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.

Product Offering

*See Notes Section for more fixture information

Product	Lamp Finish	Fixture Type
M175/PS/U/ED28	Clear	Enclosed fixture only
MS175/PS/BU-ONLY/ED28	Clear	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	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 Enclosed fixture only MS750/PS/BU-HOR/BT37 Clear & Coated M1000/U/PS/BT37 Clear Enclosed fixture only



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

31,000	5 to 7 min.	20,000
26.000	7 to 12 min	20.000
26.000	7 to 12 min	20.000
	7 10 12 11111.	20,000
23,500	7 to 12 min.	20,000
-	23,500	23,500 7 to 12 min.

• 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/UU/ED07	100	500	M170 F00	<u>φ</u> ο

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 #	Туре
Project	
Project Comments	
Prepared by	

Ordering Information

64171 MS175/PS/RU-ONLY/MED 175 Clear ED17 E26 M152/E* 15,000 17,500 12,800 65 4000k 100 64170 MS175/C/PS/RU-ONLY/MED 175 Coated ED17 E28 M152/E* 12,000V 14,400V 10,000V 65 4000k 82V 64043* MS200/PS/RU-ONLY/ED28 175 Clear ED28 E39 M152/E* 12,000V 14,400V 10,000V 65 4000K 82V 64415 MS175/PS/RU-ONLY/ED23 200 Clear ET23.5 E39 M136/E* 15,000 19,000 13,500 65 4000K 90 64044* MS200/PS/RU-ONLY 250 Clear ET28 EX39 M153/0* 15,000 21,000 16,000 70 4000K 84 64047* MS250/PS/RU-ONLYED28 250 Clear ED28 E39 M153/E* 20,000 21,000 15,000 70 3600K 88 64044* MS250/PS/RU-ONLYED28<	Item	Ordering					ANSI2	Average Rated	Initial	Mean		Color	Lamp Efficacy
64170 MS175/CPS/BU-ONLY/MED 175 Coated ED7 E28 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 14,400V 10,000V 65 4000K 82V 64815 MS175/PS/BU-ONLY ⁶ 175 Clear ED28 E39 M152/E ⁵ 15,000 17,500 12,800 65 4000K 100 64437 MS200/PS/BU-ONLYFD28' 200 Clear ED28 E39 M136/E 15,000 13,300 65 4200K 95 64730 MP250/PS/BU-ONLY 250 Clear B128 EX39 M153/0 ⁵ 15,000 21,000 16,000 70 4000K 84 64044* MS250/PS/BU-ONLY 250 Coated B128 EX39 M153/C ⁵ 20,000 23,000 15,000 20,000 33,000 84 06 64046* MS250/PS/BU-ONLYB/D28 250	Number	Abbreviation	Watts	Finish	Bulb		Code	Life (hrs.)			CRI		(LPW)
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64770 MP350/400/C/PS/BU-ONLY 350 Coated BT37 EX39 M131/0 ⁵ 20,000 32,000 23,000 70 3500K 91 64052* MS400/PS/BU-ONLY/ED28 400 Clear ED28 E39 M155/E 20,000 39,000 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/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' 42,000 31,000' 65 4000K 105 64056* MS400/C/PS/BU-ONLY/ED37 400 Clear ED37 E39 M155/S 30,000' 42,000 35,700 105 64051* M400/PS/U/ED28 400 Clear<	64769	MP350/400/PS/BU-ONLY	350	Clear	BT37	EX39	M131/0 ⁵	20,000	33,000	24,500	65	3700K	94
400 M155/0 20,000 39,000 28,000 70 3300K 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/BD-ONLY/ED37 400 Clear ED37 E39 M155/S 30,000' 42,000 31,000' 65 4000K 105 64056* MS400/C/PS/BU-ONLY/ED37 400 Coated ED37 E39 M155/S 30,000' 42,000 35,700 105 64051* M400/PS/U/ED28 400 Clear ED28 E39 M155/E 20,000 42,000 35,700 105 64051* M400/PS/U/ED28 400 Clear ED28 E39 M155/E 20,000V 36,000V 25,500V 65 4000				400			M155/0	20,000	40,000	29,500	65	3500K	100
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/BD-ONLY/ED37 400 Clear ED37 E39 M155/S 30,000' 42,000 31,000' 65 4000K 105 64056* MS400/C/PS/BU-ONLY/ED37 400 Coated ED37 E39 M155/S 30,000' 42,000 35,700 105 64056* MS400/C/PS/BU-ONLY/ED37 400 Coated ED37 E39 M155/S 30,000' 42,000 35,700 105 64051* M400/PS/U/ED28 400 Clear ED28 E39 M155/E 20,000 35,700 65 4000K 90V 64054* M400/PS/U/ED37 400 Clear ED37 E39 M155/E	64770	MP350/400/C/PS/BU-ONLY	350	Coated	BT37	EX39	M131/0 ⁵	20,000	32,000	23,000	70	3500K	91
