DIALIGHT INDUSTRIAL DED LIGHTING For General Manufacturing

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Dialight

WHY LIGHTING MATTERS in General Manufacturing Applications



Lighting is of critical importance in industrial manufacturing facilities to maximise both safety and productivity. Manufacturing sites are notorious for harsh conditions that can contribute to premature fixture failure.









Physical hazards and moving objects

High heat and high vibration

Chemical vapors, dust and debris

Noisy, complex heavy machinery

Power surges

INJURIES, ILLNESSES AND WORKPLACE FATALITIES IN EUROPE

Poor illumination can contribute to tragic work site accidents and injuries. In 2017 alone, Eurostat and the International Labour Organization cited:





While significant strides have been made by organisations such as OSHA over the past few decades to improve safety, the General Manufacturing industry inherently involve risks and hazards that demand high quality lighting. When choosing a lighting partner for your facilities, care must be taken to ensure their products have proven to perform safely and reliably in your environments and offer a sustainable solution.



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DIALIGHT SOLUTIONS for General Manufacturing Applications

Dialight is the world leader in industrial LED lighting technology with millions of fixtures installed worldwide. We specialise in lighting products designed for the world's harshest industrial environments - enabling industrial customers to reduce their energy costs, maintenance costs, and carbon footprint while maximising the safety and productivity of their employees and facility. From our signature High Bay line to our versatile Linear fixtures, Dialight offers a large selection of rugged products ideally suited for environments found within the General Manufacturing Industry.



WHERE TO USE DIALIGHT PRODUCTS in General Manufacturing Applications

INTERIOR

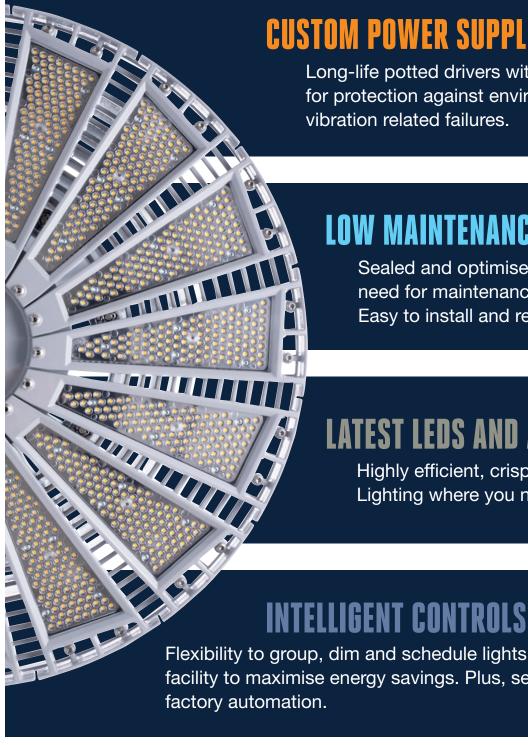
- WAREHOUSE & STORE ROOMS
- PROCESS & ASSEMBLY AREAS
- MACHINE & WELDING SHOPS
- DESPATCH AND DELIVERY AREAS
- BOILER & ELECTRICAL ROOMS

See product portfolio pages for more detailed product and ordering informatic

- **EXTERIOR**
- FLOOD LIGHTING
- WALL MOUNTED & CANOPY LIGHTING
- WALKWAY LIGHTING
- CAR PARKS
- ROADWAY LIGHTING

TECHNOLOGY DIFFERENTIATION

When choosing an LED Lighting partner, consider how their products are engineered, constructed and tested prior to making your decision. Most Dialight products are engineered to a **10 year warranty** and were designed with harsh environments, such as General Manufacturing applications, in mind.



CUSTOM POWER SUPPLIES

Long-life potted drivers with optimised thermal dissipation for protection against environmental contaminants and vibration related failures.

LOW MAINTENANCE MECHANICAL DESIGN

Sealed and optimised to reduce or eliminate the need for maintenance over the life of the fixture. Easy to install and retrofit to existing infrastructure.

LATEST LEDS AND ADVANCED OPTICS

Highly efficient, crisp, low-glare illumination. Lighting where you need it, not where you don't.

