

*Bright Ideas, Bold Innovations*

**Preserve**

**Protect**

**Prosper**



From



Performance Plus™ electronic lighting systems that save more than energy, they actually help save the environment

**VENTURE**  
**LIGHTING**

# Preserve



## Worldwide Energy Savings

The world utilizes an incredible amount of electrical energy. World total net electrical consumption in 2004 was 15,441 terawatt hours. It is expected to increase to 19,045 terawatt hours by year 2010 and to over 30,000 terawatt hours by the year 2030! World electrical consumption for lighting alone was 3,088 terawatt hours in 2004. It is expected to increase to 3809 terawatt hours by year 2010 and to over 6,000 terawatt hours in year 2030.

Venture Lighting is leading the way in improving lighting energy efficiency and reducing overall energy usage and costs throughout the world. Today, pulse start metal halide electronic lighting systems technology is the most energy efficient lighting technology available anywhere in the world. Whether through utilizing any of our highly energy efficiency pulse start systems, or simply reducing the total number of lamps, world lighting efficiencies will be increased and energy costs will be significantly reduced.

Utilizing this highly efficient technology can result in incredible benefits for the world around us, particularly in terms of returning our overall environment to both a greener and cleaner world for all to enjoy.

For example, by replacing half of the world's energy inefficient High Intensity Discharge lighting with Venture's energy efficient pulse start metal halide electronic lighting technology, worldwide lighting electrical energy consumption would be **reduced by 4% by the year 2010**, resulting in the following incredible energy savings along with improvements to our environment:

### The world would save:

- **152 Terawatt hours** of energy usage annually
- **73,157,600 tons** of coal annually

This is enough coal to fill a train circling the entire world starting at New York City.

### The world could reduce:

- **18 nuclear plants** worldwide (average energy consumption of 7.5 terawatt hours annually)
- **37 coal burning plants** worldwide (average energy consumption of 4 terawatt hours annually)
- **313,120,000,000 lbs. of CO<sub>2</sub>** emissions annually worldwide

It would be like planting 38,819,054 acres of trees (15,527,226,445 trees) annually or saving 1,556,540,862 cubic ft. of coal annually



# Greener



## Outdoor Lighting Energy Savings

Worldwide outdoor lighting is an area ideally suited for the white light generated through pulse start metal halide electronic lighting systems. Fluorescent lighting is ineffective in most outdoor applications, and high pressure sodium and mercury vapor systems generate less effective "yellow" or desirable light

Approximately 8% of global lighting electricity use is in outdoor street lighting, the vast majority of which is High Intensity Discharge lighting. In 2004 this amounted to about 247 terawatt hours of electrical consumption, an expected 305 terawatt hours in 2010 and over 480 terawatt hours in year 2030.

### 10% of the World's Street Lighting

By replacing just **10% of the world's street lighting** with highly efficient pulse start metal halide electronic lighting technology by the year 2010:

#### The world would save:

- 15 terawatt hours of energy annually
- 7,219,500 tons of coal annually

#### The world could reduce:

- Annual CO<sub>2</sub> emissions by 30,900,000,000 lbs.
- Equivalent to 2 nuclear power plants
- Equivalent to 4 coal burning plants

Results in: **Saving 3,830,827 acres of trees** (1,532,331,267 trees) annually

Results in: **Saving 153,606,037 cubic feet of coal** annually - enough to cover 32 football fields 10 stories high!

