



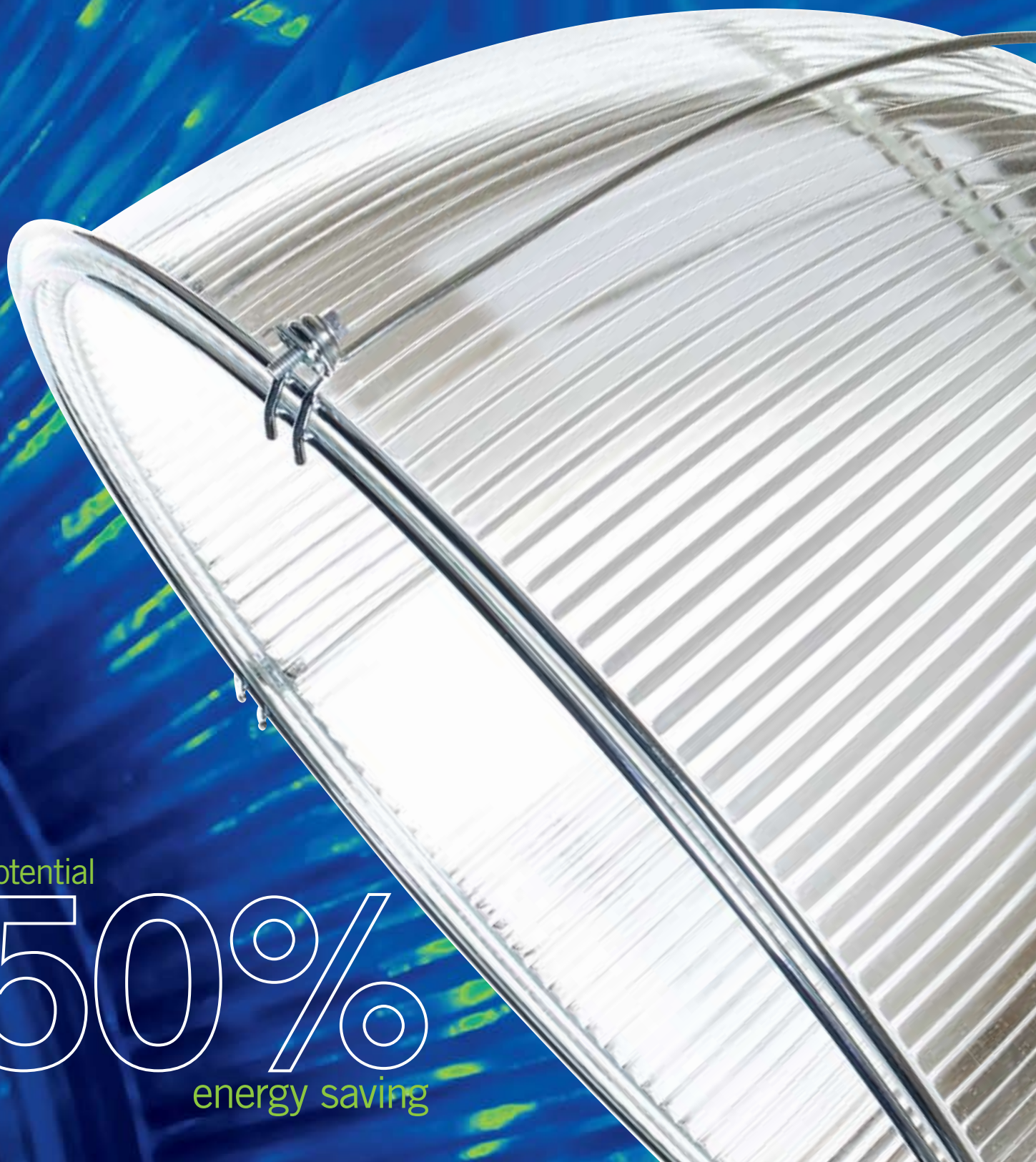
HOLOPHANE[®]
LEADER IN LIGHTING SOLUTIONS

superglass ecapsule

the energy savings are clear



superglass ecapsule



potential

50%

energy saving



Introducing a revolution in prismatic glass technology, the clearest high bay yet.

