Interior/Exterior Lighting

HELLA's extensive range of ultra reliable LED products enhance interior/exterior spaces with superior illumination.

Contents

Interior/Exterior Lighting

LED LIGHTING TECHNOLOGY
– ENERGY EFFICIENT ILLUMINATION

HELLA LED lighting enhances interiors by adding functionality, increased energy efficiency and long term durability.

Compared to traditional incandescent lighting, LED technology provides low power consumption, increased reliability, a reduction in radiated heat, longer life and less maintenance.

Not all LEDs are created equal
When comparing one LED product to another it is important to not just look at the initial purchase price but consider the full life time cost and what attributes combine to make a quality LED product.

To design efficient and reliable LED luminaires, many factors need to be considered. Light output, beam pattern, material choices and lamp protection can all make a significant difference in the performance and life of a lamp.

It is also important to consider the application where the lamp is likely to be used and what sort of illumination you desire. Corrosive moisture, heat, vibration and voltage fluctuations can all affect an LED device so these factors need to be managed.
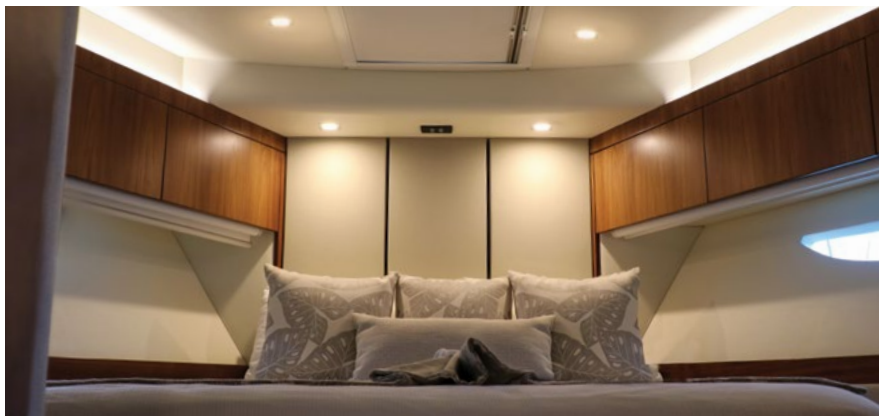
HELLA LED lamps utilise the latest technology, quality components and materials to provide the best efficacy (lumens per watt), consistent colour and light output with long term reliability, even in the most demanding conditions.

With many LED lamps offered throughout the world's markets, it is important to understand the differences and what aspects to consider when comparing LED products.

→ **Actual Light Output**

→ **Colour Temperature and Colour Rendering Index (CRI)**

→ **Thermal Management and Sealing for reliability**

→ **Electrical Interference and Flicker**

Light Output and Beam Patterns
The term 'Lumen' is commonly used to describe the light output of LED lights. Many companies describe 'Raw' lumen figures rather than the more realistic 'Effective' lumens.

Raw Lumens are a measure of the theoretical output of a light and is calculated by multiplying the theoretical rated output of the LEDs by the number of LEDs in the lamp.

Example: 8 LEDs rated at 100 Lumens per watt 8 x 100 = 800 Raw Lumens.

Factors such as the power used to drive the lamp, thermal losses and optical losses all contribute to a possible 20-50% decrease of the light lumens emitted by the LED.

Effective Lumens measure the actual output from a light after taking into consideration real world losses (e.g. thermal, optical, and assembly). Therefore it is a much more accurate representation of the light being produced.

Example: Raw lumens may = 800 but when light decreases due to thermal, optical and assembly, a 50% decrease in actual output and usable light can result. 800 raw lumens minus 50% losses = 400 Effective Lumens.
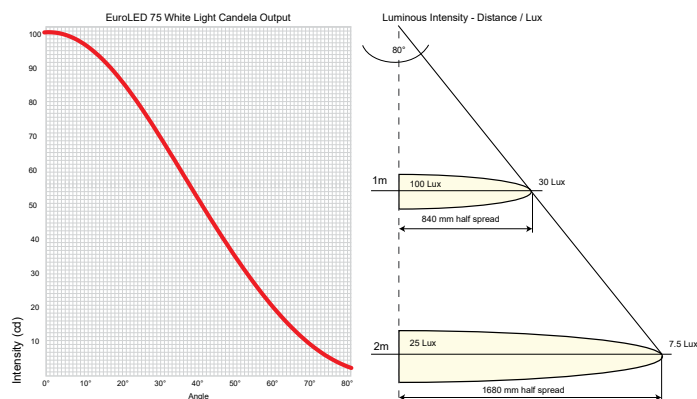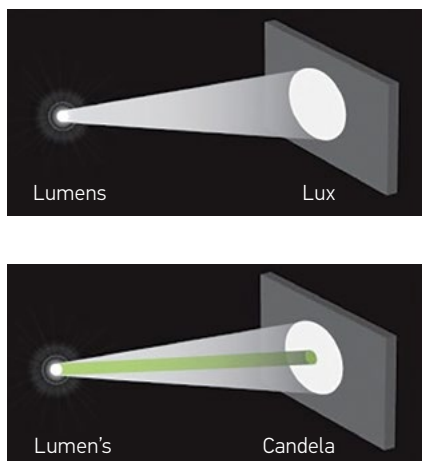
Lux and candela diagrams to illustrate accurate light output and beam angles.

Thermal Losses can equate for 20-30% decrease in light output

LEDs produce a tremendous amount of power in a relatively small area and some of this power is converted to heat. However unlike incandescent lamps LEDs do not like heat. As the LEDs increase in temperature the actual light output diminishes.

LED manufacturers typically measure the Raw Lumen output produced by their LEDs after 25 milliseconds (ms). That is equivalent to a flash bulb, giving a lumen number that is the absolute maximum value. However real world applications require the lamp to run much longer meaning potential losses of up to 30%.

All HELLA LED lamps are designed to dissipate heat away from LEDs through effective thermal management. HELLA also uses sophisticated photometric equipment to measure the lamps and only after 30 minutes of operation so the LED temperature has stabilised, ensuring you always get a more accurate 'effective' lumens measure.

Optical & Assembly losses can equate to 10-20% decrease in light

These losses are present whether the light source is an LED or a bulb. As light travels through an object (such as a lens), it loses intensity depending on the clarity of the material. This is due to inherent losses internal to the material and also to losses at the boundary of the part as the light travels from air, through the lens, and back to air.

There are also losses associated with assembly and manufacturing variation. The LED output varies as the assembly tolerances may diminish the overall performance from theoretical LED maximums.

Simply adding the expected values of the LED light sources together will never result in a lamp that shines that amount of light on the ground.

To accurately measure light performance and beam angles compare Lux Charts

Lumens are not the only measurement that is important – Another, more useful measurement of actual light output is Lux. Lux and candela ratings refer to the actual light intensity from the lamp at given distances and direction. This way you know what light levels to expect when designing your lighting layout.

Quality lighting manufacturers using state of the art photometric equipment, are able to provide accurate lux or candela charts so consumers get a fair representation of the expected Luminaire performance.

Another aspect to consider when reviewing luminaire performance is the evenness of illumination. Expressed as 'beam angle' this gives the user an idea of how spread or narrow the luminaire will be. Down lights will often have a wide spread optic to fill a room. By overlapping the wide spread beams from several luminaires, shadows are reduced. Other lamps like spotlights or courtesy lighting may be designed to focus or direct the light in a certain direction to achieve a specific effect. Make sure you select a luminaire with a lens and optical design to suit your application.

COLOUR TEMPERATURE, COLOUR RENDERING INDEX (CRI) & THERMAL MANAGEMENT

White LED lighting once had a reputation for appearing 'cold' and 'blue' due to the phosphorous coating technology. However today's devices rival traditional incandescent sources for colour and ambience.

LED colours set the tone, so choosing Luminaires that complement your interior or exterior is important

Colour temperature is measured in Kelvin and is a sliding scale of light that appears bluer or more orange at each end. HELLA describes higher colour temperatures (5000K) as 'cool white' and lower colour temperatures (3000K) as 'warm white'.

Cool white is recommended for visual tasks, work areas and exterior lighting, as it is known to reduce fatigue and increase alertness over long periods of time.

