

**MORE THAN 120 YEARS OF INNOVATION
AND TECHNICAL EXCELLENCE**



HOLOPHANE®



HOLOPHANE'S AIM IS TO DEVELOP AND MAINTAIN LONG TERM RELATIONSHIPS WITH OUR CUSTOMERS. WE DO THIS BY OFFERING SUSTAINABLE SOLUTIONS, THAT PROVIDE OUR CUSTOMERS WITH A LOW COST OF OWNERSHIP, A HIGH QUALITY SOLUTION, TOGETHER WITH SUPERIOR CUSTOMER SERVICE.

David Barnwell
Managing Director
Holophane Europe Ltd.

**WELCOME TO
HOLOPHANE**



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INTRODUCTION

AN ENVIABLE REPUTATION THROUGHOUT THE WORLD

For over 120 years the name Holophane has enjoyed an enviable reputation throughout the world for expertise, quality and innovation in lighting. From the earliest days when the company pioneered its famous glass refractor, the Holophane name has been ever present as a leader in the field of luminaire and lighting design.

In today's environment, where landscape lighting, modern architecture and public space projects predominate, the Holophane name remains synonymous with quality design, high performance, low maintenance and cost-effective lighting.

Incorporating interior, exterior, amenity, road, rail and floodlighting luminaires alongside our control solutions, Holophane's product range is suitable for today's demanding, environmentally conscious world, offering lowest total cost of ownership, engineering quality, cutting-edge design and outstanding optical performance. Holophane, part of the Acuity Brands group, provides a comprehensive range of professional lighting services which offer advice and support on all types of professional lighting projects.

About Acuity Brands

At Acuity Brands, we're maximizing the potential of technology to create the best quality of lighting for every environment. With our industry-leading portfolio and proven expertise in indoor and outdoor luminaires, LED lighting technology and daylighting, lighting controls and components, we deliver integrated, intelligent solutions that expand the boundaries of lighting.

Acuity Brands, Inc. (NYSE: AYI) is the North American market leader and one of the world's leading providers of lighting and building management solutions. With fiscal year 2018 net sales of \$3.7 billion, Acuity Brands currently employs approximately 13,000 associates and is headquartered in Atlanta, Georgia with operations throughout North America, and in Europe and Asia. The Company's products and solutions are sold under various brands, including Lithonia Lighting®, Holophane®, Aculux®, American Electric Lighting®, Antique Street Lamps™, Atrius™, DGLogik™, Distech Controls®, DTL®, eldoLED®, Gotham®, Healthcare Lighting®, Hydrel®, Indy™, IOTA®, Juno®, Lucid®, Mark Architectural Lighting™, nLight®, Peerless®, RELOC® Wiring, ROAM®, Sensor Switch®, Sunoptics® and Winona® Lighting.

AcuityBrands.
Expanding the boundaries of lighting™

WE ARE PROUD TO HAVE BEEN AWARDED THE QUEEN'S AWARD FOR ENTERPRISE - INNOVATION 2017



A Queen's Award for Enterprise is the most prestigious award a UK based company can be granted and are bestowed each year by Her Majesty The Queen.

The awards are a globally recognised mark of excellence and were established by a Royal warrant on the 30th November, 1965.

The entry process to win such an award is rigorous and detailed, requiring a compelling narrative of your achievement over a set period of time. The winners of a Queen's Award are invited to Buckingham Palace where the award will be recognised by Her Majesty The Queen.

Development of Innovative Products

Holophane have received the Queen's Award for Enterprise in Innovation in recognition of our highly innovative lighting product development. This award is only given to a very select band of elite UK businesses across all industries and is globally recognised as a mark of excellence.

Trusted & Reliable UK Manufacturer

Winning such an award is testament to Holophane's dedication to providing our customers with market leading products and solutions. You can be assured of Holophane's expertise providing the best lighting solution available.

Products That Deliver Value

Our Royal award winning products and solutions are designed to provide you with value beyond their function. Through superior optical performance, enhanced energy efficiencies and smart connected lighting solutions, Holophane deliver you the best value.



OUR HERITAGE

THE HOLOPHANE TIMELINE

1896

In 1893 Otis Mygatt forms Holophane in France followed by the establishment of Holophane UK in 1896, headed by Pelham Trotter. Holophane was born and sold its first patented globe in 'white' or 'rose crystal for 2 shillings (10p).



