



# POWERARC® POWERBALL® Technical Information

SEE THE WORLD IN A NEW LIGHT



## **The OSRAM POWERARC range features:**

Efficacies of 90 to 110 lumens per watt, depending on wattage and type.

Long lamp life.

Excellent conversion of energy into light.

## **Applications for OSRAM POWERARC:**

### **Indoors**

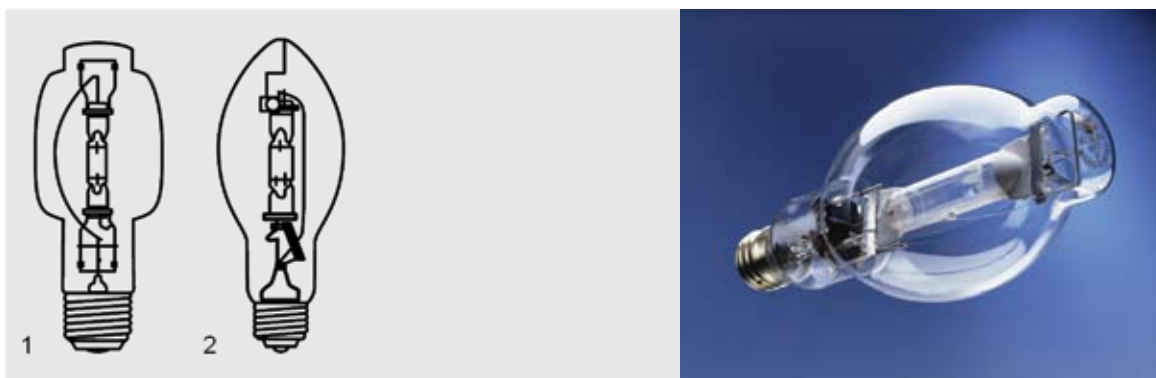
- Shopping malls, car showrooms, factories, sports centres, exhibition halls.

### **Outdoors**

- Local sporting facilities, pedestrian walkways, parks, town road lighting, lighting of civic features, work areas, car display areas.

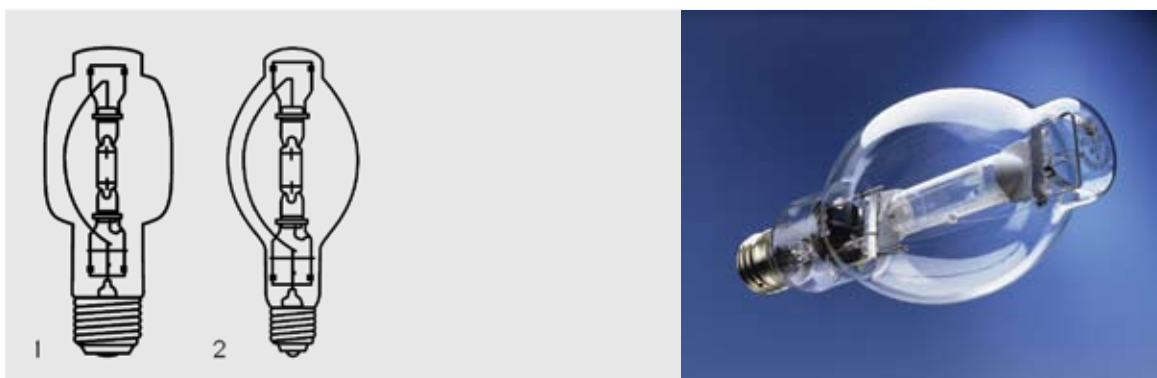
### **Specialised**

- Television broadcasting at sporting facilities, horticulture, marine floodlighting and retail display.



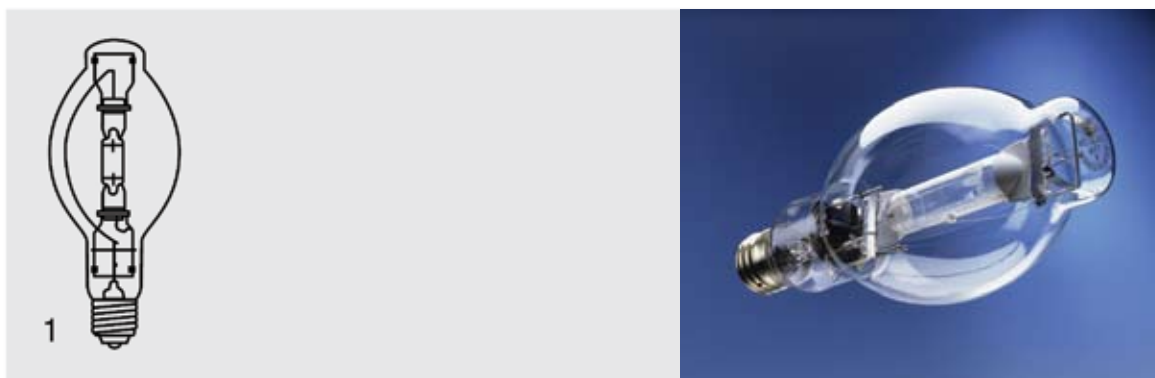
|                             |               | MI<br>175/U     | MI<br>175/U     | MI<br>250/U     |
|-----------------------------|---------------|-----------------|-----------------|-----------------|
|                             |               | Clear           | Clear           | Clear           |
| ANSI Spec No                |               | M57             | M57             | M58             |
| Lamp Wattage                | W             | 175             | 175             | 250             |
| Lamp Voltage (RMS)          | V             | 132             | 132             | 133             |
| Lamp current (RMS)          | A             | 1.5             | 1.5             | 2.1             |
| Min start voltage – lag     | V (RMS)       | 382             | 382             | 382*            |
|                             | V (Peak)      | 540             | 540             | 540*            |
| Initial Lumens              | lm vertical   | 14400           | 14400           | 22000           |
|                             | lm horizontal | 12800           | 12800           | 20000           |
| Luminous efficacy           | lm/W          | 82              | 82              | 88              |
| Colour Temp                 | K             | 4200            | 4000            | 4200            |
| Colour rendering index      | Ra            | >65             | >65             | >65             |
| Base                        |               | E40             | E27             | E40             |
| Diameter                    | mm            | 90              | 54              | 90              |
| Length                      | mm            | 211             | 138             | 211             |
| LCL                         | mm            | 127             | 86              | 127             |
| Burning position            |               | Universal       | Universal       | Universal       |
| Bulb designation            |               | BT-28           | E17             | BT-28           |
| Average Lamp Life           | h vertical    | 10000           | 10000           | 10000           |
|                             | h horizontal  | 7500            | 7500            | 7500            |
| Max. perm. outer bulb temp. | °C            | 350             | 350             | 350             |
| Max. perm. base edge temp.  | °C            | 250             | 250             | 250             |
| Lamp reference              |               | MI<br>175/U E40 | MI<br>175/U E27 | MI<br>250/U E40 |
| EAN                         |               | 4050300335292   | 046135646676    | 4050300335339   |
| Carton Qty/Standard pack    | Qty           | 6               | 20              | 6               |
| Figure                      | No.           | 1               | 2               | 1               |