Warm white is suggested for interior spaces as it adds life and vibrancy to people and objects. It is considered more flattering to skin tones or fabrics and makes food look fresh and attractive.
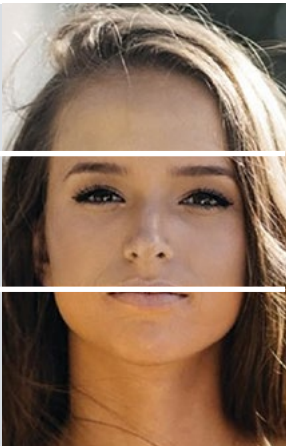
1850K	Candle	
2800K	Halogen Bulb (Incandescent Lamp)	
3000K~	Warm White LED	
5000K~	Cool White LED	
5700K~	Daylight	

When selecting LED interior lighting look for lamps with a high colour rendering index (CRI)

The higher the CRI rating the better and truer colour reproduction you will get of various objects. For example sunlight has the highest CRI rating of 100. LED lamps with a CRI rating of 80 or higher will reproduce the colour scheme of the interior with good accuracy.

HELLA LED chips are selected from tight specification bins to ensure that lamps are the same brightness and colour temperature grade. This ensures a room full of lights will all have the same appearance e.g. colour temperature and intensity.

Colour Rendering Index – CRI

CRI: 50-70
Fair

CRI: 70-80
Good

CRI: 80-90
Excellent

CRI ratings >80 produce natural colours

Thermal Management and Sealing for Reliability

Although LED lamps run much cooler than incandescent lamps, LEDs and the electronics inside a lamp do heat up and if not cooled effectively can affect the light performance and the expected life span of the lamp. It is important lamp housings are designed to efficiently transport this heat away from the LED itself.
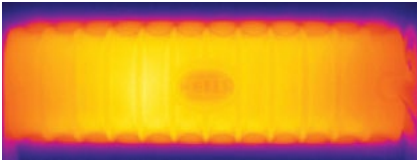
HELLA thermally conductive plastics are 30 times more thermally conductive than conventional plastic.

LEDs that overheat, meaning the junction temperature of the LED rises above a set threshold, will permanently degrade, significantly reducing their output. A very hot running Luminaire can also cause issues when interacting with the surrounding materials.

HELLA lamps are designed within stringent heat thresholds that ensures lamps will not overheat, meaning longer life.

Reliable Design and Quality Construction

Manufacturers of raw LEDs quote the lifetime of the LED chip as '50,000 hours'. This period of time is then often used to promote the expected life of the complete lamp. However to achieve this life expectancy, LEDs require precise current control, overvoltage/spike protection and temperature control to avoid any premature failure. For LED luminaire designers and manufacturers, in-depth design and engineering is required to produce such durable products. Sadly, most do not make the cut, despite their claims.

LED reliability is compromised if dust, moisture and other contaminants find their way inside the lamp. So the most effective way to protect the lamp is by completely sealing it from the elements. Sealed housings and cable entries, along with components designed to withstand shock, vibration and impacts all contribute towards exceptional life expectancy.

All HELLA LED lamps are at least IP 67 rated, meaning they can be washed and cleaned on the exterior of vehicles. If used for interior applications moisture and condensation from bathrooms and kitchens will not affect the lamp.

Electrical Interference and Flicker

Some LED products can demonstrate a flickering effect, usually when dimmed or if the lamps use low frequency components or dimmers. Not only is a flicker annoying and uncomfortable, it can also be harmful to those susceptible.

A recent US Department of Energy (DOE) report warns of poorly designed LED luminaires, associating low frequency 'Flicker' with the possibility to trigger epileptic attacks in parts of the population that are susceptible.

Electromagnetic Compatibility (EMC)

This is another safety concern, especially for emergency and industrial applications. Electromagnetic interference (EMI) can disrupt radio signals especially when in remote locations or areas with low reception. As electronic devices such as LED lamps become more common, so does the risk of unintended EMI that can have adverse effects on sensitive devices such as radios or communication equipment.

All HELLA LED products use quality components to prevent any possible flickering and are tested and certified to international standards for electromagnetic interference.

IP 30 (open)   IP 54 (partially sealed)   IP 67 (completely sealed)

DIMMABLE LOGOS
WHAT DO THEY MEAN?

Logos used throughout the Interior/Exterior section to help quick referencing of important product features are explained below.

Dimmable:
Analog DC Input

Light intensity is reduced as the DC input voltage is reduced below the lamps specified operating voltage.

Dimmable:
Internal Dimmer

Light intensity is controlled through the lamp's own internal circuitry via in-built buttons, an external DC power source and a standard switch. See specific lamp instructions for further information.

Dimmable:
PWM 10-100%

Light intensity is adjusted between 10-100% using a high frequency PWM (pulse width modulation) DC power supply, with adjustable duty cycle control.

Dual Intensity:
Switch Control

Light intensity can be switched between 100% and a lower level factory pre-set value, usually via an additional cable input supplied with the lamp using a positive feed from the DC power supply within the lamps operating voltage range.

EuroLED® 95 Gen 2 Round Down Lights – Recess Mount With Spring Clip

The next generation of LED high intensity down lights offers an improved class leading efficiency and durability. The smooth diffused lens creates a comfortable and uniform appearance with over 420 lumens of actual light in a broad and even illumination.
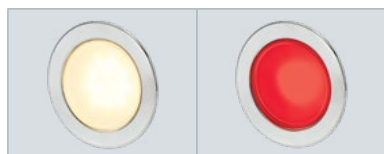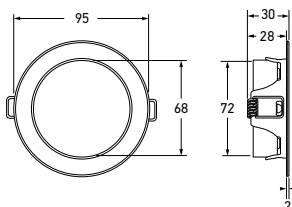
Warm White   Red – Secondary colour

Blue – Secondary colour

Dimmable: PWM 10-100% | Harsh UV UV RESISTANT | MULTI VOLT Power Supply

2JA 958 340-011		WHITE
2JA 958 340-101		WHITE/RED
2JA 958 340-111		WHITE/BLUE
2JA 958 340-021		WARM WHITE
2JA 958 340-121		WARM WHITE/RED
2JA 958 340-131		WARM WHITE/BLUE

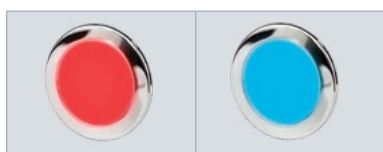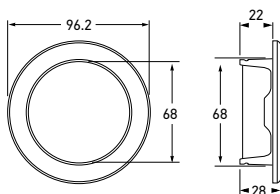|	
Mounting	Recess mount, 76mm diameter hole. Spring clip.
Voltage	Multivolt™ for optimum brightness at input voltage from 9 to 33 volts.
Power Consumption	6W
Protection	IP 6K9K (Protection against dust and high pressure/steam jet cleaning)
Cable Length	Pre-wired with 120mm of cable.
Compliance	C E

EuroLED® 95 Gen 2 Round Down Lights – Dual Colour– Screw Mount

The EuroLED 95 screw mount down lights, continue to deliver the latest in style, functionality and performance. The smooth diffused lens creates a comfortable and uniform appearance. The low profile trim is highly polished and is made from marine grade 316 stainless steel or white plastic. The ultimate in versatility, with a choice of light temperature between 5000K white and 2700K warm white. Red and Blue secondary LED colours also add increased functionality.

Red – Secondary colour   Blue – Secondary colour

Dimmable: PWM 10-100% | Harsh UV UV RESISTANT | Housing CORROSION PROOF | MULTI VOLT Power Supply

STAINLESS TRIM		WHITE TRIM		
2JA 958 340-161	Screw Mount	2JA 958 340-061	Screw Mount	WHITE/RED
2JA 958 340-171	Screw Mount	2JA 958 340-071	Screw Mount	WARM WHITE/RED
2JA 958 340-181	Screw Mount	2JA 958 340-081	Screw Mount	WHITE/BLUE
2JA 958 340-191	Screw Mount	2JA 958 340-091	Screw Mount	WARM WHITE/BLUE

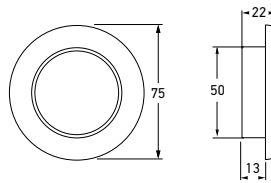|	
Mounting	Screw mount, 75mm diameter hole. Recess screw mount.
Voltage	Multivolt™ for optimum brightness at input voltages from 9 to 33 volts.
Power Consumption	6W (0.5A @ 12V / 0.25A @ 24V)
Protection	IP 6K7 (Protection against dust and temporary water immersion) IP 6K9K (Protection against dust and high pressure/steam jet cleaning)
Cable Length	Pre-wired with 120mm marine tinned cable
Compliance	C E

INTERIOR/EXTERIOR

Dimmable:
PWM 10-100%

RF CommSafe®

Harsh UV RESISTANT

Dimmable:
Analog DC Input

12 VOLT DC		24 VOLT DC		
2JA 958 110-031		**2JA 958 110-131**		**WHITE**
2JA 958 109-031		**2JA 958 109-131**		**WARM WHITE**

|	
Mounting	Recess mount, 50mm diameter hole.
Voltage	12V DC or 24V DC
Power Consumption	<3W
Protection	IP 6K7 (Protection against dust and temporary water immersion) IP 6K9K (Protection against dust and high pressure/steam jet cleaning)
Cable Length	Pre-wired with 130mm of cable
Compliance	C E ⊠

Additional rims and housings are available see page 181.

