



**HOLOPHANE**<sup>®</sup>  
LEADER IN LIGHTING SOLUTIONS

# superglass


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

interior

**superglass**<sup>™</sup>



**superglass™**



Holophane has been designing high performance lighting solutions for over a century. Thousands of customers have chosen a brand they trust to provide the most efficient luminaires available. Holophane is continuing that tradition with this innovative new prismatic design and glass manufacturing process of the new SuperGlass™.

**TO LOWER ENERGY COSTS?  
TURN UP THE TECHNOLOGY**

# superglass™

## prismpower™

The principal purpose of prismatic glass optics is to improve lighting efficiency by reflecting and refracting maximum quantities of light and directing it precisely where it is needed with an optical device that will not deteriorate with time.

Holophane's new **SuperGlass™** reflector/refractors has taken the original Prismatic Optic Design and made it better. **SuperGlass™** has been specifically designed to allow some light to transmit through the prismatic structure, creating a controlled upward light component.

## what's SuperGlass™ ?

**SuperGlass™** 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. With **SuperGlass™** from Holophane you can expect:

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

## 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.



## the beginning

Let's start at the beginning...

the goal of any optical assembly is three-fold: provide high-quality lighting of the space, minimise glare, and maximise the utilisation of light from the source.

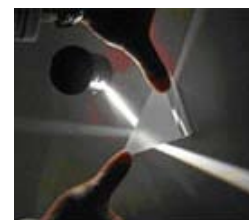
So, the objective of fixture design simplifies the strategic placement of optical components to control the direction of light from the bare source.

This mission can obviously be accomplished in an infinite number of ways, as demonstrated by the diversity of fixture construction in our industry, both today and in the past.

## how do prisms refract light?

Prisms work on the principle of **refraction**, which is Latin for "to turn aside, or bend". As light enters a transparent medium of greater density than air, the laws of physics dictate that the beam undergoes a bending proportionate to the reflective index change.

Without getting too technical, it is simply that the light beam conserves energy by travelling in different directions in different media. The degree to which the light bends depends on a number of factors... The properties of the materials at the interface (eg. air / glass), the angle of approach to the surface, and the shape of the prismatic structure.



## how do prisms reflect light?

As counterintuitive as it may seem, prism can actually be used to reflect light! Light traveling in a medium denser than air (eg glass) can literally be trapped within the medium! This phenomenon is called **Total Internal Reflection** (TIR for short), often seen in fibre optics.



## why prismatics?

The answer lies in the ability of these structures to provide a highly **efficient** and **effective** luminaire. They are efficient because they are made of transparent media, with minimal absorption of light energy.

A typical glass refractor assembly can be as high as 95% light throughput! They are **effective** because they provide the ultimate flexibility to aim the light in virtually any direction. Look around this web site and you will see the myriad of different light distributions that are possible.



TO SAVE LOTS OF MONEY?  
SPEND A LITTLE MORE



### 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.



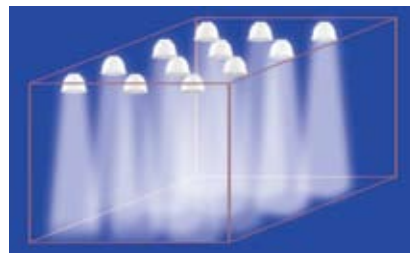
**Recyclable**  
Made from recyclable glass.

### SuperGlass technology

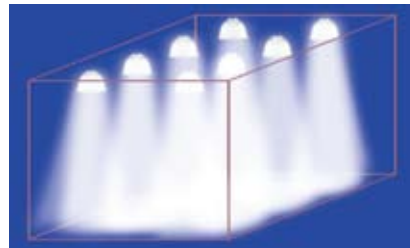
When light is reflected on a workplane, such as an inspection table in an industrial plant, it should benefit all the users of that space. In some cases, the distribution of light and shadows from a luminaire adversely affects one's comfort level and visual perception of that space.



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™** 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.



