DIALIGHT INDUSTRIAL LED LIGHTING For Oil & Gas

Dialight

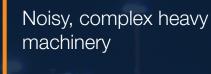


Oil and Gas Applications

WHY LIGHTING MATTERS in Oil and Gas Applications

Lighting is of critical importance in Oil and Gas applications to maximise both safety and productivity. These sites are among the most dangerous to work due to extremely harsh conditions and explosive environments. It is without question that the lighting must be able to withstand ignitible atmospheres and prevent explosions, while also providing clear illumination for workers to perform tasks safely.





High heat and high vibration

Chemical vapours, dust and debris

Physical hazards, such as slips, falls, and moving objects

Arc Flash

Flammable and explosive environments

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 over the past few decades to improve safety, the Oil and Gas industries 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



<u>with</u>



Oil and Gas Applications

DIALIGHT SOLUTIONS for Oil and Gas 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 and applications found within the Oil and Gas Industry.



WHERE TO USE DIALIGHT PRODUCTS in Oil and Gas Applications

UPSTREAM

- DERRICKS
- MUD TANKS
- DRILLING FLOOR
- GENERATORS, PUMPS
- CONTROL HOUSE
- OPERATOR'S HOUSE
- OPEN AREAS
- PERIMETER/SECURITY AREAS

See product portfolio pages for more detailed product and ordering information

MIDSTREAM & DOWNSTREAM

- STORAGE TANKS, STAIRS/LADDERS
- SWITCHGEAR, SWITCHRACKS
- PERIMETER, SECURITY AREAS
- LOADING RACKS, DOCKS
- PUMPS, MOTORS, MANIFOLDS, VALVES

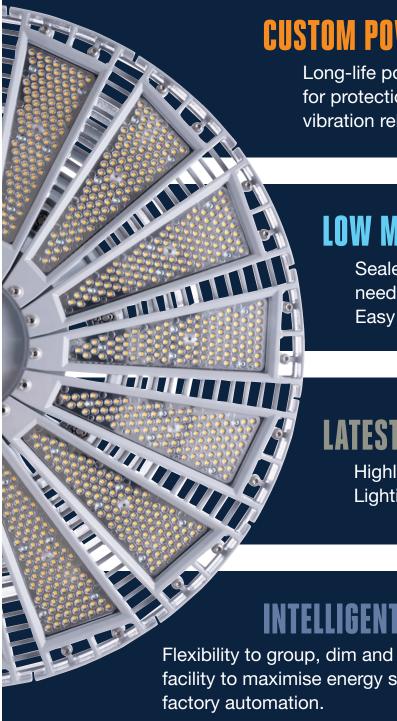
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- PLATFORMS, WALKWAYS
- COOLING TOWERS
- FACILITY ROADWAYS

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 Oil and Gas applications, in mind.



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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.

INTELLIGENT CONTROLS

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 Oil and Gas Sites





Oil and Gas Applications

SafeSite[®] High Bay

Hazardous location oil, gas and chemical storage and processing

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SafeSite[®] and Vigilant[®] Area Lights

For hazardous and non-hazardous lower ceiling indoor or outdoor process and stanchion mount applications*



www.dialight.com



SafeSite[®] and Vigilant[®] LED **Bulkhead**

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





ProSite

Floodlight

F1 Model

or outdoor flood

multiple beam

patterns available

8

ProSite Floodlight F2 Model

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







Oil and Gas Applications

Dialight



For non-hazardous and hazardous indoor

lighting applications;

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

Vigilant[®] High **Output High** Bay - Low Profile

For non-hazardous high ceiling high bay applications typically 12 metres or above



Vigilant[®] High Bay

For non-hazardous indoor or outdoor high bay applications over 4.3 metres. Remote power supply option available.

011 0





StreetSense[®] **Street Light** For plant maintained

roadways and general outdoor illumination



Downstream

CASE STUDY Rubis Terminal Rotterdam, The Netherlands

France-based Rubis Group, the fifth largest independent operator in Europe, operates 14 downstream petroleum and chemical facilities. With the development of its new terminal facility in Rotterdam, The Netherlands, Rubis aimed to bring online one of the world's most operationally and energy efficient facilities of its kind.

