METALARC® PULSE START

High Lumen Maintenance, Reduced Color Shift, Premium Metal Halide Lamps

SYLVANIA METALARC® PULSE START 175, 200, 250, 320, 320/350, 350/400, 400, 750 and 1000 watt lamps provide less color shift, high lumen maintenance and a long life. Their premium performance provides opportunities for higher maintained illumination levels and substantial energy savings. Additional increases in optical efficiency may be gained by fixture designs using compact outer jacket configurations. All high wattage pulse start lamps, 200W-1000W, are lead free.

SYLVANIA METALARC PULSE START lamps combine new metal halide lamp technology with proven ignitor technology. The result is a more transparent arc tube over life yielding less color shift and high lumen maintenance..

Key Features & Benefits

METALARC PULSE START Lamps
- Excellent lumen maintenance
- Quicker hot restrike*
- Long average rated life

175 Watt PULSE START
- 50% longer life than standard 175 watt
- 21% higher initial lumens and >50% higher mean lumens than standard product
- Available in universal operating position

200 Watt PULSE START
- 20% energy savings over 250 watt lamp
- Available with Compact ET23.5 version for higher luminaire efficiency

250 Watt PULSE START
- 20,000 hour life rating for MS types (doubles the life of standard 250 watt)
- MP type has 50% longer life than standard 250 watt
- Available with PRO-TECH® design for open fixture use
- Available in universal operating position

320 Watt PULSE START
- 100 initial lumens per watt for clear lamps
- May be operated base-up through horizontal
- Compact ED28 size allows higher luminaire efficiency

320/350 Watt PULSE START
- Available in PRO-TECH design for open fixture use
- Lamp can be operated on 320 or 350 watt ballast

350/400 Watt PULSE START
- Incorporates PRO-TECH design for open fixture use
- Lamp can be operated on 350 or 400 watt ballast

400 Watt PULSE START
- 24% higher mean lumens than the M400/U and 16% higher mean lumens than the MS400/BU-ONLY
- Less color shift over lamp life*
- Available with Compact ED28 version for higher luminaire efficiency
- Available in universal operating position

750 Watt PULSE START
- 25% energy savings over standard 1000 watt metal halide
- Compact BT37 outer jacket

1000 Watt PULSE START
- Compact BT37 outer jacket
- Available in universal operating position

*Compared to standard metal halide lamps.

RoHS compliant

Product Offering

Product	Lamp Finish	Fixture Type
M175/PS/U/ED28	Clear	Enclosed fixture only
MS175/PS/BU-ONLY/ED28	Clear & Coated	Enclosed fixture only
MS175/PS/BU-ONLY/MED	Clear & Coated	Enclosed fixture only
MS200/PS/BU-ONLY/ET23.5	Clear	Enclosed fixture only
MS200/PS/BU-ONLY/ED28	Clear & Coated	Enclosed fixture only
MP250/PS/BU-ONLY	Clear & Coated	Open or enclosed
MS250/PS/BU-ONLY/ED28	Clear & Coated	Enclosed fixture only
M250/PS/U/ED28	Clear	Enclosed fixture only
MS320/PS/BU-HOR/ED28	Clear & Coated	Enclosed fixture only

Product	Lamp Finish	Fixture Type
MP320/350/PS/BU-ONLY/BT28	Clear & Coated	Open or enclosed
MP350/400/PS/BU-ONLY	Clear & Coated	Open or enclosed
MS400/PS/BU-ONLY/ED28	Clear	Enclosed fixture only
MS400/PS/BD-ONLY/ED28	Clear	Enclosed fixture only
MS400/PS/BU-ONLY/ED37	Clear & Coated	Open or enclosed*
M400/PS/U//ED28	Clear	Enclosed fixture only
M400/PS/U/ED37	Clear	Enclosed fixture only
MS750/PS/BU-HOR/BT37	Clear & Coated	Enclosed fixture only
M1000/U/PS/BT37	Clear	Enclosed fixture only

*See Notes Section for more fixture information

SYLVANIA

Application Information

Applications

- Ambient lighting: Industrial and Commercial
- Canopy lighting
- Flood lighting
- Parking lots
- Security lighting

Application Notes

Operating orientation: Base-up only or base down only within 15° of vertical. 320W and 750W lamps may be operated base-up through horizontal. M250/PS/U/ED28, M400/PS/U/ED37, M400/PS/U/ED28 and M1000/U/PS/BT37 may be operated in any operating position.