EuroLED® 75 Down Lights – Recess Mount

This down light features the latest in LED technology and is available in two white colour temperatures. Both the cool white and the warm white option feature a smooth, evenly distributed illumination and an optic specifically designed to reduce individual light source glare, which can lead to discomfort and eye strain. Each down light includes a black and a white plastic rim.
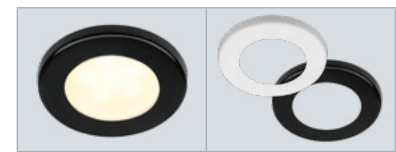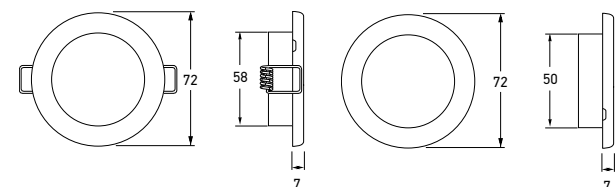
9AB 959 505-901   Black and white supplied plastic rims
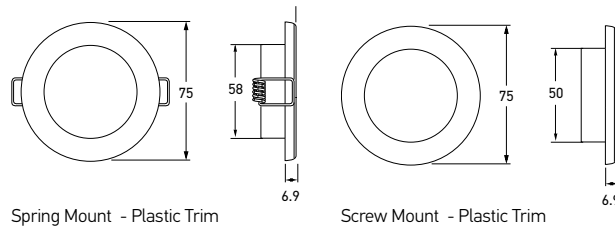
Spring Mount - Plastic Trim

Screw Mount - Plastic Trim

Voltage 12V

Housing CORROSION PROOF

Harsh UV RESISTANT

Spring Mount - Stainless Steel Trim

Screw Mount - Stainless Steel Trim

EuroLED® 75 Dual Colour LED Down Lights

Leading LED technology delivers exceptional colour rendering, an impressive output of 190 actual lumens, and a bright, broad and even illumination. Available in warm white/red or white/red, the secondary red LED colour also adds increased functionality by enhancing nighttime visibility. EuroLED® 75 lamps are completely sealed and suitable for both interior and exterior applications, wet or dry, and available in screw or spring mount options.

STAINLESS TRIM		WHITE TRIM		
2JA 015 247-021	**Screw Mount**	**2JA 015 247-011**	**Screw Mount**	**WHITE/RED**
2JA 015 247-121	**Screw Mount**	**2JA 015 247-111**	**Screw Mount**	**WARM WHITE/RED**
2JA 015 247-521	**Spring Mount**	**2JA 015 247-511**	**Spring Mount**	**WHITE/RED**
2JA 015 247-621	**Spring Mount**	**2JA 015 247-611**	**Spring Mount**	**WARM WHITE/RED**

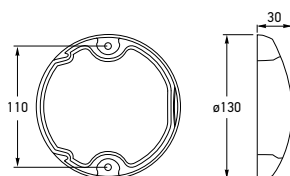|	
Mounting	50mm diameter hole screw mount, 58mm hole spring mount.
Voltage	12V DC
Power Consumption	3W
Protection	IP 6K7 (Protection against dust and temporary water immersion) IP 6K9K (Protection against dust and high pressure/steam jet cleaning)
Cable Length	Pre-wired with 120mm of cable
Supplied Rims	UV resistant plastic or 316 stainless steel options
Compliance	C E ⊠

Additional rims and housings are available see page 181.

INTERIOR/EXTERIOR

EuroLED® White Touch Lamp

White LED lamp with touch switching and clear lens. Touch the white pad to turn on and the black pad to turn off. Provides ultra long service life and is shock and vibration proof.

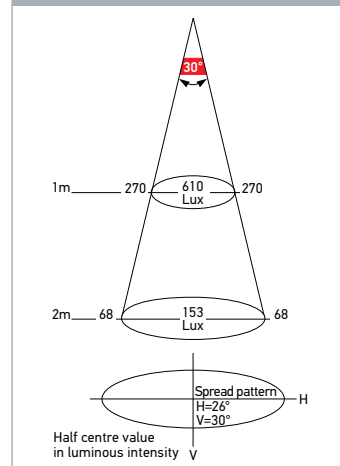| BLACK SHROUD		
2JA 959 950–551		**WHITE**
Mounting	Two hole surface mount with mounting bushes supplied.	
Voltage	Multivolt™ for optimum brightness at input voltage from 9 to 33 volts.	
Power Consumption	4W	
Protection	Reverse polarity and transient spike circuit protection. IP 6K6 (Protection against dust and high-pressure water jets) IP 6K7 (Protection against dust and temporary water immersion)	
Cable Length	Pre-wired with 2.5m of sheathed multi-core cable.	
Accessories	8HG 959 952-002 8HG 959 027-001 8HG 959 028-011	Mounting spacer - Black EuroLED® Cover - Black Screw boss kit - Pack of 4
Compliance	C E	

EuroLED® Lamp

White LED lamp with clear lens. Provides ultra long service life and is shock and vibration proof. Includes a black and a white rim. No switching or dimming.

2JA 959 820–502		WHITE
Mounting	Two hole surface mount with mounting bushes supplied.	
Voltage	Multivolt™ for optimum brightness at input voltage from 9 to 33 volts.	
Power Consumption	4W	
Protection	Reverse polarity and transient spike circuit protection. IP 6K6 (Protection against dust and high-pressure water jets) IP 6K7 (Protection against dust and temporary water immersion)	
Cable Length	Pre-wired with 2.5m of sheathed multi-core cable.	
Accessories	8HG 959 952-002 8HG 959 027-001 8HG 959 028-011	Mounting spacer - Black EuroLED® Cover - Black Screw boss kit - Pack of 4
Compliance	C E	

ILLUMINATION CHART

EuroLED® Interior Lamps

30°

1m — 270 — 610 Lux — 270

2m — 68 — 153 Lux — 68

Spread pattern
H=26°
V=30°
H

Half centre value
in luminous intensity
V

INTERIOR/EXTERIOR

INTERIOR/EXTERIOR LIGHTING

150 20 124 150

MULTI VOLT Power Supply   **UV RESISTANT** Harsh UV

WHITE PLASTIC RIM	POLISHED STAINLESS STEEL RIM		
2JA 980 631-501	**2JA 980 631-511**		**WHITE**
Mounting	Recess mount, 124mm diameter hole. Surface mount via optional spacer.		
Voltage	Multivolt™ for optimum brightness at input voltage from 9 to 33 volts.		
Power Consumption	4W		
Protection	Reverse polarity and transient spike circuit protection. Sealed against dust and water ingress.		
Cable Length	Pre-wired with 0.5m of sheathed multi-core tinned cable.		
Compliance	C E		

EuroLED® 150 Down Lights

White LED lamp with clear lens. Provides ultra long service life and is shock and vibration proof.

Packaging

MULTI VOLT Power Supply   **UV RESISTANT** Harsh UV

WHITE PLASTIC RIM	POLISHED STAINLESS STEEL RIM		
2JA 980 630-501	**2JA 980 630-511**		**WHITE**
Mounting	Recess mount, 124mm diameter hole. Surface mount via optional spacer.		
Voltage	Multivolt™ for optimum brightness at input voltage from 9 to 33 volts.		
Power Consumption	4W		
Protection	Reverse polarity and transient spike circuit protection. Sealed against dust and water ingress.		
Cable Length	Pre-wired with 0.5m of sheathed multi-core tinned cable.		
Compliance	C E		

EuroLED® Touch 150 Down Lights – Touch Switch
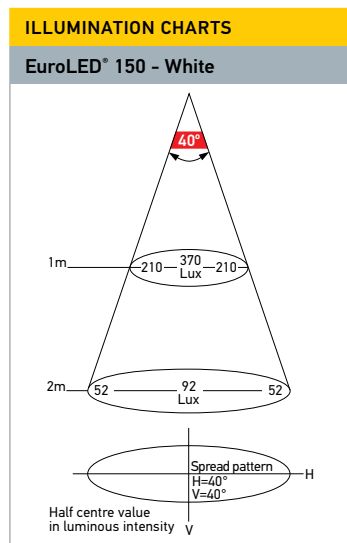
White LED lamp with touch switching and clear lens. Touch the white pad to turn on and the black pad to turn off. Provides ultra long service life and is shock and vibration proof.
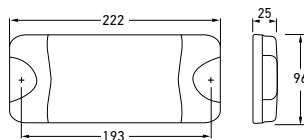
Packaging   Sealed cable entry

ILLUMINATION CHARTS

EuroLED® 150 – White

40°

1m —210— 370 Lux —210—

2m 52 — 92 Lux — 52

Spread pattern
H=40°
V=40°

Half centre value
in luminous intensity

H

V

DuraLED® Combi–S 50 White LED Lamp

DuraLED® Combi-S white 50 LED lamps are an extremely powerful source of white light and are available in two light patterns, Spread and Wide Spread, to suit a variety of uses including engine rooms, storage lockers or other heavy duty applications where reliability cannot be compromised. Each lamp is completely sealed, UV, impact and shock resistant ensuring an ultra-long service life.

