

19150 SW 119th Avenue, Tualatin, OR 97062
 503.968.9968 phone 503.968.9747 fax

In the United States alone, there are over 400 million 400 Watt High-Intensity Discharge (HID) highbay luminaires in warehouses, big-box retail stores, airplane hangers, gymnasiums and other large-volume spaces. At 465 input Watts per fixture, this quantity of fixtures consumes 186 billion watts of electrical energy each hour of every day, or 186,000,000 Kilowatt hours. This is conservatively 1 trillion four hundred billion watts or 1.4 trillion Kilowatt hours per year. This is not only an impact on electrical generation, but costs the users over \$84,000,000,000, (\$84 billion) per year to operate.

Within the next 3 to 5 years, one half of these, approximately 200,000,000 units, will be replaced or retrofitted as ongoing maintenance or energy-saving measures.

The Light Edge, Inc. produces a product that allows one-for-one replacement of these highbays *at 55% energy savings*. The potential energy savings for the 200,000,000 units is 770,000 gigaWatts and \$46,200,000,000 per year.

Of course The Light Edge, Inc. on its best day could never produce enough products to come close to this lofty goal, but as the industry sees the advantages of this approach the market will grow, as evidenced by the surge of competitive luminaire manufacturers following the lead instituted by The Light Edge, Inc.

To achieve such dramatic energy savings, The Light Edge products utilize the latest in fluorescent technology, the T5HO (high-output) lamp with a programmed-start high-frequency electronic ballast. This technology not only provides energy savings, but produces improved color, longer life, no-delay starting, silent and flicker-free operation and reduced cooling loads on buildings.

The chart below shows a comparison of a typical existing system to The Light Edge Raptor™:

	400 Watt Metal Halide	Raptor™ 4-lamp T5HO
Input Watts	465	220
Initial Lumens	36,000	20,000
Mean Lumens	24,000 (at 40% of rated life)	18,960 (at end of life)
Lumen Maintenance Factor (output degradation)	.67 (at 40% of rated life – degrades further to end of life)	.95 to end of life
Lumens per Watt	77 initial, 52 at 40% of life	91 initial, 86 at end of life
Color Rendering (CRI)	65	85
Color Stability	Poor	Excellent
Start /Restart Time	10 – 15 minutes to full output	1 second
Lamp Life	20,000 hours	30,000 hours
Ballast	Constant Wattage Autotransformer	High Frequency Programmed Start Electronic
Frequency	60 Hz (stroboscopic potential)	40,000 Hz (no flicker)
Noise Potential	Audible “Hummm”	Silent
Minimum Start Temperature	-20F	-20F
Relamping Cost Ratio	‘x’	‘x’

While the chart shows a higher lumen output with the 400 Watt HID, the *quality** of that light is poor; subsequently less of the higher-quality T5HO light is needed to satisfy visual requirements and comfort. This technology is packaged into an anodized aluminum housing comprised of multi-use components, allowing fewer SKUs in inventory and fast order turnaround. The fixture is designed with the installing contractor and maintenance person in mind; few if any tools are required for installation or maintenance. The fixtures are lighter, smaller and more easily handled than HID highbays.

The clean lines of the product makes it suitable for architectural application, a plus for high-ceiling public spaces which until now were illuminated by industrial-looking products. Anodized colors allow coordination with interior designs, or inclusion of corporate colors in retail installations. The product is available in an extremely compact 1-lamp version (2" wide x 2" high) which replaces a standard 12" wide 2-lamp product. The addition of two extruded aluminum "wings" accommodate 2, 3, 4, 5 or 6 lamps in cross-section, replacing a wide range of inefficient HID and fluorescent sources.

The Light Edge, Inc. designs all its own extrusions, metal stampings and components and has them produced by local or northwest manufacturers whenever possible.

All product is job-packaged in special nesting rows that allow protected shipping with lamps installed. When supplied with pre-wired cord-sets, the installing contractor simply removes a unit from the box, hangs it with the snap-on clips and plugs it in. Labor savings are tremendous with this system.

*The quality of light produced by a source is determined by its Color Rendering Index (CRI). This is a metric that compares the ability of a source to render colors true, in comparison to daylight.

Source	Color Rendering Index (CRI)
Daylight	100
Incandescent	100
T5HO Fluorescent	85
T8 / T12 Fluorescent	62, with 75, 85 and 95 CRI available at extra cost
Metal Halide (MH)	65
High Pressure Sodium (HPS)	22

The higher the CRI, the broader the spectrum of visible light is present. The predominant photoreceptor in the human eye is the rod, which "sees" black/grey (actually it sees a limited portion of the spectrum, but "black/grey" suits this example); however, in the 2% focal field of vision the predominate photoreceptor is the cone, which "sees" color. Therefore, the better the quality of light delivered to this 2% focal area, the more the cones are stimulated, improving visual acuity. This may be accomplished with less light.