1898+

Holophane begun to advertise in more than 60 newspapers, such as The Times and the Daily Telegraph. In those first months prospects were good. Orders for 100,000 globes were received and the offices were soon transferred to larger premises.



1910

Holophane were expanding into International markets due to this the company moved to new premises in Carteret Street, Westminster where Holophane continued to develop and enlarge its Laboratories. King George V as Prince of Wales visits Holophane.



1898

Otis Mygatt opens Holophane US in New Jersey.



1910

Holophane Company Limited was formed and acquired all the rights, patents and manufacturing process of Holophane New Jersey. The company embarked on a new programme of prismatic glassware for commercial use. A core company, Davidsons, produced this glass.



1920

Streetlighting became a strong speciality for Holophane. Sealed units had prisms moulded internally so that the outside surface was smooth for cleaning. The Duo Dome was particularly popular being supplied to Whitehall and other parts of London. Holophane US buy back the business from Holophane Limited in the UK for \$1,000,000



1922

Holophane began to establish a strong reputation. This was around the time that the famous Holophane lumeter was developed and for many years the only portable photometer available. Rapid development of the business necessitated another move to Elverton Street Westminster.



1930+

Holophane was commissioned to design and install the lighting of the enormous Battersea Power Station - not only the gigantic turbine hall, but other areas such as the coal-conveyor systems and the floodlighting of the tall chimneys



1939

Great Britain declares War on Germany. Holophane produces a range of ARP Air Raid Precaution Units designed to conform with war time lighting regulations. The company was also tasked to design fluorescent wall fittings for the illumination of wall maps in anti air raid operations rooms.



1923

In 1923 Holophane was entrusted with the lighting of St Paul's Cathedral. Holophane developed its lamp technology to modify greater glare and brightness. Part of this was the Holophane Refractor / Reflector Unit.



1937

Holophane was tasked with lighting Westminster Abbey.



1948

During the war Elverton Street was damaged by bombs on multiple occasions but work continued. The immediate post-war years were very busy for Holophane which was restricted by labour and materials shortages.



1953 When Queen Elizabeth was crowned, Holophane were given the full responsibility for the lighting of the Abbey. This was the first Coronation to be televised and filmed in colour. There had to be enough light yet not so much that it caused discomfort to the participants. Holophane used gold colour prismatic reflectors fitted into candelabras and chandeliers, with overhead projectors.



1967 In 1967 the company moved to a new and purpose built factory in Milton Keynes. This is still the present European HQ of Holophane. The laboratories developed an 8 metre swing goniophotometer and an integrating sphere.



1980s Holophane continued to lead the industry with other innovations, such as the Park Lane luminaire for parking lots. To complement our line of street and highway lighting fixtures, Holophane innovated the shallow-profile Panel-Vue to illuminate highway directional signs and advertising billboards.



1958 One of the Post War developments was the Shell Tower built in 1958 and the Shell Office Block. Some 22,000 glass conical prism lenses were used. Other contracts of this time included the National Gallery, the Tate Gallery, the Mansion House and Buckingham Palace.



1973 Holophane was expanding into international markets, first being Sweden followed by the Netherlands and Germany, and having great success internationally. In recognition of this Holophane was renamed Holophane Europe Ltd.



1996 Holophane celebrates its 100th year anniversary. A 100 Years of a Lighting Legend brochure was printed in celebration.



2001 In November 2001, Holophane's Parent Company National Services Industries NSI, split from the Lithonia Lighting Group and NSI Chemicals group. It was then formed into a new company (SpinCo) that was later renamed Acuity Brands Inc.



2014 Holophane's best selling products to date, the award winning V-MAX and Haloprism luminaire, is released. The products have been sold in 11 different countries worldwide. Both products have gone on to win numerous global awards. HEA-HEMSA Award – Product of the Year and the Light Middle East Award – Outdoor Product of the Year.



2017 Holophane Europe Ltd is awarded one of the UK's most prestigious business awards; the Queen's Award for Enterprise: Innovation 2017 in recognition of Holophane's highly innovative lighting product development.



2002 Holophane begins selling its first LED product – LED Series.



2016 2016 marked 120 years of trading for Holophane. This celebration was also accompanied with being awarded Manufacturer of the Year at Lux Live 2016. The judges said Holophane 'consistently delivers' and they are developing a suite of 'great' LED products and are 'embracing the digitisation of lighting' with 'confidence and flair'.