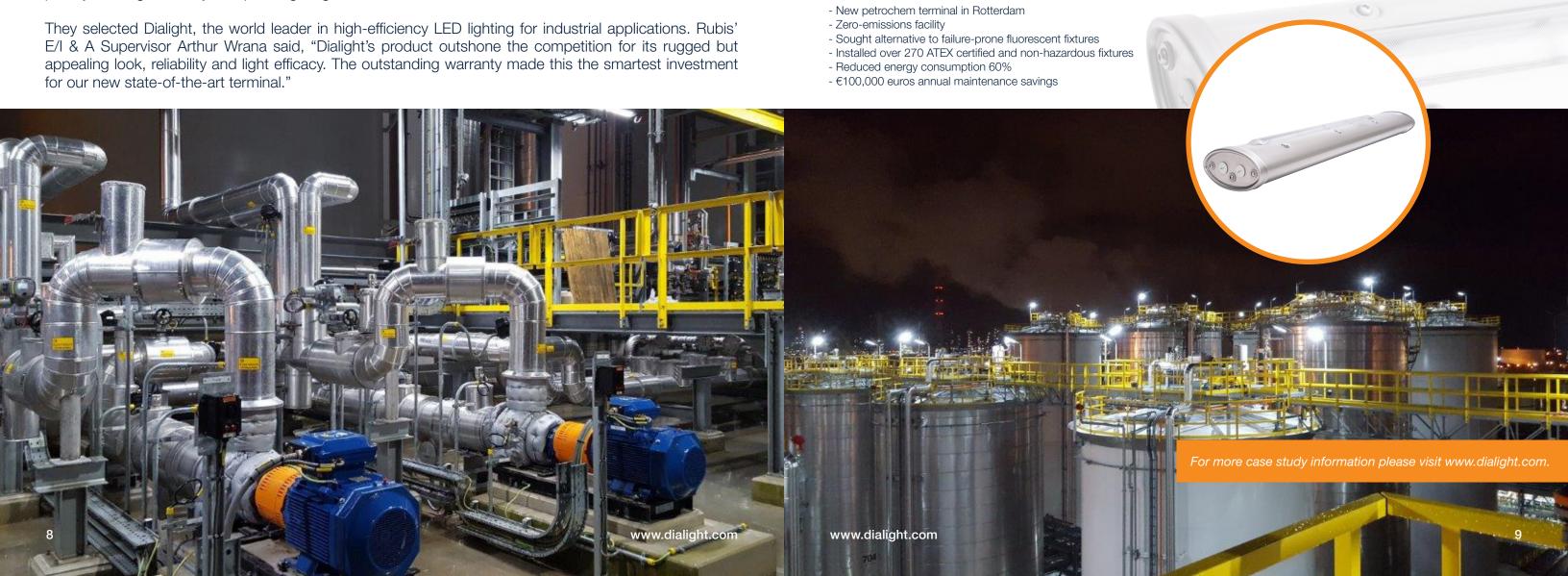
At Rubis' other terminals, the combination of fluorescent linear and flood lights is not only inefficient and unacceptable for the new zero-emissions facility at Rotterdam, but they also make it difficult for staff to perform their work without the use of supplemental, temporary, portable lights. In addition, ongoing maintenance is a challenge. Workers must build scaffolding and work at high elevation, in teams of two, with portable lighting. Vibration from equipment takes a heavy toll on the fixtures, causing frequent failures, so maintenance is an on-going process.

Designers were looking for a better solution, aiming to light the new facility with the latest-generation LED fixtures to provide the most energy-efficient, safe and reliable illumination. The goals for these impeccable standards: to reduce total energy consumption, maximise lighting efficiency, improve sustainability and safety, reduce maintenance demand and lower total operating cost. In addition, because of its harbour location, reducing light pollution for the benefit and well-being of both humans and wildlife was also a priority, making Dark Sky-compliant lighting a must.

Due to upgrading to Dialight's next-generation LED fixtures, Rubis expects to reduce energy lighting consumption, along with the greenhouse gases produced as a result, at the new facility by 60% compared to conventional lighting. Based on maintenance expenditures at other similar facilities, the company also expects save an impressive €100,000 per year on maintenance, for lights that are guaranteed to last, multiplying the annual savings accordingly. Because the Dialight fixtures are highly resistant to salt-spray corrosion, they'll hold up much better to the harsh environment along the North Sea. And, because they provide a much higher CRI and quality of light compared to conventional fixtures, coupled with strategic light placement to ensure clarity and visibility for workers, the Dialight fixtures create a safe, comfortable and welcoming environment for everyone at the site.