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' 42,000 31,000' 65 4000K 105 64056* MS400/C/PS/BU-ONLY/ED37 400 Coated ED37 E39 M155/S 30,000' 42,000 35,700 105 64056* MS400/C/PS/BU-ONLY/ED37 400 Coated ED37 E39 M155/S 30,000' 42,000 29,000' 70 3600K 105 64051* M400/PS/U/ED28 400 Clear ED28 E39 M155/E 20,000V 36,000V 25,500V 65 4000K 90V 64054* M400/PS/U/ED37 400 Clear ED37 E39 M155/E 20,000V 36,000V 25,500V 65 4000K 90V 15,000H 31,000H 22,400H 78			400				M155/0	20,000	39,000	28,000	70	3300K	98
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' 42,000 31,000' 65 4000K 105 64056* MS400/C/PS/BU-ONLY/ED37 400 Coated ED37 E39 M155/S 30,000' 42,000 35,700 105 64056* MS400/C/PS/BU-ONLY/ED37 400 Coated ED37 E39 M155/S 30,000' 42,000 29,000' 70 3600K 105 64051* M400/PS/U/ED28 400 Clear ED28 E39 M155/E 20,000V 36,000V 25,500V 65 4000K 90V 64054* M400/PS/U/ED37 400 Clear ED37 E39 M155/E 20,000V 36,000V 25,500V 65 4000K 90V 15,000H 31,000H 22,400H 78	64052*	MS400/PS/BU-ONLY/ED28	400	Clear	ED28	E39	M155/E	20,000	40,000	32,500	65	4100K	100
20,000 42,000 35,700 105 64056* MS400/C/PS/BU-ONLY/ED37 400 Coated ED37 E39 M155/S 30,000' 42,000 29,000' 70 3600K 105 64051* M400/PS/U/ED28 400 Clear ED28 E39 M155/E 20,000V 36,000V 25,500V 65 4000K 90V 64054* M400/PS/U/ED37 400 Clear ED37 E39 M155/E 20,000V 36,000V 25,500V 65 4000K 90V 64054* M400/PS/U/ED37 400 Clear ED37 E39 M155/E 20,000V 36,000V 25,500V 65 4000K 90V	64053*		400	Clear	ED28	E39	M155/E	20,000	40,000	32,500	65	4100K	100
64056* MS400/C/PS/BU-ONLY/ED37 400 Coated ED37 E39 M155/S 30,000' 42,000 29,000' 70 3600K 105 64051* M400/PS/U/ED28 400 Clear ED28 E39 M155/E 20,000 36,000V 25,500V 65 4000K 90V 64054* M400/PS/U/ED37 400 Clear ED37 E39 M155/E 20,000V 36,000V 25,500V 65 4000K 90V 64054* M400/PS/U/ED37 400 Clear ED37 E39 M155/E 20,000V 36,000V 25,500V 65 4000K 90V	64055*	MS400/PS/BU-ONLY/ED37	400	Clear	ED37	E39	M155/S	30,000 ¹	42,000	31,000 ¹	65	4000K	105
20,000 42,000 35,700 105 64051* M400/PS/U/ED28 400 Clear ED28 E39 M155/E 20,000V 36,000V 25,500V 65 4000K 90V								20,000	42,000	35,700			105
64051* M400/PS/U/ED28 400 Clear ED28 E39 M155/E 20,000V 36,000V 25,500V 65 4000K 90V 64054* M400/PS/U/ED37 400 Clear ED37 E39 M155/E 20,000V 36,000V 25,500V 65 4000K 90V 64054* M400/PS/U/ED37 400 Clear ED37 E39 M155/E 20,000V 36,000V 25,500V 65 4000K 90V	64056*	MS400/C/PS/BU-ONLY/ED37	400	Coated	ED37	E39	M155/S	30,000 ¹	42,000	29,000 ¹	70	3600K	105
15,000H 31,000H 22,400H 78H 64054* M400/PS/U/ED37 400 Clear ED37 E39 M155/E 20,000V 36,000V 25,500V 65 4000K 90V								20,000	42,000	35,700			105
64054* M400/PS/U/ED37 400 Clear ED37 E39 M155/E 20,000V 36,000V 25,500V 65 4000K 90V	64051*	M400/PS/U/ED28	400	Clear	ED28	E39	M155/E	20,000V	36,000V	25,500V	65	4000K	90V
64054* M400/PS/U/ED37 400 Clear ED37 E39 M155/E 20,000V 36,000V 25,500V 65 4000K 90V								15.000H	31.000H	22.400H			78H
	64054*	M400/PS/U/ED37	400	Clear	ED37	E39	M155/E	20.000V	36.000V		65	4000K	90V
15,000H 31,000H 22,400H /8H								15,000H	31,000H	22,400H			78H
64787 MS750/PS/BU-HOR/BT37 750 Clear BT37 E39 M149/E3 20,000V 78,000V 67,000V 65 4000K 104V	64787	MS750/PS/BU-HOR/BT37	750	Clear	BT37	E39	M149/E3				65	4000K	-
9,000H 68,000H 56,000H 91H								,	,	,			
64822 MS750/C/PS/BU-HOR/BT37 750 Coated BT37 E39 M149/E ³ 20.000V 75.000V 63.000V 70 3700K 100V	64822	MS750/C/PS/BU-HOR/BT37	750	Coated	BT37	E39	M149/E ³	,	,	,	70	3700K	
9,000H 65,000H 53,000H 87H								- ,	.,	,			
64351 M1000/U/PS/BT37 1000 Clear BT37 E39 M141/E 15,000V 110,000V 96,000V 65 3800K 110V	64351	M1000/U/PS/BT37	1000	Clear	BT37	E39	M141/E		,		65	3800K	
9,000H 107,800H 86,300H 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 64193, 64053 formerly 64191, 64054 formerly 64321, 64055 formerly 64525, 64056 formerly 64527

