# DIALIGHT INDUSTRIAL LED LIGHTING For Chemical & Petrochemical

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**Applications** 

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### WHY LIGHTING MATTERS in Chemical and Petrochemical Applications



Lighting is of critical importance in Chemical and Petrochemical plants to maximize both safety and productivity. These sites are among the most dangerous places to work due to the presence of volatile chemicals and explosive environments. It is without question that the lighting must be able to prevent and withstand combustible and explosive atmospheres while also providing clear illumination for workers to read color coded safety labels. For this reason, and the fact that workers can struggle with fatigue when operating complicated, specialized equipment for long periods of time, the Chemical Safety Board recommends bright white lighting.











High vibration and humidity

Airborne substances, including caustic chemicals and vapors

Noisy, complex heavy machinery

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

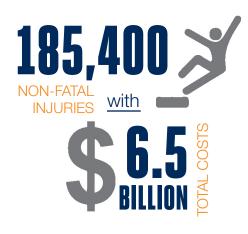
Power surges and electric shock

Flammable and explosive environments

Chemical Safety Board reference: ANSI/API RP 755: Fatigue Risk Management System

# THE COST OF POOR LIGHTING in Chem/Petrochem Applications

Poor illumination can contribute to tragic work site accidents and injuries in the Chemical and Petrochemical sector. Between 2009-2018 the US Bureau of Labor statistics cited:





The Chemical and Petrochemical industry involves risks and hazards that demand high quality lighting. What's more, the Chemical and Petrochemical industries have been global leaders in sustainability, offering essential materials and energy, while seeking to reduce harmful emissions. Dialight industrial LED lighting is engineered to maximize safety while minimizing environmental impact. 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

### **DIALIGHT SOLUTIONS** for Chemical and Petrochemical Applications

Dialight is the world leader in industrial LED lighting technology with millions of fixtures installed worldwide. We specialize 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 maximizing 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 Chemical and Petrochemical Industry.



# WHERE TO USE DIALIGHT PRODUCTS in Chem/Petrochem Applications

- TANK FARMS
- LABORATORIES
- MAINTENANCE SHOPS
- CHEMICAL STORAGE
- PROCESS AREAS
- COOLING TOWERS
- MCC/ELECTRICAL EQUIPMENT ROOMS
- WATER TREATMENT

See product portfolio pages for more detailed product and ordering information

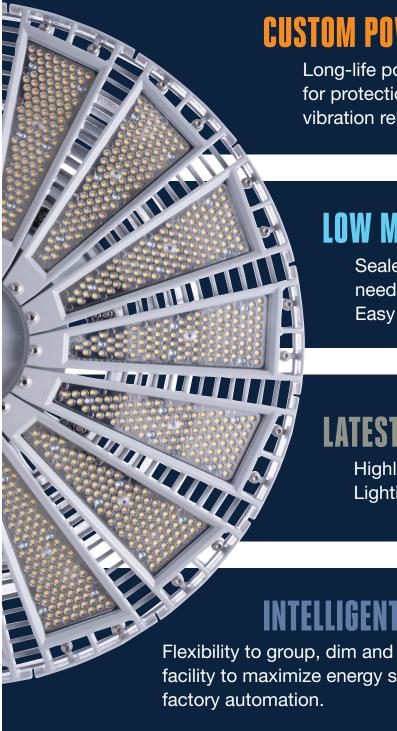
- CATWALKS
- CONVEYORS (FOR STANCHION MOUNTS)

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- WAREHOUSES AND GENERAL AREAS
- GENERAL FLOOD LIGHTING
- RAIL YARDS
- LOADING/UNLOADING AREAS

# **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 Chemical and Petrochemical Plants, in mind.



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### **CUSTOM POWER SUPPLIES**

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

## LOW MAINTENANCE MECHANICAL DESIGN

Sealed and optimized 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 maximize energy savings. Plus, seamless integration with existing SafeSite<sup>®</sup> High Bay

