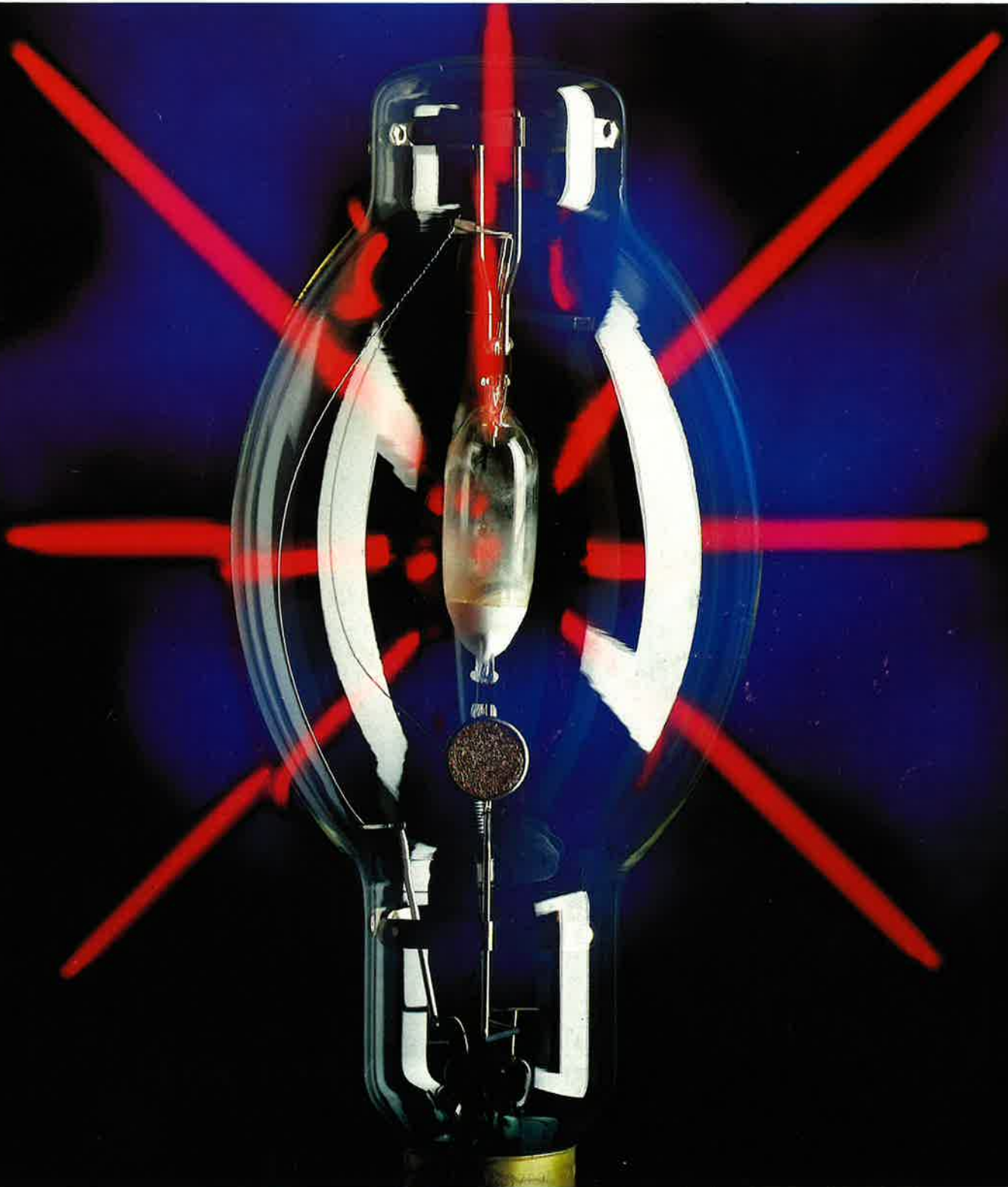


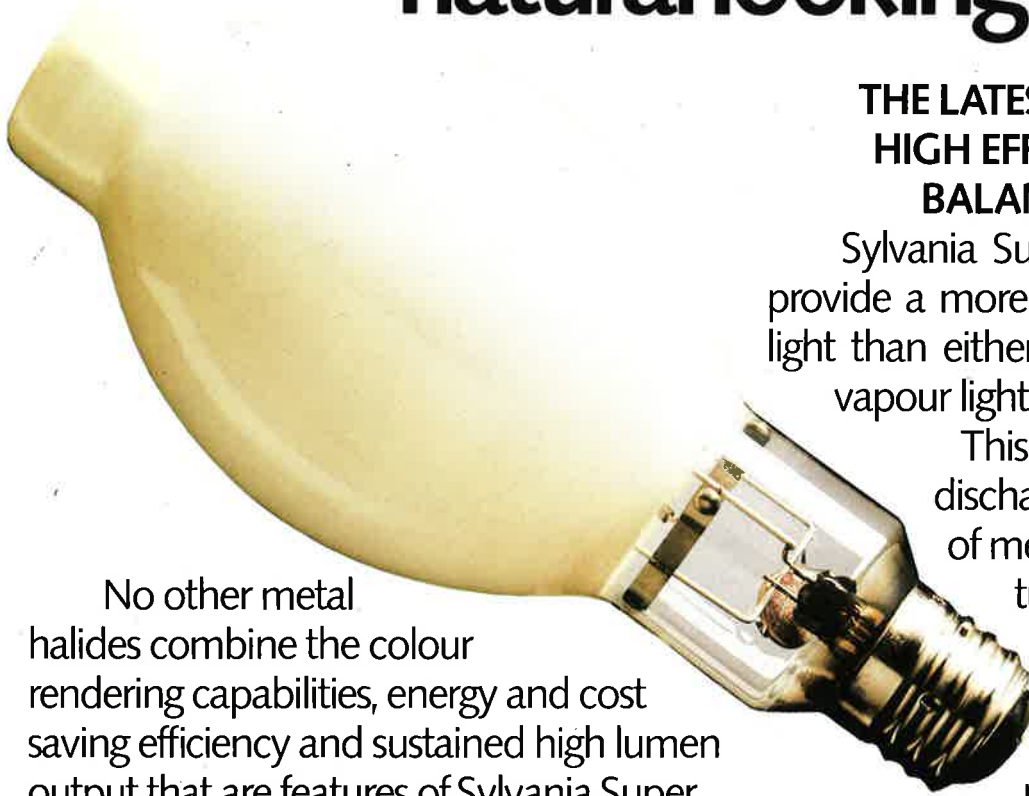
Super METALARC



**Suddenly Metal Halides
have become a more
viable proposition**

SYLVANIA GTE

Sylvania Super Metalarc lamps - your best choice for high efficiency, natural looking lighting.



THE LATEST GENERATION OF HIGH EFFICIENCY, COLOUR BALANCED LIGHTING

Sylvania Super Metalarc lamps provide a more natural looking whiter light than either sodium or mercury vapour lights.

This white light is the luminous discharge from a combination of metal additives in the arc tube of the lamp.

During lamp operation the metal additives are vapourised, producing light more evenly across the visible light spectrum than other HID sources. Since almost all colours are present in this white light colours are rendered more vividly to the viewer. Therefore Super Metalarc lamps are recommended wherever excellent colour rendition is important.

The optimised design of the lamps' arc tubes results in more isothermal arc tube wall temperatures and increased use of light emitting materials. This development helps provide longer lamp life, increased lumen output, improved efficiency and colour uniformity.

Super Metalarc lamps are compatible with colour television broadcasting equipment and because they emit light in red and blue wavelengths, they are ideal for horticultural plant growth and interior landscape lighting applications.

No other metal halides combine the colour rendering capabilities, energy and cost saving efficiency and sustained high lumen output that are features of Sylvania Super Metalarc lamps, which makes them the ideal choice wherever you want high light levels and pleasing, natural looking white light.

There's no need to compromise on lamp selection either because Sylvania has the broadest range of Metal Halide lamps in the industry.

Whatever your lighting requirements – retail and merchandising displays, lobbies, offices, industrial plants, horticulture and interior landscape lighting – you can meet your lighting needs most effectively and economically with Sylvania Super Metalarc lamps.

Choose clear lamps for maximum light output and optical control, phosphor coated for softer diffused light and Super Metalarc 3K for a warm colour and the finest colour rendering.

