

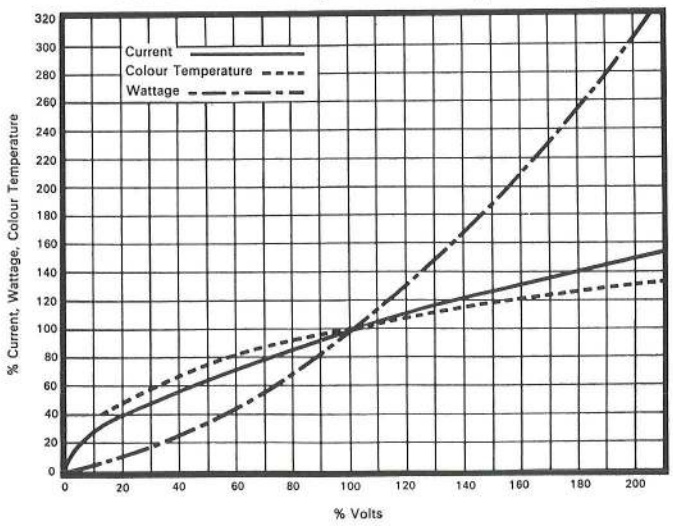
Spectral radiation curve



Estimated radiant intensity in 2 planes at right angles from a Quartz I.R. lamp in a typical reflector



Quartz infra-red lamps—effects of applied voltage



Rough service—These lamps have additional filament supports and are for use in portable headlamps and similar locations.

Watts	Price s. d.	Pur. Tax d.	Std. Pack	Cap	Finish
25	2 0	5½	25	B.C.	Pearl
40	2 0	5½	25	B.C.,E.S.	Pearl
60	2 0	5½	25	B.C.,E.S.	Pearl
100	2 9	7½	25	B.C.,E.S.	Pearl

Voltages: 40/100w.—110, 120, 200/230, 240/250: 25w.—200/230, 240/250

Fireglow—For use in heaters to provide "firelight flicker effects".

Watts	Price s. d.	Pur. Tax s. d.	Std. Pack	Cap	Finish
60	3 0	8	25 & 12	B.C.	Lacquered
60	3 0	8	25 & 12	3-pin B.C.	Lacquered
60	4 9	1 1	25 & 12	2-pin	Lacquered
60	6 6	1 6	25 & 12	B.C.	Natural glass
60	6 6	1 6	25 & 12	3-pin B.C.	Natural glass
60	7 6	1 9	25 & 12	2-pin	Natural glass

Voltage: 200/250

Traffic signal—For use in traffic signals.

Watts	Price s. d.	Pur. Tax d.	Std. Pack	Cap	Finish
65	2 3	6	25	E.S.,B.C.	Clear

Voltages: 240, 250

Pygmy sign

Watts	Price s. d.	Pur. Tax d.	Std. Pack	Cap	Finish
15 or 25	1 10	5	50	All lamps	Clear
15 or 25	2 2½	6	50	E.S.	Frosted
15 or 25	2 2½	6	50	B.C.	Colours
15 or 25	2 6	7	50	S.E.S.	Clear Rough Service
15	2 9*	7½	50	S.B.C.	Clear (L. V. types)

Voltages: 200/250 except* which are 100/110, 120/130
Internally coloured: Amber, blue, green, white, yellow.

Switchboard indicator

Watts	Price s. d.	Pur. Tax d.	Std. Pack	Cap	Finish
15	2 6	7	50	B.C.	Clear

Voltages: 100/130, 200/260

Pilot indicator

Watts	Price s. d.	Pur. Tax d.	Std. Pack	Cap	Finish
6	4 0	11	25	All lamps S.B.C.,	Clear
10	4 0	11	25	S.E.S., CAND.	Clear

Voltages: 6w.—100/130
10w.—100/130, 200/250

Neon indicator

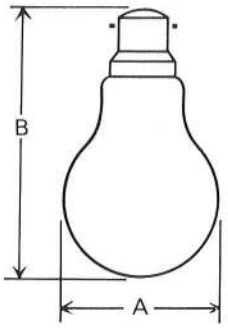
Watts	Price s. d.	Pur. Tax d.	Std. Pack	Cap	Finish
0·5	8 6	—	50	B.C.	Type B
0·5	6 0	—	50	S.B.C.	Type C
0·5	6 0	—	50	S.E.S.	Type C

Voltage: 200/260

Cooker lamp—For operation in ovens and similar up to 500°F. Special cement and high temperature solder on cap.

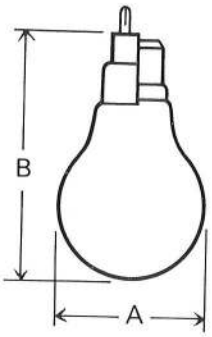
Watts	Price s. d.	Pur. Tax d.	Std. Pack	Cap	Finish
25	2 6	7	50	E.S.	Pearl

Voltage: 200/250



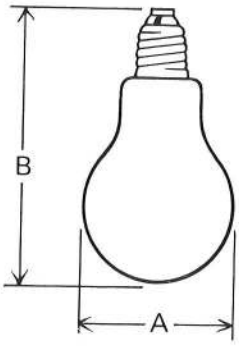
ROUGH SERVICE

	A	B
25, 40 & 60W	60	105
100W	68	125



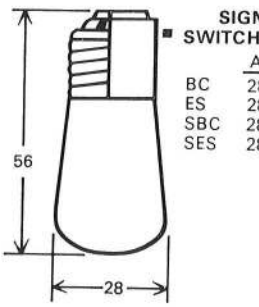
FIREGLOW

	A	B
BC	60	105
3-pin BC	60	105
2-prong	60	113



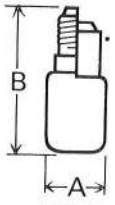
TRAFFIC SIGNAL

	A	B
65W ES	60	107



SIGN & SWITCHBOARD

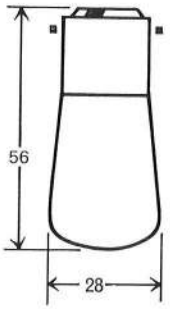
	A	B
BC	28	56
ES	28	58
SBC	28	62
SES	28	63



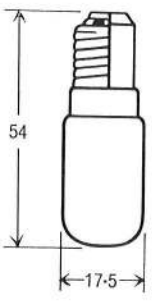
PILOT

	A	B
SBC	19	48
Cand	19	46
SES	19	48

NEONS



Type B



Type C

All dimensions in mm.

Standard lamps
Floodlighting lamps

Class B1 (Spherical bulbs)

For floodlighting of buildings and for studio and theatre sports and floodlights.

The objective average life in ventilated fittings is 800 hours. The burning position is within 135° cap down.

Ref. No.	Watts	Price £ s. d.	Pur. Tax s. d.	Std. Pack	Finish
B1/1	**100**	**16 0**	3 8	12	Clear
B1/2	**250**	**1 5 0**	5 8	12	Clear
B1/3	**500**	**1 14 0**	—	12	Clear
B1/4	**1,000**	**2 12 6**	—	12	Clear

Ref. No.	Cap	Lumens at 100 110 115v.	Lumens at 200/250v.*
B1/1	E.S.	1,100	900
B1/2	E.S.	3,600	3.100
B1/3	G.E.S.	8,000	7,250
B1/4	G.E.S.	18,000	16,500

*lamps available in 10v. steps

Class B2 (G.L.S. bulbs)

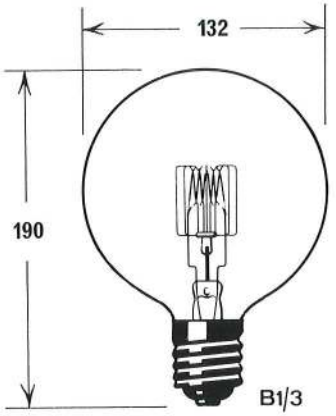
Applications are similar to Class B1 especially floodlighting from high towers for football grounds, stadiums, tattoos and similar.

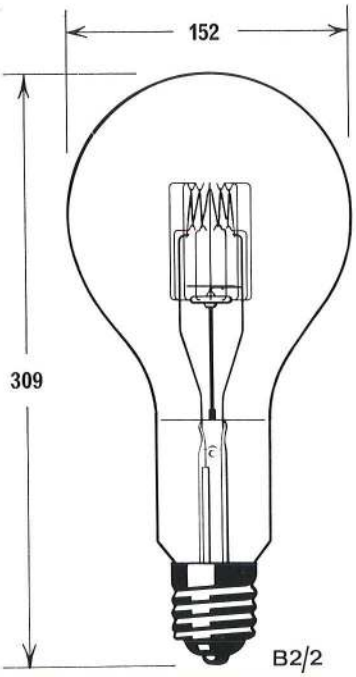
The average objective life for lamps B2/1–3 is 800 hours in well-ventilated fittings. For B2/4 it is 200 hours which is very adequate for a full season of evening matches.

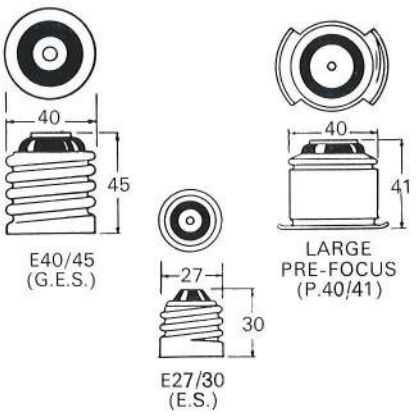
Ref. No.	Watts	Price £ s. d.	Pur. Tax s. d.	Std. Pack	Finish
B2/1	**500**	**1 14 0**	—	9	Clear
B2/2	**1,000**	**2 2 0**	—	6	Clear
B2/3	**1,500**	**2 16 0**	—	6	Clear
B2/4	**2,000**	**3 0 0**	—	6	Clear

Ref. No.	Cap	Lumens at 100 110 115v.	Lumens at 200/250v.*
B2/1	G.E.S.	8,000	7,250
B2/2	G.E.S.	18,000	16,500
B2/3	G.E.S.	—	26,000
B2/4	L.P.F.—P40/41	—	42,000

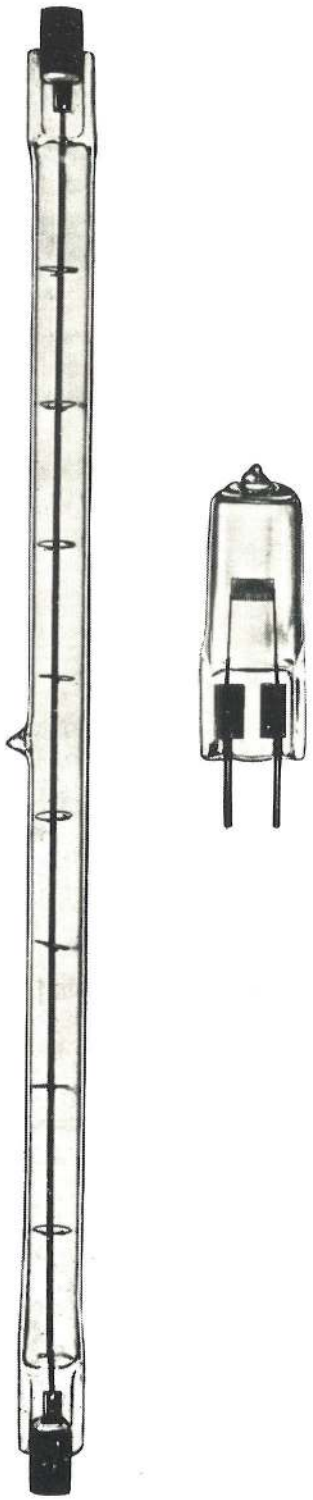
*lamps available in 10v. steps







All dimensions in mm.



A new and powerful light source in the range of tungsten filament lamps.

Application–General illumination, floodlighting and display lighting.

Range four linear lamps–500w. 750w., 1,000w., 1,500w.

One compact spot lamp–50w.

Rated life–2,000 hours.

Control Gear–None required.

Operating positions–Linears horizontal ± 4°. Spot lamp-Universal.

Principle–The tungsten filament is enclosed in a gasfilled quartz tube, together with a carefully controlled quantity of iodine. When the tungsten filament is heated by the electric current the iodine vaporises and controls the evaporation of the filament; the tungsten vapour being carried to the contrastingly comparative cool wall of the bulb where it combines with the iodine to form tungsten iodide.
This compound then returns to the filament where it is chemically converted back to tungsten and iodine and the action continues to repeat itself while the lamp is in operation.
The regenerative cycle performs a 'self-cleaning' action on the inner surface of the bulb resulting in nearly 100% lumen maintenance.

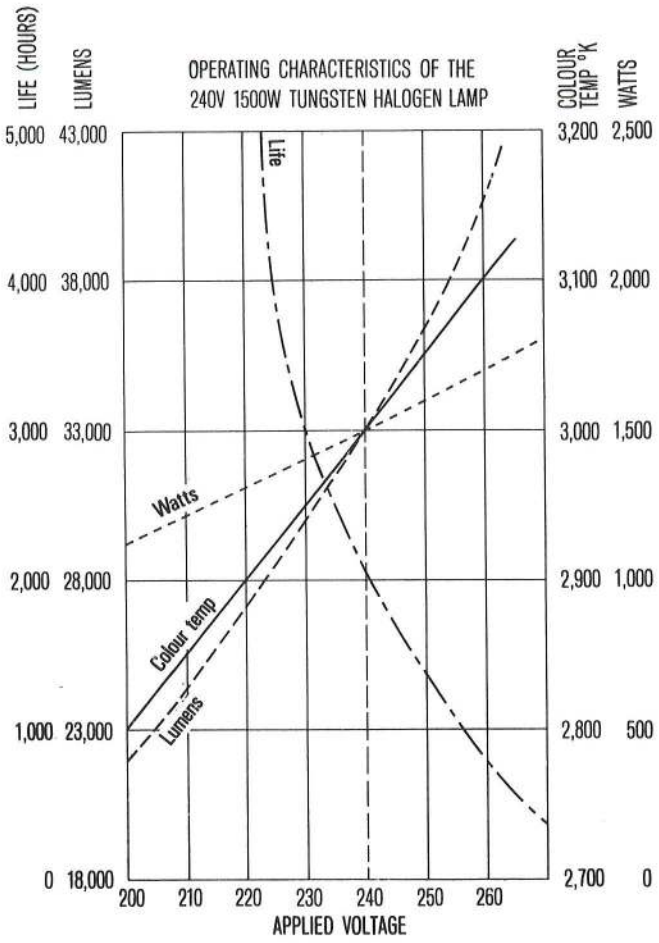
Advantages

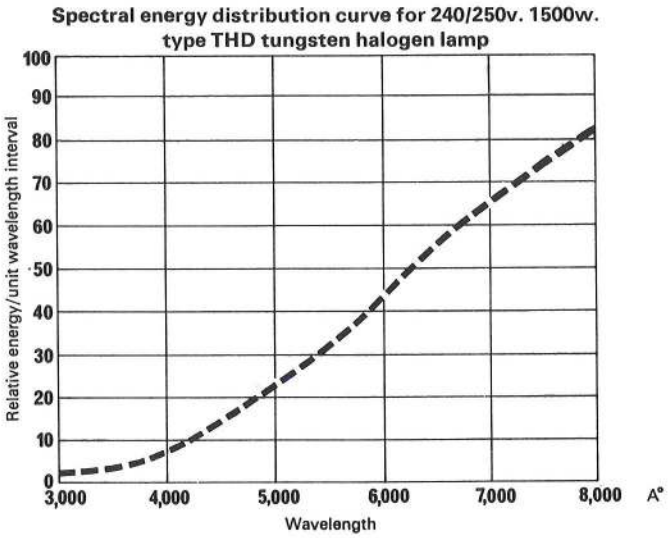
1. Up to 25% more light output compared to corresponding G.E.S. lamp.
2. Double life–2,000 hours.
3. Constant light output through life.
4. Compact, easily controllable light source.

Watts	Price £ s. d.	Pur. Tax s. d.	Std. Pack	Voltage	Nominal Lumens
50	**1 1 6**	5 0	1	**12**	1,000
500	**3 10 0**	—	1‡	**110 & 120**	10,500
500	**3 10 0**	—	1‡	**200/230 and 240/250**	9,500
750*	**3 18 0**	—	1‡		15,000
1,000†	**4 7 0**	—	1‡		21,000
1,500	**4 14 0**	—	1‡		33,000

‡Individual cartons in 10 way containers.
†Also available 110v., at same price.
*Standard 200/250v. 750w. lamps standard 189mm. O.A.L.–also available 178mm. O.A.L.

Standard lamps
Tungsten halogen lamp information





Nom. watts	Voltage	Nom. lumens	Rated life hours	Nom. colour temp. °K	Overall lamp length	Bulb diam.	Nom. lighted length	Type of contacts	Burning position	Catalogue no.
		At rated voltage			*Dimensions in millimeters*					
50	12	1,000	2,000	3,000	42±2	10·5±0·5	3·5 x 2·5	Single ended bi-pin	Universal	THD/50/12
500	110	10,500	2,000	3,000	117±2·5	10±0·25	60	R7s‡	To within 4° of horizontal	THD/500/110
500	120	10,500	2,000	3,000	117±2·5	10±0·25	60			THD/500/120
500	200/230	9,500	2,000	2,850	117±2·5	10±0·25	75			THD/500/voltage rating
750*	200/230	15,000	2,000	2,900	189±2·5	10±0·25	130			THD/750/voltage rating*
1,000†	240/250	21,000	2,000	3,000	189±2·5	10±0·25	140			THD/1000/voltage rating
1,500	240/250	33,000	2,000	3,000	254±2·5	10±0·25	200			THD/1500/voltage rating

NOTES

All lamps with the exception of the THD/50/12 are fitted with an internal fuse and have a new construction with extra filament supports allowing the lamps to be used in both normal and rough service conditions without loss of light output. During operation, the temperature of the lamp pinch seal should not exceed 350°C, whilst the bulb wall temperature must not drop below 250°C in order to maintain the tungsten halogen cycle.

*The standard length of the 750w. 240v. lamp is 189mm. Lamps with an overall length of 178mm. are also available. Please specify length when ordering.
†The 1,000w. lamp is also available in 110v. rating.
‡Double ended lamp with ceramic end caps and recessed contacts (R7s). For distance between contacts deduct 4mm. for overall length.

SfB (63)
UDC 621·32

Vehicle lamps

Vehicle lamps
Introduction

The range of lamps shown in this catalogue covers the requirements for private and commercial vehicles in Great Britain and Western Europe.
Mazda has made many outstanding and exclusive contributions to vehicle lamp progress. The Automobile Association has awarded Mazda a Silver Medal for its double filament tungsten halogen lamp. The Mazda wedge base and capless lamps have given the vehicle industry a more simple, more compact and overall less costly lamp. The wedge base lamp is without doubt the vehicle ancillary lamp of the future.
Mazda are also the prominent manufacturers of sealed beam tungsten filament headlamps and auxiliary lamps which provide a completely sealed weatherproof lamp assembly with untarnishable reflector and filaments accurately focussed in the factory for precise optical control.
Mazda vehicle lamps are leaders in outstanding developments and high quality precision manufacture. All Mazda lamps are Lucas authorised spares.

BRITISH LIGHTING INDUSTRIES LTD.
A member of the Thorn Group THORN

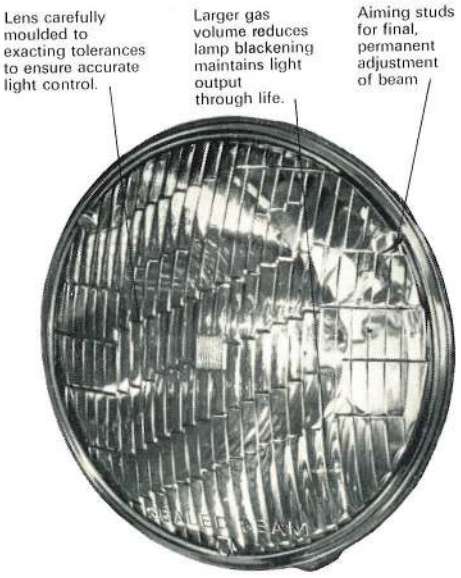
Numerical Index—Section five

Alphabetical Index—Section five

Vehicle lamps
Sealed beam lamps

Sealed Beam Lamps are available in various forms: single and double filament headlamps and auxiliary fog and spot lamps. The main advantages of Sealed Beam Lamps are:—

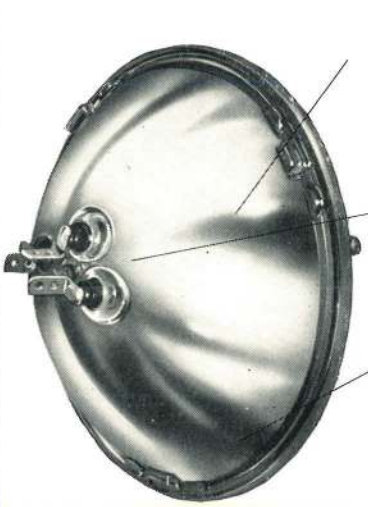
1. The completely sealed reflector remains in perfect condition throughout the life of the lamp, it is dustproof, waterproof and untarnishable.
2. Filaments are accurately focused in the factory to give permanent precisely controlled beams.
3. There is no "blind spot" behind the filament since all the reflector surface is used.
4. Large gas volume reduces lamp blackening giving 95% lumen maintenance throughout life.
5. Hard glass lenses are moulded integrally with the reflectors to give fine light control and add robustness.
6. Fitted with aiming studs to ensure final, permanent beam adjustment.
7. Headlamp main beams are high wattage to ensure more penetration for night driving. Dipped beams have a sharp, crisp cut-off ensuring no dazzle to oncoming traffic whilst clearly lighting kerbs, road signs and pedestrians.
8. They have a long life and are interchangeable with metal glass reflector units fitted with separate bulbs.



Headlamps – with 5¾ in. dia. lens.

Volts	Watts	Price £ s. d.	P.T.	Std. Pack	Drive	Dip	Lamp Ref. No.
12	37·5	1 7 0	—	10	R.H.	—	60–5700
12	50/37·5	1 9 6	—	10	R.H.	Left	60–5702
12	50	1 9 6	—	10	R.H.	—	60–5712
12	100	1 9 6	—	10	R.H.	—	60–5717
12	50/37·5	1 9 6	—	10	R.H.	Left	60–5718*

*With pilot aperture for 1968 Vauxhall Victor.



Headlamps – with 7 in. dia. lens.