Hazardous location chemical

storage and processing

### **APPLICATION GUIDE** for Chemical and Petrochemical Sites

SafeSite® and Vigilant® Area Lights

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





Vigilant<sup>®</sup> High Bay For non-hazardous indoor or

outdoor high bay applications over 14 feet





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



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\*Ask about our retrofit adapters to save labor by retrofitting to existing HID infrastructure

#### Dialight

#### Reliant<sup>™</sup> High Bay

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For indoor, light industrial applications and lighter-duty areas of heavy industrial facilities, such as warehouses



#### SafeSite® and Vigilant® **LP/TC Linears**

For hazardous and non-hazardous indoor or outdoor fluorescent strip/vaportite replacements, task or inspection lighting, electrical rooms, shops, and process areas. 4ft and 2ft versions available



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#### SafeSite® and DuroSite® **Flood Lights** For hazardous and non-hazardous indoor or

outdoor flood lighting applications; multiple

beam patterns available





### CASE STUDIES Diamond Voge Tulsa, Oklahoma

Because of the potential for airborne particles and fumes, the Diamond Vogel facility is a Class I Div 2 hazardous environment, which imposes strict requirements on the type of fixtures that could be used safely inside. Not only must they be hazardous certified, but heat is also a concern, as temperatures routinely reach 110° F under the scorching midwestern sun. With over fifty 11,000 lumen, six 14,000 lumen and six 26,000 lumen Class I, Div. 2 SafeSite® High Bays now in place, Production Supervisor Alton Wells says it's "like night and day" inside the facility. To add, they were able to reduce their fixture count by about 10 lights. Because several of the fixtures Diamond Vogel chose included Dialight's built-in DC battery backup system, this not only substantially improved egress and safety lighting, but also cut down on maintenance of the system. Now, the facility has 13 battery backup lights, all wired into a transfer switch and central DC power supply. That means multiple points of safety lighting, with just one point of maintenance.

- Installed 63 Dialight SafeSite High Bay fixtures and 6 linears
- Incandescent lighting maintenance was an ongoing chore
- Poor light quality hindered productivity and quality control
- Class I Div. 2 hazardous environment
- Reduced fixture count by 10

Dialight

# CASE STUDIES Rubis Terminal Rotterdam, The Netherlands

Rubis Group is the fifth largest independent operator in Europe of downstream petroleum and chemical facilities. With a new Rotterdam location, 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. Because of its harbor 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. By opting for Dialight's next-generation LED fixtures, Rubis reduced energy lighting consumption, along with the greenhouse gases produced as a result, at the new facility by 60 percent compared to conventional lighting. Based on maintenance expenditures at other similar facilities, the company also saved around 100,000 euros per year on maintenance, for lights that were guaranteed to last, multiplying the annual savings accordingly.

- Zero-emissions facility
- Installed over 270 ATEX certified and non-certified fixtures
- Sought alternative to failure-prone fluorescent fixtures
- Reduced energy consumption 60 percent 100,000 euros annual maintenance savings



