

# THORN LIGHTING



COMPREHENSIVE CATALOGUE 1975/76

# Standard Incandescent Lamps

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# General Lamp Information

## British Standards

Lamps described in this section comply with the following British standards where applicable:

BS 161. Tungsten Filament General Service Electric Lamps.

BS 555. Tungsten Filament Miscellaneous Electric Lamps.

BS 98. Dimensions of Screw Lamp Caps and Lampholders.

BS 52. Bayonet Lamp – Caps, Lampholders and BC adaptors.

Thorn Lighting Limited hold Licence nos. 5248, 5249, 5819, 5821, 7557 for the manufacture of lamps to BS 161.

## European Standards

Lamps also comply with the following European standard where applicable:

IEC 64. Tungsten Filament Lamps for General Service.

## Dimensions

The dimensions shown in this section are in millimetres and, unless otherwise stated, are maximum values.

## Lamp cap code

| IEC designation | Common designation | Description          |
|-----------------|--------------------|----------------------|
| B15d            | SBC                | Small bayonet cap    |
| B22d            | BC                 | Bayonet cap          |
| B22d-3          | 3-pin BC           | Bayonet cap – 3 pin  |
| E12             | CAND               | Candelabra screw     |
| E14             | SES                | Small Edison screw   |
| E27             | ES                 | Edison screw         |
| E40             | GES                | Goliath Edison screw |

Note: The first number group in the IEC designation represents the diameter of the cap in millimetres.

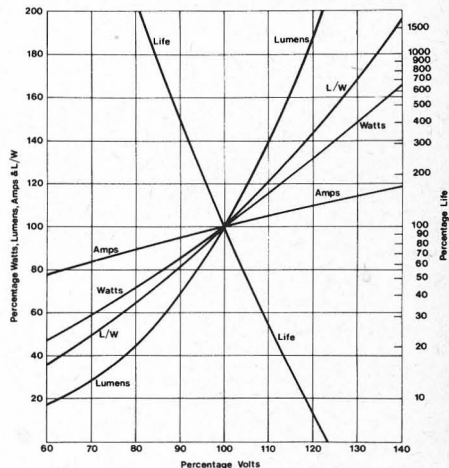
## Lumen output

The figures given below are the nominal average lumens throughout life for 240V lamps. These values are given for the practical guidance of lighting engineers.

| Watts | *Plus Lamps | *Neta Bulb | Single Coil Lamps |
|-------|-------------|------------|-------------------|
| 25    | —           | —          | 200               |
| 40    | 390         | 360        | 325               |
| 60    | 665         | 610        | 575               |
| 75    | 885         | —          | —                 |
| 100   | 1260        | 1160       | 1160              |
| 150   | 2075        | 1770       | 1960              |
| 200   | —           | —          | 2720              |
| 300   | —           | —          | 4300              |
| 500   | —           | —          | 7700              |
| 750   | —           | —          | 12400             |
| 1000  | —           | —          | 17300             |

\*Coiled coil.

## Variation of tungsten filament lamp characteristics with change in voltage.



## Effect of voltage on light output

The supply voltage is the main factor affecting the light output of tungsten filament lamps. If there is a 5% increase or decrease in the supply voltage there will be a 20% increase or decrease in the light output of the lamps.

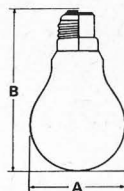
## Life

The main factor affecting the life of a tungsten filament lamp is the voltage of the supply on which it is operating. Continual operation on a supply with a voltage (say) 5% above or below the correct voltage will approximately halve or double the life of the lamp (see graph above). Correct matching of lamp and supply is therefore important.

# General lighting service lamps

## PLUS LAMPS—COILED COIL

| Watts | Voltages |     | Cap | Finish | Standard Pack |
|-------|----------|-----|-----|--------|---------------|
| 40    | 240      | 250 | BC  | Clear  | 100 and 25    |
| 40    | 240      | 250 | BC  | Pearl  | 100 and 25    |
| 60    | 240      | 250 | BC  | Clear  | 100 and 25    |
| 60    | 240      | 250 | BC  | Pearl  | 100 and 25    |
| 75    | 240      |     | BC  | Pearl  | 25            |
| 100   | 240      | 250 | BC  | Clear  | 100 and 25    |
| 100   | 220/230  | 240 | BC  | Pearl  | 100 and 25    |
| 100   | 240      |     | ES  | Pearl  | 25            |
| 150   | 240      | 250 | BC  | Clear  | 100 and 25    |
| 150   | 240      | 250 | BC  | Pearl  | 100 and 25    |
| 150   | 240      |     | ES  | Pearl  | 25            |



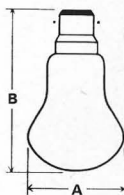
**PLUS LAMP**  
A B

|           |    |    |       |
|-----------|----|----|-------|
| 40 - 100W | BC | 61 | 108.5 |
| 150W      | BC | 69 | 128.5 |

(For ES Caps add 1.5mm to length of BC equivalent)

## NETABULB

| Watts | Voltage | Cap | Finish      | Standard Pack |
|-------|---------|-----|-------------|---------------|
| 40    | 240     | BC  | Silverlight | 100 and 25    |
| 60    | 240     | BC  | Silverlight | 100 and 25    |
| 100   | 240     | BC  | Silverlight | 100 and 25    |
| 150   | 240     | BC  | Silverlight | 100 and 25    |



**NETABULB**  
A B

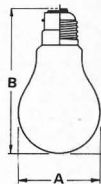
|              |    |       |
|--------------|----|-------|
| 40, 60, 100W | 61 | 103.5 |
| 150W         | 76 | 124.5 |

## COLOURED

| Watts | Voltages | Cap    | Finish                                | Standard Pack |
|-------|----------|--------|---------------------------------------|---------------|
| 15    | 200/250  | BC, ES | Amber, blue, green, pink, yellow, red | 100*          |
| 25    | 200/250  | BC, ES | Amber, blue, green, pink, yellow, red | 100*          |
| 40†   | 200/250  | BC, ES | Amber, blue, green, pink, yellow, red | 100*          |
| 60†   | 200/250  | BC     | Amber, blue, green, pink, yellow, red | 100*          |
| 60†   | 200/250  | ES     | Amber, blue, green, red, yellow       | 25            |
| 100†  | 200/250  | BC     | Amber, blue, green, pink, yellow, red | 25            |

\*Standard pack consists of 10 × 10 way packs per container.