2018 Haloprism wins Industrial Lighting Lamp/Luminaire of the year at the Electrical Industry Awards 2018.





HOLOPHANE TODAY

FACTS /
FIGURES

in operation for
over **120** years

105
employed staff

offices, production
& warehouse
10,000m²

11 assembly cells

ISO 9001
& **ISO 14001**

capacity
1000+ units/day

test laboratories operating
to **ISO 17025**

INTEGRATED LIGHTING
ONE COMPANY, UNLIMITED SOLUTIONS

Our exclusive integrated lighting solutions produce lighting that is uniquely tailored to its application and more responsive to its environment. Lighting that maximizes performance and quality while driving out waste and inefficiency.

Holophane delivers innovative, integrated, intelligent solutions: both indoor, outdoor, lighting fixtures, controls and more - to create the best quality light for every environment.

- Buildings that use less energy while enhancing the quality of lighting and the level of worker productivity.
- Environments that blend daylighting with electric lighting to achieve sustainability goals and improve the learning environment.
- Retail operations that reduce energy consumption while helping to drive additional sales with elegantly lit spaces.

- Industrial facilities that use energy-efficient lighting solutions to not only reduce costs, but create an efficient and safe environment for staff.
- Parking facilities that increase safety and security while reducing energy use and improving aesthetics.

- Streets and highways that deliver optimal lighting conditions while reducing energy and maintenance costs.

Our portfolio of lighting solutions is incredibly smart and elegantly simple. Holophane is at the forefront of a transformation in lighting technology - and we're leading the way and driving the change.



SALES & DISTRIBUTORS
EUROPE

- ▶ **Headquarters**
United Kingdom - Milton Keynes
- ▶ **Manufacturing**
United Kingdom - Milton Keynes
- ▶ **Direct Sales Teams**
United Kingdom
Germany
Belgium and Netherlands
- ▶ **Distributors**
Eire
Norway
Sweden
Netherlands
Belgium
Denmark
France
Israel
New Zealand
Australia



DESIGN PRINCIPLES



Holophane's history lies in it being the first company to give practical application to the principles of the prism as the ultimate means of light control, harnessing and redirecting the output of light source by prismatic means to provide the best in cost effective, efficient lighting. Over 120 years ago Holophane sold the first patented light diffusing globe using borosilicate glass.

Today these principles remain core to Holophane's products and technologies, culminating in our PrismaLED technology. Holophane products featuring PrismaLED technology deliver the following benefits:

Volumetric Illumination

'Volumetric illumination' delivers an optimal mix of light to walls, partitions, vertical and horizontal work surfaces. Results in reduced shadow and increased perceived volume of space. Studies have indicated that increased lighting levels in horizontal and vertical illuminance increase the productivity up to 5.7%*.

Reduces Glare

Without a lens, LEDs can cause discomfort glare when viewed from certain angles. The PrismaLED prismatic lens prevents glare, providing a more attractive and comfortable lighting environment.

Maximises Colour Consistency

Over time, LEDs can discolour and fade, which leads to an inconsistent colour of light. The PrismaLED lens distributes the light from individual LEDs so that any colour change is consistent.

Minimises LED Failure effect

LED failures when using either a clear glass or plastic lens results in obvious black spots in the light distribution.

With a PrismaLED prismatic lens, the effect of a failed LED is greatly reduced, resulting in a general dimming.

Provides superior optical control

Standard lenses can create an uneven and poor distribution in lighting environments.

PrismaLED optics have more superior control over the light output, resulting in a more uniform distribution.

Open area



Aisle area



*Source: Mack trucks, Pa. USA, EC&M

THERMAL MANAGEMENT

The thermal management of luminaires and the design around this is critical to ensure heat is dissipated away from sensitive electronic components.

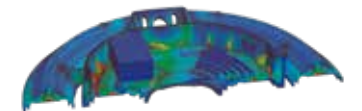
By doing so means that we can create a luminaire with market leading light output whilst achieving maximum product life. Complete 'through ventilation' of driver electronics chamber ensures minimal dust build up to also aid in the longevity of luminaires

This is why Holophane strives to design luminaires with best-in-class thermal management and we achieve this by utilising three heat transfer principles: Conduction, Convection and Radiation.