For more case study information please visit www.dialight.com

## **PRODUCT PORTFOLIO** High Bays

# **PRODUCT PORTFOLIO** High Bays

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	MANDAL CALLAND	-	Part Number	Certification	Fixture Lumens	Wattage	lm/W	ССТ	Lens	Beam Distribution	
ALASSAN				Vigilant <sup>®</sup> High Bay							
CONTRACTOR OF CONTRACTOR			HEU7MC2ANNWNGN	UL 1598, CSA	11,250	80	141	5000K (cool white)	Glass - Clear	Medium	
			HEU7MC2BNNWNGN	UL 1598, CSA	14,250	102	140	5000K (cool white)	Glass - Clear	Medium	
			HEU7MC2CNNWNGN	UL 1598, CSA	19,500	129	151	5000K (cool white)	Glass - Clear	Medium	
VIGILANT® HIGH BAY	SAFESITE® HIGH BAY	RELIANT <sup>™</sup> HIGH BAY	HEU7MC2ENNWNGN	UL 1598, CSA	26,250	186	141	5000K (cool white)	Glass - Clear	Medium	
For use in non-hazardous indoor and outdoor	For use in hazardous classified high bay	For use in indoor non-hazardous applications to				SafeSit	te <sup>®</sup> Higl	h Bay			
high bay and occasionally flood lighting applications. Replaces up to 1,000 watt traditional HID fixtures.	applications where chemical vapors or explosive dusts are present. See technical spec sheet for applicable certifications.	replace either HID or Fluorescent fixtures up to 1,000 watts where harsh environment protection is less of a concern.	HED7MC2ANNWNGN	UL 844 (CID2)	11,250	80	141	5000K (cool white)	Glass - Clear	Medium	
Ideally suited for:	Ideally suited for:	Ideally suited for:	HED7MC2BNNWNGN	UL 844 (CID2)	14,250	102	140	5000K (cool white)	Glass - Clear	Medium	
STORAGE/WAREHOUSE MAINTENANCE SHOPS	PROCESS AREAS CHEMICAL STORAGE	STORAGE/WAREHOUSE MAINTENANCE SHOPS	HED7MC2CNNWNGN	UL 844 (CID2)	19,500	129	151	5000K (cool white)	Glass - Clear	Medium	
BOILER ROOM	WATER TREATMENT	SHIPPING/RECEIVING	HED7MC2ENNWNGN	UL 844 (CID2)	26,250	186	141	5000K (cool white)	Glass - Clear	Medium	
	LOADING/UNLOADING		HEC7MC2ENNWNGN	UL 844 (CID1)	23,500	186	126	5000K (cool white)	Clear Tempered Glass	Circular	
8888888		Contraction of the second seco				Reliant	t <sup>™</sup> High	Bay*			
			RHU5MC2FDCNNGN	UL 1598, CSA	26,400	199	133	5000K (cool white)	Diffused Polycarbonate	Medium	
			RHU5MC2HDCNNGN	UL 1598, CSA	31,500	239	132	5000K (cool white)	Diffused Polycarbonate	Medium	
			Vigilant® Low Bay								
			LEULUC29NNWNGN	UL 1598, CSA	9,000	80	113	5000K (cool white)	Polycarbonate Dome - Diffused	Ultra Wide	
				SafeSite <sup>®</sup> Low Bay							
VIGILANT®			LEDLUC29NNWNGN	UL 844 (CID2)	9,000	80	113	5000K (cool white)	Polycarbonate Dome - Diffused	Ultra Wide	
HIGH OUTPUT HIGH BAY	VIGILANT® LOW BAY	SAFESITE® LOW BAY		4/1)				HIM			
For use in high output or high ceiling non- hazardous indoor and outdoor high bay applications. Replaces up to 1,500 watt traditional HID fixtures with mounting heights up to 100'.	For use in indoor and outdoor lower mounting height high bay applications where wider light distribution is required. Replaces up to 250+ watt traditional HID fixtures.	For use in lower mounting height hazardous high bay applications where chemical vapors or explosive dusts are present. See technical spec sheet for applicable certifications.			1		1	5			
Ideally suited for:	Ideally suited for:	Ideally suited for:			<i>x</i>		1		1 1 1 1000	-	
STORAGE/WAREHOUSE	WAREHOUSES	PROCESS AREAS					F	a		<u>•</u>	
	MCC/ELECTRICAL ROOMS	CHEMICAL STORAGE					F	1999-000	IIII A	21	
	MAINTENANCE SHOPS	LABORATORIES					ſ				
		LOADING/UNLOADING									
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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.

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### **PRODUCT PORTFOLIO** Area Lights

# **PRODUCT PORTFOLIO** Area Light Accessories



For more details on product specifications including mounting information, please visit www.dialight.com

