

## CORPORATE OVERVIEW

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PROVEN ILLUMINATION SOLUTIONS  
THAT TRANSFORM SPACES





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## Our Story

Lumascapе transforms outdoor architectural spaces with precision-engineered lighting solutions that are proven to perform.

Lumascapе was founded in Australia in 1991 to provide exceptionally durable, reliable architectural lighting solutions that perform in extreme conditions. For three decades, customers have come to rely on Lumascapе's high-quality, innovative luminaires to solve their toughest lighting challenges.

Today, we have grown to become an industry leader, exporting products to more than 40 countries across four continents. Our dedicated global network of agents and distributors are specialists in addressing the unique customer and business needs within their respective markets.

Our company was built on a belief in the boundless power of illumination. We recognize that light not only transforms a space; it transforms the individuals, communities, cities and cultures who move through that space. At Lumascapе, we have a deep respect for the emotions and actions that light can elicit in the built environment.

We are passionate about helping our customers harness the power of light with reliable luminaires that will transform spaces. It is why we are relentless in upholding the highest standards for our production quality, customer service, training and technical support.

The transformative effects that our products bring to the built environment are expertly showcased in countless projects. These success stories from around the world reinforce why customers trust us as a knowledgeable and collaborative partner for their most important projects.

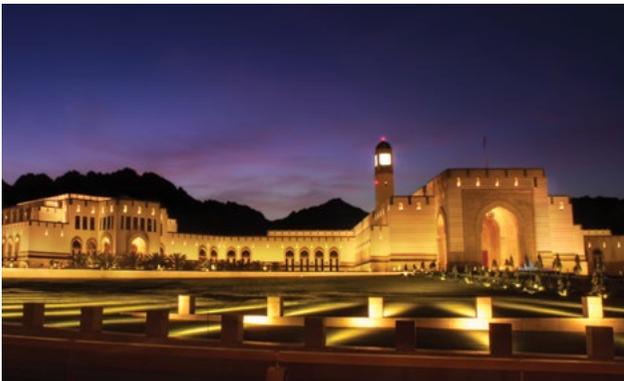
Creativity and performance are essential when it comes to harnessing the power of light. Our evocative lighting technology delivers superior output and greater control over mood and ambience, bringing projects to life.

Our design philosophy reflects four basic tenets: customer satisfaction, reliability, durability and next-generation technology. We combine sophisticated design, advanced technologies, quality materials and rigorous testing to manufacture a comprehensive range of lighting systems that consistently exceed performance expectations.

All our products are designed to meet and exceed the requirements for various standards including UL, ETL, CE and CCC, as well as other international requirements.

Lumascapе invests significant time and funding each year into research and development of new and innovative LED lighting technologies and luminaires. We have created the largest and most sophisticated lighting laboratory in Australia, and our state-of-the-art manufacturing facility is built to accommodate the latest industry advancements.

Our rigorous standards include in-line and post-build testing to ensure products of the highest quality. All our products are endorsed by third-party testing and meet or exceed industry testing standards for energy conservation and lighting performance. Without compromising quality, we design highly sophisticated lighting systems, controls, hardware and software that are easy to specify, install and maintain.







**Hunter**

# Lumascape Joins the **Hunter Industries Family**



**In 2019, Lumascape joined the Hunter Industries family of companies, renowned worldwide for innovation and product quality.**

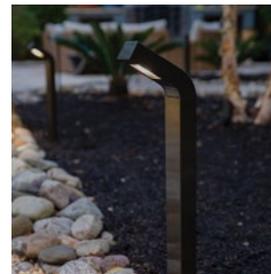
Hunter Industries is a global, family-owned manufacturer of premier solutions for the irrigation and outdoor lighting sector. Headquartered in San Marcos, California, since 1981, we offer a complete spectrum of water- and energy-efficient solutions for residential, commercial, municipal, and agricultural applications.

From rotors and valves to weather sensors and smart controllers, our philosophy is to produce products that allow landscape professionals to use as little water and energy as possible to create optimal functionality and ambience while promoting sustainable resource use.

Driving our continued success is the combined energy and talents of the nearly 3,000 people on our team. Together, we create a diverse array of products that can be seen all over the world, from residential landscapes, stadiums, and national landmarks to theme parks, commercial complexes, hotels, and municipal buildings.

