

## UNDERSTANDING HIGH INTENSITY DISCHARGE LIGHTING (CONTINUED)

### FIXTURE REQUIREMENT (continued)

The 2005 NEC also requires that metal halide luminaires for new construction/ major renovations in the playing and spectator areas of indoor sports, mixed use, and all purpose facilities, which are subject to physical damage, must be of a type that protects the lamp with a glass or plastic lens. Open luminaires will not be permitted.

For more information regarding the use of Type-O, S and E metal halide systems, please refer to the NEMA white paper on this subject that is freely available at NEMA.org.

### HOT RESTRIKE

In most instances, if an HID lamp experiences a momentary power interruption or sudden voltage drop, the lamp may extinguish. A lamp that is still hot will not restart immediately. Because the arc tube within the lamp must cool down before it can re-start, HID lamps have hot restrike times ranging from 1-15 minutes depending on the product type.

### KEY TO DATE OF MANUFACTURE

Consult your SYLVANIA Sales Representative or call 1-800-LIGHTBULB.

### LAMP WARNINGS

HID Metal Halide and Mercury lamps are marked with an "R" on their packaging. These letters provide safety information about the lamp. Below is the text used by the FDA to describe each of the letters.

**R: WARNING:** This lamp can cause serious skin burn and eye inflammation from shortwave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available.

### LIGHT CENTER LENGTH (LCL)

The light center length of HID lamps is a measurement from the center of the arc tube to the bottom of the lamp base.

### LUMENS

Initial lumen ratings are based on photometry under controlled conditions of at least 10 hours per start in the prescribed position at rated lamp wattage after

100 operating hours. SOX lamp ratings are based on measurements at constant input voltage. Lamp performance under typical service conditions may vary from rated values. Operating universal METALARC® lamps in off-vertical positions will result in reduced lumen output.

Mean lumens are measured on ANSI reference circuits at rated wattage (SOX lamp ratings are based on input voltage) at 40% of average rated life except for those lamps with a "+" next to their life rating; these lamps are measured at 50% of average rated life. All measurements are based on ballast operation on systems with current crest factors of 1.8 or less. Higher current crest factors reduce values. In actual applications on CW or CWA ballasts, mean lumens may be higher than published ratings.

Unless otherwise noted, all photometry measurements are made on an ANSI reference ballast at rated lamp wattage.

### MAXIMUM OVERALL LENGTH (MOL)

The maximum overall length of single-ended lamps is the maximum distance from the top of the bulb to the bottom of the base. For double-ended lamps, it is the maximum distance from end-to-end (excluding any leadwires).

### ORDERING ABBREVIATION

Ordering abbreviation provides a shorthand description of the lamp, using a unique code, which can be used when ordering a lamp if you do not know the product number. This information can be found on the lamp etc.

### PACKAGE QUANTITY

This identifies the number of lamps contained in a standard shipping carton.

### PRODUCT NUMBER

The product number is a five-digit number used to identify a specific SYLVANIA lamp and should be used when ordering.

### WARM UP TIME

Most HID lamps do not have instant on capabilities. It may take several minutes for the arc tube to stabilize before optimal light output is achieved.

### WATTS

Watts shown are nominal lamp watts only.

## HOW TO READ PRODUCT INFORMATION – HID

Watts	Bulb	Base	Product Number	Ordering Abbreviation	ANSI Ballast Code	Pkg Qty	Lamp Finish	Operating Position	Fix Req	Avg Rated Life (hrs)	Approx. Lumens (Initial)	(Mean)	CRI	CCT (K)
100	E17	E26 Med	67506	LU100/MED	S54	20	Clear	Universal	O	24000+	9500	8000	22	2100
320	BT37	E39 Excl Mogul	64851	MCP320/C/PS/BU-ONLY/840/BT37 PB	M154/O	6	Coated	Base up within 15° only	O	20000	36000	27000	88	3900
360	BT37	E39 Mogul	64655	MS360/SS/BU-HOR	M59/S	6	Clear	BU-HOR	S	20000V 15000H	36000V 30000H	23500V 19000H	65	4000
1000	BT37	E39 Mogul	64351	M1000/PS/U/BT37	M141/E	6	Clear	Universal	E	15000V 9000H	110000V 107800H	96000V 86300H	65	3800

Please refer to the "Understanding High Intensity Discharge" section on this and previous page for definitions and explanations of the category headers.

## HOW TO READ ORDERING ABBREVIATIONS

MS360/SS/BU-HOR		MCP320/C/PS/BU-ONLY/840/BT37 PB		LU100/D/MED		H39KC-175/DX	
MS	SUPER METALARC®	MCP	METALARC® Ceramic PRO-TECH®	LU	LUMALUX®	H39	ANSI Ballast Number
360	Wattage	320	Wattage	100	Wattage	175	Wattage
SS	SUPERSAVER®	C	Coated	D	Coated	DX	Brite White Deluxe Coated
BU-HOR	Operating Position: Base up through Horizontal	PS	Pulse Start	MED	Medium Base		
		BU-ONLY	Operating Position: Base up only				
		840	80+ CRI; 4000 CCT				
		BT37	Bulb Type				
		PB	POWERBALL				

Specifications subject to change without notice.