Socket Information

Lamps operate in standard mogul HID sockets rated to withstand 4000 volt pulses. Exclusionary mogul sockets are recommended for the METALARC PRO-TECH (MP) versions.

Ballast Information

All lamps will operate on ANSI Pulse Start ballasts with ignitors for metal halide lamps as noted in the Ordering and Specification Information section (page 3 of this PIB).

Fixtures

Consult your local fixture agent for available fixtures.

Lamp Comparison

Lamp Type	Initial Lumens	Mean Lumens	Hot Restrike	Average Rated Life (hrs.)
400 Watt PULSE START MS400/PS/BU-ONLY/ED37	42,000	31,000	5 to 7 min.	20,000
400 Watt SUPER METALARC MS400/BU-ONLY/ED37	42,000	26,000	7 to 12 min.	20,000
400 Watt Standard	36,000	23,500	7 to 12 min.	20,000

- 16% higher mean lumens than the 400 Watt SUPER METALARC lamps
- 24% higher mean lumens than the standard 400 Watt METALARC lamps
- 50% longer average rated life when operated on a 120-hour cycle — average rated life of 30,000 hours

Installed Savings

Lamp Type	Watts	Number of Lamps	Energy Cost per Year	Savings per Year
M400/U/ED37	400	500	$179,536	$0
MP350/400/PS/BU-ONLY	350	500	$156,800	$22,736

- Lowers energy costs
- 5600 hours/year, $0.14 kWh; 458W per fixture for the 400W lamp, 400W per fixture for the 350W lamp.