\*a suitable ignitor (1kV aprox.) can be used



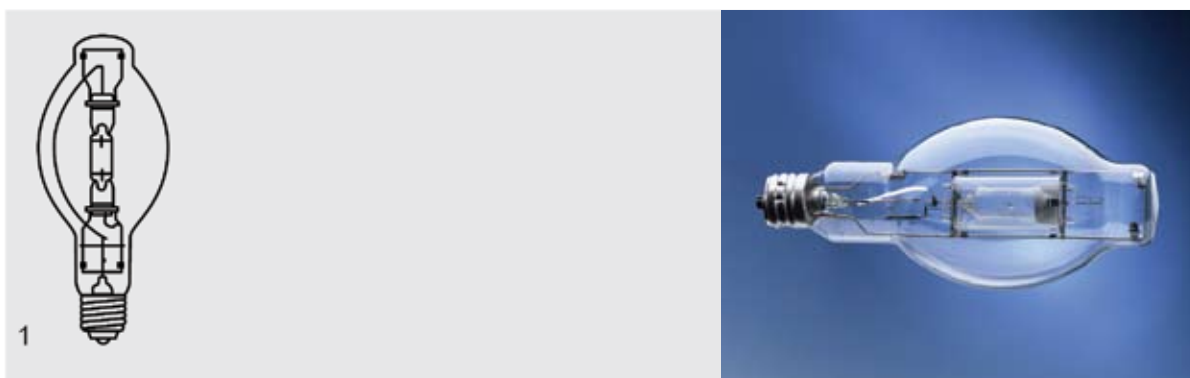
|                             |               | MI<br>250/C/U     | MI<br>250/C/U     | MI<br>400/U   |
|-----------------------------|---------------|-------------------|-------------------|---------------|
|                             |               | Coated            | Coated            | Clear         |
| ANSI Spec No                |               | M58               | M58               | M59           |
| Lamp Wattage                | W             | 250               | 250               | 400           |
| Lamp Voltage (RMS)          | V             | 133               | 133               | 135           |
| Lamp current (RMS)          | A             | 2.1               | 2.1               | 3.25*         |
| Min start voltage – lag     | V (RMS)       | 382*              | 382*              | 382           |
|                             | V (Peak)      | 540*              | 540*              | 540           |
| Initial Lumens              | lm vertical   | 21500             | 21500             | 36000         |
|                             | lm horizontal | 19500             | 19500             | 1280032000    |
| Luminous efficacy           | lm/W          | 86                | 86                | 90            |
| Colour Temp                 | K             | 3800              | 3800              | 4000          |
| Colour rendering index      | Ra            | >70               | >70               | >65           |
| Base                        |               | E40               | E39               | E40           |
| Diameter                    | mm            | 89                | 89                | 117           |
| Length                      | mm            | 211               | 211               | 292           |
| LCL                         | mm            | 127               | 127               | 118           |
| Burning position            |               | Universal         | Universal         | Universal     |
| Bulb designation            |               | BT-28             | BT-28             | BT-37         |
| Average Lamp Life           | h vertical    | 10000             | 10000             | 20000         |
|                             | h horizontal  | 7500              | 7500              | 15000         |
| Max. perm. outer bulb temp. | °C            | 350               | 350               | 400           |
| Max. perm. base edge temp.  | °C            | 250               | 250               | 250           |
| Lamp reference              |               | MI<br>250/C/U E40 | MI<br>250/C/U E39 | MI<br>400/U   |
| EAN                         |               | 4050300335353     | 46135646379       | 4050300335377 |
| Carton Qty/Standard pack    | Qty           | 6                 | 6                 | 6             |
| Figure                      | No.           | 1                 | 1                 | 2             |