Flexibility to group, dim and schedule lights around the unique needs of a facility to maximise energy savings. Plus, seamless integration with existing

APPLICATION GUIDE for General Manufacturing Sites

Vigilant[®] High Output High Bay - Low Profile For non-hazardous high ceiling high bay applications typically 12 metres or above

Dialight







Vigilant[®] and SafeSite[®]

For non-hazardous and hazardous lower ceiling indoor or outdoor applications where wider light distribution is critical





Vigilant[®] and SafeSite[®] High Bay

For non-hazardous and hazardous indoor or outdoor high bay applications over 4.2 metres





Vigilant[®] GRP

For non-hazardous indoor or outdoor fluorescent strip/vaportite replacements, task or inspection lighting, electrical rooms, shops, and process areas. 764mm and 1244mm versions available



DuroSite[®] and SafeSite[®] Flood Lights

For non-hazardous and hazardous indoor or outdoor flood lighting applications; multiple beam patterns available



Reliant[™] High Bay

For indoor, light industrial applications and lighterduty areas of heavy industrial facilities, such as warehouses



Vigilant[®] Dual Floodlight

For non-hazardous indoor or outdoor high power flood applications (Typical 1,000 watt or better HID replacement)



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CASE STUDY Kuehne & Nage Minworth, UK

Global logistics provider Kuehne + Nagel is committed to offering robust, sustainable and innovative supply chain solutions that continually reduce impact on the environment. Kuehne + Nagel's Minworth facility consists of two warehouses with a linking area jointly covering 20,000 square metres. The older of the two buildings was fitted with 136 x 250W high pressure sodium lamps (HPS), the newer facility with 100 x 400W HPS and the linking bay with a few metal halides.

"Overall we wanted to save energy, but we also wanted to improve light quality. We found that the 250W HPS did not provide sufficient light quality in the older warehouse, which is why we moved to 400W HPS in the newer warehouse. However, they were actually averaging about 280W and 430W of power respectively. Also, sodium lights are not very effective at night and make it hard for the workers to read labels... In our warehouses, the sodium lights are running 24/7 and need changing every 20,000 hours. A scissor lift is required to reach them at 13 metres, which involves considerable cost, inevitable work interruption, and there is the additional problem of dealing with hazardous waste when you dispose of them. There were plenty of reasons to look for a more efficient lighting solution."

After trialing some LED light fittings at several locations, Kevin Greene selected Dialight's DuroSite™ LED High Bay fittings for the two Minworth warehouses, installing 63 x 150W LED High Bays in each with three to a row compared to five HPS lights.

"The reason we chose Dialight is the length of time that the company has been in the market, whereas many of their competitors are relatively new. With the LED High Bay we have a very robust unit containing no hazardous materials that offers a 60,000 hour lifespan and is warranted by a well-established company. Not only does it remove the maintenance and the disposal problem, it's also a very workable light, perfect for reading labels. We allowed a few extra fittings to avoid shadows and the light clarity experience is brilliant."

The LED lighting in fact delivers a CRI of 72 compared to around 20 for HPS lighting out of a total scale of 100, so although the lux level of 150 remains very similar the lighting quality has vastly increased. Greene points out additional benefits: "Although we installed light-saving devices with the sodiums, there was a 5-10 minute lag-time between switching them on and off, so we weren't realising any particular benefit. The switching off also shortens the life of the lamps, but LEDs come on instantly and have no issues at all with switching."

- Replaced – 250W and 400W HPS with 150W LED High Bay - Energy saving –555,735 kWh, saving over £42,000 annually

- Carbon reduction – 271 tonnes annually

CASE STUDY NSG Pilkington Redditch, UK

NSG Group, one of the world's leading producers of glass and glazing products, is a multinational supplier of architectural, automotive and technical glass for buildings, OEM and aftermarket replacement and displays, optoelectronics and glass fiber products. Like most facilities of its time, the Pilkington plant was lit by conventional HID lamps with linear fluorescents as emergency backup. But, as is typical with HID technology, the fixtures required frequent bulb changes. Not only was maintenance an ongoing issue and expense, but it was made even more challenging by the difficulty in accessing the fixtures themselves. Between the location of fixtures above the storage racking and the high-traffic environment with 24/7 operations, changing out light bulbs often meant shutting down aisles for access, which directly impacted productivity and revenue.

NSG had already built a relationship with Dialight with LED lighting installations at multiple NSG facilities across Europe over the years. Dialight proposed its Vigilant Dimmable 18,000 and 26,000 lumen High Bay fixtures to bring clarity and increased visibility to the Pilkington facility. Offering maximum energy efficiency and lumen efficacy of any fixture in their class, the Vigilant High Bays offered at least 65% reduction in energy consumption per fixture compared to the outdated HIDs. Not to mention, the Dialight High Bays are backed by the company's 10-year full-performance warranty, which essentially eliminates lighting maintenance for a decade or more. In addition, the proposal included implementation of a Controls package with occupancy sensors to maximize energy savings and sustainability. Installed and commissioned by Ecopare, a Dialight recommended installer, the lights are activated only when personnel are present, reducing burn time and energy consumption with virtually no impact on productivity. The Dialight Vigilant Dimmable 18,000 and 26,000 lumen High Bays have delivered a major improvement in light levels throughout the Pilkington plant, enhancing visibility and worker safety. Despite adding a few more fixtures, the low-energy LED products reduced the facilities' energy costs by 17% while virtually eliminating lighting maintenance for years to come, for an overall substantial return on investment.

