



Energy Independence and Security Act of 2007 (EISA)

Regulation of Metal Halide Luminaires

Energy Independence and Security Act of 2007

What it means to the lighting industry



Energy Independence and Security Act of 2007 (EISA)

Regulation of Metal Halide Luminaires

What is EISA?

On December 19, 2007, President Bush signed H.R. 6 the Federal Energy Independence and Security Act of 2007 into law.

The goal of the Act is to move the U.S. “toward greater energy independence and security, to increase the production of clean renewable fuels, to protect consumers, to increase the efficiency of products, buildings and vehicles, to promote research on and deploy greenhouse gas capture and storage options, and to improve the energy performance of the Federal Government, and for other purposes.”



Energy Independence and Security Act of 2007 (EISA)

Regulation of Metal Halide Luminaires

How does EISA impact lighting?

Within the Act, there are four sections that will impact the residential, commercial and industrial market:

- Sec. 321. Efficient Light Bulbs
- Sec. 322. Incandescent Reflector Lamp Efficiency Standards
- Sec. 324. Metal Halide Lamp Fixtures
- Sec. 655. Bright Tomorrow Lighting Prizes Commercial Buildings Tax Deduction

Energy Independence and Security Act of 2007 (EISA)

Regulation of Metal Halide Luminaires

324. Metal Halide Lamp Fixtures

Starting January 1, 2009 the provision prohibits the sale of metal halide fixture ranging from 150W to 500W unless the ballast in the fixture is greater than 88% efficient in the U.S.

The Act uses the following formula to calculate efficiency in percentage:

- Efficiency = P_{out}/P_{in}
 - P_{out} = the measured operating wattage of the lamp
 - P_{in} = the measured operating input wattage



Energy Independence and Security Act of 2007 (EISA)

Regulation of Metal Halide Luminaires

324. Metal Halide Lamp Fixtures

What does this mean to the Probe Start Metal Halide Fixtures?

Based on the efficiency requirements set forth in the Act, it virtually eliminates the manufacture of today's >150W to <500W probe-start metal halide magnetic ballasted fixtures.

Energy Independence and Security Act of 2007 (EISA)

Regulation of Metal Halide Luminaires

324. Metal Halide Lamp Fixtures

Minimum Ballast Efficiency Requirements

Ballast Type	Metal Halide Lamp Wattage	Minimum Ballast Efficiency
Pulse-start metal halide ballast	150W to 500W	88%
Magnetic probe-start ballast	150W to 500W	94%
Electronic ballast (not pulse-start)	150W to 250W	90%
	250W to 500W	92%

Energy Independence and Security Act of 2007 (EISA)

Regulation of Metal Halide Luminaires

324. Metal Halide Lamp Fixtures

What does this all mean for the owner / user?

- A more energy efficient system
- A more expensive fixture
 - Why? To make the ballast more efficient, more copper and steel, including higher grade steel, were needed
- Improved lumen maintenance, up to 16%
- Greater system efficacy (L/W), up to 50%
- Longer lamp life, up to 50%
- Superior Color Rendition, up to 85+ CRI
- Faster cold (~2 minutes) / hot re-strike time (~4 minutes)

Energy Independence and Security Act of 2007 (EISA)

Regulation of Metal Halide Luminaires

324. Metal Halide Lamp Fixtures

How does EISA impact the sale of metal halide?

- The provision only impacts the sale of metal halide fixtures in the U.S. and U.S. territories
- The sale of metal halide fixtures for markets outside of the United States does not need to comply
- It does not affect replacement ballasts

Energy Independence and Security Act of 2007 (EISA)

Regulation of Metal Halide Luminaires

324. Metal Halide Lamp Fixtures

The provision covers only newly manufactured metal halide fixtures and an exemption does apply to fixtures that:

- Use a regulated lag ballasts;
- Use electronic ballasts that operate at 480V; or
- Fixtures that meet all of the following criteria:
 - Are rated only for 150W lamps,
 - Are rated for use in wet locations per NEC 202, section 410.4(A)
 - **AND** Contain a ballast rated to operate at ambient air temperatures above 50°C per UL 1029-2001.