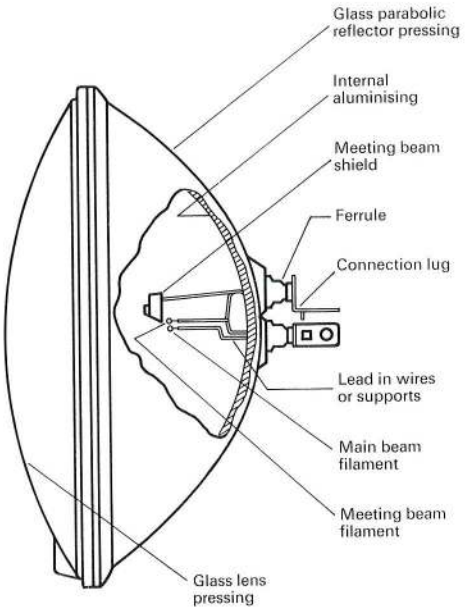
Volts	Watts	Price £ s. d.	P.T.	Std. Pack	Drive	Dip	Lamp Ref. No.
12	60/45	1 9 6	—	10	R.H.	Left	60–7002
12	50/40	1 9 6	—	10	L.H.	Right	60–7005†
12	75/50	1 12 6	—	10	R.H.	Left	60–7010
12	75	1 9 6	—	10	R.H.	—	60–7012
12	50/60	1 9 6	—	10	R.H.	Left	60–7013
12	60/45	1 9 6	—	10	R.H.	Left	60–7014*

*With pilot aperture for B.M.C. Mini Cars. †Supplied only to special order.

Auxiliary lamps – with 5¾ in. dia. lens.

Volts	Watts	Price £ s. d.	P.T.	Std. Pack	Application	Lamp Ref. No.
6	40	1 9 6	—	10	Spot	60–5713
6	40	1 9 6	—	10	Fog	60–5714
12	50	1 9 6	—	10	Spot	60–5704
12	50	1 9 6	—	10	Fog	60–5706
12	50	1 9 6	—	10	Spot	60–5705*
12	50	1 9 6	—	10	Fog	60–5709*
24	50	1 9 6	—	10	Spot	60–5707
24	50	1 9 6	—	10	Fog	60–5708

*Yellow front lens.



Tungsten halogen auxiliary lamps – with 5¾ in. dia. lens.

Volts	Watts	Price £ s. d.	P.T.	Std. Pack	Application	Lamp Ref. No.
12	55	2 17 6	—	10	Fog	60–5720
12	55	2 17 6	—	10	Spot	60–5721

These lamps are suitable for replacements in Lucas FT9 Units – Lucas Silver Sabre and Lucas Silver Lance.

For use in headlamps and fog and spot auxiliaries.

Single filament type—
with B.P.F. cap P22s/21 and P22d/21 as illustrated.

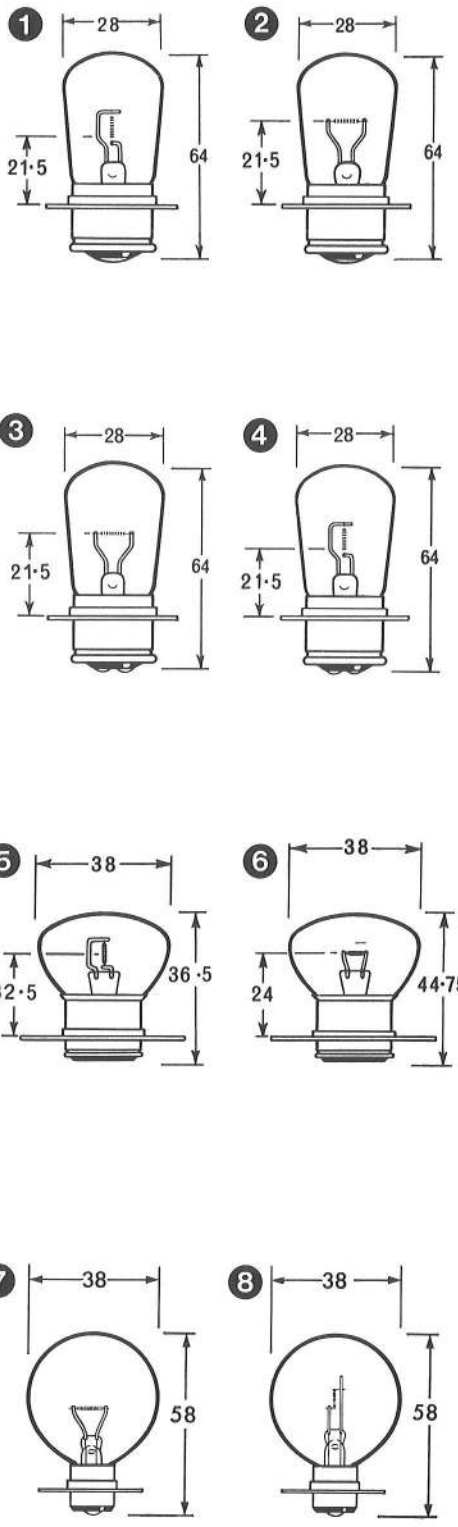
Volts	Watts	Price s. d.	P.T. s. d.	Std. Pack	Filament	Contact	Illus.	Lamp Ref. No.
6	36	5–0	1–1	10	Axial	Single	1	26–0172
6	36	5–0	1–1	10	Transverse	Single	2	26–0173
12	48	5–0	1–1	10	Axial	Single	1	26–0185
12	48	5–0	1–1	10	Transverse	Single	2	26–0323
12	48	6–6	1–5	10	Cadmium Axial	Single	1	26–0685
12	48	6–6	1–5	10	Cadmium Transverse	Single	2	26–0600
24	44	5–0	1–1	10	Axial	Double	4	26–0331
24	44	5–0	1–1	10	Transverse	Single	2	26–0606
24	44	5–0	1–1	10	Transverse	Double	3	26–0330

Single filament type—with special prefocus cap P48d/21.

Volts	Watts	Price s. d.	P.T. s. d.	Std. Pack	Filament	Contact	Illus.	Lamp Ref. No.
12	48	6–0	1–3	10	Axial	Double	5	26–0434
12	48	6–0	1–3	10	Transverse	Double	6	26–0432

Single filament type—
with American prefocus type cap P15s/19.

Volts	Watts	Price s. d.	P.T. s. d.	Std. Pack	Filament	Contact	Illus.	Lamp Ref. No.
6	36	5–0	1–1	10	Transverse	Single	7	26–0667
6	36	5–0	1–1	10	Axial	Single	8	26–0669
12	36	5–0	1–1	10	Transverse	Single	7	26–0668
12	36	5–0	1–1	10	Axial	Single	8	26–0670



All dimensions in mm.

Vehicle lamps
British prefocus headlamps

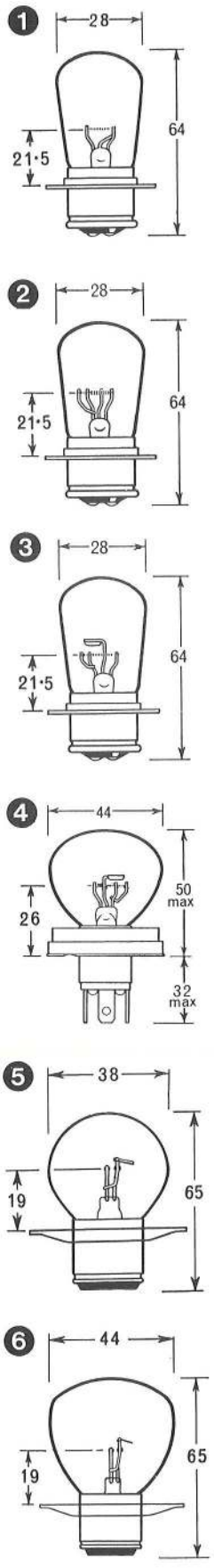
Double filament type – with double contact caps as illustrated and transverse filaments.

Volts	Watts	Price s. d.	P.T. s. d.	Std. Pack	Dip	Drive	Illus.	Lamp. Ref. No.
6	30/24	6–0	1–3	10	Vert.	Either	1	26–0312
6	36/36	6–0	1–3	10	Left	R.H.	2	26–0306
6.4	45/35	6–0	1–3	10	Left	R.H.	2	26–0356
12	44/38	6–0	1–3	10	Left	R.H.	2	26–0358
12	50/40	6–0	1–3	10	Left	R.H.	3	26–0414*
12	50/40	6–0	1–3	10	Right	L.H.	3	26–0415*
12	60/40	10–0	2–1	10	Left	R.H.	4	26–0416*†
12	60/40	10–0	2–1	10	Right	L.H.	4	26–0417*†
24	44/38	6–0	1–3	10	Left	R.H.	2	26–0359

*These lamps have transverse shielded filaments (see illustrations)
†UEC – Unified European Cap

Double filament type – with special double contact prefocus caps P50 and transverse filaments.

Volts	Watts	Price s. d.	P.T. s. d.	Std. Pack	Dip	Drive	Illus.	Lamp Ref. No.
12	60/40	10–0	2–1	10	Left	R.H.	5	26–0452
12	80/60	12–6	2–8	10	Left	R.H.	6	26–0451



All dimensions in mm.

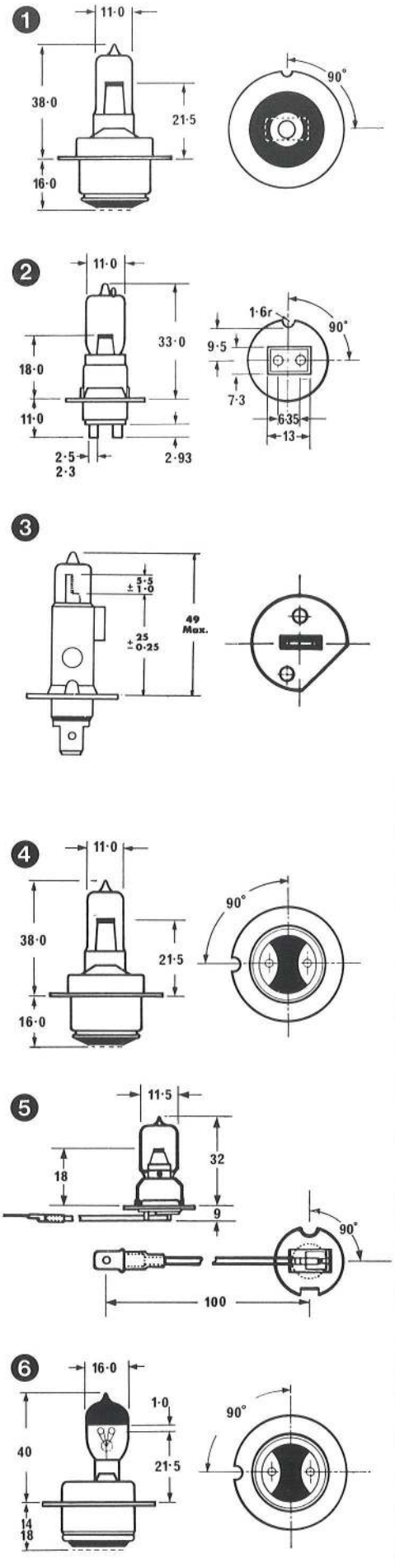
The widest range in Europe for dipping headlights and all types of fog and spot units.

These lamps of very advanced design have many advantages:—

1. Up to 50% more efficient than conventional lamps giving up to twice the beam intensity for the same power consumption.
2. The tungsten halogen cycle gives total elimination of bulb blackening ensuring that the lamp maintains full performance throughout life.
3. The light is 'whiter'.
4. Compact filaments give extremely precise optical control putting light in the right place without producing unwanted, wasteful glare.
5. Overall robustness, high resistance to mechanical and thermal shock.
6. Long life. Typical value: 350 Hrs. at 12v.
7. The double filament headlamp and lamps (26–0**450**, 26–0**454**, 26–0**458** and 26–0**459**) are directly interchangeable with conventional lamps fitted with B.P.F. caps.

Volts	Watts	Price s.d.	P.T. s.d.	Std. Pack	Applications & Illus. No.	Cap	Lamp Ref. No.
6	50	28–0	5–11	10	Fog & Spot (1)	B.P.F. Single Contact P22s/21	26–0454
12	55	28–0	5–11	10			26–0450
6	50	30–0	6–4	10	Fog & Spot (5)	PK22s	26–0455
12	55	30–0	6–4	10			26–0453*
6	50	28–0	5–11	10	Fog & Spot (2)	M.P.F. Double Contact PK22.5	26–2949
12	55	28–0	5–11	10			26–2951
12	55	28–0	5–11	10	Fog & Spot (3)	P145s	26–0448†
24	70	35–0	7–5	10	Fog & Spot (1)	P22s/21	26–0459
24	70	35–0	7–5	10	Fog & Spot (4)	P22d/21	26–0458
12	55/43	42–6	9–0	10	Dipping Headlamps (6)	B.P.F. Double P22d/21	26–0457

*International standardised and known as H3.
†International standardised and known as H1.



All dimensions in mm.

AA National Motoring Award for 1967

Mazda has been awarded a Silver Medal by the AA for the introduction of the world's first practical double filament halogen headlamp, Mazda no. 26-0457. The citation reads 'Silver Medal, for the year's most significant improvement to motor vehicle safety, comfort or economy . . . primarily in relation to technical progress'.

Vehicle lamps
Ordinary headlamps

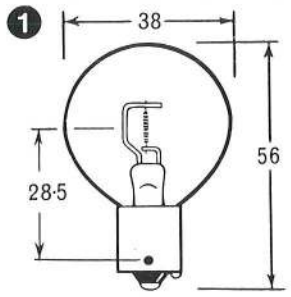
Single filament type

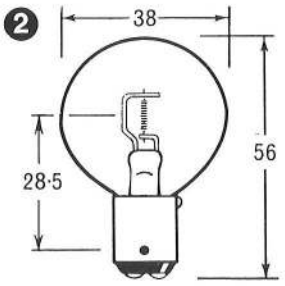
Volts	Watts	Price s. d.	P.T. s. d.	Std. Pack	Cap	Filament	Illus.	Lamp Ref. No.
6	24	5–0	1–1	10	S.C.C.	Axial	1	25–0106
6	24	5–0	1–1	10	S.B.C.	Axial	2	25–0109
6	36	5–0	1–1	10	S.C.C.	Axial	1	25–0108
6	36	5–0	1–1	10	S.B.C.	Axial	2	25–0111
12	24	5–0	1–1	10	S.C.C.	Axial	1	25–0001
12	24	5–0	1–1	10	S.B.C.	Axial	2	25–0004
12	36	5–0	1–1	10	S.C.C.	Axial	1	25–0002
12	36	5–0	1–1	10	S.B.C.	Axial	2	25–0005
12	36	5–0	1–1	10	S.C.C.	Transverse	3	25–0057
12	48	5–0	1–1	10	S.B.C.	Axial	2	25–0027
24	24	5–0	1–1	10	S.B.C.	Axial	2	25–0122
24	24	5–0	1–1	10	B.C.	Axial	4	25–0620
24	36	5–0	1–1	10	S.B.C.	Axial	2	25–0123
24	36	5–0	1–1	10	B.C.	Axial	4	25–0622
24	48	5–0	1–1	10	S.B.C.	Axial	2	25–0140
24	48	5–0	1–1	10	B.C.	Axial	4	25–0624

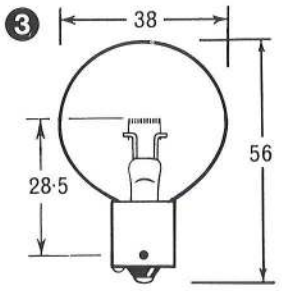
Double filament type

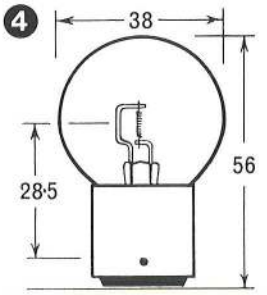
Volts	Watts	Price s. d.	P.T. s. d.	Std. Pack	Cap	Filament	Illus.	Lamp Ref. No.
6	15/15	6–0	1–3	10	S.B.C.*	Axial & Transverse	5	25–0386
12	36/36	6–0	1–3	10	S.B.C.	Transverse	6	25–0171
24	44/38	7–6	1–7	10	S.B.C.	Transverse	6	25–0671

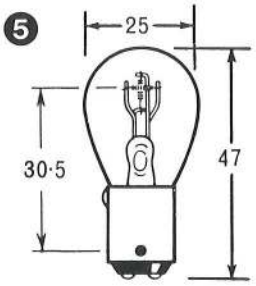
*Unequal length pins.

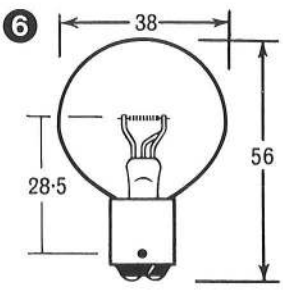












All dimensions in mm.

Flasher and Stop/Tail – with transverse filaments.

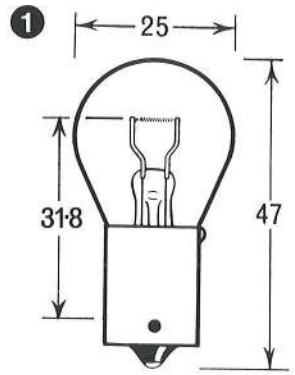
Volts	Watts	Price s. d.	P.T. s. d.	Std. Pack	Cap	Illus.	Lamp Ref. No.
6	18	3–6	9	10	S.C.C.	1	25–0317
6	18	3–6	9	10	S.B.C.	2	25–0319
6	6/18	4–0	10	10	S.B.C.	3	25–0383
6	6/18	4–0	10	10	S.B.C. index	3	25–0384
12	21	3–6	9	10	S.C.C.	1	25–0382
12	21	3–6	9	10	S.B.C.	2	25–0335
12	21	5–0	1–1	10	S.C.C.	1	25–0343*
12	6/21	4–0	10	10	S.B.C.	3	25–0381
12	6/21	4–0	10	10	S.B.C. index	3	25–0380
24	24	4–0	10	10	S.C.C.	1	25–0339
24	24	4–0	10	10	S.B.C.	2	25–0333
24	6/24	4–6	11½	10	S.B.C.	3	25–0692
24	6/24	4–6	11½	10	S.B.C. index	3	25–0334
28	7/30	7–0	1–6	10	S.B.C. index	3	25–0337

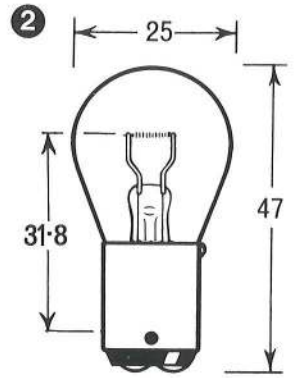
*Amber bulb.

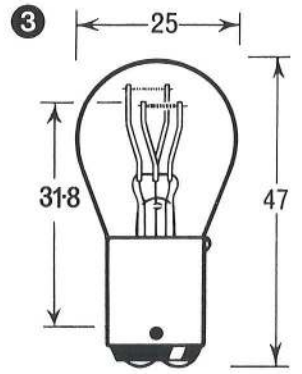
Reversing

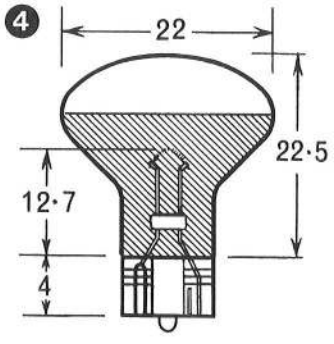
Volts	Watts	Price s. d.	P.T. d.	Std. Pack	Cap	Illus.	Lamp Ref. No.
12	5	4–6	11½	10	wedge base	4	20–0503*
12	21	3–6	9	10	S.C.C.	1	25–0382

*Externally silvered.







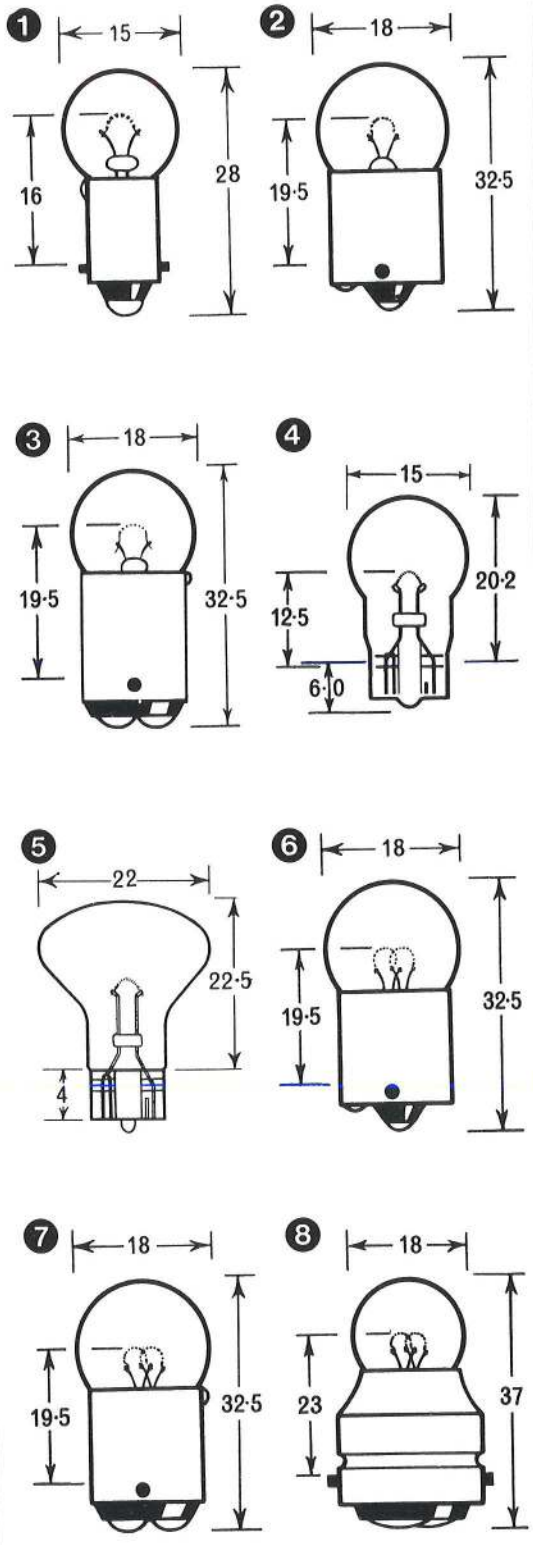


All dimensions in mm.

Vehicle lamps
Ancillary lamps

Side and Tail – with bow filaments.