†Not suitable for outdoor use unless enclosed for protection against rain.



**COLOURED**  
A B

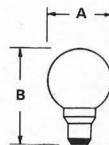
|         |    |       |
|---------|----|-------|
| 15W-60W | 61 | 108.5 |
| 100W    | 69 | 128.5 |

(For ES caps add 1.5mm to length of BC equivalent)

## ROUND BULB FESTIVE (for Silverlight see page 377)

| Watts | Voltage | Cap    | Finish                          | Standard Pack |
|-------|---------|--------|---------------------------------|---------------|
| 15    | 200/250 | BC, ES | Amber, blue, green, red, yellow | 50*           |
| 25    | 200/250 | BC, ES | Amber, blue, green, red, yellow | 50*           |

\*Standard pack consists of 5 × 10-way packs per container



**ROUND BULB**

|    |    |      |
|----|----|------|
|    | A  | B    |
| BC | 46 | 68.5 |
| ES | 46 | 72.5 |

All dimensions in mm

All dimensions in mm

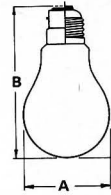
# General lighting service lamps

## SINGLE COIL

| Watts |            | Voltages |         | Cap | Finish | Standard Pack |
|-------|------------|----------|---------|-----|--------|---------------|
| 5-8   | Nightlight |          | 200/250 | BC  | Pearl  | 10            |
| 15    |            |          | 240 250 | BC  | Pearl  | 25            |
| 25    |            | 220/230  | 240 250 | BC  | Pearl  | 25            |
| 25    |            |          | 240     | ES  | Pearl  | 25            |
| 40    |            |          | 240     | BC  | Clear  | 25            |
| 40    | 110        | 220/230  | 240 250 | BC  | Pearl  | 25            |
| 40    | 110 120    |          | 240 250 | ES  | Pearl  | 25            |
| 40    |            |          | 240     | SBC | Pearl  | 25            |
| 60    | 110        | 220/230  | 240 250 | BC  | Clear  | 25            |
| 60    | 110 120    | 220/230  | 240 250 | BC  | Pearl  | 25            |
| 60    | 110        |          | 240 250 | ES  | Clear  | 25            |
| 60    | 110        | 220/230  | 240     | ES  | Pearl  | 25            |
| 60    |            |          | 240     | SBC | Pearl  | 25            |
| 100   | 110 120    |          | 240 250 | BC  | Clear  | 25            |
| 100   | 110 120    | 220/230  | 240 250 | BC  | Pearl  | 25            |
| 100   | 110        |          | 240 250 | ES  | Clear  | 25            |
| 100   | 110        |          | 240 250 | ES  | Pearl  | 25            |
| 150   | 110        |          | 240 250 | BC  | Pearl  | 25            |
| 150   | 110        |          | 240 250 | ES  | Pearl  | 25            |
| 200   |            |          | 240 250 | BC  | Pearl  | 25            |
| 200   | 110        |          | 240 250 | ES  | Pearl  | 25            |
| 300   | 110 120    | 220/230  | 240 250 | GES | Clear  | 10            |
| 300   | 110        |          | 240     | ES  | Clear  | 10            |
| 500   | 110 120    |          | 240 250 | GES | Clear  | 10            |
| 750   |            |          | 240 250 | GES | Clear  | 10            |
| 1000  |            |          | 240 250 | GES | Clear  | 10            |

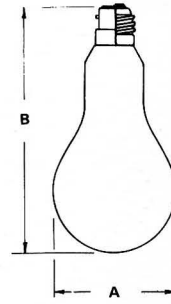
## SINGLE COIL Extra low voltage

| Watts |  | Voltages |  | Cap     | Finish | Standard Pack |
|-------|--|----------|--|---------|--------|---------------|
| 25    |  | 25 50    |  | BC      | Pearl  | 25            |
| 40    |  | 25 50    |  | BC      | Pearl  | 25            |
| 40    |  | 25       |  | 3pin BC | Pearl  | 25            |
| 40    |  | 25 50    |  | ES      | Pearl  | 25            |
| 60    |  | 25 50    |  | BC      | Pearl  | 25            |
| 60    |  | 25 50    |  | ES      | Pearl  | 25            |
| 100   |  | 25 50    |  | BC      | Pearl  | 25            |
| 300   |  | 50       |  | GES     | Clear  | 10            |



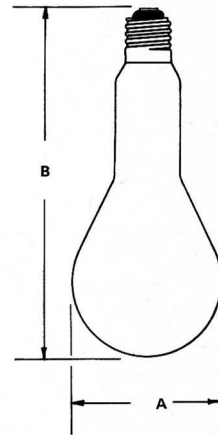
SINGLE COIL

15- 100W BC 61 108-5  
 (For ES Caps add 1.5mm to length of BC equivalent)