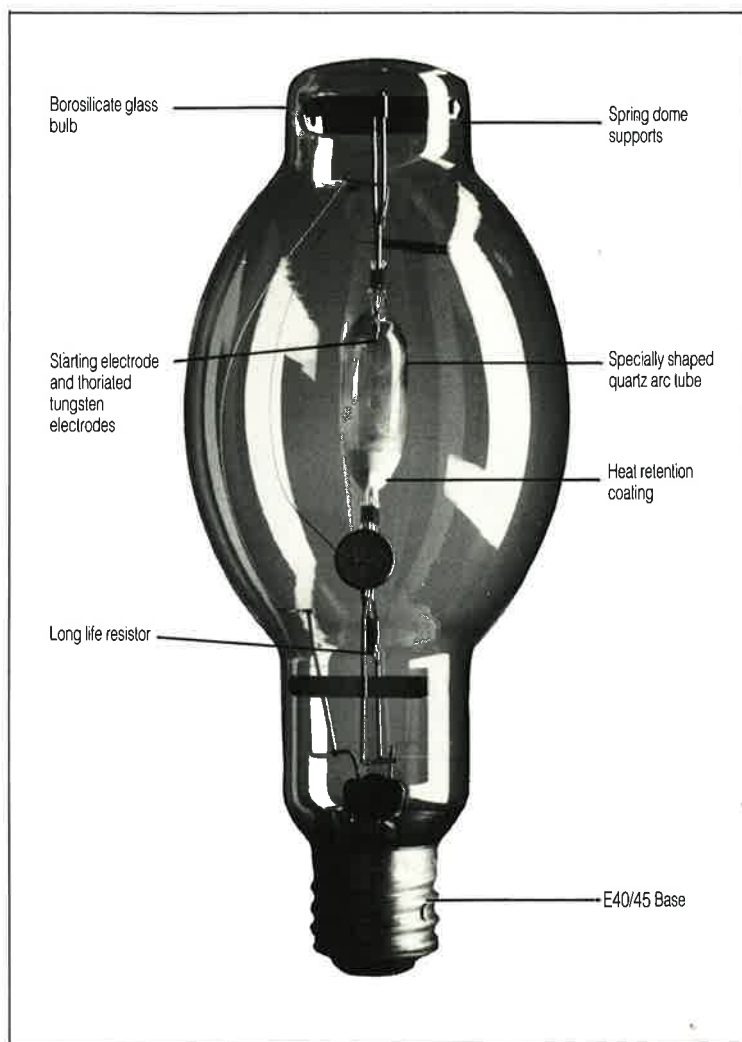


Discharge Lamp Product Information

MS-CLEAR

Description

Super Metalarc Clear Lamps



Physical and Photometric Characteristics

Ordering Abbreviation	MS175/HOR	MS250/HOR	MS400/HOR	MS400/BU	MS400/BD	MS1000/BU	MS1000/BD
Bulb Designation	BT-28	BT-28	BT-37	BT-37	BT-37	BT-56	BT-56
Bulb Diameter mm	89	89	117.5	117.5	117.5	178	178
Base Type	Position Orientated E40/45	Position Orientated E40/45	Position Orientated E40/45	E40/45	E40/45	E40/45	E40/45
Light Centre Length mm	132	132	183	183	183	246	246
Arc Length mm	26	33	39	38	38	90	90
Max. Overall Length mm	216	216	297	297	297	395	395
Max. Bulb Temp. °C	350	350	400	400	400	400	400
Max. Base Temp. °C	210	210	210	210	210	210	210
2000 Hr. Lumens	13,500	20,700	36,000	36,800	36,800	112,500	112,500
Colour Temperature	4700°K	4200°K	4500°K	3700°K	3700°K	3500°K	3500°K
Chromaticity Co-ord x	0.353	0.375	0.360	0.390	0.390	0.400	0.400
y	0.382	0.395	0.370	0.365	0.365	0.375	0.375
CRI	65	65	65	65	65	65	65
Warm Up Time mins	2	2	2	2	2	4	4
Hot Restrike Time mins	10	10	10	10	10	10	10

- Features**
- Highest efficiencies available
 - Allows precise optical control
 - Excellent colour rendering

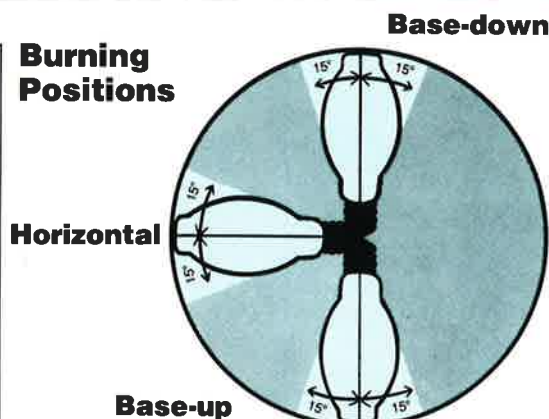
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Applications

- Where the highest light levels and good optical control are required.
 - Factories
 - Warehouses
 - Sports Halls
 - Floodlighting