"The new Dialight fixtures have more than met our expectations with improved light quality, cost savings and durability," said Mark Hay EDC Operations Manager). "The controls package has allowed us a great deal of flexibility in site use based on occupancy and the level of site activity. Overall, we're extremely pleased with Dialight's solution, and highly recommend these fixtures to anyone looking for a reliable, robust, future-ready lighting solution."

Replaced 400W HID fixtures and 73W fluorescent with 327 x 112W 18,000
Lumen and 108 x 212W 26,000 lumen Dialight High Bays
Delivered 17% energy cost savings, despite a net gain in fixture count



PRODUCT PORTFOLIO High Bays

PRODUCT PORTFOLIO High Bays



installer and/or end-user to: (a) determine the suitability of the product for its intended application; and, (b) ensure that the product is safely installed (with secondary retention / netting where appropriate) and in compliance with all applicable laws and regulations. To the extent permissible under applicable laws, Dialight disclaims all liability for personal injury and/or other damage resulting from any dislodgment or other dislocation of its products

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dislocation of its products

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je	lm/W	ССТ	Lens	Beam Distribution
ilar	ilant [®] High Bay*			
	141	5000K (cool white)	Glass - Clear	Medium
	140	5000K (cool white)	Glass - Clear	Medium
	151	5000K (cool white)	Glass - Clear	Medium
	141	5000K (cool white)	Glass - Clear	Medium
rof	ile High	Output High Bay		
	146	5000K (cool white)	Glass - Clear	Medium
	153	5000K (cool white)	Glass - Clear	Medium
	145	5000K (cool white)	Glass - Clear	Medium
eS	ite [®] Higł	n Bay		
	110	5000K (cool white)	Glass - Clear	Medium
	110	5000K (cool white)	Glass - Clear	Medium
	110	5000K (cool white)	Glass - Clear	Medium
	110	5000K (cool white)	Glass - Clear	Medium
® H	lydroger	n High Bay		
	141	5000K (cool white)	Glass - Clear	Medium
	140	5000K (cool white)	Glass - Clear	Medium
	151	5000K (cool white)	Glass - Clear	Medium
	141	5000K (cool white)	Glass - Clear	Medium
liant [™] High Bay*				
	149	5000K (cool white)	Clear Polycarbonate	Medium
	147	5000K (cool white)	Clear Polycarbonate	Medium
	148	5000K (cool white)	Clear Polycarbonate	Medium
	143	5000K (cool white)	Clear Polycarbonate	Medium
	148	5000K (cool white)	Clear Polycarbonate	Medium
	146	5000K (cool white)	Clear Polycarbonate	Medium

injury or death. Dialight recommends that all installations should use secondary retention / netting (appropriate to the installation environment) where applicable. It is the exclusive responsibility of the contractor, installer and/or end-user to: (a) determine the suitability of the product for its intended application; and, (b) ensure that the product is safely installed (with secondary retention / netting where appropriate) and in compliance with all applicable laws and regulations. To the extent permissible under applicable laws, Dialight disclaims all liability for personal injury and/or other damage resulting from any dislodgment or other

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PRODUCT PORTFOLIO Area Lights

PRODUCT PORTFOLIO Bulkheads



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dislocation of its products

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For use in non-hazardous indoor and outdoor applications, ideal for any industrial retrofit or greenfield environment.

Ideally suited for:

PROCESS AREAS

CONVEYORS

WALKWAYS

LOADING AND UNLOADING AREAS

е	lm/W	ССТ	Lens	Beam Distribution
taı	andard and Emergency Options			
	144	5000K (cool white)	Clear Polycarbonate	Ultra-Wide (Type 1)
	142	5000K (cool white)	Clear Polycarbonate	Ultra-Wide (Type 1)
	124	5000K (cool white)	Clear Polycarbonate	Ultra-Wide (Type 1)
	133	5000K (cool white)	Clear Polycarbonate	Ultra-Wide (Type 1)
le	Mount a	and Emergency Optic	ons	
	144	5000K (cool white)	Clear Polycarbonate	Ultra-Wide (Type 1)
	142	5000K (cool white)	Clear Polycarbonate	Ultra-Wide (Type 1)
	124	5000K (cool white)	Clear Polycarbonate	Ultra-Wide (Type 1)
	133	5000K (cool white)	Clear Polycarbonate	Ultra-Wide (Type 1)

*Emergency Battery Backup Model

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PRODUCT PORTFOLIO Floodlights

PRODUCT PORTFOLIO Linear Lights



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dislocation of its products.