Volts	Watts	Price s. d.	P.T. d.	Std. Pack	Cap	Illus.	Lamp Ref. No.
6	**3**	**1–9**	4½	10	M.C.C.	1	20–0**988**
6	**6**	**1–9**	4½	10	M.C.C.	1	20–0**951**
6	**6**	**1–9**	4½	10	S.C.C.	2	20–0**205**
6	**6**	**1–9**	4½	10	S.B.C.	3	20–0**206**
12	**5**	**2–0**	5	10	wedge base	4	20–0**501**
12	**6**	**1–9**	4½	10	M.C.C.	1	20–0**989**
12	**6**	**1–9**	4½	10	S.C.C.	2	20–0**207**
12	**6**	**1–9**	4½	10	S.B.C.	3	20–0**209**
16	**6**	**2–0**	5	10	S.B.C.	3	20–0**637**
24	**5**	**2–6**	6½	10	wedge base	5	20–0**502**
24	**6**	**2–0**	5	10	S.C.C.	6	20–0**149**
24	**6**	**2–0**	5	10	S.B.C.	7	20–0**150**
24	**6**	**2–6**	6½	10	B.C.	8	20–0**638**
28	**6**	**2–6**	6½	10	S.B.C.	3	20–0**228**

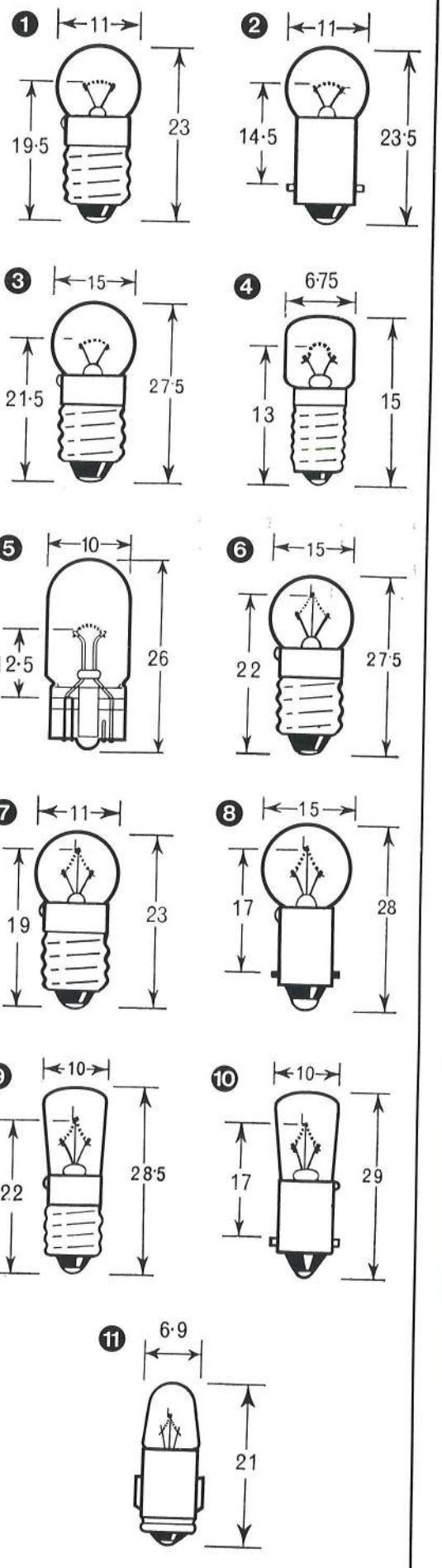


All dimensions in mm.

Indicator, Panel and Instrument Warning

Volts	Watts	Price s. d.	P.T. d.	Std. Pack	Cap	Illus.	Lamp Ref. No.
6	3	1–6	4	10	M.E.S.	1	21–0990
6	3	1–6	4	10	M.C.C.	2	21–0641
6	3	1–6	4	10	M.E.S.	3	21–0981
6	6	1–6	4	10	M.E.S.	3	21–0950
12	1·5	1–9	4½	10	L.E.S.	4	21–0280
12	1·5	1–9	4½	10	wedge base	5	21–2131
12	1CP	1–9	4½	10	wedge base	5	21–2104
12	2	1–9	4½	10	BA7s/11	11	21–0281
12	2·2	1–3	3	10	M.E.S.	1	21–0987
12	2·2	1–3	3	10	M.C.C.	2	21–0643
12	3	1–9	4½	10	wedge base	5	21–0504*
16	3	2–6	6½	10	M.E.S.	6	21–0985
24	2·8	1–9	4½	10	M.E.S.	7	21–0650
24	2·8	1–9	4½	10	M.C.C.	8	21–0651
24	2·8	1–9	4½	10	M.E.S.	9	21–0695
24	2·8	1–9	4½	10	M.E.S.	6	21–0993
24	2·8	1–9	4½	10	M.C.C.	10	21–2020
24	3	2–3	6	10	wedge base	5	21–2158

*Formerly rated 2·2w.



All dimensions in mm.

Vehicle lamps
Ancillary lamps

Festoon for Trafficators and Roof-lights

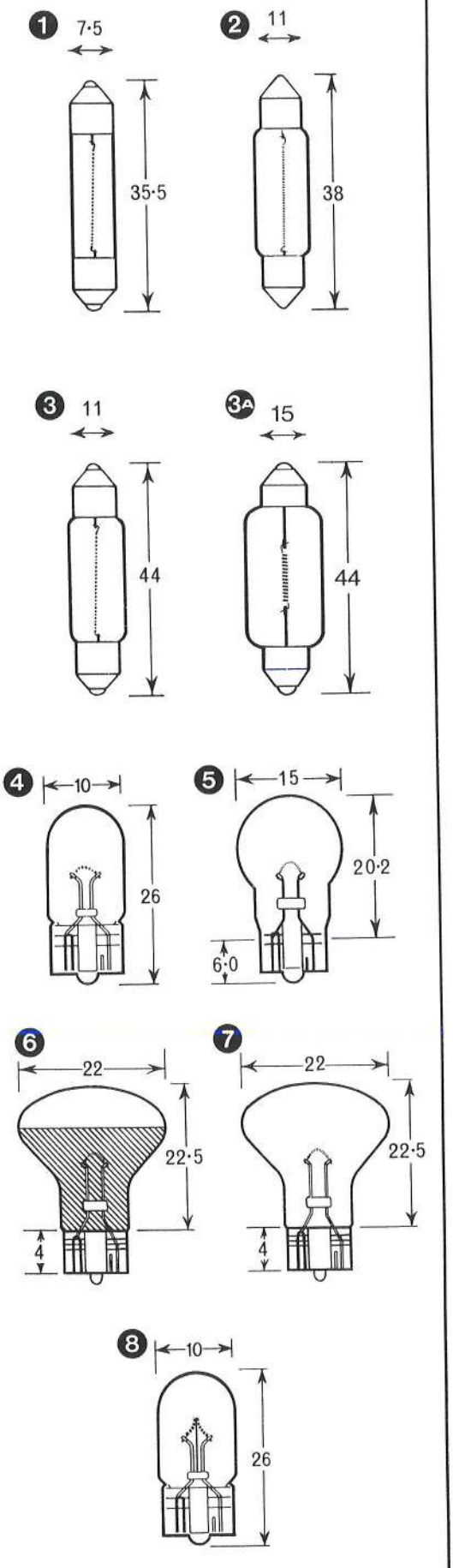
Volts	Watts	Price s. d.	P.T. d.	Std. Pack	Cap	Illus.	Lamp Ref. No.
6	3	2–6	6½	100	S7/8	1	23–0255
6	6	2–6	6½	100	S8·5/8	2	23–0253
12	3	2–6	6½	100	S7/8	1	23–0256
12	6	2–6	6½	100	S8·5/8	2	23–0254
12	10	2–6	6½	10	S8·5/8	2	23–0272
12	18	3–6	9	10	S8·5/8	3A	23–0270
12	21	3–6	9	10	S8·5/8	3A	23–0273
24	6	2–6	6½	100	S8·5/8	2	23–0653*
24	6	2–6	6½	100	S8·5/8	3	23–0260
24	10	2–6	6½	10	S8·5/8	2	23–0274

*Supported filament.

Wedge Base (Capless)

Volts	Watts	Price s. d.	P.T. s. d.	Std. Pack	Application	Illus.	Lamp Ref. No.
12	1CP	1–9	4½	10	Panels	4	21–2104
12	1·5	1–9	4½	10	and	4	21–2131
12	3	1–9	4½	10	Instruments	4	21–0504
12	5	2–0	5	10	Side and No. Plate	5	20–0501
12	5	4–6	11½	10	Reversing	6	20–0503*
24	3	2–3	6	10	Indicator	8	21–2158
24	5	2–6	6½	10	Marker	7	20–0502
28	2·8	5–0	1–1	10	Aircraft Panel	8	28–6624 (A400)
28	11	5–0	1–1	10	Reading Lamp	7	28–6680 (A401)

*Externally silvered.



All dimensions in mm.

Cycle dynamo lamps

Headlamps

Volts	Amps	Price s. d.	P.T. d.	Std. Pack	Cap	Finish	Illus.	Lamp Ref. No.
6	0·2	8	2	50	M.E.S.	Granulated	1	24–2162
6	0·25	8	2	50	M.E.S.	Granulated	1	24–2012
6	0·25	1–0	2½	50	wedge base	Clear	7	24–2049
6	0·3	8	2	50	M.E.S.	Granulated	1	24–2013
6	0·4	1–0	2½	50	wedge base	Clear	7	24–2053
6	0·5	8	2	50	M.E.S.	Granulated	1	24–0997
6	0·5	8	2	50	M.E.S.	Clear	4	24–2225
6	0·65	1–0	2½	50	wedge base	Clear	7	24–2060

Tail and battery operated

Volts	Amps	Price s. d.	P.T. d.	Std. Pack	Cap	Finish	Illus.	Lamp Ref. No.
6	0·04	8	2	50	M.E.S.	Clear	2	24–0991
6	0·1	8	2	50	M.E.S.	Clear	2	24–0998
6	0·1	1–0	2½	50	wedge base	Clear	7	24–2048

Flashlamps—with clear bulbs

Ordinary type

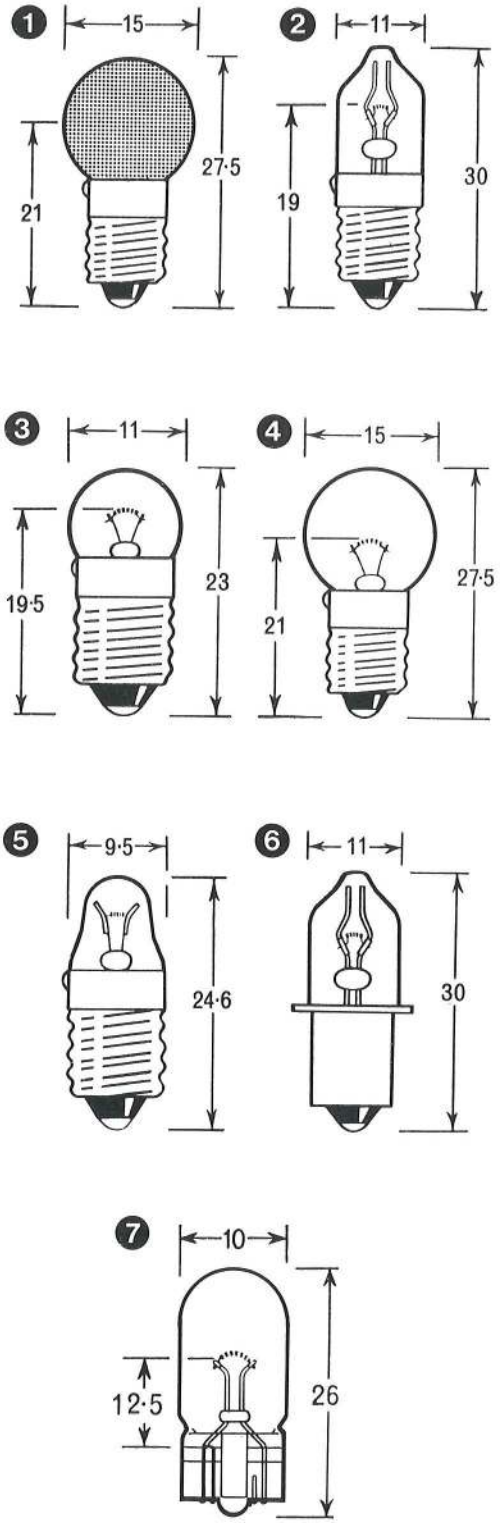
Volts	Amps	Price d.	P.T. d.	Std. Pack	Cap	Illus.	Lamp Ref. No.
1·5	0·2	5	1	50	M.E.S.	3	22–0390
2·5	0·2	5	1	50	M.E.S.	3	22–0970
2·5	0·3	5	1	50	M.E.S.	3	22–0972
3·5	0·15	5	1	50	M.E.S.	3	22–0974
3·5	0·3	5	1	50	M.E.S.	3	22–0977
4	0·3	5	1	50	M.E.S.	3	22–2008
4·5	0·3	5	1	50	M.E.S.	4	22–2004
5	0·15	8	2	50	M.E.S.	4	22–2076

Lens end type

Volts	Amps	Price d.	P.T. d.	Std. Pack	Cap	Illus.	Lamp Ref. No.
1·5	0·25	8½	2	50	M.E.S.	5	22–2031

Prefocus flashlights

Volts	Amps	Price d.	P.T. d.	Std. Pack	Cap	Illus.	Lamp Ref. No.
2·5	0·3	8½	2	50	Prefocus P13.5s	6	22–2046
3·5	0·3	8½	2	50		6	22–2061
5·5	0·3	8½	2	50		6	22–2077

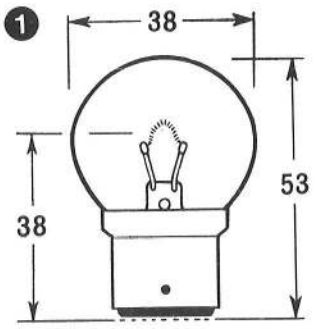


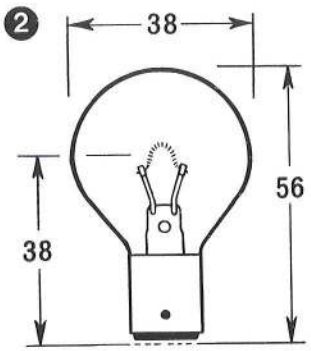
All dimensions in mm.

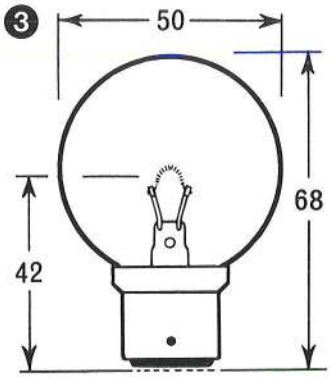
Vehicle lamps
Bus, coach and yacht lamps

For interior lighting

Volts	Watts	Price s.d.	P.T. d.	Std. Pack	Cap	Finish	Illus.	Lamp Ref. No.
12	12	2–6	6½	10	B.C.	Clear	1	27–3120
12	12	2–6	6½	10	S.B.C.	Clear	2	27–3121
12	12	2–6	6½	10	B.C.	Pearl	1	27–3123
12	12	2–6	6½	10	S.B.C.	Pearl	2	27–3124
12	24	3–0	8	10	B.C.	Pearl	1	27–3204
12	24	3–0	8	10	S.B.C.	Pearl	2	27–3205
24	12	2–6	6½	10	B.C.	Clear	1	27–3128
24	12	2–6	6½	10	S.B.C.	Clear	2	27–3129
24	12	2–6	6½	10	B.C.	Pearl	1	27–3131
24	12	2–6	6½	10	S.B.C.	Pearl	2	27–3132
24	12	2–6	6½	10	B.C.	Pearl	3	27–3230
24	15	3–0	8	10	B.C.	Pearl	3	27–3250
24	20	3–0	8	10	B.C.	Pearl	1	27–3184
24	20	3–0	8	10	S.B.C.	Pearl	2	27–3182
24	20	3–0	8	10	B.C.	Pearl	3	27–3264
40	36	4–0	10	10	B.C.	Clear	1	27–3217







All dimensions in mm.

Lamp number index

The full vehicle lamp reference number consists of six figures — the first two denoting the group and the last four the serial number in the group. Colloquially, these numbers are known by their last significant digits only and in many cases these last digits are also the Lucas reference numbers.

In the table the lamp serial numbers and the full lamp reference numbers are both given.

Lamp Serial No.	Lamp Ref. No.	Volts	Watts	Description
1	25–0001	12	24	Ordinary Headlight S.C.C.
2	25–0002	12	36	Ordinary Headlight S.C.C.
4	25–0004	12	24	Ordinary Headlight S.B.C.
5	25–0005	12	36	Ordinary Headlight S.B.C.
27	25–0027	12	48	Ordinary Headlight S.B.C.
57	25–0057	12	36	Ordinary Headlight S.C.C.
106	25–0106	6	24	Ordinary Headlight S.C.C.
108	25–0108	6	36	Ordinary Headlight S.C.C.
109	25–0109	6	24	Ordinary Headlight S.B.C.
111	25–0111	6	36	Ordinary Headlight S.B.C.
122	25–0122	24	24	Ordinary Headlight S.B.C.
123	25–0123	24	36	Ordinary Headlight S.B.C.
140	25–0140	24	48	Ordinary Headlight S.B.C.
149	20–0149	24	6	Side S.C.C.
150	20–0150	24	6	Side S.B.C.
171	25–0171	12	36 & 36	Ordinary Headlamp S.B.C.
172	26–0172	6	36	Prefocus Headlight
173	26–0173	6	36	Prefocus Headlight
185	26–0185	12	48	Prefocus Headlight
205	20–0205	6	6	Side S.C.C.
206	20–0206	6	6	Side S.B.C.
207	20–0207	12	6	Side S.C.C.
209	20–0209	12	6	Side S.B.C.
228	20–0228	28	6	Side S.B.C.
253	25–0253	6	6	Festoon
254	23–0254	12	6	Festoon
255	23–0255	6	3	Festoon
256	23–0256	12	3	Festoon
260	23–0260	24	6	Festoon
270	23–0270	12	18	Festoon
272	23–0272	12	10	Festoon
273	23–0273	12	21	Festoon
274	23–0274	24	10	Festoon
280	21–0280	12	1·5	Indicator E5/8
281	21–0281	12	2	Indicator, Panel, Instrument
306	26–0306	6	36 & 36	Prefocus Headlight
312	26–0312	6	30 & 24	Prefocus Headlight
317	25–0317	6	18	Stop S.C.C.
319	25–0319	6	18	Stop S.B.C.
323	26–0323	12	48	Prefocus Headlight
330	26–0330	24	44	Prefocus Headlight
331	26–0331	24	44	Prefocus Headlight
333	25–0333	24	24	Stop S.B.C.
334	25–0334	24	6 & 24	Stop S.B.C. Index
335	25–0335	12	21	Stop S.B.C.
337	25–0337	28	7 & 30	Stop S.B.C. Index
339	25–0339	24	24	Stop S.C.C.
343	25–0343	12	21	Flasher, Stop, Tail
356	26–0356	6·4	45 & 35	Prefocus Headlight
358	26–0358	12	44 & 38	Prefocus Headlight
359	26–0359	24	44 & 38	Prefocus Headlight
380	25–0380	12	6 & 21	Stop S.B.C. Index
381	25–0381	12	6 & 21	Stop S.B.C.
382	25–0382	12	21	Stop S.C.C.
383	25–0383	6	6 & 18	Stop S.B.C.
384	25–0384	6	6 & 18	Stop S.B.C. Index
386	25–0386	6	15 & 15	Scooter Headlight S.B.C.
390	22–0390	1·5	0·2a	Flashlight M.E.S.
414	26–0414	12	50 & 40	Prefocus Headlamp
415	26–0415	12	50 & 40	Prefocus Headlamp
416	26–0416	12	60 & 40	Prefocus Headlamp
417	26–0417	12	60 & 40	Prefocus Headlamp
432	26–0432	12	48	Prefocus Fog Lamp
434	26–0434	12	48	Prefocus Spot Lamp
448	26–0448	12	55	Tungsten Halogen Fog
450	26–0450	12	55	Prefocus Halogen Fog/Spot
451	26–0451	12	80 & 60	Prefocus Headlight
452	26–0452	12	60 & 60	Prefocus Headlight
453	26–0453	12	55	Tungsten Halogen Fog & Spot
454	26–0454	6	50	Tungsten Halogen Fog & Spot
455	26–0455	6	50	Tungsten Halogen Fog & Spot
457	26–0457	12	55/43	Tungsten Halogen Dipping Headlamp
458	26–0458	24	70	Tungsten Halogen Fog & Spot
459	26–0459	24	70	Tungsten Halogen Fog & Spot
501	20–0501	12	5	Capless Side and Tail
502	20–0502	24	5	Capless Side and Tail
503	20–0503	12	5	Reversing Lamp Capless
504	21–0504	12	3	Capless Indicator
600	26–0600	12	48	Cadmium Headlight
606	26–0606	24	44	Prefocus Headlight
620	25–0620	24	24	Ordinary Headlight B.C.
622	25–0622	24	36	Ordinary Headlight B.C.
624	25–0624	24	48	Ordinary Headlight B.C.
637	20–0637	16	6	Side S.B.C.
638	20–0638	24	6	Side B.C.
641	21–0641	6	3	Indicator M.C.C.
643	21–0643	12	2·2	Indicator M.C.C.
650	21–0650	24	2·8	Indicator M.E.S.
651	21–0651	24	2·8	Indicator M.C.C.
653	23–0653	24	6	Festoon
667	25–0667	6	36	American Prefocus Head
668	26–0668	12	36	American Prefocus Head
669	26–0669	6	36	American Prefocus Head
670	26–0670	12	36	American Prefocus Head
671	25–0671	24	44 & 38	Ordinary Headlight S.B.C.
685	26–0685	12	48	Cadmium Headlight
692	25–0692	24	6 & 24	Stop S.B.C.
695	21–0695	24	2·8	Indicator M.E.S.
950	21–0950	6	6	Indicator M.E.S.
951	20–0951	6	6	Side M.C.C.
970	22–0970	2·5	0·2a	Flashlight M.E.S.
972	22–0972	2·5	0·3a	Flashlight M.E.S.
974	22–0974	3·5	0·15a	Flashlight M.E.S.
977	22–0977	3·5	0·3a	Flashlight M.E.S.
981	21–0981	6	3	Indicator M.E.S.
985	21–0985	16	3	Indicator M.E.S.
987	21–0987	12	2·2	Indicator M.E.S.
988	20–0988	6	3	Side M.C.C.
989	20–0989	12	6	Side M.C.C.
990	21–0990	6	3	Indicator M.E.S.

Vehicle lamps

Lamp number index (contd.)