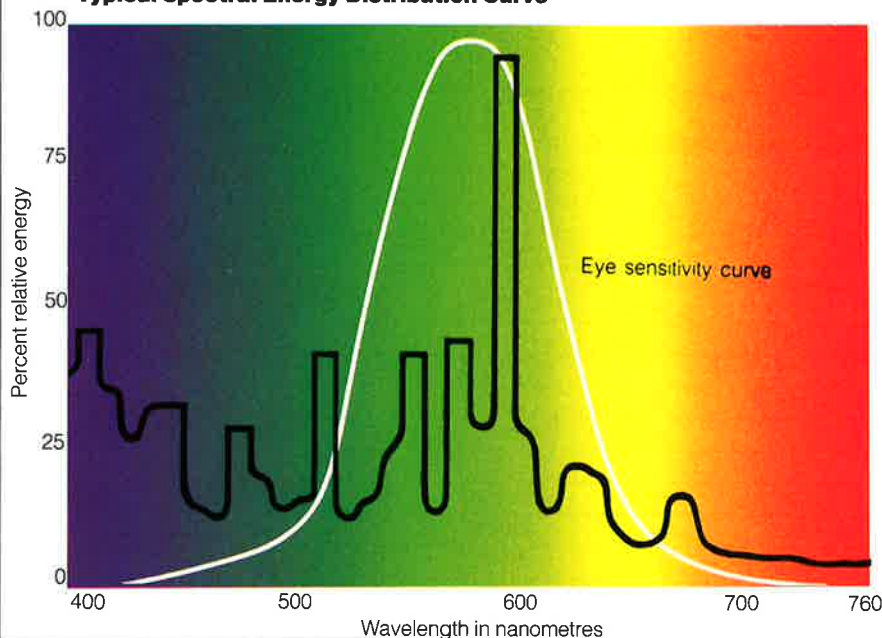
Burning Positions



Electrical Characteristics

Sylvania Code No	20611		20612		20613		20614		20615		20616		20617	
Ordering Abbreviation	MS175/HOR		MS250/HOR		MS400/HOR		MS400/BU		MS400/BD		MS1000/BU		MS1000/BD	
Burning Position	Horizontal ±15°		Horizontal ±15°		Horizontal ±15°		Base Up ±15° only		Base Down ±15° only		Base Up ±15° only		Base Down ±15° only	
Nominal Lamp Watts	175		250		400		400		400		1000		1000	
Nominal Lamp Volts	130		130		130		133		133		265		265	
Nominal Lamp Amps	1.55		2.1		3.4		3.2		3.2		4.3		4.3	
Min RMS For Lamp Stability	250		250		250		250		250		340		340	
Min. Starting Volts Req.	RMS	Peak	RMS	Peak	RMS	Peak	RMS	Peak	RMS	Peak	RMS	Peak	RMS	Peak
98% Probability at –18°C or above	382	540	382	540	382	540	382	540	382	540	440	622	440	622
90% Probability down to –30°C with Lead Peak	382	540	382	540	382	540	382	540	382	540	530	750	530	750
Max. Current Crest Factor (Crest Factor 1.8)	295	540	295	540	295	540	295	540	295	540	410	750	410	750

Typical Spectral Energy Distribution Curve



Special Notes:

- Super Metalarc lamps only to be operated on approved lead-peak control gear except 1000 W.
 - Lamps should only be used in suitably enclosed luminaires as there is a small risk of the arc tube shattering at end of life.
 - For continuous operation, it is recommended that all Super Metalarc lamps be turned off once per week to reduce the risk of arc tube rupture.
 - As with all mercury and metal halide lamps, switch off and remove lamp immediately if outer bulb is broken as skin burn and eye inflammation from short wave UV may occur.
 - Do not operate vertical BU and BD types within 60° of horizontal as they may shatter.
- Sylvania reserves the right to change data and specifications without notice. Data for guidance only.