Energy Independence and Security Act of 2007 (EISA)

Regulation of Metal Halide Luminaires

324. Metal Halide Lamp Fixtures

What is required to identify metal halide fixtures that meets the efficiency requirement?

The Federal Trade Commission created a capital “E” within a circle as the label to indicate that the product meets the DOE energy efficiency standards. The label must appear on the packaging of the fixture and the ballast within the fixture.





Energy Independence and Security Act of 2007 (EISA)

Regulation of Metal Halide Luminaires

324. Metal Halide Lamp Fixtures

Except for California, the following states regulation of metal halide fixtures will remain in effect until the Act takes effect:

- Arizona
- New York
- Oregon
- Rhode Island
- Washington

The California Energy Commission is authorized to implement regulations until 2011.



Energy Independence and Security Act of 2007 (EISA)

Regulation of Metal Halide Luminaires

324. Metal Halide Lamp Fixtures

Recommended solutions for 150W Universal (ED-17) Pulse Start

Starting January 1, 2009			
Ballast Type	Wattage	Lamp Orientation	Lamp Type
Pulse	150W	Horizontal	ED-17 Ceramic
Pulse	100W Universal	Horizontal	ED-17 Ceramic
Pulse	150W	Vertical	ED-17 Ceramic
Pulse	100W Universal	Vertical	ED-17 Ceramic



Energy Independence and Security Act of 2007 (EISA)

Regulation of Metal Halide Luminaires

324. Metal Halide Lamp Fixtures

Recommended solutions for 175W (ED-17) Probe Start

Starting January 1, 2009			
Ballast Type	Wattage	Lamp Orientation	Lamp Type
Pulse	150W	Horizontal	ED-17 Ceramic
Pulse	150W Universal	Horizontal	ED-17
Pulse	150W	Vertical	ED-17 Ceramic
Pulse	150W Universal	Vertical	ED-17
Pulse	175W BU only	Vertical	ED-17

Energy Independence and Security Act of 2007 (EISA)

Regulation of Metal Halide Luminaires

324. Metal Halide Lamp Fixtures

Recommended solutions for 175W (ED-28) Probe Start

Starting January 1, 2009			
Ballast Type	Wattage	Lamp Orientation	Lamp Type
Pulse	150W	Horizontal	ED-23.5 Ceramic
Pulse	150W Universal	Horizontal	ED-17 Ceramic
Pulse	150W	Vertical	ED-23.5 Ceramic
Pulse	150W Universal	Vertical	ED-17 Ceramic
Pulse	175W BU only	Vertical	ED-28



Energy Independence and Security Act of 2007 (EISA)

Regulation of Metal Halide Luminaires

324. Metal Halide Lamp Fixtures

Recommended solutions for 250W (ED-28) Probe Start

Starting January 1, 2009			
Ballast Type	Wattage	Lamp Orientation	Lamp Type
Pulse	250W	Horizontal	BT-28
Pulse	250W	Vertical	BT-28
Pulse	200W	Vertical	ED-28



Energy Independence and Security Act of 2007 (EISA)

Regulation of Metal Halide Luminaires

324. Metal Halide Lamp Fixtures

Recommended solutions for 400W (BT-28) Probe Start

Starting January 1, 2009			
Ballast Type	Wattage	Lamp Orientation	Lamp Type
Pulse	320W	Horizontal	ED-28
Pulse	400W	Vertical	ED-28
Pulse	320W	Vertical	ED-28



Energy Independence and Security Act of 2007 (EISA)

Regulation of Metal Halide Luminaires

324. Metal Halide Lamp Fixtures

Recommended solutions for 400W (BT-37) Probe Start

Starting January 1, 2009			
Ballast Type	Wattage	Lamp Orientation	Lamp Type
Pulse	320W	Horizontal	ED-37
Pulse	400W	Horizontal	BT-37
Pulse	350W	Vertical	ED-37
Pulse	320W	Vertical	ED-28
Pulse	400W	Vertical	BT-37