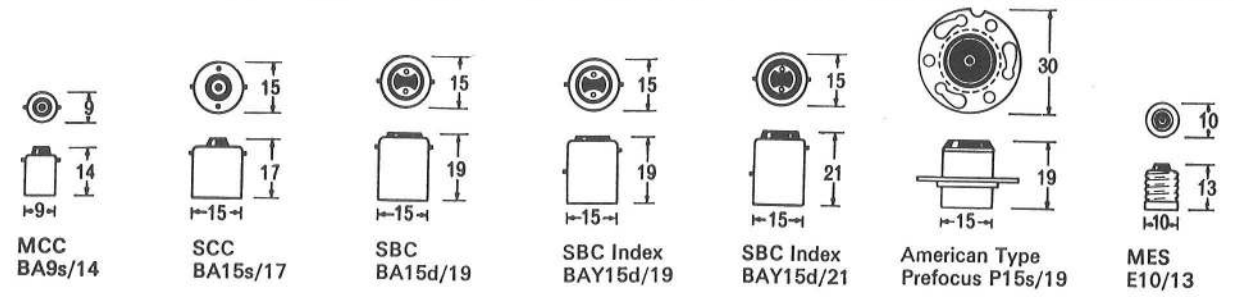
Lamp Serial No.	Lamp Ref. No.	Volts	Watts	Description
991	24–0991	6	0·04a	Cycle Dynamo Tail
993	21–0993	24	2·8	Indicator M.E.S.
997	24–0997	6	0·5a	Cycle Dynamo Head
998	24–0998	6	0·10a	Cycle Dynamo Tail
2003	22–2003	5·0	0·15a	Flashlight M.E.S.
2004	22–2004	4·5	0·3a	Flashlight M.E.S.
2008	22–2008	4	0·3a	Flashlight M.E.S.
2012	24–2012	6	0·25a	Cycle Dynamo Head
2013	24–2013	6	0·3a	Cycle Dynamo Head
2020	21–2020	24	2·8	Indicator, Panel, Instrument
2031	22–2031	2·2	0·25a	Lens-End-Flashlight
2046	22–2046	2·5	0·3a	Prefocus Flashlight
2048	24–2048	6	0·1a	Cycle tail
2049	24–2049	6	0·25a	Cycle tail
2053	24–2053	6	0·4a	Cycle Headlamp
2060	24–2060	6	0·65a	Cycle Headlamp
2061	22–2061	3·5	0·3a	Prefocus Flashlight
2076	22–2076	5·5	0·3a	Flashlight M.E.S.
2077	22–2077	5·5	0·3a	Prefocus Flashlight
2104	21–2104	12	1CP	Indicator Capless
2158	21–2158	24	3	Indicator, Panel, Instrument
2162	24–2162	6	0·2a	Cycle Head M.E.S.
2225	24–2225	6	0·5a	Cycle Dynamo Head
2949	26–2949	6	50	Tungsten Halogen Fog & Spot
2951	26–2951	12	55	Prefocus Halogen Fog & Spot
3120	27–3120	12	12	Bus Interior B.C.
3121	27–3121	12	12	Bus Interior S.B.C.
3123	27–3123	12	12	Bus Interior B.C.
3124	27–3124	12	12	Bus Interior S.B.C.
3125	27–3125	6	0·04a	Telephone Visual
3128	27–3128	24	12	Bus Interior B.C.
3129	27–3129	24	12	Bus Interior S B.C.
3131	27–3131	24	12	Bus Interior B.C.

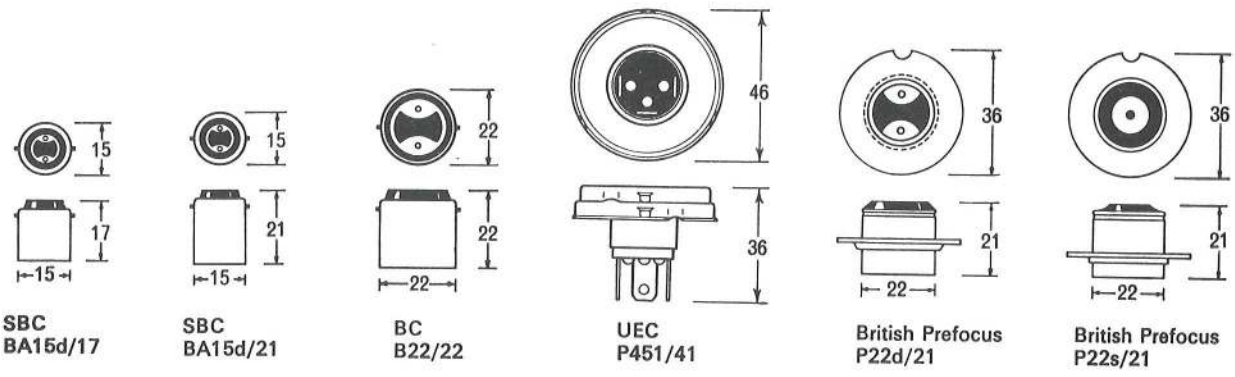
Lamp Serial No.	Lamp Ref. No.	Volts	Watts	Description
3132	27–3132	24	12	Bus Interior S.B.C
3182	27–3182	24	20	Bus Interior S.B.C.
3184	27–3184	24	20	Bus Interior B.C.
3204	27–3204	12	24	Bus Interior B.C.
3205	27–3205	12	24	Bus Interior S.B.C.
3217	27–3217	40	36	Bus Interior B.C.
3230	27–3230	24	12	Bus Interior B.C.
3250	27–3250	24	15	Bus Interior B.C.
3264	27–3264	24	20	Bus Interior B.C.
5700	60–5700	12	37·5	Sealed Beam Head
5702	60–5702	12	50/37·5	Sealed Beam Head
5704	60–5704	12	50	Sealed Beam Spot
5705	60–5705	12	50	Sealed Beam Spot
5706	60–5706	12	50	Sealed Beam Fog
5707	60–5707	24	50	Sealed Beam Spot
5708	60–5708	24	50	Sealed Beam Fog
5709	60–5709	12	50	Sealed Beam Fog
5712	60–5712	12	50	Sealed Beam Head
5713	60–5713	6	40	Sealed Beam Spot
5714	60–5714	6	40	Sealed Beam Fog
5717	60–5717	12	100	Sealed Beam Headlamp
5718	60–5718	12	50/37·5	Sealed Beam Headlamp
5720	60–5720	12	55	Tungsten Halogen Auxiliary
5721	60–5721	12	55	Tungsten Halogen Spot
6624 (A400)	28–6624	28	2·8	Aircraft Panel
6680	28–6680	28	11	Reading Lamp
7002	60–7002	12	60/45	Sealed Beam Head
7005	60–7005	12	50/40	Sealed Beam Head
7010	60–7010	12	75/50	Sealed Beam Head
7012	60–7012	12	75	Sealed Beam Head
7013	60–7013	12	50/60	Sealed Beam Head
7014	60–7014	12	60/45	Sealed Beam Head

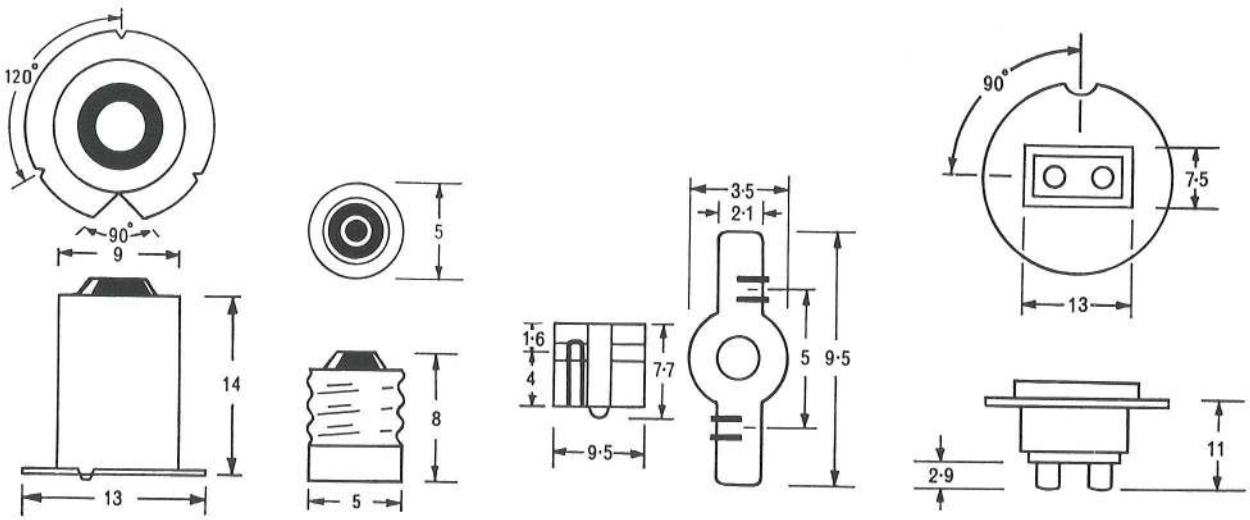
Vehicle lamps
Lamp cap dimensions

The dimensions and details of the caps used on the range of vehicle lamps are given below.

All dimensions in mm.







Vehicle lamps
Obsolete lamps and extras

Obsolete lamps

Current Lamp Number	Superseded Number
185	162
205	200
206	204
323	325
414	354
441	603
641	640
643	645
951	988
987	986
989	222
990	982

Extras

Certain lamps in this catalogue are available with non-standard finish and/or non-standard caps. Where such alternatives are available, the following extra charge to list prices will be made.

Colour spraying and external frosting

	Price each list extra s. d.
10mm, 11mm and 15mm bulbs	6
18mm bulbs and above	1 0

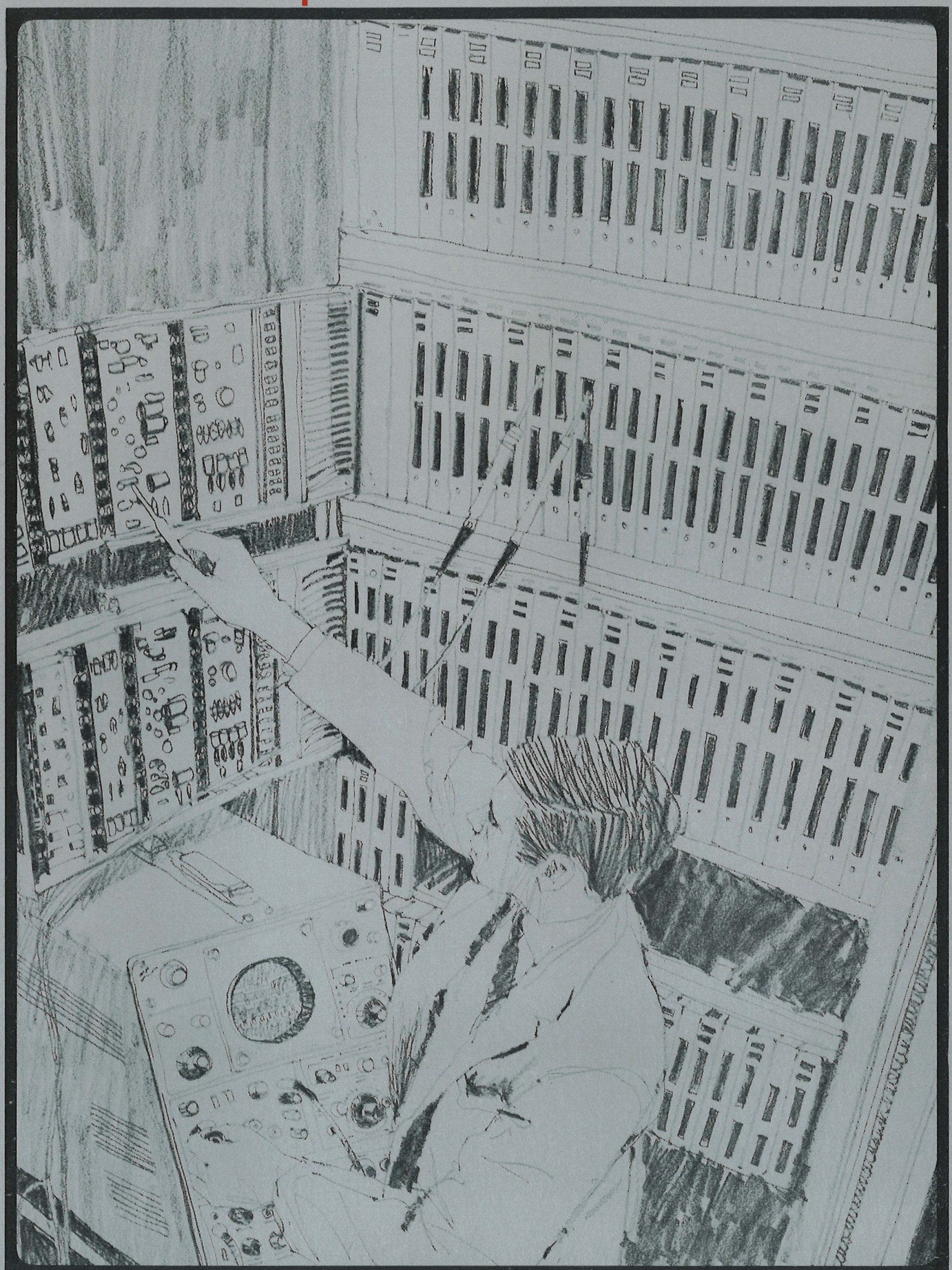
Caps—quantities of less than 1000 identical lamps

M.E.S., M.C.C.	6
B.C., E.S., S.B.C., S.B.C. Index, A.S.B.C., A.S.C.C., 3-pin B.C., Bosch, S.E.S., A.P.F.	1 0

Extra for 1000 and over identical lamps on application.

SfB (63)
UDC 621·32

Minitek lamps



Minitek lamps
Introduction

Mazda Minitek lamps are miniature lamps where specialised and miniaturised techniques are required in manufacture–hence the name Minitek. They are part of the supplies needed for everyday life, being essential components of the telephone, the telewriter and some aircraft control systems. Many are used for very specialised applications, such as computers, digital read-out systems and telecommunications instrumentation to name but a few.

BRITISH LIGHTING INDUSTRIES LTD.
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Numerical and alphabetical indexes

Numerical Index — Section Six

Alphabetical Index — Section Six

Minitek lamps

Sub-miniature panel lamps and miners lamps

Sub-miniature panel lamps

Midget flange cap Illustration 1–all lamps.

Volts	Amps.	Std. Pack	Cap	Average Life Hours	Nato Stock No. 6240–99–995	Special Products No.	Lamp Ref. No.
4	**0·26**	50	S6/8	1,000	9125	L–1001	28–6155
6	**0·1**	50	S6/8	1,000	9119	L–1002	28–6201
6	**0·2**	50	S6/8	500	9135	L–1014	28–6202
12	**0·1**	50	S6/8	1,000*	9120	L–1003	28–6301
14	**0·08**	50	S6/8	750	—	L–1068	21–2120
18	**0·04**	50	S6/8	1,000	—	L–1125	21–2117
28	**0·04**	50	S6/8	1,000	—	L–1004	28–6601
28	**0·04**	50	S6/8	25,000	9182	L–1338	28–6595
28	**0·08**	50	S6/8	1,000	9122	L–1006	28–6615

Price and purchase tax on application.
*At 14v.

Sub-miniature panel lamps

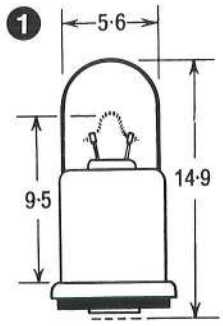
Without cap Illustration 1A–all lamps.

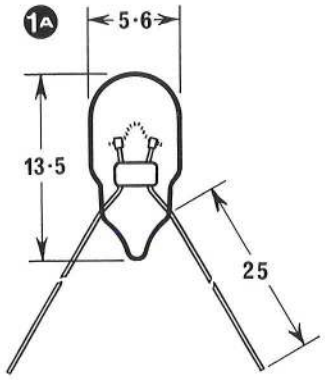
Volts	Amps.	Std. Pack	Average Life Hours	Special Products No.	Lamp Ref. No.
6	**0·2**	50	500	L–1052	28–6203
12	**0·1**	50	1,000*	L–1053	28–6303
28	**0·04**	50	1,000	L–1009	28–6609
28	**0·04**	50	25,000	L–1296	28–6604

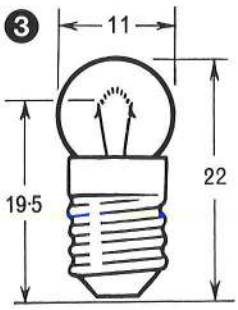
*At 14v.

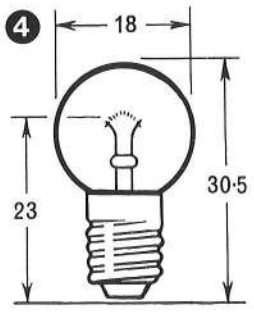
Miners lamps

Volts	Amps.	Price s. d.	P.T. d.	Std. Pack	Cap	Illus.	Type	Lamp Ref. No.
4	**0·25**	**1–6**	4	25	M.E.S.	3	Vacuum	24–5101
4	**0·46**	**1–6**	4	25	M.E.S.	3	Vacuum	24–5106
3.6	**1**	**2–6**	—	25	M.E.S.	4	Krypton	24–5657
4	**0·67**	**3–0**	8	25	M.E.S.	4	Krypton	24–5705
4	**0·8**	**2–6**	—	25	M.E.S.	4	Krypton	24–5721
4	**0·9**	**3–0**	—	25	M.E.S.	4	Krypton	24–5726
4	**1**	**3–0**	—	25	M.E.S.	4	Krypton	24–5730









All dimensions in mm.

BRITISH LIGHTING INDUSTRIES LTD.
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Telephone visual lamps

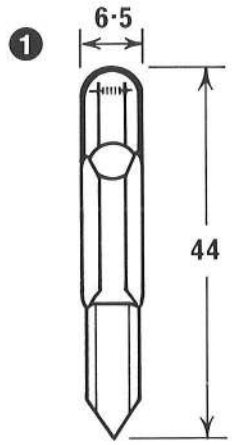
Side contact plates and coloured endpieces.

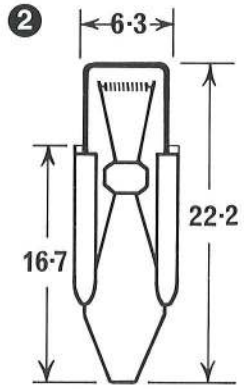
Volts	Amps.	Price s. d.	P.T. d.	Std. Pack	Filament	Endpiece colour	Illus.	Lamp Ref. No.
6	0·041	2–2	5½	50	No. 2 METAL	Grey	1	24–3125
17	0·045	2–2	5½	50		Orange	1	24–3165
24	0·10	2–2	5½	50		Yellow	1	24–3171
24	0·055	2–2	5½	50		Yellow/ Black	1	24–3172
60	0·06	2–9	7	50		White/ Grey	1	24–3461
12	0·117	2–9	7	50	No. 2 CARBON	Red	1	24–3001
36	0·075	2–9	7	50		Black	1	24–3015
50	0·107	2–9	7	50		White	1	24–3035
6	0·04	2–9	7	50	METAL	Black*	2	21–2180
12	0·04	2–9	7	50		Black*	2	21–2185
28	0·04	2–9	7	50		Black*	2	21–2190

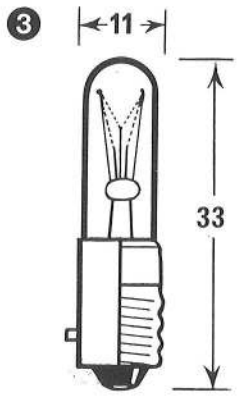
*Lamp Ref. No. 21–2180, 21–2185, 21–2190.
Special Products No. L–1019, L–1020, L–1018.

Telewriter lamps Illus. 3

Volts	Amps.	Price s. d.	P.T. d.	Std. Pack	Cap	Lamp Ref. No.
24	0·1	3–1	8	50	M.C.C.	24–3551
24	0·1	3–1	8	50	M.E.S.	24–3552
50	0·05	3–1	8	50	M.C.C.	24–3626
50	0·05	3–1	8	50	M.E.S.	24–3627







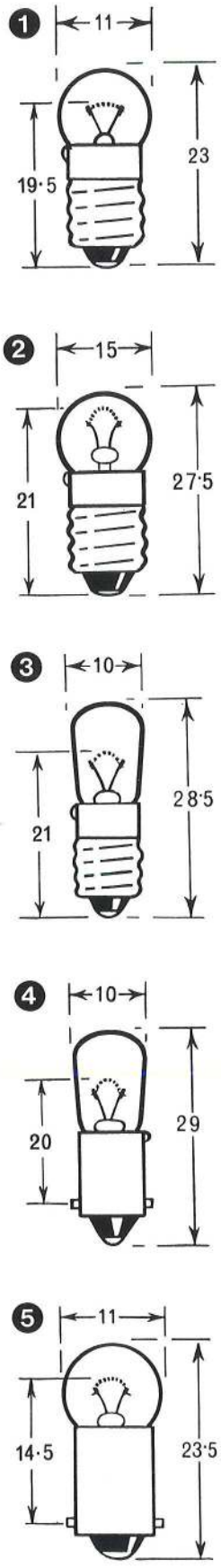
All dimensions in mm.

Minitek lamps
Radio panel lamps

Radio panel lamps

Volts	Amps.	Price s. d.	P.T. d.	Std. Pack	Cap	Illus.	Lamp Ref. No.
6	0·04	1–0	2½	50	M.E.S.	1	21–3083
6	0·06	1–0	2½	50	M.E.S.	1	21–3058
6·2	0·3	7	1½	50	M.E.S.	2	21–3019
6·2	0·3	7	1½	50	M.E.S.	3	21–3025
6·3	0·11	7	1½	50	M.E.S.	1	21–3094
6·3	0·15	7	1½	50	M.C.C.	4	21–3074
6·3	0·15	1–0	2½	50	M.C.C.	4	*21–3033
6·3	0·15	7	2½	50	M.E.S.	3	21–3051
6·3	0·25	1–0	2½	50	M.C.C.	4	21–3043
6·5	0·35	7	1½	50	M.E.S.	1	21–3029
6·5	0·3	7	1½	50	M.C.C.	5	21–3030
6·5	0·3	7	1½	50	M.E.S.	3	21–3028

*Long life lamp.



All dimensions in mm.

BRITISH LIGHTING INDUSTRIES LTD.
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Lamp number index

For quick reference the table shows the Minitek lamps in numerical lamp reference number order. If the lamps are known locally only by the last four digits it is easy to run through the three groups of 21, 24 and 28.