E17



ED28



ET23.5



ED37, ED28



BT37

## METALARC® Pulse Start Lamps

### High Output, Reduced Color Shift Metal Halide Lamps for Enclosed Fixtures

See product information bulletins (HID021 and HID059) for product details

Watts	Bulb	Base	Product Number	Ordering Abbreviation	ANSI Code/ Fixture Req.	Pkg Qty	Lamp Finish	Operating Position	Average Rated Life (hrs)	Initial Lumens (Mean)	CRI	CCT (K)	Lamp Efficacy (LPW)
70	E17	E26Med	64836	M70/U/MED	M98/E	12	Clear	Universal	12000	5600 (3400)	75	4000	80
100	E17	E26Med	64818	M100/U/MED	M90/E	20	Clear	Universal	12000	8500 (4675)	75	4000	85
150	E17	E26Med	64785	M150/U/MED	M102/E	20	Clear	Universal	12000	12900 (4300)	75	4300	86
175	E17	E26Med	64171	MS175/PS/BU-ONLY/MED	M152/E	12	Clear	BU ±15°	15000	17500 (12800)	65	4000	100
175	ED28	E39 Mogul	64043	M175/PS/U/ED28	M152/E	6	Clear	Universal	12000V 9000H	14400V (10000V) 12800H (8300H)	65	4000	82V 73H
			64815	MS175/PS/BU-ONLY	M152/E	12	Clear	BU ±15°	15000	17500 (12800)	65	4000	100
			64816	MS175/C/PS/BU-ONLY	M152/E	12	Coated	BU ±15°	15000	16600 (12500)	70	3700	95
200	ET23.5	E39 Mogul	64837	MS200/PS/BU-ONLY/ET23.5	M136/E	12	Clear	BU ±15°	15000	19000 (13300)	65	4200	95
200	ED28	E39 Mogul	64044	MS200/PS/BU-ONLY/ED28	M136/E	6	Clear	BU ±15°	15000	19000 (13500)	65	4000	95
			64045	MS200/C/PS/BU-ONLY/ED28	M136/E	6	Coated	BU ±15°	15000	18000 (12800)	70	3800	90
250	ED28	E39 Mogul	64046	M250/PS/U/ED28	M153/E	6	Clear	Universal	15000V 12000H	21000V (18000H) 15400V (11000H)	65	3800	88V 76H
			64047	MS250/PS/BU-ONLY/ED28	M153/E	6	Clear	BU ±15°	20000 <sup>1</sup>	23000 (17000)	65	4200	92
			64048	MS250/C/PS/BU-ONLY/ED28	M153/E	6	Clear	BU ±15°	20000 <sup>1</sup>	21500 (15500)	70	3600	86
320	ED28	E39 Mogul	64049	MS320/PS/BU-HOR/ED28	M154/E	6	Clear	Universal	20000V 15000H	30000V (21000V) 28000H (19700H)	65	4300	94 88
			64050	MS320/C/PS/BU-HOR/ED28	M154/E	6	Coated	Universal	20000V 15000H	30000V (19700V) 28000H (18400H)	70	3900	94 88
400	ED28	E39 Mogul	64051	M400/PS/U/ED28	M155/E	6	Clear	Universal	20000V 15000H	36000V (25500V) 31000H (22400H)	65	4000	90 78
			64052	MS400/PS/BU-ONLY/ED28	M155/E	6	Clear	BU ± 15	20000	40000 (32500)	65	4100	100
			64053	MS400/PS/BU-ONLY/ED28	M155/E	6	Clear	BU ± 15	20000	40000 (32500)	65	4100	100
400	ED37	E39 Mogul	64054	M400/PS/U/ED28	M155/E	6	Clear	Universal	20000V 15000H	36000V (25500V) 31000H (22400H)	65	4000	90V 78H
			64055	MS400/PS/BU-ONLY/ED37	M155/S	6	Clear	Universal	30000 20000	42000V (29000V) 42000H (35700H)	65	4000	105 105
			64056	MS400/C/PS/BU-ONLY/ED37	M155/S	6	Coated	Universal	30000 20000	42000V (29000V) 42000H (35700H)	70	3600	105 105
750	BT37	E39 Mogul	64787	MS750/PS/BU-HOR/BT37	M149/E	6	Clear	BU-HOR	20000V 9000H	78000V (67000V) 68000H (56000H)	65	4000	104 91
			64822	MS750/C/PS/BU-HOR/BT37	M149/E	6	Coated	BU-HOR	20000V 9000H	75000V (63000V) 65000H (53000H)	70	3700	100 87
1000	BT37	E39 Mogul	64351	M1000/PS/U/BT37	M141/E	6	Clear	Universal	20000V 9000H	110000V (96000V) 107800H (86300H)	65	3800	110 108

Lamps between 175W and 400W operating on ballasts having a sustaining voltage less than 270V, lamp life may be significantly reduced.

Lamps > 400W operating on ballasts having a sustaining voltage less than 310V, lamp life may be significantly reduced.

<sup>1</sup> 20,000 average rated life based on 10 hrs/start. 30,000 average rated life based on 120 hrs/start.