The powerful combination of energy and maintenance savings is expected to generate a payback period of less than four years, creating a substantial ROI for Rubis at this new facility. The outstanding efficiency and sustainability of the LED fixtures also allows the company to more easily meet annual governmental energy audit requirements, and achieve its goal of operating a zero-emissions facility. The project has been so successful, the company plans to expand the project to retrofit existing terminals with new, state-ofthe-art Dialight LED fixtures.

"We've been extremely pleased with the Dialight products," Wrana said. "They not only give us the high efficiency and low emissions we needed to meet our specifications, but they also give our facility a modern, safe and vibrant look, which our staff and customers both appreciate."



Dialight

PRODUCT PORTFOLIO High Bays

PRODUCT PORTFOLIO High Bays



WARNING - INSTALLATION & SECONDARY RETENTION. Use of any Dialight products 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) 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 dislocation of its products

dislocation of its products.

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je	lm/W	ССТ	Lens	Beam Distribution		
ilaı	ilant® High Bay*					
	134	5000K (cool white)	Clear Polycarbonate	Medium		
	135	5000K (cool white)	Clear Polycarbonate	Medium		
	145	5000K (cool white)	Clear Polycarbonate	Medium		
	136	5000K (cool white)	Clear Polycarbonate	Medium		
	146	5000K (cool white)	Glass - Clear	Medium		
eS	eSite® High 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	lydrogei	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		
	iant [™] 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		
	1.16	A Delt half to a local ball				

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PRODUCT PORTFOLIO Area Lights, Bulkheads

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dislocation of its products

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е	lm/W	ССТ	Lens	Beam Distribution
la	nt® Area	Light		
	138	5000K (cool white)	Glass - Clear	180°
	137	5000K (cool white)	Glass - Clear	180°
	133	5000K (cool white)	Glass - Clear	180°
	143	5000K (cool white)	Glass - Clear	360°
	140	5000K (cool white)	Glass - Clear	360°
	136	5000K (cool white)	Glass - Clear	360°
S	te [®] Area	Light		
	97	5000K (cool white)	Tempered Glass	180°
	103	5000K (cool white)	Tempered Glass	360°
ila	nt® Bulk	head		
	149	5000K (cool white)	Clear Polycarbonate	Circular
	149	5000K (cool white)	Clear Polycarbonate	Circular
	144	5000K (cool white)	Clear Polycarbonate	Ultra-Wide (Type 1)
	142	5000K (cool white)	Clear Polycarbonate	Ultra-Wide (Type 1)
	128	5000K (cool white)	Clear Polycarbonate	Circular
	124	5000K (cool white)	Clear Polycarbonate	Ultra-Wide (Type 1)
əS	ite [®] Bulk	khead		
	153	5000K (cool white)	Clear Polycarbonate	Circular
	138	5000K (cool white)	Clear Polycarbonate	Circular
	144	5000K (cool white)	Clear Polycarbonate	Ultra-Wide (Type 1)
	138	5000K (cool white)	Clear Polycarbonate	Ultra-Wide (Type 1)
	132	5000K (cool white)	Clear Polycarbonate	360°
	129	5000K (cool white)	Clear Polycarbonate	360°
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PRODUCT PORTFOLIO Floodlights

PRODUCT PORTFOLIO Linear Lights



Neutral white options available, please consult local Dialight sales office for availability. *For more details on product specifications, please visit www.dialight.com.*

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dislocation of its products

*Emergency Battery Backup Model

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HAZARDOUS LOCATIONS 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
Τ5	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 utimate 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, use and maintenance of such products and all customers (including but not limited to end customers) are 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 software detailed herein are subject to applicable warranties 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 data sheets); (b) Dialight terms and conditions of sale; and, (c) the relevant product warranties. To the extent that any contract is deemed formed between Dialight and the purchaser of Dialight product and/or and-user, versions of documents available at <u>www.dialight.com</u> as at the date of sale shall be the versions incorporated

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