



**Universal Lighting's**  
Guide to Energy Independence  
and Security Act of 2007

**EISA Ballast Guidelines**

# HID Ballasts

*for the Energy Independence and Security Act of 2007*

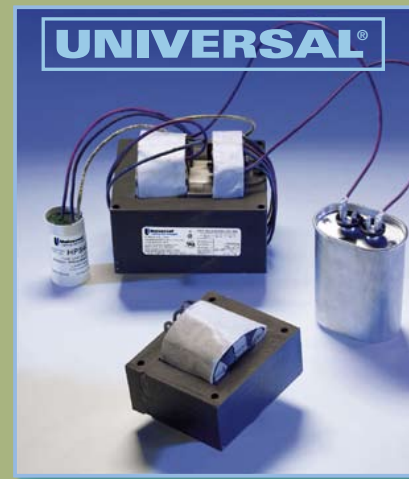
**Effective January 1, 2009**, Metal Halide luminaires manufactured for use in the U.S.A. must comply with new energy efficiency requirements. ULT recognizes the impact of this legislation to our customers and has developed a full line of EISA compliant products.



**Universal™ Lighting Technologies** provides a number of ballast solutions for use with the new luminaire efficiency requirement.

## Magnetic HID Ballasts

- Variety of 88% Efficiency Options
- Core & Coil
- High Temperature Class N
- Multi-Taps
- Reactors



## *What do you need to watch for?*

EISA legislation requires manufacturers and end users to convert from probe start to pulse start ballasts for luminaires that range from 150 – 400 watts for all new installations. To show EISA compliance ballast labels and fixture packaging must now display the (E) emblem. ULT has added this emblem to all compliant ballasts. Familiarize yourself with the benefits to your end user as well as the law. It is inevitable that the price for these ballasts will go up as they will need higher grades of steel, more steel, and more copper than the current designs.

## *Requirements Summary:*

- Luminaires manufactured starting January 1, 2009 with metal halide lamps rated from 150W to 500W shall not contain a probe start ballast.
- In addition, pulse start luminaires in the same wattage range must use a magnetic ballast that meets a minimum efficiency of 88%.
- Electronic ballasts may also be used as long as they meet a minimum ballast efficiency of 92% for lamps greater than 250W and 90% for lamps less than or equal to 250W.

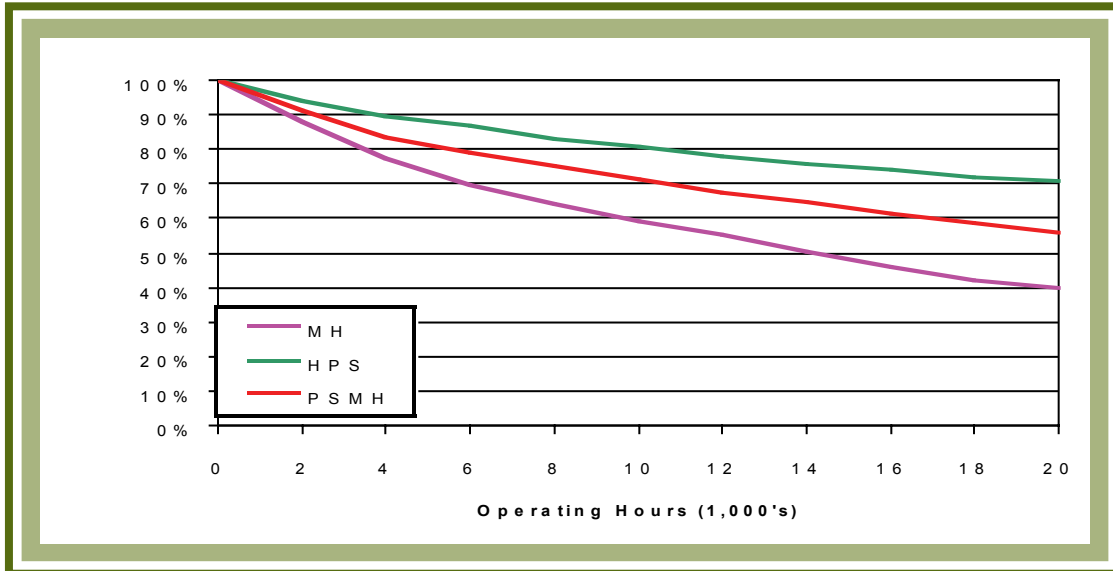
## *Exemptions:*

- Fixtures containing regulated lag ballasts
- Fixtures that contain electronic ballasts and operate at 480 volts
- Fixtures rated only for 150W lamps, for use in wet locations, and contain a ballast rated to operate at ambient temperatures above 50°C
- Probe Start systems can be used if ballasts meet higher efficiency requirements currently not achieved with magnetic ballasts
- Does not apply to ballast used for maintenance of previously installed luminaires.