SINGLE COIL

150- 200W BC 61 164-5  
 (For ES Caps add 1.5mm to length of BC equivalents)



300W ES 111-5 245  
 300- 500W GES 111-5 239  
 750-1000W GES 131-5 299

All dimensions in mm

# Decorative lamps

## PLAIN CANDLE

| Watts | Voltage | Cap          | Finish      | Standard Pack |
|-------|---------|--------------|-------------|---------------|
| 25    | 240/250 | BC, SBC      | Clear       | 50*           |
| 25    | 240/250 | BC, SBC      | Pearl       | 50*           |
| 25    | 240/250 | BC, SBC, SES | Silverlight | 50*           |
| 40    | 240/250 | BC, SBC, SES | Clear       | 50*           |
| 40    | 240/250 | BC, SBC      | Pearl       | 50*           |
| 40    | 240/250 | BC, SBC, SES | Silverlight | 50*           |
| 60    | 240/250 | BC, SBC      | Clear       | 50*           |
| 60    | 240/250 | BC, SBC      | Pearl       | 50*           |
| 60    | 240/250 | BC, SBC      | Silverlight | 50*           |

## PLAIN CANDLE – COLOURED

| Watts | Voltage | Cap | Finish | Standard pack |
|-------|---------|-----|--------|---------------|
| 25    | 240/250 | BC  | Amber  | 50*           |
| 40    | 240/250 | BC  | Amber  | 50*           |

## TWISTED CANDLE

| Watts | Voltage | Cap     | Finish | Standard Pack |
|-------|---------|---------|--------|---------------|
| 25    | 240/250 | BC, SBC | Clear  | 50*           |
| 25    | 240/250 | BC, SBC | Pearl  | 50*           |
| 40    | 240/250 | BC, SBC | Clear  | 50*           |
| 40    | 240/250 | BC, SBC | Pearl  | 50*           |
| 60    | 240/250 | BC, SBC | Clear  | 50*           |
| 60    | 240/250 | BC, SBC | Pearl  | 50*           |

## TWISTED CANDLE – TIPPED

| Watts | Voltage | Cap | Finish              | Standard Pack |
|-------|---------|-----|---------------------|---------------|
| 40    | 240/250 | BC  | Amber tip, Pink tip | 50*           |
| 60    | 240/250 | BC  | Amber tip, Pink tip | 50*           |

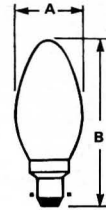
## DECOR ROUND (For Decor Spots see page 380)

| Watts | Voltage | Cap    | Finish                    | Standard Pack |
|-------|---------|--------|---------------------------|---------------|
| 40    | 240/250 | BC, ES | Clear                     | 10            |
| 40    | 240/250 | BC, ES | Silverlight               | 10            |
| 40    | 240/250 | BC, ES | Amber, red, green, purple | 10            |
| 40    | 240/250 | BC, ES | Crown Silvered            | 10            |
| 60    | 240/250 | BC, ES | Silverlight               | 10            |

## ROUND BULB (For Coloureds see page 375)

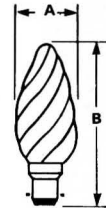
| Watts | Voltage | Cap              | Finish      | Standard Pack |
|-------|---------|------------------|-------------|---------------|
| 25    | 240/250 | BC, SBC, SES     | Silverlight | 50*           |
| 40    | 240/250 | BC, SBC, ES, SES | Silverlight | 50*           |

Standard pack consists of 5 x 10-way packs per container.



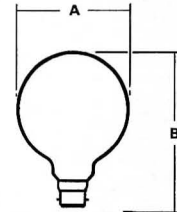
PLAIN CANDLE

|            | A  | B   |
|------------|----|-----|
| 25W-40W BC | 36 | 97  |
| SBC        | 36 | 103 |
| SES        | 36 | 104 |
| 60W BC     | 46 | 128 |
| SBC        | 46 | 133 |



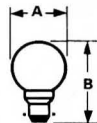
TWISTED CANDLE

|            | A  | B   |
|------------|----|-----|
| 25W BC     | 36 | 100 |
| SBC        | 36 | 104 |
| 40W-60W BC | 47 | 128 |
| SBC        | 47 | 133 |



DECOR ROUND

|           | A   | B     |
|-----------|-----|-------|
| 40-60W BC | 102 | 142-5 |
| 40-60W ES | 102 | 144   |



ROUND BULB

|     | A  | B    |
|-----|----|------|
| BC  | 46 | 68.5 |
| SBC | 46 | 74.5 |
| SES | 46 | 75.5 |
| ES  | 46 | 72.5 |

All dimensions in mm

# Special service lamps

## FIREGLOW

| Watts | Voltage | Cap      | Finish    | Standard Pack |
|-------|---------|----------|-----------|---------------|
| 60    | 200/250 | BC       | Lacquered | 50            |
| 60    | 200/250 | 3-pin BC | Lacquered | 50            |
| 60    | 200/250 | 2-prong  | Lacquered | 50            |

## PYGMY SIGN

| Watts | Voltages | Cap              | Finish                                  | Standard Pack |
|-------|----------|------------------|---|---------------|
| 15    | 25       | BC, SBC          | Clear                                   | 50            |
| 15    | 50       | BC, SBC, ES      | Clear                                   | 50            |
| 15    | 60       | BC               | Clear                                   | 50            |
| 15    | 100/110  | BC, SBC, ES, SES | Clear                                   | 50            |
| 15    | 120/130  | BC, SBC, ES, SES | Clear                                   | 50            |
| 15    | 150      | BC               | Clear                                   | 50            |
| 15    | 200/250  | BC, SBC, ES, SES | Clear                                   | 50            |
| 15    | 200/250  | BC, SBC          | Amber, Blue, Green, Pink<br>Red, Yellow | 50            |
| 25    | 200/250  | BC, SBC, ES, SES | Clear                                   | 50            |