We are committed to pushing the boundaries of technology, conservation, quality, and customer experience in every product and project we undertake. That is why our core mission will always remain the same: to deliver valued products and services backed by unwavering customer support, grow the company conscientiously, and remain true to the culture that makes our employees proud to work at Hunter.

**Learn more at [hunterindustries.com](https://hunterindustries.com)**



# Our Capabilities

Lumascape is committed to providing high-quality, value-based solutions that are simple to specify, install and maintain.

## Design & Development

Our highly skilled engineers, scientists and product designers specialize in the development of high-performance, field-proven lighting and control systems. All engineering is conducted by Lumascape in our world-class facilities, including mechanical, optical, electronic and firmware development.

While all our tests exceed industry standards to ensure the highest reliability, many of our products exceed tough military-grade standards.

All our products go through a series of rigorous Lumascape Design Acceptance Tests. This procedure consists of 47 comprehensive tests covering shock, vibration, corrosion, UV, high-voltage discharge, surge immunity, EMC, thermal shock, high ambient temperature, photometric and more.

MTBF is calculated in accordance with Telecordia SR-332 exceeding 200,000 hours even at elevated ambient temperatures.

Lumascape's design center is the largest and most sophisticated design and testing facility in Australia, with state-of-the-art equipment including:

- 52' (16 m) goniophotometer
- Integrating spheres
- Salt spray corrosion chamber
- Thermal chamber
- Draft-free chamber
- UV chamber
- Test bed for impact and vibration testing
- IP and pressure testing
- IK testing
- High-resolution thermal imaging
- EMC; and more

## Manufacturing

All production is conducted in our state-of-the-art facilities, which are ISO 9001 and ISO 14001 certified. We perform 11 in-line and end-of-line tests on every product.

End-of-line testing includes 24- to 48-hour burn-in with a temperature cycle between -14°F to 122°F (-10°C to 50°C). After a burn-in test, every product receives a final communication test, followed by photometric and colorimetric testing in accordance with LM-79.

## Project Management

Our project management experience and technical competence ensure that projects are delivered on time, in full and to the required standard. For decades, Lumascape has been a supplier on complex lighting projects in varying applications throughout the world. Early involvement in projects enables a greater ability to influence design outcomes, reduce project costs and minimize delivery time through value engineering and manufacturing analysis.

We consistently achieve optimal results through best management practices in areas such as:

- Design and specification assistance
- Materials selection
- Standardization in selection and sizing of equipment
- Installation procedures
- Manufacturing
- Programming and scheduling
- Refinements
- Commissioning process; and more



## Powder-Coating Process

At Lumascope, we select only top-quality materials and surface protections. Aluminum luminaires are protected by the application of marine-grade powder-coating or anodizing processes specifically designed for durability in harsh, coastal environments.

The powder-coating process on all Lumascope products includes:

- Castings are inspected and mechanically processed to remove unwanted surface imperfections.
- A vibratory finish rounds edges for better paint coverage at the corners and removes potential corrosion “lead-ins.”
- Acid etching removes dirt, dust and oil and provides additional surface keying.
- Parts are rinsed in two separate tanks with deionized water of conductivity less than 5  $\mu\text{S}/\text{m}$  to ensure all etch substances are removed.
- Pre-treatment of metal with chrome-free conversion coating ensures additional corrosion resistance and powder-coat adhesion.
- Controlled oven dry provides proper retention of conversion coating to ensure parts are fully dry prior to application of powder.
- An epoxy undercoat applied, approximately 75  $\mu\text{m}$  (3 mil) thick, is applied with controlled curing to ensure proper top-coat bond and provide an excellent, non-hygroscopic barrier.
- A polyester top-coat, approximately 75  $\mu\text{m}$  (3 mil) thick, ensures maximum UV protection.



## Our Products

Lumascap offers an ever-growing portfolio of versatile, high-performance LED luminaires in a wide range of types, form factors and output levels.

### FACADE

This range includes a series of high-performance, state-of-the-art LED linear and spotlight luminaires perfect for high-profile exterior architectural projects, illuminating surface textures and accentuating architectural features. These versatile luminaires are available with white, color-changing and tuneable white light engines and offer industry-leading EasyGlow™ visual comfort, CoolDrive™ thermal management and PowerSync™ digital control technology.