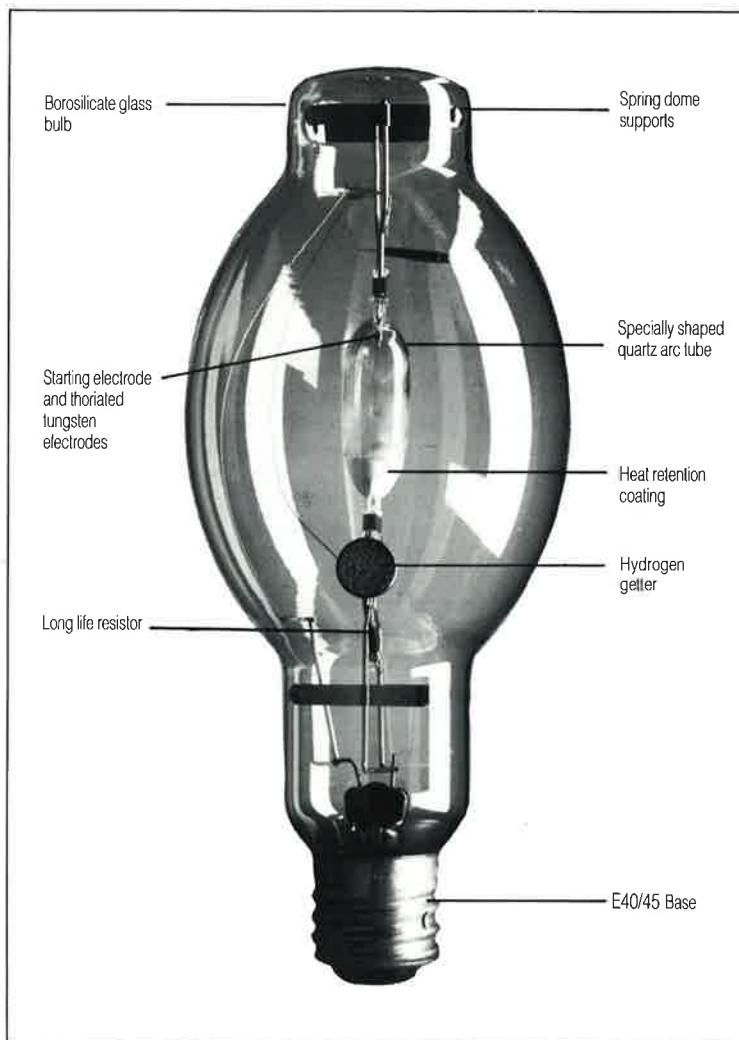


Discharge Lamp Product Information

**MS-
COATED**

Description

Super Metalarc Coated Lamps



Physical and Photometric Characteristics

Ordering Abbreviation	MS175/C/HOR	MS250/C/HOR	MS400/C/HOR	MS400/C/BU	MS400/C/BD	MS1000/C/BU	MS1000/C/BD
Bulb Designation	BT-28	BT-28	BT-37	BT-37	BT-37	BT-56	BT-56
Bulb Diameter mm	89	89	117.5	117.5	117.5	178	178
Base Type	Position Orientated E40/45	Position Orientated E40/45	Position Orientated E40/45	E40/45	E40/45	E40/45	E40/45
Light Centre Length mm	132	132	183	183	183	246	246
Arc Length mm	26	33	39	38	38	90	90
Max. Overall Length mm	216	216	297	297	297	395	395
Max. Bulb Temp. °C	350	350	400	400	400	400	400
Max. Base Temp. °C	210	210	210	210	210	210	210
2000 Hr. Lumens	12,800	19,600	36,400	37,600	37,600	112,500	112,500
Colour Temperature	4200°K	3700°K	3800°K	3500°K	3500°K	3100°K	3100°K
Chromaticity Co-ord x	0.373	0.380	0.385	0.410	0.410	0.425	0.425
y	0.380	0.380	0.368	0.380	0.330	0.390	0.390
CRI	70	70	70	70	70	70	70
Warm Up Time mins	2	2	2	2	2	4	4
Hot Restrike Time mins	10	10	10	10	10	10	10

- Features**
- Highest efficiencies available
 - Diffuse light source giving good visual comfort
 - Excellent colour rendering

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Discharge Lamp Product Information

MS-COATED

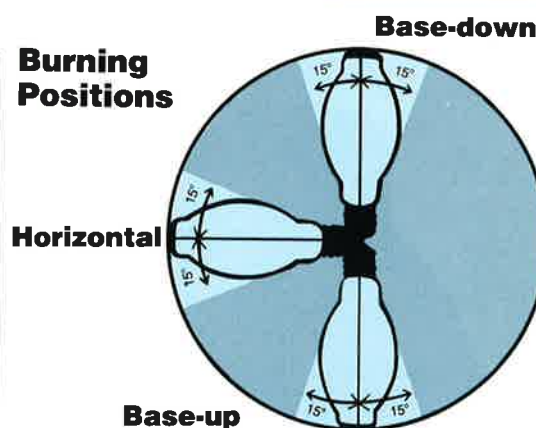
Description

Super Metalarc Coated Lamps

Applications

- Where high efficiency, high colour rendering and diffuse lighting is required.
 - Factories
 - Warehouses
 - Sports Halls
 - Retail Stores
 - Commercial Offices