## PYGMY SIGN — ROUGH SERVICE

| Watts | Voltage | Cap          | Finish | Standard Pack |
|-------|---------|--------------|--------|---------------|
| 15    | 200/250 | BC, SBC, SES | Clear  | 50            |
| 25    | 200/250 | BC, ES, SBC  | Clear  | 50            |

## SWITCHBOARD INDICATOR

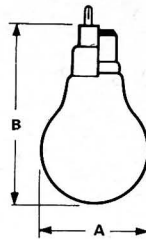
| Watts | Voltage | Cap | Finish | Standard Pack |
|-------|---------|-----|--------|---------------|
|       | 200/260 | BC  | Clear  | 50            |

## PILOT INDICATOR

| Watts | Voltages | Cap            | Finish | Standard Pack |
|-------|----------|----------------|--------|---------------|
| 6/10  | 50       | SBC, CAND      | Clear  | 25            |
| 6/10  | 100/130  | SBC, SES, CAND | Clear  | 25            |
| 6/10  | 200/250  | SBC, SES, CAND | Clear  | 25            |

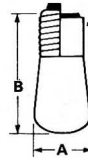
## OVEN LAMPS

| Watts | Voltage | Cap    | Finish | Standard Pack |
|-------|---------|--------|--------|---------------|
| 60    | 240/250 | BC, ES | Clear  | 10            |



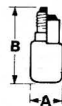
FIREGLOW

|          | A  | B     |
|----------|----|-------|
| BC       | 61 | 108.5 |
| 3-pin BC | 61 | 108.5 |
| 2-prong  | 61 | 110.5 |



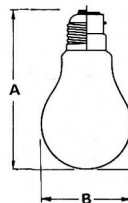
PYGMY AND SWITCHBOARD INDICATOR

|     | A  | B  |
|-----|----|----|
| BC  | 29 | 59 |
| ES  | 29 | 61 |
| SBC | 29 | 65 |
| SES | 29 | 66 |



PILOT INDICATOR

|      | A  | B  |
|------|----|----|
| SBC  | 19 | 43 |
| CAND | 19 | 48 |
| SES  | 19 | 49 |



OVEN LAMP

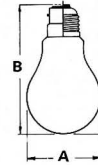
|    | A  | B     |
|----|----|-------|
| BC | 61 | 108.5 |
| ES | 61 | 110   |

Dimensions in mm

# Special service lamps

## ROUGH SERVICE

| Watts | Voltages |         | Cap    | Finish | Standard pack |
|-------|----------|---------|--------|--------|---------------|
| 40    | 110/120  | 200/250 | BC, ES | Pearl  | 25            |
| 60    | 110/120  | 200/250 | BC, ES | Pearl  | 25            |
| 100   | 110/120  | 200/250 | BC, ES | Pearl  | 25            |

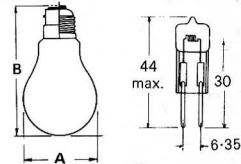


## ROUGH SERVICE & SAFELITE

|        | A  | B     |
|--------|----|-------|
| 40-60W | 61 | 108-5 |
| 100W   | 69 | 128-5 |

## TRAFFIC SIGNAL

| Watts            | Voltages |     | Nominal L.C.L. | Cap          | Finish | Standard Pack |
|------------------|----------|-----|----------------|--------------|--------|---------------|
| 65               | 240/250  |     | 62             | ES           | Clear  | 25            |
| 65               | 250      |     | 65             | BC           | Clear  | 25            |
| Tungsten halogen |          |     |                |              |        |               |
| 50               | 12       | M32 | 30             | Bi-pin G6-35 | Clear  | 1             |
| 100              | 12       | M28 | 30             | Bi-pin G6-35 | Clear  | 1             |



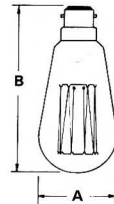
M32, M28

## TRAFFIC SIGNAL

|        | A  | B   | A   | B      |
|--------|----|-----|-----|--------|
| 65W ES | 61 | 110 | M32 | 8-5 44 |
| 65W BC | 61 | 115 | M28 | 11 45  |

## CAGE, NAVIGATION

| Watts | Voltages |  | Cap | Finish | Standard Pack |
|-------|----------|--|-----|--------|---------------|
| 40    | 220/240  |  | BC  | Clear  | 100           |
| 60    | 220/240  |  | BC  | Clear  | 72            |



## NAVIGATION

|     | A  | B   |
|-----|----|-----|
| 40W | 59 | 128 |
| 60W | 65 | 145 |

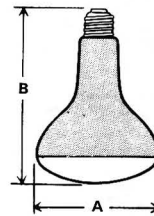
## HEATING LAMPS

### INFRA-RED REFLECTOR Standard bulb (NOT for domestic use)

| Watts | Voltages |         | Cap    | Finish | Standard Pack |
|-------|----------|---------|--------|--------|---------------|
| 150   | 200/250  |         | ES     | Satin  | 12            |
| 275   | 200/250  |         | BC     | Satin  | 12            |
| 275   | 100/130  | 200/250 | ES     | Satin  | 12            |
| 275   | 200/250  |         | BC, ES | Clear  | 12            |

### INFRA-RED REFLECTOR Hard glass bulb (Domestic and other uses)

| Watts | Voltages |  | Cap    | Finish      | Standard pack |
|-------|----------|--|--------|-------------|---------------|
| 275   | 200/250  |  | BC, ES | Clear Front | 10            |
| 275   | 200/250  |  | BC, ES | Red Front   | 10            |