Results in: **Saving 1,573,849,191 gallons of gasoline** worldwide annually



### 50% of the World's Street Lighting

The following energy savings would result by replacing **50% of the world's street lighting** with highly efficient pulse start metal halide technology in 2010:

#### The world would save:

- 76 Terawatt hours of energy annually
- 36,097,500 tons of coal annually

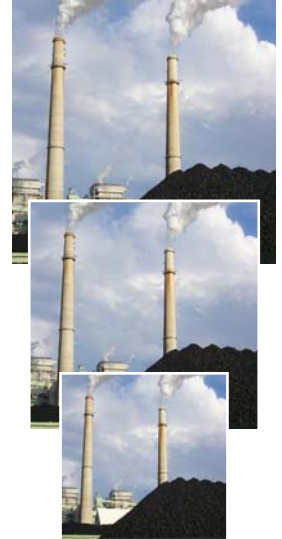
#### The world could reduce:

- Annual CO<sub>2</sub> emissions by 154,500,000,000 lbs.
- Equivalent to 9 nuclear power plants
- Equivalent to 18 coal burning plants

Results in: **Saving 768,030,186 cubic ft. of coal** annually - enough to cover 159 football fields 10 stories high!

Results in: **Saving 7,869,246,954 gallons of gasoline** worldwide annually

Replacing the world's outdoor lighting with the most energy efficiency lighting available, pulse start metal halide electronic lighting systems can also help to preserve, protect and save our world, and make it greener and cleaner for future generations to enjoy.



*Whether through utilizing our highly energy efficiency pulse start systems, or simply reducing the total number of lamps necessary for your applications, world lighting efficiencies will be increased and energy costs will be significantly reduced.*



Cleaner

# Protect

## Quality of Light Makes a Visible Difference

Studies have shown that metal halide lighting, with highly visible "white" light, at night can have a lighting effectiveness of up to six times that of high pressure sodium (HPS) lamps, with their distinctive "yellow" glow.

In the summer of 2005, a Mexico City municipality installed 36,000 of Venture's 200 watt Uni-Form® pulse start lamps in its street lights. Antonio Gershensen, Public Lighting Director of Mexico City, noted: "This kind of lamp gives 30% more light than the old yellow ones. The lamps not only last longer but also give more brightness and clearness". Mario Bonilla Ramirez, Coacalco County Under Director of Public Services, also notes that these lamps have resulted in "a diminishing of 25% in the small felonies in the streets".

Gershensen also stated that "It's a great investment not only in the city's beauty but in its public security. The new lighting technology has changed the city's panorama completely".

## White Light is Safer

Recent research shows that the color of the light source has a significant effect on nighttime visibility, which is important because road accidents occur mostly at night. Also, it is well known that the eye responds to light depending upon both the color content and the amount of light available.

When light levels are very low, like starlight, the eye's visual response changes dramatically. Sensitivity to yellow and red light is greatly reduced, while response to blue light is increased.

The effective light output of a yellow HPS light source is reduced and the effective white light output (from Venture's electronic metal halide systems) with blue/green content is increased.

*"It's a great investment not only in the city's beauty but in its public security. The new lighting technology has changed the city's panorama completely... This kind of lamp gives 30% more light than the old yellow ones. The lamps not only last longer but also give more brightness and clearness",*

- Antonio Gershensen,  
Public Lighting Director of  
Mexico City



The ability to detect fine contrast is also significantly better under metal halide sources than sodium. In street lighting, driver reaction time under LPS and HPS lighting is roughly 50% longer than for metal halide. Therefore, the color output of a light source has an important influence on safety. Studies have shown that metal halide lighting, in some circumstances, can be up to six times as effective as yellow HPS. This can make a difference in peripheral viewing and in dark areas where hidden hazards may be present.



**Security**

# Prosper

## Energy Consumption Facts

- Lighting is approximately 20% of the energy cost of an average commercial building
- The energy consumed by a lighting system is 90% of the overall lifetime cost to operate it.
- One halogen MR16 costs \$26.00 per year to operate (at 330 kWh)



**50W MR16 Halogen**  
150 watts

or



**100W PAR38 Halogen**  
150 watts

=



**Venture's 35W MR16**

or



**3W White LED MR16**  
75 watts



5K Color

4K Color

3K Color

# Less Energy



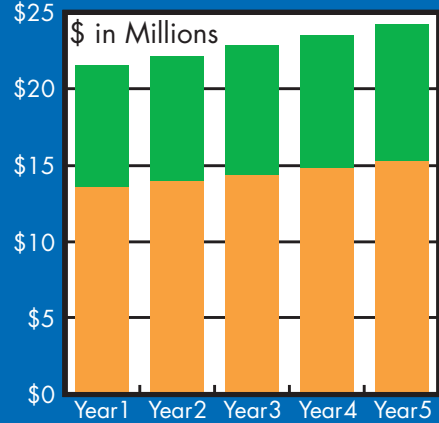
### How much will can be saved?

