

Expect More from the Horizontal Position

Positions of Operation



Performance is Everything

For lighting applications, performance is everything. It is important that lighting fixtures provide top performance in terms of light and heat management, and appearance. The lamp and ballast are expected to provide uniform, bright light as well as great lumen maintenance and long life. So why in most horizontal lighting applications do we continue to sacrifice light and life in our lamp choices?

Published catalog lumens of Universal lamps are based on operation in the Vertical burning position. When these lamps are burned horizontally, the lamp will lose as much as 25% of lamp life and 10% of its initial as well as mean lumens.

Thanks to the introduction of Venture's Horizontal Pulse Start lamp series, <u>sacrificing</u> <u>lamp performance</u> in a horizontal burning position <u>is no longer necessary</u>.

There are several types of burn positions posted by all manufacturers. First, there is the Universal or "U". Then there is the Vertical or "V". Then we have Base Up or BU. Lastly, we have the Horizontal or "HOR".

Position Descriptions U (Universal)

This lamp can be burned in any position within a lighting fixture. Lumens and life vary based on which way the lamp is positioned or burned.

BU (Base-Up)

This lamp should only be positioned with the base up.

V (Vertical)

This lamp can be burned base-up or basedown but must be in a vertical position in the fixture.

HOR (Horizontal)

This lamp requires a position oriented mogul (POM) base and socket for the proper position of the arc tube. The lamp pin and unique socket with slot must be aligned for proper positioning.

H75 (Horizontal +/- 75°)

This lamp is designed to operate in a + or -75 degree position in the fixture without the POM base and socket. This design offers long life as well as exceptional lumen output.



Universal (U)

When you turn a metal halide lamp sideways, two things occur: <u>loss of lamp life as well as loss</u> <u>of lamp lumens</u>. All lamp manufacturers publish these ratings. When the lamp burns on its side, gravity intervenes and the arc between the electrodes begins to bow upwards. As this happens, the bow of the arc overheats on the upper quartz wall of the arc tube. This shortens the life of the lamp, and can result in non-passive failures in these lamps.

The bow in the arc also reduces lumen output. The metal halide salts used in the chemistry of the arc tube lay at the bottom of the arc tube in the horizontal burning position, resulting in the creation of a cool pool of halides. This pool affects the performance of the lamp, resulting in lower lumen output. In order for the lamp to achieve its greatest lumen output the pool needs to be at a high temperature, which in this position it cannot achieve.

It is the halide chemistry in the arc tube in each lamp that creates proper light levels and color temperature, resulting in better lumen output and color uniformity.



Universal position lamp's probe start arc tube in Horizontal operation



😽 Metal Halide Salts





Probe start HOR arc tube

Arc Stream

Metal Halide Salts



Position Oriented Mogul (POM) base and socket, which is **NOT** required for Venture's H75 Series

Horizontal (HOR)

A design technique which has been used by Venture as well as other manufacturers to help correct lumen output and lamp life loss was the usage of POM bases and sockets. The electrodes in this arc tube design are moved down to the bottom of the arc tube. In this way, as the arc bows, it does not position itself so close to the top of the arc tube, thus assisting in improved lamp life.

In addition, as the electrodes sit lower, the pool of halides that fall due to the gravity draw are now closer to the arc stream and will keep the overall light output high. This design has resulted in many problems in lighting applications. Initially, engineers must be certain to specify the POM base and socket. Then, the manufacturer has to ensure that the POM socket is correctly installed in the fixture, and the proper HOR lamp with the POM base has to be ordered. Additionally, the pin and the channel on the socket must align perfectly. All of these elements rarely occur. The result that often occurs is early failures, color shift and lumen miscalculations. The Venture Horizontal Pulse Start Series is a practical and needed improvement to help alleviate these problems.





Horizontal +/- 75° (H75)

What makes Venture's Horizontal Pulse Start systems so unique? In typical fashion, Venture went back to our basics - the "Uni-Form" arc tube. Venture understands the practical need to remove the POM base and socket requirement. In order to allow this to happen, Venture found a way to keep the electrodes at the center of the arc tube at all times, so the install positioning has now become irrelevant.

Benefits of Horizontal Pulse Start Life

The walls of the arc tube have been substantially thickened with quartz material. This results in less heating of the upper side of the arc tube, which in turn results in longer overall lamp life.

Lumens

Venture has also modified the Uni-Form shape to offer better lumens. In addition, we have changed the chemistry of the metal halide lamp's arc tube to produce the lumens that meet the standard V or BU versions of the lamp. This also has resulted in greater mean lumens of this product line.

Venture has created a horizontal pulse start lamp line that now offers long life and high lumens based on a better arc tube. The line eliminates the problems associated with the POM base lamp and is offered in a variety of jacket sizes and wattages.









Application Targets

Venture's Horizontal Pulse Start series is targeted at the mid-range wattages as well as the enclosed fixture.