### DIRECT VIEW

This range includes precise controllable marker and linear luminaires that support stunning effects and excellent light-blending properties on interior and exterior displays. From highlighting architectural elements to super-smooth crossfades and color flows, imagination is the only limitation when combining direct view luminaires. These versatile luminaires are available with white, color-changing and tuneable white light engines and offer industry-leading CoolDrive™ thermal management and PowerSync™ digital control technology.

### IN-GROUND

This range has outstanding performance ideal for wall washing, pathways, lighting trees and enhancing architecture. Installation options including pedestrian, slip-resistant and drive-over applications make the in-ground range incredibly versatile. These luminaires feature aiming options to ensure a perfect lighting design after installation. Available in a variety of color temperatures, beam angles, optical and shielding combinations, the in-ground range performs consistently in any application.

### UNDERWATER

With exceptional performance and control technology, this range offers a reliable solution for underwater, swimming pool and water feature applications. Rugged, highly corrosion-resistant materials ensure the luminaires maintain top performance in harsh environments. Available in a variety of color temperatures, beam angles, optical and shielding combinations, the underwater range has an option for you.

### WALL MOUNT

This range includes a series of compact and highly adjustable luminaires perfect for architectural applications such as feature highlighting, area lighting and indirect illumination. All luminaires are sealed to IP66/67 and made from corrosion-resistant materials and coatings that are perfect for both internal and external applications. These luminaires are available in a range of color temperatures, beam angles, optical and shielding combinations.

### GROUND MOUNT

This range includes a series of highly adjustable luminaires suitable for landscape and decorative applications. Available in a variety of color temperatures, beam angles, optical and shielding combinations, the ground mount range is incredibly versatile and easy to install.

### POWER & SUPPLY

A highly reliable and stable power supply is key to maintaining a trouble-free lighting installation. Ripple-free power supplies feature over voltage, over current, short circuit and thermal protection for peace of mind. Lumascap has a range of options suited for almost any application.

### BOLLARD & PATHWAY

This range includes a variety of high-performance luminaires suitable for exterior landscape applications such as residential gardens, paths or driveways. These luminaires are versatile and tough in both function and appearance. The bollard and pathway range is highly flexible, allowing configurations in height, head type and mounting method.

### DOWNLIGHT

This range of luminaires includes options from basic lighting to highly sophisticated color and dimming control. For highly technical applications, the color-changing offerings feature extremely high color-mixing versatility, perfect blending and flicker-free dimming to black. Multiple dimming and control options are available, from basic set-and-forget to full dynamic control.

### GARDEN Q

This range of luminaires is designed for landscape applications that feature polished copper and brass, electropolished marine-grade stainless steel or powder-coated aluminum to complement the look and feel of the surrounding architecture. All products are suitable for outdoor applications and incorporate high-quality light engines designed and produced by Lumascap.



## Our Technologies

Lumascap invests significant time and funding into research and development of new and innovative lighting technologies and luminaires.







## Our Projects

Lumascap has been recognized for its commitment and ingenuity on a range of projects around the globe.

Our lighting projects have transformed diverse urban and natural settings worldwide. Selected projects include:

- Al-Wakra Celebration Hall – Doha, Qatar
- Archifest RGB Pavilion – Singapore
- Brisbane Busways – Brisbane, Australia
- Carlsbad Caverns – New Mexico, USA
- Diwan Al Amir – Doha, Qatar
- Eastmark Great Park – Mesa, Arizona, USA
- Flinders Street Railway Station – Melbourne, Australia
- Huntingdale Golf Club – Melbourne, Australia
- Majlis Oman – Muscat, Oman
- Merah Putih Bridge – Ambon, Indonesia
- Morpheus Hotel – City of Dreams, Macau
- Old North Tower – Oklahoma, USA
- Perth Concert Hall Facade – Perth, Australia
- Royal Opera House Arcade – London, UK
- Semanggi Interchange – Jakarta, Indonesia
- Studio Movie Grill, Sunset Walk – Orlando, Florida, USA
- Sydney Opera House Concert Hall – Sydney, Australia
- The Founder's Memorial – Abu Dhabi, UAE
- The Shoppes – Carlsbad, California, USA





# Flinders Street Railway Station

Melbourne, Australia



## Introduction

As part of the Victorian government's refurbishment plan, Flinders Street Railway Station underwent both exterior and interior works including the upgrade of facade lighting.