\*a suitable ignitor (1kV aprox.) can be used



|                             |               | MI<br>400/C/U | MI<br>400/C/U | MI<br>1000/U  |
|-----------------------------|---------------|---------------|---------------|---------------|
|                             |               | Coated        | Coated        | Clear         |
| ANSI Spec No                |               | M59           | M59           | M47           |
| Lamp Wattage                | W             | 400           | 400           | 1000          |
| Lamp Voltage (RMS)          | V             | 135           | 135           | 263           |
| Lamp current (RMS)          | A             | 3.25          | 3.25          | 4.1           |
| Min start voltage – lag     | V (RMS)       | 382*          | 382*          | 530*          |
|                             | V (Peak)      | 540*          | 540*          | 750*          |
| Initial Lumens              | lm vertical   | 36000         | 36000         | 110000        |
|                             | lm horizontal | 32000         | 32000         | 107800        |
| Luminous efficacy           | lm/W          | 90            | 90            | 110           |
| Colour Temp                 | K             | 3700          | 3700          | 4000          |
| Colour rendering index      | Ra            | >70           | >70           | >65           |
| Base                        |               | E40           | E39           | E40           |
| Diameter                    | mm            | 118           | 118           | 178           |
| Length                      | mm            | 292           | 292           | 390           |
| LCL                         | mm            | 178           | 178           | 241           |
| Burning position            |               | Universal     | Universal     | Universal     |
| Bulb designation            |               | BT-37         | BT-37         | BT-56         |
| Average Lamp Life           | h vertical    | 20000         | 20000         | 15000         |
|                             | h horizontal  | 15000         | 15000         | 9000          |
| Max. perm. outer bulb temp. | °C            | 400           | 400           | 400           |
| Max. perm. base edge temp.  | °C            | 250           | 250           | 250           |
|                             |               | MI            | MI            | MI            |
| Lamp reference              |               | 400/C/U       | 400/C/U       | 1000/U        |
| EAN                         |               | 4050300335391 | 046135646416  | 4050300335414 |
| Carton Qty/Standard pack    | Qty           | 6             | 6             | 6             |
| Figure                      | No.           | 1             | 1             | 1             |

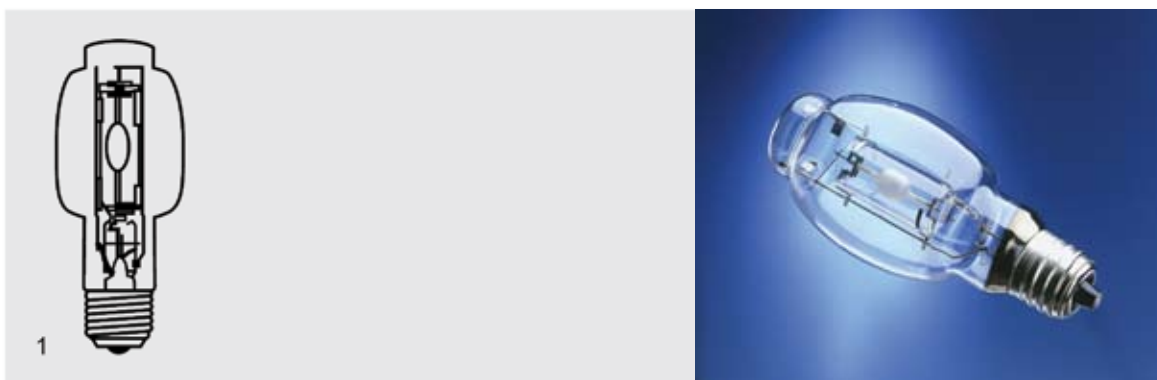
\*a suitable ignitor (1kV aprox.) can be used



|                                    |               | <b>MI<br/>1500/BU</b>    | <b>MIS<br/>400/BU</b> | <b>MIS<br/>1000/BU</b> |
|------------------------------------|---------------|--------------------------|-----------------------|------------------------|
|                                    |               | Clear                    | Clear                 | Clear                  |
| <b>ANSI Spec No</b>                |               | M48                      | M59                   | M47                    |
| <b>Lamp Wattage</b>                | W             | 1500                     | 400                   | 1000                   |
| <b>Lamp Voltage (RMS)</b>          | V             | 268                      | 135                   | 263                    |
| <b>Lamp current (RMS)</b>          | A             | 6.2                      | 3.25                  | 4.1                    |
| <b>Min start voltage – lag</b>     | V (RMS)       | 530                      | 382*                  | 530*                   |
|                                    | V (Peak)      | 750                      | 540*                  | 750*                   |
| <b>Initial Lumens</b>              | lm vertical   | 170000                   | 41000                 | 115000                 |
|                                    | lm horizontal | 153000                   | -                     | -                      |
| <b>Luminous efficacy</b>           | lm/W          | 113                      | 102.5                 | 115                    |
| <b>Colour Temp</b>                 | K             | 4000                     | 4000                  | 4000                   |
| <b>Colour rendering index</b>      | Ra            | >70                      | >65                   | >65                    |
| <b>Base</b>                        |               | E40                      | E39                   | E40                    |
| <b>Diameter</b>                    | mm            | 178                      | 118                   | 178                    |
| <b>Length</b>                      | mm            | 390                      | 292                   | 390                    |
| <b>LCL</b>                         | mm            | 241                      | 178                   | 241                    |
| <b>Burning position</b>            |               | Base up to<br>Horizontal | Base up only          | Base up only           |
| <b>Bulb designation</b>            |               | BT-56                    | BT-37                 | BT-56                  |
| <b>Average Lamp Life</b>           | h vertical    | 3000                     | 20000                 | 12000                  |
|                                    | h horizontal  | 3000                     | -                     | -                      |
| <b>Max. perm. outer bulb temp.</b> | °C            | 400                      | 400                   | 400                    |
| <b>Max. perm. base edge temp.</b>  | °C            | 250                      | 250                   | 250                    |
| <b>Lamp reference</b>              |               | MI<br>1500/BU            | MIS<br>400/BU         | MIS<br>1000/BU         |
| <b>EAN</b>                         |               | 4050300335452            | 046135644672          | 046135644276           |
| <b>Carton Qty/Standard pack</b>    | Qty           | 6                        | 6                     | 6                      |
| <b>Figure</b>                      | No.           | 1                        | 1                     | 1                      |