Switching to energy efficient lighting will yield greater savings; For example, Venture's Performance Plus™ 290 watt electronic system gives: The same light as yesterday's 400 watt probe start system and a savings of 150 watts. That's reduction in energy use of one-third.

- Cost of Performance Plus™ system
- Savings from Performance Plus™ system

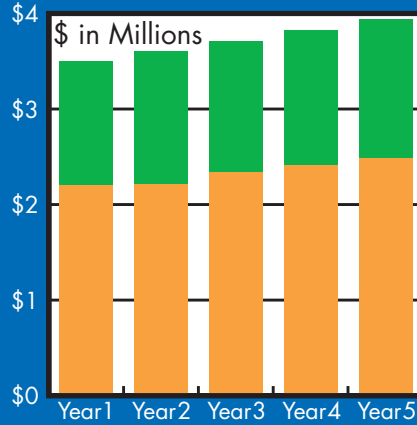
- At \$0.09 per kWh/year
- Assumes 3% annual increase in energy costs

#### 400 Stores - Electronics Retailer



Total 5 Year Energy Savings with Performance Plus™: **\$42.2 Million**

#### 130 Stores - Supermarket Chain



Total 5 Year Energy Savings with Performance Plus™: **\$6.9 Million**

**1** Venture's 450W system  
465 system watts



or



**400W Probe Start MH**  
920 system watts

or



**54W T5HO Fluorescent**  
527 system watts

=

or



**25W Compact Fluorescent**  
700 watts

or



**100W A-19 Incandescent**  
2,900 watts

or



**3W White LED**  
1,875 watts



**Less Costs**

# Why Venture



## The Venture Advantage

Venture has always been an industry leader, innovator and worldwide marketer and manufacturer of metal halide lighting systems. Venture's revolutionary *Uni-Form* electronic pulse start system technology holds the future for metal halide. *Uni-Form* electronic systems offer up to 50% more lumens per system watt than probe start metal halide lamps and magnetic power supplies. Its capabilities continue to improve.

- Up to twice the lamp life - Fewer replacements for the end-user.
- Saves Energy - Up to 50% improvement in system lumens per watt compared to standard metal halide technology
- Faster Warm-Up/Restrike - Up to 400% improvement - Less arc chamber quartz mass reduces the thermal mass
- Better Color Uniformity - Smaller temperature gradients in the arc tube, along with uniform wall thickness and shape, combined with the optimized regulation of the electronic power supply, results in excellent color uniformity
- Reliable starting in colder conditions, down to -40°C; Exclusion of starter electrode, bi-metal switch and resistor improves the reliability of the lamp

## Superior Lumen Maintenance

*Uni-Form* pulse start system lumen output does not decay as rapidly over life as standard metal halide. Mean lumens improve dramatically, up to 50% higher, with lamps operating on Venture's electronic power supplies.

## Color Uniformity

- More consistent lamp to lamp color
- Better color while dimming with *Uni-Form* systems - Stays white when dimmed while ceramic metal halide turns green
- Ideal for daylight harvesting

*Uni-Form* lighting systems are more energy efficient, especially when operating on Venture's electronic power supplies. Compared to standard metal halide or many T5HO systems, *Uni-Form* systems not only are more efficient, but are excellent at saving energy.