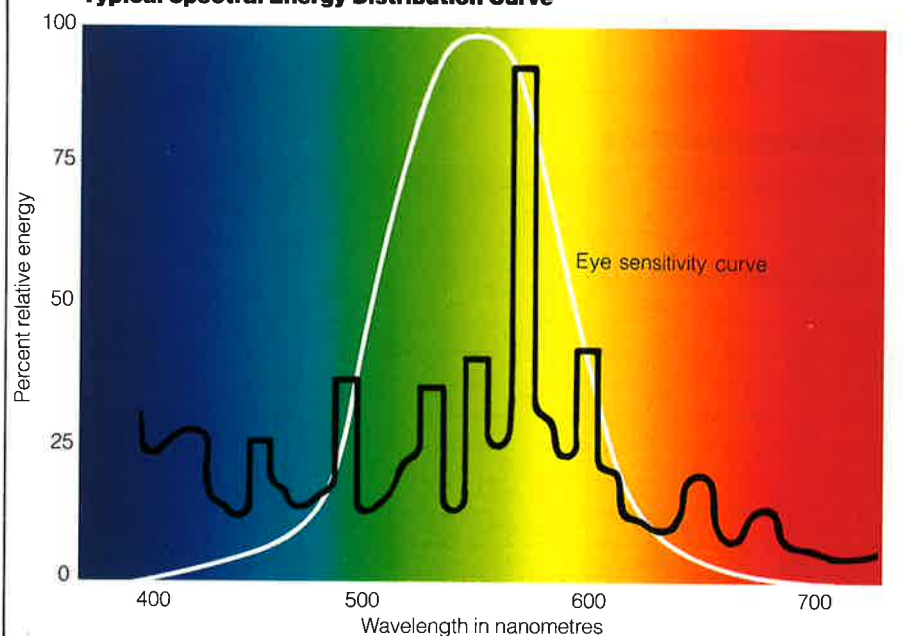
Burning Positions



Electrical Characteristics

Sylvania Code No	20604		20605		20606		20607		20608		20609		20610	
Ordering Abbreviation	MS175/C/HOR		MS250/C/HOR		MS400/C/HOR		MS400/C/BU		MS400/C/BD		MS1000/C/BU		MS1000/C/BD	
Burning Position	Horizontal ±15°		Horizontal ±15°		Horizontal ±15°		Base Up ±15° only		Base Down ±15° only		Base Up ±15° only		Base Down ±15° only	
Nominal Lamp Watts	175		250		400		400		400		1000		1000	
Nominal Lamp Volts	130		130		130		133		133		265		265	
Nominal Lamp Amps	1.55		2.1		3.4		3.2		3.2		4.3		4.3	
Min RMS For Lamp Stability	250		250		250		250		250		340		340	
Min. Starting Volts Req.	RMS	Peak	RMS	Peak	RMS	Peak	RMS	Peak	RMS	Peak	RMS	Peak	RMS	Peak
98% Probability at or above	382	540	382	540	382	540	382	540	382	540	440	622	440	622
90% Probability down to with Lead Peak	382	540	382	540	382	540	382	540	382	540	530	750	530	750
Max. Current Crest Factor (Crest Factor 1.8)	295	540	295	540	295	540	295	540	295	540	410	750	410	750

Typical Spectral Energy Distribution Curve



Special Notes:

- Super Metalarc lamps only to be operated on approved CWA control gear.
- Lamps should only be used in suitably enclosed luminaires as there is a small risk of the arc tube shattering at end of life.
- For continuous operation, it is recommended that all Super Metalarc lamps be turned off once per week to reduce the risk of arc tube rupture.
- As with all mercury and metal halide lamps, switch off and remove lamp immediately if outer bulb is broken as skin burn and eye inflammation from short wave UV may occur.
- Do not operate vertical BU and BD types within 60° of horizontal as they may shatter.

Sylvania reserves the right to change data and specifications without notice. Data for guidance only.

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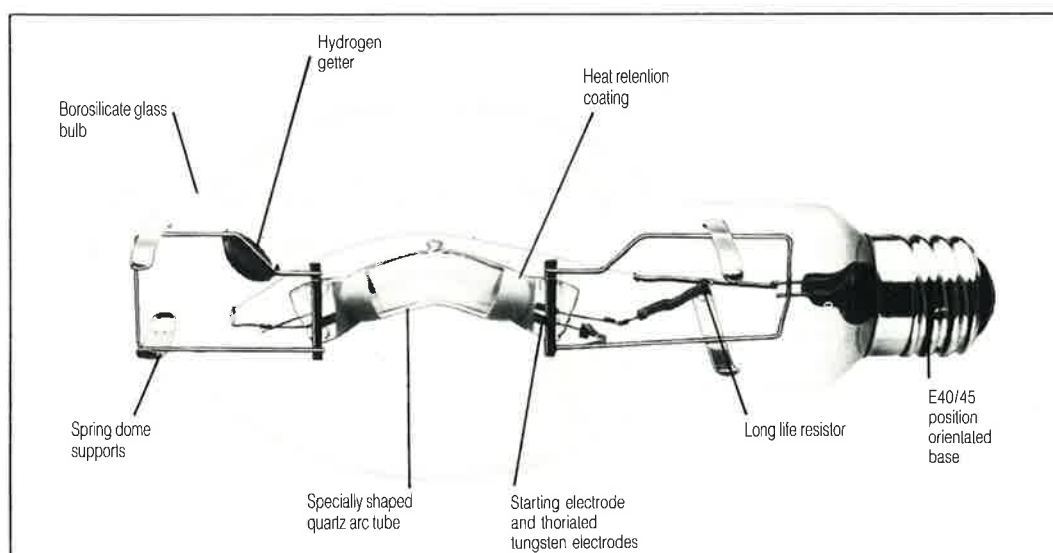
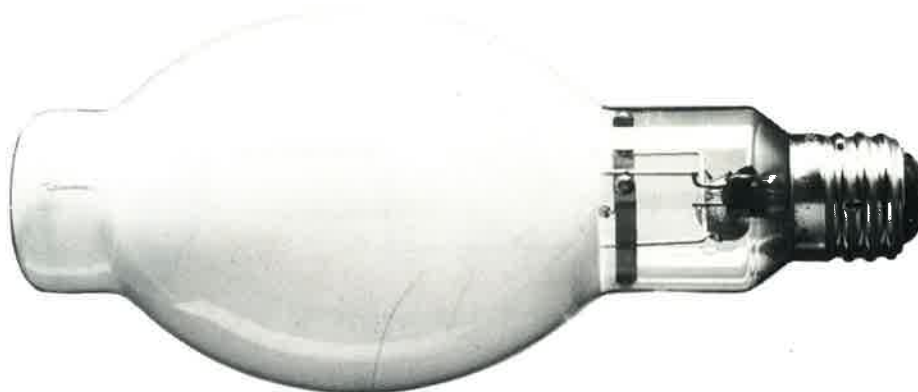