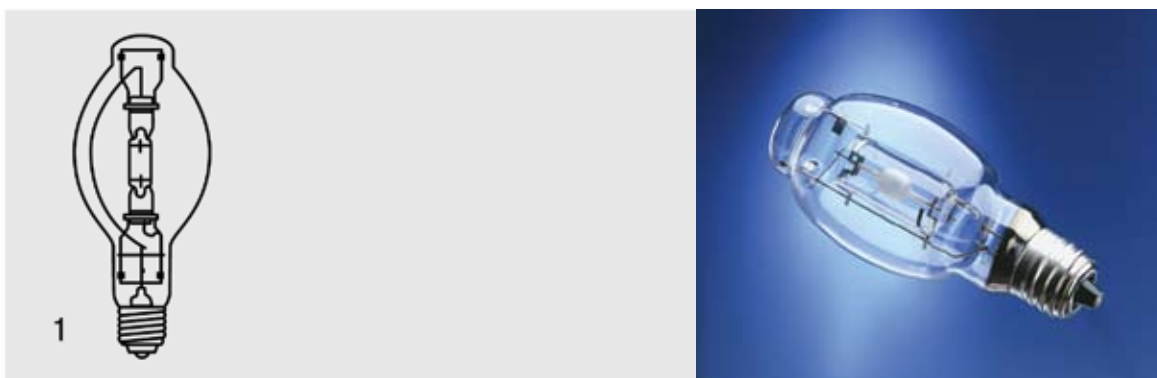
\*a suitable ignitor (1kV aprox.) can be used





|                             |               | MIP<br>250/PS/BU | MIP<br>250/C/PS/BU | MICP<br>320/C/PS/BU |
|-----------------------------|---------------|------------------|--------------------|---------------------|
|                             |               | Clear            | Coated             | Coated              |
| ANSI Spec No                |               | M153             | M153               | M154                |
| Lamp Wattage                | W             | 250              | 250                | 320                 |
| Lamp Voltage (RMS)          | V             | 133              | 133                | 135                 |
| Lamp current (RMS)          | A             | 2.1              | 2.1                | 2.6                 |
| Min start voltage – lag     | V (RMS)       | 254              | 254                | 254                 |
|                             | V (Peak)      | 345              | 345                | 345                 |
| Initial Lumens              | lm vertical   | 22500            | 21000              | 27700               |
|                             | lm horizontal | -                | -                  | -                   |
| Luminous efficacy           | lm/W          | 90               | 84                 | 100                 |
| Colour Temp                 | K             | 4000             | 4000               | 3600                |
| Colour rendering index      | Ra            | >65              | >70                | >70                 |
| Base                        |               | EX39             | EX39               | EX39                |
| Diameter                    | mm            | 89               | 89                 | 89                  |
| Length                      | mm            | 211              | 211                | 211                 |
| LCL                         | mm            | 127              | 127                | 127                 |
| Burning position            |               | Base up only     | Base up only       | Base up only        |
| Bulb designation            |               | BT28             | BT28               | BT28                |
| Average Lamp Life           | h vertical    | 15000            | 15000              | 20000               |
|                             | h horizontal  | -                | -                  | -                   |
| Max. perm. outer bulb temp. | °C            | 400              | 400                | 400                 |
| Max. perm. base edge temp.  | °C            | 210              | 210                | 210                 |
| Lamp reference              |               | MIP<br>250/PS/BU | MIP<br>250/C/PS/BU | MICP<br>320/C/PS/BU |
| EAN                         |               |                  | 0046135643170      | 046135648830        |
| Carton Qty/Standard pack    | Qty           | 6                | 6                  | 6                   |
| Figure                      | No.           | 1                | 1                  | 1                   |

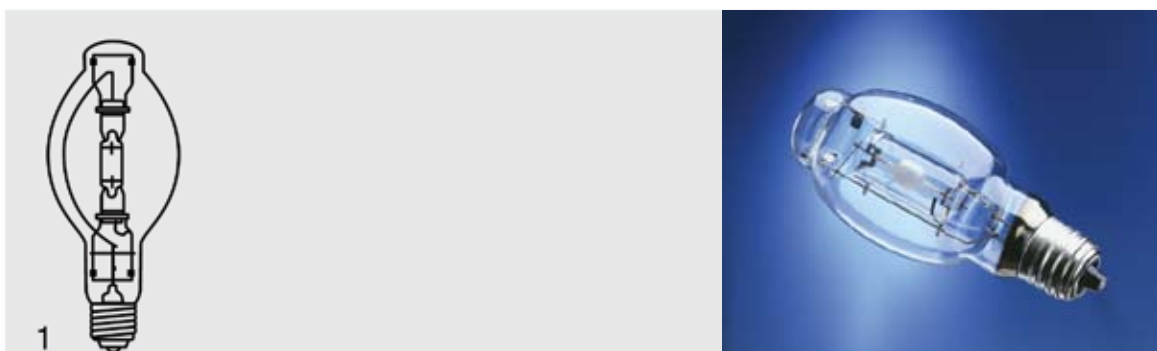
\*a suitable ignitor (1kV aprox.) can be used