## Longer Life

*Uni-Form* pulse start systems offer up to twice the lamp life along with improved lumen maintenance. This directly benefits end-users by reducing lifetime operating costs. While 50% of standard metal halide lamps survive at the end of their rated life, 80% of *Uni-Form* lamps will still be operating at the end of rated life while operating on Venture's electronic power supplies.



# Better



## Technically Advanced

Unique to only Venture Lighting:

- "Hot Bulb" quartz arc tube forming process and manufacturing; Consistent wall thickness - Precision control of arc tube geometry; Most uniform thermal profile of any HID quartz arc tube.
- Tipless arc tube process: for improved arc tube thermals, combined with uniform bulb forming producing arc tubes with greater color consistency.
- Electronic ballasts/control gear for the widest range of wattages and dramatically improved lumen maintenance

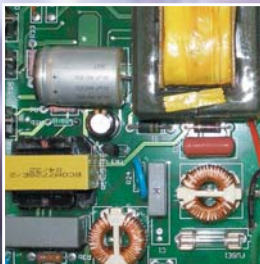
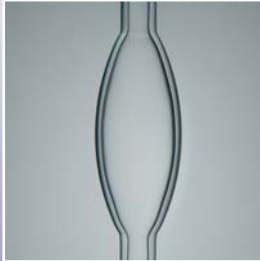
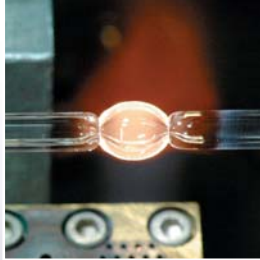
## Natural White™

- High CRI lighting, 90+
- Daylight color (5000K CCT); Bring daylight indoors and daylight to night

## Lighting with Electronics

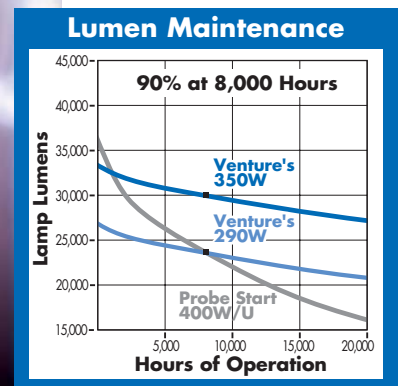
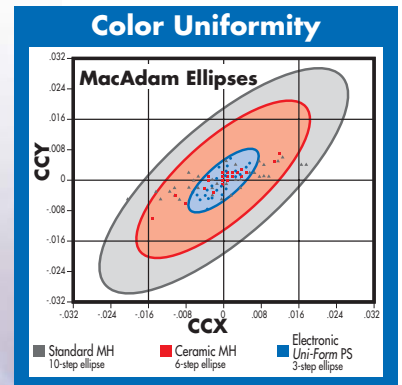
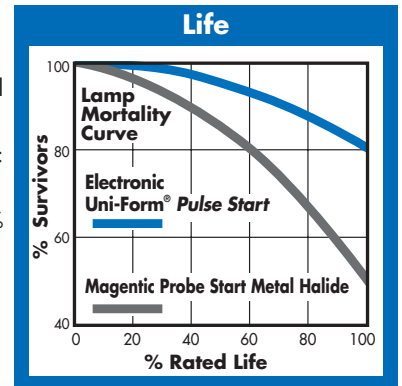
Venture's electronic ballast/control gear

- Get **40% more** mean lumen output compared to magnetic systems
- **Less system watts!** Save up to 150 system watts for the same mean lumens by switching from magnetic to electronic power supplies
- **Even Longer lamp life:** 80% survival at rated life
- Lightweight and **quiet** ("A" sound rating)