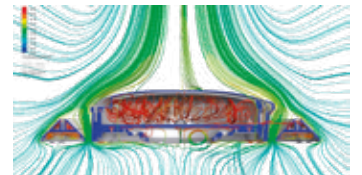
Conduction

From the LEDs and driver onto the LED module and gear housing respectively.



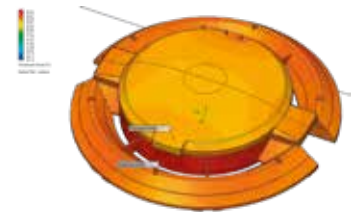
Convection

The air channel between the LED module and gear housing.



Radiation

Heat energy from the driver and LED is emitted from the casting in all directions.



WHY GLASS REFRACTORS?

With all of the materials available today (plastics, acrylics, polycarbonate), Holophane has chosen to focus its intellectual energy on glass for one simple reason... the benefit to 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 because it has great economic advantages in application. Here are just a few of these advantages...



Thermal shock

Glass shows very low thermal expansion or contraction



UV impervious

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



Longevity

Doesn't degrade over time!



Temperature resistance

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



Chemical resistance

Remember the test tubes in chemistry class? Making glass ideal for industrial environments and aggressive atmospheres.



Low dirt accumulation

Glass does not build an electrostatic charge unlike metals and plastics.



Recyclable

Made from recyclable glass.



ELIZABETH THE SECOND,
by the Grace of God of the United Kingdom of Great Britain and Northern Ireland and of Our other Realms
and Territories Queen, Defender of the Faith, to

Kulophane Europe Ltd.

Greeting!

We recognising the outstanding achievement of the said Award winner as demonstrated by the Kingdom of Great Britain and Northern Ireland

show Our Royal Favour do hereby confer
S AWARD
RISE:



AN AWARD
WINNING
BUSINESS

AWARD WINNING PRODUCTS

For over 120 years
Holophane has enjoyed
an enviable reputation
throughout the world for
expertise, quality and
innovation in Lighting.

We are proud over the years to
have been publicly recognised for
delivering industry leading product
developments and innovations by
some of lighting’s principal industry
bodies, associations and awards
platforms.