Competitor



Superglass

TO GET MORE LIGHT?  
INSTALL FEWER FITTINGS





superglass™



## 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™** optics enable you to reduce installation and long term maintenance costs. It also comes with three additional benefits as standard!

### 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

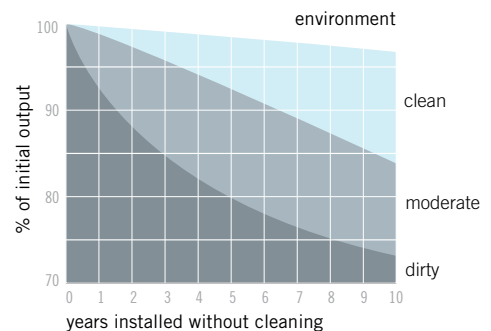
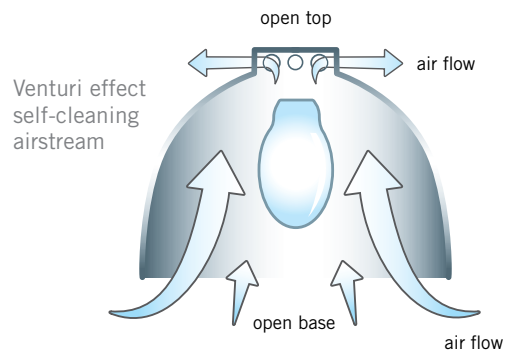
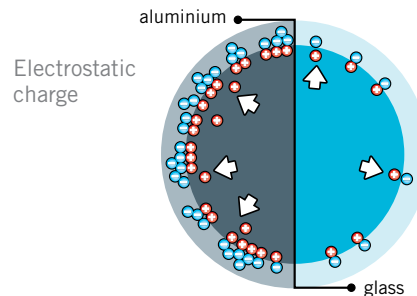
The open bottom and open top reflector design of Holophane luminaires uses the heat generated by the lamp to create a constant air flow through the reflector. This is called the 'Venturi effect'.

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.

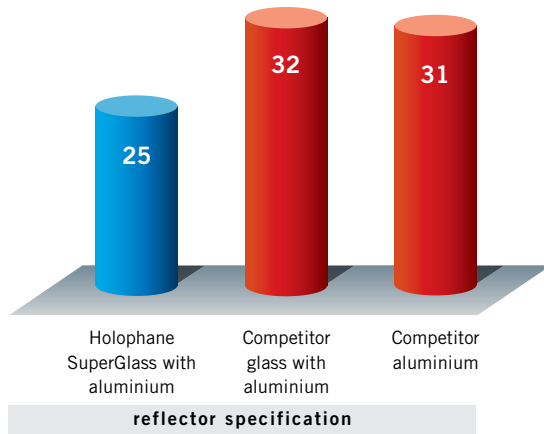


TO REDUCE YOUR RISKS?  
SPECIFY A LIGHT YOU'VE NEVER USED BEFORE

## the Ultimate in efficiency and uniformity

What does SuperGlass™ give you? **Up to 25% savings**

### Number of Luminaires

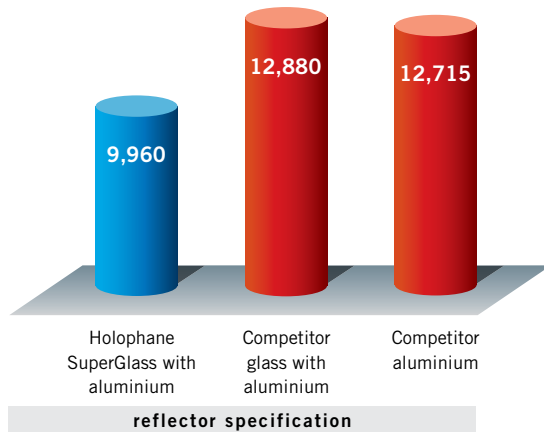


### to get more light, install fewer fittings

#### 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.

### 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



superglass™

**superglass™**

To find out more visit [www.holophane.co.uk/SuperGlass](http://www.holophane.co.uk/SuperGlass)

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**experience lighting's best.**