## INFRA-RED REFLECTOR

|          | A     | B     |
|----------|-------|-------|
| 150-275W | 127-5 | 182-5 |

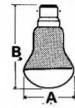
All dimensions in mm



# Reflector lamps

## CHELSEA For use with Chelsea Glass

| Watts | Voltages | Cap | Finish      | Standard Pack |
|-------|----------|-----|-------------|---------------|
| 40    | 240/250  | BC  | Clear Front | 25            |

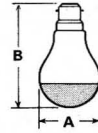


**CHELSEA**

40W                  A                  B  
61                  103-5

## CROWN SILVERED DISPLAY High volt

| Watts | Voltages | Cap         | Finish   | Standard Pack |
|-------|----------|-------------|--|---------------|
| 60    | 240/250  | BC, 3PBC ES | Crown Silvered   | 25            |
| 100   | 240/250  | 3PBC, ES    | Crown Silvered   | 25            |
| 60    | 240/250  | 3Pin BC ES  | Crown Silvered - Lacquered<br>Red, Blue, Green, Yellow | 25            |

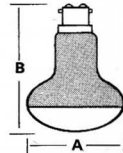


**MAINS VOLTAGE DISPLAY**

A                  B  
60 & 100W          69          128-5

## DECOR SPOT

| Watts | Voltages | Cap    | Finish                             | Standard Pack |
|-------|----------|--------|------------------------------------|---------------|
| 40    | 240/250  | BC, ES | Lacquered Blue, Green, Red, Yellow | 10            |
| 60    | 240/250  | BC, ES | Light Diffuse Front                | 10            |

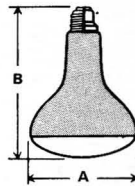


**DECOR SPOT**

A                  B  
40 & 60W          81          113

## INTERIOR DISPLAY REFLECTOR

| Watts | Voltages | Cap    | Finish                             | Standard Pack |
|-------|----------|--------|------------------------------------|---------------|
| 75    | 240/250  | BC, ES | Light Diffuse Front                | 10            |
| 75    | 240/250  | BC, ES | Lacquered Blue, Green, Red, Yellow | 10            |
| 100   | 240/250  | BC, ES | Light Diffuse Front                | 10            |
| 150   | 240/250  | BC, ES | Light Diffuse Front                | 10            |



**REFLECTOR DISPLAY**

A                  B  
75W and 100W      96          139  
150W                  126-5      181  
(For ES caps add 1-5mm to  
length of BC equivalent)

All dimensions in mm

# Sealed beam lamps/Low volt display lamps

## Par sealed beam spotlights and floodlights

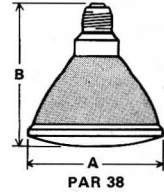
These lamps, with the exception of the PAR 38 Cool-ray and PAR 56 are for indoor and outdoor applications. The Color-ray spotlights have internal

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 cool ray and colour temperature of 4000°K make it an ideal source for display and exhibition applications.

### PAR 38 SEALED BEAM SPOT & FLOOD

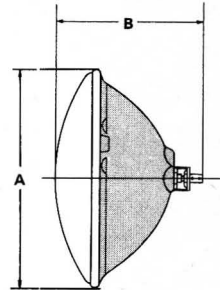
| Watts | Voltages           | Cap | Finish                              | Standard Pack |
|-------|--------------------|-----|-------------------------------------|---------------|
| 100   | 240/250            | ES  | Clear Front, Spot                   | 10            |
| 100   | 240/250            | ES  | Clear Front, Flood                  | 10            |
| 100   | 240/250            | ES  | Lacquered Blue, Green, Red, Yellow  | 10            |
| 150   | 24 110/115 240/250 | ES  | Clear Front, Spot                   | 10            |
| 150   | 110/115 240/250    | ES  | Clear Front, Flood                  | 10            |
| 150   | 240/250            | ES  | Color-Ray, Blue, Green, Red, Yellow | 10            |
| 150   | 240/250            | ES  | Cool-Ray, Spot                      | 10            |



PAR 38  
100W and 150W      A 123      B 138

### PAR 56 SEALED BEAM

| Watts | Voltages | Cap   | Finish                   | Standard Pack |
|-------|----------|-------|--------------------------|---------------|
| 300   | 240/250  | 2 lug | Clear Front, Wide Beam   | 10            |
| 300   | 240/250  | 2 lug | Clear Front, Med-Beam    | 10            |
| 300   | 240/250  | 2 lug | Clear Front, Narrow Beam | 10            |

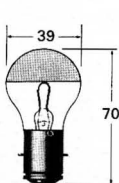


PAR 56  
A 178.6      B 133.4

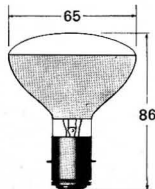
### LOW VOLTAGE DISPLAY

|           |         |         |         |         |         |
|-----------|---------|---------|---------|---------|---------|
| Volts     | 12      | 12      | 12      | 12      | 24      |
| Watts     | 50      | 50      | 50      | 24      | 150     |
| Cap.      | Bosch   | Bosch   | ES      | SBC     | Bosch   |
| Ref.      | 11-7015 | 11-8012 | 11-7014 | 11-7005 | 11-7040 |
| Pack Qty. | 25      | 25      | 25      | 25      | 25      |

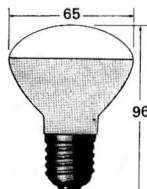
Internal crown reflector for narrow no-spill beam.



