

LIGHTING  
ISSUE 20



# ORBIK

**LIGHTING SPECIALISTS FOR 40 YEARS**

[www.orbik.co.uk](http://www.orbik.co.uk)

# WELCOME TO ORBIK

**LIGHTING SPECIALISTS FOR 40 YEARS**

**1982**

Orbik is established supplying UK lighting companies with emergency lighting control gear.

**1986**

Orbik manufacture their first range of luminaires.

**1993**

Orbik acquire Metalforms and Metcoat in order to satisfy increased demand for highly automated precision sheet metalwork and powder coating.

**1999**

Orbik move to their new four acre, purpose built facility at Aldridge in the West Midlands.

**1984**

Orbik factory is accredited with BS5750, an early version of the ISO 9001:2015 quality system it still holds today.

The first BSI Kitemark is issued to an Orbik product. The company now holds BSI Kitemark licences for over 400 products.

**1991**

Orbik exhibit at the Hannover Messe for the first time.

The company begin selling emergency gear and luminaires into Europe and the Middle East.

**1997**

Bewdley becomes the first range of luminaires to receive a Kitemark from BSI, with Pescara quickly following suit. Pescara is still sold by Orbik today.



**2001**

SPEL is formed to supply emergency lighting products into electrical wholesalers and is now a wholly owned subsidiary of the Orbik group.

**2007**

Orbik begin a partnership with NICEIC Training where Orbik's qualified design engineers can provide fire alarm and emergency lighting courses to electrical contractors.

**2005**

Orbik make their first move into the fire detection and safety systems market.

**2016**

Orbik's entire range of LED drivers are issued with a BSI Kitemark.

**2018**

Orbik exhibit at the Light Middle East Exhibition in Dubai for the first time.

BSI Kitemarks are issued to a wide range of Orbik static inverter emergency lighting systems.

**2022**

Orbik celebrate 40 years of trading by obtaining TUV Rheinland approvals with the release of their new luminaires and exit signs.



# ABOUT US

Since their formation in 1982, Orbik have been a standard bearer for quality lighting and safety products and are a highly respected supplier to their large customer base across the UK, Europe and the Middle East.

Orbik's exacting standards, attention to detail and focus on customer satisfaction has enabled them to win many prestigious projects all over the world.

In an extremely competitive global market place, Orbik are rightfully proud of the fact that all of their products are designed, developed and manufactured in their purpose built four acre facility in the West Midlands region of the UK, which features state-of-the-art in-house production, precision metal engineering and powder coating facilities.

Throughout their distinguished history, Orbik have consistently maintained their dedication to excellence, which has seen the company being awarded a significant amount of quality certificates from the likes of BSI and TUV Rheinland.



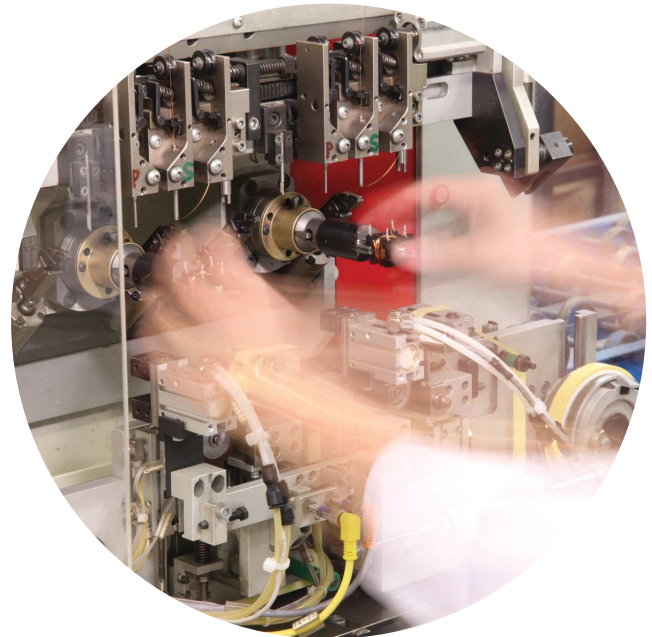
## DESIGN & DEVELOPMENT

Orbik have a policy of continual product development and our own technical and test laboratories enable our products to be amongst the market leaders for safety, innovation and efficiency.

Orbik's involvement with UK and International standards and regulations for emergency lighting ensure that our products are compliant with current and anticipated regulations within most safety applications.

With the on-going development of LEDs as a light source combined with advances in lens and diffuser design, Orbik have developed their existing range and enhanced this with new exciting products to exploit the many advantages of using LEDs as a primary light source.

Our highly skilled technical team have painstakingly tried and tested our vast range of LED luminaires individually to ensure that the intensive, highly directional light remains efficient, visually comfortable and most importantly, safe.



## MISSION STATEMENT

***"At Orbik, we are dedicated to providing our customers with the highest quality products and services by continually monitoring current market trends."***

***"Through continuous investment in new products, staff development and the latest technology, we are committed to offering a professional business solution to a rapidly expanding and demanding market place."***





### **QUALITY & TESTING**

Orbik manufacture within quality system ISO 9001:2015 and together with a 100% test policy, our products provide our valued customers with the peace-of-mind that the product they are purchasing is not only fit for purpose but also made with the utmost care and attention to detail.

We are rightfully proud of the reputation that we have earned Worldwide as a supplier of high quality products and services and we have enthusiastically supported the improvement of quality standards within the lighting industry during our 40 year history.

Orbik are represented on the technical committees of the British Standards Institute (BSI), the Industry Committee for Emergency Lighting (ICEL) and the Lighting Industry Association (LIA).

All Orbik luminaires are designed to conform to EN60598 and emergency gear conforms to EN61347.



### **STOCK & DELIVERY**

In the fast paced World that we live in, Orbik have made a commitment to service our customers requirements by way of a stock holding of over £1.5m.

Our efficient warehouse team will always attempt to ensure that stock orders are despatched to the customer as quickly as possible via courier service or for larger orders, on our own transport. Where time is of the essence, Orbik can also despatch orders directly to site if required.

Orbik will also endeavour to supply products that are not strictly "off the shelf" as quickly as possible, thus underlining our complete dedication to respond to individual customer requirements in order to provide solutions to applications of a more unusual nature.

This dedicated outlook has enabled Orbik to become the first choice supplier to our large UK and International customer base.

Orbik has a policy of constant product improvement and therefore reserve the right to modify specifications without prior notice. All details and specifications shown within this brochure are deemed correct at the time of print .

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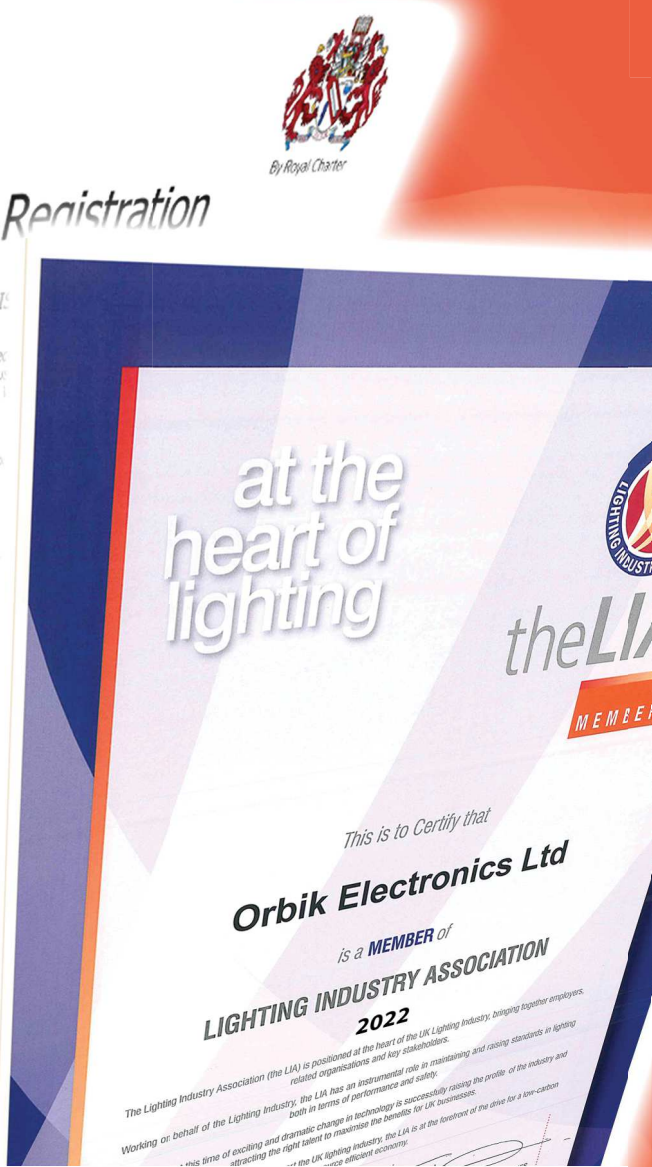
Unless otherwise stated, all of Orbik's emergency luminaires are designed to operate in an ambient temperature of 25°C and are manufactured in accordance with EN60598.2.22 and EN55015. Many of our emergency luminaires and modules are subject to ongoing surveillance testing by TUV Rheinland.

# SETTING STANDARDS

Over their 40 year history, an absolute fundamental of Orbik's business strategy has been the high standards of their products, services and manufacturing processes. This is evident by the accreditations and certification that Orbik have held for many years.

Orbik manufacture within quality system ISO 9001:2015, Orbik are represented on the technical committees of the British Standards Institute (BSI), the Industry Committee for Emergency Lighting (ICEL), the Lighting Industry Association (LIA) and TÜV Rheinland.

Orbik customers can rest assured that they are purchasing products of the highest quality.





# NEW PRODUCTS & DESIGNS

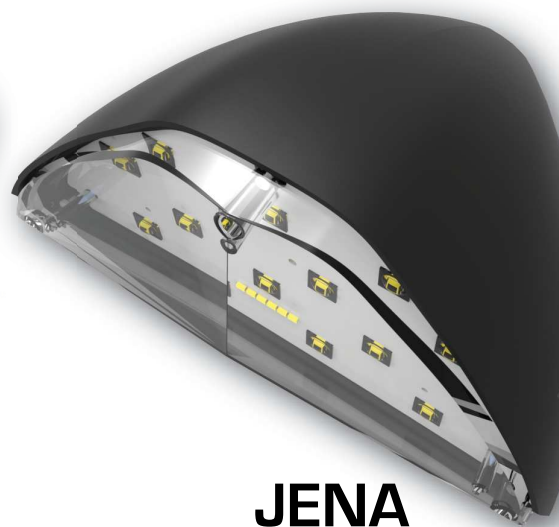
## ARC

IP65 COMPACT BULKHEAD  
NEW DESIGN



## ODET

EMERGENCY TWIN-SPOT  
NEW 6W LED VERSION



## JENA

IP65 DIECAST ALUMINIUM WALLPACK  
NEW PRODUCT

## MINI-SINE

COMPACT STATIC INVERTER  
NEW TECHNOLOGY



## NORTON

ROBUST DIECAST ALUMINIUM BOLLARD  
NEW PRODUCT



## DELTA

FULLY RECESSED EMERGENCY DOWNLIGHT  
NEW PRODUCT



# PRODUCT GUIDE

## LUMINAIRE FEATURE SYMBOLS



MAINS VERSIONS  
AVAILABLE



EMERGENCY VERSIONS  
AVAILABLE



CENTRAL SYSTEM  
SLAVE VERSIONS  
AVAILABLE



LED LIGHT SOURCE



TUNGSTEN HALOGEN  
LIGHT SOURCE

### COMMERCIAL LUMINAIRES



**ARRIAN 12**



**DARWIN 14**



**KANDEL 16**



**KERRILED 18**

### OUTDOOR & INDUSTRIAL LUMINAIRES



**ECOS 36**



**HOLT 38**



**IDRO 40**



**IPSTONES 42**

### EMERGENCY LUMINAIRES & EXIT SIGNS



**ARC 58**



**CALABOR 60**



**CHELLA 62**



**DALBY 64**



**PALOMA 80**



**PESCARA 82**



**PESCARA-G 84**



**PETINA 86**

### EMERGENCY GEAR



**LED EMERGENCY  
CONTROL  
GEAR 104**



**PERFORM™  
EMERGENCY  
MODULES 105**



**BATTERIES 108**



**LED MAINS  
DRIVERS 110**

### CENTRAL SYSTEMS



**CENTRAL  
BATTERY  
SYSTEMS 116**



**LPAC SINGLE  
PHASE STATIC  
INVERTERS 118**



**HPAC SINGLE  
PHASE STATIC  
INVERTERS 120**



**HPAC THREE  
PHASE STATIC  
INVERTERS 122**

## BESPOKE PRODUCTS

By identifying and responding to individual customer's specific requirements, Orbik have quickly gained a reputation for being able to supply products that are not strictly "off the shelf" or from our already extensive product range. This has enabled us to become the first choice supplier to our large UK and International customer base and have enabled our products to be at the forefront of many prestigious projects throughout the UK and overseas. Many of these projects began as an idea on paper that was developed, adapted, refined and crucially, delivered by Orbik.

However unusual or difficult a project may appear, Orbik will consider each enquiry on its own merits and offer advice and solutions to any potential issues within the project. For more details on bespoke products or for assistance with specialities within lighting specifications, please contact our sales department.



INGRESS RATING



WARRANTY PERIOD



TUV RHEINLAND  
CERTIFIED VERSIONS  
AVAILABLE



**LARINO 20**



**LEAH 22**



**LEDRA DA 24**



**MELBY 26**



**MELED 28**



**MIERLO 30**



**NEATH 32**



**JARO 44**



**JENA 46**



**MEZZINA 48**



**NORTON 50**



**RIVA 52**



**DELTA 66**



**DYODE 68**



**EDEN 70**



**ELLED 66**



**GENEVA 74**



**NAPOLI 76**



**ODET 78**



**PICO 88**



**RETZ 90**



**ROMNEY 92**



**ROTA 94**



**SAVONA 96**



**TIEL 98**



**LEGENDS 100**



**CENTRAL SYSTEM  
LED CONTROL  
GEAR 111**



**CENTRAL SYSTEM  
FLUORESCENT  
INVERTERS 112**



**MINI-SINE  
COMPACT STATIC  
INVERTER 124**



**SUB-CIRCUIT  
MONITOR  
RELAY 125**

## TECHNICAL

Photometric data and other lighting design information including luminaire data files, are available from our technical department or from our website [www.orbik.co.uk](http://www.orbik.co.uk).





# COMMERCIAL LUMINAIRES

A range of mains and emergency luminaires ideal for use in commercial environments such as offices, reception areas and conference rooms.





**ARRIAN 12**  
Low profile diecast aluminium  
LED panel



**DARWIN 14**  
Fire-rated chip-on-board downlight



**KANDEL 16**  
Circular surface or semi-recessed  
luminaire



**KERRILED 18**  
Stylish LED circular recessed luminaire



**LARINO 20**  
Elegant circular lighting range



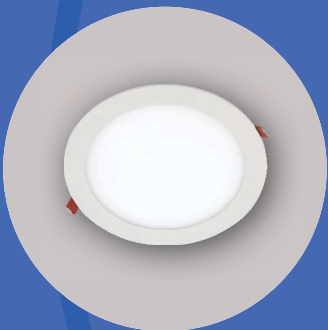
**LEAH 22**  
Attractive & robust IP65  
circular luminaire



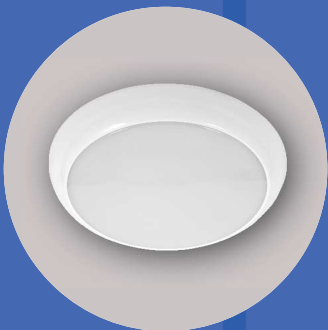
**LEDRA DA 24**  
IP54 circular polycarbonate luminaire



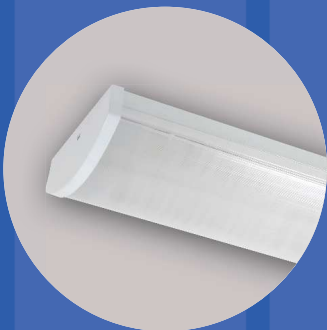
**MELBY 26**  
Diecast aluminium LED  
circular downlight



**MELED 28**  
Attractive shallow LED downlight



**MIERLO 30**  
Attractive general purpose luminaire

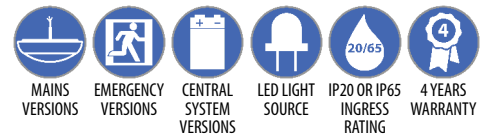


**NEATH 32**  
LED luminaire with striated  
clear diffuser

**MAIN IMAGE:**  
Arrian LED panels situated at Dunton Environmental  
head office, Aldridge.

# ARRIAN

## LOW PROFILE DIECAST ALUMINIUM LED PANEL



## IMAGES

- A. Standard recessed Arrian.
- B. Rear of IP65 Arrian (suffix **/IP65**).
- C. Arrian fitted with surface mounting kit (suffix **/SM**).

## FEATURES

- Low profile aluminium body for enhanced thermal dissipation.
- Supplied as a recessed luminaire as standard with a surface mounting kit available as an option.
- Uniform light distribution across the panel.
- Wide range of optional extras available including DALI and dimmable control gear.
- Visually comfortable.
- Polycarbonate diffuser and PMMA light guide.
- LED life greater than 54,000 hours.
- CRI 80 (minimum).
- 4000K colour temperature as standard (3000K available to order).
- Luminaires have a rating greater than 100 lm/W.
- All stated lumens are actual luminaire output.

## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRE		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
ARN/LED	2.30Kg		3600				

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
ARN/LED/M3E	4.10Kg		3600		270		
ARN/LED/M3	4.10Kg		3600			400	
ARN/LED/M3H	4.10Kg		3600				470

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
ARN/LED/LVR24	4.10Kg		3600			770	
ARN/LED/LVR50	4.10Kg		3600			830	
ARN/LED/LVR110	4.10Kg		3600			870	
ARN/LED/LVR220	4.10Kg		3600			820	

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

**/DAE** DALI emergency mode only  
**/DAEM** DALI mains and emergency mode  
**/DAM** DALI mains mode only  
**/DIM** Dimmable control gear  
**/IP65** IP65 version  
**/SM** Surface mounting kit  
**/ST** Digital self-test

## DIMENSIONS

### RECESSED LUMINAIRE DIMENSIONS

Length 595mm x Width 595mm x Depth 10mm

### SURFACE LUMINAIRE DIMENSIONS

Length 600mm x Width 600mm x Depth 50mm

### IP65 VERSION DIMENSIONS

Length 595mm x Width 595mm x Depth 10mm

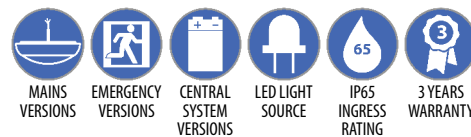
### CUT-OUT DIMENSIONS

Length 585mm x Width 585mm



# DARWIN

FIRE-RATED CHIP-ON-BOARD DOWNLIGHT



## FEATURES

- Highly efficient LED light source.
- IP65 ingress rating.
- Robust diecast aluminium construction.
- Supplied in a high quality white finish.
- 60° beam angle.
- Simple to install.
- Suitable for many applications, including bathrooms and wet rooms.
- LED life greater than 54,000 hours.
- CRI 80 (minimum).
- 4000K colour temperature.
- All luminaires in this range have a lumens/Watt rating greater than 80 lm/W.
- All stated lumens are actual luminaire output.

## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRE		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
DRW/LED/9W	0.30Kg		790				

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
DRW/LED/9W/M3E	1.64Kg		790		250		
DRW/LED/9W/M3	1.64Kg		790			350	
DRW/LED/9W/M3H	1.64Kg		790				420

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
DRW/LED/9W/LVR24	1.64Kg		790			680	
DRW/LED/9W/LVR50	1.64Kg		790			750	
DRW/LED/9W/LVR110	1.64Kg		790			790	
DRW/LED/9W/LVR220	1.64Kg		790			710	

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

- /DAE DALI emergency mode only
- /DAEM DALI mains and emergency mode
- /DAM DALI mains mode only
- /DIM Dimmable control gear

## DIMENSIONS

### LUMINAIRE DIMENSIONS

Ø 90mm x Depth 71mm

### EMERGENCY & SLAVE PACK

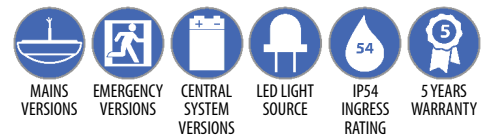
Length 800mm

### CUT-OUT DIMENSIONS

Ø 70mm

# KANDEL

CIRCULAR SURFACE OR SEMI-RECESSED LUMINAIRE



## IMAGES

- A. Standard surface mounted Kandel.
- B. Kandel with semi-recessing kit (suffix **/R**).
- C. Kandel with white surface trim (suffix **/KN/WH**).

## FEATURES

- All white polycarbonate housing can be ceiling or wall mounted.
- Supplied as a surface mounted luminaire as standard; can be semi-recessed or supplied with an attractive surface trim as options.
- Twist-and-lock diffuser for simple installation and maintenance.
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- 3 step MacAdam rated.
- CRI 80 (minimum).
- 4000K colour temperature as standard (2700K - 5000K available to order).
- Lumens/Watt rating up to 100 lm/W.
- All stated lumens are actual luminaire output.



## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
KN/LEDE	2.10Kg	1210					
KN/LED	2.10Kg		2320				
KN/LEDH	2.10Kg			2840			

EMERGENCY LUMINAIRE		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
KN/LED/M3	2.70Kg		2320			150	

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
KN/LED/LVR24	2.10Kg		2320			710	
KN/LED/LVR50	2.10Kg		2320			740	
KN/LED/LVR110	2.10Kg		2320			780	
KN/LED/LVR220	2.10Kg		2320			740	

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

/2K7 2700K colour temperature  
 /3K 3000K colour temperature  
 /5K 5000K colour temperature  
 /DAE DALI emergency mode only  
 /DAEM DALI mains and emergency mode  
 /DAM DALI mains mode only  
 /DIM Dimmable control gear  
 /KN/BR Brass surface trim  
 /KN/CH Chrome surface trim  
 /KN/WH White surface trim  
 /MD Microwave presence detector  
 /MODIM Motion dimmable ballast  
 /MODIM/DH Daylight harvesting motion dimmable ballast  
 /R Recessed version  
 /ST Digital self-test

## DIMENSIONS

### LUMINAIRE DIMENSIONS

Ø 380mm x Depth 85mm (Dimensions based on if luminaire is fitted with surface trim)

### RECESSED LUMINAIRE DIMENSIONS

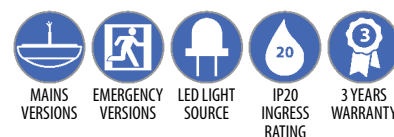
Ø 380mm x Depth 35mm

### CUT-OUT DIMENSIONS

Ø 335mm (Minimum ceiling void of 50mm required)

# KERRILED

STYLISH LED CIRCULAR RECESSED LUMINAIRE



## FEATURES

- Diecast aluminium base with with an opal diffuser.
- Available in mains and emergency options.
- Supplied with high quality LEDs for extended life.
- LED life greater than 54,000 hours.
- CRI 80 (minimum).
- 4000K colour temperature.
- All luminaires in this range have a lumens/Watt rating greater than 100 lm/W.
- All stated lumens are actual luminaire output.

## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRE		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
KER/LED/R	2.10Kg		4135				

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
KER/LED/M3E/R	3.00Kg		4135		240		
KER/LED/M3/R	3.00Kg		4135			370	
KER/LED/M3H/R	3.00Kg		4135				430

## OPTIONS

Products incorporating any of the following options are manufactured to order.  
Some options may not be available in all models.

/DAE DALI emergency mode only  
/DAEM DALI mains and emergency mode  
/DAM DALI mains mode only  
/DIM Dimmable control gear  
/ST Digital self-test

## DIMENSIONS

### LUMINAIRE DIMENSIONS

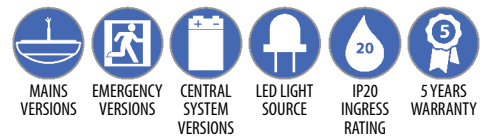
Ø 600mm x Depth 15mm

### CUT-OUT DIMENSIONS

Ø 590mm

# LARINO

ELEGANT CIRCULAR LIGHTING RANGE



## IMAGES

- A. Standard Larino in white finish.
- B. Larino in brass effect finish (suffix **/BR**).
- C. Larino in chrome effect finish (suffix **/CH**).

## FEATURES

- Spun steel base containing control gear and energy saving LEDs.
- Available in 2 diameter sizes; 330mm or 430mm.
- Supplied in white finish as standard with brass effect (RAL1036) and chrome effect (RAL9022) finishes available as options.
- Suitable for wall or ceiling mounting.
- Available in mains, emergency and slave options.
- 3 step MacAdam rated.
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 4000K colour temperature as standard (2700K - 6500K available to order).
- LED luminaires in this range have a lumens/Watt rating up to 100 lm/W.
- All stated lumens are actual luminaire output.



## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
LAR/LEDE/A*	1.10Kg	1230					
LAR/LEDE	2.10Kg	1230					
LAR/LED	2.10Kg		2350				
LAR/LEDH	2.10Kg			2870			

\* All luminaires are housed in a size B body with the exception of LAR/LEDE/A which is housed in a size A body.

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
LAR/LEDE/M3	3.00Kg	1230				150	
LAR/LED/M3	3.00Kg		2350			150	
LAR/LEDH/M3	3.00Kg			2870		150	

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
LAR/LED/LVR24	2.10Kg		2350			710	
LAR/LED/LVR50	2.10Kg		2350			740	
LAR/LED/LVR110	2.10Kg		2350			780	
LAR/LED/LVR220	2.10Kg		2350			740	

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

**/2K7** 2700K Colour temperature  
**/3K** 3000K Colour temperature  
**/5K** 5000K Colour temperature  
**/6K5** 6500K Colour temperature  
**/BR** Brass effect finish (RAL1036)  
**/CH** Chrome effect finish (RAL9022)  
**/DAE** DALI emergency mode only  
**/DAEM** DALI mains and emergency mode  
**/DAM** DALI mains mode only  
**/DIM** Dimmable control gear  
**/MD** Microwave presence detector  
**/MODIM** Motion dimmable ballast  
**/MODIM/DH** Daylight harvesting motion dimmable ballast  
**/ST** Digital self-test

## DIMENSIONS

### SIZE A LUMINAIRE DIMENSIONS

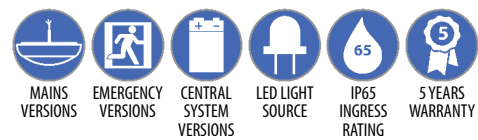
Ø 330mm x Depth 105mm

### SIZE B LUMINAIRE DIMENSIONS

Ø 430mm x Depth 105mm

# LEAH

ATTRACTIVE & ROBUST IP65 CIRCULAR LUMINAIRE



## IMAGES

- A. Standard Leah.
- B. Leah fitted with narrow trim (suffix **/NT**).
- C. Leah fitted with wide trim (suffix **/WT**).

## FEATURES

- Suitable for most interior and exterior applications.
- Hinged steel gear tray and centre rear besa entry for ease of installation.
- Optional narrow or wide trims.
- Can be semi-recessed when supplied with the narrow trim.
- 3 step MacAdam rated.
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 4000K colour temperature as standard (2700K - 6500K available to order).
- Lumens/Watt rating up to 100 lm/W.
- All stated lumens are actual luminaire output.

## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
LE/LEDE	2.70Kg	1110					
LE/LED	2.70Kg		2120				
LE/LEDH	2.70Kg			2590			

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
LE/LEDE/M3	3.60Kg	1110				135	
LE/LED/M3	3.60Kg		2120			135	
LE/LEDH/M3	3.60Kg			2590		135	

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
LE/LED/LVR24	2.60Kg		2120			650	
LE/LED/LVR50	2.60Kg		2120			680	
LE/LED/LVR110	2.60Kg		2120			720	
LE/LED/LVR220	2.60Kg		2120			680	

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

**/2K7** 2700K Colour temperature  
**/3K** 3000K Colour temperature  
**/5K** 5000K Colour temperature  
**/6K5** 6500K Colour temperature  
**/DAE** DALI emergency mode only  
**/DAEM** DALI mains and emergency mode  
**/DAM** DALI mains mode only  
**/DIM** Dimmable control gear  
**/MD** Microwave presence detector  
**/MODIM** Motion dimmable ballast  
**/MODIM/DH** Daylight harvesting motion dimmable ballast  
**/NT** Narrow trim  
**/R** Semi-recessing kit  
**/ST** Digital self-test  
**/WS** Wire-suspension kit  
**/WT** Wide trim

## DIMENSIONS

### STANDARD LUMINAIRE DIMENSIONS (WITHOUT TRIM)

Ø 395mm x Depth 120mm

### LUMINAIRE DIMENSIONS WITH NARROW TRIM

Ø 440mm x Depth 120mm

### LUMINAIRE DIMENSIONS WITH WIDE TRIM

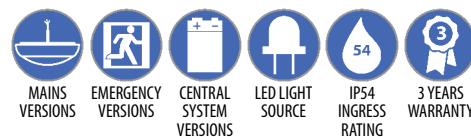
Ø 520mm x Depth 120mm

### CUT-OUT DIMENSIONS

Ø 357mm (When using semi-recessing kit and narrow trim)

# LEDRADA

IP54 CIRCULAR POLYCARBONATE LUMINAIRE



## FEATURES

- Available in mains, emergency and slave versions.
- All polycarbonate white housing with opal diffuser.
- Suitable for wall and ceiling mounting.
- LED diffusing textured finish.
- LED life greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 4000K colour temperature.
- Lumens/Watt rating up to 90 lm/W.
- All stated lumens are actual luminaire output.



## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRE		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
LED/LEDE	1.10Kg	1200					

EMERGENCY LUMINAIRE		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
LED/LEDE/M3	2.70Kg	1200				160	

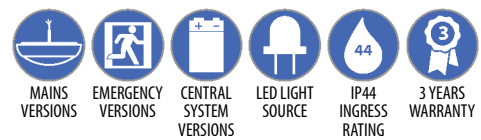
CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
LED/LEDE/LVR24	1.10Kg	1200				480	
LED/LEDE/LVR50	1.10Kg	1200				530	
LED/LEDE/LVR110	1.10Kg	1200				555	
LED/LEDE/LVR220	1.10Kg	1200				500	

## DIMENSIONS

Ø 365mm x Depth 125mm

# MELBY

## DIECAST ALUMINIUM LED CIRCULAR DOWNLIGHT



## FEATURES

- Diecast aluminium body for enhanced thermal dissipation.
- Spring fixing clips providing quick installation.
- High quality LED driver enabling uniform LED light distribution.
- Available in mains, emergency and slave versions.
- Wide range of optional extras.
- Compact white body with attractive opal diffuser.
- Extended LED life greater than 54,000 hours.
- CRI 80 (minimum).
- 4000K colour temperature.
- All luminaires in this range have a lumens/Watt rating greater than 85 lm/W.
- All stated lumens are actual luminaire output.

## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
MBY/LED/16	1.10Kg		1400				
MBY/LED/25	1.60Kg		2100				
MBY/LED/40	1.75Kg		4110				
MBY/LED/50	2.30Kg		5200				

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
MBY/LED/16/M3E	2.60Kg		1400		238		
MBY/LED/25/M3	3.10Kg		2100			336	
MBY/LED/40/M3H	3.25Kg		4110				452
MBY/LED/50/M3H	3.80Kg		5200				468

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
MBY/LED/16/LVR24	2.60Kg		1400			780	
MBY/LED/16/LVR50	2.60Kg		1400			819	
MBY/LED/16/LVR110	2.60Kg		1400			879	
MBY/LED/16/LVR220	2.60Kg		1400			800	
MBY/LED/25/LVR24	3.10Kg		2100			682	
MBY/LED/25/LVR50	3.10Kg		2100			717	
MBY/LED/25/LVR110	3.10Kg		2100			770	
MBY/LED/25/LVR220	3.10Kg		2100			700	
MBY/LED/40/LVR24	3.25Kg		4110			801	
MBY/LED/40/LVR50	3.25Kg		4110			842	
MBY/LED/40/LVR110	3.25Kg		4110			904	
MBY/LED/40/LVR220	3.25Kg		4110			822	
MBY/LED/50/LVR24	3.80Kg		5200			780	
MBY/LED/50/LVR50	3.80Kg		5200			820	
MBY/LED/50/LVR110	3.80Kg		5200			880	
MBY/LED/50/LVR220	3.80Kg		5200			800	

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

/DAE DALI emergency mode only  
 /DAEM DALI mains and emergency mode  
 /DAM DALI mains mode only  
 /DIM Dimmable control gear  
 /MD Microwave presence detector  
 /ST Digital self-test

## DIMENSIONS

### LUMINAIRE DIMENSIONS

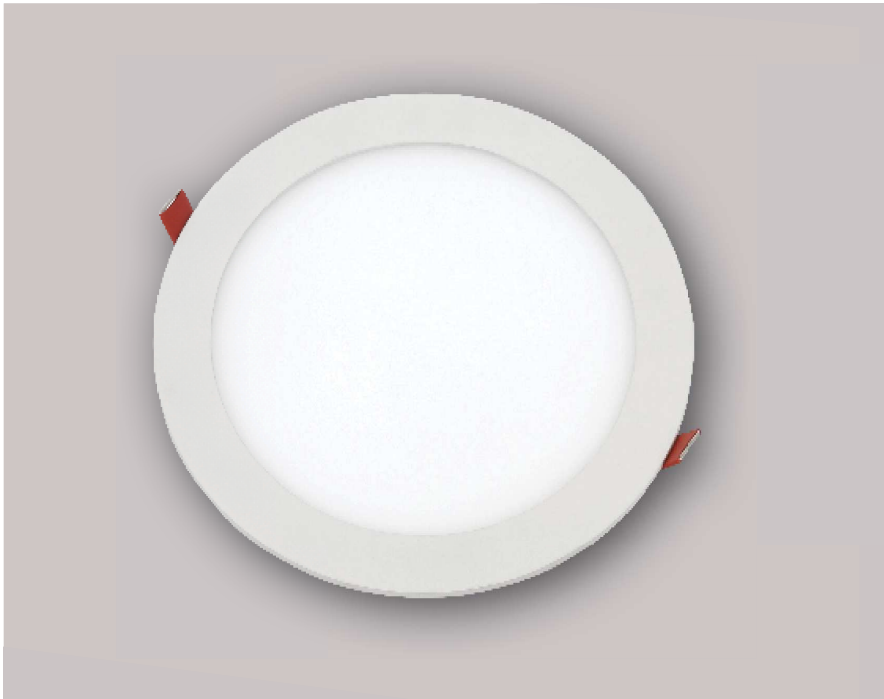
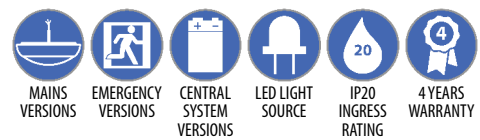
16W Versions: Ø 140mm x Depth 65mm  
 25W Versions: Ø 165mm x Depth 65mm  
 40W Versions: Ø 220mm x Depth 90mm  
 50W Versions: Ø 245mm x Depth 90mm

### CUT-OUT DIMENSIONS

16W Versions: Ø 125mm  
 25W Versions: Ø 155mm  
 40W Versions: Ø 205mm  
 50W Versions: Ø 220mm

# MELED

ATTRACTIVE SHALLOW LED DOWNLIGHT



## FEATURES

- Shallow diecast aluminium body for enhanced thermal dissipation.
- Wide beam angle.
- High quality LED driver providing uniform LED light distribution.
- Spring fixing clips enabling quick installation.
- Compact white body with attractive opal diffuser.
- Mains, emergency and slave versions.
- Extended LED life greater than 54,000 hours.
- CRI 80 (minimum).
- 4000K colour temperature.
- All luminaires in this range have a lumens/Watt rating greater than 70 lm/W.
- All stated lumens are actual luminaire output.



## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
MEL/LED/9	0.30Kg		640				
MEL/LED/12	0.40Kg		890				
MEL/LED/18	0.60Kg		1510				
MEL/LED/24	1.20Kg		2360				

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
MEL/LED/9/M3E	1.80Kg		640		180		
MEL/LED/12/M3E	1.90Kg		890		200		
MEL/LED/18/M3E	2.10Kg		1510		250		
MEL/LED/24/M3E	2.10Kg		2360		150		

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
MEL/LED/9/LVR24	0.30Kg		640			480	
MEL/LED/9/LVR50	0.30Kg		640			500	
MEL/LED/9/LVR110	0.30Kg		640			525	
MEL/LED/9/LVR220	0.30Kg		640			500	
MEL/LED/12/LVR24	0.40Kg		890			590	
MEL/LED/12/LVR50	0.40Kg		890			620	
MEL/LED/12/LVR110	0.40Kg		890			650	
MEL/LED/12/LVR220	0.40Kg		890			620	
MEL/LED/18/LVR24	0.60Kg		1510			800	
MEL/LED/18/LVR50	0.60Kg		1510			900	
MEL/LED/18/LVR110	0.60Kg		1510			900	
MEL/LED/18/LVR220	0.60Kg		1510			850	
MEL/LED/24/LVR24	0.60Kg		2360			550	
MEL/LED/24/LVR50	0.60Kg		2360			590	
MEL/LED/24/LVR110	0.60Kg		2360			590	
MEL/LED/24/LVR220	0.60Kg		2360			550	

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

/DAE DALI emergency mode only  
 /DAEM DALI mains and emergency mode  
 /DAM DALI mains mode only  
 /DIM Dimmable control gear  
 /ST Digital self-test

## DIMENSIONS

### LUMINAIRE DIMENSIONS

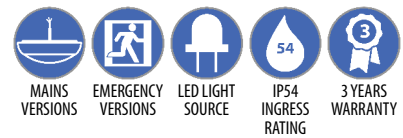
9W Versions: Ø 150mm x Depth 21mm  
 12W Versions: Ø 174mm x Depth 21mm  
 18W Versions: Ø 225mm x Depth 21mm  
 24W Versions: Ø 300mm x Depth 21mm

### CUT-OUT DIMENSIONS

9W Versions: Ø 135mm  
 12W Versions: Ø 150mm  
 18W Versions: Ø 210mm  
 24W Versions: Ø 285mm

# MIERLO

ATTRACTIVE GENERAL PURPOSE LUMINAIRE



## IMAGES

- A. Standard Mierlo with white trim.
- B. Mierlo fitted with chrome effect trim (suffix **/CH**).

## FEATURES

- Available in mains and emergency versions.
- White polycarbonate enclosure with opal diffuser.
- IP54 ingress rating.
- Suitable for wall and ceiling mounting.
- Textured interior finish for LED diffusion.
- Smooth outer finish for ease of maintenance.
- 4000K colour temperature.
- All luminaires in this range have a lumens/Watt rating greater than 90 lm/W.
- All stated lumens are actual luminaire output.

## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRE		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
MIE/LEDE	1.10Kg	1500					

EMERGENCY LUMINAIRE		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
MIE/LEDE/M3	2.70Kg	1500				363	

## OPTIONS

Products incorporating any of the following options are manufactured to order.  
Some options may not be available in all models.

/CH Chrome effect trim (RAL9022)

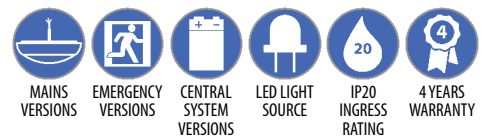
/MD Microwave presence detector

## DIMENSIONS

Ø 325mm x Depth 100mm

# NEATH

LED LUMINAIRE WITH STRIATED CLEAR DIFFUSER



## FEATURES

- Elegant design.
- Steel body with white gloss finish.
- Quality UV stabilised polycarbonate striated clear diffuser and polycarbonate end caps.
- Available in 50W and 70W versions.
- LED life greater than 54,000 hours.
- CRI 80 (minimum).
- 4000K colour temperature.
- Lumens/Watt rating greater than 85 lm/W.



## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
NEA/LED/50	3.50Kg		5700				
NEA/LED/70	3.70Kg		7500				

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
NEA/LED/50/M3E	5.00Kg		5700		357		
NEA/LED/50/M3	5.00Kg		5700			535	
NEA/LED/50/M3H	5.00Kg		5700				624
NEA/LED/70/M3E	5.25Kg		7500		475		
NEA/LED/70/M3	5.25Kg		7500			760	
NEA/LED/70/M3H	5.25Kg		7500				895

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
NEA/LED/50/LVR24	3.50Kg		5700			1017	
NEA/LED/50/LVR50	3.50Kg		5700			1141	
NEA/LED/50/LVR110	3.50Kg		5700			1213	
NEA/LED/50/LVR220	3.50Kg		5700			1116	
NEA/LED/70/LVR24	3.70Kg		7500			1485	
NEA/LED/70/LVR50	3.70Kg		7500			1618	
NEA/LED/70/LVR110	3.70Kg		7500			1675	
NEA/LED/70/LVR220	3.70Kg		7500			1561	

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

/DAEM DALI mains and emergency mode  
 /DAM DALI mains mode only  
 /DIM Dimmable control gear  
 /MD Microwave presence detector  
 /PIR Passive infra-red detector  
 /ST Digital self-test

## DIMENSIONS

### 50W VERSIONS

Length 1200mm x Width 208mm x Depth 70mm

### 70W VERSIONS

Length 1500mm x Width 208mm x Depth 70mm

# OUTDOOR & INDUSTRIAL LUMINAIRES

A range of mains and emergency luminaires to provide lighting solutions in demanding environments such as car parks, warehouses, factories and sports halls.





**ECOS 36**  
Durable IP65 polycarbonate  
circular luminaire



**HOLT 38**  
Rugged IP65 square luminaire



**IDRO 40**  
Robust circular diecast aluminium  
IP65 bulkhead



**IPSTONES 42**  
Surface mounted IP65 non-corrosive  
luminaire



**JARO 44**  
Robust IP65 wall pack luminaire



**JENA 46**  
IP65 diecast aluminium wall pack



**MEZZINA 48**  
IP65 circular polycarbonate  
utility luminaire



**NORTON 50**  
Robust diecast aluminium bollard



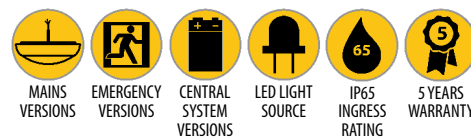
**RIVA 52**  
Robust IP65 diecast circular luminaire

#### MAIN IMAGE:

Ipstones LED non-corrosive luminaires situated at  
Wolverhampton Wanderers Football Club, Molineux  
Stadium, Woverhampton.

# ECOS

DURABLE IP65 POLYCARBONATE CIRCULAR LUMINAIRE



## IMAGES

- A. Standard Ecos with clear diffuser.
- B. Ecos with opal diffuser (suffix **/O**).
- C. Ecos fitted with semi-recessing trim (suffix **/ECR/WH**).

## FEATURES

- Each enclosure is manufactured from UV stabilised, flame retardant polycarbonate.
- Supplied with a white base and clear radial diffuser for enhanced photometric performance (opal diffuser available as an option).
- Available in mains, emergency and slave variants.
- Wide range of options including integral microwave presence detectors and digital self-testing luminaires.
- Can be supplied with a semi-recessing trim lending it to anti-ligature applications.
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 4000K colour temperature as standard (2700K - 6500K available to order).
- All LED luminaires in this range have a lumens/Watt rating up to 109 lm/W.
- All stated lumens are actual luminaire output.



## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
EC/LEDE	2.80Kg	1318					
EC/LED	2.80Kg		2510				
EC/LEDH	2.80Kg			3075			

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
EC/LEDE/M3	3.10Kg	1318				150	
EC/LED/M3	3.10Kg		2510			150	
EC/LEDH/M3	3.10Kg			3075		150	

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
EC/LED/LVR24	2.90Kg		2510			800	
EC/LED/LVR50	2.90Kg		2510			820	
EC/LED/LVR110	2.90Kg		2510			860	
EC/LED/LVR220	2.90Kg		2510			800	

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

**/2K7** 2700K colour temperature  
**/3K** 3000K colour temperature  
**/5K** 5000K colour temperature  
**/6K5** 6500K colour temperature  
**/DAE** DALI emergency mode only  
**/DAM** DALI mains mode only  
**/DIM** Dimmable control gear  
**/ECR/WH** White semi-recessing trim  
**/MD** Microwave presence detector  
**/O** Opal diffuser  
**/ST** Digital self-test  
**/TS** Push-to-test switch (surface mounting luminaires only)  
**/VR** Anti-tamper screws

## DIMENSIONS

### LUMINAIRE DIMENSIONS

Ø 397mm x Depth 132mm

### DIMENSIONS WITH SEMI-RECESSING TRIM

Ø 406mm x Depth 86mm

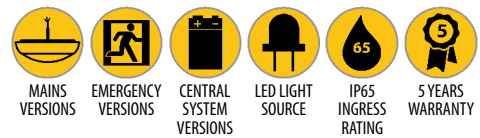
### CUT-OUT DIMENSIONS

Ø 395mm (minimum ceiling void of 46mm required)



# HOLT

## RUGGED IP65 SQUARE LUMINAIRE



## IMAGES

- A. Standard Holt with clear diffuser.
- B. Holt with opal diffuser (suffix **/O**).
- C. Holt with black base and opal diffuser (suffix **/BK** and **/O**).

## FEATURES

- Tough, flame retardant polycarbonate housing with screw-fixing diffuser.
- Wide range of options available to suit specific requirements.
- Steel gear tray, rear besa and side conduit entries for ease of installation.
- Sealed to IP65 as standard.
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 4000K colour temperature as standard (2700K - 6500K available to order).
- LED luminaires in this range have a lumens/Watt rating up to 105 lm/W.
- All stated lumens are actual luminaire output.

## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
HT/LEDE	1.10Kg	1300					
HT/LED	1.10Kg		2400				
HT/LEDH	1.10Kg			3000			

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
HT/LEDE/M3	3.00Kg	1300				125	
HT/LED/M3	3.00Kg		2400			125	
HT/LEDH/M3	3.00Kg			3000		125	

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
HT/LED/LVR24	2.90Kg		2400			770	
HT/LED/LVR50	2.90Kg		2400			780	
HT/LED/LVR110	2.90Kg		2400			820	
HT/LED/LVR220	2.90Kg		2400			770	

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

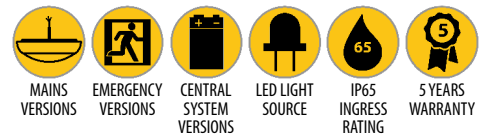
**/2K7** 2700K colour temperature  
**/3K** 3000K colour temperature  
**/5K** 5000K colour temperature  
**/6K5** 6500K colour temperature  
**/BK** Black base  
**/DAE** DALI emergency mode only  
**/DAEM** DALI mains and emergency mode  
**/DAM** DALI mains mode only  
**/DIM** Dimmable control gear  
**/MD** Microwave presence detector  
**/MODIM** Motion dimmable ballast  
**/MODIM/DH** Daylight harvesting motion dimmable ballast  
**/O** Opal diffuser  
**/ST** Digital self-test  
**/VR** Anti-tamper screws

## DIMENSIONS

Length 285mm x Width 285mm x Depth 90mm

# IDRO

## ROBUST CIRCULAR DIECAST ALUMINIUM IP65 BULKHEAD



## IMAGES

- A. Standard Idro in black finish.
- B. Idro in silver grey finish with anti-light pollution eyelid (suffix **/SG** and **/EY**).
- C. Idro in black finish with impact protective guard (suffix **/GU**).

## FEATURES

- Robust IP65 diecast housing supplied in black finish as standard, with silver grey finish available as an option.
- Can be wall or ceiling mounted and is suitable for exterior applications.
- Anti-light pollution eyelid and impact protective guard versions available.
- Supplied with toughened polycarbonate diffuser and anti-tamper screws as standard.
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 4000K colour temperature as standard (2700K - 6500K available to order).
- All stated lumens are actual luminaire output.

## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
IDR/LEDE	6.00Kg	640					
IDR/LED	6.00Kg		1220				
IDR/LEDH	6.00Kg			1490			

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
IDR/LEDE/M3	7.00Kg	640				80	
IDR/LED/M3	7.00Kg		1220			80	
IDR/LEDH/M3	7.00Kg			1490		80	

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
IDR/LED/LVR24	6.00Kg		1220			390	
IDR/LED/LVR50	6.00Kg		1220			400	
IDR/LED/LVR110	6.00Kg		1220			410	
IDR/LED/LVR220	6.00Kg		1220			390	

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

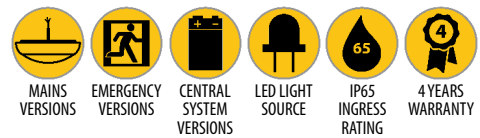
**/2K7** 2700K colour temperature  
**/3K** 3000K colour temperature  
**/5K** 5000K colour temperature  
**/6K5** 6500K colour temperature  
**/DAE** DALI emergency mode only  
**/DAEM** DALI mains and emergency mode  
**/DAM** DALI mains mode only  
**/DIM** Dimmable control gear  
**/EY** Anti-light pollution eyelid  
**/GU** Impact protective guard  
**/SG** Silver grey finish  
**/ST** Digital self-test

## DIMENSIONS

Ø 360mm x Depth 130mm

# IPSTONES

SURFACE MOUNTED IP65 NON-CORROSIVE LUMINAIRE



## FEATURES

- All polycarbonate construction with stainless steel retaining clips.
- Mains, emergency and slave versions available.
- Aluminium gear tray retained on straps for easy installation.
- Fixings provided for suspension of luminaire.
- LED life greater than 54,000 hours.
- CRI 80 (minimum).
- 4000K colour temperature.
- All LED luminaires in this range have a lumens/Watt rating up to 100 lm/W.
- All stated lumens are actual luminaire output.



## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
IPS/LED/40	2.50Kg		4080				
IPS/LED/48	2.80Kg		4550				
IPS/LED/60	2.90Kg		6000				
IPS/LED/80	2.90Kg		7970				

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
IPS/LED/40/M3E	3.50Kg		4080		285		
IPS/LED/40/M3	3.50Kg		4080			410	
IPS/LED/40/M3H	3.50Kg		4080				490
IPS/LED/48/M3E	3.80Kg		4550		265		
IPS/LED/48/M3	3.80Kg		4550			380	
IPS/LED/48/M3H	3.80Kg		4550				455
IPS/LED/60/M3E	3.90Kg		6000		300		
IPS/LED/60/M3	3.90Kg		6000			430	
IPS/LED/60/M3H	3.90Kg		6000				514
IPS/LED/80/M3E	3.90Kg		7970		280		
IPS/LED/80/M3	3.90Kg		7970			400	
IPS/LED/80/M3H	3.90Kg		7970				478

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
IPS/LED/40/LVR24	2.50Kg		4080			795	
IPS/LED/40/LVR50	2.50Kg		4080			856	
IPS/LED/40/LVR110	2.50Kg		4080			897	
IPS/LED/40/LVR220	2.50Kg		4080			836	
IPS/LED/48/LVR24	2.80Kg		4550			739	
IPS/LED/48/LVR50	2.80Kg		4550			796	
IPS/LED/48/LVR110	2.80Kg		4550			834	
IPS/LED/48/LVR220	2.80Kg		4550			777	
IPS/LED/60/LVR24	2.90Kg		6000			835	
IPS/LED/60/LVR50	2.90Kg		6000			900	
IPS/LED/60/LVR110	2.90Kg		6000			943	
IPS/LED/60/LVR220	2.90Kg		6000			878	
IPS/LED/80/LVR24	2.90Kg		7970			777	
IPS/LED/80/LVR50	2.90Kg		7970			836	
IPS/LED/80/LVR110	2.90Kg		7970			876	
IPS/LED/80/LVR220	2.90Kg		7970			817	

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

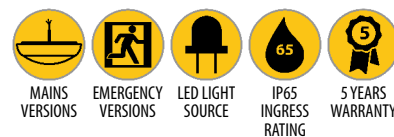
/DAE DALI emergency mode only  
 /DAEM DALI mains and emergency mode  
 /DAM DALI mains mode only  
 /DIM Dimmable control gear  
 /MD Microwave presence detector  
 /PIR Passive infra-red detector  
 /ST Digital self-test

## DIMENSIONS

40W Versions: Length 1565mm x Width 93mm x Depth 100mm  
 48W Versions: Length 1270mm x Width 140mm x Depth 100mm  
 60W Versions: Length 1565mm x Width 140mm x Depth 100mm  
 80W Versions: Length 1565mm x Width 140mm x Depth 100mm

# JARO

## ROBUST IP65 WALL PACK LUMINAIRE



## FEATURES

- Effective design offers maximum efficiency and reduced light pollution.
- IP65 ingress protection.
- Robust construction with a diecast aluminium base and polycarbonate diffuser and cover.
- Side conduit entry to aid easy installation.
- LED life greater than 54,000 hours.
- CRI 80 (minimum).
- 4000K colour temperature as standard (5000K available as an option).
- Lumens/Watt rating greater than 85 lm/W.
- 5 years warranty.
- 3 hours maintained emergency versions available.
- All stated lumens are actual luminaire output.

## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
JA/LED/30	2.40Kg		2650				
JA/LED/50	2.40Kg		4000				

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
JA/LED/30/M3E	3.60Kg		2650		170		
JA/LED/30/M3	3.60Kg		2650			260	
JA/LED/30/M3H	3.60Kg		2650				310

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
JA/LED/30/LVR24	2.40Kg		2650			550	
JA/LED/30/LVR50	2.40Kg		2650			610	
JA/LED/30/LVR110	2.40Kg		2650			610	
JA/LED/30/LVR220	2.40Kg		2650			550	

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

/5K 5000K colour temperature

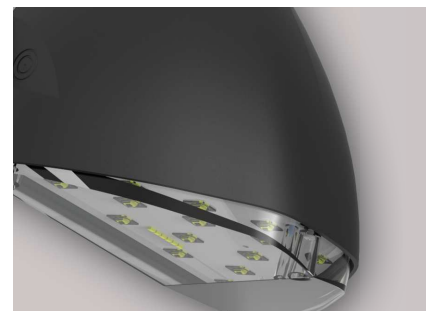
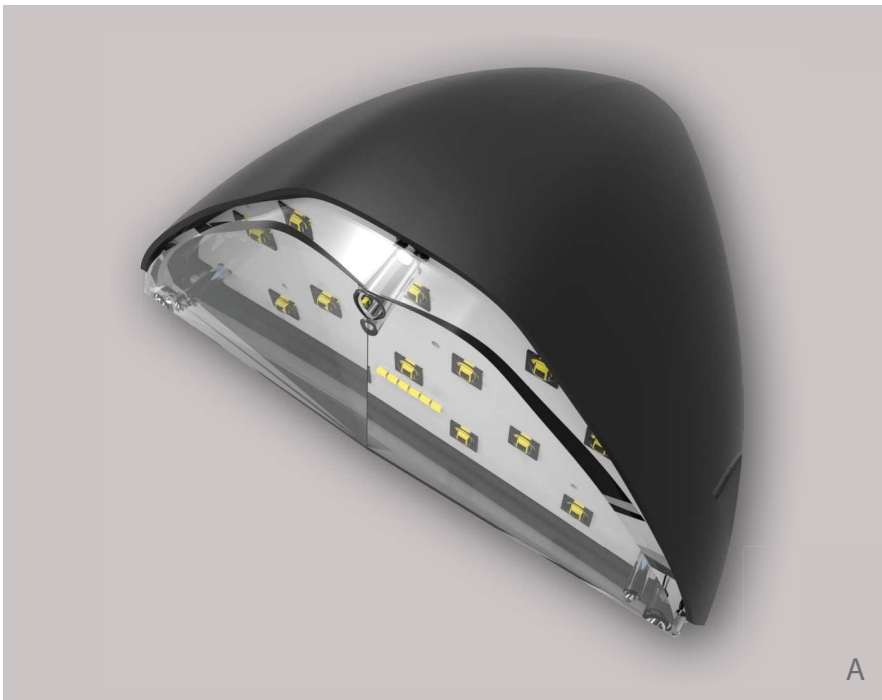
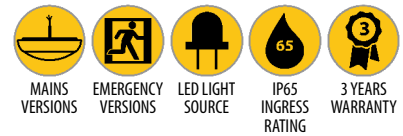
/PH Dusk/dawn photo cell

## DIMENSIONS

Length 308mm x Width 265mm x Depth 185mm

# JENA

## IP65 LED DIECAST ALUMINIUM WALL PACK



## IMAGES

- A. Standard Jena in black finish.  
B. Jena in grey finish (suffix /GY).

## FEATURES

- Robust construction with a diecast aluminium base and polycarbonate diffuser.
- IP65 ingress protection.
- 120° beam angle.
- Colour temperature switchable (3000K or 4000K).
- Selectable light outputs (13W 1700lm, 18W 2500lm or 28W 3500lm).
- Rear and side cable entries suitable for conduit and BESA box installation.
- 5 years warranty.
- 3 hours maintained emergency versions feature Lithium LiFePO4 battery technology.
- LED life greater than 60,000 hours.
- CRI 80 (minimum).
- IK10 impact resistant.
- Lumens/Watt rating greater than 125 lm/W.
- All stated lumens are actual luminaire output (using models set at factory standard 28W/colour temperature 4000K) .

## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRE		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	POWER SET AT 13W	POWER SET AT 18W	POWER SET AT 28W	POWER SET AT 13W	POWER SET AT 18W	POWER SET AT 28W
JE/LED	1.80Kg	1700	2500	3500			

EMERGENCY LUMINAIRE		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	POWER SET AT 13W	POWER SET AT 18W	POWER SET AT 28W	POWER SET AT 13W	POWER SET AT 18W	POWER SET AT 28W
JE/LED/M3	2.20Kg	1700	2500	3500	275	275	275

## OPTIONS

Products incorporating any of the following options are manufactured to order.  
Some options may not be available in all models.

/GY Grey finish

/PH Dusk/dawn photo cell

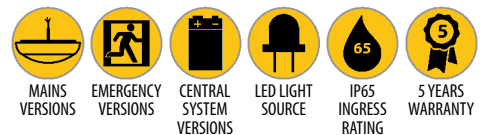
## DIMENSIONS

Length 265mm x Width 319mm x Depth 165mm



# MEZZINA

IP65 CIRCULAR POLYCARBONATE UTILITY LUMINAIRE



## IMAGES

- A. Standard Mezzina with clear diffuser and white base.
- B. Mezzina fitted with white semi-recessing trim (suffix **/MZR/WH**).
- C. Mezzina with (left to right) opal diffuser and white base (suffix **/O**) and black base and clear diffuser (suffix **/BK**).

## FEATURES

- Robust screw-fit diffuser sealed to the luminaire body with a closed-cell neoprene gasket for durability.
- Suitable for most interior and exterior applications.
- Steel gear tray, centre rear besa entry and 20mm conduit knockouts at each end for ease of installation.
- Supplied with white base and clear diffuser with techno-radial lens technology as standard (opal diffuser and black base available as options).
- Available in mains, emergency and slave variants.
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 4000K colour temperature as standard (2700K - 6500K available to order).
- All LED luminaires in this range have a lumens/Watt rating up to 107 lm/W.
- All stated lumens are actual luminaire output.

## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
MZ/LEDE	1.10Kg	1300					
MZ/LED	1.10Kg		2400				
MZ/LEDH	1.10Kg			3000			

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
MZ/LEDE/M3	2.70Kg	1300				132	
MZ/LED/M3	2.70Kg		2400			132	
MZ/LEDH/M3	2.70Kg			3000		132	

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
MZ/LED/LVR24	1.10Kg		2400			770	
MZ/LED/LVR50	1.10Kg		2400			787	
MZ/LED/LVR110	1.10Kg		2400			823	
MZ/LED/LVR220	1.10Kg		2400			770	

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

**/2K7** 2700K colour temperature  
**/3K** 3000K colour temperature  
**/5K** 5000K colour temperature  
**/6K5** 6500K colour temperature  
**/BK** Black base  
**/DAE** DALI emergency mode only  
**/DAEM** DALI mains and emergency mode  
**/DAM** DALI mains mode only  
**/DIM** Dimmable control gear  
**/MD** Microwave presence detector  
**/MODIM** Motion dimmable ballast  
**/MODIM/DH** Daylight harvesting motion dimmable ballast  
**/MZR/WH** White semi-recessing trim  
**/O** Opal diffuser  
**/ST** Digital self-test  
**/VR** Anti-tamper screws

## DIMENSIONS

### LUMINAIRE DIMENSIONS

Ø 290mm x Depth 79mm

### DIMENSIONS WITH SEMI-RECESSING TRIM

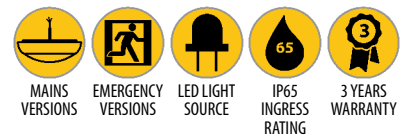
Ø 345mm x Depth 50mm (below ceiling)

### CUT-OUT DIMENSIONS

Ø 295mm

# NORTON

ROBUST DIECAST ALUMINIUM BOLLARD



## IMAGES

- A. Standard Norton with flat diffuser head.
- B. Norton with dome diffuser head (suffix **/DM**).
- C. Norton with louvre reflector head (suffix **/LV**).

## FEATURES

- Robust diecast aluminium construction with polycarbonate diffuser.
- IP65 ingress rating.
- Low glare for controlled illumination at night.
- Highly efficient 25W LED light source.
- 3 reflector head options.
- Ideal for driveways and footpaths.
- Changeable colour temperature between 3000K and 4000K (factory set at 4000K as standard).
- CRI 80 (minimum).
- IK09 impact resistant.
- 3 years warranty.
- 3 hours maintained emergency version available.
- Superior quality RAL9005 black finish.
- All stated lumens are actual luminaire output.

## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRE		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
NOR/LED	6.35Kg		2400				

EMERGENCY LUMINAIRE		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
NOR/LED/M3	7.60Kg		2400			240	

## OPTIONS

Products incorporating any of the following options are manufactured to order.  
Some options may not be available in all models.

**/DM** Dome reflector head

**/JB** J-bolt fixing kit

**/LV** Louvre reflector head (mains lumens reduce to 950 lm; emergency lumens reduce to 87 lm)

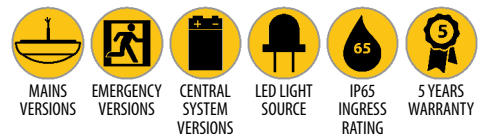
**/PH** Dusk/dawn photo cell

## DIMENSIONS

Ø 168mm x Length 1000mm

# RIVA

## ROBUST IP65 DIECAST CIRCULAR LUMINAIRE



## FEATURES

- Robust screw-fit polycarbonate prismatic diffuser sealed to the black diecast aluminium base for IP65 ingress rating.
- Suitable for most interior and exterior applications.
- Mains, emergency and slave modes available.
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 4000K colour temperature as standard (2700K - 6500K available to order).
- All luminaires in this range have a lumens/Watt rating up to 107 lm/W.
- All stated lumens are actual luminaire output.



## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
RIV/LEDE/C	1.30Kg	1290					
RIV/LED/C	1.30Kg		2460				
RIV/LEDH/C	1.30Kg			3010			

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
RIV/LEDE/M3/C	2.70Kg	1290				130	
RIV/LED/M3/C	2.70Kg		2460			130	
RIV/LEDH/M3/C	2.70Kg			3010		130	

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
RIV/LED/LVR24/C	1.30Kg		2460			789	
RIV/LED/LVR50/C	1.30Kg		2460			806	
RIV/LED/LVR110/C	1.30Kg		2460			843	
RIV/LED/LVR220/C	1.30Kg		2460			789	

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

**/2K7** 2700K colour temperature  
**/3K** 3000K colour temperature  
**/5K** 5000K colour temperature  
**/6K5** 6500K colour temperature  
**/DAE** DALI emergency mode only  
**/DAEM** DALI mains and emergency mode  
**/DAM** DALI mains mode only  
**/DIM** Dimmable control gear  
**/MODIM** Motion dimmable ballast  
**/MODIM/DH** Daylight harvesting motion dimmable ballast  
**/ST** Digital self-test  
**/VR** Anti-tamper screws

## DIMENSIONS

Ø 285mm x Depth 95mm



# EMERGENCY LUMINAIRES & EXIT SIGNS

A comprehensive collection of emergency luminaires and exit signs to provide solutions to the demands of current legislation.





### ARC 58

IP65 compact bulkhead & exit sign



### CALABOR 60

Fully recessed interior luminaire or exit sign



### CHELLA 62

Stylish recessed luminaire or exit sign



### DALBY 64

Versatile low profile luminaire or exit sign



### DELTA 66

Fully recessed emergency downlight



### DYODE 68

Fully recessed LED luminaire



### EDEN 70

IP65 compact bulkhead



### ELLED 72

Distinctive LED luminaire



### GENEVA 74

Stylish recessed luminaire or exit sign



### NAPOLI 76

Slim injection-moulded polycarbonate exit sign



### ODET 78

Emergency twin-spot range



### PALOMA 80

Versatile LED exit sign with a host of options



### PESCARA 82

Adaptable LED exit sign for internal & external use



### PESCARA-G 84

Large exit sign with viewing distances up to 80 metres



### PETINA 86

Ultra-slim LED single & double-sided exit sign



### PICO 88

Low profile single-sided exit box



### **RETZ 90**

Decorative curved exit sign



### **ROMNEY 92**

Multi-functional LED exit sign



### **ROTA 94**

Wall or ceiling mounting  
LED exit sign



### **SAVONA 96**

Edge-lit chain-suspended  
LED exit sign



### **TIEL 98**

IP65 double-sided polycarbonate  
exit sign



### **LEGENDS 100**

Flame-retardant legend panels in  
EN7010 & BS5499 formats

#### **MAIN IMAGE (PAGE 54):**

Digital self-test versions of Odet twin-spots situated  
at King Charles I School, Kidderminster.

# EMERGENCY LIGHTING DESIGN GUIDE

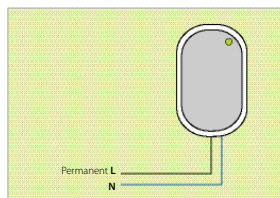
## LIGHTING REQUIREMENTS

**Luminaires:** When luminaires have been sited to cover the locations above, additional luminaires may be required to ensure minimum lighting levels are achieved.

Escape route corridors etc: 1 lux minimum on the centre line of the escape route.  
Open areas: 0.5 lux minimum in the central core to within 0.5m of the walls.

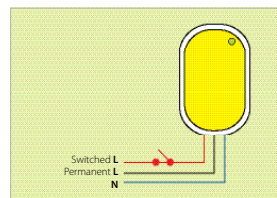
**Exit signs:** Should apply to the European Signs Directive and be either back illuminated or have an emergency luminaire within 2m of horizontal height. Signs should be the same format throughout the building.

**This guide should be used in conjunction with the Nationally recognised standards and should not be used solely as a demonstration of compliance.**



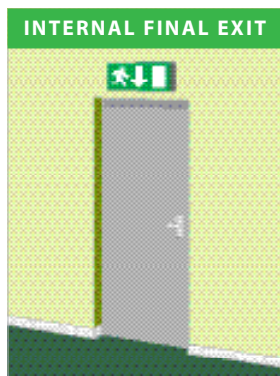
### NON-MAINTAINED

The lighting only operates when the normal mains supply fails (emergency lighting only).



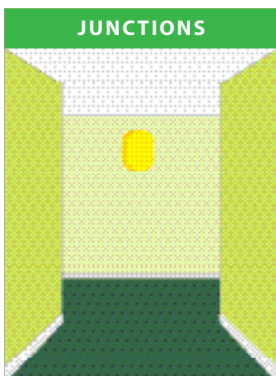
### MAINTAINED

The lighting operates normally and continues to operate when the normal mains supply fails (mains lighting and emergency lighting).



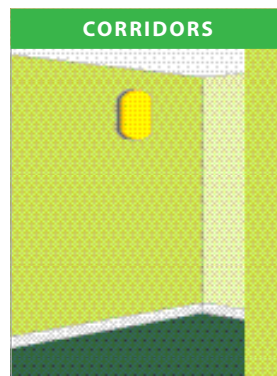
### INTERNAL FINAL EXIT

Panic bars, locks etc need to be illuminated to allow them to be easily seen and operated.