2JA 980 629–501		WIDE SPREAD
2JA 980 629–001		SPREAD
Mounting	Two hole surface mount with mounting bushes supplied.	
Voltage	Multivolt™ for optimum brightness at input voltages from 9 to 33 volts.	
Power Consumption	<12W	
Protection	Reverse polarity and transient spike circuit protection. IP 6K7 (Protection against dust and temporary water immersion) IP 6K9K (Protection against dust and high pressure/steam jet cleaning)	
Cable Length	Pre-wired with 2.5m of cable.	
Compliance		

Ultra slim height of only 25mm.

DuraLED® Combi–S 50 White LED Lamp - Charcoal

DuraLED® Combi-S white 50 LED charcoal lens is an extremely powerful source of white light offering a safe, energy efficient and reliable alternative to incandescent and fluorescent lighting. Lens manufactured from Grilamid® clear nylon which features high UV and chemical resistance, and high impact strength. The lamp is fully sealed against dust and moisture ingress.

2JA 980 604–032		WIDE SPREAD
Mounting	Two hole surface mount with mounting bushes supplied.	
Voltage	Multivolt™ for optimum brightness at input voltages from 9 to 33 volts.	
Power Consumption	<12W	
Protection	As per 2JA 980 629–501 above.	
Cable Length	Pre-wired with 2.5m of cable.	
Lens Material	High impact and chemical resistant Grilamid® lens	
Compliance		

Ultra slim height of only 25mm.

ILLUMINATION CHARTS

2JA 980 629–001

36°

1m — 700 — 1650 Lux — 700
2m — 175 — 412 Lux — 175

Spread pattern
H=36°
V=36°
Half centre value in luminous intensity

2JA 980 629–501

100°

1m — 50 — 375 Lux — 50
2m — 12 — 94 Lux — 12

Spread pattern
H=100°
V=100°
Half centre value in luminous intensity

2JA 980 604–032

75°

1m — 320 — 1280 Lux — 320
2m — 80 — 320 Lux — 80

Spread pattern
H=75°
V=35°
Half centre value in luminous intensity

DuraLED® Combi-S 50 White LED Lamp with DT Connector

DuraLED® Combi-S white 50 LED is an extremely powerful source of white light offering a safe, energy efficient and reliable alternative to incandescent and fluorescent lighting. Lens manufactured from Grilamid® clear nylon which features high UV and chemical resistance, and high impact strength. The lamp is fully sealed against dust and moisture ingress.
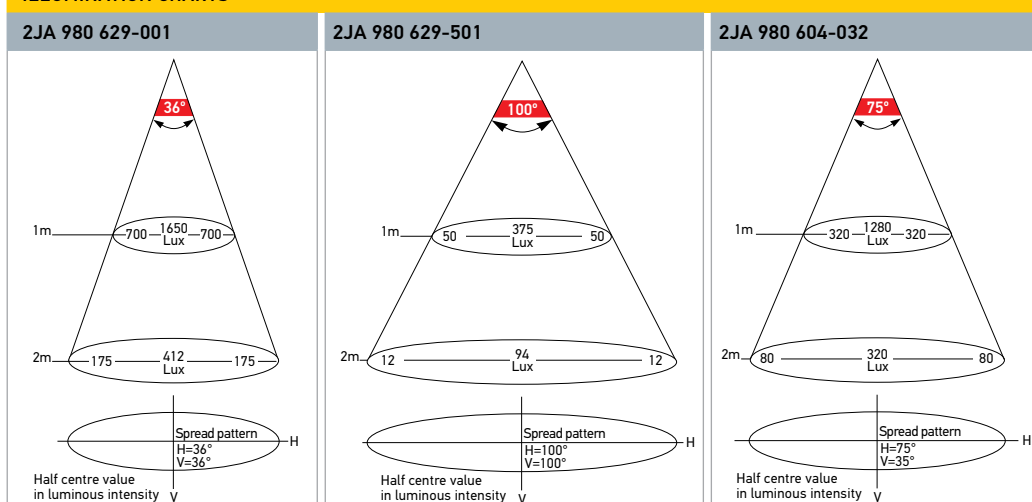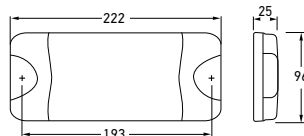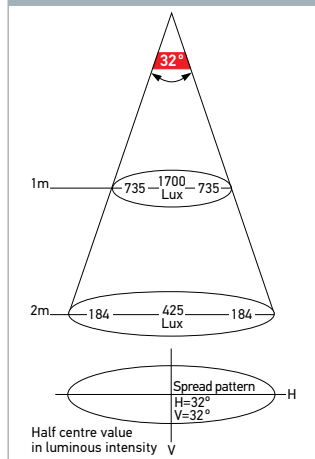
222 **25**
193 **96**

2JA 980 629-601		SPREAD
Mounting	Two hole surface mount with mounting bushes supplied.	
Voltage	Multivolt™ for optimum brightness at input voltages from 9 to 33 volts.	
Power Consumption	<12W	
Protection	Reverse polarity and transient spike circuit protection. IP 6K7 (Protection against dust and temporary water immersion) IP 6K9K (Protection against dust and high pressure/steam jet cleaning)	
Cable Length	Pre-wired with 130mm of cable with DT connector.	
Lens Material	High impact and chemical resistant Grilamid® lens	
Accessories	8KA 958 360-001 2 Pole Switch plug and socket (300mm) 8KA 958 361-001 2 Pole Y-splitter joint plug and socket (300mm) 8KA 958 363-001 2 Pole DT extension plug and socket (2.5m)	
Compliance		

ILLUMINATION CHART

P/N 2JA 980 629-601

32°

1m 735 — 1700 Lux — 735

2m 184 — 425 Lux — 184

Spread pattern
H=32°
V=32°
H

Half centre value
in luminous intensity V

Rear view showing DT Connector

Ultra slim height of only 25mm.

DT Connectors - 2 Pole Plug, Socket and Switch Accessories

8KA 958 360-001	(Switch)	
8KA 958 361-001	(Y-Splitter Joint)	1.5MM² CABLE SIZE
8KA 958 363-001	(Extension Cable)	

8KA 958 360-001
Switch-300mm

8KA 958 363-001
Extension cable -2.5m

8KA 958 361-001
Y-splitter joint-300mm

INTERIOR/EXTERIOR

DuraLED® White 36 LED Lamp

White high brightness LED lamp with Grilamid® lens. Exceptional light output, incorporating high efficacy electronics and LEDs resulting in low power consumption (<9 watts) and low heat. Lens manufactured from Grilamid® clear nylon which features high UV and chemical resistance, and high impact strength. The lamp is fully sealed against dust and moisture ingress.
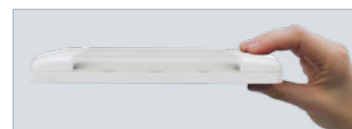
177 **31** **100** **148**

Harsh UV UV RESISTANT | Lens Material GMD | Power Supply MULTI VOLT™
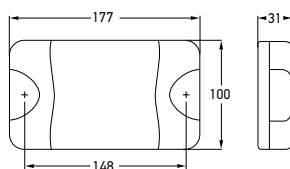
WHITE LENS		
2JA 959 037–202		SPREAD
Mounting	Two hole surface mount with mounting bushes supplied.	
Voltage	Multivolt™ for optimum brightness at input voltages from 9 to 33 volts.	
Power Consumption	<9W	
Protection	Reverse polarity and transient spike circuit protection. IP 6K6 (Protection against dust and high-pressure water jets) IP 6K7 (Protection against dust and temporary water immersion)	
Cable Length	Pre-wired with 2.5m of sheathed multi-core cable.	
Lens Material	High impact and chemical resistant Grilamid® lens	
Compliance	C€	⬙
See page 62 for DuraLED® accessories.		