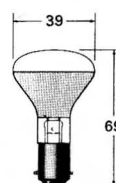
Parabolic internal reflector, diffusing front for high intensity soft edged beam.



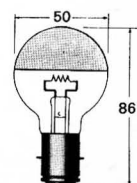
Parabolic internal reflector, clear front for narrow beam.



Parabolic internal reflector, diffused front for high intensity soft edged beam.



Internal crown reflector for narrow non-spill beam.



All dimensions in mm

# Tubular lamps

## ARCHITECTURAL STRAIGHT – Striplites

| Watts | Voltages | Cap                        | Finish | Standard Pack |
|-------|----------|----------------------------|--------|---------------|
| 35    | 240/250  | Peg                        | Opal   | 1             |
| 53    | 240/250  | Peg                        | Opal   | 1             |
| 60    | 240/250  | Peg                        | Opal   | 1             |
| 60    | 240/250  | Double centre contact S14d | Opal   | 1             |
| 75    | 240/250  | Peg                        | Opal   | 1             |
| 110   | 240/250  | Peg                        | Opal   | 1             |
| 150   | 240/250  | Peg                        | Opal   | 1             |

## DOUBLE CAP TUBULAR – Striplites

| Watts    | Voltages | Cap  | Finish              | Standard Pack |
|----------|----------|------|---------------------|---------------|
| 30 or 60 | 240/250  | S15s | Clear               | 25            |
| 30 or 60 | 240/250  | S15s | Opal                | 25            |
| 60       | 240/250  | S15s | Amber (284 mm only) | 25            |

## SINGLE CAP TUBULAR

| Watts | Voltages | Cap          | Finish          | Standard Pack |
|-------|----------|--------------|-----------------|---------------|
| 25    | 240/250  | BC, SBC, SES | Clear           | 50            |
| 40    | 240/250  | BC, SBC      | Clear           | 50            |
| 60    | 240/250  | BC           | Opal (Longlite) | 25            |

## ARCHITECTURAL STRAIGHT

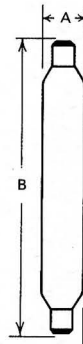
|      |      | A  | B    | C    |
|------|------|----|------|------|
| 12in | 35W  | 30 | 229  | 305  |
| 18in | 53W  | 30 | 382  | 457  |
| 20in | 60W  | 30 | 424  | 500  |
| 24in | 75W  | 30 | 534  | 610  |
| 36in | 110W | 30 | 839  | 915  |
| 48in | 150W | 30 | 1144 | 1220 |

Nominal Dimensions



## DOUBLE CAP TUBULAR

|            | A  | B   |
|------------|----|-----|
| 30 and 60W | 26 | 222 |
|            | 26 | 285 |

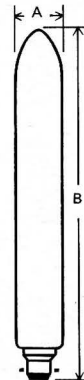


## SINGLE CAP TUBULAR

|            | A  | B  |
|------------|----|----|
| BC and SBC | 26 | 85 |
| ES         | 26 | 87 |

## LONGLITE

|     | A  | B   |
|-----|----|-----|
| 60W | 39 | 305 |



LONGLITE

All dimensions in mm

# Tungsten halogen photoprinting lamps

A number of office copying machines require a linear light source of relatively high colour temperature, and for these applications linear tungsten halogen lamps are the ideal sources. The advantage of tungsten halogen lamps is that the

light output remains constant throughout life, and so the speeds of copying remain unchanged throughout the lamp life. For the larger sizes of lamps it is desirable to obtain even illumination across the length of the lamps, and

this is achieved by the use of "segmented filaments" where the filaments are wound with differential gaps to avoid fall-off of light at the ends of the lamp.

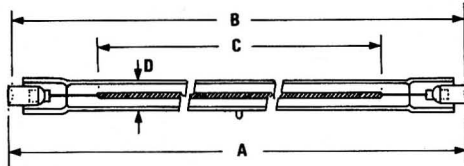
## Fusing

It is an advantage to have a fuse in the fitting or external circuit.

**Operating temperatures:** During operation, the temperature of the lamp pinch seal should not exceed 350°C, while the bulb wall temperature must not drop below 250°C in order to maintain the tungsten-halogen cycle.

**Principle of operation and Advantages of use** are as indicated in the section referring to **tungsten halogen floodlighting lamps**.

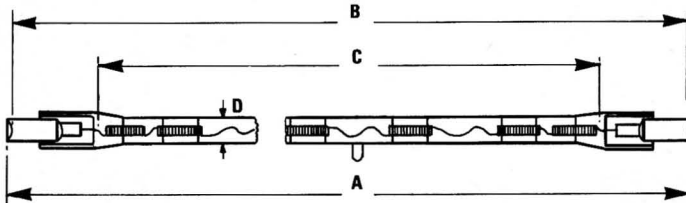
## NON-SEGMENTED FILAMENT TYPES



| Watts | Volts | Caps | Contact to Ceramic Max (A) | Contact to Contact (B) | Nom Light Length (C) | Max Bulb Dia (D) | Nom Lumens | Colour Temp | Operating Position | Lamp Type |
|-------|-------|------|----------------------------|------------------------|----------------------|------------------|------------|-------------|--------------------|-----------|
| 500   | 110   | R7s  | 117-6                      | 114-2±1-6              | 60                   | 11 max           | 10500      | 2900 K      | Horizontal         | K1        |
| 500   | 120   | R7s  | 117-6                      | 114-2±1-6              | 60                   | 11 max           | 10500      | 2900 K      | Horizontal         | K1        |
| 500   | 120   | R7s  | 117-6                      | 114-2±1-6              | 60                   | 8-5 max          | 13000      | 3200 K      | Horizontal         | DC1/1     |
| 800   | 220   | R7s  | 117-6                      | 114-2±1-6              | 67                   | 12 max           | 20600      | 3200 K      | Horizontal         | P2/18     |
| 800   | 240   | R7s  | 117-6                      | 114-2±1-6              | 67                   | 12 max           | 20600      | 3200 K      | Horizontal         | P2/18     |

Min. life of above lamps 50,000 switchings at 6 seconds on 6 seconds off.

