

# Metal Halide

## Uni-Form Pulse Start Lamps from Venture Lighting



For the first time the benefits of high pressure sodium (HPS) and metal halide (MH) sources can be found in one white color HID source. Medium wattage Uni-FormPulse Start metal halide lamps from Venture Lighting, deliver excellent color rendering with increased efficacy. Parking lots, warehouses and other applications typically lit with HPS for purely economic reasons now have a more appealing choice of light source.

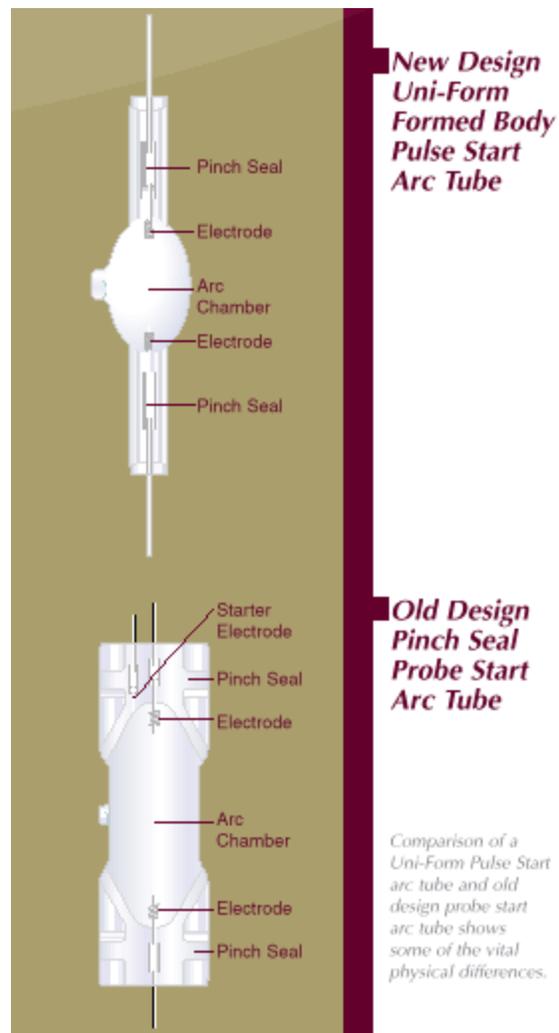
### Improved Lamp Performance (as compared to old design MH)

- Higher Efficacy
- Better Color Uniformity
- Faster Warm-up & Restrike
- Longer Lamp Life

How can Uni-Form formed body Pulse Start lamps excel above traditional medium wattage MH probe start lamps? The answer is found in how the arc tube is designed and in how the starting current is delivered.

### New Arc Tube Shape

The oval shape of the new formed body arc tube looks deceptively simple. Venture Lighting's Uni-Form shape closely follows the actual shape of the arc stream. This contour allows more metal halides to be "excited" within the arc stream thus emitting more light. Additionally, this oval shape is highly reproducible from arc tube to arc tube. The metal halide salts will heat in the same manner from lamp to lamp in like-burning positions. Color uniformity improves from lamp to lamp (as compared to differently shaped arc tube lamps).



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## Smaller Pinch Seal Area

Pinch seals are great for containing metal halide salts and other materials within the arc tube. Unfortunately, pinch seals also draw heat away from light-emitting halide salts as they vaporize within the arc tube thereby diminishing performance.

In the past, smaller pinch seal areas were not possible due to old MH technology and arc tube manufacturing processes. Today, Uni-Form formed body arc tubes take advantage of new Venture Lighting technology and precision manufacturing processes. Heat loss through pinch seal areas is dramatically reduced. Less heat loss means more salts are vaporized and introduced in the arc. This means more light can be emitted, which contributes to increased efficacy (lumens per watt).

## Ignitor Based Starting

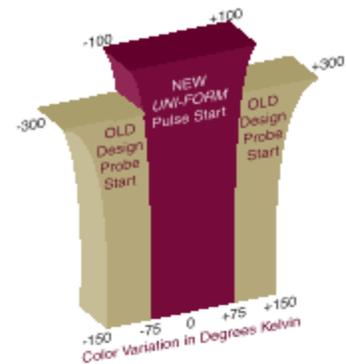
Uni-Form Pulse Start metal halide systems use a familiar component found in everyday high pressure sodium systems—an ignitor. Ignitor based starting for medium wattage metal halide lamps is now a reality thanks to advances in MH technology. Adding the ignitor component allows for removal of the bi-metal starting switch which did nothing to improve the lamp's performance.

Additionally, ignitor based starting is more effective than probe based ignition because a higher voltage starting pulse is available. This higher voltage provides for quicker breakdown of gases when starting the arc. This makes fast warm-ups and re-strikes possible.

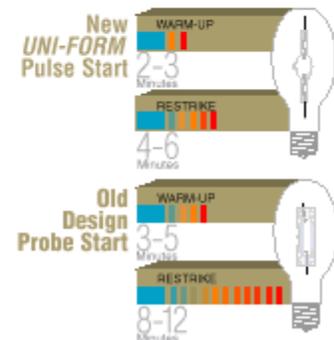
The lamp's higher fill pressure and the ballast's smoother waveform reduce sputtering and evaporation of tungsten from the lamp electrodes. This means less tungsten is deposited on the arc wall, thus darkening of the arc wall decreases and lumen maintenance improves.

Ballast losses show dramatic reductions too. An old design 400W probe start metal halide constant wattage autotransformer (CWA) consumes 460 system watts. The new 400W Uni-Form Pulse Start CWA ballast uses only 448W to do the same job (and the lamp delivers significantly higher mean lumens). An even better option is the new 400W Uni-Form Pulse Start 277V reactor ballast which uses a mere 430W. The 277V reactor reduces ballast losses by 50% when compared to the probe start CWA ballast.

Reduced ballast losses are possible because the CWA ballast for Uni-Form Pulse Start systems no longer provides the lamp starting function (as found in probe start systems). Removing this function from the ballast results in a system that consumes less wattage. The Uni-Form Pulse Start 277V reactor ballast offers the lowest losses. It has no need to transform supply voltage into the lamp's operating voltage (as a CWA ballast does for both probe and pulse start).



New Uni-Form Pulse Start metal halide lamps provide better lamp-to-lamp color consistency than old design metal halide lamps.



Faster warm-up and quicker restrike times are two of the benefits Uni-Form Pulse Start Systems offer.

## Systems Comparison Guide

Lamp Watts	Initial Lumens	Mean Lumens	Avg. Rated Life Hours	System Wattage	
				CWA	277V Reactor
<b>400W Uni-Form</b> enclosed rated lamp	44,000	35,200	20,000+	448	430
<b>350W Uni-Form</b> enclosed rated lamp	38,000	30,400	20,000+	400	375
<b>320W Uni-Form</b> enclosed rated lamp	34,000	27,200	20,000+	365	345
<b>400W Old Design</b>	36,000	25,200	20,000	460	430