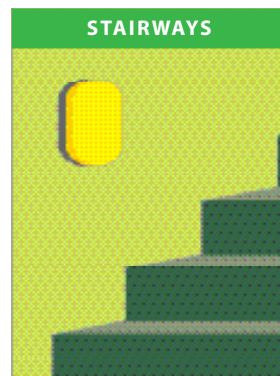
### JUNCTIONS

The luminaire must illuminate in both directions at the change of direction or intersection.



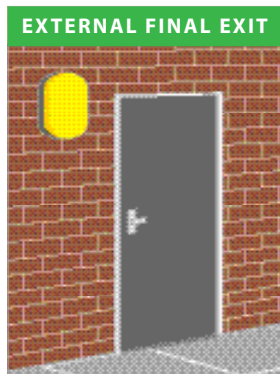
### CORRIDORS

The luminaire must illuminate in both directions at the change of direction or intersection.



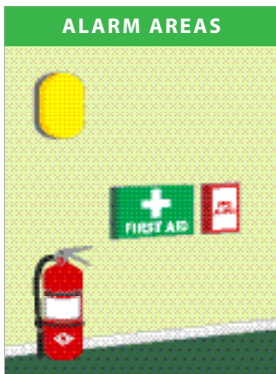
### STAIRWAYS

Install within 2 metres horizontal distance of change in floor level or stairs (each tread to receive direct light).



### EXTERNAL FINAL EXIT

Install externally within 2m horizontal distance of any final exits. Sufficient light will be needed to muster a roll call.



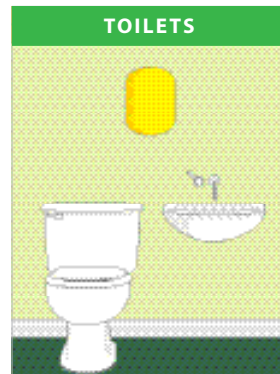
### ALARM AREAS

First aid points, call points, fire-fighting equipment and fire panels should have 15 lux of vertical illuminance.



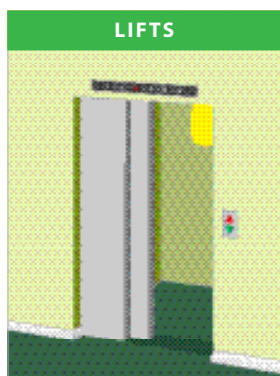
### ESCALATORS

Should not be used as an escape route but requires the same illumination to protect users on it when the supply fails.



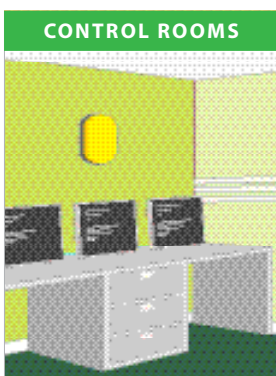
### TOILETS

Disabled toilets or multiple 'closets' without borrowed light should have at least one luminaire.



### LIFTS

To provide emergency illuminations in all lifts.



### CONTROL ROOMS

Plant and switch rooms should have 15 lux in plane of visual task. First aid rooms 15 lux and treatment rooms 50 lux on horizontal working plane for minimum duration of 30 minutes.



### OPEN AREAS

Open rooms either with a particular hazard, an escape route passing through or larger than 60m². Reception areas 15 lux in plane of visual task (e.g. switchboards) full duration.



### HAZARDOUS AREAS

Areas of high risk should be illuminated to 10% of normal lighting or 15 lux, whichever is greater. Kitchens 15 lux horizontal on working plane and switches/cutoffs for minimum duration 30 minutes.



# ARC

## IP65 COMPACT BULKHEAD & EXIT SIGN



## IMAGES

- A. Standard Arc bulkhead.
- B. Arc fitted with recessed mounting kit (suffix **/ARC/R**).

## FEATURES


- Soft arc linear diffuser designed to provide maximum spacings between emergency luminaires.
- IP65 flame retardant polycarbonate enclosure (white base/clear diffuser).
- 3 hours maintained emergency duration.
- Hinged gear tray with push fit terminals.
- Highly efficient LED light source.
- Supplied with a self-adhesive EN7010 format legend kit to give an exit sign option.
- Supplied as surface mounting luminaire as standard but can be semi-recessed with the use of a recessed mounting kit.
- EN7010 format exit sign diffuser option.
- TM-21 L70 greater than 54,000 hours.
- CRI 80 (minimum).
- 6500K colour temperature.
- 3 years product warranty.



**TUV RHEINLAND  
CERTIFIED**



## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
ARC/LED/M3 	1.20Kg		150			150	

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

**/ARC/EX** Exit sign diffuser

**/AR/R** Recessed mounting kit

## DIMENSIONS

### LUMINAIRE DIMENSIONS

Length 351mm x Width 111mm x Depth 63mm

### EXIT SIGNS DIMENSIONS

Length 351mm x Width 111mm x Depth 221mm

### CUT-OUT DIMENSIONS

Length 355mm x Width 125mm (when supplied with ARC/R recessed mounting kit)

### VIEWING DISTANCES

28 Metres (when fitted with ARC/EX exit sign diffuser)

18 Metres (when fitted with supplied self-adhesive legend)

## LEGEND OPTIONS (EXIT SIGN DIFFUSER VERSIONS ONLY)

### EN7010 FORMAT



Suffix **L16/7010**

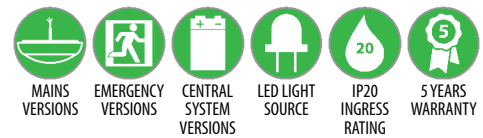
Suffix **L17/7010**

Suffix **L19/7010**

Suffix **L20/7010**

# CALABOR

FULLY RECESSED INTERIOR LUMINAIRE OR EXIT SIGN



## IMAGES

- A. Standard Calabor luminaire with white finish.
- B. Calabor exit sign with brass effect finish (suffix **/EX** and **/BR**).
- C. Calabor luminaire with chrome effect finish (suffix **/CH**).

## FEATURES

- Supplied with zintec steel fascia in white finish as standard, with brass effect (RAL1036) and chrome effect (RAL9022) finishes available as options.
- Galvanised steel back box and hinged, removable steel gear tray.
- Supplied as a fully recessed luminaire as standard but can be transformed into an attractive recessed exit sign with the use of an edge-lit plasi-glas flame retardant legend panel.
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 4000K colour temperature as standard (2700K - 6500K available to order).

## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
CAL/LED	2.20Kg		150				
CAL/LEDH	2.20Kg			360			

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
CAL/LED/M3	2.20Kg		120			120	
CAL/LEDH/M3H	2.20Kg			200			200
CAL/LED/NM3H	2.20Kg						320

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
CAL/LED/LVR24	2.10Kg		150			135	
CAL/LED/LVR50	2.10Kg		150			135	
CAL/LED/LVR110	2.10Kg		150			135	
CAL/LED/LVR220	2.10Kg		150			135	
CAL/LED/24D	2.10Kg					135	
CAL/LED/50D	2.10Kg					135	
CAL/LED/110D	2.10Kg					150	
CAL/LED/220D	2.10Kg					150	

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

**/2K7** 2700K colour temperature  
**/3K** 3000K colour temperature  
**/5K** 5000K colour temperature  
**/6K5** 6500K colour temperature  
**/BR** Brass effect finish (RAL1036)  
**/CH** Chrome effect finish (RAL9022)  
**/DAE** DALI emergency mode only  
**/EX** Exit version with single-sided legend  
**/EX/D** Exit version with double-sided legend  
**/ST** Digital self-test

## DIMENSIONS

### LUMINAIRE DIMENSIONS

Length 410mm x Width 155mm x Depth 90mm

### EXIT SIGN DIMENSIONS

Length 410mm x Width 155mm x Overall Depth 250mm (legend panel is 160mm below the ceiling)

### CUT-OUT DIMENSIONS

Length 325mm x Width 130mm

### VIEWING DISTANCE

27 Metres (when supplied as an exit version)

## LEGEND OPTIONS (EXIT VERSIONS ONLY)

### EN7010 FORMAT



Suffix L16/7010

Suffix L17/7010

Suffix L19/7010

Suffix L20/7010

### BS5499 FORMAT



Suffix L16

Suffix L17

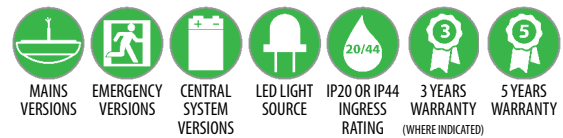
Suffix L18

Suffix L19

Suffix L20

# CHELLA

STYLISH RECESSED LUMINAIRE OR EXIT SIGN



## IMAGES

- A. Standard Chella luminaire.  
B. Chella exit sign (suffix **/EX**).

## FEATURES

- Supplied as a fully recessed luminaire as standard but can be transformed into an attractive recessed exit sign with the use of an edge-lit plasi-glas flame retardant legend panel.
- Effective light-pipe design allowing clear visibility of the emergency charge LED indicator.
- Hinged, removable steel gear tray facilitates easy fixing and maintenance.
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 4000K colour temperature as standard (2700K - 6500K available to order).

## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
CHE/LED	1.00Kg		150				
CHE/LEDH	1.00Kg			360			

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
CHE/LEDE/M3E <sup>3</sup>	1.80Kg	75			75		
CHE/LED/M3	1.80Kg		120			120	
CHE/LEDH/M3H	1.80Kg			200			200
CHE/LED/NM3H	1.80Kg						320
CHE/LEDH/C3	1.80Kg			360		120	
CHE/LEDH/C3H	1.80Kg			360			320

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
CHE/LED/LVR24	1.30Kg		150			135	
CHE/LED/LVR50	1.30Kg		150			135	
CHE/LED/LVR110	1.30Kg		150			135	
CHE/LED/LVR220	1.30Kg		150			135	
CHE/LED/24D	1.30Kg					135	
CHE/LED/50D	1.30Kg					135	
CHE/LED/110D	1.30Kg					150	
CHE/LED/220D	1.30Kg					150	

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

/2K7 2700K colour temperature  
 /3K 3000K colour temperature  
 /5K 5000K colour temperature  
 /6K5 6500K colour temperature  
 /DAE DALI emergency mode only  
 /EX Exit version with single-sided legend (ingress rating reduces to IP20)  
 /EX/D Exit version with double-sided legend (ingress rating reduces to IP20)  
 /ST Digital self-test

## DIMENSIONS

### LUMINAIRE DIMENSIONS

Length 380mm x Width 150mm x Depth 80mm

### EXIT SIGN DIMENSIONS

Length 380mm x Width 150mm x Overall Depth 250mm (legend panel is 160mm below the ceiling)

### CUT-OUT DIMENSIONS

Length 360mm x Width 130mm

### VIEWING DISTANCE

27 Metres (when supplied as an exit version)

## LEGEND OPTIONS (EXIT VERSIONS ONLY)

### EN7010 FORMAT



Suffix L16/7010



Suffix L17/7010



Suffix L19/7010



Suffix L20/7010

### BS5499 FORMAT



Suffix L16



Suffix L17



Suffix L18



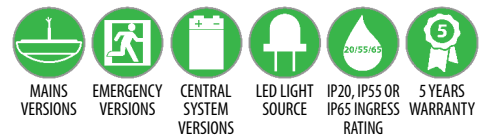
Suffix L19



Suffix L20

# DALBY

VERSATILE LOW PROFILE LUMINAIRE OR EXIT SIGN



## IMAGES

- A. Standard Dalby luminaire.
- B. Dalby exit sign (suffix **/EX**).
- C. Dalby luminaire fitted with self-adhesive kit (suffix **/SAL2**).

## FEATURES

- Flame-retardant polycarbonate body and diffuser.
- Supplied as a surface mounting luminaire as standard but can be semi-recessed with the use of a semi-recessing kit.
- Elegant low profile design.
- Can be transformed into an attractive exit sign with the use of an edge-lit plasi-glas flame retardant legend panel or self-adhesive legend kit.
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 4000K colour temperature as standard (2700K - 6500K available to order).



## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
DAL/LED	1.80Kg		150				
DAL/LEDH	1.80Kg			360			

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
DAL/LED/M3	1.80Kg		120			120	
DAL/LEDH/M3H	1.80Kg			200			200
DAL/LEDH/NM3H	1.80Kg						320
DAL/LED/NM3H/600	1.80Kg						600
DAL/LED/NM3H/900	1.80Kg						900

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
DAL/LED/LVR24	1.10Kg		150			135	
DAL/LED/LVR50	1.10Kg		150			135	
DAL/LED/LVR110	1.10Kg		150			135	
DAL/LED/LVR220	1.10Kg		150			135	
DAL/LED/24D	1.10Kg					135	
DAL/LED/50D	1.10Kg					135	
DAL/LED/110D	1.10Kg					150	
DAL/LED/220D	1.10Kg					150	

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

/2K7 2700K colour temperature  
 /3K 3000K colour temperature  
 /5K 5000K colour temperature  
 /6K5 6500K colour temperature  
 /DAE DALI emergency mode only  
 /EX Exit version with single-sided legend (ingress rating reduces to IP20)  
 /EX/D Exit version with double-sided legend (ingress rating reduces to IP20)  
 /IP65 IP65 version (not available with exit sign versions)  
 /M IP65 metal base (not available with exit sign versions)  
 /R Semi-recessing kit  
 /SAL2 BS5499 format self-adhesive legend kit  
 /SAL2/7010 EN7010 format self-adhesive legend kit  
 /ST Digital self-test  
 /TS Push-to-test switch

## DIMENSIONS

### LUMINAIRE DIMENSIONS

Length 355mm x Width 195mm x Depth 70mm

### EXIT SIGN DIMENSIONS

Length 355mm x Width 195mm x Overall Depth 230mm (legend panel is 160mm below the ceiling)

### CUT-OUT DIMENSIONS

Length 330mm x Width 170mm (when supplied with semi-recessing kit)

### VIEWING DISTANCE

27 Metres (when supplied as an exit version)

22 Metres (when supplied with self-adhesive legend kit)

## LEGEND OPTIONS (EXIT VERSIONS ONLY)

### EN7010 FORMAT



Suffix L16/7010

Suffix L17/7010

Suffix L19/7010

Suffix L20/7010

### BS5499 FORMAT



Suffix L16

Suffix L17

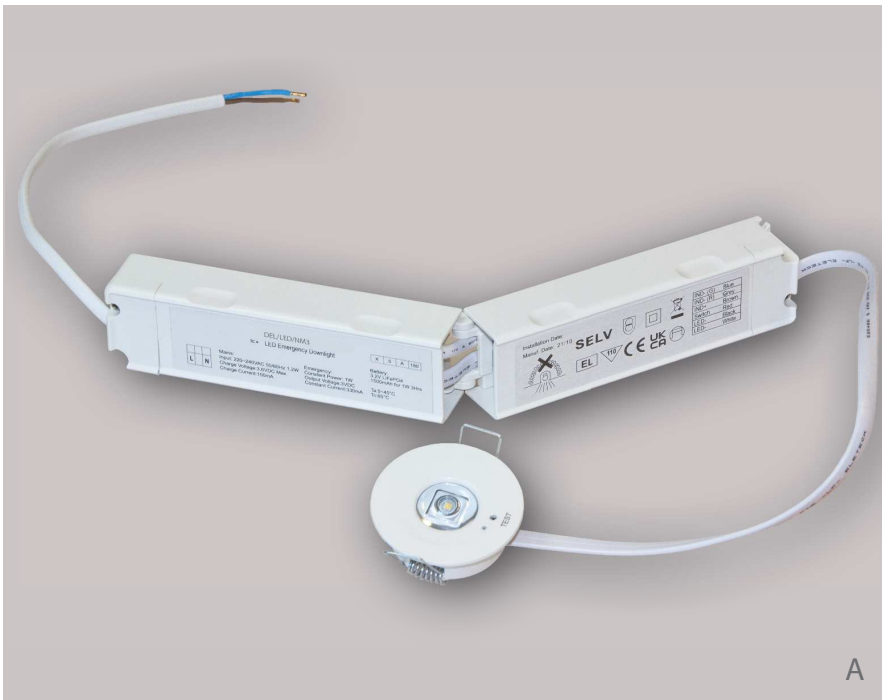
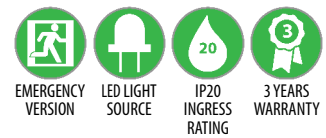
Suffix L18

Suffix L19

Suffix L20

# DELTA

## FULLY RECESSED EMERGENCY DOWNLIGHT



## IMAGES

- A. Delta fitted with standard open area lens.
- B. Delta fitted with corridor lens.
- C. Delta fitted with open area lens in black finish (suffix **/BK**).

## FEATURES

- Luminaire diameter of just 50mm.
- Emergency packs can easily pass through ceiling cut-out of 43-44mm.
- Fitted with an open area lens as standard and also supplied with an alternative corridor lens to illuminate centre lines of escape routes.
- LED life greater than 36,000 hours.
- Effective optical design to maximise light distribution for emergency lighting applications.
- Polycarbonate body and diffuser are 850°C hot-wire compliant.
- 6500K colour temperature.
- Proficient LED driver along with enhanced thermal engineering techniques reduce LED operating temperatures.
- Gatefold driver and battery pack for ease of installation in shallow ceiling voids.
- Emergency versions feature Lithium LiFePO4 battery technology.
- All stated lumens are actual luminaire output.