DuraLED® White 36 LED Lamp

White LED interior lamp with either a diffusion or clear acrylic lens. The lamps are shock and vibration proof and are fully sealed against dust and moisture ingress.
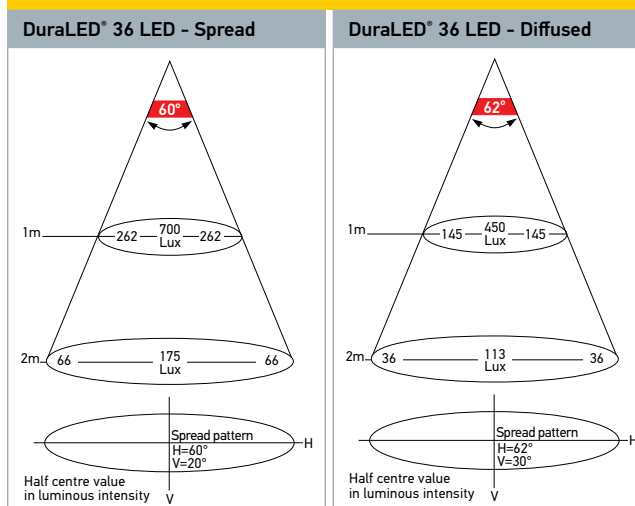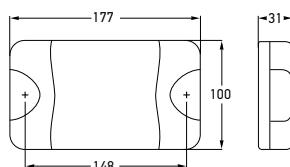
2JA 959 037–511

177 **31** **100** **148**

Harsh UV UV RESISTANT | Power Supply MULTI VOLT™
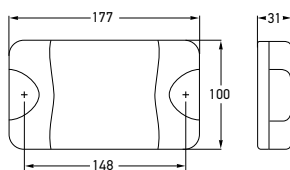
2JA 959 037–501		DIFFUSED
2JA 959 037–511		SPREAD
Mounting	Two hole surface mount with mounting bushes supplied.	
Voltage	Multivolt™ for optimum brightness at input voltages from 9 to 33 volts.	
Power Consumption	<9W	
Protection	See DuraLED® White 36 LED Lamp above.	
Cable Length	Pre-wired with 2.5m of sheathed multi-core cable.	
Lens Material	Acrylic	
Compliance	C€	⬙

ILLUMINATION CHARTS

DuraLED® 36 LED – Spread	DuraLED® 36 LED – Diffused
60°	62°
1m — 262 — 700 Lux — 262	1m — 145 — 450 Lux — 145
2m — 66 — 175 Lux — 66	2m — 36 — 113 Lux — 36
Spread pattern H=60° V=20° — H	Spread pattern H=62° V=30° — H
Half centre value in luminous intensity V	Half centre value in luminous intensity V

INTERIOR/EXTERIOR

INTERIOR/EXTERIOR LIGHTING

DuraLED® White 20 LED Lamp

White high brightness LED lamp. Exceptional light output, incorporating high efficacy electronics and LEDs resulting in low power consumption (<5 watts) and low heat. The lamp is fully sealed against dust and moisture ingress.

177 · 31 · 100 · 148

MULTI VOLT Power Supply · **UV RESISTANT** Harsh UV

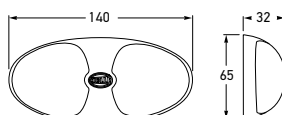| 2JA 980 608-112		SPREAD
Mounting	Two hole surface mount with mounting bushes supplied.	
Voltage	Multivolt™ for optimum brightness at input voltages from 9 to 33 volts.	
Power Consumption	5W	
Protection	Reverse polarity and transient spike circuit protection. IP 6K6 (Protection against dust and high-pressure water jets) IP 6K7 (Protection against dust and temporary water immersion)	
Cable Length	Pre-wired with 2.5m of sheathed multi-core cable.	
Compliance	C E	

See page 62 for DuraLED® accessories.

DuraLED® White 12 LED Lamp

White high brightness LED lamp. Exceptional light output, incorporating high efficacy electronics and LEDs resulting in low power consumption (<3 watts) and low heat. The lamp is fully sealed against dust and moisture ingress.
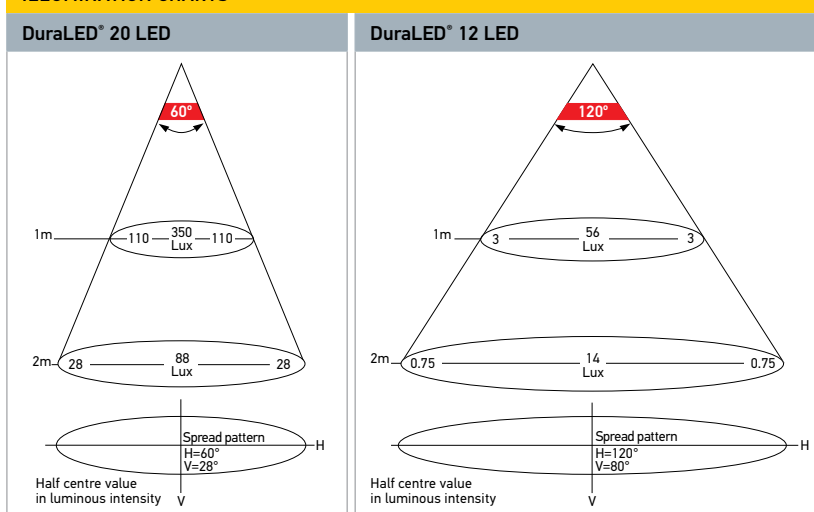
140 · 32 · 65

MULTI VOLT Power Supply · **Wide** Visibility Optic · **RF CommSafe™** · **UV RESISTANT** Harsh UV

2JA 959 700-112		WIDE SPREAD
Mounting	Two hole surface mount with mounting bushes supplied.	
Voltage	Multivolt™ for optimum brightness in 12 and 24 volt systems.	
Power Consumption	<3W	
Protection	Reverse polarity and transient spike circuit protection. Fully sealed against dust, high-pressure washing and temporary water immersion.	
Cable Length	Pre-wired with 2.5m of sheathed multi-core cable.	
Compliance	C E	

ILLUMINATION CHARTS

DuraLED® 20 LED

60°

1m — 110 — 350 Lux — 110

2m — 28 — 88 Lux — 28

Spread pattern H=60° V=28°
Half centre value in luminous intensity

DuraLED® 12 LED

120°

1m — 3 — 56 Lux — 3

2m — 0.75 — 14 Lux — 0.75

Spread pattern H=120° V=80°
Half centre value in luminous intensity

INTERIOR/EXTERIOR
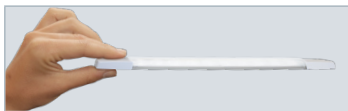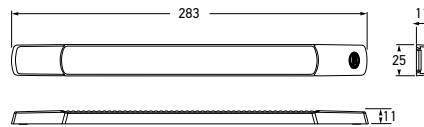
LED Interior/Exterior Strip Lamp – Surface Mount

LED interior surface mount strip lamps feature a shallow 11mm profile, completely sealed housing and class leading efficiency. The range is an ideal replacement for bulky fluorescent lighting and a wide range of wet or dry interior or exterior applications.
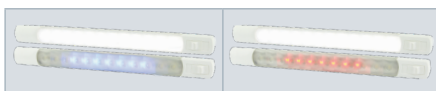
Ultra slim height of only 11mm.

Dimmable: Analog DC Input

Harsh UV RESISTANT

RF CommSafe

12 VOLT DC		24 VOLT DC		
2JA 958 124-021	2652	**2JA 958 124-421**	265224V	**WHITE**
Mounting	Surface mount.			
Power Consumption	<3W			
Protection	Reverse polarity protection. IP 6K7 (Protection against dust and temporary water immersion) IP 6K9K (Protection against dust and high-pressure/steam jet cleaning)			
Cable Length	Pre-wired with 2.5m of sheathed multi-core cable.			
Spare Parts	9HD 980 885-007 White screw caps (MOQ 4) 9HD 980 885-017 Charcoal screw caps (MOQ 4) 9HD 980 885-107 Chrome plated screw caps (MOQ 4)			
Note: Includes charcoal and white screw caps.				