- Parking Garages
- Car Dealerships
- Site Lighting
- Wall Washes
- Gas Station Canopy
- Area Lighting
- Parking Lot Lighting

These fixtures can be difficult to fit a standard lamp jacket such as the ED37 or even reduced ED28. Therefore, certain wattages with a T15 jacket have been targeted for the tight fit fixture. Venture's offering includes three LCL lengths: 5'', 5.75'' and 7''.

The Line:

Venture offers the H75 series of horizontal pulse start systems in these available wattages:

- 200W
- 250W
- 320W
- 350W
- 400W

By offering Venture's Horizontal Pulse Start series, the end-user benefits from longer lamp life, a reduction in lamp replacements as well as lower labor and maintenance costs. Better light with higher lumens also results in a reduction in poles and fixtures, which can substantially reduce the initial costs of the application.



Enclosed Rated LAMPS ANSI Type-E Mogul Base

	Lamp	Product	ANSI	Initia	Lumens	Mean	Avg. Life	CCT Warm-Up Restrike					Oper.		Case
Watts	Description	No.	Code	Lumens	Per Watt	Lumens	Hours	(K)	(Min) [`]	(Min)	CRI	Finish	Pos.	Fig.	Qty
200	MS 200W/H75/T15/PS/740	70764	M136/E	19000	95	15200	15000	4000	1-2	2-4	68	Clear	HOR±75°	A	12
250	MS 250W/H75/PS/740	81054	M153/E	22000	88	17600	15000	4000	2-3	3-5	68	Clear	HOR±75°	D	12
250	MS 250W/H75/T15/PS/740	57625	M153/E	22000	88	17600	15000	4000	2-3	3-5	68	Clear	HOR±75°	B	12
320	MS 320W/H75/ED28/PS/740	47549	M154/E	30000	94	24000	20000+	4000	2-3	4-6	68	Clear	HOR±75°	D	12
320	MS 320W/H75/T15/L/PS/740	79710	M154/E	30000	94	24000	20000+	4000	2-3	4-6	68	Clear	HOR±75°	C	12
320	MS 320W/H75/T15/S/PS/740	57626	M154/E	30000	94	24000	20000+	4000	2-3	4-6	68	Clear	HOR±75°	B	12
320	MS 320W/C/H75/ED28/PS/737	12758	M154/E	27000	84	21000	20000+	3700	2-3	4-6	70	Coated	HOR±75°	D	12
350	MS 350W/C/H75/PS/737	64866	M131/E	31000	89	25000	20000+	3700	2-3	4-6	70	Coated	HOR±75°	Ε	6
350	MS 350W/H75/ED28/PS/740	46959	M131/E	33000	94	26000	20000+	4000	2-3	4-6	68	Clear	HOR±75°	D	12
350	MS 350W/H75/T15/PS/740	93749	M131/E	33000	94	26000	20000+	4000	2-3	4-6	68	Clear	HOR±75°	C	12
400	MS 400W/H75/PS/740	58788	M155/E	40000	100	32000	20000+	4000	2-3	4-6	68	Clear	HOR±75°	Ε	6
400	MS 400W/H75/ED28/PS/740	40124	M155/E	40000	100	32000	20000+	4000	2-3	4-6	68	Clear	HOR±75°	D	12
400	MS 400W/C/H75/ED28/PS/737	55459	M155/E	38000	95	30000	20000+	3700	2-3	4-6	70	Coated	HOR±75°	D	12
400 400 400	MS 400W/H75/ED28/PS/740 MS 400W/C/H75/ED28/PS/737	58788 40124 55459	M155/E M155/E M155/E	40000 40000 38000	100 100 95	32000 32000 30000	20000+ 20000+ 20000+	4000 4000 3700	2-3 2-3 2-3	4-0 4-6 4-6	68 70	Clear Clear Coated	HOR±75° HOR±75°	D D	0 12 12

Note: + 20,000+ hours means that al least 70% of the lamps initially installed will still be operating after 20,000 hours.

С

5



Dia. = $1 \frac{7}{6}''$ (46mm) MOL = $8 \frac{5}{16}''$ (211mm) LCL = 5'' (127mm) Base = E39



В

5

Dia. = 1 ⁷/₆" (46mm) MOL = 9 ³/₄" (248mm) LCL = 5 ³/₄" (146mm) Base = E39



Dia. = 1 ⁷/₆" (46mm) MOL = 11 ¹/₂" (292mm) LCL = 7" (178mm) Base = E39



Dia. = 3 ¹/2" (90mm) MOL = 8 ⁵/16" (211mm) LCL = 5" (127mm) Base = E39



Dia. = 4 ⁵/₈" (120mm) MOL = 11 ¹/₂" (292mm) LCL = 7" (178mm) Base = E39



Horizontal Pulse Start VENTURE

Benefits

- Longer life compared to both universal and HOR lamps in horizontal operation and Higher lumen output
- No POM base and socket required
- Variety of outer jacket shapes and sizes for full cut-off fixtures



Indoor

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Venture has specifically designed the H75 series for horizontal operation

- Thicker walls of the lamp arc tube
- Better distribution of the halides in the arc stream



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