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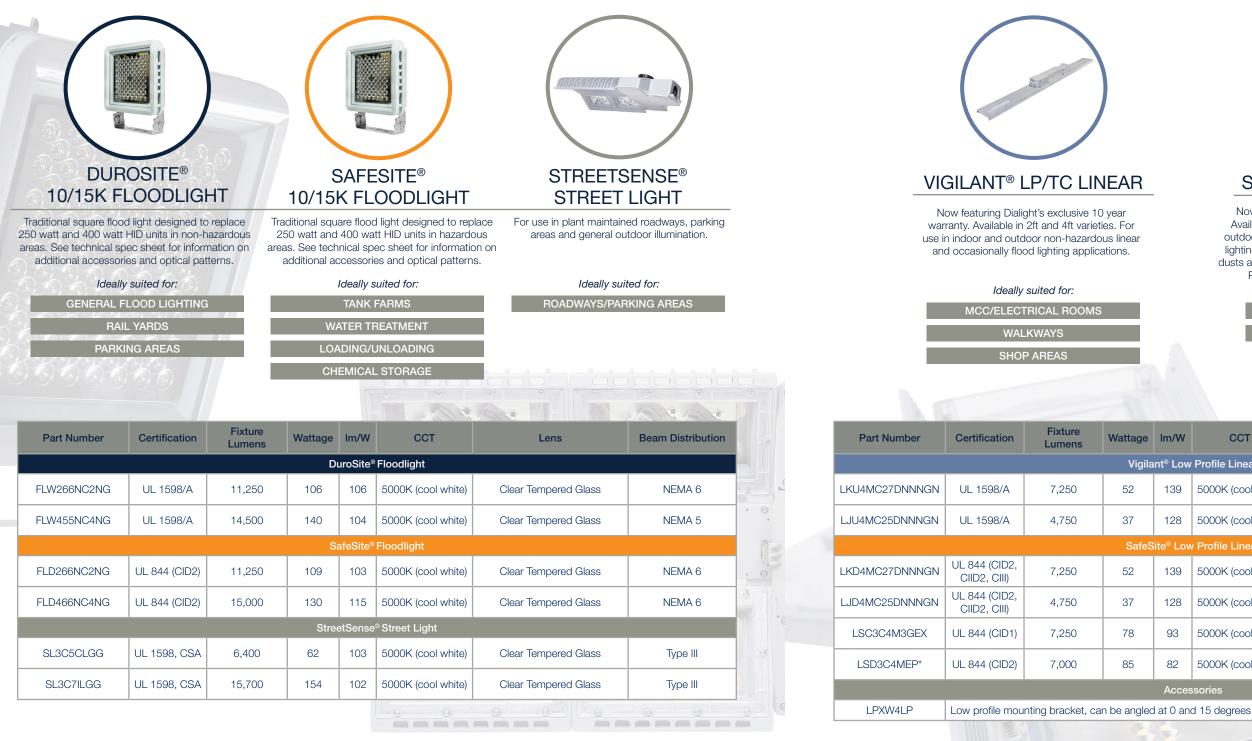
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ertilite <sup>®</sup> V Retrofit Kit - HZXTHKL					Thomas & Betts Hazlux <sup>®</sup> Retrofit Kit - HZXTHTB							
ing	Wall	Wall			Pendant	Pendant Cone	Flexible Pendant		Ceiling		Wall	
k VMX-	2 VMB2B & VI	VMB2B & VMB-2			ЗP	ЗF	3C		ЗW		5S	
k VMX-	3 VMB3B & VI	VMB3B & VMB-3			4P	4F	-		4W		6S	
3, 8B, 9B VMS5B					-					5J, 6J		
50					Wall	25° Angle Stanchion	25° Angl Stanchic		Straight Stanchion		Straight Stanchion	
					VB2-VIB	VS4	VS4-VIB VL4			VL4-VIB		
ster III Retrofit Kit - HZXTHAP				VB3-VIB	VS5	VS5-VI	В	VL5		VL5-VIB		
ng	Wall	S	anchion		GE Lighting	g Solutions	s – Filtr-G	arc	l™ Retrofit	Kit	- HZXTHGE	
-75	KPWB-75	K	PS-125		Pendant	Ceiling	Wall	s	Stanchion	(	Quad Mount	
100	KPWB-100	K	PS-150	l	3P	ЗF	3C	ЗW			5S	
		K	PST-125	ľ	4P	4F			4W		6S	
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### **PRODUCT PORTFOLIO** Floodlights

## **PRODUCT PORTFOLIO** Linear Lights



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dislocation of its products.

#### Dialight



#### SAFESITE<sup>®</sup> LP/TC LINEAR

Now featuring Dialight's exclusive 10 year warranty. Available in 2ft and 4ft varieties. For use in indoor and outdoor hazardous certified linear and occasionally flood lighting applications where chemical vapors or explosive dusts are present. CID1 linear available in a different series. Refer to Dialight website for more information.