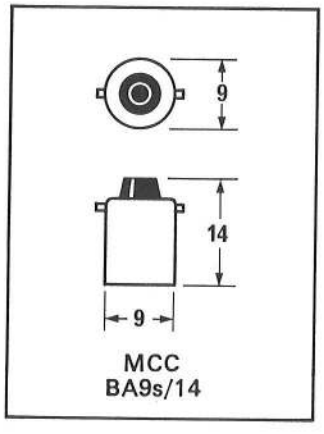
Lamp Ref. No.	Volts	Amps.	Description
21–2117	18	0·04	Sub-miniature panel
21–2120	14	0·08	Sub-miniature panel
21–2180	6	0·04	Telephone visual
21–2185	12	0·04	Telephone visual
21–2190	28	0·04	Telephone visual
21–3019	6·2	0·3	Radio panel
21–3025	6·2	0·3	Radio panel
21–3028	6·5	0·3	Radio panel
21–3029	6·5	0·35	Radio panel
21–3030	6·5	0·3	Radio panel
21–3033	6·3	0·15	Radio panel
21–3043	6·3	0·25	Radio panel
21–3051	6·3	0·15	Radio panel
21–3058	6	0·06	Radio panel
21–3074	6·3	0·15	Radio panel
21–3083	6	0·04	Radio panel
21–3094	6·3	0·11	Radio panel
24–3001	12	0·117	Telephone visual
24–3015	36	0·045	Telephone visual
24–3035	50	0·107	Telephone visual
24–3125	6	0·041	Telephone visual
24–3161	60	0·06	Telephone visual
24–3165	17	0·045	Telephone visual
24–3171	24	0·10	Telephone visual
24–3172	24	0·055	Telephone visual

Lamp Ref. No.	Volts	Amps.	Description
24–3551	24	0·1	Telewriter
24–3552	24	0·1	Telewriter
24–3626	50	0·05	Telewriter
24–3627	50	0·05	Telewriter
24–5081	2·5	0·85	Miners
24–5101	4	0·25	Miners
24–5106	4	0·46	Miners
24–5657	3·6	1	Miners
24–5705	4	0·67	Miners
24–5721	4	0·8	Miners
24–5726	4	0·9	Miners
24–5730	4	1	Miners
28–6155	4	0·26	Sub-miniature panel
28–6201	6	0·1	Sub-miniature panel
28–6202	6	0·2	Sub-miniature panel
28–6203	6	0·2	Sub-miniature panel
28–6301	12	0·1	Sub-miniature panel
28–6303	12	0·1	Sub-miniature panel
28–6595	28	0·04	Sub-miniature panel
28–6601	28	0·04	Sub-miniature panel
28–6604	28	0·04	Sub-miniature panel
28–6609	28	0·04	Sub-miniature panel
28–6615	28	0·08	Sub-miniature panel

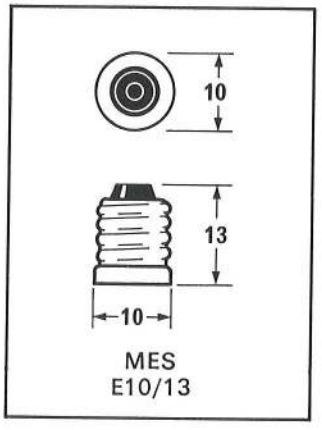
Lamp caps

The lamp caps used on Minitek lamps are shown below, with the exception of the side contact plates and endpieces, used on telephone visuals, which are an integral part of the lamp.

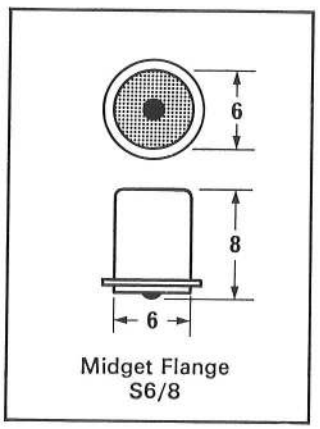
All dimensions in mm.



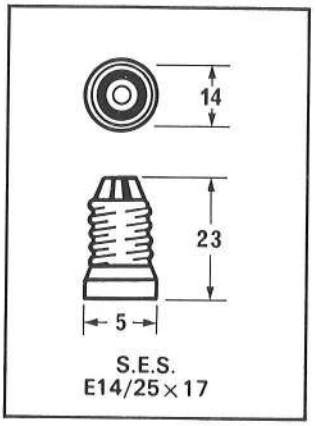
MCC
BA9s/14



MES
E10/13



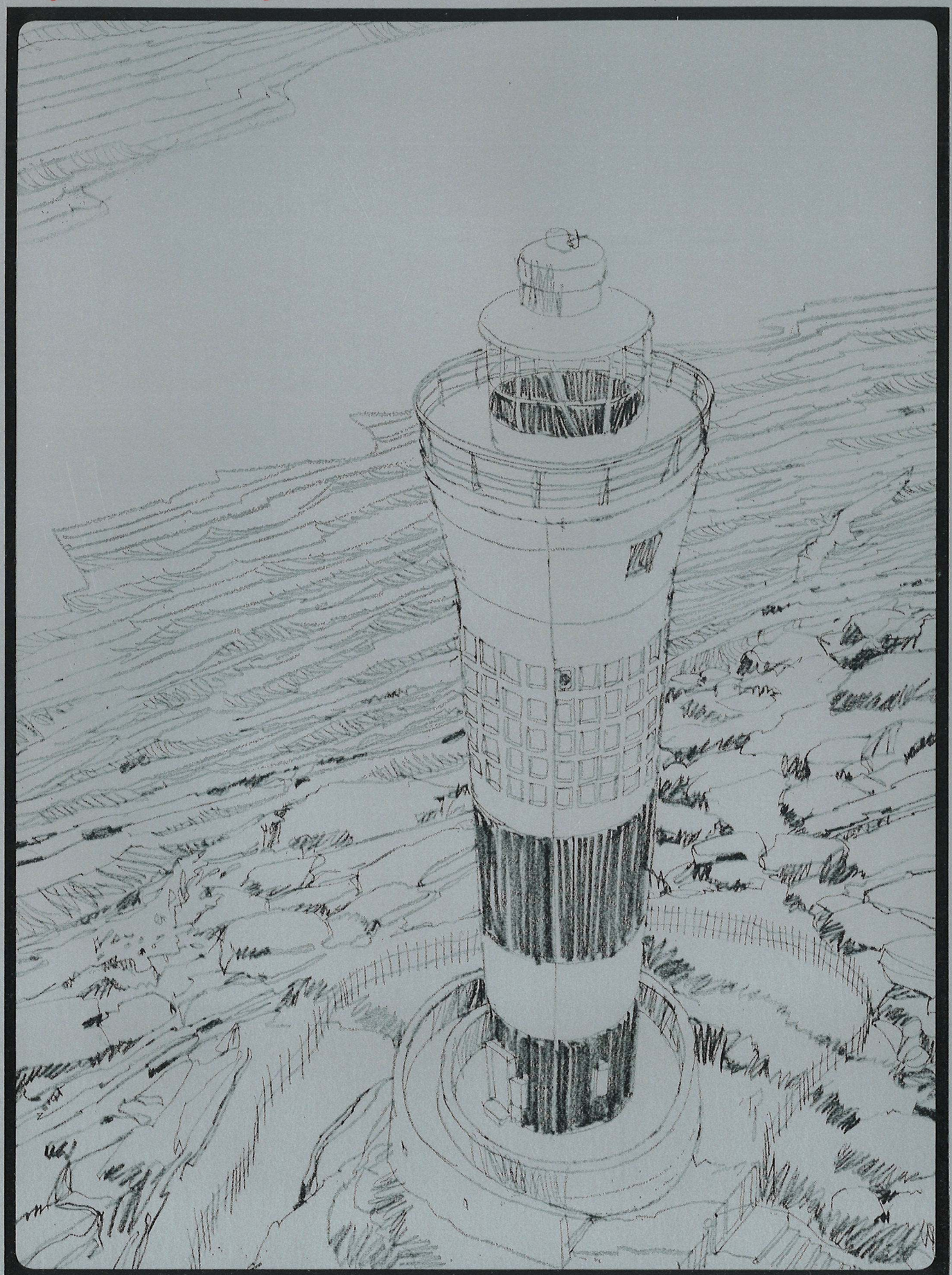
Midget Flange
S6/8



S.E.S.
E14/25×17

SfB (63)
UDC 621·32

Hytek lamps



Hytek lamps
Introduction

The Mazda Hytek lamps are specialised mercury and xenon lamps manufactured to meet the needs of research and industry for advanced compact and high brightness light sources. There is also a variety of ultra-violet sources. These proven ranges of lamps are used for inspection and development projects in many locations and they undoubtedly have done much to maintain the superior quality and advanced design of much British industrial and engineering equipment.
The lamps are manufactured to exacting specification with advanced or high techniques—hence the name Hytek.

BRITISH LIGHTING INDUSTRIES LTD.
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Numerical index—Section seven

Alphabetical index—Section seven

Hytek lamps

Mercury lamps for projector purposes —Type MB/D

Supply voltage 200/250 AC.

Description

Mercury vapour discharge lamps with quartz arc tubes loaded below 100w/cm. of arc length and operating at pressures of 8/10 atmospheres. The arc tubes are mounted in tubular outer bulbs, and the lamps are designed for vertical burning cap down. Restrictions in the arc tube ensure a stabilised and accurately focussed linear light source for projection purposes.

The lamps require control gear consisting of a choke and power factor correction capacitor.

Typical applications

Optical instruments requiring accurate optical control e.g. spectroscopes, comparators, and other 'slit' instruments.

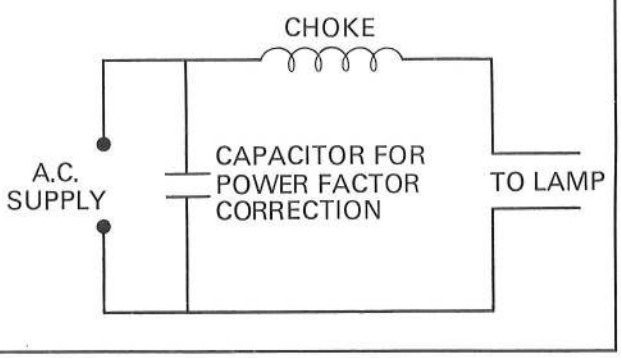
Lamps

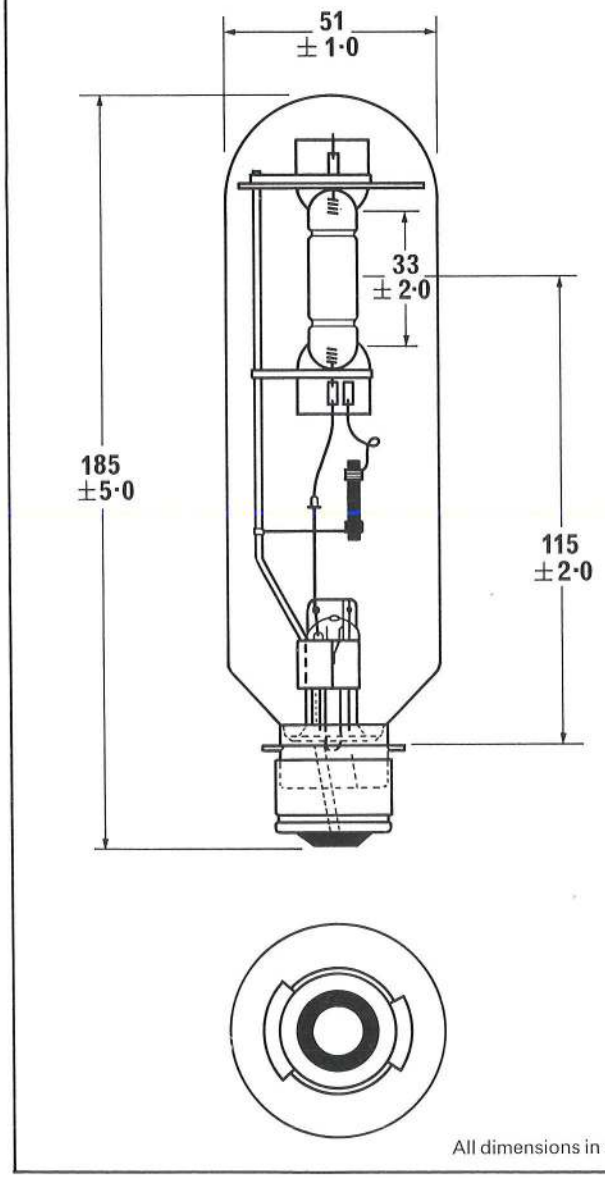
Ref. No.	Watts	Arc Length	Cap	Lamp Operating Volts	Lamp Operating Amps	Starting Current	Design Average Lumens	Life Hrs.	Recommended Price
91-1159	125	33±2	P28/25	110/140	1·15	2·0—1·5	4,000	1,500	£4 12 0

Control gear 240v. 50HZ.

Rating	Choke Cat. No.	Choke Nett User Price	Capacitor Cat. No.	Capacitor Rating mfd.	Capacitor Nett User Price
125w.	AME53159·4	£1 14 3	AMEC2234	8	12s 6d

A.C. OPERATION





All dimensions in mm.

BRITISH LIGHTING INDUSTRIES LTD.
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Supply voltage 200/250.

Description

Mercury vapour discharge lamps with quartz arc tubes loaded above 100w/cm. of arc length and operating at a pressure of about 30 atmospheres.
The arc operates between solid tungsten electrodes providing a compact light source of high brightness.
In the 250w. ratings the quartz arc tube is enclosed in a metal case with clear apertures or with a quartz window to enable short wave U.V. to be utilised from the lamp, or with a glass window where short wave U.V. is not required. Alternatively the quartz arc tube is enclosed in a tubular glass outer bulb.
The 1,000w. rating is a bare quartz arc tube.
Lamps may be operated on DC or AC supplies in conjunction with appropriate control gear. For AC supplies this consists of a choke and power factor correction capacitor. In addition the 1,000w. lamp utilises a starting capacitor in series with a push button switch. For DC operation of 250w. lamps a choke and series resistance are required, the choke being retained for starting purposes, the 1,000w. lamp on DC operation requires a series resistance the lamp being started by means of a Tesla coil.
The lamps are designed for burning in the vertical position.

Typical applications

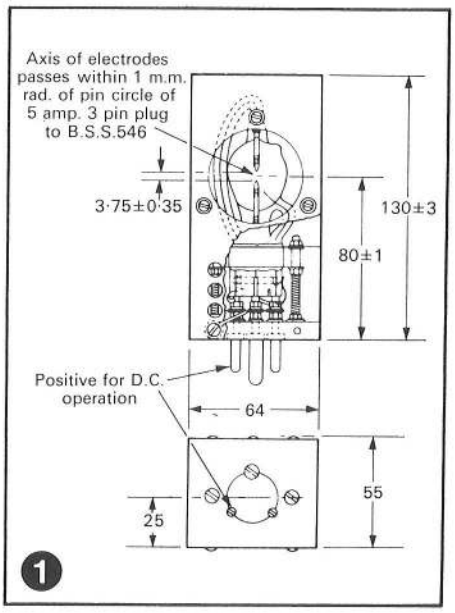
Monochrome slide and film projectors. Film printing. Projection microscopes. Profile projectors.

Lamps

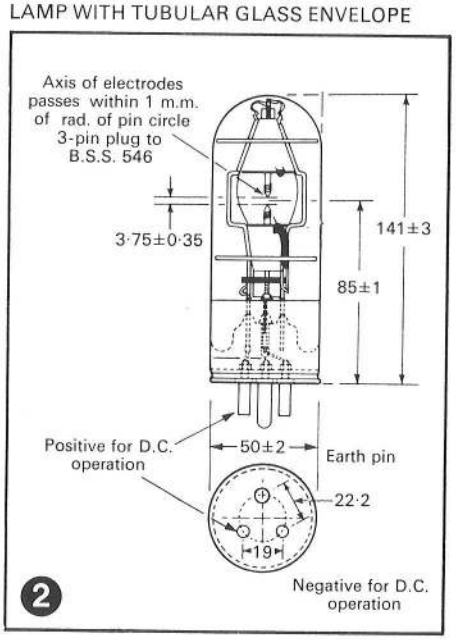
Ref. No.	Watts	Arc Length mm	Cap	Outer Casing	Illus.	Lamp Operating Volts	Lamp Operating Amps.	Starting Current Amps.	Max. Brightness Stilbs	Mean HCP	Life Hrs.	Recommended Price
94-0001	250	3·75	3-pin	Metal Box Glass Window	1	60/75	3·7/4·6	4/5	20,000	1,300	500	£27 6 0
94-0006	250	3·75	3-pin	Metal Box Quartz Window	1	60/75	3·7/4·6	4/5	20,000	1,300	500	£36 10 0
94-0051	250	3·75	3-pin	Tubular Glass Bulb	2	60/75	3·7/4·6	4/5	20,000	1,300	500	£20 6 0
94-0101	250	3·75	P28/25	Oval Metal Case	3	60/75	3·7/4·6	4/5	20,000	1,300	500	£28 18 0
94-0151	1,000	6·5	Cylindrical with Disc	—	4	60/75	16/18	20/22	40,000	7,000	500	£87 10 0

For a control gear and illustration of 1,000w. lamp—see overleaf.

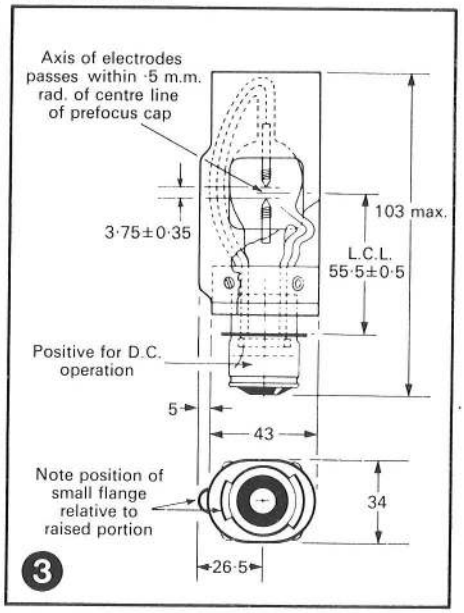
3-PIN BOX TYPE LAMP



LAMP WITH TUBULAR GLASS ENVELOPE



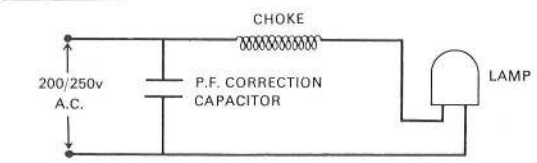
PREFOCUS LAMP



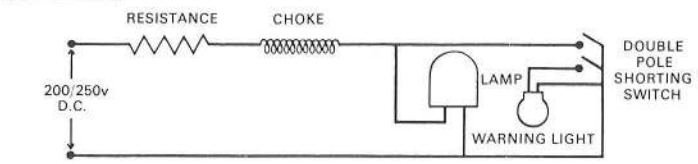
All dimensions in mm.

ME/D LAMPS – CIRCUIT DIAGRAMS 250w LAMPS

A.C. OPERATION



D.C. OPERATION



Hytek lamps

Mercury lamps for projector purposes —Type ME/D

Control gear AC Operation

Rating	Supply AC	Choke Cat. No.	Choke Nett User Price each †	Capacitor Cat. No.	Capacitor Rating mfd.	Capacitor Nett User Price each †	Starting Capacitor
250w.	200/250v.	AME53235	£10 15 0	AMEC2275	60	£7 14 8	—
1,000w.	200/250v.	4 × AME53235	£10 15 0	3 × AMEC2276	3 × 80	£9 19 8	0·5 mfd*

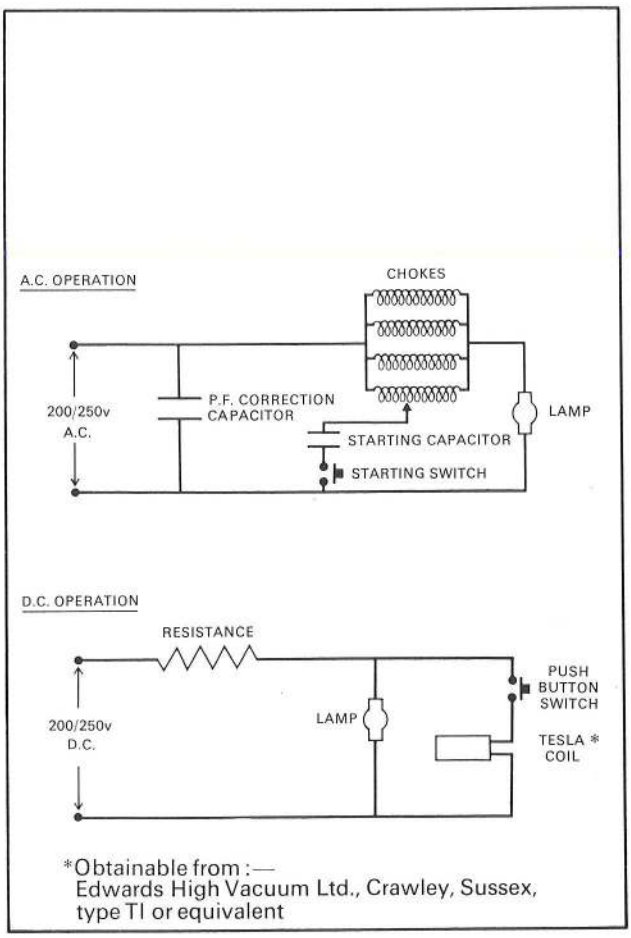
*TCC type CP142W–1,000v. working–70°C max. working temperature or equivalent.
†Not subject to normal discount.

Control gear DC Operation

Supply Volts DC	250w. Series Resistance* Ohms	250w. Choke	250w. Nett User Price †	1,000w. Series Resistance* Ohms	1,000w. Current Rating Amps
200	35·2	AMEC53235	£16 0 0	8·9	22·5
210	37·0			9·5	22·0
220	40·6			10·2	21·6
230	43·3			10·9	21·0
240	46·0			11·5	20·8
250	48·7			12·2	20·4

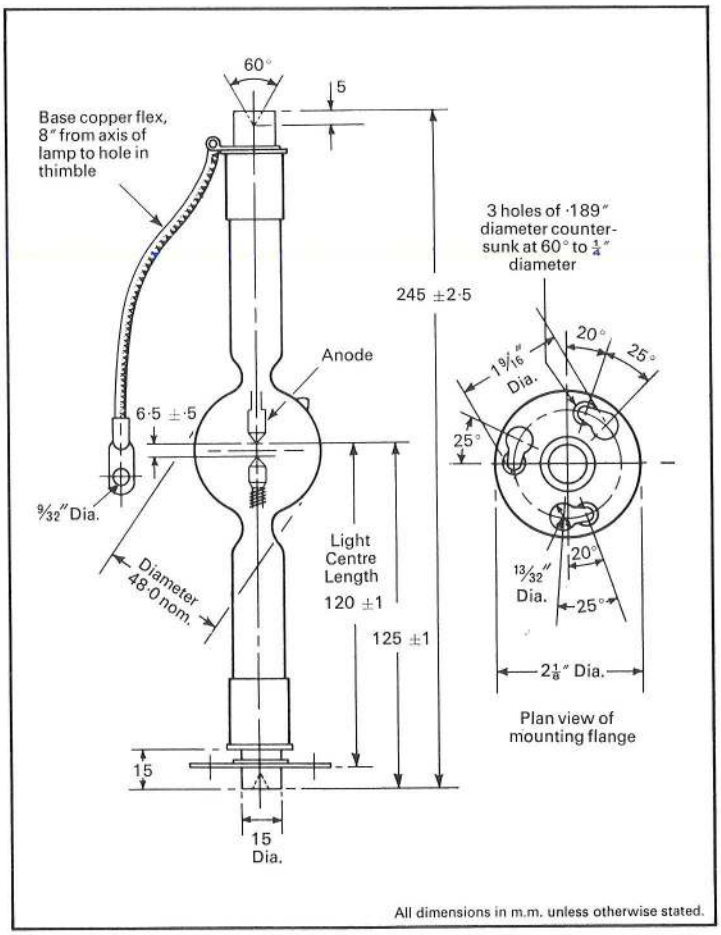
†Not subject to normal discount. *Supplied by Installer

1,000w. LAMPS



*Obtainable from :—
Edwards High Vacuum Ltd., Crawley, Sussex, type TI or equivalent

LAMP WITH TAG/LEAD CONNECTION



All dimensions in m.m. unless otherwise stated.