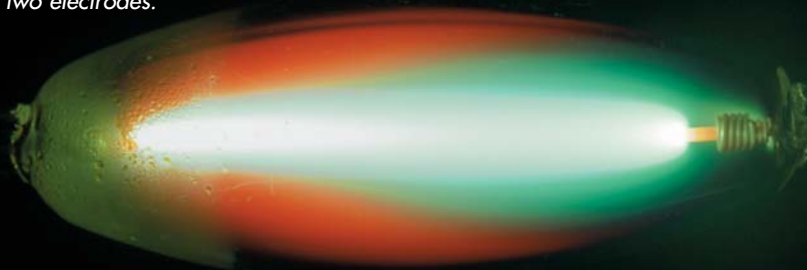


## The Result: Constant Lighting Systems

- More reliable: **Longer life** and greater survival rates
- **Color** consistency, uniformity and stability: Color rendering index (CRI) of 90+
- Little loss of light over the life of the lamps: 90% mean lumens (.90 light loss factor)



Light is produced by an arc of electricity between two electrodes.



# Brighter

# Low Watt, High Brightness



## Performance Plus™ Low Wattage Accent Lighting

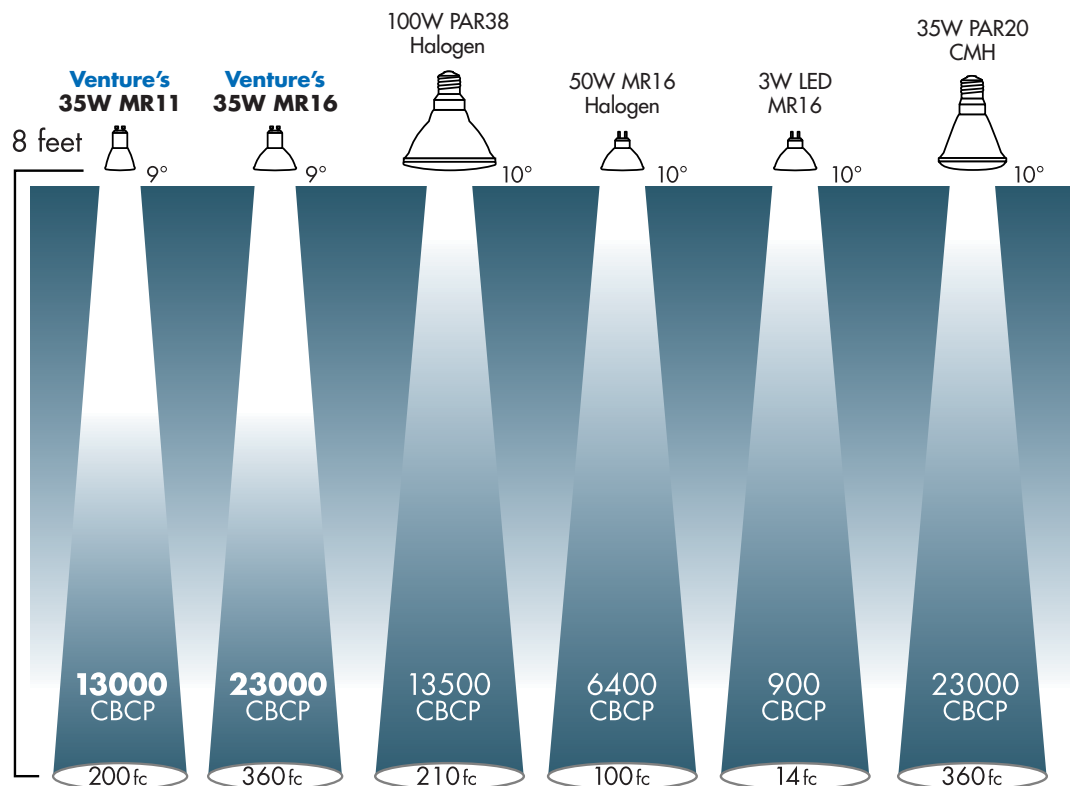
Benefits of Venture's Performance Plus™ electronic low watt systems for high powered accent lighting with less energy and more life and light

### The Venture Advantage

- High efficiency
- High CRI
- Beam control: tight beam angle
- Small size
- Maximum punch
- More choices across the visual color spectrum

## More Color Choices with Color+™ Filters

Through Venture's Color+ filters, more energy efficient color choices can be achieved. Venture's specialty filters, used with the high powered, low watt electronics, can achieve any color of the rainbow.