# What makes High Efficiency Pulse Start Better?

ULT's product offering of new high-efficiency products also provides benefits to your customers. Offering better lumen maintenance, greater system efficacies, longer lamp life, and cooler ballast operation.

## Lumen Curves



Better lumen maintenance and increased lamp life reduces the number of re-lamps and provides more lumens longer at the same rated lamp power.

## High Efficiency Pulse Start Energy Story

Qty of Lamps	Lamp Type	Ballast	Mean Lamp Lumens	System Watts	Mean System Lumens Delivered	Mean Lumen Comparison	System Delivered LPW	Energy Savings (Watts)	Annual Energy Savings(\$)*
1	400W MH	standard C&C	24,000	458	19,200	100%	41.9		
1	400W PSMH	P 400MLTAC4L	33,000	454	26,400	138%	58.1	4	\$1.28
1	350W PSMH	P 350MLTAC40	27,500	397	22,000	115%	55.0	57	\$18.24
1	320W PSMH	P 320MLTAC40	25,000	365	20,000	104%	54.8	89	\$28.48

Savings calculated based on 4,000 annual operating hours and \$0.08/KW H utility rate  
 system mean lumens = mean lamp lumens x # lamps x est 80% fixture efficiency

Switching from a 400W MH to a 320 W PSMH system gives you a 89 Watt reduction in energy consumption with no sacrifice in lumen levels.

Underlit? Converting from a 400W MH to a 400 W PSMH can increase light levels up to 138% with no increase in energy costs.

## Universal™ HID Ballasts for EISA 2007: 150 to 450 Watt

Lamp Wattage (ANSI Code)	Model Number	Circuit	Voltage	Notes
150 (M102)	M150277RCEM	Reactor	277V	
	M150MLTAC3M*	CWA	Quad-Tap	wet location luminaire*
	M150MLTLC3M*	HX-HPF	Quad-Tap	wet location luminaire*
	M15048TLC3M*	HX-HPF	480V w/ 120V tap	wet location luminaire*
175 (M137)	P175277RCEM	Reactor	277V	
	P175MLTAC3L	CWA	Quad-Tap	
	P175MLTAC4L	CWA	Quad-Tap	
	P17548TAC3L	CWA	480V w/ 120V tap	
	P17548TAC4L	CWA	480V w/ 120V tap	
200 (M136)	P200MLTAC3L	CWA	Quad-Tap	
	P20048TAC3L	CWA	480V w/ 120V tap	
250 (M138)	P250ML5AC4L	CWA	Multi-5 Tap	
	P250277RCEM	Reactor	277V	
	P250MLTAC4L	CWA	Quad-Tap	
	P25048TAC4L	CWA	480V w/ 120V tap	
320 (M132)	P320277RCEM	Reactor	277V	
	P32048TAC4L	CWA	480V w/ 120V tap	
	P320ML5AC4L	CWA	Multi-5 Tap	
	P320MLTAC40	CWA	Quad-Tap	
350 (M131)	P350277RCEM	Reactor	277V	
	P35048TAC40	CWA	480V w/ 120V tap	
	P350ML5AC40	CWA	Multi-5 Tap	
	P350MLTAC40	CWA	Quad-Tap	
400 (M135)	P40048TAC4L	CWA	480V w/ 120V tap	
	P400ML5AC4L	CWA	Multi-5 Tap	
	P400MLTAC4L	CWA	Quad-Tap	
450 (M144)	P45048TAC4L	CWA	480V w/ 120V tap	
	P450ML5AC4L	CWA	Multi-5 Tap	
	P450MLTAC4L	CWA	Quad-Tap	

\* Quad-Tap: 120/208/240/277 Volt Taps      Multi-5 Tap: 120/208/240/277/480 Volt Taps

\* Complies only when the luminaire is rated for use in wet locations.