LED Interior/Exterior Strip Lamp with Sealed Switch – Surface Mount

These LED interior surface mount strip lamps with sealed waterproof switch feature a shallow 11mm profile, completely sealed housings and class leading efficiency. The range is ideal for a wide range of interior or exterior applications.
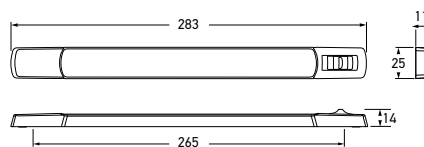
2JA 958 121-011
White/Blue

2JA 958 121-001
White/Red
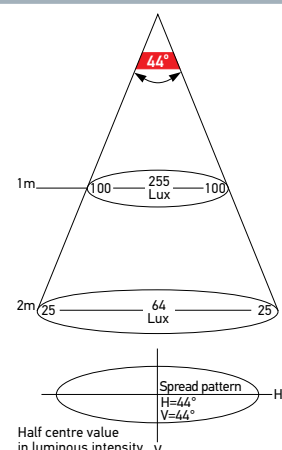
Ultra slim height of only 11mm.

Dimmable: Analog DC Input

Harsh UV RESISTANT

RF CommSafe

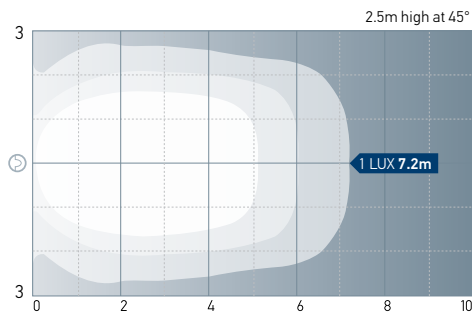| 12 VOLT DC		24 VOLT DC		
2JA 958 123-021	2652SW	**2JA 958 123-421**	2652SW24V	**WHITE**
2JA 958 121-011				**WHITE/BLUE**
2JA 958 121-001				**WHITE/RED**
Mounting	Surface mount.			
Power Consumption	White function: <3W	Colour function: <1W		
Protection	As per 2JA 958 124-021			
Cable Length	Pre-wired with 2.5m of sheathed multi-core cable. Dual colour lamps are pre-wired with 0.5m of twin core cable.			
Spare Parts	9HD 958 108-822 1 White switch screw cap + 1 white standard screw cap 9HD 958 108-832 1 Charcoal switch screw cap + 1 charcoal standard screw cap			
Note: 2JA 958 123-021 & 2JA 958 123-421 include charcoal screw caps only. 2JA 958 121-xxx include white screw caps only.				

ILLUMINATION CHART

2JA 958 123-xxx/2JA 958 121-xxx

44°

1m — 100 — 255 Lux — 100

2m — 25 — 64 Lux — 25

Spread pattern
H=44°
V=44°

Half centre value
in luminous intensity

INTERIOR/EXTERIOR LIGHTING

UV RESISTANT — Harsh UV

GMD — Lens Material

RF CommSafe™

Dimmable: Analog DC Input

15°

Light output directed downwards

283

11

25

11

LED Awning Lamp – Surface Mount

LED awning lamp with an ultra slim profile of only 11mm, a heavy duty Grilamid® lens and low power consumption of less than 3W, HELLA's LED Awning Lamp is ideal for interior and exterior use. It comes complete with charcoal as well as white end caps and can be accessorised with a matching 45° mounting bracket to angle the beam further. Combining state of the art technology with sophisticated looks, this new low profile LED Awning Lamp is a lighting solution which will fit many applications. The precision optic, with a 15° downwards spread pattern, is designed to cause minimum glare.

12 VOLT DC		24 VOLT DC		
2JA 980 879-001		**2JA 980 879-101**		**WHITE**
Mounting	Mounting Two hole surface mount.			
Power Consumption	<3W			
Protection	Reverse polarity protection. IP 6K7 (Protection against dust and temporary water immersion) IP 6K9K (Protection against dust and high-pressure/steam jet cleaning)			
Cable Length	Pre-wired with 2.5m of twin core cable.			
Lens Material	High impact and chemical resistant Grilamid® lens			
Spare Part	9HD 980 885-007 White screw caps (MOQ 4) 9HD 980 885-017 Charcoal screw caps (MOQ 4) 9HD 980 885-107 Chrome plated screw caps (MOQ 4) 8HG 958 000-021 Mounting bracket 45° - Charcoal 8HG 958 000-011 Mounting bracket 45° - White			

See page 64 for surface mount strip lamp screw caps.

ILLUMINATION CHART

98087900/...10

2.5m high at 45°

3

1 LUX **7.2m**

3

0   2   4   6   8   10

8HG 958 000-021   8HG 958 000-011

Ultra slim height of only 11mm.

INTERIOR/EXTERIOR

Illumination Charts Explained

HELLA light performance charts show illuminance and spread in an easy to read format. At the top is the horizontal spread angle, with the boundary threshold being defined as half of the peak luminous intensity. While there is light beyond the indicated angles, the majority of light will be inside the cone shown. Luminous intensity is the measure of light emanating from a source in a specific direction.

The difference between lux (illuminance) and lumen (luminous flux) is that lux takes into account the area over which the luminous flux is spread. Accordingly the lux value decreases with distance. Most interior lamps will be installed at around the 2 - 2.5 metre height.

As a guideline, some 40 - 100 lux is required for corridors and passageways, around 300 lux for reading and 500 - 800 lux for offices. The spread pattern may not always be designed as symmetrical so the spread horizontally (H) and vertically (V) are given.

Luminance and Illuminance is additive, meaning overlapping light patterns or multiple lamps lighting the same surface add their luminance.

One Lux represents the intensity of the light of a full moon (under clear atmospheric conditions) or just sufficient light by which to read a newspaper.
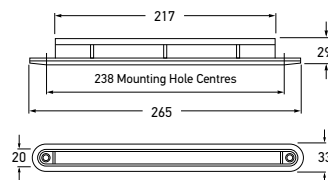
LED White Interior/Exterior Strip Lamp – Recess Mount

White LED interior lamp with clear UV resistant acrylic lens. Ideal for steps, interior or exterior courtesy lighting and storage areas.
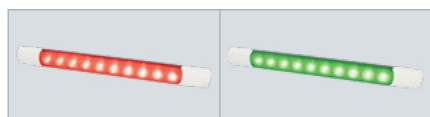
217
29
238 Mounting Hole Centres
265
20
33

Dimmable: Analog DC Input

Harsh UV RESISTANT

RF CommSafe®

12 VOLT DC		24 VOLT DC		
2JA 959 073-011	264112V	2JA 959 073-211	264124V	WHITE
2JA 959 076-521	2641HB	2JA 959 076-631	2641HB24V	HIGH BRIGHTNESS WHITE
Mounting	Recess mount.			
Power Consumption	<2W			
Protection	Reverse polarity protection. IP 6K7 (Protection against dust and temporary water immersion) IP 6K9K (Protection against dust and high-pressure/steam jet cleaning)			
Cable Length	Pre-wired with 2.5m of sheathed multi-core cable.			

2JA 959 076-521

LED Courtesy Strip Lamp – Surface Mount

These LED courtesy surface mount strip lamps feature a shallow 11mm profile and completely sealed housings. Available in blue, red and green colour variants.
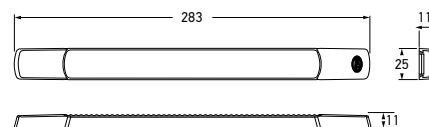
283
11
25
11

Dimmable: Analog DC Input

Harsh UV RESISTANT

RF CommSafe®

12 VOLT DC		24 VOLT DC		
2JA 980 881-402		2JA 980 881-502		BLUE
2JA 980 881-602		2JA 980 881-702		RED
2JA 980 881-802		2JA 980 881-902		GREEN
Mounting	Surface mount.			
Power Consumption	<2W			
Protection	Reverse polarity protection. IP 6K7 (Protection against dust and temporary water immersion) IP 6K9K (Protection against dust and high-pressure/steam jet cleaning)			
Cable Length	Pre-wired with 0.5m of sheathed multi-core tinned cable.			
Spare Parts	9HD 980 885-007 White screw caps (MOQ 4) 9HD 980 885-017 Charcoal screw caps (MOQ 4) 9HD 980 885-107 Chrome plated screw caps (MOQ 4)			

See page 64 for surface mount strip lamp screw caps.

2JA 980 881-602   2JA 980 881-802

Ultra slim height of only 11mm.