#### Ideally suited for:

LABORATORIES PROCESS AREAS

n/W	ССТ	Lens	Beam Distribution			
<sup>®</sup> Low	Profile Linear					
139	5000K (cool white)	Clear Polycarbonate	Medium			
128	5000K (cool white)	Clear Polycarbonate	Medium			
<sup>®</sup> Low	/ Profile Linear					
139	5000K (cool white)	Clear Polycarbonate	Medium			
128	5000K (cool white)	Clear Polycarbonate	Medium			
93	5000K (cool white)	Clear Tempered Glass	Medium			
82	5000K (cool white)	Clear Polycarbonate	Medium			
Acces	sories					
0 and 15 degrees						

\*Battery backup unit

#### For more details on product specifications, please visit www.dialight.com.

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# **HAZARDOUS LOCATIONS RATINGS**

Fixed and portable fixtures for installation and use in hazardous (classified) locations Class I, Divisions 1 and 2, Groups A, B, C, and D; Class II, Division 1, Groups E, F, and G; Class II, Division 2, Groups F and G; and Class III, Divisions 1 and 2, in accordance with the National Electrical Code, NFPA 70

#### Classes

The classes define the general nature of hazardous material in the surrounding atmosphere.

Class	Hazardous Material in Surrounding Atmosphere
Class I	Hazardous due to the presence of flammable gases or vapors in the air in quantities to produce explosive or ignitible mixtures
Class II	Hazardous due to the presence of combustible and/or conductive dusts
Class III	Hazardous due to the presence of easily ignitible fibers and flyings, such as wood chips, cotton, flax and nylon. Group classifications are not applied to this class

#### **Divisions**

The division defines the likelihood of hazardous substances being present in ignitible concentrations in the surrounding atmosphere.

Division	Presence of Hazardous Material				
Division 1	The hazard exists during normal operating conditions				
Division 2	The hazard is present only due to accidental system breakdowns or abnormal operations				

#### Groups

The group(s) are determined by the specific hazardous materials which may be present.

Group	Hazardous Material in Surrounding Atmosphere						
Class I Groups							
Group A	Acetylene						
Group B	Hydrogen, fuel and combustible process gases containing more than 30% hydrogen by volume or gases of equivalent hazard such as butadiene, ethylene oxide, propylene oxide and acrolein						
Group C	Carbon monoxide, methyl ether, hydrogen sulfide, methylacetylene, cyclopropane, ethyl and ethylene or gases of equivalent hazard						
Group D	Gasoline, acetone, ammonia, benzene, butane, cyclopropane, ethanol, hexane, methanol, methane, vinyl chloride, natural gas, naphtha, propane or gases of equivalent hazard						
Class II Groups							
Group E	Combustible metal dusts, including aluminum, magnesium and their commercial alloys or other combustible dusts whose particle size, abrasiveness and conductivity present similar hazards in connection with electrical equipment						
Group F	Carbonaceous dusts that have more than 8 percent total entrapped volatiles or that have been sensitized by other materials so that they present an explosion hazard. Coal, carbon black, charcoal, and coke dusts are examples of carbonaceous dusts						
Group G	Flour dust, grain dust, flour, starch, sugar, wood, plastic and chemicals						

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info@dialight.com	Fax: 281-492-1531
	info@dialight.com

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#### WARNING / DISCLAIMERS:

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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 of the subject to applicable warranties and terms and conditions of use/purchase. Unless agreed otherwise in writing by an authorized representative of Dialight. Dialight cost of current versions of: (a) relevant product documentation (including relevant product stars) (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 purchase 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 even

Exclusion of liability. To the extent permissible under the relevant law, Dialight disclaims all liability for personal injury and/or other damage resulting from any dislodgment or other dislocation of its products. Whilst Dialight has used its reasonable endeavours to ensure the completeness and accuracy of information herein, Dialight does not assume any liability for damages resulting from use of this information or for any third-party representations made in relation to Dialight products.

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