# Accent Lighting

VENTURE  
LIGHTING

## Performance Plus™ Electronic Systems

Lamp Type	Lamp Description	Center Beam Candle Power	Beam Angle°	Beam Type	Avg. Life Hours	CCT (K)	CRI	System Watts	Input Voltage	Ballast Description	Max. Case Temp (°C)
MR11	MPSE 20W/GX10/MR11/950	6500	9	Very Narrow Spot	6000	5000	90+	26	120	V020SSF120	80
MR16	MPSE 20W/GX10/MR16/950	10000	9	Very Narrow Spot	6000	5000	90+	26	120	V020SSF120	80
MR11	MPSE 35W/GX10/MR11/950	13000	9	Very Narrow Spot	6000	5000	90+	43	120	V035SSF120	80
MR16	MPSE 35W/GX10/MR16/950	23000	9	Very Narrow Spot	6000	5000	90+	43	120	V035SSF120	80
PAR30	MPSE 35W/PAR30/950	45000	4	Extremely Narrow Spot	9000	5000	90+	43	120	V035SSF120	80
PAR30	MPSE 70W/PAR30/SP/950	64000	6	Very Narrow Spot	9000	5000	90+	77	120	V070SSF120	80
PAR30	MPSE 70W/PAR30/FL/950	4800	40	Flood	9000	5000	90+	77	120	V070SSF120	80



## Applications

- Downlighting - Low Ceiling
- Track Lighting
- Retail Lighting
- Art Gallery/Museum Lighting



## Color+™ Filters

From different filters, achieve different color temperatures, from 2700° K (yellow) to 7000° K (blue) without significant loss in light output approximately 80% efficient