## CATALOGUE NUMBER & INFORMATION

EMERGENCY LUMINAIRE			MAINS LUMENS		EMERGENCY LUMENS	
CAT NO	WATTS	WEIGHT	WHEN FITTED WITH OPEN AREA LENS	WHEN FITTED WITH CORRIDOR LENS	WHEN FITTED WITH OPEN AREA LENS	WHEN FITTED WITH CORRIDOR LENS
DEL/LED/NM3	1W	0.2Kg			120	130

## OPTION

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

/BK Black finish

## DIMENSIONS

### LUMINAIRE DIMENSIONS

Ø 50mm x Depth 21mm

### DRIVER/EMERGENCY PACK DIMENSIONS

Length 250mm x Width 36mm x Depth 21mm

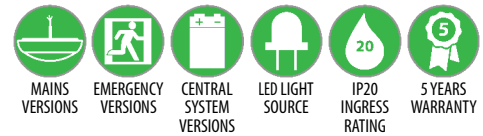
*\* Dimensions based on pack being fully extended (pack is foldable for ease of installation)*

### CUT-OUT DIMENSIONS

Ø 43-44mm

# DYODE

## FULLY RECESSED LED LUMINAIRE



## IMAGES

- A. Standard recessed Dyode in white finish.
- B. Surface mounted Dyode in black finish (suffix **/SUR** and **/BK**).
- C. Surface mounted Dyode in white finish (suffix **/SUR**).

## FEATURES

- Luminaire diameter of just 50mm.
- Emergency packs can easily pass through a ceiling cut-out of 40mm.
- Unique optical design to optimise the light distribution for emergency lighting applications.
- Specially developed LED driver and advanced thermal engineering techniques reduce LED operating temperatures.
- Supplied as an open area version as standard with corridor versions to illuminate centre lines of escape routes available as an option.
- Polycarbonate body and diffuser are 850°C hot-wire compliant.
- LED life exceeds 54,000 hours.
- 6500K colour temperature.
- Emergency versions utilise nickel cadmium battery packs.
- Taper battery charger reduces power consumption by 40% over product life.
- Surface mounting version available.

## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
DY/LED/MAINS/OA	0.50Kg		146				

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
DY/LED/NM3/OA	1.10Kg					146	
DY/LED/NM3H/OA	1.10Kg						268
DY/LED/M3/OA	1.10Kg		130			130	

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
DY/LED/24D/OA	0.50Kg					146	
DY/LED/50D/OA	0.50Kg					146	
DY/LED/110D/OA	0.50Kg					146	
DY/LED/220D/OA	0.50Kg					146	

24V and 50V slave versions require access to the ceiling prior to installation.

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

**/BK** Black finish  
**/CR** Corridor version (replaces /OA suffix)  
**/DAE** DALI emergency mode only  
**/ST** Digital self-test  
**/SUR** Surface mounting version

## DIMENSIONS

### RECESSED LUMINAIRE DIMENSIONS

Ø 50mm x Depth 32mm (10mm below the ceiling)

### SURFACE LUMINAIRE DIMENSIONS

Length 250mm x Width 150mm x Depth 54mm

### EMERGENCY PACK DIMENSIONS (RECESSED VERSIONS ONLY)

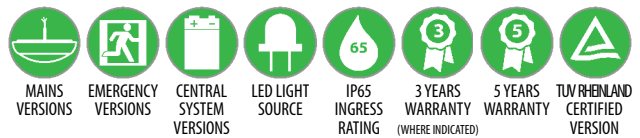
Length 600mm x Width 38mm x Depth 35mm

### CUT-OUT DIMENSIONS (RECESSED VERSIONS ONLY)

Ø 40mm

# EDEN

## IP65 COMPACT BULKHEAD



## IMAGES

- A. Standard surface mounting Eden.
- B. Eden fitted with semi-recessing trim (suffix **/ED/WH**).
- C. Eden fitted with self-adhesive legend kit (suffix **/SAL1**).

## FEATURES

- Soft arc linear diffuser designed to provide maximum spacings between emergency luminaires.
- IP65 flame retardant polycarbonate enclosure (white base/clear diffuser) and screw-fixing diffuser located with brass threaded inserts.
- Can be fitted with a self-adhesive legend kit (SAL1) to create an exit sign.
- LED high output options suitable for high bay applications.
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 4000K colour temperature as standard (2700K - 6500K available to order).





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AVAILABLE**



## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
ED/LED	1.20Kg		150				
ED/LEDH	1.20Kg			342			

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
ED/LEDE/M3E 	1.45Kg	75			75		
ED/LED/M3 	1.45Kg		120			120	
ED/LEDH/M3H	1.45Kg			200			200
ED/LED/NM3H	1.20Kg						305
ED/LEDH/C3	1.45Kg			342		120	
ED/LEDH/C3H	1.45Kg			342			305

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
ED/LED/LVR24	1.20Kg		150			135	
ED/LED/LVR50	1.20Kg		150			135	
ED/LED/LVR110	1.20Kg		150			135	
ED/LED/LVR220	1.20Kg		150			135	
ED/LED/24D	1.20Kg					135	
ED/LED/50D	1.20Kg					135	
ED/LED/110D	1.20Kg					150	
ED/LED/220D	1.20Kg					150	

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

**/2K7** 2700K colour temperature  
**/3K** 3000K colour temperature  
**/5K** 5000K colour temperature  
**/6K5** 6500K colour temperature  
**/DAE** DALI emergency mode only  
**/ED/WH** White semi-recessing kit  
**/M** IP65 metal base  
**/SAL1** BS5499 format self-adhesive legend kit  
**/SAL1/7010** EN7010 format self-adhesive legend kit  
**/ST** Digital self-test  
**/TS** Push-to-test switch  
**/VR** Anti-tamper screws

## DIMENSIONS

### LUMINAIRE DIMENSIONS

Length 350mm x Width 108mm x Depth 80mm

### CUT-OUT DIMENSIONS

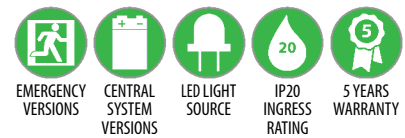
Length 330mm x Width 90mm (when supplied with ED/WH semi-recessing kit)

### VIEWING DISTANCE

18 Metres (when supplied with self-adhesive kit)

# ELLED

## DISTINCTIVE LED LUMINAIRE



## IMAGES

- A. Elled fitted with semi-recessing kit (suffix **/R**).
- B. Elled fitted with white surface trim (suffix **/WH**).
- C. Elled fitted with (left to right) brass surface trim (suffix **/BR**) and chrome surface trim (suffix **/CH**).

## FEATURES

- Seamless design to blend into any lighting scheme.
- Specially developed LED driver.
- High quality 3W (150 lumens/Watt) LED with extended life expectancy.
- Supplied as an open area version as standard with corridor versions to illuminate centre lines of escape routes available as an option.
- Refractor lens provides efficient light distribution pattern.
- Self-test versions designed to the requirements of BS EN62034:2006.
- Options include cold store application versions and surface trims in a variety of colour finishes.
- Emergency versions utilise Nickel Metal Hydride battery packs.

## CATALOGUE NUMBERS & INFORMATION

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
ELL/LED/NM3/OA	0.50Kg					45	

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
ELL/LED/110D/OA	0.50Kg					45	
ELL/LED/220D/OA	0.50Kg					45	

## OPTIONS

Products incorporating any of the following options are manufactured to order.  
Some options may not be available in all models.

**/30°C** Cold store version (suitable to ambients down to -30°C)  
**/BR** Brass effect surface trim (RAL1036)  
**/CH** Chrome effect surface trim (RAL9022)  
**/CR** Corridor version (replaces /OA suffix)  
**/ST** Self-test  
**/WH** White surface trim

## DIMENSIONS

### LUMINAIRE DIMENSIONS

Ø 120mm x Depth 67mm (35mm below the ceiling)

### EMERGENCY PACK DIMENSIONS (RECESSED VERSIONS ONLY)

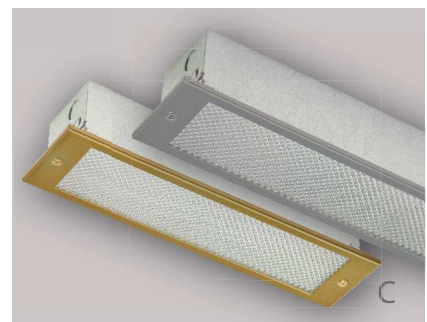
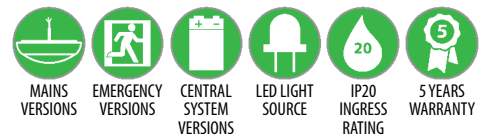
Ø 75mm x Depth 190mm

### CUT-OUT DIMENSIONS (RECESSED VERSIONS ONLY)

Ø 100mm

# GENEVA

STYLISH RECESSED LUMINAIRE OR EXIT SIGN



## IMAGES

- A. Standard Geneva luminaire with white finish.
- B. Geneva exit sign with white finish (suffix **/EX**).
- C. Geneva luminaire with (left to right) brass effect finish (suffix **/BR**) and chrome effect finish (suffix **/CH**).

## FEATURES

- Standard luminaire comprises of a zintec steel fascia with a white finish, prismatic polycarbonate diffuser and galvanised steel back box.
- Brass effect (RAL1036) and chrome effect (RAL9022) finishes available as options.
- Supplied as a fully recessed luminaire as standard but can be transformed into an attractive recessed exit sign with the use of an edge-lit plasi-glas flame retardant legend panel.
- Prismatic lens controller for optimised light distribution.
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 4000K colour temperature as standard (2700K - 6500K available to order).

## CATALOGUE NUMBERS & INFORMATION

MAINS LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
GN/LED	1.20Kg		150				
GN/LEDH	1.20Kg			360			

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
GN/LED/M3	1.50Kg		120			120	
GN/LEDH/M3H	1.50Kg			200			200
GN/LED/NM3H	1.50Kg						320

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
GN/LED/LVR24	1.20Kg		150			135	
GN/LED/LVR50	1.20Kg		150			135	
GN/LED/LVR110	1.20Kg		150			135	
GN/LED/LVR220	1.20Kg		150			135	
GN/LED/24D	1.20Kg					135	
GN/LED/50D	1.20Kg					135	
GN/LED/110D	1.20Kg					150	
GN/LED/220D	1.20Kg					150	

## OPTIONS

Products incorporating any of the following options are manufactured to order.  
Some options may not be available in all models.

**/2K7** 2700K colour temperature  
**/3K** 3000K colour temperature  
**/5K** 5000K colour temperature  
**/6K5** 6500K colour temperature  
**/BR** Brass effect finish (RAL1036)  
**/CH** Chrome effect finish (RAL9022)  
**/EX** Exit version with single-sided legend  
**/EX/D** Exit version with double-sided legend

## DIMENSIONS

### LUMINAIRE DIMENSIONS

Length 360mm x Width 90mm x Depth 80mm

### EXIT SIGN DIMENSIONS

Length 360mm x Width 90mm x Overall Depth 240mm (legend panel is 160mm below the ceiling)

### CUT-OUT DIMENSIONS

Length 325mm x Width 80mm

### VIEWING DISTANCE

27 Metres (when supplied as an exit version)

## LEGEND OPTIONS (EXIT VERSIONS ONLY)

### EN7010 FORMAT



Suffix L16/7010

Suffix L17/7010

Suffix L19/7010

Suffix L20/7010

### BS5499 FORMAT



Suffix L16

Suffix L17

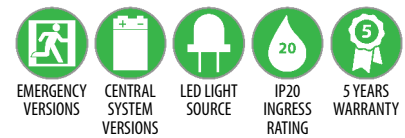
Suffix L18

Suffix L19

Suffix L20

# NAPOLI

SLIM INJECTION-MOULDED POLYCARBONATE EXIT SIGN



## FEATURES

- Pleasing aesthetic design.
- Injection-moulded polycarbonate body.
- Clip fixings for quick and simple installation.
- Supplied complete with specified polycarbonate legend panel.
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 6500K colour temperature.



## CATALOGUE NUMBERS & INFORMATION

EMERGENCY EXIT SIGNS		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
NA/LED/M3	2.30Kg		120			120	
NA/LEDH/M3H	2.30Kg			200			200

CENTRAL SYSTEM SLAVE EXIT SIGNS		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
NA/LED/LVR24	2.30Kg		150			135	
NA/LED/LVR50	2.30Kg		150			135	
NA/LED/LVR110	2.30Kg		150			135	
NA/LED/LVR220	2.30Kg		150			135	
NA/LED/24D	2.30Kg					135	
NA/LED/50D	2.30Kg					135	
NA/LED/110D	2.30Kg					150	
NA/LED/220D	2.30Kg					150	

## OPTIONS

Products incorporating any of the following options are manufactured to order.  
Some options may not be available in all models.

/DAE DALI emergency mode only  
/ST Digital self-test  
/TS Push-to-test switch

## DIMENSIONS

### EXIT SIGN DIMENSIONS

Length 420mm x Width 221mm x Depth 58mm

### VIEWING DISTANCE

36 Metres

## LEGEND OPTIONS

### EN7010 FORMAT



Suffix L16/7010



Suffix L17/7010



Suffix L19/7010



Suffix L20/7010

### BS5499 FORMAT



Suffix L16



Suffix L17



Suffix L18



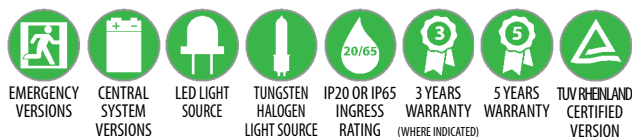
Suffix L19



Suffix L20

# ODET

## EMERGENCY TWIN-SPOT RANGE



## IMAGES

- A. 18W LED Odet (ODS18/LED/NM3).
- B. 20W tungsten halogen Odet (ODS20/NM3/TH).
- C. 6W LED Odet (ODS6/LED/NM3/IP65/ST).

## FEATURES

### ALL MODELS

- Low Voltage disconnect circuit prevents batteries entering deep discharge state in the event of prolonged power failure.
- Constant current with green LED to indicate mains is healthy and battery is connected.
- 3 hours non-maintained emergency duration.
- Swivel/tilt heads enable the client to tailor light distribution to highlight specific areas.


### LED MODELS ONLY

- High quality polycarbonate LED projectors.
- 5 years warranty on 9W and 18W LED versions (3 years warranty on all other products within the range).
- Supplied as standard with zintec coated steel enclosure with an epoxy coated finish (IP65 plastic enclosures available to order).
- 6W versions are supplied with an IP65 plastic enclosure and self-test facility as standard.
- 9W and 18W LED versions feature maintenance-free sealed lead acid batteries (high quality NiCad cells are used in 6W LED versions).
- 6500K colour temperature.



**TUV RHEINLAND  
CERTIFIED OPTION  
AVAILABLE**

## CATALOGUE NUMBERS & INFORMATION

EMERGENCY LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
ODS6/LED/NM3/IP65 	3.80Kg					2 x 310	
ODS9/LED/NM3	5.50Kg					2 x 345	
ODS9/LED/M3	5.50Kg		2 x 345			2 x 345	
ODS18/LED/NM3	7.00Kg					2 x 900	
ODS18/LED/M3	7.00Kg		2 x 900			2 x 900	
ODS20/NM3/TH	7.00Kg					2 x 340	

CENTRAL SYSTEM SLAVE LUMINAIRES		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
ODS9/LED/110D	5.50Kg					2 x 345	
ODS9/LED/220D	5.50Kg					2 x 345	
ODS18/LED/110D	7.00Kg					2 x 900	
ODS18/LED/220D	7.00Kg					2 x 900	
ODS20/110D/TH	7.00Kg					2 x 340	
ODS20/220D/TH	7.00Kg					2 x 340	

## OPTIONS

Products incorporating any of the following options are manufactured to order.  
Some options may not be available in all models.

- /3MTR** Remote heads fitted on 3m loom suitable cold store applications (20W tungsten halogen versions only)
- /BK** Black finish (excluding 6W LED version)
- /CH** Chrome effect finish (excluding 6W LED version)
- /IP65** IP65 weatherproof enclosure (excluding 6W LED version)
- /ST** Digital self-test (20W tungsten halogen versions only)
- /TM14** 14 minute timer delay for use with discharge lamp schemes (20W tungsten halogen versions only)

## DIMENSIONS

### 6W LED LUMINAIRE DIMENSIONS

Length 303mm x Height 304mm x Depth 74.5mm

### 9W & 18W LED LUMINAIRE DIMENSIONS

Length 315mm x Height 260mm x Depth 110mm

### 20W TUNGSTEN HALOGEN LUMINAIRE DIMENSIONS

Length 315mm x Height 310mm x Depth 110mm

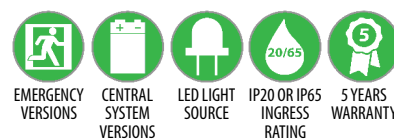
### IP65 LUMINAIRE DIMENSIONS\*

Length 400mm x Height 400mm x Depth 135mm

\*Excluding 6W LED version

# PALOMA

VERSATILE LED EXIT SIGN WITH A HOST OF OPTIONS



## IMAGES

- A. Paloma (top to bottom) single-sided IP65 version (suffix **/IP65**) and standard single-sided version in white finish.
- B. Single-sided Paloma (top to bottom) in brass effect finish (suffix **/BR**), chrome effect finish (suffix **/CH**) and black finish (suffix **/BK**).
- C. Double-sided Paloma (left to right) with 100mm white rod-suspension kit (suffix **/RS/100MM**) and black wire-suspension kit (suffix **/WS/BK**).