Queens Award for Enterprise
in Innovation 2017



CityMAX™

Lux Awards 2017
Exterior Luminaire of the Year



Lux Awards 2016
Manufacturer of the Year



HMAO

Lux Awards 2015
Exterior Luminaire of the Year

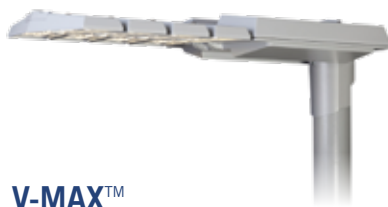


Haloprism™

Lux Awards 2013
Interior Luminaire of the Year



Electrical Industry Awards 2018
Industrial Lighting Lamp /
Luminaire of the Year

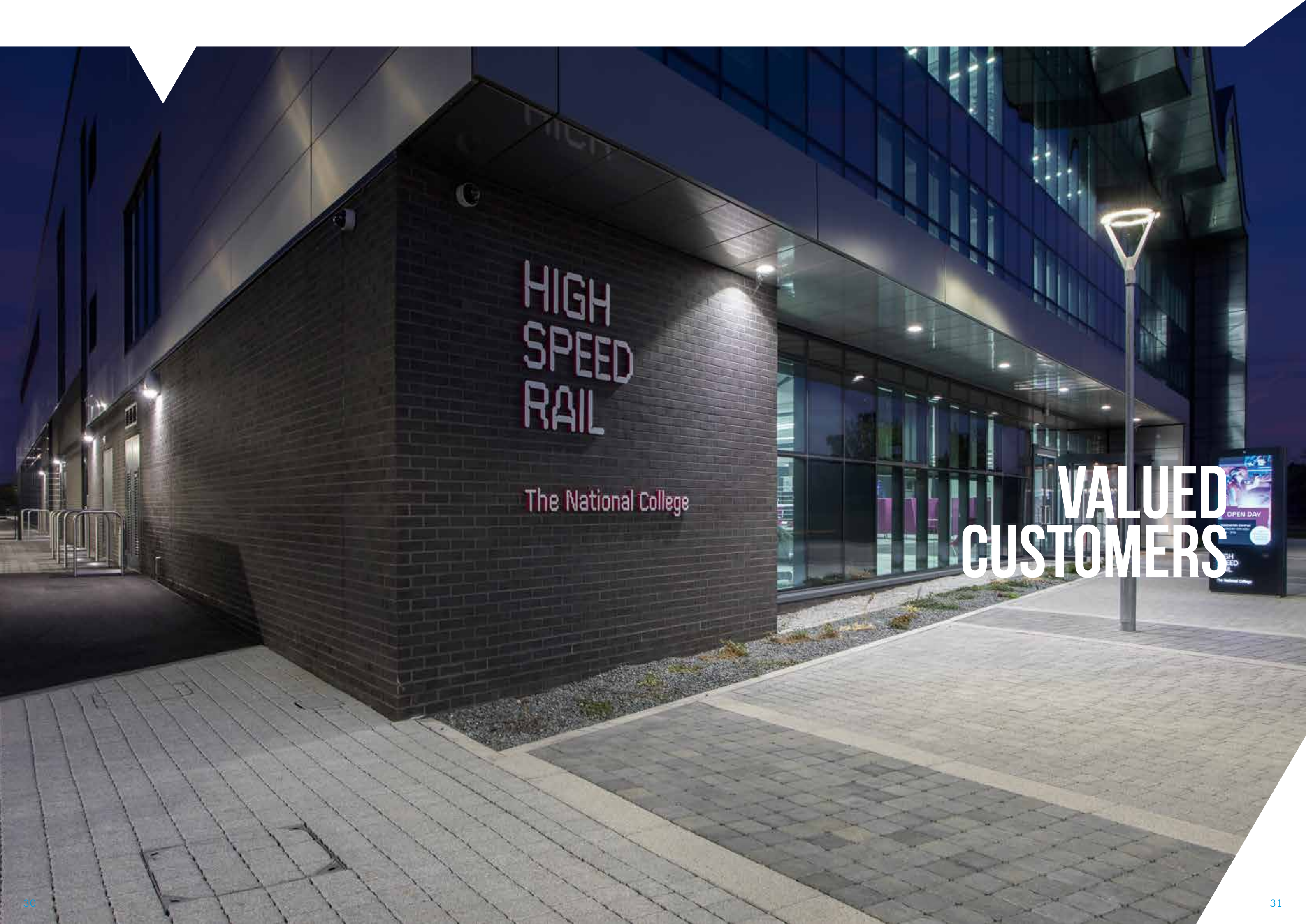


V-MAX™

Light Middle East Awards 2014
Outdoor Product of the Year

HEA-HEMSA Awards 2014
Product of the Year





VALUED
CUSTOMERS

VALUED
CUSTOMERS

Street and
road tunnels



Outdoor amenity
areas

Heathrow



Industrial

Gatwick



voestalpine



Rail



National accounts

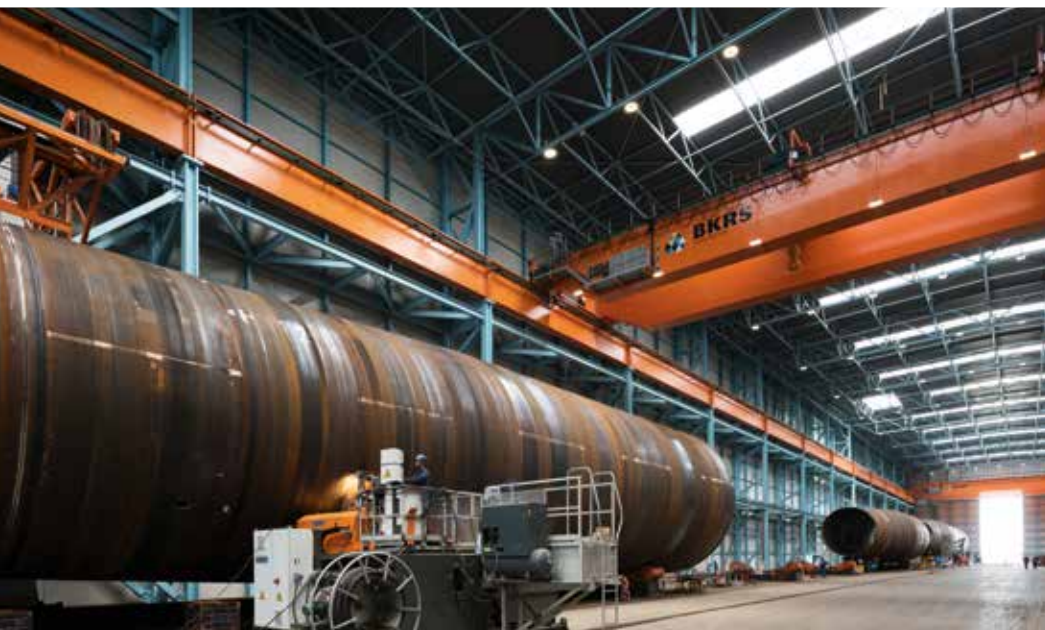
Sainsbury's



Logistics and
warehousing

Travis Perkins





AMENITY



Selecting the best outdoor LED luminaires can be daunting, especially when designing for a variety of applications on a single site. Whether it is performance, long life, energy savings or aesthetics that drives your decision, Holophane has a variety of LED family luminaires delivering better lighting from every angle.

Through the delivery of high-performance, integrated lighting, controls and modern relevance, our solutions promote a triple bottom line providing a superior visual experience for occupants, reduced operating and maintenance burden, and increased environmental sustainability.

INDUSTRIAL



Holophane's solutions for industrial spaces maximize energy savings while reducing maintenance costs through the use of advanced LED lighting technology, full range dimming, and flexible, intelligent control options.

Our systems include lighting and controls for a stand-alone or networked application, provide the flexibility to reconfigure lighting to accommodate changes in the warehouse configuration, and the ability to rezone and regroup fixtures for changing requirements.

Our standard and custom industrial lighting fixtures are known for their superior optical design and efficient illumination. Custom reflector designs, special finishes and unique housings satisfy the most challenging applications and withstand dirt, heat, moisture and corrosiveness.



LOGISTICS & WAREHOUSE

We are a single-source provider of today's most innovative technology, offering an extensive portfolio of products and partnering with building professionals to deliver a cost-effective, safe and productive workspace.

Traditional warehouse lighting is a drain on your resources. It wastes energy, certainly. But it also requires both routine and unexpected