**MR11**



Dia. = 1 3/8" (35mm)  
MOL = 3" (76mm)  
Base = GX10

**MR16**

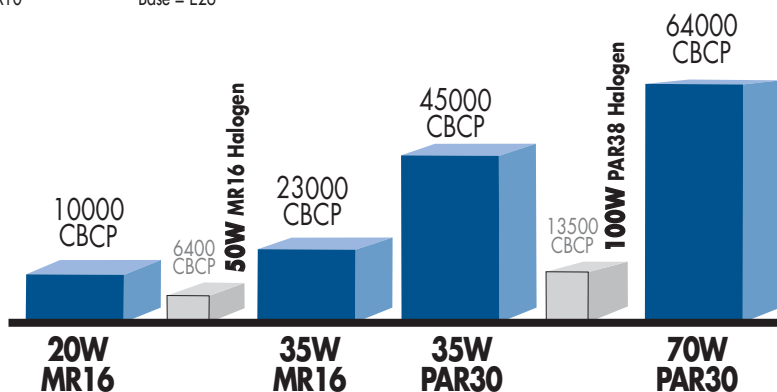


Dia. = 2" (51mm)  
MOL = 3" (76mm)  
Base = GX10

**PAR30**



Dia. = 3 3/4" (95mm)  
MOL = 4 1/2" (114mm)  
Base = E26



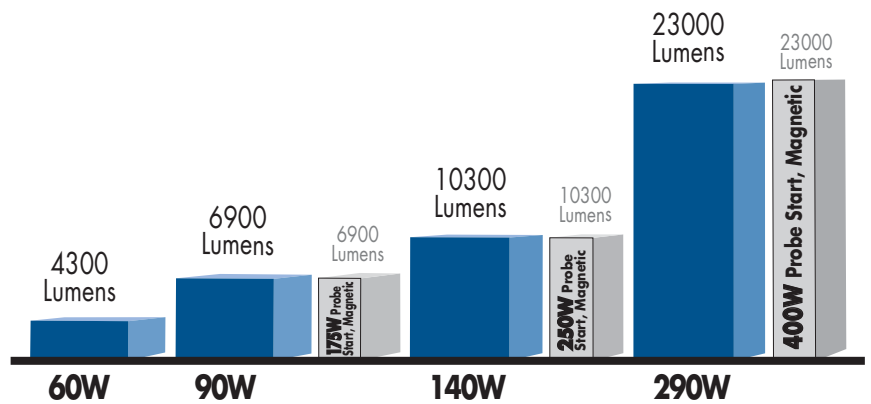
# Energy Savings and Same Light

## Performance Plus™ Energy Saving Retrofits

All the benefits of high color temperature, high CRI and better lamp life as well as energy savings with electronic power supplies.

## Maximum Energy Savings with Same Light

With the same mean lumens as its predecessors, Performance Plus™ electronic lighting systems can save up to 150 watts per luminaire.



The Venture Mean Lumen Advantage



### Performance Plus™ Electronic Systems

Lamp Type	Lamp Description	Initial Effective Lumens	Mean Effective Lumens	Avg. Life Hours	Survival @ 12000 hrs	CCT (K)	CRI	System Watts	Input Voltage	Ballast Description	Max. Case Temp (°C)
ED17	MPSE 60W/V/UVS/950	4800	4300	20000+	90%	5000	90+	69	120V	V060SSF120	80
ED17	MPSE 90W/V/UVS/950	7600	6900	20000+	90%	5000	90+	103	120V	V090SSF120	80
ED17	MPSE 140W/V/UVS/950	11500	10300	20000+	90%	5000	90+	158	120V	V140SSF120	80
ED28	MPSE 290W/V/UVS/950	26000	23000	20000++	95%	5000	90+	312	277V	OPE450	*

Note: Effective lumens are scotopically enhanced (for nighttime viewing) relative to standard 4K lamps

\* See engineering specifications



### Applications

- Landscape Lighting
- Downlighting - Low Ceiling
- Sconce Lighting
- Security Lighting
- Signage Lighting
- Floodlighting
- Parking Garage
- Energy Saving Retrofits
- Hazardous Location Lighting
- Bollard Lighting
- Roadway Lighting
- Municipal Lighting

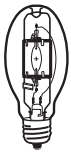


**EDX17**



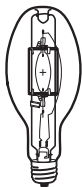
Dia. = 2 1/8" (54mm)  
MOL = 5 7/16" (138mm)  
LCL = 3 3/8" (86mm)  
Base = E26  
Narrow Neck