## FEATURES

- Sheet steel construction in white finish as standard, with black, brass effect (RAL1036) and chrome effect (RAL9022) finishes available to order.
- Supplied with specified polycarbonate legend panel which can be removed from either end via removable end-caps.
- Clear threshold illuminates the area below the sign.
- IP65 versions are of robust construction to suit a host of exterior applications.
- Supplied as single-sided versions as standard (prefix PAL), with double-sided versions available as an option (prefix PALD).
- Double-sided versions can be supplied with a variety of rod-suspension and wire-suspension kits.
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 6500K colour temperature.

## CATALOGUE NUMBERS & INFORMATION

EMERGENCY EXIT SIGNS		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
PAL/LED/M3	2.50Kg		150			150	
PALD/LED/M3	2.50Kg		150			150	

CENTRAL SYSTEM SLAVE EXIT SIGNS		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
PAL/LED/110D	2.30Kg					150	
PAL/LED/220D	2.30Kg					150	
PALD/LED/110D	2.30Kg					150	
PALD/LED/220D	2.30Kg					150	

## OPTIONS

Products incorporating any of the following options are manufactured to order.  
Some options may not be available in all models.

**/BK** Black finish  
**/BR** Brass effect finish (RAL1036)  
**/CH** Chrome effect finish (RAL9022)  
**/DAE** DALI emergency mode only  
**/IP65** IP65 version  
**/RAB** Right-angled mounting bracket  
**/RS+MM** White rod-suspension kit (double-sided versions only)  
**/RS+MM/BK** Black rod-suspension kit (double-sided versions only)  
**/RS+MM/BR** Brass effect (RAL1036) rod-suspension kit (double-sided versions only)  
**/RS+MM/CH** Chrome effect (RAL9022) rod-suspension kit (double-sided versions only)  
**/ST** Digital self-test  
**/VR** Anti-tamper screws  
**/WS** White wire-suspension kit (double-sided versions only)  
**/WS/BK** Black wire-suspension kit (double-sided versions only)  
**/WS/BR** Brass effect (RAL1036) wire-suspension kit (double-sided versions only)  
**/WS/CH** Chrome effect (RAL9022) wire-suspension kit (double-sided versions only)

Replace + with either **100** for 100mm, **300** for 300mm or **600** for 600mm length rod-suspension kit.

## DIMENSIONS

### EXIT SIGN DIMENSIONS (SINGLE & DOUBLE SIDED VERSIONS)

Length 380mm x Width 225mm x Depth 55mm

### IP65 VERSION DIMENSIONS

Length 440mm x Width 270mm x Depth 75mm

### VIEWING DISTANCE

36 Metres

## LEGEND OPTIONS

### EN7010 FORMAT



Suffix **L16/7010**

Suffix **L17/7010**

Suffix **L19/7010**

Suffix **L20/7010**

### BS5499 FORMAT



Suffix **L16**

Suffix **L17**

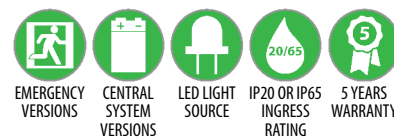
Suffix **L18**

Suffix **L19**

Suffix **L20**

# PESCARA

ADAPTABLE LED EXIT SIGN FOR INTERNAL & EXTERNAL USE



## IMAGES

- A. Standard Pescara in white finish.
- B. IP65 Pescara (suffix **/IP65**).
- C. Pescara in (top to bottom) brass effect finish (suffix **/BR**), chrome effect finish (suffix **/CH**) and black finish (suffix **/BK**).

## FEATURES

- Zintec coated steel housing in white finish as standard, with black, brass effect (RAL1036) and chrome effect (RAL9022) finishes available to order.
- Supplied with specified polycarbonate legend panel and an opal polycarbonate threshold panel that illuminates the area below the sign.
- Supplied as single-sided versions as standard (prefix PES), with double-sided versions available as an option (prefix PED).
- Legend panel can be removed from either end via removable end-caps.
- IP65 and anti-tamper versions available for outdoor use.
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 6500K colour temperature.



## CATALOGUE NUMBERS & INFORMATION

EMERGENCY EXIT SIGNS		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
PES/LED/M3	3.00Kg		150			150	
PED/LED/M3	3.00Kg		150			150	
PES/LEDH/M3H	3.00Kg			200			200
PED/LEDH/M3H	3.00Kg			200			200
PES/LED/NM3H	3.00Kg						300
PED/LED/NM3H	3.00Kg						300
PES/LEDH/C3	3.00Kg			360		150	
PED/LEDH/C3	3.00Kg			360		150	
PES/LEDH/C3H	3.00Kg			360			300
PED/LEDH/C3H	3.00Kg			360			120

CENTRAL SYSTEM SLAVE EXIT SIGNS		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
PES/LED/LVR#	2.50Kg		150			135	
PED/LED/LVR#	2.50Kg		150			135	
PES/LED/24D	2.50Kg					135	
PED/LED/24D	2.50Kg					135	
PES/LED/50D	2.50Kg					135	
PED/LED/50D	2.50Kg					135	
PES/LED/110D	2.50Kg					150	
PED/LED/110D	2.50Kg					150	
PES/LED/220D	2.50Kg					150	
PED/LED/220D	2.50Kg					150	

Replace # with AC/DC system Voltage **24, 50, 110** or **220** Volts.

## OPTIONS

Products incorporating any of the following options are manufactured to order.  
Some options may not be available in all models.

**/BK** Black finish  
**/BR** Brass effect finish (RAL1036)  
**/CH** Chrome effect finish (RAL9022)  
**/DAE** DALI emergency mode only  
**/IP65** IP65 version  
**/ST** Digital self-test  
**/TS** Push-to-test switch  
**/VR** Anti-tamper screws  
**/WS** White wire-suspension kit (double sided versions only)  
**/WS/BK** Black wire-suspension kit (double sided versions only)  
**/WS/BR** Brass effect (RAL1036) wire-suspension kit (double sided versions only)  
**/WS/CH** Chrome effect (RAL9022) wire-suspension kit (double sided versions only)

## DIMENSIONS

### EXIT SIGN DIMENSIONS (SINGLE & DOUBLE SIDED VERSIONS)

Length 385mm x Width 200mm x Depth 95mm

### IP65 VERSIONS DIMENSIONS

Length 445mm x Width 225mm x Depth 95mm

### VIEWING DISTANCE

36 Metres

## LEGEND OPTIONS

### EN7010 FORMAT



Suffix **L16/7010**



Suffix **L17/7010**



Suffix **L19/7010**



Suffix **L20/7010**

### BS5499 FORMAT



Suffix **L16**



Suffix **L17**



Suffix **L18**



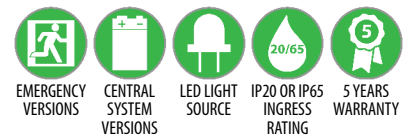
Suffix **L19**



Suffix **L20**

# PESCARA-G

LARGE EXIT SIGN WITH VIEWING DISTANCES UP TO 80 METRES



## IMAGES

- A. Standard Pescara-G.
- B. IP65 Pescara-G (suffix **/IP65**).

## FEATURES

- Up to 80 metres viewing distance (IP65 version for exterior applications has a viewing distance of 66 metres).
- Supplied with a specified polycarbonate legend panel.
- Zintec plated sheet steel construction in white finish.
- High quality LED light source.
- 'U' channel gear tray ensures even illumination in both single-sided and double-sided versions.
- Double polycarbonate panel illuminates directly below the sign to the escape route and door threshold.
- Supplied as single-sided versions as standard (prefix PESG), with double-sided versions available as an option (prefix PEDG).
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 6500K colour temperature.

## CATALOGUE NUMBERS & INFORMATION

EMERGENCY EXIT SIGNS		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
PESG/LED/M3	9.80Kg		1500			376	
PEDG/LED/M3	10.00Kg		1500			376	

CENTRAL SYSTEM SLAVE EXIT SIGNS		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
PESG/LED/LVR24	9.30Kg		1500			934	
PEDG/LED/LVR24	9.50Kg		1500			934	
PESG/LED/LVR50	9.30Kg		1500			979	
PEDG/LED/LVR50	9.50Kg		1500			979	
PESG/LED/LVR110	9.30Kg		1500			1032	
PEDG/LED/LVR110	9.50Kg		1500			1032	
PESG/LED/LVR220	9.30Kg		1500			964	
PEDG/LED/LVR220	9.50Kg		1500			964	

## OPTIONS

Products incorporating any of the following options are manufactured to order.  
Some options may not be available in all models.

/DAE DALI emergency mode only  
/DAEM DALI mains and emergency mode  
/DAM DALI mains mode only  
/IP65 IP65 version  
/ST Digital self-test

## DIMENSIONS

### EXIT SIGN DIMENSIONS (SINGLE & DOUBLE SIDED VERSIONS)

Length 620mm x Width 455mm x Depth 80mm

### IP65 VERSIONS DIMENSIONS

Length 625mm x Width 520mm x Depth 100mm

### VIEWING DISTANCES

80 Metres (standard versions)

66 Metres (IP65 versions)

## LEGEND OPTIONS

### EN7010 FORMAT



Suffix L16/7010



Suffix L17/7010



Suffix L19/7010



Suffix L20/7010

### BS5499 FORMAT



Suffix L16



Suffix L17



Suffix L18



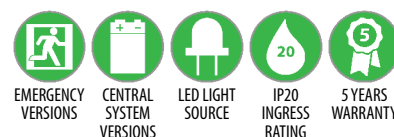
Suffix L19



Suffix L20

# PETINA

## ULTRA-SLIM LED SINGLE AND DOUBLE-SIDED EXIT SIGN



## IMAGES

- A. Standard single-sided Petina in white finish.
- B. Single-sided Petina (left to right) in chrome effect finish (suffix **/CH**) and brass effect finish (suffix **/BR**).
- C. Single-sided Petina (left to right) in black finish (suffix **/BK**) and double-sided Petina in white finish (prefix **/PD**).

## FEATURES

- Single-sided versions are just 30mm deep.
- Zintec coated sheet steel construction in a white finish as standard, with black, brass effect and chrome effect finishes available to order.
- Double-sided versions boast a wide variety of options including right-angle mounting brackets, wire suspension kits and rod suspension kits.
- Supplied with specified flame-retardant plasi-glas legend panel that utilises advanced optical design, ensuring an even spread of illumination from the LEDs.
- Supplied as single-sided versions as standard (prefix PE), with double-sided versions available as an option (prefix PD).
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 6500K colour temperature.

## CATALOGUE NUMBERS & INFORMATION

EMERGENCY EXIT SIGNS		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
PE/LED/M3	2.30Kg		150			150	
PD/LED/M3	2.40Kg		150			150	

CENTRAL SYSTEM SLAVE EXIT SIGNS		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
PE/LED/110D	2.00Kg					150	
PD/LED/110D	2.10Kg					150	
PE/LED/220D	2.00Kg					150	
PD/LED/220D	2.10Kg					150	

## OPTIONS

Products incorporating any of the following options are manufactured to order.  
Some options may not be available in all models.

**/BK** Black finish  
**/BR** Brass effect finish (RAL1036)  
**/CH** Chrome effect finish (RAL9022)  
**/DAE** DALI emergency mode only  
**/RAB** Right-angled mounting bracket  
**/RS+MM** White rod-suspension kit (double-sided versions only)  
**/RS+MM/BK** Black rod-suspension kit (double-sided versions only)  
**/RS+MM/BR** Brass effect (RAL1036) rod-suspension kit (double-sided versions only)  
**/RS+MM/CH** Chrome effect (RAL9022) rod-suspension kit (double-sided versions only)  
**/ST** Digital self-test  
**/VR** Anti-tamper screws  
**/WS** White wire-suspension kit (double-sided versions only)  
**/WS/BK** Black wire-suspension kit (double-sided versions only)  
**/WS/BR** Brass effect (RAL1036) wire-suspension kit (double-sided versions only)  
**/WS/CH** Chrome effect (RAL9022) wire-suspension kit (double-sided versions only)

Replace + with either **100** for 100mm, **300** for 300mm or **600** for 600mm length rod-suspension kit.

## DIMENSIONS

### SINGLE-SIDED EXIT SIGN DIMENSIONS

Length 360mm x Width 235mm x Depth 30mm

### DOUBLE-SIDED EXIT SIGN DIMENSIONS

Length 377mm x Width 255mm x Depth 45mm

### VIEWING DISTANCE

36 Metres

## LEGEND OPTIONS

### EN7010 FORMAT



Suffix **L16/7010**

Suffix **L17/7010**

Suffix **L19/7010**

Suffix **L20/7010**

### BS5499 FORMAT



Suffix **L16**

Suffix **L17**

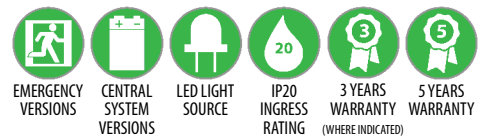
Suffix **L18**

Suffix **L19**

Suffix **L20**

# PICO

## LOW PROFILE SINGLE-SIDED EXIT BOX



## IMAGES

- A. Standard Pico in white finish.
- B. Pico in chrome effect finish (suffix **/CH**).
- C. Pico in brass effect finish (suffix **/BR**).

## FEATURES

- Zintec steel construction in a white epoxy finish as standard, with brass effect (RAL1036) and chrome effect (RAL9022) finishes available to order.
- Supplied with specified polycarbonate legend panel.
- Rear centre besa entry and keyhole slots for ease of installation.
- Legend panel can be removed from either end via removable end-caps.
- Opal polycarbonate panel illuminates directly below the sign to the escape route and door threshold.
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 6500K colour temperature.



## CATALOGUE NUMBERS & INFORMATION

EMERGENCY EXIT SIGNS		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
PIC/LED/M3E <sup>3</sup>	2.50Kg	75			75		
PIC/LED/M3	2.50Kg		150			150	
PIC/LEDH/M3H	2.60Kg			200			200

CENTRAL SYSTEM SLAVE EXIT SIGNS		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
PIC/LED/LVR24	2.30Kg		150			135	
PIC/LED/LVR50	2.30Kg		150			135	
PIC/LED/LVR110	2.30Kg		150			135	
PIC/LED/LVR220	2.30Kg		150			135	
PIC/LED/24D	2.30Kg					135	
PIC/LED/50D	2.30Kg					135	
PIC/LED/110D	2.30Kg					150	
PIC/LED/220D	2.30Kg					150	

## OPTIONS

Products incorporating any of the following options are manufactured to order.  
Some options may not be available in all models.

/BR Brass effect finish (RAL1036)  
/CH Chrome effect finish (RAL9022)  
/DAE DALI emergency mode only  
/ST Digital self-test  
/TS Push-to-test switch  
/VR Anti-tamper screws

## DIMENSIONS

### EXIT SIGN DIMENSIONS

Length 385mm x Width 200mm x Depth 65mm

### VIEWING DISTANCE

36 Metres

## LEGEND OPTIONS

### EN7010 FORMAT



Suffix L16/7010



Suffix L17/7010



Suffix L19/7010



Suffix L20/7010

### BS5499 FORMAT



Suffix L16



Suffix L17



Suffix L18



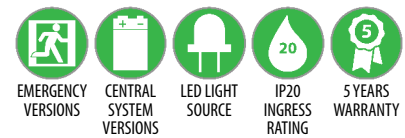
Suffix L19



Suffix L20

# RETZ

## DECORATIVE CURVED EXIT SIGN



## IMAGES

A. Standard single-sided Retz.

B. Double-sided Retz.

## FEATURES

- Sheet steel construction with white powder coated finish.
- Available in single-sided versions (prefix RZ), with double-sided versions (prefix RZD) available as an option.
- Opal threshold panel illuminates the area below the sign.
- Supplied with specified polycarbonate legend panel(s).
- Elegant design utilises an attractive curved fascia ensuring suitability to most prestigious applications.
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 6500K colour temperature.

## CATALOGUE NUMBERS & INFORMATION

EMERGENCY EXIT SIGNS		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
RZ/LED/M3	2.20Kg		150			150	
RZD/LED/M3	2.60Kg		150			150	
RZ/LEDH/M3H	2.40Kg			200			200
RZD/LEDH/M3H	2.80Kg			200			200
RZ/LED/NM3H	2.20Kg						360
RZD/LED/NM3H	2.60Kg						360

CENTRAL SYSTEM SLAVE EXIT SIGNS		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
RZ/LED/LVR24	2.00Kg		150			135	
RZD/LED/LVR24	2.40Kg		150			135	
RZ/LED/LVR50	2.00Kg		150			135	
RZD/LED/LVR50	2.40Kg		150			135	
RZ/LED/LVR110	2.00Kg		150			135	
RZD/LED/LVR110	2.40Kg		150			135	
RZ/LED/LVR220	2.00Kg		150			135	
RZD/LED/LVR220	2.40Kg		150			135	
RZ/LED/24D	2.00Kg					135	
RZD/LED/24D	2.40Kg					135	
RZ/LED/50D	2.00Kg					135	
RZD/LED/50D	2.40Kg					135	
RZ/LED/110D	2.00Kg					150	
RZD/LED/110D	2.40Kg					150	
RZ/LED/220D	2.00Kg					150	
RZD/LED/220D	2.40Kg					150	

## OPTIONS

Products incorporating any of the following options are manufactured to order.  
Some options may not be available in all models.