‘the **optimum** way to increase luminaire **efficiency** and minimise the number of **luminaires**’



superglass
ecapsule

to lower
turn up

SuperGlass ecapsule is the next generation of prismatic lighting technology. Holophane has redesigned the prism, and redefined the glass manufacturing process in such a way that our reflectors can now supply more light, more efficiently than ever before. ►

Already leading the pack in lighting performance, Holophane's glass luminaires are now taking a quantum leap forward to never before seen levels of lighting proficiency.

◀ **SuperGlass ecapsule** (available with Prispack S and Prismalume S) is the energy reduction system that dims high wattage metal halide lamps to 25% of initial lumens and offers up to 50% energy savings, a longer lamp life and improved lumen depreciation. Each SuperGlass ecapsule is available with a choice of lamps and distributions that cater for a variety of lighting requirements.

The **SuperGlass ecapsule** revolutionary development has typical payback periods of up to 12 months dependent on total scheme design and utilisation of the dimming feature.

Taking advantage of the reduced lumen depreciation of lamps run on electronic gear, you could convert to 350W lamps which will give an initial 50W (12.5%) saving at full output without dimming.

energy costs?
the technology



features and benefits

With **SuperGlass ecapsule** from Holophane you can expect:

- > More light with fewer fixtures installed
- > Lower installation costs
- > Lower annual energy costs
- > Reduced maintenance and relamping costs
- > Lower long-term cost of ownership
- > Superior visual comfort

Continuous dimming up to 25% of initial lumens

- > Up to 50% energy savings

1-10V signal control voltage

- > Industry standard control voltage

High frequency operation

- > Lamp colour temperature stable over dimming range
- > Reduced stroboscopic effect
- > Quiet operation

Soft lamp start-up

- > Improved lamp lumen depreciation

Built-in thermal protection

- > Protects ballast against excessive temperature
- > Automatically restores power when ballast temperatures drop

High power factor through dimming range (>0.97)

- > Low ballast losses (c 50% magnetic)

Unique auxiliary lamp option

typical applications

Industrial: Manufacturing, warehouses, aircraft hangars, water treatment facilities.

Retail: Superstores, malls and shopping centres, fitness centres, retail outlets.

Educational: Colleges and universities, gymnasiums, libraries, cafeterias.

to save lots of money?
spend a little more





Competitor



Superglass

glass technology

When light is reflected on a workplane, such as an inspection table in an industrial plant, it should benefit all the users of that space. In some cases, the distribution of light and shadows from a luminaire adversely affects one's comfort level and visual perception of that space.

Most luminaires are designed and optimised to perform as a single unit. However an application requires a system or set of luminaires. With that in mind, Holophane's luminaires with **SuperGlass ecapsule** were designed to work in concert with each other. This solution provides you with the best of both worlds, efficiency without sacrificing uniformity. As a result, you have an energy efficient and visually pleasing environment.

to reduce your specify a light you've

ignition technology

Holophane's **SuperGlass ecapsule** encompasses a unique ignition system that significantly reduces damaging electrode erosion and the resulting lamp lumen degradation, therefore increases life of both Metal Halide and High Pressure Sodium lamps.

Results - Preventing Wall Blackening

400W Metal-Halide Lamp after 8,000 hours



Magnetic Ballast



Electronic Ballast

why glass refractors?

With all of the materials available today (plastics, acrylics, polycarbonate), Holophane has chosen to focus its intellectual energy on borosilicate glass for one simple reason... the benefit of you, the customer.

Glass is actually a very difficult material to work with in manufacturing, but we have chosen to invest heavily in this technology since it has such great economic advantages in application. Here are just a few of the advantages...



Longevity

Doesn't degrade over time!



UV impervious

Sunlight and lamp energy don't affect it. No change with prolonged exposure to sunlight or lamp.



Temperature resistance

Typical fixture temperatures are comfortably within the melting point of glass.



Thermal shock

Borosilicate glass shows very low thermal expansion or contraction.



Chemical resistance

Remember the test tubes in chemistry class?



Dirt accumulation

Glass doesn't build static charge, unlike metals.



Recyclable

Made from recyclable glass.

risks?

never used before

The "Digital Ignition Technology", available with **SuperGlass ecapsule**, significantly reduces the electrode damaging energy generated by conventional "Impulser" or "Super Imposed Pulse" ignitors. (see electrode photographs to the right.)

The soft start technology in the **SuperGlass ecapsule** generates a high frequency burst of narrow ignition pulses within a nanosecond, in effect warms the electrodes prior to ignition, reducing thermal shock and ensures the electrodes experience the minimum ignition damage.

