THORN LIGHTING

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Data Sheet

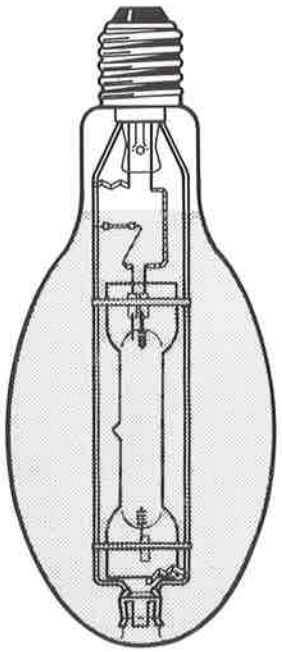
Discharge Lamps

MBFSD

High Pressure Mercury Lamp
SUPER DELUXE
50W, 80W, 125W, 250W, 400W

Description

The high pressure mercury discharge operates in a fused silica (quartz) arc tube which is mounted in an outer glass elliptical bulb coated on the inside with a fluorescent phosphor. The phosphor converts the ultra-violet radiation from the discharge into visible light and also diffuses the arc.

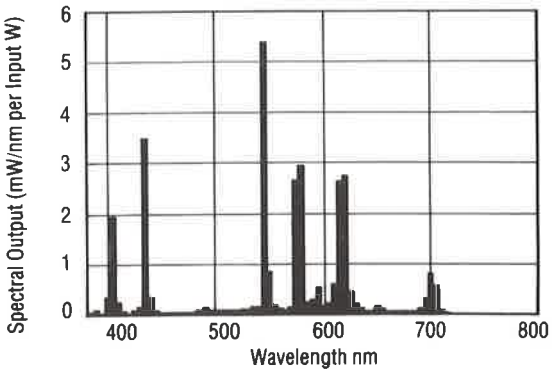


Benefits

In comparison with ordinary mercury lamps, MBFSD super deluxe offer significant benefits.

1) The use of new phosphors improves the spectral distribution giving better colour rendering, particularly for skin tones.
2) The warm white appearance (3300K) is very suitable for interior applications and gives an acceptable blend with fluorescent tubes.
3) The lumen output is 5% higher with good lumen maintenance characteristics.
4) MBFSD lamps are dimensionally and electrically the same as standard MBF lamps of the same wattage. They operate on the same control gear and can be used as direct replacements to improve the quality of lighting.

SPECTRAL POWER DISTRIBUTION

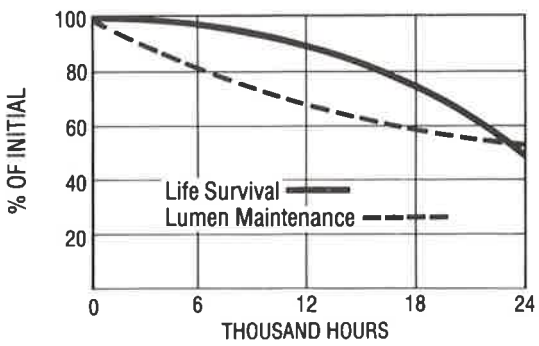


Dimensions

	50W	80W	125W	250W	400W
Overall Length (max.) mm	129	154	175	227	286
Diameter (max.) mm	56	71	76	91	122
Cap	E27/27	E27/27	E27/27	E40/45	E40/45
Bulb Glass	Soft	Soft	Soft	Hard	Hard
Operating Position	Universal	Universal	Universal	Universal	Universal
Weight of Mercury Per Lamp (Max.)	12mg	14mg	19mg	38mg	60mg

Electrical Characteristics

	50W	80W	125W	250W	400W
Lamp Volts	95	115	125	130	135
Lamp Current (amps)	0.60	0.80	1.15	2.15	3.25