maintenance. That includes labour that can be expensive. It struggles to comply with ever-changing energy codes. A constant worry, this can add up in maintenance which is costly and time-consuming. It leaves employees in darker spaces than are warranted by their tasks. That affects productivity, and quite possibly, can create an unsafe work environment.

Holophane's product range is suitable for today's environmentally conscious world, offering lowest total cost of ownership, engineering quality, cutting-edge design and outstanding optical performance suitable for a wide range of logistic and warehousing projects.



STREET, ROAD & TUNNEL

As a leader in the development of emerging technologies which reduce energy consumption in outdoor lighting applications, Holophane delivers the broadest portfolio of complementary street lights, monitoring systems and controls.

Our solutions deliver superior performance, increased system life, and the lowest total cost of ownership for municipalities, utilities, and government infrastructure. Combined, lighting and control solutions for infrastructure and roads will protect the LED investment, extend LED fixture life cycle, reduce payback time and increase investment value as well as energy performance by up to 80%.



RAIL

The rail environment demands flexibility to optimise lighting control and achieve significant energy savings. Controls are required to detect movement, daylight contribution, variations in tasks performed, and calendar/clock scheduling among others.

The aim of any controls system should be to provide maximum utilisation savings while providing minimum interruption to worker and customer productivity and ensuring safety.

By combining the latest in lighting technology with multiple control options, Holophane delivers intelligent indoor/outdoor lighting solutions. Our engineering and technology departments combine state-of-the-industry LEDs, printed circuit boards, optics, thermal management systems and controls to deliver the best performing systems available. Holophane blends the best materials and processes to deliver a measurable, premium lighting experience. As a result, customers benefit from maximised lighting performance and minimized cost of ownership.

The use of prismatic glass refractors help break up the image of the LEDs with a PrismGlow effect. This reduces the glare normally associated with individual LEDs and eliminates hotspots on the working environment.



ENSURING QUALITY

QUALITY AND PRODUCT QUALITY

ISO9001

The Holophane name is synonymous with quality, high performance luminaires.