## SEGMENTED FILAMENT TYPES



| Watts | Volts   | Caps | Contact to Ceramic (A) | Contact to Contact (B) | Nom Light Length (C) | Max Bulb Dia (D) | Nom Lumens | Colour Temp | Operating Position | Lamp Type |
|-------|---------|------|------------------------|------------------------|----------------------|------------------|------------|-------------|--------------------|-----------|
| 650   | 220/230 | R7s  | 318 max                | 315±1-6                | 276                  | 8-5 max          | 14300      | 3200 K      | Horizontal         | —         |
| 650   | 240/250 | R7s  | 318 max                | 315±1-6                | 276                  | 8-5 max          | 14300      | 3200 K      | Horizontal         | —         |
| 1000  | 220/230 | R7s  | 267 max                | 264±1-6                | 220                  | 8-5 max          | 23000      | 3200 K      | Horizontal         | —         |
| 1000  | 240/250 | R7s  | 267 max                | 264±1-6                | 220                  | 8-5 max          | 23000      | 3200 K      | Horizontal         | —         |
| 1000  | 220/230 | R7s  | 318 max                | 315±1-6                | 270                  | 8-5 max          | 23000      | 3200 K      | Horizontal         | DC1/8     |
| 1000  | 240/250 | R7s  | 318 max                | 315±1-6                | 270                  | 8-5 max          | 23000      | 3200 K      | Horizontal         | DC1/8     |
| 1500  | 220/230 | R7s  | 368 max                | 365±1-6                | 320                  | 8-5 max          | 32250      | 3200 K      | Horizontal         | DC1/9     |
| 1500  | 240/250 | R7s  | 368 max                | 365±1-6                | 320                  | 8-5 max          | 32250      | 3200 K      | Horizontal         | DC1/9     |

Min. life of above lamps 50,000 switchings at 6 seconds on 6 seconds off.

All dimensions in millimetres

# Linear tungsten halogen lamps

**Principle:** The tungsten filament is enclosed in a gas-filled quartz tube, together with a carefully controlled quantity of a halogen. When the tungsten filament is heated by the electric current the halogen 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 halogen to form a tungsten halide. This compound then returns to the filament where it is chemically converted back to tungsten and the halogen. 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.

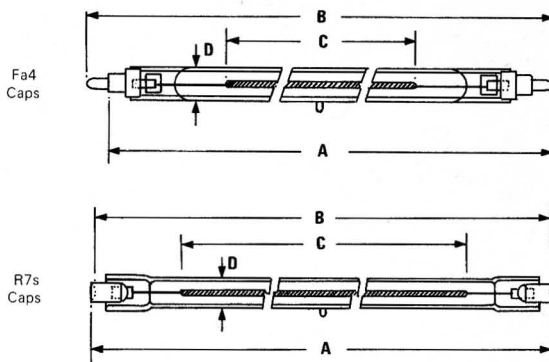
**Advantages:**

- 1 Up to 20% more light output compared to corresponding GLS lamp.
- 2 Double life—2000 hours.
- 3 Constant light output through life.
- 4 Compact easily controllable light source.

**Fusing:**

It is an advantage to have a fuse in the fitting or external circuit.

**Operating temperatures:** 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.

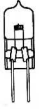


| Watts | Volts   | Caps | Contact to Ceramic Max (A) | Contact to Contact (B) | Nom Light Length (C) | Max Bulb Dia (D) | Rated Life (Hrs) | Nom Lumens | Colour Temp °K | Operating Position | Lamp Type |
|-------|---------|------|----------------------------|------------------------|----------------------|------------------|------------------|------------|----------------|--------------------|-----------|
| 300   | 110/115 | R7s  | 117-6                      | 114-2±1-6              | 62-0                 | 9-0              | 2000             | 5250       | 2900           | Horizontal         | K9        |
| 300   | 200/230 | R7s  | 117-6                      | 114-2±1-6              | 66-0                 | 9-0              | 2000             | 5000       | 2900           | Horizontal         | K9        |
| 300   | 240/250 | R7s  | 117-6                      | 114-2±1-6              | 66-0                 | 9-0              | 2000             | 5000       | 2900           | Horizontal         | K9        |
| 300†  | 240/250 | R7s  | 117-6                      | 114-2±1-6              | 66-0                 | 9-0              | 2000             | 5000       | 2900           | Horizontal         | K9        |
| 500   | 110     | R7s  | 117-6                      | 114-2±1-6              | 57-0                 | 11-0             | 2000             | 10500      | 2900           | Horizontal         | K1        |
| 500   | 120     | R7s  | 117-6                      | 114-2±1-6              | 57-0                 | 11-0             | 2000             | 10500      | 2900           | Horizontal         | K1        |
| 500   | 200/230 | R7s  | 117-6                      | 114-2±1-6              | 66-0                 | 11-0             | 2000             | 9500       | 2900           | Horizontal         | K1        |
| 500   | 240/250 | R7s  | 117-6                      | 114-2±1-6              | 66-0                 | 11-0             | 2000             | 9500       | 2900           | Horizontal         | K1        |
| 750   | 200/230 | R7s  | 189-1‡                     | 185-7±1-6              | 117-0                | 11-0             | 2000             | 15000      | 3000           | Horizontal         | K3        |
| 750   | 240/250 | R7s  | 189-1‡                     | 185-7±1-6              | 117-0                | 11-0             | 2000             | 15000      | 3000           | Horizontal         | K3        |
| 1000  | 110     | R7s  | 189-1                      | 185-7±1-6              | 107-0                | 11-0             | 2000             | 22000      | 3000           | Horizontal         | K4        |
| 1000  | 200/230 | R7s  | 189-1                      | 185-7±1-6              | 112-0                | 11-0             | 2000             | 21000      | 3000           | Horizontal         | K4        |
| 1000  | 240/250 | R7s  | 189-1                      | 185-7±1-6              | 112-0                | 11-0             | 2000             | 21000      | 3000           | Horizontal         | K4        |
| 1500  | 200/230 | R7s  | 254-1                      | 250-7±1-6              | 175-0                | 11-0             | 2000             | 33000      | 3000           | Horizontal         | K5        |
| 1500  | 240/250 | R7s  | 254-1                      | 250-7±1-6              | 175-0                | 11-0             | 2000             | 33000      | 3000           | Horizontal         | K5        |
| 2000  | 200/230 | R7s  | 331-0                      | 327-4±1-6              | 249-0                | 11-0             | 2000             | 44000      | 3000           | Horizontal         | K8        |
| 2000  | 240/250 | R7s  | 331-0                      | 327-4±1-6              | 249-0                | 11-0             | 2000             | 44000      | 3000           | Horizontal         | K8        |
| 2000  | 200/230 | Fa4  | 324-1                      | 334-4 max              | 229-0                | 12-0             | 2000             | 44000      | 3000           | Horizontal         | K6        |
| 2000  | 240/250 | Fa4  | 324-1                      | 334-4 max              | 229-0                | 12-0             | 2000             | 44000      | 3000           | Horizontal         | K6        |