|                             |               | MIP<br>350/400/PS/BU | MIP<br>350/400/PS/BU |
|-----------------------------|---------------|----------------------|----------------------|
|                             |               | Clear                | Clear                |
| ANSI Spec No                |               | M131                 | M155                 |
| Lamp Wattage                | W             | 350                  | 400                  |
| Lamp Voltage (RMS)          | V             | 135                  | 135                  |
| Lamp current (RMS)          | A             | 2.9                  | 3.25                 |
| Min start voltage – lag     | V (RMS)       | 254                  | 254                  |
|                             | V (Peak)      | 345                  | 345                  |
| Initial Lumens              | lm vertical   | 33000                | 40000                |
|                             | lm horizontal | -                    | -                    |
| Luminous efficacy           | lm/W          | 100                  | 100                  |
| Colour Temp                 | K             | 3700                 | 3500                 |
| Colour rendering index      | Ra            | >65                  | >65                  |
| Base                        |               | EX39                 | EX39                 |
| Diameter                    | mm            | 117                  | 117                  |
| Length                      | mm            | 292                  | 292                  |
| LCL                         | mm            | 178                  | 178                  |
| Burning position            |               | Base up only         | Base up only         |
| Bulb designation            |               | BT37                 | BT37                 |
| Average Lamp Life           | h vertical    | 20000                | 20000                |
|                             | h horizontal  | -                    | -                    |
| Max. perm. outer bulb temp. | °C            | 400                  | 400                  |
| Max. perm. base edge temp.  | °C            | 210                  | 210                  |
| Lamp reference              |               | MIP<br>350/400/PS/BU | MIP<br>350/400/PS/BU |
| EAN                         |               |                      |                      |
| Standard pack               | Qty           | 6                    | 6                    |
| Figure                      | No.           | 1                    | 1                    |

\*a suitable ignitor (1kV aprox.) can be used





|                             |               | MIP<br>350/400/C/PS/BU<br>Coated | MIP<br>350/400/C/PS/BU<br>Coated |
|-----------------------------|---------------|----------------------------------|----------------------------------|
| ANSI Spec No                |               | M131                             | M155                             |
| Lamp Wattage                | W             | 350                              | 400                              |
| Lamp Voltage (RMS)          | V             | 135                              | 135                              |
| Lamp current (RMS)          | A             | 2.9                              | 3.25                             |
| Min start voltage – lag     | V (RMS)       | 254                              | 254                              |
|                             | V (Peak)      | 345                              | 345                              |
| Initial Lumens              | lm vertical   | 32000                            | 39000                            |
|                             | lm horizontal | -                                | -                                |
| Luminous efficacy           | lm/W          | 91                               | 97                               |
| Colour Temp                 | K             | 3500                             | 3300                             |
| Colour rendering index      | Ra            | >70                              | >70                              |
| Base                        |               | EX39                             | EX39                             |
| Diameter                    | mm            | 117                              | 117                              |
| Length                      | mm            | 292                              | 292                              |
| LCL                         | mm            | 178                              | 178                              |
| Burning position            |               | Base up only                     | Base up only                     |
| Bulb designation            |               | BT37                             | BT37                             |
| Average Lamp Life           | h vertical    | 20000                            | 20000                            |
|                             | h horizontal  | -                                | -                                |
| Max. perm. outer bulb temp. | °C            | 400                              | 400                              |
| Max. perm. base edge temp.  | °C            | 210                              | 210                              |
| Lamp reference              |               | MIP<br>350/400/C/PS/BU           | MIP<br>350/400/C/PS/BU           |
| EAN                         |               | 0046135643163                    | 0046135643163                    |
| Standard pack               | Qty           | 6                                | 6                                |
| Figure                      | No.           | 1                                | 1                                |

\*a suitable ignitor (1kV aprox.) can be used

# OSRAM POWERARC Metal Halide Lamps MI /MIS

POWERARC Metal Halide lamps are the ideal choice for today's cost conscious user. High lumen output throughout a relatively long life, along with good efficacy, together with a wide range of wattages, allow designers increased flexibility in optimising their lighting solutions.

The OSRAM Metal Halide lamp family offers a complete line of lamps, each offering distinct features, which contribute many advantages. The MI and MIS families are described below.

## Specification Guide.

This guide contains a complete listing of those OSRAM branded products which are produced to comply with the USA ANSI specifications. The data contained here includes the photometric, electrical and physical parameters. For further information an Engineering Bulletin can also be made available upon request.

## Standard POWERARC Lamps.

These lamps (designated MI) are best known for their exceptional "White" light – not too warm nor too cool. They are available with a clear envelope or coated, to suit the characteristics of the luminaire.

All are designed for universal burning, however, performance details may change with orientation; consult the tables for details.

## High Output POWERARC.

Also referred to as Super Metal Halide lamps, the 400W, 1000W and 1500W MIS "Base Up" (BU) types are readily available for use where higher light output than the "Standard MI", is desired. The 175W and 250W ratings are available to order, (conditionally).

Due to their unique design, the High Output POWERARC MIS lamps are restricted to specific burning positions. Horizontal" (HOR) burning versions are also available in 250W and 400W. They require a "Position Oriented Mogul" (POM) lampholder.

## Special Purpose POWERARC.

A selection of the PAR (2 of the 12 types available), Compact (2 of 6 types) and Double Ended Tubular (2 out of 4 available) have been introduced into the OSRAM POWERARC range, for application in those more specialised situations, which are often encountered.

Contrary to the rest of the POWERARC range, the 100W PAR38 Spot and Flood Lamps offer "Warm White" light – 3000K Colour temperature; with a C.R.I. of 75.

At the other end of the scale, the 1500W T7 and 2000W T9 Tubular Metal Halide lamps have been designed specifically for Sports Stadium or Site Floodlighting. They provide 100 Lumens per watt of people friendly "Neutral White" light and offer good Service Life.

## Other POWERARC Options.

With the exception of the 400W and 1000W Standard lamps, when burning in the Vertical Base Up position and the PAR lamps, all these Metal Halide lamps must be housed within enclosed luminaires.

OSRAM do manufacture a range of Metal Halide lamps in the wattage range 175W to 1000W, which have shielded Arc Tubes to allow their use in open luminaires. These lamps are constructed in a similar manner to the popular HQI-E Low Wattage range.

Apart from the information contained here, there is advisory information relating to application, printed on the packaging of all OSRAM POWERARC lamps. For safe and proper performance this advice should be followed.