BRITISH LIGHTING INDUSTRIES LTD.
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Mercury lamp for long wave U.V. —Type MBW (Blacklight)

Supply voltage 200/250 AC.

Description

Mercury vapour discharge lamps with quartz arc tubes loaded below 100w/cm. of arc length and operating at pressures of 8/10 atmospheres. The quartz arc tube is enclosed in a pear shaped outer bulb of Woods glass which absorbs virtually all radiation from the arc tube other than that in the long wave U.V. of predominantly 3650 Angstrom units, little visible light is emitted.
The lamp is thus eminently suitable as a source of long wave U.V. radiation to excite fluorescence in susceptible substances.
The lamp is designed for operation off 200/250v. AC supplies with suitable control gear in the form of a series choke and power factor correction capacitor.
It will operate in any position.

Typical application

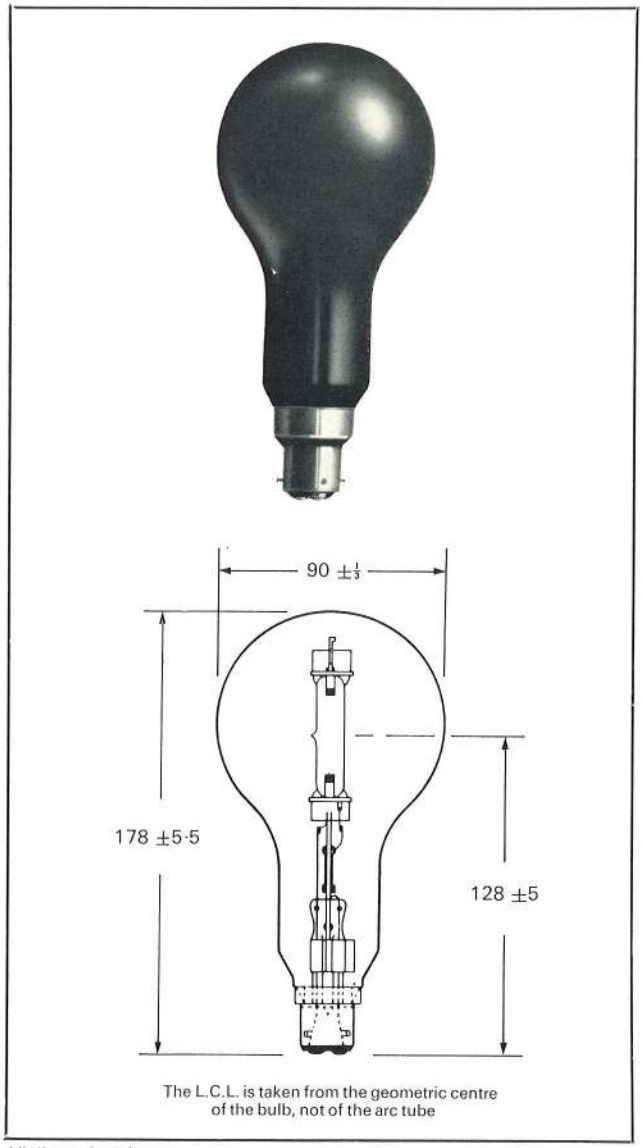
As a source of long wave U.V. for bacteriological, mineralogical and forensic investigations. In connection with fluorescent pigments for various detection methods and for special effects in entertainments and shop window lighting.

Lamps

Ref. No.	Watts	Cap	Lamp Operating Volts	Lamp Operating Amps	Starting Current	Life Hrs.	Recommended Price
91-6217	125	B22/31 × 30 3-pin	110/140	1·15	2·0/1·5	1,500	£3 15 0

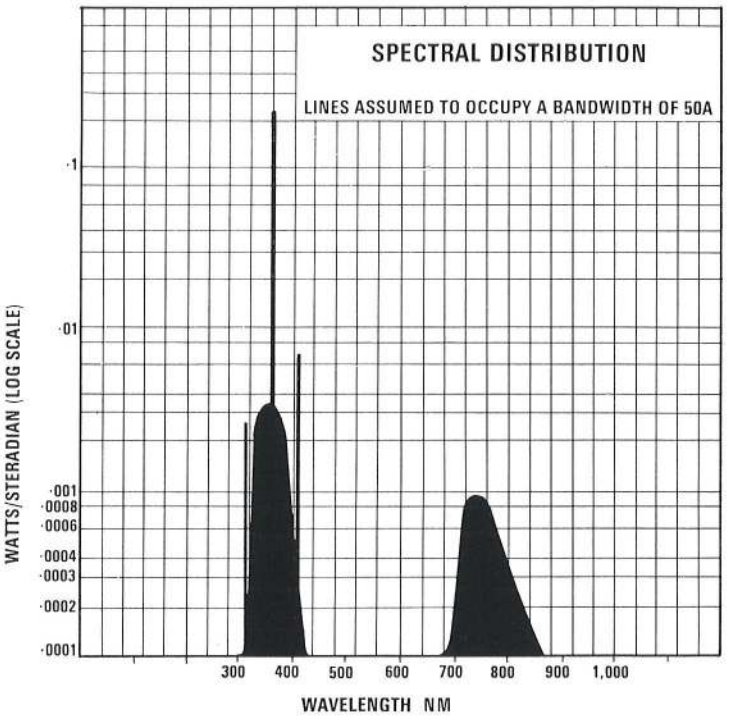
Control gear

Rating	Choke Cat. No.	Choke Nett User Price	Capacitor Cat. No.	Capacitor Rating mfd.	Capacitor Nett User Price
125w.	AME53159·4	£1 14 3	AMEC2234	8	12s 6d

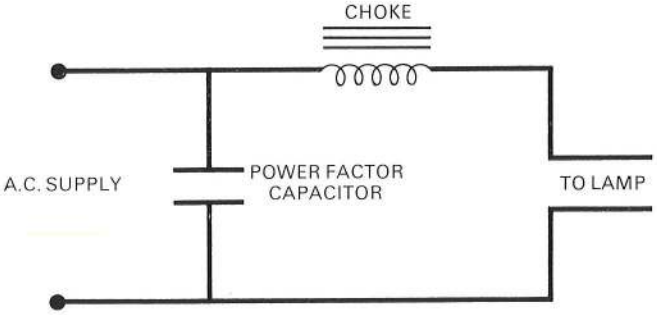


The L.C.L. is taken from the geometric centre of the bulb, not of the arc tube

All dimensions in mm



CIRCUIT DIAGRAM



Hytek lamps

Miniature mercury lamps for long wave U.V. — Types M1 and M2

Description

Low pressure discharge in mercury vapour between electrodes in a tubular glass envelope, these lamps provide both U.V. and visible radiation especially useful in providing excitation of fluorescent materials at low illumination levels. The M1 lamp is designed for operation from 24v. DC supplies with suitable series resistances, and the M2 type is designed for 200/250v. AC supplies with suitable control gear either in the form of a choke or series resistance.
The lamps operate in any position.

Typical application

As a source of long wave U.V. for the excitation of low lumen levels of fluorescent pigments in display work.

Lamps

Type	Ref. No.	Rating*	Supply Volts	Cap	Filament Current	Max. Arc Current	Life Hrs.	Recommended Price
M1	98-9001	4·5w.	22 DC Min	S.B.C.	0·8 Amp	0·75 Amp	200	£4 13 6
M2	98-9002	4·5w.	200/250 AC	S.B.C.	—	0·5/1·5 Amp	200	£4 13 6

*At 0·75 Amp.

Control gear M1 lamps DC Operation

Rating	Supply Volts	Series Resistance†	Heater Resistance†
4·5w	24 DC	24 Ohms	30 Ohms

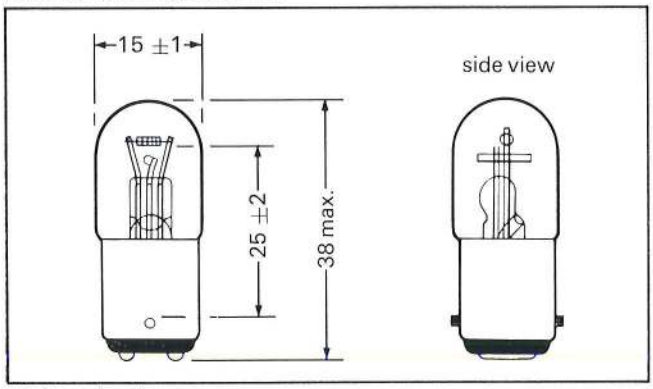
†Supplied by installer.

M2 lamps AC Operation

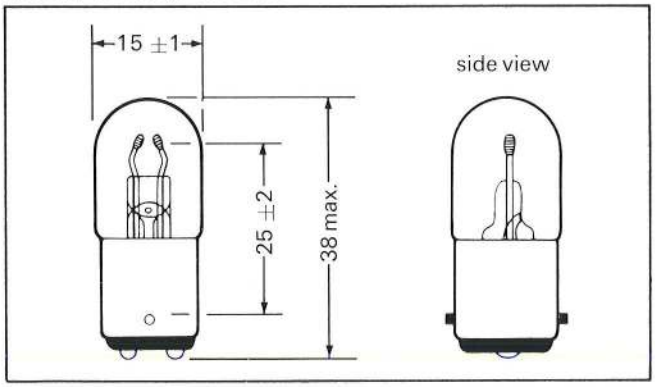
Supply Volts	Operating Current	Chokes in Series	Recommended Price
200/250v.	0·9 Amp	AME62830·4	£2 6 6
50HZ		AME62825	£1 3 6

Alternatively series resistances may be used in place of the two series chokes of values between 480-160 Ohms to give operating currents in the range 0·5 to 1·5 Amps.

Mercury discharge tube M.1



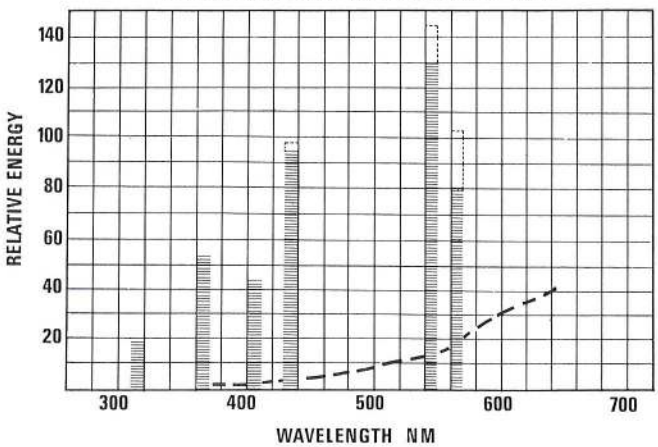
Mercury discharge tube M.2



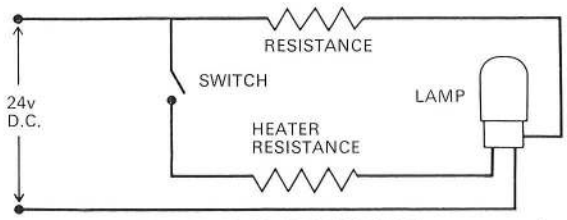
All dimensions in mm.

APPROXIMATE SPECTRAL ENERGY DISTRIBUTION FOR M.1 AND M.2 MERCURY DISCHARGE TUBES

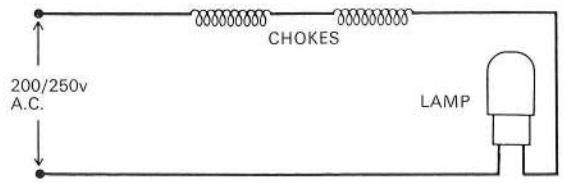
(Principal mercury lines shown as 10NM. wide.)



M1 and M2 LAMPS – CIRCUIT DIAGRAMS



M1 LAMPS – 24v D.C. OPERATION



M2 LAMPS – 200/250v A.C. OPERATION

BRITISH LIGHTING INDUSTRIES LTD.
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Mercury lamp for short wave U.V. — Type MBL/D

Supply voltage 200/250.

Description

Mercury discharge lamps with bare quartz arc tubes loaded below 100w/cm. of arc length and operating at a pressure of 8/10 atmospheres. The lamp transmits both long wave and short wave U.V. as well as visible light. Perforated diaphragms mounted above the electrodes ensure a stabilised and accurately focussed linear light source for optical purposes.

The lamp is designed to operate in the vertical cap down position off 200/250v. AC and DC supplies with suitable control gear. For AC operation this consists of a series choke and power factor correction capacitor. For DC operation, a series choke and a series resistor are required together with a quick break switch for starting purposes.

Typical application

As a source of short wave U.V. in measuring instruments e.g. spectral photometers.

Lamps

Ref. No.	Watts	Arc Length mm	Cap	Lamp Operating Volts	Lamp Operating Amps	Starting Current Amps	Max. Brightness Stilbs	Life Hrs.	Recommended Price
91-9006	125	20	B22/31 x 30 3-pin	110	1·25	3·0	800	1,000	£18 10 0

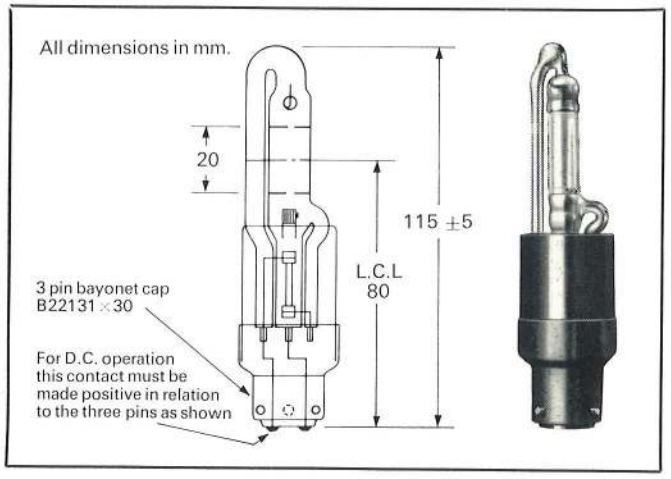
Control gear AC Operation

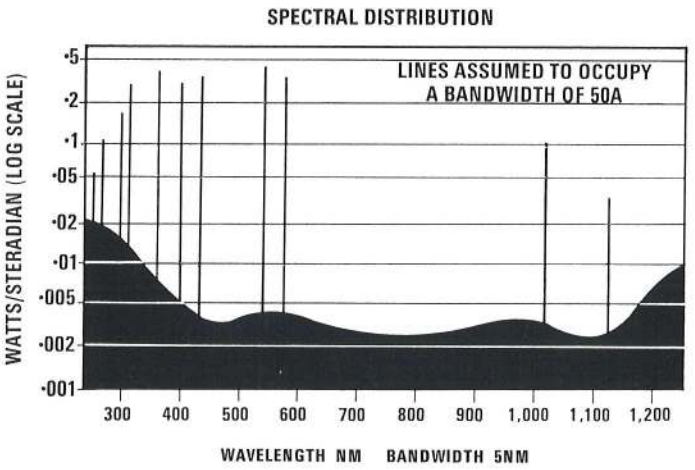
Rating	Choke Cat. No.	Nett User Price	Capacitor Cat. No.	Rating mfd.	Nett User Price
125w.	AME53159·4	£1 14 3	AMEC2234	8	12s 6d

Control gear DC Operation

Rating	Supply Volts DC	Resistance* Ohms	Current Rating Amps	Choke Ref. No.	Nett User Price
	200	79			
	210	87			
125w.	220	95	2·3	AME53159·4	£1 14 3
	230	105			
	240	112			
	250	123			

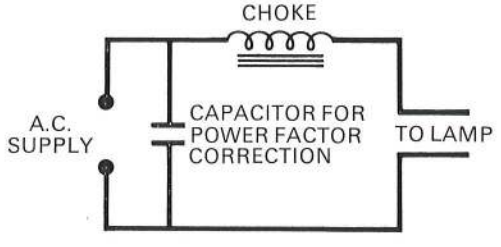
*Supplied by installer



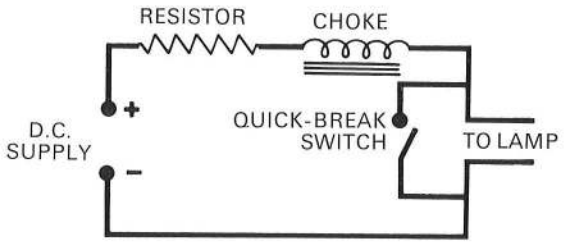


CIRCUIT DIAGRAMS

A. C. OPERATION



D.C. OPERATION



Hytek lamps

Mercury iodide lamp— Type HBIL/H

Supply voltage 240—Life 3,000 hours.

Description

A mercury iodide lamp with a quartz tube loaded below 100w/cm. arc length at a pressure of 8/10 atmospheres.

The lamp is for use in 'Edinburgh' asymmetric floodlight fitting* only and the provisional data for the lamp in this fitting is as below :—

Lighting design lamp lumens	60,000
Lamp operating position—horizontal	±20°
Total circuit watts per fitting	900
Circuit power factor (lagging)	0·80
Mains current at 240v.	4·7 Amps

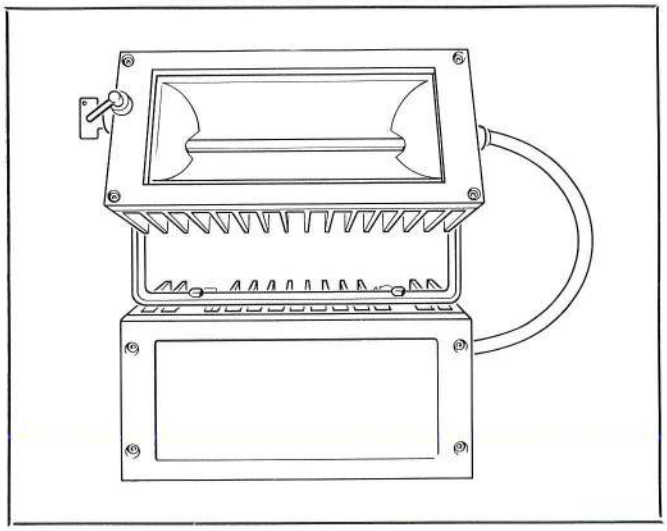
Application

The lamp is an integral part of the 'Edinburgh' floodlight which is primarily used for high tower floodlighting applications outdoors.

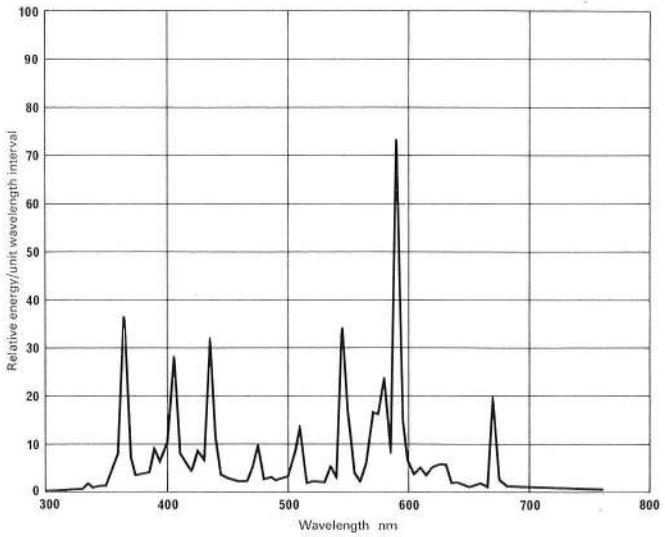
Watts	Lamp Ref. No.	Price	Std. Pack
750	91-7461	£11 10 0	1

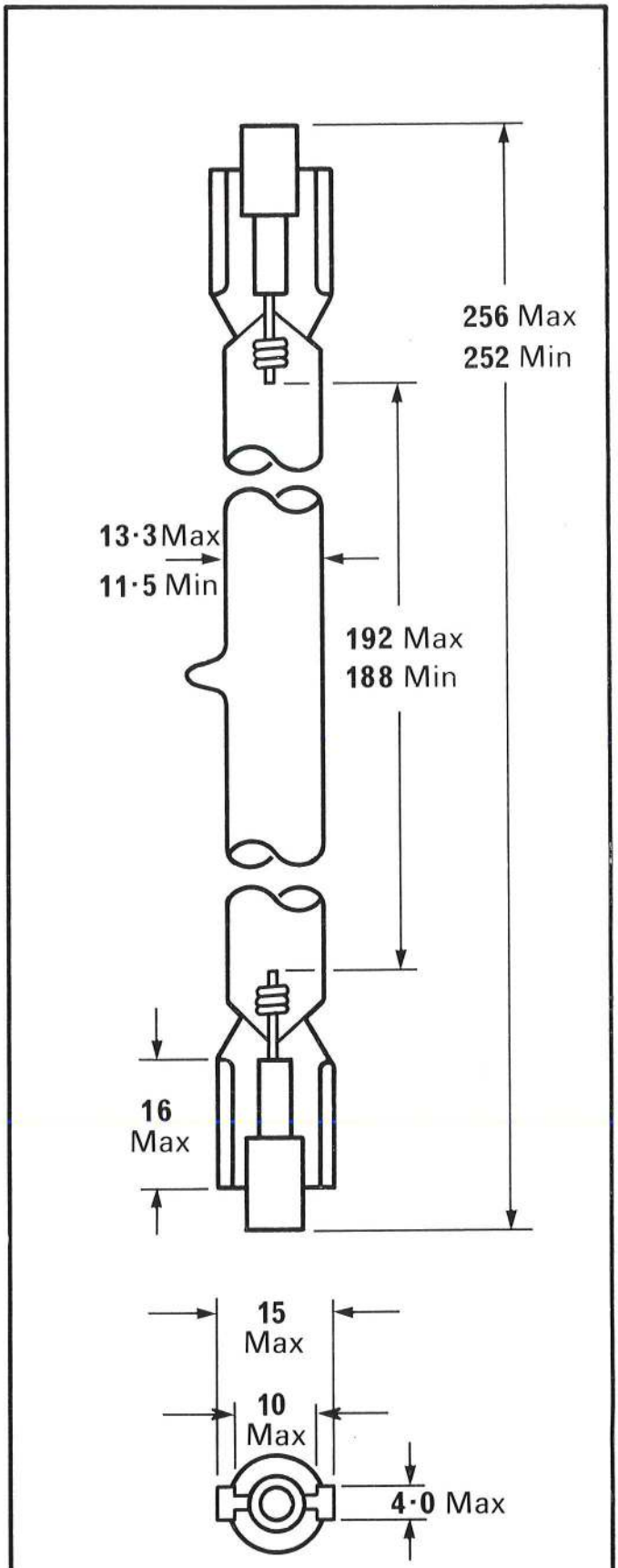
The lamp is not subject to purchase tax.
*For details see the British Lighting Industries Fittings Catalogue.