Discharge Lamp Product Information

MS-3K

Description

Super Metalarc 3K Lamps



Physical and Photometric Characteristics

Ordering Abbreviation	MS 175/3K/HOR	MS 250/3K/HOR	MS 400/3K/HOR	MS 400/3K/BU
Bulb Designation	BT-28	BT-28	BT-37	BT-37
Bulb Diameter mm	89	89	117.5	117.5
Base Type	Position Orientated E40/45	Position Orientated E40/45	Position Orientated E40/45	Position Orientated E40/45
Light Centre Length mm	132	132	183	183
Arc Length mm	26	33	39	38
Max. Overall Length mm	216	216	297	297
Max. Bulb Temp. °C	350	350	400	400
Max. Base Temp. °C	210	210	210	210
2000 Hr Lumens	11,900	18,300	33,300	33,300
Warm Up Time minutes	2	2	2	2
Hot Restrike Time minutes	10	10	10	10

- Features**
- Warm colour similar to incandescent
 - Highest efficiencies available
 - Excellent colour rendering

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Discharge Lamp Product Information

MS-3K

Description

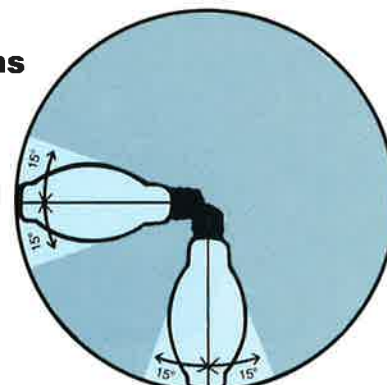
Super Metalarc 3K Lamps

Applications

- Where warm, high efficiency and high colour rendering is required in interiors.
 - Retail Stores
 - Commercial Offices

Burning Positions

Horizontal

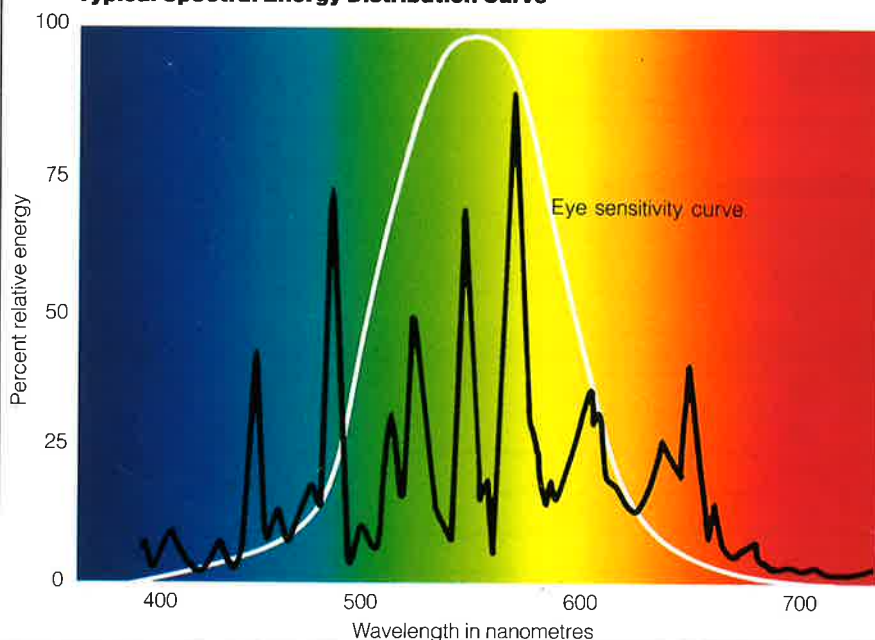


Base-up

Electrical Characteristics

Sylvania Code No	20600	20601	20602	20603				
Ordering Abbreviation	MS 175/3K/HOR	MS 250/3K/HOR	MS 400/3K/HOR	MS 400/3K/BU				
Burning Position	Horizontal $\pm 15^\circ$	Horizontal $\pm 15^\circ$	Horizontal $\pm 15^\circ$	Base Up $\pm 15^\circ$				
Nominal Lamp Watts	175	250	400	400				
Nominal Lamp Volts	130	130	130	133				
Nominal Lamp Amps	1.55	2.1	3.4	3.2				
Min. RMS for Lamp Stability	250	250	250	250				
Min Starting Volts Req'd.	RMS	PEAK	RMS	PEAK	RMS	PEAK	RMS	PEAK
98% Probability at or above	382	540	382	540	382	540	382	540
90% Probability down to with Lead Peak	382	540	382	540	382	540	382	540
Max. Current Crest Factor (Crest Factor 1.8)	295	540	295	540	295	540	295	540