†Frosted for use with Wall Washer fitting  
‡The standard length of the 750W lamp is 189-1mm  
Lamps with a length of 178mm are also available.  
Please specify length when ordering.

All dimensions in millimetres

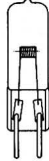
# Single-ended tungsten halogen lamps



M34 6V 20W  
M35 12V 20W



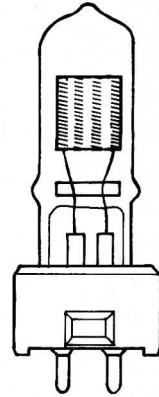
M32 12V 50W



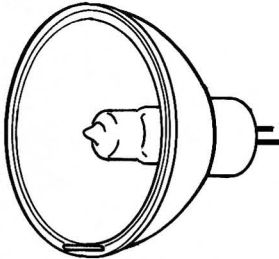
M28 12V.100W



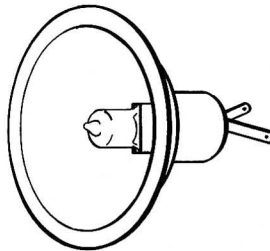
M36 24V 250W



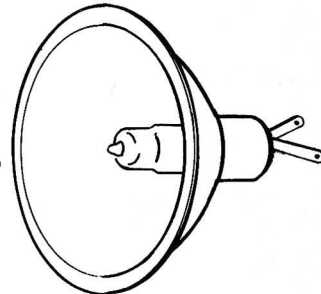
M38 300W



M37 12V 55W



M39 6V 20W



M41 6V 20W

**Principle of operation and advantages of use** are as indicated on the preceding page.

**Lampholders** suitable for some of these lamps are listed on page 321.

**Fusing:** A fuse should be mounted in the fitting or external circuit.

### Operating temperatures:

During operation the temperatures of the lamp pinch seal should not exceed 350°C, while the bulb wall temperature must not drop below 250°C in order to maintain the tungsten-halogen cycle.

| Lamp type | Watts | Volts                     | Overall length (max) | Bulb/Flange dia. (max) | Nom. lumens | Rated life (Hours) | Base   | Operating position | Description        |
|-----------|-------|---------------------------|----------------------|------------------------|-------------|--------------------|--------|--------------------|--------------------|
| M34       | 20    | 6                         | 30                   | 8.5                    | 350         | 2000               | G4     | Any                |                    |
| M39       | 20    | 6                         | 39                   | 50                     | —           | 2000               | 2 Tab  | Any                | Ellipsoidal mirror |
| M41       | 20    | 6                         | 40                   | 56                     | —           | 2000               | 2 Tab  | Any                | Parabolic mirror   |
| M35       | 20    | 12                        | 30                   | 8.5                    | 450         | 100                | G4     | Any                |                    |
|           | 23    | 113.2                     | 30                   | 8.5                    | 600         | 50                 | G4     | Any                |                    |
| M32       | 50    | 12                        | 44                   | 12                     | 900         | 2000               | GY6-35 | Any                |                    |
| M37       | 55    | 12                        | 42                   | 50                     | —           | 750                | GZ6-35 | Any                | Ellipsoidal mirror |
| M28       | 100   | 12                        | 45                   | 11                     | 2150        | 2000               | GY6-35 | VBD ± 90**         |                    |
| M36       | 250   | 24                        | 58                   | 15                     | 5750        | 2000               | G6-35  | VBD ± 90*          |                    |
| M38       | 300   | 120<br>200/230<br>240/250 | 80                   | 15                     | 5000        | 2000               | GY9-5  | Any                |                    |

\* Can be operated in any position if heat sinks are used  
† M35 can be operated at 13.2V. The characteristics for such operating are as above.  
VBD : Vertical, base down.

All dimensions in mm