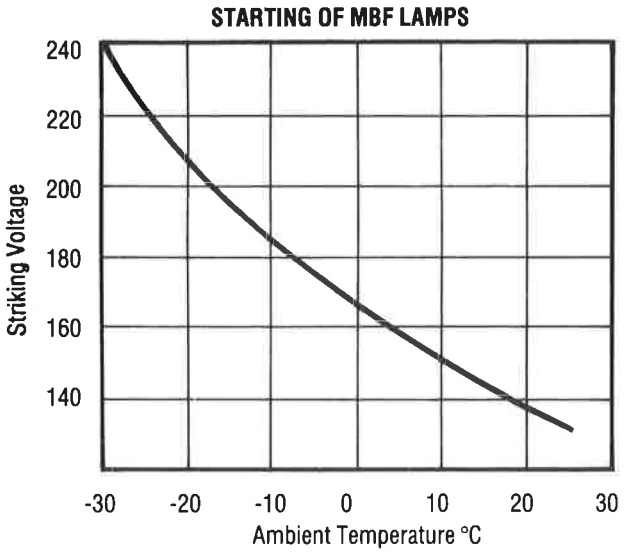
Luminous Characteristics

		50W	80W	125W	250W	400W
Lumens 100 hours		2000	3850	6500	14,000	24,000
Lumens 2000 hours		1900	3650	6200	13,300	22,800
Average Luminance cd/cm^2		5	5	9	10	12
Chromaticity Co-ordinates	x	0.420	0.420	0.420	0.420	0.420
	y	0.395	0.395	0.395	0.395	0.395
Correlated Colour Temperature		3300K	3300K	3300K	3300K	3300K
Colour Rendering Index Ra		55	55	55	55	55

Starting and Operating

Although these lamps start immediately, they require 5–7 minutes to warm up and achieve full output. If a lamp is switched off it requires a few minutes to cool before it will re-start.

The starting voltage of mercury lamps is dependent on ambient temperature as shown on the graph below.



Supply Voltage

All lamps are suitable for 220V and 240V supplies with suitable control gear. Lamps will start and operate with a 10% reduction in rated supply voltage provided the correct control gear is used.

Fusing

For a very short period after switch-on, a discharge lamp may act as a rectifier and as a result the ballast may allow several times the normal circuit current to flow. To avoid fuse failures the ratings shown below should be used. For further information refer to Data Sheet 4:90.2. To prevent rectification occurring at end of life continuous burning of discharge lamps should be avoided and a switch off introduced at least once every 24 hours.

Recommended ratings for individual fusing of circuits.

Lamp power (Watts)	50	80	125	250	400
HBC and MCB fuse rating (Amps)	4	4	4	10	16
Rewireable fuse rating (Amps)	5	5	5	5	10

Guidance for Luminaire Manufacturers

Temperature Limits	50W–125W	250W–400W
Maximum permissible bulb temperature	375°C	450°C
Maximum permissible cap temperature	210°C	250°C

Packing

	50W	80W	125W	250W	400W
Individual Carton Dimensions mm	55 × 55 × 145	70 × 70 × 165	74 × 74 × 177	113 × 113 × 267	128 × 128 × 330
Individual Weight kg	0.53	.063	.083	.160	.230
Bulk Pack Dimensions mm	340 × 340 × 343	445 × 445 × 185	465 × 465 × 185	580 × 240 × 280	655 × 275 × 340
No. in Outer Pack	50	36	36	10	10
Weight kg	3.90	3.24	4.12	3.10	4.22

British and International Standards

Lamps conform to the following standards where applicable.

BS	3677	High pressure mercury vapour lamps
IEC	188	High pressure mercury vapour lamps
BS	5101	Part 1 lamp caps
IEC	61-1	Lamp caps

Operation and Maintenance

Guide for the Safe Installation, Operation and Disposal of High Pressure Mercury lamps.

Before Use

Always isolate the equipment from the electricity supply before inserting or replacing a lamp.

Check that the replacement lamp is the correct type for the application. This includes checking that the lamp voltage (if applicable), wattage and cap are suitable for use in the circuit and with the control gear.

Ensure that the lamp is correctly located in the lampholder and the glass bulb is not scratched during insertion.

During Use

For all lamps (unless indicated to the contrary) prevent rain, snow, condensation droplets or water splashing on the lamp as these may cause the bulb to shatter.

If the outer bulb is broken the lamp must not be operated.

Where mercury discharge lamps are used for prolonged periods in close proximity to eyes and skin there may be a slight possibility of a low level UV radiation hazard. Suitable protection should be employed.

Disposal

These lamps should be broken in a container. Precautions must be taken against flying glass or other fragments. The operation should be carried out outdoors (or in a well-ventilated area). With high pressure mercury lamps it is not necessary to break up the inner arc tube. The debris of large quantities of lamps must be disposed of in accordance with the rules of the Local Authority.