## About the Project

The original Flinders Street Station was completed in 1910, designed by James Fawcett and H.P. Ashworth from the Railways Department. Today it is the busiest railway station in Australia. More than 90,000 passengers pass through the entrance each day. Flinders Street's facade depicts Edwardian architecture and is one of the most well-known icons in Melbourne.

## The Solution

In 2018, a state-of-the-art LED lighting system was unveiled, with over 90,000 LEDs and an advanced control network. The nighttime transformation of the building's classical architecture is breathtaking.

From the beautiful classic colors of red, blue and green, to high-impact dynamic lighting effects, the lighting system on Flinders Street Station knows no bounds. The facade lighting can respond to many social and cultural events held in the city such as Australia Day, St. Patrick's Day, Breast Cancer Awareness and more.

The project features more than 12 mi (20 km) of cable and 1,100 automated LED light fixtures that can be operated remotely.

The visual nighttime transformation of the train station can be clearly seen, but what is less obvious is the level of intelligence in the control system behind it all. The system enables optimum operation, delivers detailed reports in real time, facilitates maintenance and simplifies customized lighting effects, all via the internet.

Lumascap supplied PowerSync™ enabled luminaires to highlight the building accents, including the next-generation Vestalux V1 direct view linear outliner to add definition to the facade.

Significant energy savings from the transition to LED technology coupled with maintenance savings through a fully monitored solution were key considerations in partnering with Lumascap.

Lumascap is honored to have had the opportunity to work with Darkon and Apec Electrical to create such a special lighting show on such an iconic building in the heart of Melbourne city.



# The Founder's Memorial

Abu Dhabi, United Arab Emirates



## Introduction

The Founder's Memorial, located at the intersection of 1st and 2nd Street along Abu Dhabi's Corniche and spanning 3.3 hectares, serves as a permanent tribute to the UAE's Founding Father, Sheikh Zayed.

The centerpiece of the Founder's Memorial is a monumental public artwork called The Constellation, a dynamic three-dimensional portrait of the late Sheikh Zayed.

## About the Project

The Constellation can be experienced differently from multiple viewing points around the memorial and from other vantage points, offering a series of infinitely evolving personal encounters with his image.

Housed within a 100' (30 m) tall pavilion, The Constellation, one of the largest art installations of its kind, contains more than 1,327 stainless steel objects suspended on more than 1,110 vertical steel wire cables. The installation was designed by Ralph Helmick, renowned for his large-scale suspended sculptures.

## The Solution

For this project, Lumascope provided a total of 1,985 luminaires to illuminate the monument, mounted to the floor and ceiling. The specific installation locations for luminaires were not evenly positioned. Instead they were determined by the artist to achieve the desired vision and to accentuate the monument's features.

On the triangular floor, 1,203 upright luminaires were mounted to the floor substrate, then buried up to the aperture with sandstone gravel. These fittings are supplied pointing vertically but can be aimed 15° in any direction.

The other 782 luminaires are downlights and were installed into the soffit from behind, pointing vertically down into the monument space. The length of each luminaire was individually adjusted on site to flush finish with the ceiling.

All fittings were supplied with a color temperature of 3000K, a 10° beam angle and controlled directly by a PowerSync™ backbone. The DMX data from the show control hardware is provided to a bank of low-voltage PowerSync™ masters mounted into two racks. This allowed for the show control company and artist to work together to adjust the intensity levels and aim for the best result.

It has humbled Lumascope to play such an important role in the construction of this permanent national tribute commemorating the UAE's beloved Sheikh Zayed.

# Morpheus Hotel

City of Dreams, Macau

## Introduction

Morpheus is the fifth tower in Macau's City of Dreams complex. Standing 40 stories high, Morpheus includes 780 guest rooms, luxury suites and villas, retail outlets, restaurants, a casino, spa and sky pool as well as meeting and event spaces.

The luxurious Morpheus Hotel is the world's first free-form exoskeleton high-rise. It was designed by Pritzker Prize-winning architect Dame Zaha Hadid. The awe-inspiring structure consists of two towers blended together with internal voids through its center to create a window connecting the hotel's interior communal space with the outside city.

## About the Project

The unique nature of the exoskeleton concept provided an intricate and challenging canvas for Isometrix, the project's lead lighting designer, to incorporate lighting fixtures.