# OSRAM POWERARC Metal Halide Lamps MI /MIS

Continued achievement of the light output and colour characteristics quoted for POWERARC lamps is regularly being monitored in our laboratories, in USA. They have however, proved their performance in service over many years - in the case of the Standard lamp, over 30 years.

These lamps may however, demonstrate some variation from the published data due to differences in manufacturing tolerances, (eg. chemistry), operating parameters (controlled by the ballast and mains voltage) and age.

## Lumen ratings.

The Lumen Output figures for the POWERARC Metal Halide lamps in this listing are representative of the lamp running at the rated wattage. They have been obtained by measuring an actual lamp, operating under controlled laboratory conditions, on an ANSI specified circuit (HPF Linear reactor).

The performance curves are recorded with lamps burning on a 10 hour duty cycle (excluding MI 1500 and MI 2000 types). The initial lumen value represents the 100 hour figure.

For design purposes, a lumen output value, chosen in accordance with the guidelines of the appropriate Standard, should be selected, after consulting the performance curves provided.

## Colour Appearance.

Being the traditional USA designs, ie. to ANSI specifications, the Colour Temperature generated by the Sodium Scandium Halide mix falls within the Neutral White band, 3500 – 4700K, with C.R.I. 65-70.

As with all Metal Halide lamps, the POWERARC lamps may vary in colour appearance, lamp to lamp.

## Bulb Shapes.

OSRAM POWERARC lamps feature the customary BT Elliptical shapes (MI & MIS) except for those lamps designed for specialised applications (such as major sporting facilities or retail display), where Double Ended Tubular or PAR shapes apply.

A Compact E17 envelope 175W lamp is listed, other sizes are available, subject to ordering conditions.

## End of Life with POWERARC.

The Average Rated Life (the elapsed period before 50% of any large batch of lamps fail, under controlled conditions) is stated for each POWERARC lamp, in the following tables. As stated earlier this assumes a 10 hour or more duty cycle.

It is recommended that POWERARC lamps be taken out of service at least on or before this period expires. (See note under “Lumen Ratings”). Failures can occur at any time throughout this period. In order to protect the ballast etc. it is advisable to replace a failed lamp immediately.

A lamp at “end of life” may exhibit:

- Dramatically changed colour appearance.
- A notable decrease in light output.
- A difficulty in starting
- Cycling off and on shortly after starting.
- An alteration to the physical construction.

## Lamp restart.

On initial switch on the POWERARC lamp will take about 2 to 4 minutes to warm up to full output. After switch off, the lamp will take around 7 to 10 minutes to restrike.

All POWERARC lamps are manufactured to the same high quality standards, adopted throughout all OSRAM manufacturing plants. Each lamp is “date coded” to help with performance tracking.

## Technical concerns.

OSRAM POWERARC lamps are suitable for both indoor and outdoor applications, within suitably designed luminaires.

For best performance from the POWERARC lamp, the use of “Constant Wattage” (Lead Peak) ballasts, designed in accordance with the designated ANSI specification, is recommended. This is particularly applicable if voltages are likely to be unstable. These lamps may also be operated on Linear Reactor ballasts in combination with a 1kV ignitor, matched to the ballast type and installation requirements.

If a reactor ballast is employed, the maximum permissible voltage variation is plus or minus 5%. Voltage increases of this nature should only be allowed for short periods.

Circuit protection, in the form of slow acting fusing, rated to suit the expected starting current of the system, is recommended.

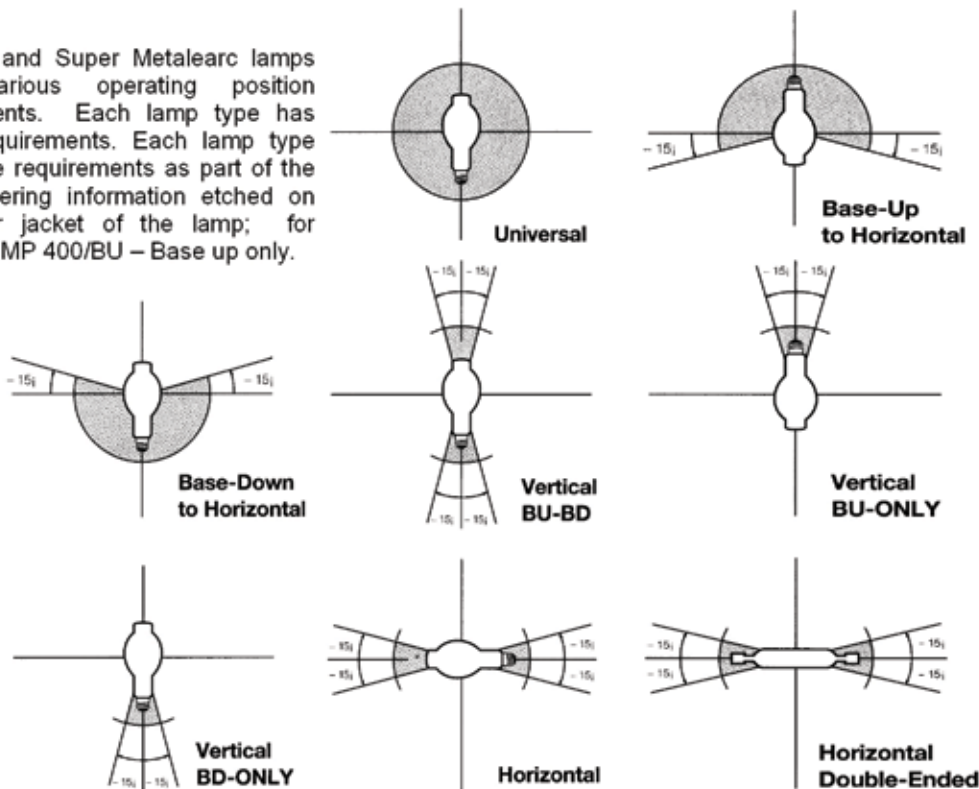
In addition, thermal overload protection may also be appropriate although from 400W and above, this is not as strong a recommendation, as it is with low wattage metal halide lamps.