Specification Data

Catalog #	Type
Project	
Comments	
Prepared by	

Ordering Information

Item Number	Ordering Abbreviation	Watts	Finish	Bulb	Base	ANSI2 Code	Average Rated Life (hrs.)	Initial Lumens	Mean Lumens	CRI	Color Temp	Lamp Efficacy (LPW)
64171	MS175/PS/BU-ONLY/MED	175	Clear	ED17	E26	M152/E[5]	15,000	17,500	12,800	65	4000K	100
64170	MS175/C/PS/BU-ONLY/MED	175	Coated	ED17	E26	M152/E[5]	15,000	16,600	12,500	70	3700K	95
64043*	M175/PS/U/ED28	175	Clear	ED28	E39	M152/E[5]	12,000V 9,000H	14,400V 12,800H	10,000V 8,300H	65	4000K	82V 73H
64815	MS175/PS/BU-ONLY[4]	175	Clear	ED28	E39	M152/E[5]	15,000	17,500	12,800	65	4000K	100
64816	MS175/C/PS/BU-ONLY[4]	175	Coated	ED28	E39	M152/E[5]	15,000	16,600	12,500	70	3700K	95
64837	MS200/PS/BU-ONLY/ET23.5	200	Clear	ET23.5	E39	M136/E	15,000	19,000	13,300	65	4200K	95
64044*	MS200/PS/BU-ONLY/ED28[4]	200	Clear	ED28	E39	M136/E[5]	15,000	19,000	13,500	65	4000K	95
64789	MP250/PS/BU-ONLY	250	Clear	BT28	EX39	M153/O[5]	15,000	22,500	17,000	65	4000K	90
64790	MP250/C/PS/BU-ONLY	250	Coated	BT28	EX39	M153/O[5]	15,000	21,000	16,000	70	4000K	84
64047*	MS250/PS/BU-ONLY/ED28	250	Clear	ED28	E39	M153/E[5]	20,000	23,000	17,000	65	4200K	92
64048*	MS250/C/PS/BU-ONLY/ED28	250	Coated	ED28	E39	M153/E[5]	20,000	21,500	15,500	70	3600K	86
64046*	M250/U/PS/U/ED28	250	Clear	ED28	E39	M153/E[5]	15,000V 12,000H	21,000V 18,000H	15,400V 11,000H	65	3800K	88V 76H
64049*	MS320/PS/BU-HOR/ED28	320	Clear	ED28	E39	M154/E[5]	20,000V 15,000H	30,000V 28,000H	21,000V 19,700H	65	4300K	94V 88H
64050*	MS320/C/PS/BU-HOR/ED28	320	Coated	ED28	E39	M154/E[5]	20,000V 15,000H	30,000V 28,000H	19,700V 18,400H	70	3900K	94V 88H
64391	MP320/350/PS/BU-ONLY/BT28	320	Clear 350	BT28	EX39	M154/O M131/O[5]	20,000 20,000	28,600 33,500	21,000 24,000	65 65	3800K 3600K	89 96
64349	MP320/350/C/PS/BU-ONLY/BT28	320	Coated 350	BT28	EX39	M154/O M131/O[5]	20,000 20,000	27,700 32,000	19,000 22,000	70 70	3600K 3600K	87 91
64769	MP350/400/PS/BU-ONLY	350	Clear 400	BT37	EX39	M131/O[5] M155/O	20,000 20,000	33,000 40,000	24,500 29,500	65 65	3700K 3500K	94 100
64770	MP350/400/C/PS/BU-ONLY	350 400	Coated	BT37	EX39	M131/O[5] M155/O	20,000 20,000	32,000 39,000	23,000 28,000	70 70	3500K 3300K	91 98
64052*	MS400/PS/BU-ONLY/ED28	400	Clear	ED28	E39	M155/E	20,000	40,000	32,500	65	4100K	100
64053*	MS400/PS/BD-ONLY/ED28	400	Clear	ED28	E39	M155/E	20,000	40,000	32,500	65	4100K	100
64055*	MS400/PS/BU-ONLY/ED37	400	Clear	ED37	E39	M155/S	30,000[1] 20,000	42,000 42,000	31,000[1] 35,700	65	4000K	105 105
64056*	MS400/C/PS/BU-ONLY/ED37	400	Coated	ED37	E39	M155/S	30,000[1] 20,000	42,000 42,000	29,000[1] 35,700	70	3600K	105 105
64051*	M400/PS/U/ED28	400	Clear	ED28	E39	M155/E	20,000V 15,000H	36,000V 31,000H	25,500V 22,400H	65	4000K	90V 78H
64054*	M400/PS/U/ED37	400	Clear	ED37	E39	M155/E	20,000V 15,000H	36,000V 31,000H	25,500V 22,400H	65	4000K	90V 78H
64787	MS750/PS/BU-HOR/BT37	750	Clear	BT37	E39	M149/E[3]	20,000V 9,000H	78,000V 68,000H	67,000V 56,000H	65	4000K	104V 91H
64822	MS750/C/PS/BU-HOR/BT37	750	Coated	BT37	E39	M149/E[3]	20,000V 9,000H	75,000V 65,000H	63,000V 53,000H	70	3700K	100V 87H
64351	M1000/U/PS/BT37	1000	Clear	BT37	E39	M141/E	15,000V 9,000H	110,000V 107,800H	96,000V 86,300H	65	3800K	110V 108H

*64043 formerly 64319, 64044 formerly 64838, 64046 formerly 64320, 64047 formerly 64578, 64048 formerly 64617, 64049 formerly 64507, 64050 formerly 64646, 64051 formerly 64188, 64052 formerly 64189, 64053 formerly 64191, 64054 formerly 64321, 64055 formerly 64525, 64056 formerly 64527

Notes:

1. Based on 10 hrs/start operating cycle. On 120 hrs/start, life rating increases from 20,000 to 30,000 hours and mean lumen point is at 12,000 hrs.
2. For lamps with 2 ANSI codes, the first is the new ANSI code and the second is the original code.
3. When operated on ballasts having a sustaining voltage less than 310V, lamp life may be significantly reduced.
4. Contact your local OSRAM SYLVANIA sales representative for availability.
5. When operated on ballasts having a sustaining voltage less than 270V, lamp life may be significantly reduced.
6. For lamp wattages of 360W and greater, it is recommended that lampholders with nickel-plated copper alloy center contacts (with spring) should be used rather than electrical contacts made of stainless steel.