Edinburgh' fitting with 750w lamp and gear



Spectral distribution diagram for 750w Mercury Iodide Lamp





All dimensions in mm.

BRITISH LIGHTING INDUSTRIES LTD.
A member of the Thorn Group THORN

Description

The 400 watt compact source iodide lamp is a new design of projector lamp giving white light of good colour rendering properties at an efficiency of 80 l/w for 100 hours. The source size is approximately 9mm. x 5mm. and the brightness is about 8,000 candelas per square cm.

The high efficiency is obtained by the use of an arc discharge. The iodide technique has been used to introduce additional elements into the arc and to keep the bulb wall clean throughout life.

The lamp is somewhat unconventional in appearance. It is extremely rugged. The small total physical size and the ability to operate it in any position ensures that the lamp can be readily fitted into existing equipment and simplifies the design of new equipment. The single ended construction and the degree of prefocusing provided means that lamp replacement is straightforward.

Applications

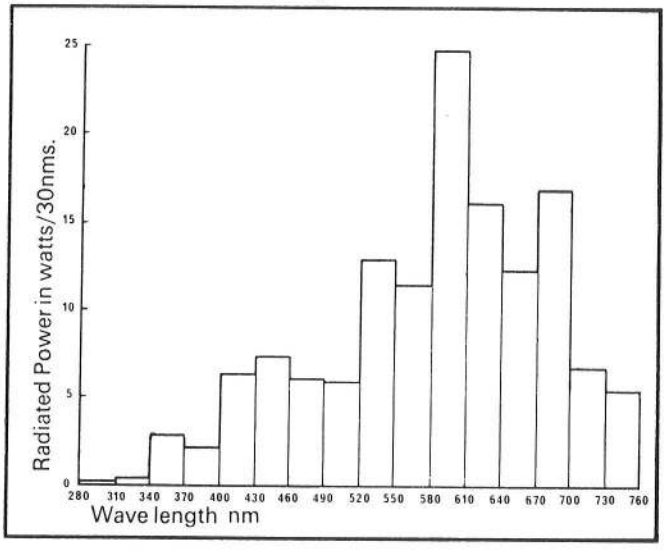
The major advantage of this lamp is its high efficiency, combined with its robustness, simplicity, small size and relatively low power consumption.

In general, considerations of source size, lamp size, lamp rating and efficiency indicates that it can be used in applications which at present use 100v.-240v. hard glass filament projector lamps of 250w.-1,000w. rating to give a substantial advantage in terms of either increased light output or a reduction in input power and heat. In a number of cases it should prove a useful replacement for the 250w. M.E. lamp and the 500w. and 2Kw. xenon lamps. In the latter case the main advantage will be in the major reduction in cost and complexity of control gear.

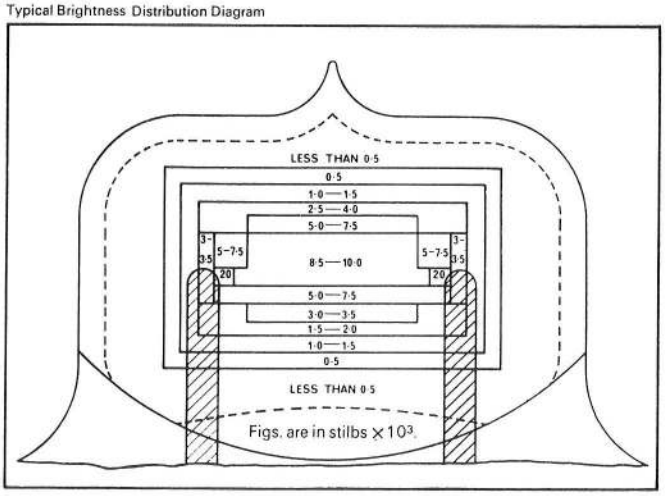
Lamp Ref. No. 99-0201—Recommended price £7 0 0.

FOR ADDITIONAL INFORMATION ON THIS LAMP—SEE OVERLEAF.

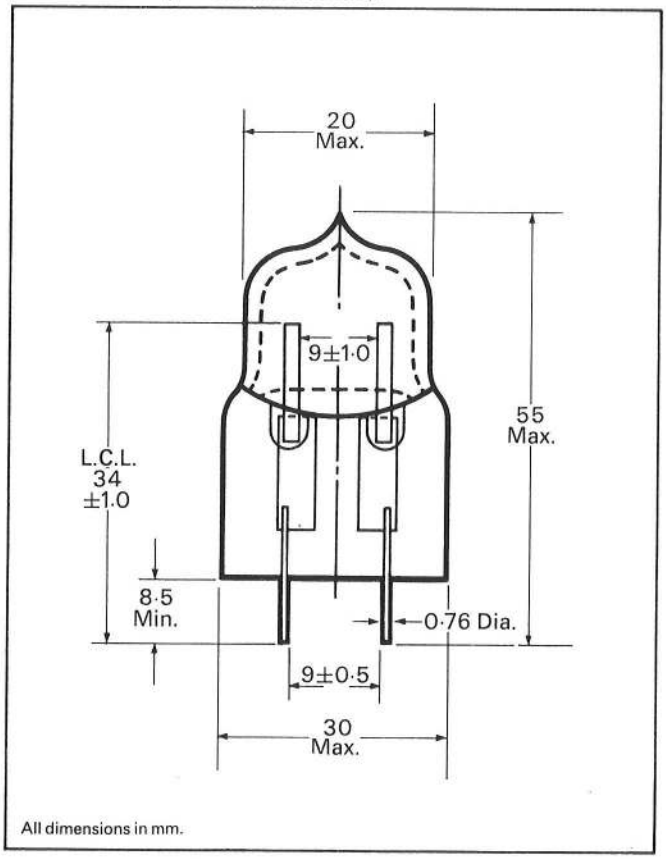
Typical Spectral Power Histrogram for the 400W Compact Source Iodide Lamp



Typical Brightness Distribution Diagram



The 400 watt Compact Source Iodide Lamp.



Hytek lamps

Compact source mercury iodide lamp for projector purposes

Electrical characteristics

Supply Volts AC	240
Arc Watts	400
Arc Volts	100
Arc Current (amps)	5
Run up Time (secs.)	30
Re-starting Time (mins.)	3/5

Physical dimensions (in millimetres)

Arc Length	9±1·0
Arc Size	9 x 5
Overall Length (max.)	55
L.C.L.	34±1
Diameter (max.)	30
Pin Length (min.)	8·5
Pin Spacing	9·0±0·5
Pin Diameter	·76

Luminous characteristics

Initial Lum. Eff. (min.)	80 lumens/watt
Lumen Maintenance	90%
Colour Rendering	Good
Chromaticity Co-ordinates	x=·433, y=·382

Life (nominal objective)—100 hours

Operating position—universal

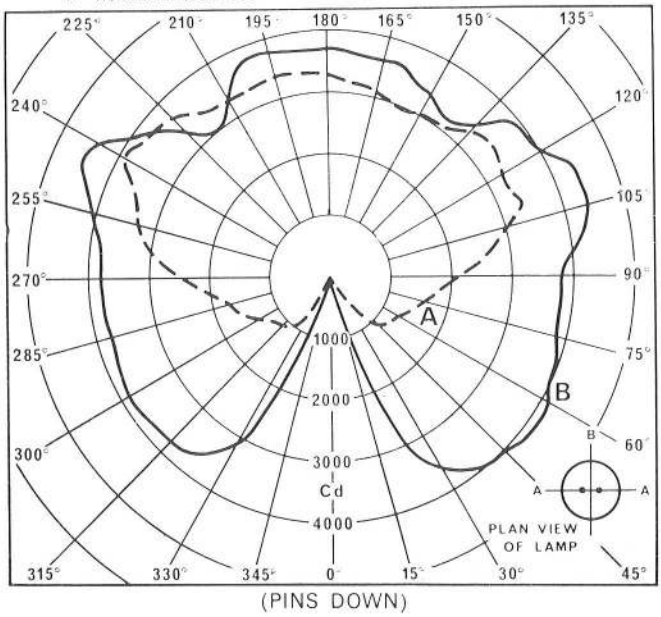
Control gear

Control Gear and Box—AME53196·4
Nett User Price £20 14 0

Lampholder

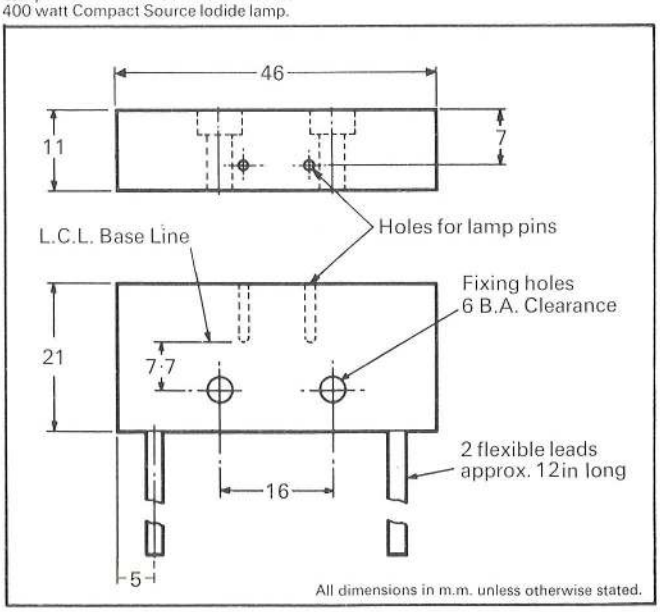
A lampholder (B.L.I. Cat. No. L1101) has been designed for use with the lamp. Price 10s. 0d. An outline drawing showing fixing dimensions is shown below.

Typical Candlepower Distribution in vertical planes.
A—through electrodes
B—normal to electrodes



(PINS DOWN)

Lampholder ref : L.1101 for use with the 400 watt Compact Source Iodide lamp.



BRITISH LIGHTING INDUSTRIES LTD.
A member of the Thorn Group THORN

Hytek lamps

Compact source xenon lamps —Type XE/D

Description

Xenon compact source discharge lamps consist of an arc burning between electrodes of tungsten in a high pressure of pure xenon contained in a quartz bulb.

The light source is of high brightness emitting radiation virtually in a continuum, extending from the ultra-violet through the visible into the infra-red, giving a colour similar to noon sunlight of an approximate colour temperature of 5,600°K.

All lamps require a starter unit to initiate the arc. In addition AC lamps require control gear in the form of a series inductance and a power factor correction capacitor, whereas DC lamps require as control gear series resistances.

Alternatively the DC lamps may be run off AC supplies using as control gear, a rectifier ballast unit.

All starters require a 200/250v. 50c/s 2 amp supply.

Application

High speed photography and cinematography
Colour matching
Fadeometer testing
Graphic arts
Optical instruments
Laboratory and general scientific purposes.

Lamps

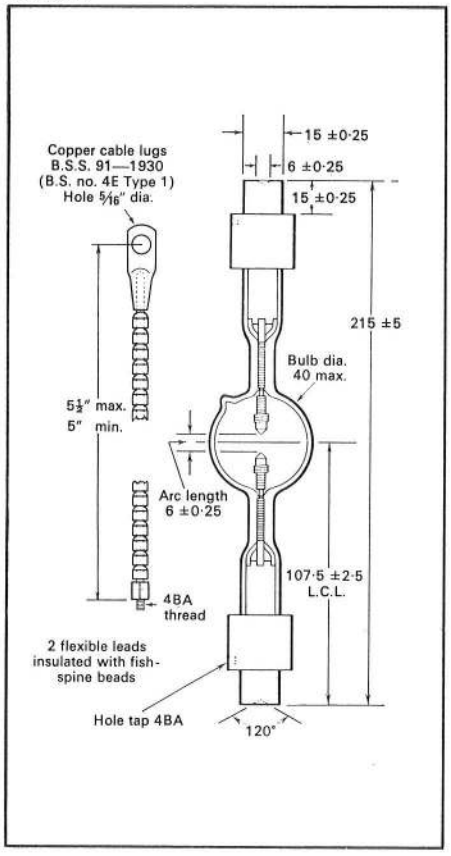
Rating Watts	Ref. No.	Supply Volts	Arc size mm.	Lamp Operating Volts	Lamp Operating Amps	Lumens	Luminance*	Life Hrs.	Nett Price †
250 DC	98-0352	65 DC Min.	3 x 2	16·5	15	5,000	11,000	1,500	£25
250 AC	98-0351	200/250 AC	3 x 2	16	17	5,000	10,000	500	£20
500 DC	98-1002	65 DC Min.	5 x 3	22	23	12,000	20,000	1,000	£65 10 0
500 AC	98-1001	200/250 AC	5·5 x 3	20	27	11,000	11,000	500	£47
2Kw DC *2 Electrode*	98-1506	65 DC Min.	4·5 x 4	25	80	70,000	120,000	1,000	£112
2Kw DC *3 Electrode*	98-1503	35 DC Min.	7·5 x 4	27	74	64,000	67,000	1,000	£112

*Luminance = Average luminance of brightest circle of 2mm. diam. in candelas/sq. cm.
†Not subject to discounts.

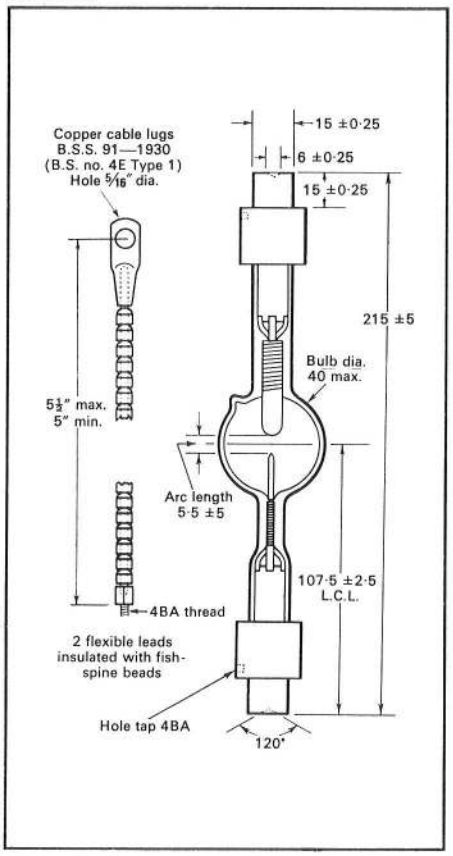
Position of burning: Vertical ± 15° except for 2Kw 3 electrode lamp which burns vertically or horizontally ± 15°.
Caps: All lamps are fitted with special cylindrical caps. Lamps of 500w. and 2Kw have a cone centre for mounting, and a flexible lead.

FOR ADDITIONAL INFORMATION ON THESE LAMPS—SEE OVERLEAF.

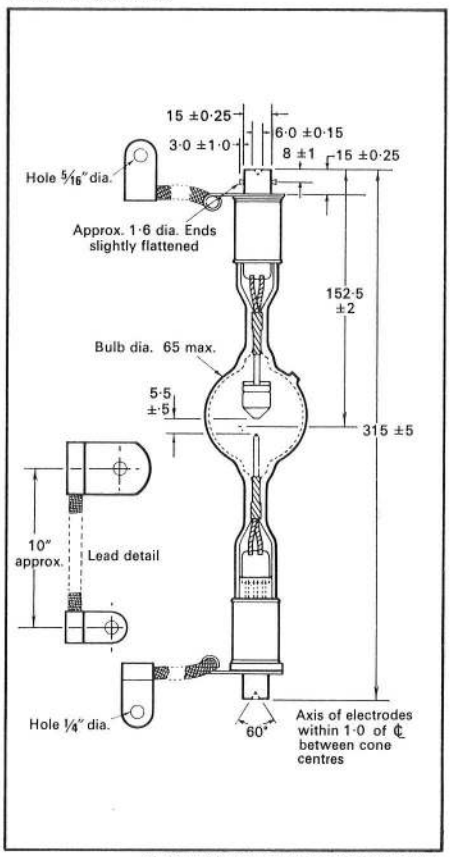
500 W/AC



500 W/DC



2 Kw DC 2 electrodes



All dimensions in m.m. unless otherwise stated.

Hytek lamps

Compact source xenon lamps —Type XE/D

Control gear for AC lamps on 200/250v. 50HZ supplies

Rating	Starter Cat. No.	Starter Nett Price	Chokes Cat. No.	Chokes Watts Loss	Chokes Nett User Price Each	Capacitors MFD	Capacitors Cat. No.	Capacitors Mains Current Amps	Capacitors Nett User Price Each
250w.	AME53239	£56†	4 x AME53235	100	£10 15 0	160 or 200	2 x AMEC2276	5	£9 19 8
							2 x AMEC2275	2	£7 14 8
							+AMEC2276		£9 19 8
500w.	AME53239	£56†	6 x AME53235	150	£10 15 0	240 or 300	3 x AMEC2276	$8\frac{1}{2}$	£9 19 8
							3 x AMEC2276 +AMEC2275	$4\frac{1}{2}$	£7 14 8

†Not subject to discount. | Nett prices not subject to normal discount.

Control gear for DC lamps on 35/65v. DC supplies

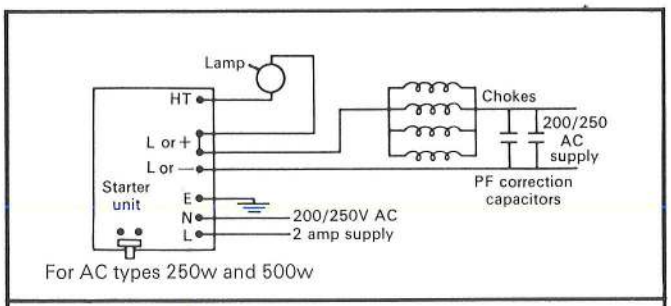
Rating	DC Supply Volts	Starter Cat. No.	Starter Nett Price	Series Resistance Ohms	Series Resistance Current Amps
250w.	65v. Min.	AME53239	£56†	V—16·5 / 15	15
500w.	65v. Min.	AME53239	£56†	V—22 / 23	23
2Kw *2 Electrode*	65v. Min.	AME53233	£88†	V—25 / 80	80
2Kw *3 Electrode*	35v. Min.	AME53234	£65†	V—27 / 74	74

† Not subject to discount.

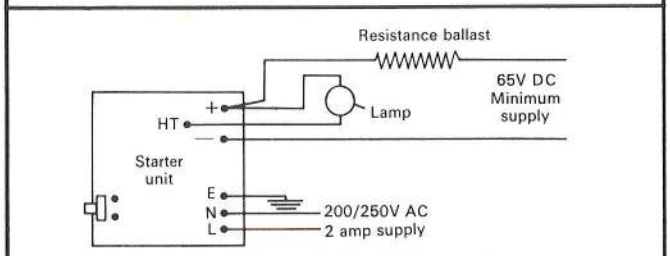
Control gear for DC lamps on 200/250v. 50HZ supplies

Rating	Starter Cat. No.	Starter Nett Price	Rectifier Ballast Cat. No.	Rectifier Ballast Nett Price
250w.	AME53239	£56†	AME53236	£150†
500w.	AME53239	£56†	AME53236	£150†
2Kw *2 Electrode*	AME53233	£88†	AME53237	£277†
2Kw *3 Electrode*	AME53234	£65†	AME53238	£203†

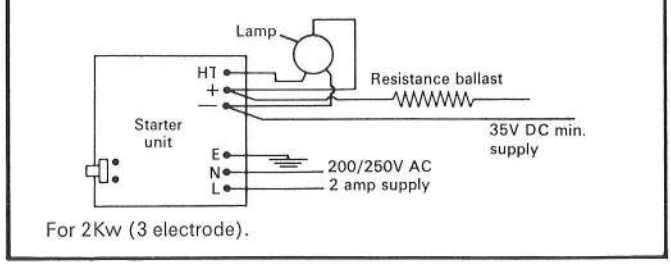
†Not subject to discount.



For AC types 250w and 500w

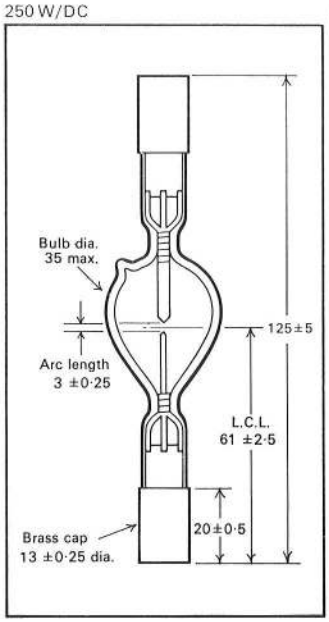


For DC types 250w, 500w, and 2Kw (2 Electrode).

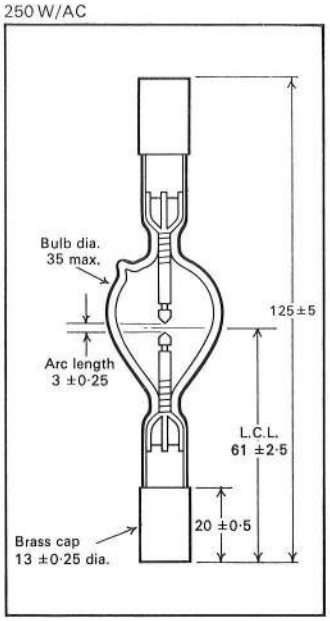


For 2Kw (3 electrode).

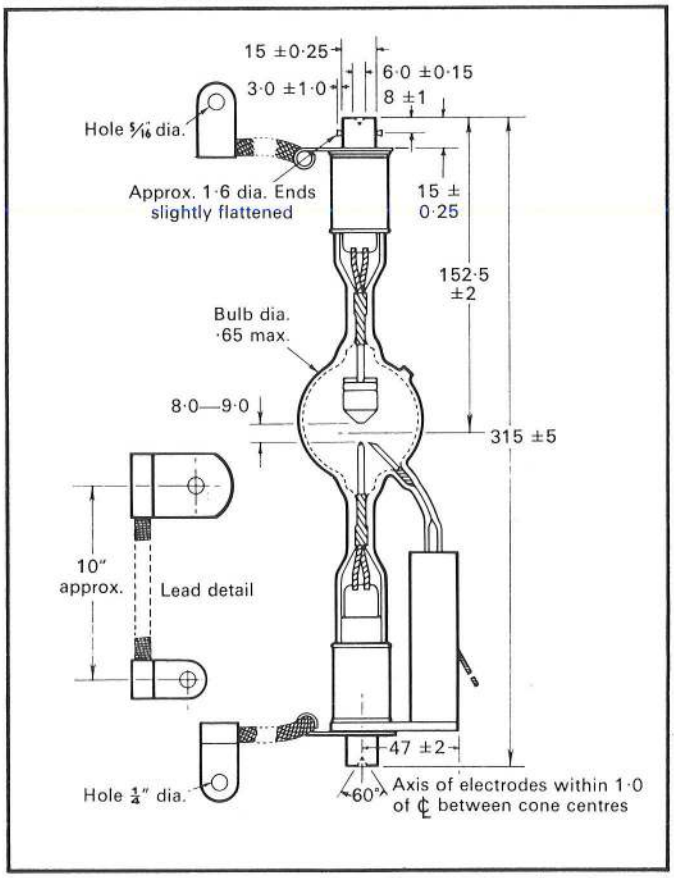
250 W/DC



250 W/AC



2 Kw DC 3 electrodes



All dimensions in m.m. unless otherwise stated.