Temperature limits for the base and the glass envelope are quoted and these values should not be exceeded when the lamp is installed (check at nominal voltage plus upper tolerance).

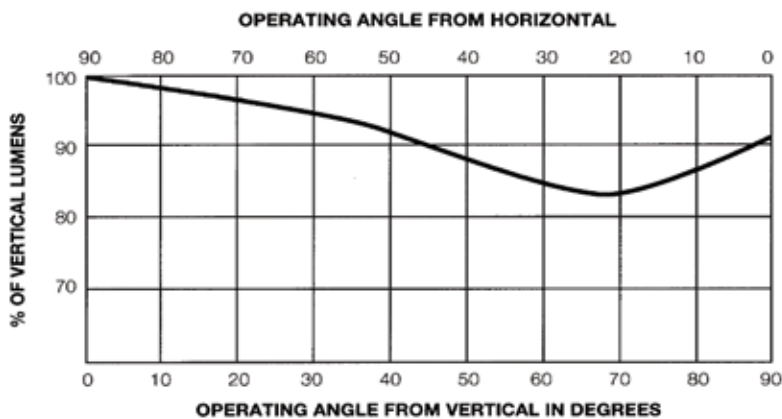
# Operating Positsion

## Burning Position.

Metalarc and Super Metalearc lamps have various operating position requirements. Each lamp type has these requirements as part of the lamp ordering information etched on the outer jacket of the lamp; for example, MP 400/BU – Base up only.



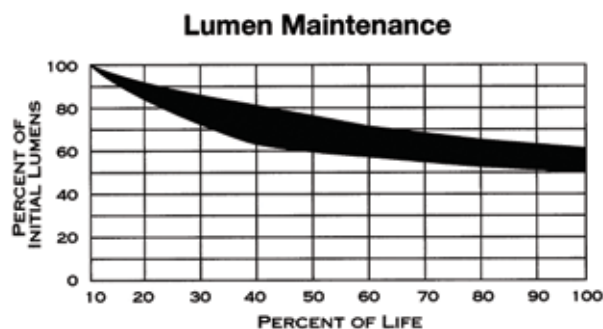
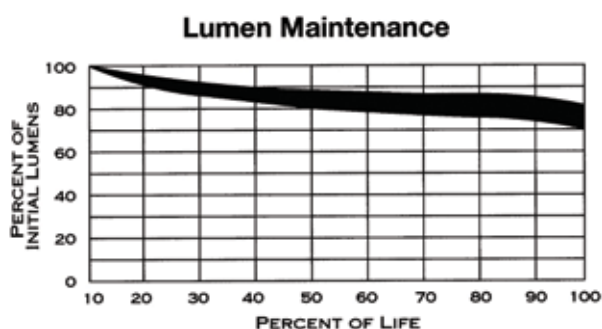
## Typical Lumen Output Characteristics.



## Effect of Operating Position.

The published ratings of Universal burning lamps are established with the lamps operated in the vertical (base-down) position. When operated in positions other than vertical, the lamp wattage and the lumen output decrease slightly as does the lumen maintenance and mean lumens over life. The operating positions, which produce the lowest lumen output (and should therefore be avoided) are approximately 20-30° from horizontal (60-70° from vertical). In operating positions other than vertical, the arc tends to bend upward thereby producing non-uniform heating of the arc tube wall, resulting in less efficient operation. The graph on the left shows the effects of light output versus lamp operating position.

## Lumen Maintenance Curves.



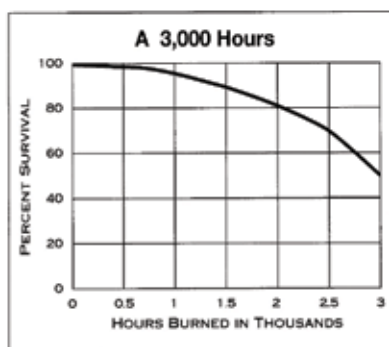
The light output of POWERARC lamps gradually declines throughout lamp life. This phenomenon is also found in other electrical light sources. The shading depicts the variations that may be observed in practice and this is influenced partially by the differences within each family of lamps in the group. Apart from manufacturing tolerances associated with a lamp, there could also be variations due to the luminaire, ballast, and input voltage, reflected into the actual lighting outcome. Variations in the lumen maintenance may also be attributable to the differences in chemistry, starting method, arc tube variations, and lamp life ratings.

The Left Hand plot represents the performance expected from sports lighting lamps and some Pulse Start lamps. The Right Hand plot indicates the Lumen Maintenance expected from the more conventional Metal Halide lamps.

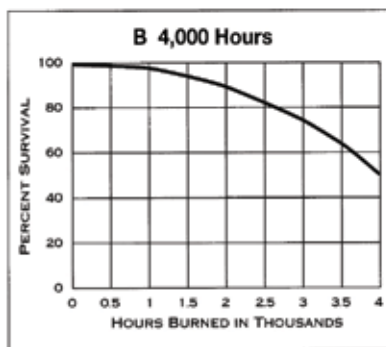
Presently, OSRAM SYLVANIA INC. only publish "100 hour" (Initial) and "Mean Lumen" figures for the Powerarc range. The mean lumen value is measured at 40% of "Average Rated Life". There are no "End of Life" lumen values stated, the above curves can be used to assess approximate values at any point during the lamp's life.

In actual applications, the mean lumens will be brighter than the published ratings if the lamp is operated on a "Constant Wattage" style ballast.