The **SuperGlass ecapsule** microprocessor monitors the lamp condition and once the lamp arc is established, within a burst of energy, the ballast immediately switches to current mode control.

Results - Extending Lamp Life

400W Metal-Halide Lamp after 8,000 hours



Smart Electronic Ballast for HID with High Frequency MicroStart™ Ignition

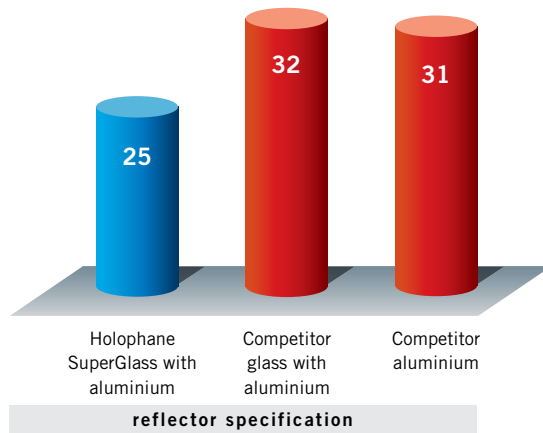


Conventional magnetic



superglass ecapsule - the ultimate in efficiency and

Number of Luminaires



to get more light, install fewer fittings

Quality you can count on

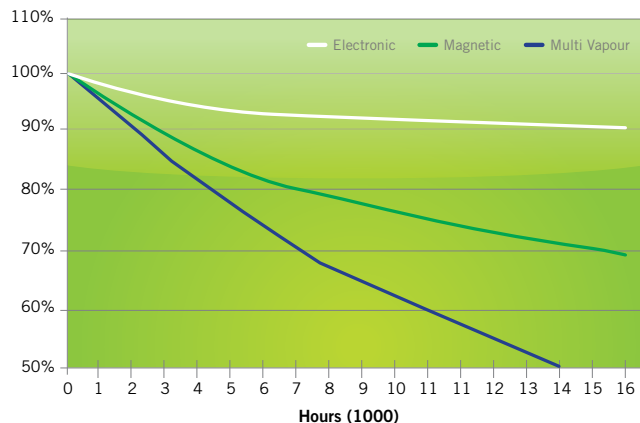
Holophane luminaires featuring SuperGlass™ perform drastically better than other standard HID systems. This means significantly lower initial costs and operating costs for you and the life of the product.

50%

superglass ecapsule - the power factor

Typical Lumen Maintenance vs Time

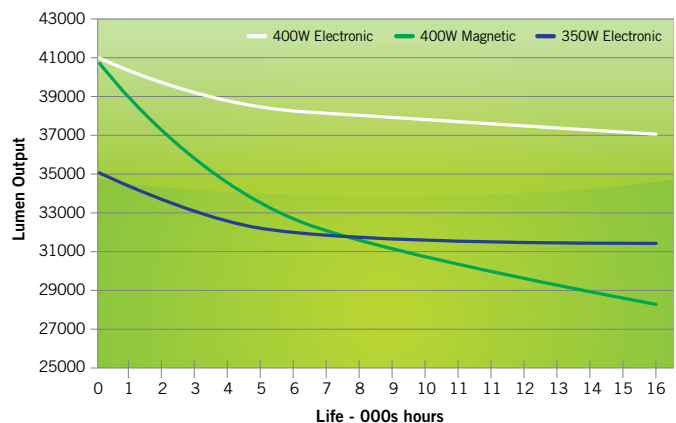
(Metal Halide Lamps)



The graph shows the typical lumen maintenance of electronic gear vs magnetic. After 16,000 hours you could lose over 30% lumen maintenance as compared to only 10% with electronic.

Typical Lumen Output vs Time

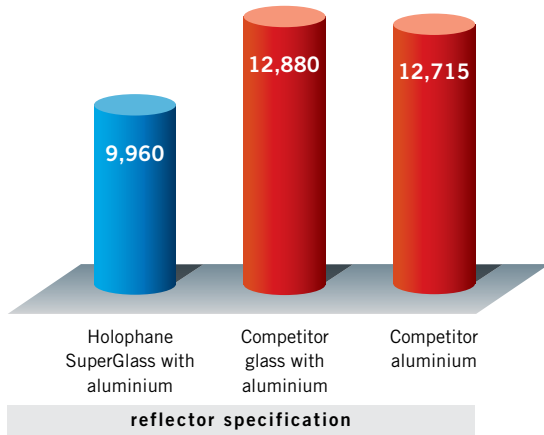
(Metal Halide Lamps)



By dropping down a lamp wattage (from 400W to 350W) and using electronic gear you make the energy saving of using a lower wattage lamp and getting a more stable lumen output over time.

uniformity

System wattage consumption



lower energy consumption over other HID systems.