E = Lamps classified as E-type are to be used ONLY in suitably enclosed luminaires. See lamp warning.

O = Lamps classified as O-type, comply with ANSI standard C78.389 for containment testing and may be used in open luminaires. See lamp warning.

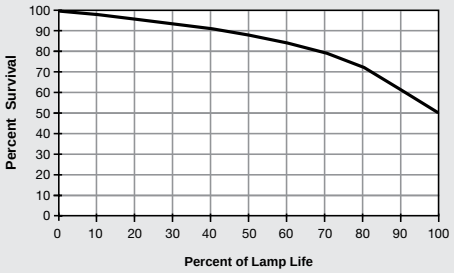
S = When operated within 15 degrees of vertical, this lamp may be operated in an open luminaire provided the installation is not near people or flammable or combustible material, otherwise it must be operated in a suitably enclosed luminaire. See lamp warning.

Ordering Guide

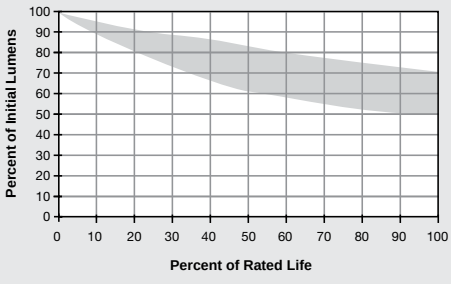
MS	320	/	—	/	PS	/	BU-ONLY
M = METALARC Metal Halide S = SUPER high output P = METALARC PRO-TECH® open fixture rated	Wattage: 175, 200, 250, 320, 320/350, 350/400, 400, 750 or 1000 watts		Finish: = Clear C = Coated		PULSE START		BU-ONLY = Base up only U = Universal BD-ONLY = Base down only BU-HOR = Base up - Horizontal

Technical Information

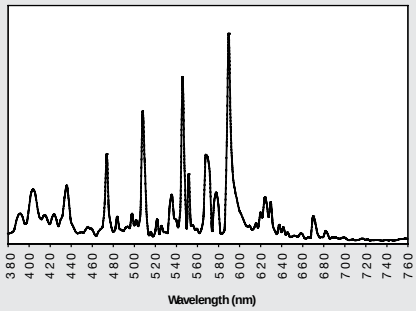
Typical Mortality Curve



Typical Lumen Depreciation

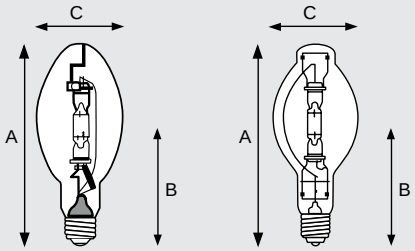


Typical Spectral Power Distribution



Lamp Dimensions

Ordering Abbreviation	(A) MOL	(B) LCL	(C) Bulb Diameter
ED17	5"	3"	2-1/8"
ET23.5	6-29/32"	4-1/2"	2-15/16"
BT28/ED28	8-5/16"	5"	3-1/2"
BT37/ED37	11-1/2"	7"	4-5/8"



Sample Specification

400 Watt: Lamp(s) shall be (a) 400W METALARC® PULSE START lamp(s) exhibiting initial lumens of 42,000 with a 74% mean lumen maintenance and capable of operating on a M155/M135 ballast. Lamp construction shall include a lead-free welded base with a maximum temperature of 250°C.

Safety Information

WARNING! THESE LAMPS CAN CAUSE SERIOUS SKIN BURN AND EYE INFLAMMATION FROM SHORT-WAVE ULTRAVIOLET RADIATION IF THE OUTER ENVELOPE (GLASS BULB) 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 punctured or broken are commercially available from OSRAM SYLVANIA Products Inc. THESE LAMPS CONFORM TO FEDERAL STANDARD 21 CFR 1040.30 in the U.S. AND SOR/80-381 in Canada.

OSRAM
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