

**Fabrications, Safety
& Lighting Solutions**

**ZerO Energy
Lighting**



Kingspan ZerO Energy Lighting
A Ground-Breaking Concept in Energy Efficiency



Extending our daylighting range, and continuing a tradition of sustainable innovation, we are now able to complement our translucent polycarbonate solutions with a range of intelligent LED lighting systems.

For over 40 years, Kingspan has pushed the boundaries of energy efficiency, creating the world's most advanced building envelopes that offer superior energy performance and exceptional comfort across the world's climate zones.

The world of construction is changing - depleting natural resources, climate change and the pressures from rising global energy costs have changed focus. Responsible construction today focuses on sustainable solutions; designing, constructing and operating buildings in a manner that minimises energy consumption and reduces environmental impact, as well as improving well-being.

Lighting is accountable for over 19%* of the world's energy usage, and improvements in lighting technology represent an opportunity to substantially lower our reliance on traditional energy sources, whilst delivering tangible financial savings and a path to sustainable development.

Notes:

*Source: Compiled by Earth Policy Institute from International Energy Agency (IEA), Light's Labour's Lost: Policies for Energy-efficient Lighting (Paris: 2006); 2005 electricity consumption estimated from IEA, World Energy Outlook 2006 (Paris: 2006).

ZerO Energy Lighting

ZerO Energy Lighting (ZEL) offers a unique blend; consisting of high quality daylight solutions, intelligent LED lighting, fully programmable automatic controls and Kingspan Energy Rooftop Solar PV.

Our intelligent LED lighting offers a major improvement in energy efficiency, as a light source and also through improved levels of lighting control. The automatically-controlled lighting levels are imperceptible to occupants as they move around the building, surrounding them with a consistent level of natural quality light from a combination of daylight and artificial sources.

From a building management perspective, manual lighting control leads to lights being left on and energy being wasted. It is far better for the lighting to be controlled by the building administration, allowing the automatic controls to deliver an optimised performance.

Our integrated technology is what makes ZerO Energy Lighting an attractive and solid business proposition, that goes beyond energy savings to create future-proofed, sustainable buildings with safe, pleasant and productive working environments.

Zero Energy Lighting

How Does it Work?

By optimising the application and design of Kingspan Day-Lite polycarbonate rooflights, we can maximise the benefit of natural light, reducing energy demand and improving building comfort levels.

Research shows that more exposure to natural light enhances the productivity, safety and wellbeing of a building's occupants. Yet many of today's commercial and industrial buildings are still equipped with inefficient High Intensity Discharge (HID) lighting, that provides a poor quality of light that is often dull and yellowish.

With the introduction of Kingspan Smart-Lite, our highly-efficient intelligent LED technology, a natural quality of light is created, replicating the midday sunlight in terms of colour temperature and vibrancy. Furthermore, lighting energy costs are minimised, typically offering a reduction of 50% when compared to traditional lighting sources.

Each Kingspan Smart-Lite luminaire can include smart controls that react rapidly to changing environmental conditions. Automatic daylight dimming ensures the most efficient use of natural daylight, whilst occupancy sensors provide precise zonal control, so that areas are only lit when required. This intelligent technology can typically provide an additional energy saving of 40%.

With the addition of Kingspan Energy Rooftop Solar PV, we can eliminate the residual lighting energy demand, achieving or surpassing our ZEL objective.

Scan the code below to watch our ZEL animation.



What Do We Offer?

Pay Back Proposal

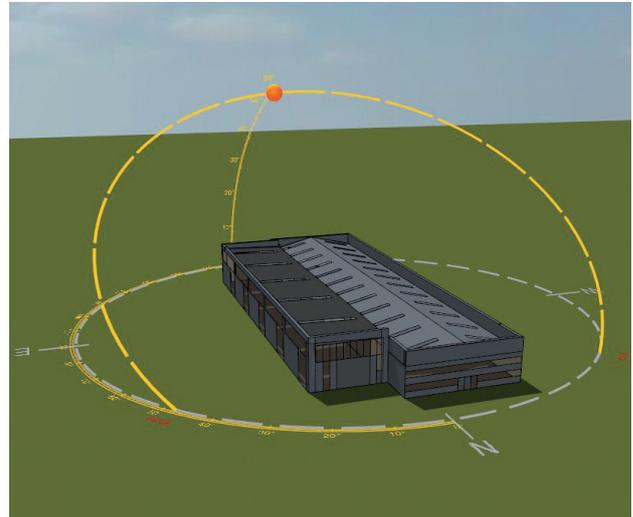
During the early design stage, a financial assessment of the project will be carried out (please see example on page 9), providing a preliminary analysis of the project and reporting on the following key parameters:

- Energy for lighting.
- Investment required.
- Pay back period on investment.*
- Annual electricity savings.*
- Carbon savings.*
- Return on investment, internal rate of return and net financial benefit over a given period.*

Notes:

* A base case is needed for comparison.

Eliminating Lighting Energy Costs



Funding

We offer a range of funding options, for both the individual elements of our ZEL solution or the package as a whole, including Power Purchase and Shared Saving Agreements. Please contact us for more information.

Holistic Modelling

Utilising advanced virtual environment modelling and expertise, we assess building operator and design team requirements, taking into account key parameters such as location, orientation, work activities and environment, in order to create the optimal, tailor-made lighting design.

We use sophisticated software to create a virtual model of the building and its environment, including the path of the sun throughout the year and typical historical weather data. With this knowledge, the performance and configuration of Kingspan Day-Lite rooflights can be assessed and optimised to meet the occupancy requirements of the building.

Following this, a Kingspan Smart-Lite intelligent LED lighting system is designed, complementing the natural daylight generated by our Kingspan Day-Lite systems and optimising the lighting energy demand.

Finally, the residual lighting energy demand is calculated and a Kingspan Energy Rooftop Solar PV array is designed accordingly.

Guarantee

All products are covered by the Kingspan Guarantee.

Quality & Durability

All of our ZEL products are manufactured from the highest quality materials using state-of-the-art production equipment to rigorous quality control standards; ensuring long-term reliability and service life. All products are fully compliant with ISO 9001 (Quality), ISO 14001 (Environmental) and OHSAS 18001 (Health & Safety).

Kingspan Day-Lite Rooflights

Product Data

Our Kingspan Day-Lite range of polycarbonate rooflights allows superior levels of natural light to flow into buildings, contributing to reductions in overall energy consumption. This range of translucent polycarbonate systems provides superior resistance to UV degradation, resulting in excellent long-term light transmission, thermal and structural performance.

Designed to be an integral part of our roof panel systems, Kingspan Day-Lite is a range of co-extruded, multi-wall polycarbonate rooflights. A range of thicknesses is available, offering U-values from 1.8W/m²K to 0.8W/m²K to suit project specific requirements.

Kingspan Day-Lite rooflights allow installation of a high proportion of rooflights without significantly affecting the overall thermal performance of the roof, thus improving energy efficiency and sustainability.

The Kingspan Day-Lite range offers a quality of daylight management unrivalled within the industry, whilst providing architects with maximum design flexibility and industry-leading guarantees. Our comprehensive portfolio of translucent polycarbonate daylighting solutions delivers the optimum balance between energy efficiency requirements and the use of natural and artificial lighting:

- Kingspan Day-Lite Trapezoidal and Trapezoidal Plus are trapezoidal-profiled rooflights designed to integrate with our Trapezoidal Roof panel;
- Kingspan Day-Lite Upstand is an upstand rooflight designed to integrate with our Lo-Pitch, KingZip IP, Trapezoidal Roof, Trapezoidal Secret-Fix and Roof Tile panels;
- Kingspan Day-Lite Vault is a barrel vault rooflight designed for flat or low pitch roofs, compatible with our Topdek insulated roof panels.



Features & Benefits

- U-values ranging from 1.8W/m²K to 0.8W/m²K - fully compliant with the appropriate National Building Regulations.
- Excellent light transmission - up to 65% when new, with minimal deterioration over time, to BS EN 410.
- Low Solar Heat Gain Coefficient - limiting local temperature increases under the rooflight.
- High degree of colour fastness means product will not discolour over a guaranteed period.
- Non-fragility performance - meets the requirements of ACR[M]001: 2014, Class B. Non-fragility compliance over product lifetime significantly reduces the risk of falls to both construction and maintenance personnel.
- Lightweight and durable, guaranteed for structural, thermal and UV-resistance.