Typical Spectral Energy Distribution Curve



Colour Data

Colour Temperature : 3200°K

x : 0.425

y : 0.410

CRI : 70

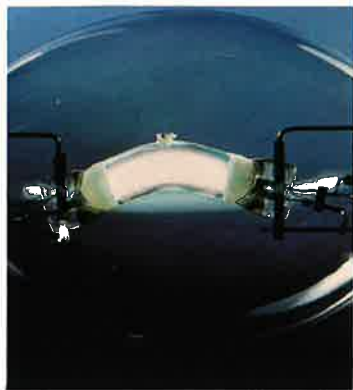
Special Notes:

- 3K Super Metalarc lamps only to be operated on approved CWA control gear.
- Lamps should only be used in suitably enclosed luminaires as there is a small risk of the arc tube shattering at end of life.
- For continuous operation, it is recommended that all Super Metalarc lamps be turned off once per week to reduce the risk of arc tube rupture.
- As with all mercury and metal halide lamps, switch off and remove lamp immediately if outer bulb is broken as skin burn and eye inflammation from short wave UV may occur.
- Do not operate vertical BU and BD types within 60° of horizontal as they may shatter.

Sylvania reserves the right to change data and specifications without notice. Data for guidance only.

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Horizontal burning Super Metalarc lamps

In these lamps the arc tube is bowed upward to follow the natural curve of the arc stream in the horizontal operating position.

They are excellent choices for energy efficient low profile luminaires.

Vertical burning Super Metalarc lamps

The exclusive expanded arc tube in these lamps accommodates the convection current generated by the arc stream in the vertical position.

As in the horizontal burning types, the unique arc tube design assures that the tube walls are heated uniformly, increasing lamp life, efficiency, lumen output and colour uniformity.

SYLVANIA OFFERS A COMPLETE RANGE OF METAL HALIDE LAMPS TO MEET YOUR NEEDS EXACTLY

Clear

Where highest light levels and good optical control are important in sports halls, factories and similar installations, clear Super Metalarc lamps are ideal. They provide maximum non-diffused light with excellent colour.

Coated

Phosphor coated Super Metalarc-C lamps are designed for use in commercial interiors and retail installations, where the soft diffused lighting helps to create a

cheerful atmosphere, and in industrial interiors where the glare from clear light sources may be a problem.

SUPER METALARC 3K

This latest edition to the Super Metalarc line is coated with rare earth phosphors selected to provide warmth and enhanced colour similar to that of incandescent lighting.

Just as important, though, is the fact that all wattages are targeted at the same colour appearance level of 3200°K.



Standard Sylvania Super Metalarc provides cooler, whiter lighting.



New Sylvania Super Metalarc 3K enhances colour with warmer lighting.

This, combined with the arc tube improvements, gives excellent colour uniformity.

With a colour rendering Index (CRI) of 70 it is an excellent choice for retail stores, conference rooms, sales areas, commercial offices and other installations where warmth and quality of colour is the prime consideration.

This new highly efficient lamp family, with its incandescent light colour, offers a new opportunity for the use of HID sources in interior lighting design.





SUPER METALARC LAMPS

Sylvania Code Number	Ordering Abbreviation	Description	2000 Hour Lumens	CRI	Pack Quantity
20600	MS175/3K/HOR	175W Coated 3200°K Horizontal burning only	11,900	70	6
20601	MS250/3K/HOR	250W Coated 3200°K Horizontal burning only	18,300	70	6
20602	MS400/3K/HOR	400W Coated 3200°K Horizontal burning only	33,300	70	6
20603	MS400/3K/BU	400W Coated 3200°K Base Up burning only	33,300	70	6
20604	MS175/C/HOR	175W Coated 4200°K Horizontal burning only	12,800	70	6
20605	MS250/C/HOR	250W Coated 3700°K Horizontal burning only	19,600	70	6
20606	MS400/C/HOR	400W Coated 3800°K Horizontal burning only	36,400	70	6
20607	MS400/C/BU	400W Coated 3500°K Base Up burning only	37,600	70	6
20608	MS400/C/BD	400W Coated 3500°K Base Down burning only	37,600	70	6
20609	MS1000/C/BU	1000W Coated 3100°K Base Up burning only	112,500	70	6
20610	MS1000/C/BD	1000W Coated 3100°K Base Down burning only	112,500	70	6
20611	MS175/HOR	175W Clear 4700°K Horizontal burning only	13,500	65	6
20612	MS250/HOR	250W Clear 4200°K Horizontal burning only	20,700	65	6
20613	MS400/HOR	400W Clear 4500°K Horizontal burning only	36,000	65	6
20614	MS400/BU	400W Clear 3700°K Base Up burning only	36,800	65	6
20615	MS400/BD	400W Clear 3700°K Base Down burning only	36,800	65	6
20616	MS1000/BU	1000W Clear 3500°K Base Up burning only	112,500	65	6
20617	MS1000/BD	1000W Clear 3500°K Base Down burning only	112,500	65	6

Your qualified stockist for Sylvania lighting equipment.