Achieved by using the more efficient SuperGlass™ optic to achieve the required light levels. In turn, this means that less fittings are needed.

System Parameters

Room Dimensions	36 x 36 x 10 (Industrial = Dirty Environment)
Mounting Height	8 meters
Lamp Type	400W clear metal halide (open fixture rated)
Lumens	42000
Distribution	1.25:1
Lamp Maintenance Factor	8000 hours
Luminaire Maintenance	2 years
Reflectance	50/50/20
Target Average Lux	455
Target Uniformity	0.69

potential energy saving

Power Factor

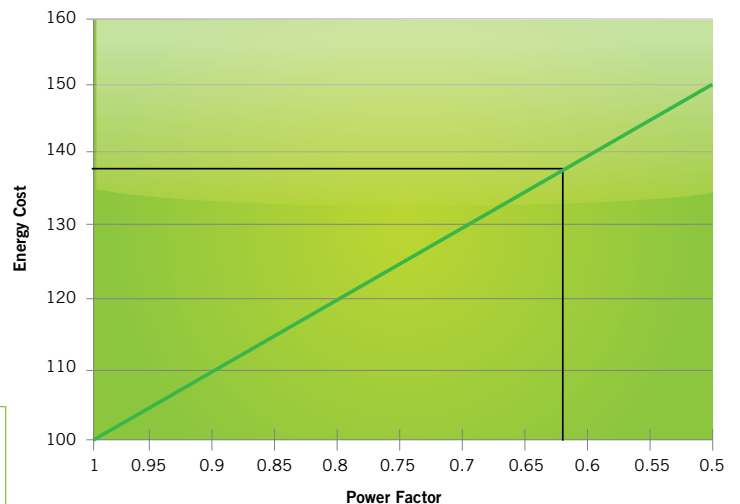
Power factor has a direct effect on apparent power and therefore the cost to run a discharge luminaire. When new, the power factor of a Holophane magnet ballasted product (core and coil reactor, ignitor and power factor correction capacitor) is in the order of 0.9 to 0.95. It is a characteristic of lighting power factor correction capacitors that they gradually lose their capacitance from the first day of use. This varies from site to site so the most accurate method would be to take a sample from the site and measure capacitance. However, our best estimate is 5% capacitance loss per year. Therefore to calculate the estimated power factor of existing luminaires use the following formulae.

$$\text{Pfc (current power factor)} = \text{0.95 (initial power factor)} \times \text{0.95 years (5\% year on year degradation)}$$

e.g. for an 8 years old installation, the estimated pfc = $0.95 \times 0.95^8 = 0.63$

This would result in energy charges 37% greater than expected.

Actual Energy Cost against Power Factor





holophane's optical design

In this very competitive environment, it is becoming increasingly important to reduce operating costs and improve profitability. Holophane is your expert when it comes to delivering the most efficient lighting solutions to help you achieve that goal. Taking advantage of the most advanced system technologies available, you can achieve a energy saving of up to 25% over existing installations. Holophane's **SuperGlass ecapsule** optics enable you to reduce installation, long term maintenance costs. Provides extended lamp life and controllable lighting allowing you to reduce your energy costs. It also comes with three additional benefits as standard!

reduced maintenance

glass reflector/refractor

The major advantage of glass over aluminium or plastic is its low electrostatic charge, which makes it less attractive to dust and dirt accumulation over time. A glass reflector/refractor has a much lower light depreciation over time than either aluminium or plastic. Fewer luminaires are required, significantly reducing installation, operating and maintenance costs.