Dimension, Weight & Performance

Product Reference	Overall Height (mm)	Weight (kg/m ²)	U-value (W/m ² K)	Light Transmission (%)*	Solar Heat Gain Coefficient
Kingspan Day-Lite Trapezoidal 1.6	55	3.3	1.6	65	0.65
Kingspan Day-Lite Trapezoidal 1.3	68	4.7	1.3	53	0.53
Kingspan Day-Lite Trapezoidal 1.0	71	6.0	1.0	36	0.41
Kingspan Day-Lite Trapezoidal Plus 0.8	to suit panel	6.23 [†]	0.8	36	0.41
Kingspan Day-Lite Upstand	199	variable	1.8	61	0.64
Kingspan Day-Lite Vault	to suit panel	variable	1.1 ^{**}	41	0.41

Notes:

[†] Based on an 80mm panel thickness with spacers at 1m centres.

The U-values have been calculated using the method required by the appropriate National Building Regulations.

* Based on a clear polycarbonate finish. Light transmission, according to BS EN 410, is as measured on 600mm x 600mm samples.

** Standard U-value is shown above. Standalone U-value of FAU is 1.35W/m²K.

Solar Heat Gain Coefficient, according to BS EN 410, is the total solar energy that enters the interior of a building.

Kingspan Smart-Lite High Bay

Product Data

Kingspan Smart-Lite High Bay is a range of intelligent LED luminaires offering an ultra-efficient design that significantly cuts lighting energy usage. When old lighting systems are replaced with Kingspan Smart-Lite High Bay luminaires, a more natural light is created, replicating midday sunlight in terms of colour temperature and vibrancy.

The high quality of light emitted from Kingspan Smart-Lite High Bay means that colours become more vibrant and easier to distinguish, whilst its low-glare design and uniform light distribution ensures a more suitably-lit environment for the occupants.

Kingspan Smart-Lite High Bay offers a range of LED luminaires with a choice of narrow-aisle or open-area optics to meet individual project requirements, and is suitable for a range of applications such as production, warehouse and retail environments.

Kingspan Smart-Lite High Bay can feature smart dimming controls that automatically dim the light, substantially reducing energy consumption. These controls react efficiently to changes in natural daylight levels and occupancy, and allow for precise zonal control so the area is only lit when required.

Each Kingspan Smart-Lite High Bay luminaire is available with a choice of either built-in Passive Infra-Red (PIR) sensors for individual control or Digital Addressable Lighting Interface (DALI) with a single external PIR sensor for group control. Both integrated and external PIR sensors can be programmed from ground level using a wireless remote control.



Features & Benefits

- Performance is guaranteed for up to 7 years under the Kingspan Guarantee.
- Luminaires are lightweight, and quick and easy to install.
- Available with a range of mounting kits and accessories including cable suspension, wall and busbar brackets and sports hall protection kits.
- Integrated lifetime protection control, which reduces the system power when the luminaire is exposed to critically-high environmental temperatures.
- Excellent ingress protection rating of IP65, ensuring high levels of resistance to dust and water ingress.
- High performance exterior specification with white powder-coated polyester, providing high resistance to moisture, oxidation and UV radiation.

Dimensions, Weight & Performance

Product Reference	Dimensions		Lumen Maintenance (hrs)**	Power (W)	Luminous Flux (lm)	Luminous Efficacy (lm/W)
	Length x Width (mm)*	Weight (kg)				
Kingspan Smart-Lite High Bay 80	425 x 376	4.5	100,000	84	9,700	115
Kingspan Smart-Lite High Bay 110	425 x 376	4.5	50,000	110	12,100	110
Kingspan Smart-Lite High Bay 120	425 x 376	4.5	100,000	121	13,100	108
Kingspan Smart-Lite High Bay 155	747 x 376	9.0	50,000	154	15,700	102
Kingspan Smart-Lite High Bay 165	747 x 376	9.0	100,000	169	19,100	113
Kingspan Smart-Lite High Bay 245	747 x 376	9.0	100,000	243	26,000	107

Notes:

* Based on luminaires with built-in PIR sensors. Length without built-in PIR sensors are 320mm (single unit) or 642mm (double unit).