**ED28**



Dia. = 3 1/2" (90mm)  
MOL = 8 3/16" (211mm)  
LCL = 5" (127mm)  
Base = EX39

**ED37**



Dia. = 4 5/8" (120mm)  
MOL = 11 1/2" (292mm)  
LCL = 7" (178mm)  
Base = EX39

**T12**

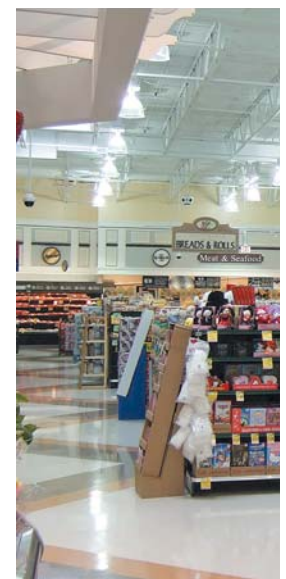


Dia. = 1 1/2" (38mm)  
MOL = 5 7/16" (138mm)  
LCL = 3 3/8" (86mm)  
Base = E26

**T15**

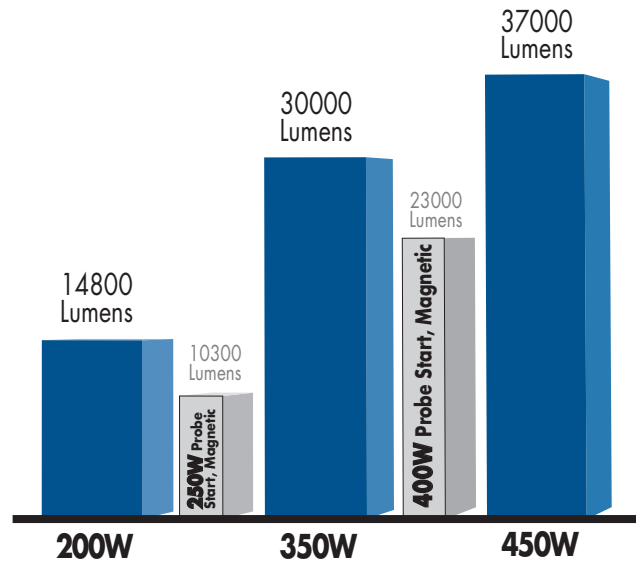


Dia. = 1 3/8" (46mm)  
MOL = 11 1/2" (292mm)  
LCL = 7" (178mm)  
Base = EX39



# More Light and Energy Savings

## The Venture Mean Lumen Advantage



**350W Natural White**

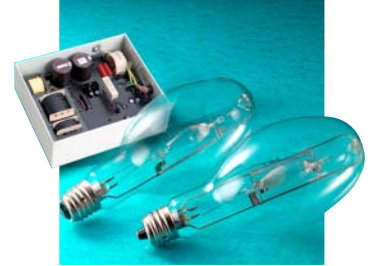


## Performance Plus™ Electronic Systems

Lamp Type	Lamp Description	Initial Effective Lumens	Mean Effective Lumens	Avg. Life Hours	Survival @ 12000 hrs	CCT (K)	CRI	System Watts	Input Voltage	Ballast Description	Max. Case Temp (°C)
ED28	MPSE 200W/BU/UVS/950	16500	14800	20000++	95%	5000	90+	216	277V	OPE200	*
ED37	MPSE 350W/BU/UVS/950	33400	30000	20000++	95%	5000	90+	375	277V	OPE350	*
ED37	MPSE 450W/BU/UVS/950	41000	37000	20000++	95%	5000	90+	465	277V	OPE450	*

Note: Effective lumens are scotopically enhanced (for nighttime viewing) relative to standard 4K lamps

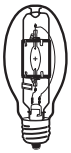
\* See engineering specifications



### Applications

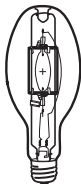
- Big Box Retail
- Warehouse lighting
- Distribution Center
- Energy Saving Retrofits
- Security Lighting
- Parking Garage
- Roadways
- Site Lighting

**ED28**



Dia. = 3 1/2" (90mm)  
MOL = 8 5/16" (211mm)  
LCL = 5" (127mm)  
Base = EX39

**ED37**

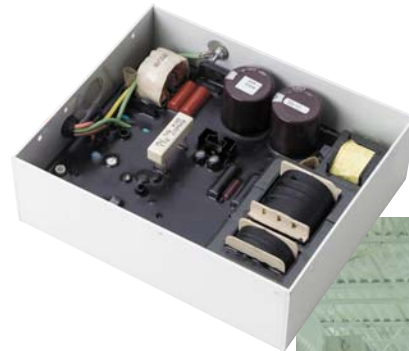


Dia. = 4 5/8" (120mm)  
MOL = 11 1/2" (292mm)  
LCL = 7" (178mm)  
Base = EX39

**T15**



Dia. = 1 7/8" (46mm)  
MOL = 11 1/2" (292mm)  
LCL = 7" (178mm)  
Base = EX39



## In Summary

Venture Lighting's innovative Performance Plus™ electronic lighting systems will change the world and the way you think about lighting.

- **More reliable:** Longer life and greater survival rates
- **Color** consistency, uniformity and stability
- **Little light loss**  
(90% lumen maintenance; 0.90 light loss factor)



[www.VentureLighting.com](http://www.VentureLighting.com)

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