Description

Linear source xenon lamps consist of an arc burning between tungsten electrodes operating in an atmosphere of pure xenon contained in a tubular quartz bulb. The spectrum of the radiation is virtually a continuum extending from the ultra-violet through the visible into the infra-red. The colour of the visible radiation is very similar to noon sunlight having a colour temperature of approximately 5,600°K. Light output may be modified over a wide range by adjusting the power input without appreciably altering the colour of the light.

The lamps require a starter unit to initiate the arc, and a series inductance and power factor correction capacitor are also required.

Application

High speed photography and cinematography
Colour matching
Fadeometer testing
Graphic arts
Optical instruments
Laboratory and general scientific purposes.

Lamps

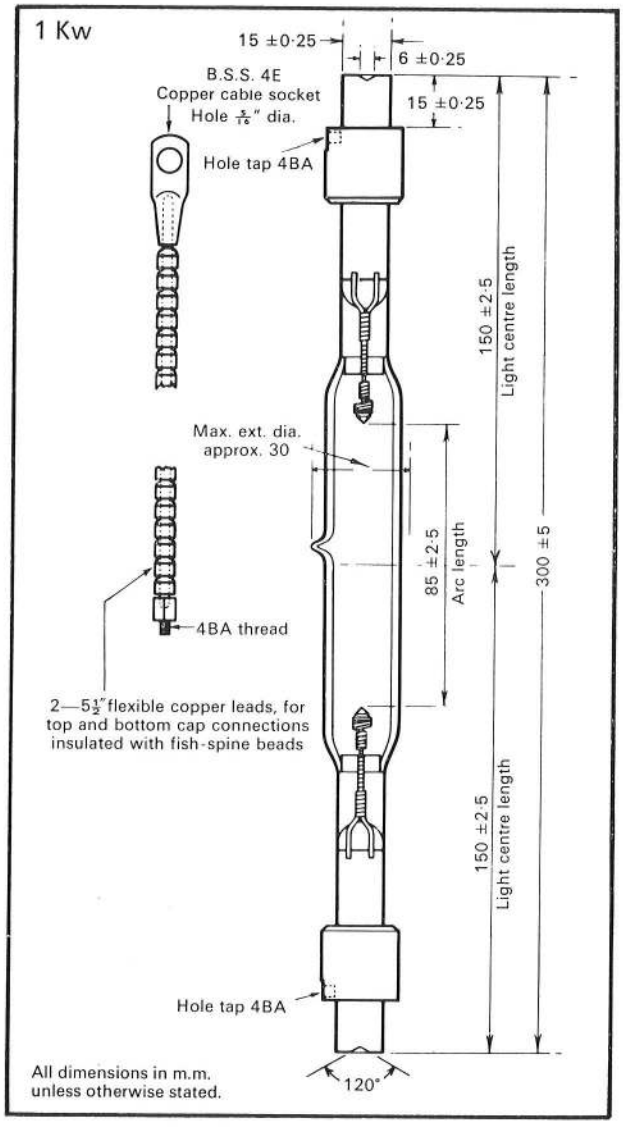
Rating	Ref. No.	Supply Volts	Arc Length (mm)	Lamp Operating Volts	Lamp Operating Amps	Lumens	Life	Nett Price
1Kw	98-0125	200/250v. 50c/s	85±2·5	42	25	22,000	500	£56†

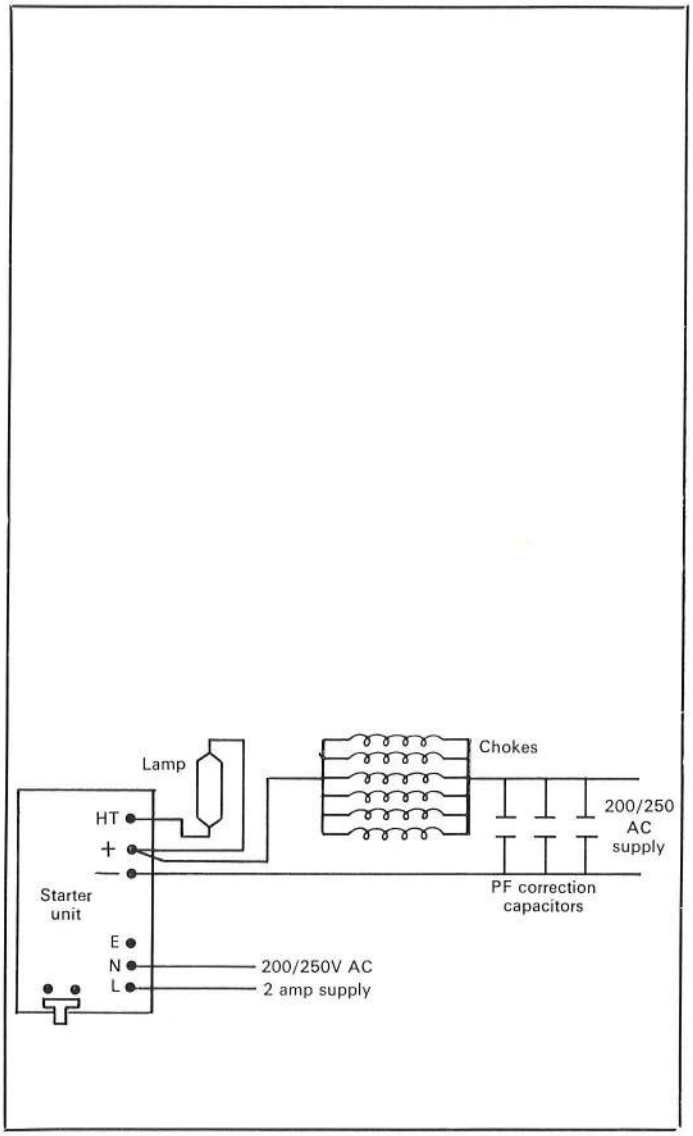
†Not subject to discount.
Position of burning: vertical ±15°
Caps: Special cylindrical caps with a cone centre for mounting, and a flexible lead.

Control gear

Rating	Starter Ref. No.	Starter Nett Price	Chokes Ref. No.	Chokes Nett User Price	Capacitors MFD	Capacitors Ref. No.	Mains Current Amps	Mains Current Nett User Price
1Kw	AME53239	£56†	6 x AME53235	£10 15 0 each†	240	3 x AMEC2276	7½	£9 19 8 each
					or 300	3 x AMEC2276 +AMEC2275	5	£9 9 8 each £7 14 8

†Not subject to discount. Nett User prices not subject to normal discount.





Hytek lamps
Standard xenon lamp '4 in 1' housings

General specification

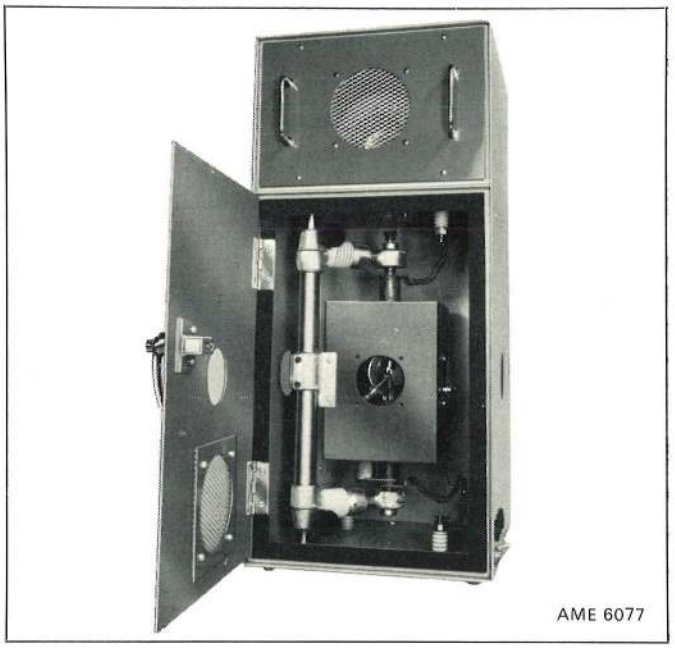
The '4 in 1' system. Four optical systems each 90° apart, can be illuminated by a single xenon lamp. The '4 in 1' range of two standard lamphouses has been designed to accommodate 250w. or 500w.-2kW xenon lamps.

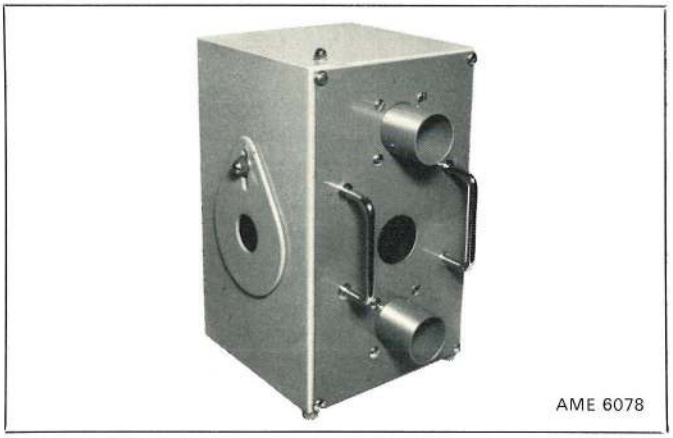
Construction and finish. Both lamphouses are in 16 S.W.G. mild steel welded construction and finished in grey synthetic stoving enamel.

Lamp mounts and shields. The mount is a unit assembly, is fully adjustable and retains the xenon lamp between spring loaded retention cups. The lamp is surrounded by a metal box type heat shield which also provides mechanical protection. The lamphouses are supplied with four plastic feet for free standing operation.

Mechanical adjustments. All mechanical adjustments are carried out by varying the position of the lamp mount assembly.

Electrical connections. Provision for three cable. inlets has been made, in addition to an earth connection.


AME 6077


AME 6078

250w. housing Cat. No. AME6078

Dimensions	
Base	6″ x 6″
Overall height	10¼″
Optical centre line height from table surface	5″
Weight	10 lbs.
Nett Price†	£53 15 0

Optical features. Provision is made for mounting a standard 2″ x 2″ heat filter to the lamp shield.

Cooling. Under normal operating conditions, convection cooling only is necessary. For continuous operation or for operation in confined spaces, forced air cooling may be necessary.

Safety. The front panel is retained by four screws and cannot be accidentally opened. The housing must be effectively earthed before switching on. Unauthorised persons should not have access to the housing interior once electrical connection has been made.

500w./2kw housing Cat. No. AME6077

Dimensions	
Base	12″ x 12″
Overall height	26″
Optical centre line height from table surface	9½″
Weight	50 lbs.
Nett Price†	£113 10 0

Optical features. Provision is made for the attachment of a rear aluminised spherical mirror by means of an adjustable mount attached to the lamp shield. On the opposite face provision is made for mounting a standard 2″ x 2″ heat filter. The aluminised reflector is supplied as part of the standard unit, but heat filters are not included.

† not subject to discount

Safety requirements

Ventilation. xenon lamps when in operation, generate ozone. Adequate room ventilation or the use of a ducted system where necessary, must be provided.

U.V. radiation. The radiation from a xenon lamp is rich in ultra-violet, and when the eyes and skin are exposed directly to the radiation, harmful effects such as conjunctivitis and skin irritation may be experienced. A completely sealed lamphouse system will ensure maximum safety.

Additional facilities

The standard housings are designed for free standing use. However, to ensure precise registration of the housing in one or more optical systems, provision has been made for Kinematic mounting. A special Kinematic base plate suitable for either housing, providing location for P.T.I. standard optical benches is available.

Other available accessories include—

Heat filters.
Special lens mounts to accept a range of standard lenses, condensers and other proprietary optical systems.
Fan cooling units for 250w. housing ducts.

Enquiries for these additional features should be made to—

Goulding & Partners (Consultant Engineers) Ltd.,
1a Essex Road, Acton, London W.3.

Description

These pulsed xenon arc lamps consist of an arc between tungsten electrodes operating in an atmosphere of pure xenon contained in a tubular quartz bulb. Until recently, the standard light source for copyboard illumination in photo reproduction has been the open carbon arc. Over the last two or three years special discharge lamps have been utilised, particularly pulsed xenon arc lamps.

The spectrum of the radiation is virtually a continuum extending from the ultra-violet through the visible into the infra-red. The colour of the visible radiation is very similar to noon sunlight having a colour temperature of 5,600°K. Light output is controlled by the gear which pulses the lamp for a specific period.

Lamp specification

Type:	Pulsed Xenon Arc.
Cap:	Ceramic with flexible leads.
Operating Position:	Universal. Forced cooling essential.
Arc Voltage:	110±5.
Supply Voltage:	200/250v. 50c/s.
Pulsed Frequency:	100c/s.
Design Wattage:	1,500 and 3,000.
Efficiency:	25 lumens per watt.
Life:	500 hours.
Arc Length:	310 mm. nominal.

Control gear

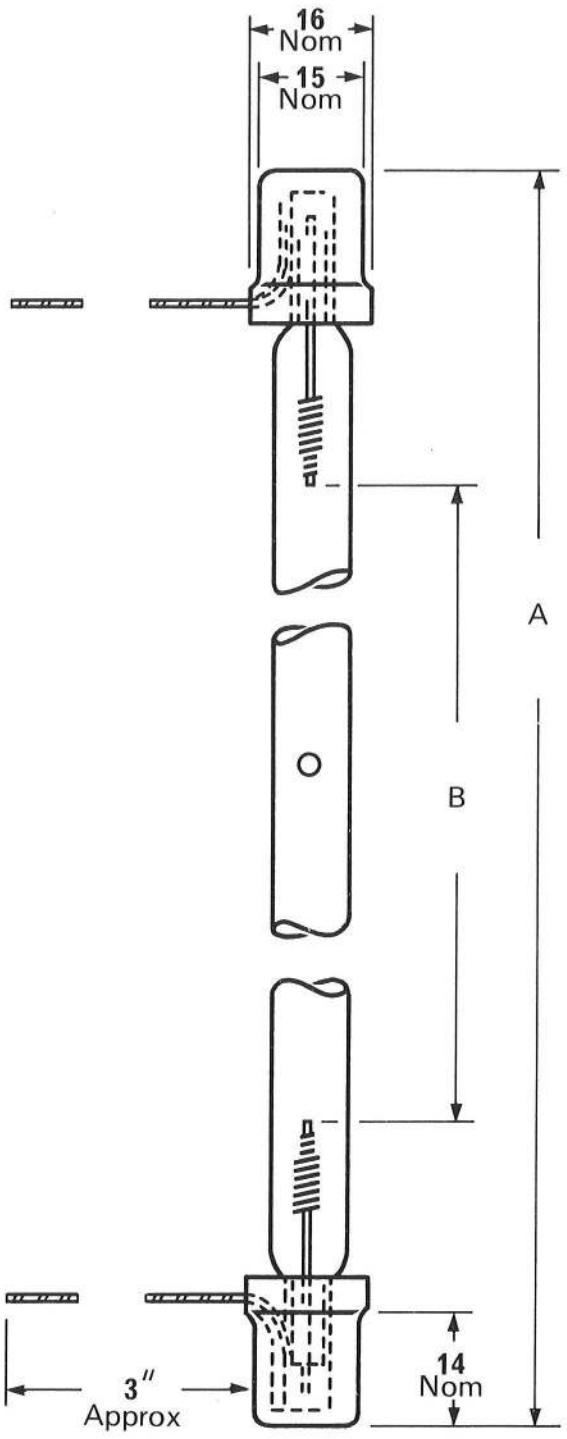
The lamp is designed to operate with control gear which provides a 100 c.p.s. pulse rate for a pulse width of one millisecond at half peak. Suitable gear for operating the lamp is manufactured by Thymer, Ascorlux, & Littlejohn. Other companies have gear under development.

Lamp prices

Rating	Lamp Ref. No.	Nett Price
1,500w.	98-2015	£9 0 0†
3,000w.	98-2030	£11 0 0†

†Not subject to discount.

Pulsed Xenon Discharge lamp



Rating	A	B
1500W	392 ±3	310 Approx
3000W	695 ±3	615 Approx

All dimensions in m.m. unless otherwise stated.

Hytek lamps
Germicidal tubes

Fluorescent type germicidal tubes
These lamps are in standard fluorescent lamp sizes. The lamps are made without phosphors, and the tube is a special glass which transmits short wave U.V. Approximately 95% of the radiated energy is in the 2537 Angstrom band which is near the maximum for germicidal effectiveness. The lamps are useful for the irradiation of airborne bacteria or moulds, and also for the irradiation of surfaces on which bacteria and/or mould spores have collected.
A publication 'Germicidal Radiation and its Application' is available on request.

Typical application
For hospitals etc.: for sterilising purposes.

Tubes

Rating	Lamp Ref. No.	Nominal Dimensions ins.	Nominal Dimensions mm.	Recommended Price	Std. Pack
15w.	92-2013	18″ x 1″	457 x 25	£3 10 0	25
30w.	92-4540	3′ x 1″	914 x 25	£5 8 0	25

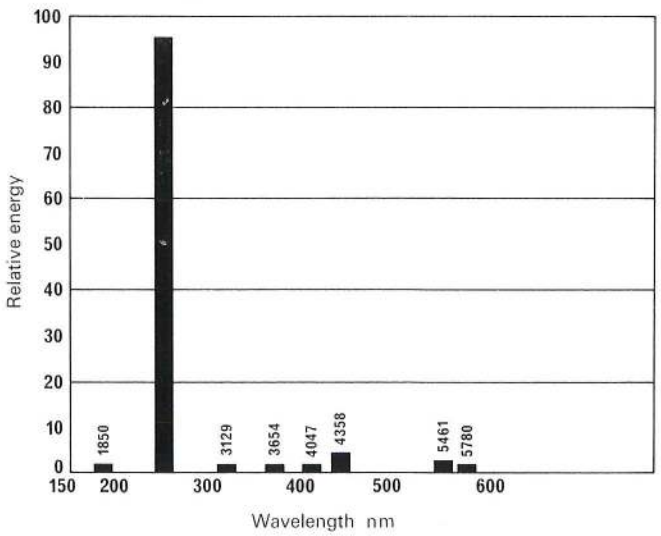
Long wave ultra-violet fluorescent type tubes
The germicidal tubes shown are short wave ultra-violet sources. Long wave ultra-violet fluorescent type tubes as below are also available and details are given in section 2.

Type	Ratings
Ultra-Violet (Non filter)	5 ft. 65/80w., 4 ft. 40w., 2 ft. 20w.. 1½ ft. 15w., 12 in. 8w.
Blacklight blue U-V	4 ft. 40w., 1½ ft. 15w., 12 in. 8w., 9 in. 6w., 6 in. 4w.

Fittings and control gear
All tubes on this page go into standard fittings where available, and operate on standard fluorescent control gear—see British Lighting Industries Fittings Catalogue.

The 30w. tube operates on 200/250v. AC and the 15w. on 100/250v. AC. Alternatively two 15w. tubes may be run as a series pair on 200/250v. AC.

Spectral energy distribution germicidal tube



Mercury lamp – 1,000w. – Type MA/H

Supply voltage 200/250—Life 5,000 hours.

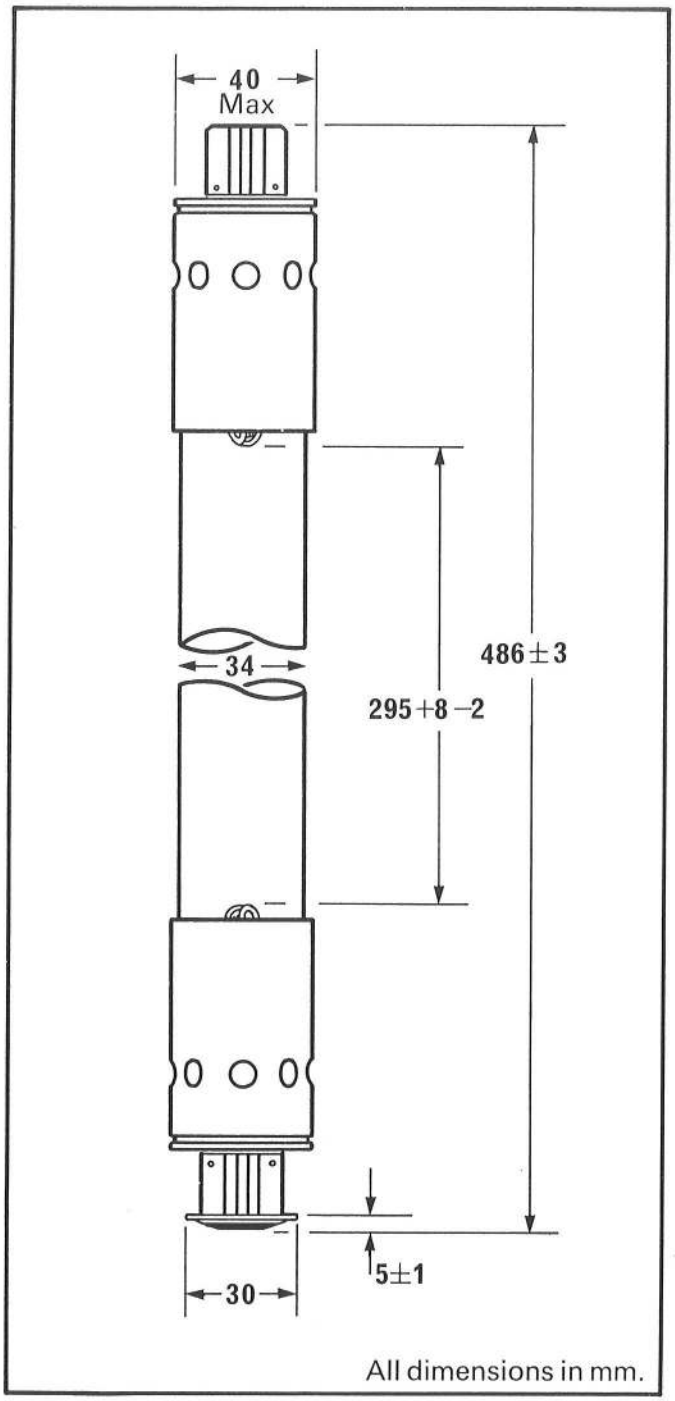
Description

A mercury lamp comprising a hard glass tube, loaded below 10w/cm. arc length, and a cap at each end. The cap designations are S22/19 and S22s/21 with locating rings.
The lamp is designed to be operated in a horizontal position and requires control gear consisting of a choke and a power factor correction capacitor.

Application

This lamp is for replacement purposes only in certain specific floodlighting installations.

Watts	Lamp Ref. No.	Price	Std. Pack	Lighting Design Lumens
1,000	90-2395	£11 0 0	1	43,000



a catalogue of

Mazda lamps & tubes

THORN

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