Notes:

Based on 11 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.
 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 SYLVANIA sales representative for availability.

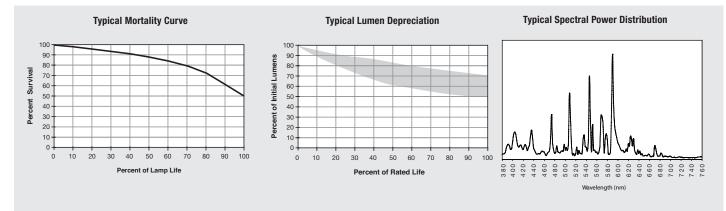
5. When operated on ballasts having a sustaining voltage less than 270V, lamp life may be significantly reduced.

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.

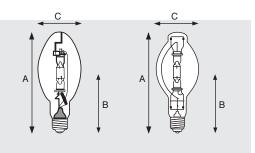
Ordering Guide							
MS	320	1	_	1	PS	1	BU-ONLY
M = METALARC	Wattage:		Finish:		PULSE		BU-ONLY = Base up only
Metal Halide	175, 200, 250,		= Clear		START		U = Universal
S = SUPER high output	320, 320/350,		C = Coated				BD-ONLY = Base down only
P = METALARC PRO-TECH®	350/400, 400,						BU-HOR = Base up - Horizontal
open fixture rated	750 or 1000 watts						

Technical Information



Lamp Dimensions

Ordering	(A)	(B)	(C)
Abbreviation	MOL	LCL	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. THESE LAMPS CONFORM TO FEDERAL STANDARD 21 CFR 1040.30 in the U.S. AND SOR/80-381 in Canada.

LEDVANCE LLC 200 Ballardvale Street Wilmington, MA 01887 USA Phone 1-800-LIGHTBULB (1-800-544-4828) www.sylvania.com

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