This reputation has been established over 100 years of commitment to the manufacture and supply of luminaires of outstanding performance and design. In order to maintain and improve upon this high level of quality, Holophane was one of the first luminaire manufacturers in the UK to achieve Registered Firm status to ISO9001. This ensures that the required high standard is maintained throughout the manufacturing system, from receipt of components to delivery of the finished product.

Holophane products are developed in our Product Design Office, equipped with modern C.A.D. systems and working to ISO9001. Full type testing to the European Standard for Luminaires, EN60598, is carried out in our laboratory. All luminaires will carry the mandatory CE mark, as required by European law, confirming that our products comply with the relevant EU standards confirmed by test data obtained in our approved laboratories.



TESTING AND

LAB SERVICES

Tests of Photometric, thermal and electrical performance together with electromagnetic compatibility, is tested in our approved laboratories and every luminaire manufactured is tested for function and safety before being dispatched from our factory.

Holophane boasts one of the worlds largest and impressive sets of photometric equipment. This includes a 12-metre arc length multicell Gonio-Photometer and a 4m diameter intergrating sphere utilising a state-of-the-art spectrometer.

Holophane has successfully achieved the Environmental certification ISO 14001. Using ISO 14001 provides assurance to company management and employees as well as external stakeholders that environmental impact is being continually measured and improved. Benefits include:

- ▶ Reduced cost of waste management
- ▶ Savings in consumption of energy and materials
- ▶ Lower distribution costs
- ▶ Improved corporate image among regulators, customers and the public



PROFESSIONAL

AFFILIATES



The Lighting Industry Association



Highway Electrical Association



RIBA



Lumicon Member



The Institute of Lighting Professionals



RoHS Compliant



Chartered Institute of Building Services Engineers - Society of Light and Lighting



European Norms Electrical Certification





ENVIRONMENTALLY CONSCIOUS

ENVIRONMENTAL ISO14001

The Environment

Holophane takes its responsibility to environmental issues seriously. As well as attaining accreditation to ISO14001 and maintaining compliance at each annual external audit, we have set ourselves the target to continually improve our performance with one objective being to further reduce and recycle generated waste by 20% year on year. To monitor that we are achieving our objective we are continually conducting internal audits which focuses all employees towards the same culture of environmental awareness.

All product design processes encompass the requirements of the EuP directive and also conforms to WEEE and RoHS requirements. This is enhanced by our own in-house thorough evaluations of products environmental profile considering all aspects of the products life from 'Cradle to Grave'.

Distribution

Holophane produces products within the geographic market that they will be installed which means minimal transport with quicker availability for customers thus complying with the aims of the product environmental profile.

The packaging is designed in compliance with EU 94/62/EC packaging directive in order to

reduce the weight and volume and consequently the environmental impact of the distribution phase of the life cycle of the product.

All of our product packaging uses 100% recyclable cardboard.





SUPPLY CHAIN

SUPPLY CHAIN EUROPE/UK

Holophane has had its manufacturing Centre of Excellence situated at Bond Avenue, Milton Keynes since 1967 where a wide range of professional lighting products have been developed and produced to meet the needs of both the local UK market as well as supplying further afield.

Holophane as a business has enjoyed continued growth and development in manufacturing and associated sales during the time at their 10,000m² site in Milton Keynes. We serve the European and Scandinavian markets.

The majority of our OEM suppliers are European companies with a significant number of these suppliers being UK based, with a large proportion of these local to the Holophane Europe factory.

With our continual investment in our business we look to sustain local employment, ensure British economic investment and contribute to British manufacturing output. As part of this investment our business philosophy is that our products are Crafted in Britain.



CRAFTED IN BRITAIN



For over 120 years Holophane has designed, developed and manufactured lighting solutions from our facilities in the UK. With our continual investment in our business we look to sustain local employment, ensure British economic investment and contribute to the British manufacturing output.

As part of this investment, our business philosophy is that our products are:

Researched in Britain

Liaison with customers ensuring products we produce meet their requirements.

Designed in Britain

By our in-house design team who understand British and European markets.

Tooled in Britain

Using local and national suppliers thus supporting the British economy.

Tested in Britain

By our in-house laboratory and photometric teams ensuring compliance with British and European standards.

Manufactured in Britain

By our 105 strong factory workforce in Milton Keynes delivering the best quality expediently to our customers.

Supported in Britain

By our in-house project office ensuring we provide the best service to our customers.





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Expanding the boundaries of lighting™