The exoskeleton contains several free-form structures and integrating powerful luminaires to up-light the morphing shapes within each bay was the main challenge. This involved multiple calculations, studies and mock-ups to develop luminaires that were just right for this application.

## The Solution

Lumascap designed custom solutions to deliver uniformity and consistency of light across the entire facade. One of the main considerations for this profile was that the lighting needed to blend into the exoskeleton.

To meet such challenging requirements, Lumascap developed unique optics to light the inside of the exoskeleton, enhancing the three-dimensional form, while not allowing any direct light into the windows behind.

After numerous sample submittals and mock-ups, CLA, Lumascap's partner in Asia, was awarded the supply and installation contract, using luminaires from Lumascap incorporating proprietary PowerSync™ technology.

One luminaire was a 9W RGBW with a horizontal narrow beam, designed to up-light the underside of each facade section. The second was a 100W RGBW floodlight to up-light the external spaces within the central core of the building.

The Morpheus Hotel has been acclaimed with several prestigious awards for design and structure including:

- "World's Greatest Places 2018" by TIME Magazine, awarded just two months after opening its doors
- Best Hotel Architecture Macau, 2019
- Best New Hotel Construction & Design Macau, 2019
- Building of the Year 2019 by ArchDaily, the world's most visited architecture website; and more.





# Sydney Opera House

Sydney, Australia



## Introduction

The award-winning Sydney Opera House in Australia is a globally recognized architectural masterpiece. The iconic sails are a beacon for art and design through its innovative lighting displays, while the site itself is an acclaimed performance venue, host to more than 1,800 events each year.

## About the Project

Within the Concert Hall at one of the world's most recognized and celebrated buildings, lighting engineers were faced with the considerable challenge of maintaining an aging system experiencing regular transformer failures and decreasing efficiency as they were coming to the end of their usable life. The traditional 250W halogen lamps were obsolete and increasingly difficult to find.

LED was a logical consideration to utilize new advancements in lighting technology, in addition to the benefits of long-term energy savings. After having completed several successful projects within the Opera House, Lumascope offered their expertise in LED lighting systems to ultimately develop a custom solution that would meet the needs of the Concert Hall. The project was managed in-house by the Sydney Opera House projects group.

## The Solution

Lumascope created a plan that met the specialized artistic, aesthetic and sustainability needs of the Opera House. Lumascope understood that a new lighting solution would only be successful if it adhered to the building's strict architectural and performance heritage requirements. Aesthetically, the housings needed to remain intact, not changing the look or feel of the Concert Hall.

Smooth, flicker-free, fade-to-black dimming was a critical feature of the luminaire and lighting controls design, ensuring the Concert Hall would evoke the same feelings audiences have come to expect from performances. Individual LEDs of red, blue, green, white and amber were mixed to achieve a CRI above 97, dimming from bright white to a warm orange glow to black with the same intensity and color as incandescent. The end result perfectly mimicked the traditional lighting aesthetic, evoking the nostalgic feeling of the original hall.

The addition of RGB capabilities and subsequent improvements have added a new dimension to Concert Hall performances, delighting performers and audiences alike. Now considered a next-generation venue, the different effects and control of individual color channels make the concert hall an attractive site for a wider variety of performances. Performers are also pleased to know they can record performances at 1080HD without the presence of banding lines caused by slower frequency dimming LEDs.

The upgrade to LED technology, which took nearly two years to develop and implement, has offered significant benefits beyond aesthetic values to maximize energy savings across the entire facility. Ultimately, three types of luminaires were developed: a lower-level fitting (70W; replaced 250W) over the boxes, high-level house lights within the stalls, and crown lights (200W; replaced 1,000W) directly above the stage. Benefits of the upgrade include:

- 75% reduction in electricity consumption, with estimated savings of \$70,000 AUD per year;
- Greatly reduced need for staff to work in confined ceiling spaces to replace lights (five times a year before upgrade);
- Increased capacity to create ambient and specific lighting effects, without the cost of hanging additional lights; and
- Removal of about four tons of air-conditioning ducting, thanks to less heat being generated.

For the project, Lumascope was bestowed the coveted Product Innovation Award in 2015, for the advancement of the art and science of lighting. The Concert Hall project was also a finalist in the prestigious New South Wales government's 2014 Green Globe Awards, which recognizes organizations who show outstanding environmental and sustainability leadership.

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