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The latest addition to the linear family, featuring extremely durable glass reinforced polyester and our exclusive 10 year warranty. Available in 764mm and 1244mm varieties. For use in indoor and outdoor hazardous certified linear and low mounting height applications where explosive gases may be present. Refer to Dialight website for more information.

> Ideally suited for: LABORATORIES

PROCESS AREAS

ge	lm/W	ССТ	Lens	Beam Distribution
ant	ant [®] GRP Linear			
	115	5000K (cool white)	Textured Polycarbonate	Medium
	122	5000K (cool white)	Textured Polycarbonate	Medium
Site [®] GRP Linear				
	115	5000K (cool white)	Textured Polycarbonate	Circular
	123	5000K (cool white)	Textured Polycarbonate	Circular
	115	5000K (cool white)	Textured Polycarbonate	Circular
	123	5000K (cool white)	Textured Polycarbonate	Circular
Stainless Steel Linear				
	76	5000K (cool white)	Clear Polycarbonate	Medium
	76	5000K (cool white)	Clear Polycarbonate	Medium
	74	5000K (cool white)	Clear Tempered Glass	Medium
	73	5000K (cool white)	Clear Polycarbonate	Medium

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HAZARDOUS AREA RATINGS



Fixed and portable fixtures for installation and use in hazardous areas.

Zones

The zone defines the probability of hazardous material being present in an explosive concentration in the atmosphere.

Zone	Hazardous Material in Surrounding Atmosphere
Zone 0, 20	Area in which an explosive gas / dust mixture is continuously present or present for long periods
Zone 1, 21	Area in which an explosive gas / dust mixture is likely to occur for short periods in normal operation
Zone 2, 22	Area in which an explosive gas / dust mixture is present for a very short time due to an abnormal condition

Protection Types

The protection types are used to denote the protection concept utilised in the devices.

Ex	Presence of Hazardous Material	Zones
Ex d	Flameproof (Explosion proof) Enclosure	1, 21, 2, 22
Ex e	Increased Safety	1, 21, 2, 22
Ex m	Encapsulation	1, 21, 2, 22
Ex n or N	Non incendive or/and normally no sparking circuits	2, 22

Temperature Ratings

Certified equipment is tested for maximum temperature rating by approval agencies.

Equipment for Group II receives a temperature code indicating the maximum temperatures of the product.

Temperature Rating		
T1	450°C	
T2	300°C	
ТЗ	200°C	
T4	135°C	
T5	100°C	
T6	85°C	

Groups (Gas & Dust)

Equipment is tested for suitability in specified gas groups and dust groups. Gas groups IIA, IIB, IIC. Dust groups IIIA, IIIB, IIC

Group	Hazardous Material in Surrounding Atmosphere
Group IIA	Propane group
Group IIB	Ethylene group
Group IIC	Hydrogen group
Group IIIA	Combustible flyings
Group IIIB	Non-conductive dust
Group IIIC	Conductive dust

Dialight Europe Ltd

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WARNING / DISCLAIMERS:

Installation & secondary retention. The use of this product without proper installation (including secondary retention / netting) and periodic inspections, could cause severe injury or death. Dialight recommends that all installations should use secondary retention / netting (appropriate to the installation environment) as applicable. Dialight products are intended for ultimate purchase, installation and operation by knowledgeable persons trained in the functional assessment, installation, use and maintenance of such products and all customers (including but not limited to end customers) are responsibile for assessing the suitability of Dialight products for any given installation, requirement. It is the exclusive responsibility of the contractor, installer and/or end-user to: (a) determine the suitability of the product for its intended application; and, (b) ensure that the product is safely installed (with secondary retention / netting as appropriate) and in compliance with all applicable laws and regulations. *Product specifications & warranties.* All product information provided is, to the best of Dialight's knowledge, accurate as of the date of publication. All values and performance data herein are design or typical values when measured under laboratory conditions. The information herein is subject to change without notice. The products is products a fit for any particular purpose and accepts no liability for the installation and/or unauthorised use of its products. When ordering, refer to <u>www.dialight.com</u> for current versions of: (a) relevant product documentation (including relevant product warranties. To the extent that any contract is deemed formed between Dialight and the purchaser of Dialight products and/or an end-user, versions of documents available at <u>www.dialight.com</u> as at the date of sale shall be the versions incorporated therein. In the event of any discrepancy between this document and information provided at <u>www.dialight.com</u> as at the date of sale shall be the versions incorporated t

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