** Lumen maintenance is based on L70 @ 25°C.

Kingspan Smart-Lite Linear

Product Data

Kingspan Smart-Lite Linear offers a range of utility lighting modules that is ideal for car parks, coldrooms, walkways and a multitude of other applications. This durable LED luminaire delivers a tough, tamper-resistant and easy to install module that offers significant energy savings compared to traditional fluorescent lighting.

Kingspan Smart-Lite Linear offers a range of cost-effective LED luminaire solutions for a range of applications. It is available in a choice of three lengths to suit project specific requirements.

A range of optics is also available, offering varying degrees of light distribution and luminance depending on application and project requirements: narrow beam (80°) for high ceiling installations, and wide beam (160° maximum) or batwing (147°) for low to mid-height ceiling installations.

Kingspan Smart-Lite Linear can feature smart dimming controls that automatically dim the light, substantially reducing energy consumption. These controls react efficiently to changes in natural daylight levels and occupancy, and allow for precise zonal control so the area is only lit when required.

Each Kingspan Smart-Lite Linear luminaire is supplied with Digital Addressable Lighting Interface (DALI) as standard, allowing full control via external Passive Infra-Red (PIR) sensors that can be programmed from ground level using a wireless remote control.

Notes:
Narrow and batwing optics are available with Kingspan Smart-Lite Linear 42 and Kingspan Smart-Lite Linear 68 only.



Features & Benefits

- Performance is guaranteed for up to 5 years under the Kingspan Guarantee.
- Luminaires are lightweight, and quick and easy to install with tool-less wiring.
- Supplied with wall and / or ceiling mounting brackets.
- Integrated lifetime protection control, which reduces the system power when the luminaire is exposed to critically-high environmental temperatures.
- Excellent ingress protection rating of IP66, ensuring high levels of resistance to dust and water ingress.
- Tamper-proof fixings, protecting against vandalism and theft.
- High performance polycarbonate casing, providing high resistance to moisture, oxidation and UV radiation.

Dimensions, Weight & Performance

Product Reference	Dimensions		Lumen Maintenance (hrs)**	Power (W)	Luminous Flux (lm)	Luminous Efficacy (lm/W)
	Length x Width (mm)	Weight (kg)				
Kingspan Smart-Lite Linear 14	650 x 92	2.1	50,000	14	1300	93
Kingspan Smart-Lite Linear 28	1100 x 92	3.1	50,000	28	2600	93
Kingspan Smart-Lite Linear 42	1500 x 92	4.1	50,000	42	4000	95
Kingspan Smart-Lite Linear 68	1500 x 92	4.1	50,000	68	5700	85

Notes:
** Lumen maintenance is based on L70 @ 25°C.

Kingspan Smart-Lite Recess

Product Data

Kingspan Smart-Lite Recess offers a range of inspirational and aesthetic LED luminaires, delivering a transformational lighting solution that creates the feeling of natural daylight with beautifully uniform and bright, yet soft lighting. The products are ideally suited for high occupancy working environments, making them vibrant and welcoming.

Kingspan Smart-Lite Recess is a range of LED lighting modules ideal for offices, retail, hospitality, healthcare and commercial applications. The products are specifically designed to fit flush with suspended ceilings (surface-mounted modules are also available upon request).

These recessed LED luminaires create a uniform light distribution and luminance, making them the perfect choice for installations where a substantial amount of floor light is required.

Kingspan Smart-Lite Recess can feature smart dimming controls that automatically dim the light, substantially reducing energy consumption. These controls react efficiently to changes in natural daylight levels and occupancy, and allow for precise zonal control so the area is only lit when required.

Each Kingspan Smart-Lite Recess luminaire is supplied with Digital Addressable Lighting Interface (DALI) as standard, allowing full control via external Passive Infra-Red (PIR) sensors that can be programmed from ground level using a wireless remote control.



Features & Benefits

- Performance is guaranteed for up to 5 years under the Kingspan Guarantee.
- Luminaires are lightweight, and quick and easy to install.
- Supplied with wall and / or ceiling mounting brackets.
- Integrated lifetime protection control, which reduces the system power when the luminaire is exposed to critically-high environmental temperatures.
- High performance exterior specification with white powder-coated steel, providing high resistance to moisture, oxidation and UV radiation.

