

FIXTURES



An Advanced Lighting Technologies Company

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. Ruud Lighting products featuring *Uni-Form* Pulse 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. All fixtures come with a 2-year lamp, 5-year component and a 7-year finish warranty.



For lamp information please see the Venture Lighting general information page in this catalog

Ballast Information

Choose from two ballast types -

Reactor or **Constant Wattage Autotransformer (CWA)**.

Reactor - 277V

The revolutionary benefits of improved lamp lumen maintenance and reduced ballast losses are even more pronounced with the 277V reactor ballast type. Of all the metal halide ballast types, the 277V reactor provides the smoothest waveform. This smoother waveform reduces evaporation of tungsten from the lamp's electrodes. Less deposits occur on the arc chamber wall and the arc chamber darkening decreases. Therefore, lamp lumen maintenance improves. Ballast losses are minimized with this ballast type. Most metal halide lamps require 277V for operation. Unlike a CWA ballast type, the 277V reactor does not waste precious energy (watts) transforming supply voltage to the lamp's operating voltage.

As an example, a 400W MH probe start lamp with a CWA ballast type requires 460W to operate. Conversely, a 400W *Uni-Form* pulse start lamp with a 277V reactor ballast type needs only 430W. Ballast losses in this case are reduced by 50%.

Best application: 277V with good voltage regulation (line voltage regulation \pm 5%).

CWA - 120V, 208V, 240V, 277V, 347V and 480V

The number of voltage choices and good voltage regulation are key benefits this ballast type offers. CWA ballast types provide line voltage regulation of \pm 10%.

The CWA ballast type provides a wide voltage selection along with good line voltage regulation. The CWA also allows for 120V options such as quartz standby or fusing on products using line voltage other than 120V.

Best application: Anywhere 277V reactor ballast type is not practical.

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Performance Benefits

Retrofit Performance Benefits

Why should customers continue to sacrifice their energy dollars to operate older, inefficient lighting fixtures? A one-for-one retrofit with Ruud products featuring a *Uni-Form* pulse start system can give them better lighting with lower operating costs. Lower operating costs mean the new, efficient lighting system can pay for itself in a short period of time! Using an existing application with a 400W MH (universal burn) lamp we clearly see the benefits a retrofit delivers.

Choosing the 320W option produces major annual energy savings of 20% or 25% based on ballast type with an 5% increase in lumen output. Choosing the 350W option noticeably raises mean lumen levels by 20% while delivering real energy savings of 13% or 18% based on ballast type.

Retrofit Options							
Maximizing Energy Savings (one for one fixture replacement)							
	400W Existing old design		350W Retrofit <i>Uni-Form</i> pulse start			320W Retrofit <i>Uni-Form</i> pulse start	
Ballast Type	CWA		CWA	277V Reactor		CWA	277V Reactor
System Watts per fixture	460		400	375		365	345
Annual Energy Cost * per fixture	\$154.56		\$134.40	\$126.00		\$122.64	\$115.92
Annual Energy Savings \$ per fixture	-		\$20.16	\$28.56		\$31.92	\$38.64
Annual Energy Savings %	-		13%	18%		20%	25%
Mean Lumens / fixture	25,200		30,400	30,400		26,400	26,400
Mean Lumen Comparison	-		+20%	+20%		+5%	+5%
* annual energy cost based on 4,200 hours operation per fixture at \$0.08/kWh (system watts/1000X4200X .08 = annual energy cost)							



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New Application Performance Benefits

New applications present great opportunities for the *Ruud* products featuring *Uni-Form* pulse start lamps. Your customers benefit by achieving higher lumen levels with an equal or lesser number of fixtures. This can mean a lower bottom line initial cost for products, materials and labor. Plus, the installation achieves long-term savings by effectively reducing annual energy costs.

The example below demonstrates possible options for an application requiring approximately 50 maintained footcandles (mfc) in a typical large task manufacturing/assembly area. Annual energy savings of 20% to 37% are possible while maintaining uniform light levels.

New Application Options							
	Old design 400W/U MH lamp	New 400W <i>Uni-Form</i> pulse start		New 350W <i>Uni-Form</i> pulse start		New 320W <i>Uni-Form</i> pulse start	
Ballast Type	CWA	CWA	27V Reactor	CWA	27V Reactor	CWA	27V Reactor
Number of Fixtures*	64	49	49	49	49	64	64
System Watts / fixture	460	448	430	400	375	365	345
Annual Energy Cost **	\$9,891.84	\$7,375.87	\$7,079.52	\$6,585.60	\$6,174.00	\$7,848.96	\$7,418.88
Annual Energy Savings \$	-	\$2,515.96	\$2,812.32	\$3,306.24	\$3,717.84	\$2,042.88	\$2,472.96
Annual Energy Savings %	-	25%	28%	33%	37%	20%	25%
Average Maintained Footcandles	50	54	54	47	47	53	53
number of fixtures; arrangement	64; 8X8	49; 7X7	49; 7X7	49; 7X7	49; 7X7	64; 8X8	64; 8X8

* Practical fixture spacings dictate the number of fixtures used for each example.
 ** annual energy cost based on 4,200 hours operation per fixture at \$0.08/kWh