self cleaning effect

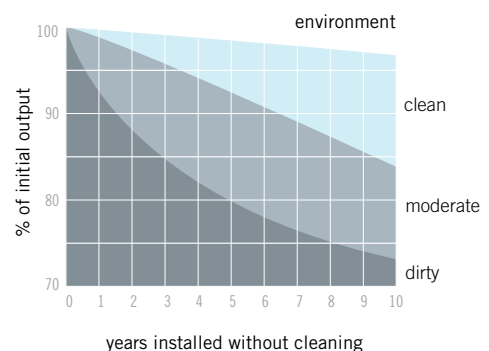
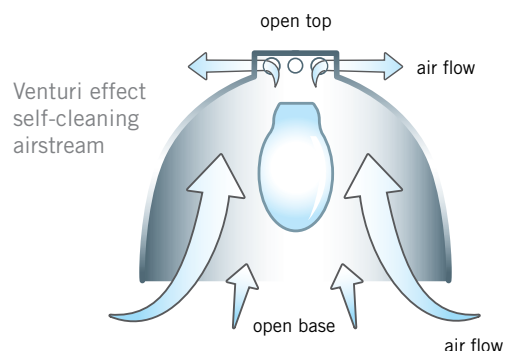
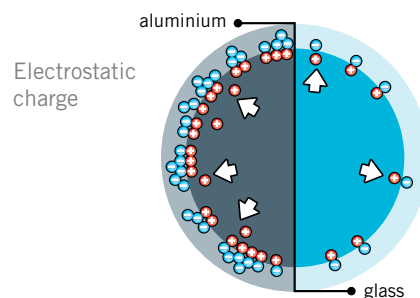
The open bottom and open top reflector design of Holophane luminaires uses the heat generated by the lamp to create a constant air flow through the reflector. This is called the 'Venturi effect'.

Dirt particles pass through the reflector and out of the open top, keeping the smooth inner surface of the reflector/refractor cleaner for longer. When cleaning is required, a simple wiping of the smooth inner surface will restore 'as new' efficiency.

luminaire maintenance

The graph opposite shows the Holophane glass reflector/refractor maintenance factors over a 10 year period without cleaning.

These curves can be used with confidence to calculate accurate illuminance levels throughout the chosen maintenance life of the installation. The lower dirt depreciation of Holophane industrial luminaires ensures more light from fewer luminaires yielding lower operating costs.



ordering details

Code Product Name

PPSE	Prismpack S ecapsule
PLSE	Prismmalume S ecapsule

Code Replacement Lamp Type

320HTPSP	320W Clear Protected Pulse Start Metal Halide Lamp
320HDPSP	320W Coated Protected Pulse Start Metal Halide
350HDPSP	350W Coated Protected Pulse Start Metal Halide
350HTPSP	350W Clear Protected Pulse Start Metal Halide Lamp
400HTPSP	400W Clear Protected Pulse Start Metal Halide Lamp
400HDPSP	400W Coated Protected Pulse Start Metal Halide

Code Dimming Rate

.ANF*	Analogue (1-10 volt DC) Fast Dim System
.ANS**	Analogue (1-10 volt DC) Standard Dim System
.DIF*	Digital (MADLI) Fast Dim System (availability to be confirmed)
.DIS**	Digital (MADLI) Standard Dim System (availability to be confirmed)

Code Distribution

.FD	Focused Distribution (6612 Reflector)
.ID	Intensive Distribution (6612 Reflector)
.BD	Broad Distribution (6611 Reflector)
.ED	Extensive Distribution (6611 Reflector)

Code Options

.RAL****	Customer specified colour
.B	Flush mounting bracket
.Q	Catenary mounting bracket
.WL	Wet location (IP65 capsule) with glanded entry
.CA	Safety chain attachment (chain not included)
.M	Electronic relay circuit complete with tungsten halogen standby lamp

PPSE	320HTPSP	.ANF	.FD	.RAL****
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Note: Cannot be used above 35°C external ambient temperature

* Fast dimming up speed (approx 5 seconds up and 3 minutes down). Used for warehouse aisles with presence detectors, where fork-lift drivers need maximum level as they move into an aisle to select a storage location.

** Standard dimming speed (approx 3 minutes up and 3 minutes down).
Used for open work areas with dimming control.



superglass ecapsule

To find out more visit www.holophane.co.uk/SuperGlass

Holophane Europe Limited
Bond Avenue, Bletchley, Milton Keynes MK1 1JG United Kingdom
Telephone: +44 (0) 1908 649292 UK Fax: +44 (0) 1908 367618
International Fax: +44 (0) 1908 272029
E-mail: info@holophane.co.uk

www.holophane.co.uk



experience lighting's best.