ILLUMINATION CHARTS

2JA 959 073-011/ 2JA 959 073-211	2JA 959 076-521/2JA 959 076-631
24°	24°
1m — 58 — 130 Lux — 58	1m — 230 — 515 Lux — 230
2m — 14 — 32 Lux — 14	2m — 58 — 129 Lux — 58
Spread pattern H=24° V=24° H	Spread pattern H=24° V=24° H
Half centre value in luminous intensity V	Half centre value in luminous intensity V

INTERIOR/EXTERIOR

INTERIOR/EXTERIOR LIGHTING

DuraLED® Flush Mount Courtesy Lamp – Low Profile

These LED courtesy lamps feature a shallow 9mm profile and completely sealed housing. Available in a range of colours. Optic appears clear until illuminated.

2XT 980 855-101		WHITE
2XT 980 855-251		AMBER
2XT 980 855-351		RED
2XT 980 855-401		BLUE
2XT 980 855-501		GREEN

Mounting	Two hole flush mount.
Voltage	Multivolt™ for optimum brightness in 12 and 24 volt systems.
Power Consumption	<1W
Protection	Reverse polarity protection. IP 6K7 (Protection against dust and temporary water immersion) IP 6K9K (Protection against dust and high-pressure/steam jet cleaning)
Cable Length	Pre-wired with 0.5m of sheathed multi-core cable.
Lens Material	High impact and chemical resistant Grilamid® lens
Compliance	

2XT 980 855-251   2XT 980 855-351

2XT 980 855-401   2XT 980 855-501

DuraLED® Flush Mount Courtesy Lamp Accessories

Accessory rims and screw caps for the LED flush mount courtesy lamp family.

RIMS

Part Number	Colour	Material
9AB 959 686-001	BLACK	PLASTIC
9AB 959 686-011	WHITE	
9AB 959 685-002	POLISHED	316 STAINLESS STEEL
9AB 959 685-062	SATIN CHROME PLATED	

9AB 959 686-011

9AB 959 686-002

9AB 959 685-002

9AB 959 685-062

SCREW CAPS

| Part Number		Colour	Quantity
9HD 980 858-007	9231009BULK	BLACK	
9HD 980 858-037	9231010BULK	RED	PACK OF 4
9HD 980 858-017	9231011BULK	WHITE	

9HD 980 858-007

9HD 980 858-017

9HD 980 858-037

INTERIOR/EXTERIOR

LED Wide Rim Rectangular Courtesy Step Lamp

Wide rim, flush mount, courtesy step lamp with either white, red, green or blue LEDs. Optic appears clear until illuminated.
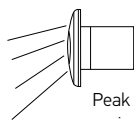
Peak light output is projected down at 30°
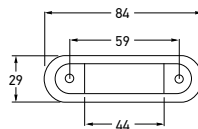
| 12/24 VOLT (CLEAR LENS)		
2XT 959 680–861	〔▭〕	WHITE
Mounting	Recess mount.	
Voltage	Multivolt™ for optimum brightness in 12 and 24 volt systems.	
Power Consumption	<1W	
Protection	Reverse polarity protection. IP 6K6 (Protection against dust and high-pressure water jets) IP 6K7 (Protection against dust and temporary water immersion)	
Cable Length	Pre-wired with 120mm of cable.	
Compliance	C E	♲

LED Square Courtesy Lamps

Attractive, energy efficient square LED courtesy lamps for interior and exterior use. Available in either white, warm white, red or blue. Optic appears clear until illuminated.
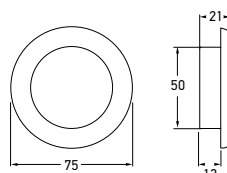
Dimmable: Analog DC Input

2XT 980 580-551, 2XT 980 581-551
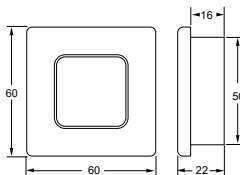
12 VOLT DC		24 VOLT DC		
2XT 980 580–551	〔▭〕	**2XT 980 581–551**	〔▭〕	WHITE
2XT 980 580–751	〔▭〕	**2XT 980 581–751**	〔▭〕	WARM WHITE
2XT 980 582–251	〔▭〕	**2XT 980 583–251**	〔▭〕	BLUE
Mounting	Recess mount, 50mm diameter hole.			
Power Consumption	<1W			
Protection	Reverse polarity protection. Fully sealed against dust, high-pressure washing and temporary water immersion.			
Cable Length	Pre-wired with 120mm of cable.			

2XT 980 580-751,   2XT 980 582-251,
2XT 980 581-751   2XT 980 583-251

INTERIOR/EXTERIOR

INTERIOR/EXTERIOR LIGHTING

Dimmable:
Analog DC Input

12 VOLT DC		24 VOLT DC		
2XT 980 500-511		**2XT 980 501-511**		WHITE
2XT 980 500-711		**2XT 980 501-711**		WARM WHITE
2XT 980 507-211		**2XT 980 508-211**		RED
2XT 980 502-211		**2XT 980 503-211**		BLUE

Mounting	Recess mount, 50mm diameter hole.
Power Consumption	<1W
Protection	Reverse polarity protection. Fully sealed against dust, high-pressure washing and temporary water immersion.
Cable Length	Pre-wired with 120mm of cable.

Each lamp includes a black and a white plastic rim. See other available colours below

LED Round Courtesy Lamps – Clear Lens

Attractive, energy efficient square LED courtesy lamps for interior and exterior use. Available in either white, warm white, red or blue and supplied with a white and black rim. Optic appears clear until illuminated.

2XT 980 500-511

2XT 980 500-711   2XT 980 507-211   2XT 980 502-211

ROUND RIMS - SINGLE		
Part Number	**Colour**	**Material**
9AB 959 505-012	CHROME PLATED	PLASTIC
9AB 959 505-203	BLACK	
9AB 959 505-503	POLISHED	316 STAINLESS STEEL
9AB 959 505-563	SATIN CHROME PLATED	

ROUND HOUSING		
Part Number	**Colour**	**Material**
8HG 959 993-103	BLACK	PLASTIC
8HG 959 993-113	WHITE	

8HG 959 993-103   9AB 959 505-503   9AB 959 505-563
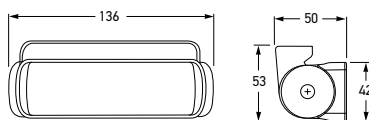
Round Courtesy Lamp Accessories

Spare rims and housings for the round courtesy lamp family. One rim is required per lamp.

INTERIOR/EXTERIOR
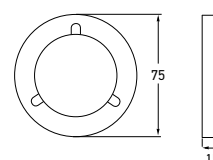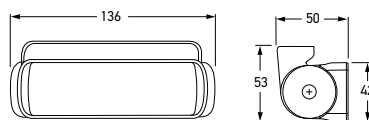
DuraLED® WL200 Work Lamp – Close Range

LED universal work lamp with low profile stainless steel bracket. Lamp may be mounted upright or pendant and may be adjusted vertically up or down. Totally sealed against dust and moisture and with a tough, chemical resistant Grilamid® lens.

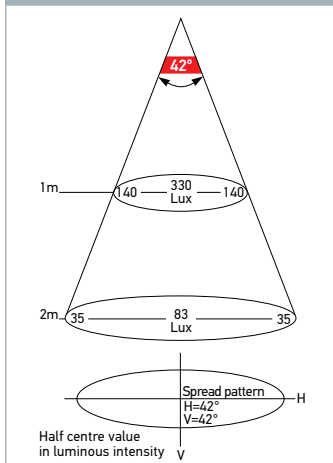| 1GA 980 670–421		WHITE
Mounting	Upright or pendant.	
Voltage	Multivolt™ for optimum brightness at input voltages from 9 to 33 volts.	
Power Consumption	3W	
Actual Light Output	200 lumen	
Protection	Reverse polarity and voltage spike protection. IP 6K7 (Protection against dust and temporary water immersion) IP 6K9K (Protection against dust and high-pressure/steam jet cleaning)	
Cable Length	Pre-wired with 2.5m of sheathed multi-core cable.	
Lens Material	High impact and chemical resistant Grilamid® lens	
Compliance	C E	

DuraLED® WL200 RFCommSafe™ Work Lamp – Close Range

LED universal work lamp with low profile stainless steel bracket developed with RFCommSafe™ technology. RFCommSafe™ products offer superior electromagnetic compatibility (EMC) dramatically removing the risk of unintended electromagnetic inference (EMI) on sensitive devices such as radios or communication equipment well beyond the requirement of international standards. Lamp may be mounted upright or pendant and may be adjusted vertically up or down. Hermetically sealed against dust and moisture. Featuring a tough, chemical resistant Grilamid® lens.