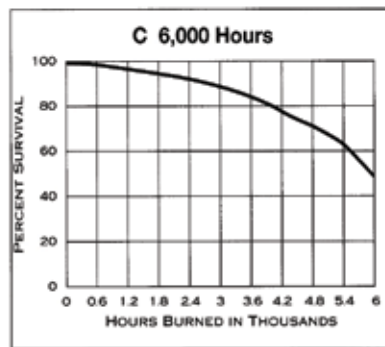
## Lumen Survival Curves.



M1500/BU-HOR.  
M2000/T9/DE



M1500T8/DE



HQI-SE/10/WDX  
HQ0-SE/150/WDX

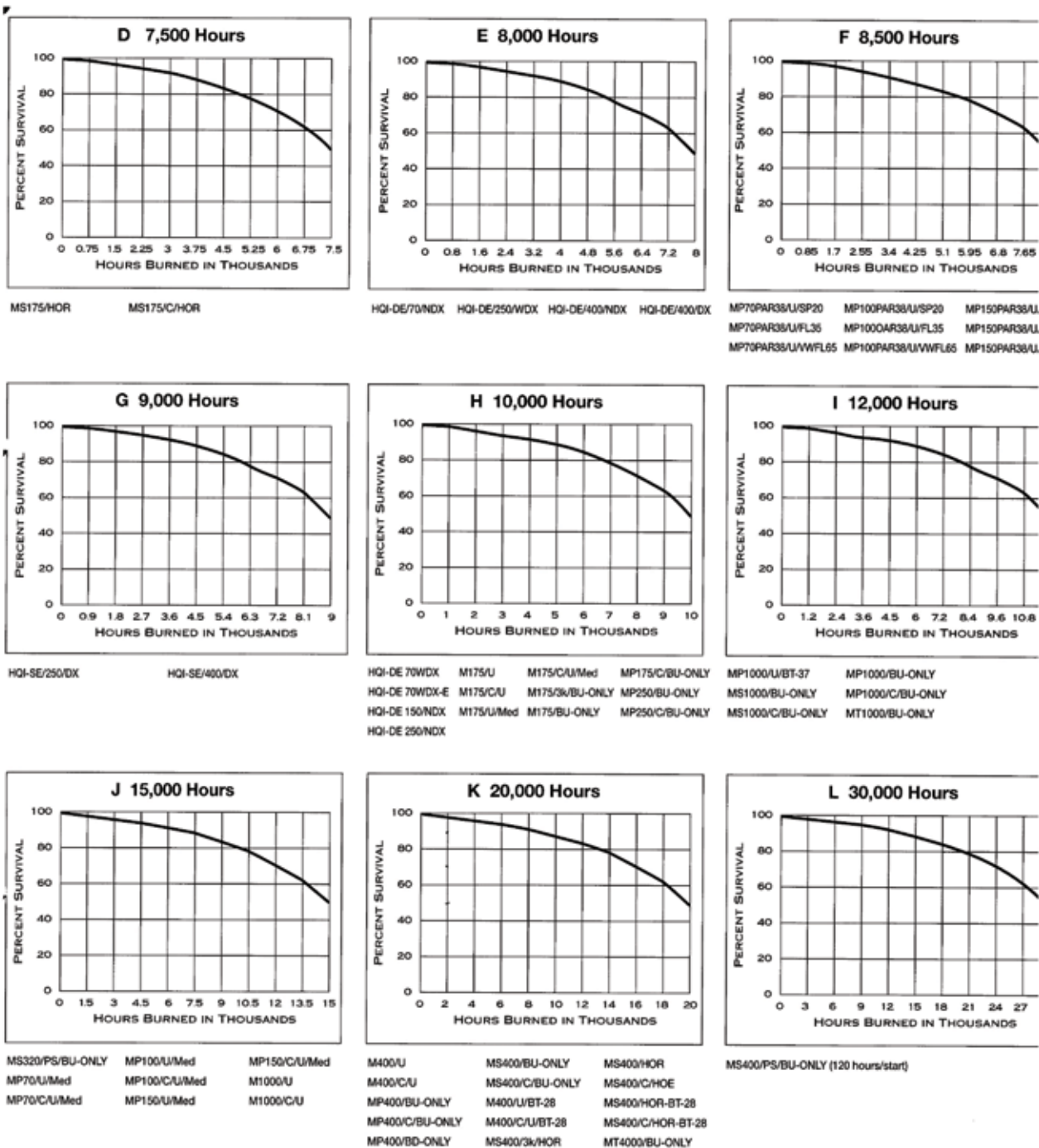
The 1500W and 2000W curves above are based on operating periods of 5 hours per start, typical for Sports Lighting, with the other low wattage Double Ended lamps, operating for 10 or more hours per start. The above survival curves are for lamps burning Horizontally.

Lamps, which, after each switching, are often burnt for periods less than the hours nominated, will experience a shortened life.

The curves and life ratings shown above are subject to change without notice. Consult your catalogue and / or OSRAM Australia Pty Ltd representative for confirmation of details.

The above curves are nominal approximations. Actual lamp performance may vary in practice.





The above curves generally cover lamps that are operated for 10 hour or more per start and this therefore forms the basis for life assessments. The exception is the 400W Pulse Start Powerarc lamp linked to the 30,000 hour burning period. In this case, the lamps operate for 24 hours per day, 6 days per week, ie. 120 hours straight without switching.

Unless otherwise nominated, the lamps would have been tested in the “Base Up” burning position. Consult the catalogue for any performance changes that occur when “Universal Burning” lamps are burnt horizontally.

Powerarc lamps, which, after each switching, are often burnt for periods less the hours nominated, will experience a shortened life.

The mortality curves and life ratings as shown above are subject to change without notice. Consult your catalogue and / or OSRAM Australia Pty Ltd representative to confirm details.

The above curves are nominal approximations. Actual lamp performance may vary in practice.





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