Dimensions, Weight & Performance

Product Reference	Dimensions		Lumen Maintenance (hrs)**	Power (W)	Luminous Flux (lm)***	Luminous Efficacy (lm/W)***
	Length x Width (mm)	Weight (kg)				
Kingspan Smart-Lite Recess 33	596 x 596	4.0	50,000	33	3000	91
	1196 x 296	4.5				

Notes:

** Lumen maintenance is based on L70 @ 25°C.

*** Luminous flux and efficacy are based on 4000K colour temperature LEDs. 2900K is also available, please refer to the product data sheet for more information.

Kingspan Energy Rooftop Solar PV

Product Data

Kingspan Energy Rooftop Solar PV is a versatile solar photovoltaic (PV) system that is suitable for pitched and flat roof applications on new build, retrofit or refurbishment projects.

We offer a comprehensive range of fully integrated and warranted rooftop solar PV systems, which carry a unique 25 year combined PV and insulated roof panel guarantee*. Our solutions are tailored specifically to end clients' needs and provide long-term revenue generation and cost savings. We have the expertise to competently and professionally design and install the appropriate rooftop PV systems for our clients, and offer market client financed and 100% funded solutions.

The PV system has been structurally tested in conjunction with a range of Kingspan insulated roof panels. It is a top sheet mounted system, negating the need for through fixing therefore eliminating cold bridging.

Service Package

We deliver a full turnkey service, including: initial feasibility survey, rooftop survey, system design, financing, installation and on-going maintenance and monitoring, providing our end clients with the ultimate peace of mind.

We have secured a guaranteed supply of PV modules and inverters to meet our supply chain demand.

Guarantee & Maintenance

As part of our package we offer a 25 year system guarantee, combined with monitoring and maintenance.

With our in-depth knowledge of, and expertise in, the industrial and commercial roofing sector, we can competently and professionally deliver tailored solar PV solutions. Our PV systems not only complement new or existing roof systems but, more importantly, will not compromise their structural integrity or weatherproofing performance. This results in our ability to offer a unique 25 year combined PV system and insulated roof panel guarantee*.

Kingspan Energy operational and maintenance obligation:

- We will maintain the roof and solar PV system for the duration of the 25 year contract lease term*;
- We will ensure that the solar PV system's operational efficiency and its energy output are optimised.

Notes:

*The combined guarantee is valid for Kingspan insulated roof panels only.



Kingspan Insulation Selby, UK

Case Study

Industrial

Project Type:

Production & Warehouse Facility, Refurbishment

Installer:

Kingspan Energy

Products Used:

- Kingspan Smart-Lite High Bay LED Lighting
- Kingspan Day-Lite Trapezoidal Roof System
- Kingspan Energy Rooftop Solar PV
- Trapezoidal Roof Panel

"The combination of Kingspan Smart-Lite technology and an impressive solar PV array has made an instant impact at our Selby plant, significantly improving the lighting and generating an immediate reduction in energy consumption that will have huge financial benefits for the business. This is one of the best infrastructure improvements I have seen in 28 years!"
Sam Hindle, Operations Manager, Kingspan Insulation.





Technical Services

Our technical engineers are a key part of our design and development process, providing a wide range of technical support and working with customers on an individual project basis to ensure that the correct products are specified and ordered.

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Ireland

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Quotes

To receive a quote and expected lead times for your project requirements, please call one of our team on:

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Tel: +44 (0) 1944 712444
Email: ZEL@kingspanpanels.com

Ireland

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Email: ZEL@kingspanpanels.com

Marketing Support

Our marketing team aims to provide a fast turnaround on literature requests, eliminating delays with material planning and client approval. Brochures and case studies and videos are all available on the website at www.kingspanpanels.co.uk.

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Field Service & Training

We recognise that customer staff training is key to maximising the performance of our products, therefore we provide extensive training on the whole procedure from safe off-loading and product handling through to installation.

Area Sales Managers

To find your nearest area sales manager, simply visit: www.kingspanpanels.co.uk/asm

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For the product offering in other markets please contact your local sales representative or visit www.kingspanpanels.com

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