12 VOLT		24 VOLT		
1GA 980 670–382		1GA 980 670–622		WHITE
Mounting	Upright or pendant.			
Power Consumption	4W			
Actual Light Output	150 lumen			
Protection	Reverse polarity and voltage spike protection. IP 6K7 (Protection against dust and temporary water immersion) IP 6K9K (Protection against dust and high-pressure/steam jet cleaning)			
Cable Length	Pre-wired with 2.5m of sheathed multi-core cable.			
Lens Material	High impact and chemical resistant Grilamid® lens			
Compliance	C E			

ILLUMINATION CHARTS

2JA 980 670–302 WL200–Close Range
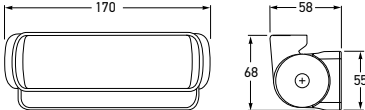
42°

1m — 140 — 330 Lux — 140

2m — 35 — 83 Lux — 35

Spread pattern
H=42°
V=42°

Half centre value
in luminous intensity

INTERIOR/EXTERIOR

DURALED® WORK LAMPS

**Dual Intensity:
Switch Control**

Power Supply	Harsh UV	Lens Material	Bracket	Housing
MULTI VOLT™	UV RESISTANT	GMD	STAINLESS STEEL	CORROSION PROOF

136
50
53
42

DuraLED® WL550 Work Lamp

LED universal work lamp with low profile stainless steel bracket. Lamp may be mounted upright or pendant and may be adjusted vertically up or down. Totally sealed against dust and moisture and with a tough, chemical resistant Grilamid® lens. Option of two light patterns, close range or flood.

CLOSE RANGE	FLOOD	
1GA 980 573-101	**1GA 980 573-001**	**WHITE**

Mounting	Upright or pendant.
Voltage	Multivolt™ for optimum brightness at input voltages from 9 to 33 volts.
Power Consumption	7W
Actual Light Output	550 lumen
Protection	Reverse polarity and voltage spike protection. IP 6K7 (Protection against dust and temporary water immersion) IP 6K9K (Protection against dust and high-pressure/steam jet cleaning)
Cable Length	Pre-wired with 2.5m of sheathed multi-core cable.
Lens Material	High impact and chemical resistant Grilamid® lens
Compliance	C E

LIFETIME DuraLED® WARRANTY

**Dual Intensity:
Switch Control**

Power Supply	Harsh UV	Lens Material	Bracket	Housing
MULTI VOLT™	UV RESISTANT	GMD	STAINLESS STEEL	CORROSION PROOF

170
58
68
55

DuraLED® WL750 Work Lamp – Close Range

Featuring an integrated dual intensity circuit, a high level of spike protection and energy efficient Multivolt™ technology, the innovative DuraLED® WL750 will appeal for applications where energy efficiency and reliability is a must. Features a tough, chemical resistant Grilamid® lens, a highly impact resistant Swiss-made crystal clear polyamide with superior tolerance to chemical and long term harsh UV exposure, as well as technologically advanced thermally conductive non-metal housing.

1GD 980 950-031	**WHITE**

Mounting	Upright or pendant.
Voltage	Multivolt™ for optimum brightness at input voltages from 9 to 33 volts.
Power Consumption	High intensity mode: 12W (1A@12V DC/0.50A@24V DC) Low intensity mode: 2W (0.17A@12V DC/0.08A@24V DC)
Actual Light Output	750 lumen
Protection	Reverse polarity and voltage spike protection. IP 6K7 (Protection against dust and temporary water immersion) IP 6K9K (Protection against dust and high-pressure/steam jet cleaning)
Cable Length	Pre-wired with 2.5m of sheathed multi-core cable.
Lens Material	High impact and chemical resistant Grilamid® lens
Compliance	C E

LIFETIME DuraLED® WARRANTY

INTERIOR/EXTERIOR

ILLUMINATION CHARTS

WL550 – Close Range

42°
1m — 330 — 760 Lux — 330
2m — 83 — 188 Lux — 83

Spread pattern
H=42°
V=42°
Half centre value in luminous intensity

WL550 – Flood

70°
1m — 230 — 750 Lux — 230
2m — 58 — 188 Lux — 58

Spread pattern
H=70°
V=30°
Half centre value in luminous intensity

WL750 – Close Range

75°
1m — 260 — 1050 Lux — 260
2m — 65 — 263 Lux — 65

Spread pattern
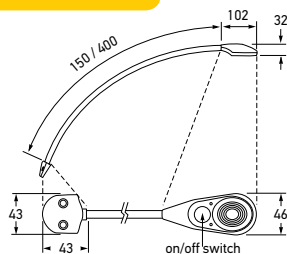H=75°
V=25°
Half centre value in luminous intensity

Friction mounts; easy adjustment without tools.

Completely sealed lamp/cable entry. Marine grade stainless steel bracket.
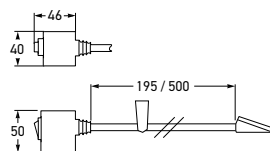
LED Flexible Map Reading Lamp

LED map reading light featuring a strong flexible shaft and an on/off switch on the lamp head. Low power consumption.

102   32

150 / 400

43   46
43   on/off switch

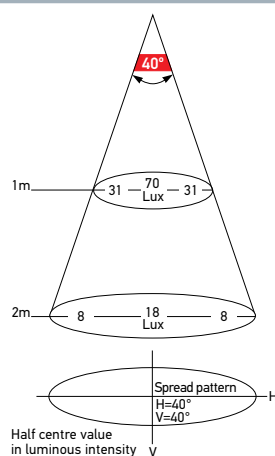| 2JA 343 720-123	2639		400MM ARM SIZE
Mounting	Screw mount.		
Voltage	Multivolt™ for optimum brightness at input voltage from 9 to 31 volts.		
Power Consumption	2.4W		
Protection	Reverse polarity protection. IP 53 (Protection against dust and water spray)		
Cable Length	Pre-wired with 150mm of cable.		
Compliance	C E		
Suitable for interior use only.			

Map Reading Lamp

Flexible black arm. Lamp head has an integral rocker on/off switch and is fitted with a clear diffuser lens for glare-free illumination. Pillar or dash mounting. Includes additional red lens.
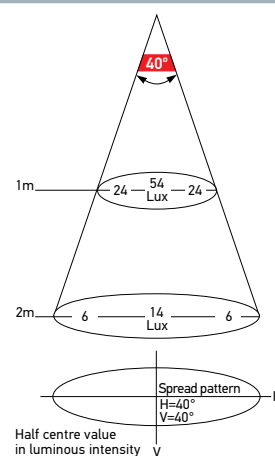
46
40

195 / 500

50

2AB 004 532-171	2633		195MM ARM SIZE
Mounting	Screw mount.		
Power Consumption	7W		
Bulbs to Suit	12V 24V	8GP 007 676-124 8GP 008 285-002	

ILLUMINATION CHARTS

LED Flexible Map Reading Lamp	Map Reading Lamp
40°	40°
1m 31 — 70 Lux — 31	1m 24 — 54 Lux — 24
2m 8 — 18 Lux — 8	2m 6 — 14 Lux — 6
Spread pattern H=40° V=40° H	Spread pattern H=40° V=40° H
Half centre value in luminous intensity V	Half centre value in luminous intensity V

INTERIOR/EXTERIOR

LED Ponui Wall Mount Lamp

LED Ponui wall mount interior lamp is an energy efficient and high quality wall light offering an attractive and modern design in a chrome plated housing. Both the cool white and the warm white option feature a smooth, evenly distributed illumination and an optic specifically designed to reduce individual light source glare, which can lead to discomfort and eye strain.

RF CommSafe® | **Harsh UV RESISTANT** | **Dimmable:** Analog DC Input | **Dimmable:** PWM 10-100%

12 VOLT DC		24 VOLT DC		
2JA 958 358-001		2JA 958 358-201		WHITE
2JA 958 358-011		2JA 958 358-211		WARM WHITE

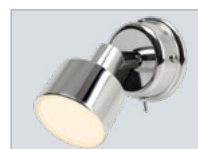|	
Mounting	Wall mount.
Voltage	12V DC or 24V DC
Power Consumption	<3W
Protection	Electronics are completely sealed from moisture and dust ingress.
Cable Length	Pre-wired with 100mm of cable
Compliance	

2JA 958 358-011

ILLUMINATION CHART

LED Ponui Wall Mount Lamp

80°

1m — 25 — 100 Lux — 25

2m. — 6 — 25 Lux — 6

Spread pattern
H=80°
V=80°

Half centre value
in luminous intensity

H

V

INTERIOR/EXTERIOR