/DAE DALI emergency mode only  
/RS+MM White rod-suspension kit (double-sided versions only)  
/ST Digital self-test  
/WS White wire-suspension kit (double-sided versions only)

Replace + with either **100** for 100mm, **300** for 300mm or **600** for 600mm length rod-suspension kit.

## DIMENSIONS

### SINGLE SIDED EXIT SIGN DIMENSIONS

Length 440mm x Width 220mm x Depth 65mm

### DOUBLE SIDED EXIT SIGN DIMENSIONS

Length 440mm x Width 250mm x Depth 130mm

### VIEWING DISTANCE

36 Metres

## LEGEND OPTIONS

### EN7010 FORMAT



Suffix L16/7010

Suffix L17/7010

Suffix L19/7010

Suffix L20/7010

### BS5499 FORMAT



Suffix L16

Suffix L17

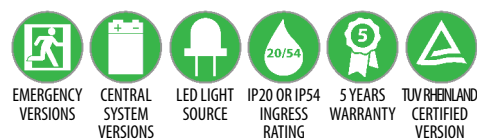
Suffix L18

Suffix L19

Suffix L20

# ROMNEY

MULTI-FUNCTIONAL LED EXIT SIGN



## IMAGES

- A. Ceiling mounting Romney with (left to right) steel construction (suffix **/M**) and standard ceiling mounting Romney with polycarbonate construction.
- B. Romney with (left to right) steel construction and right angled mounting bracket (suffix **/M** and **/RAB**) and polycarbonate construction with 100mm white rod-suspension kit (suffix **/RS/100MM**).
- C. Romney with (left to right) steel construction and wall mounting bracket (suffix **/M** and **/WMB**) and polycarbonate construction with suspension kit (suffix **/WS**).


## FEATURES

- Injection moulded polycarbonate construction as standard with metal fabricated housing available as an option.
- Specifically engineered to utilise LED technology offering extended life.
- Flame-retardant edge-lit plasi-glas legend panel ensures an even spread of illumination.
- Two legend sizes are available; a standard 180mm legend or a 135mm legend for areas where height is restricted.
- Ceiling mounting as standard, with additional options for wall mounting brackets, right-angled brackets, rod and wire-suspension kits.
- Rod suspension kits available in 3 drop lengths; 100mm, 300mm and 600mm.
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 6500K colour temperature.



**TUV RHEINLAND  
CERTIFIED OPTION  
AVAILABLE**

## CATALOGUE NUMBERS & INFORMATION

EMERGENCY EXIT SIGNS		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
ROM/LED/M3 	1.60Kg		150			150	

CENTRAL SYSTEM SLAVE EXIT SIGNS		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
ROM/LED/110D	1.60Kg					150	
ROM/LED/220D	1.60Kg					150	

## OPTIONS

Products incorporating any of the following options are manufactured to order.  
Some options may not be available in all models.

**/135MM** 135mm depth legend panel  
**/D** Double-sided legend panel  
**/DAE** DALI emergency mode only  
**/IP54** IP54 version  
**/M** Metal housing in white finish  
**/M/BK** Metal housing in black finish  
**/M/BR** Metal housing in brass effect finish (RAL1036)  
**/M/CH** Metal housing in chrome effect finish (RAL9022)  
**/RAB** Right-angled mounting bracket  
**/RS+MM** White rod-suspension kit  
**/RS+MM/BK** Black rod-suspension kit  
**/RS+MM/BR** Brass effect (RAL1036) rod-suspension kit  
**/RS+MM/CH** Chrome effect (RAL9022) rod-suspension kit  
**/ST** Digital self-test (mounted in separate ceiling box)  
**/WMB** Wall mounting bracket  
**/WS** White wire-suspension kit  
**/WS/BK** Black wire-suspension kit  
**/WS/BR** Brass effect (RAL1036) wire-suspension kit  
**/WS/CH** Chrome effect (RAL9022) wire-suspension kit

Replace + with either **100** for 100mm, **300** for 300mm or **600** for 600mm length rod-suspension kit.

## DIMENSIONS

### EXIT SIGN DIMENSIONS (WHEN SUPPLIED WITH STANDARD 180MM LEGEND)

Length 310mm x Width 242mm x Depth 45mm

### EXIT SIGN DIMENSIONS (WHEN SUPPLIED WITH 135MM LEGEND)

Length 310mm x Width 197mm x Depth 45mm

### VIEWING DISTANCES

27 Metres (with standard 180mm legend panel)

20 Metres (when supplied with 135mm legend panel)

## LEGEND OPTIONS

### EN7010 FORMAT



Suffix L16/7010



Suffix L17/7010



Suffix L19/7010



Suffix L20/7010

### BS5499 FORMAT



Suffix L16



Suffix L17



Suffix L18



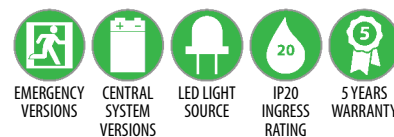
Suffix L19



Suffix L20

# ROTA

WALL OR CEILING MOUNTING LED EXIT SIGN



## IMAGES

- A. Standard Rota in white finish.
- B. Recessed Rota (suffix **/R**).
- C. Rota in (left to right) brass effect finish (suffix **/BR**) and chrome effect finish (suffix **/CH**).

## FEATURES

- Versatile exit sign suitable for wall or ceiling mounting.
- Steel construction in white epoxy coated finish as standard, with brass effect (RAL1036) and chrome effect (RAL9022) finishes available to order.
- Combines extended life LED technology with high quality engineering.
- Supplied complete with a specified flame-retardant plasi-glas legend panel that ensures an even spread of illumination from the LEDs.
- Suitable for non-maintained or maintained emergency modes.
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 6500K colour temperature.



## CATALOGUE NUMBERS & INFORMATION

EMERGENCY EXIT SIGNS		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
RO/LED/M3	2.00Kg		150			150	

CENTRAL SYSTEM SLAVE EXIT SIGNS		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
RO/LED/110D	2.00Kg					150	
RO/LED/220D	2.00Kg					150	

## OPTIONS

Products incorporating any of the following options are manufactured to order.  
Some options may not be available in all models.

- /BR Brass effect finish (RAL1036)
- /CH Chrome effect finish (RAL9022)
- /D Double-sided legend panel
- /DAE DALI emergency mode only
- /R Recessed version
- /ST Digital self-test

## DIMENSIONS

### STANDARD VERSION DIMENSIONS

Length 330mm x Width 260mm (including legend panel) x Depth 80mm

### RECESSED VERSION DIMENSIONS

Length 330mm x Width 235mm (including legend panel) x Depth 80mm

### VIEWING DISTANCE

27 Metres

## LEGEND OPTIONS

### EN7010 FORMAT



Suffix L16/7010

Suffix L17/7010

Suffix L19/7010

Suffix L20/7010

### BS5499 FORMAT



Suffix L16

Suffix L17

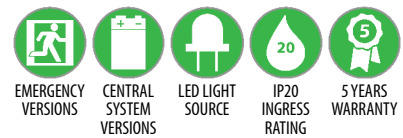
Suffix L18

Suffix L19

Suffix L20

# SAVONA

## EDGE-LIT CHAIN-SUSPENDED LED EXIT SIGN



## IMAGES

- A. Standard Savona in white finish.
- B. Savona in brass effect finish (suffix **/BR**).
- C. Savona in chrome effect finish (suffix **/CH**).

## FEATURES

- Contemporary design lends itself to many prestigious installations.
- Variety of mounting options; chain-suspension as standard with rod suspension and right-angled mounting versions available to order.
- Supplied in white finish as standard with brass effect (RAL1036) and chrome effect (RAL9022) options available to order.
- All signs are supplied with a specified flame-retardant single-sided plasi-glas legend panel (double-sided legends available to order).
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 6500K colour temperature.

## CATALOGUE NUMBERS & INFORMATION

EMERGENCY EXIT SIGN		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
SAV/LED/M3	3.20Kg		150			150	

CENTRAL SYSTEM SLAVE EXIT SIGNS		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
SAV/LED/LVR24	2.00Kg		150			135	
SAV/LED/LVR50	2.00Kg		150			135	
SAV/LED/LVR110	2.00Kg		150			135	
SAV/LED/LVR220	2.00Kg		150			135	
SAV/LED/24D	2.00Kg					135	
SAV/LED/50D	2.00Kg					135	
SAV/LED/110D	2.00Kg					150	
SAV/LED/220D	2.00Kg					150	

## OPTIONS

Products incorporating any of the following options are manufactured to order.  
Some options may not be available in all models.

**/BR** Brass effect finish (RAL1036)  
**/CH** Chrome effect finish (RAL9022)  
**/D** Double-sided legend panel  
**/DAE** DALI emergency mode only  
**/RAB** Right-angled mounting bracket  
**/RS+MM** White rod-suspension kit  
**/RS+MM/BR** Brass effect (RAL1036) rod-suspension kit  
**/RS+MM/CH** Chrome effect (RAL9022) rod-suspension kit  
**/ST** Digital self-test

Replace + with either **100** for 100mm, **300** for 300mm or **600** for 600mm length rod-suspension kit.

## DIMENSIONS

### CHAIN-SUSPENDED VERSIONS

Length 445mm x Height 820mm x Depth 90mm

Height of chain-suspended version reduces to 380mm if chain is removed and exit sign is attached directly to the mounting bar

### ROD-SUSPENDED VERSIONS

Length 445mm x Height 480mm, 680mm or 980mm x Depth 90mm

Height of rod-suspended version is 480mm when used with 100mm rods, 680mm when used with 300mm rods and 980mm when used with 600mm rods

### VIEWING DISTANCE

36 Metres

## LEGEND OPTIONS

### EN7010 FORMAT



Suffix **L16/7010**

Suffix **L17/7010**

Suffix **L19/7010**

Suffix **L20/7010**

### BS5499 FORMAT



Suffix **L16**

Suffix **L17**

Suffix **L18**

Suffix **L19**

Suffix **L20**

# TIEL

## IP65 DOUBLE-SIDED POLYCARBONATE EXIT SIGN



## IMAGES

- A. Standard surface mounting Tiel.
- B. Tiel fitted with semi-recessing trim (suffix **/TI/WH**).
- C. Tiel with wire-suspension kit (suffix **/WS**).



## FEATURES

- Robust IP65 polycarbonate housing.
- Screw-fixing diffuser located with brass threaded inserts.
- Double-sided as standard by way of 2 supplied self-adhesive legends.
- Can be surface mounted, semi-recessed or wire-suspended.
- Hinged steel gear tray, centre rear besa entry and 20mm conduit knockouts at each end for ease of installation.
- TM-21 L70 greater than 54,000 hours using 0.5W 150 lumen/Watt LEDs.
- CRI 80 (minimum).
- 3 step MacAdam rated.
- 6500K colour temperature.



**TUV RHEINLAND  
CERTIFIED OPTION  
AVAILABLE**

## CATALOGUE NUMBERS & INFORMATION

EMERGENCY EXIT SIGNS		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
TI/LEDE/M3E 	1.00Kg	75			75		
TI/LED/M3 	1.20Kg		150			150	
TI/LEDH/M3H	1.20Kg			200			200
TI/LED/NM3H	1.20Kg						300
TI/LEDH/C3	1.30Kg			360		150	
TI/LEDH/C3H	1.40Kg			360			300

CENTRAL SYSTEM SLAVE EXIT SIGNS		MAINS LUMENS			EMERGENCY LUMENS		
CAT NO	WEIGHT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT	ECONOMY OUTPUT	STANDARD OUTPUT	HIGH OUTPUT
TI/LED/LVR24	0.85Kg		150			135	
TI/LED/LVR50	0.85Kg		150			135	
TI/LED/LVR110	0.85Kg		150			135	
TI/LED/LVR220	0.85Kg		150			135	
TI/LED/24D	0.85Kg					135	
TI/LED/50D	0.85Kg					135	
TI/LED/110D	0.85Kg					150	
TI/LED/220D	0.85Kg					150	

## OPTIONS

Products incorporating any of the following options are manufactured to order. Some options may not be available in all models.

/DAE DALI emergency mode only  
 /ST Digital self-test  
 /TI/WH White semi-recessing kit  
 /TS Push-to-test switch  
 /VR Anti-tamper screws  
 /WS Wire-suspension kit

## DIMENSIONS

### EXIT SIGN DIMENSIONS

Length 350mm x Width 108mm x Depth 204mm

### CUT-OUT DIMENSIONS

Length 330mm x Width 90mm  
 (When supplied with TI/WH semi-recessing kit)

### VIEWING DISTANCE

28 Metres

## LEGEND OPTIONS

### EN7010 FORMAT



Suffix L16/7010

Suffix L17/7010

Suffix L19/7010

Suffix L20/7010

### BS5499 FORMAT



Suffix L16

Suffix L17

Suffix L18

Suffix L19

Suffix L20

# LEGENDS

## FLAME-RETARDANT POLYCARBONATE LEGEND PANELS IN EN7010 & BS5499 FORMATS

### EN7010 FORMAT

Suitable for existing new builds; cannot be mixed with BS5499 format signage

L17 legend panel is used to signify direction straight on and final exits in EN7010 format



L16/7010



L17/7010



L19/7010



L20/7010

### BS5499 FORMAT

Suitable for existing installations; cannot be mixed with EN7010 format signage



L16



L17



L18



L19



L20



L21



L22



L23





**40 years  
of raising  
the bar.**



# EMERGENCY GEAR

Emergency control gear to provide emergency lighting solutions to a wide range of LED and fluorescent circuits.



**LED EMERGENCY  
CONTROL GEAR  
104**



**PERFORM™  
EMERGENCY MODULES  
104**



**BATTERIES  
104**



**LED MAINS DRIVERS  
104**



**CENTRAL SYSTEM LED  
CONTROL GEAR  
104**



**CENTRAL SYSTEM  
FLUORESCENT INVERTERS  
104**



# LED EMERGENCY CONTROL GEAR



## FEATURES

- A range of LED emergency control gear designed to operate LED loads of 3V – 80V DC maintained or non-maintained modes, in the event of a lighting circuit failure.
- Available in 3, 4 and 5 cell versions to suit most applications.
- Designed for use with NiCad or NiMH battery types.
- Incorporates switched live in/out facility for isolation of the LED load and mains driver power supply during emergency operation.
- Compatible with most LED drivers up to 150W – higher power drivers can be accommodated (contact our technical department for further information).
- Suitable for use with external LED drivers.
- Designed and manufactured in accordance with BS EN61347-2-13 and BS EN62384.

## OVERVIEW

Orbik offer a range of LED emergency control gear to suit single or multiple LED lamps housed in a stylish, low profile, polycarbonate moulded housing. In schemes where physical space within the luminaire is restricted, the module can be housed within a flexible silicon sleeving.

Due to the extensive range of LED products currently available, it is becoming increasingly difficult to select suitable LED emergency control gear for LED lamps. In order to establish the correct emergency control gear for an LED application, two fundamental factors that can be located on the LED mains driver need to be determined:

### LED driver output Voltage (V-out)

### LED driver output current (I-out)

If the V-out is less than 80V the LCMR range is suitable, however if the V-out is greater than 80V DC, please contact our technical department for further assistance.

## SPECIFICATION

Cat No	LCMR380V	LCMR480V	LCMR580V
Input Voltage	230V - 240V AC 50/60Hz (110V AC available to order)		
Emergency Duration	3 Hours		
Mode of Operation	Non-maintained / maintained (for use with external drivers)		
Battery Type	Nickel Cadmium (NiCad) or Nickel Metal Hydride (NiMH)		
Nominal Battery Voltage	3.6V	4.8V	6V
Battery Capacity	4Ah		
Minimum LED Voltage (Vf)	3V dc		
Maximum LED Voltage	80V dc		
Emergency LED Supply Current Range (If)	30mA - 200mA	40mA - 240mA	60mA - 270mA
Typical EBLF (Using Orbik Arrian 40W)	6%	9%	12%
Typical EBLF (Using Orbik Ecos 30W)	11%	16%	20%
Typical EBLF (Using Orbik Meled 9W)	29%	35%	45%

## DIMENSIONS

Cat No	LCMR380V	LCMR480V	LCMR580V
Dimensions L x W x H (mm)	Length 225mm x Width 44mm x Height 30mm (fixing centres 205mm)		
Weight (Kg)	0.20Kg		

# PERFORM™ EMERGENCY MODULES

## FEATURES

- Removes 'pink limbs' on certain compact fluorescent lamps.
- Combats severely reduced life or the premature blackening of lamp cathodes in fluorescent lamps.
- Reverse battery polarity protected.
- High level of continuous lamp cathode heating throughout the emergency duration.
- Tested and approved to EN61347-2-7.
- EMC compliant to EN55015 and CE marked where applicable.
- Incorporates over temperature and charger short circuit protection.
- Available as standard in 3 hours duration, with other durations available to order.
- All modules have battery over discharge protection as standard (DDP).



## OVERVIEW

Despite the lighting industry now being dominated by a vast array of LED products, Orbik are still committed to providing emergency lighting solutions for existing fluorescent lighting schemes in the form of our extensive range of Perferm™ emergency conversion modules.

Perferm™ products are designed to help combat some of the problems introduced by the lower mercury levels in today's fluorescent lamps. All Perferm™ modules employ enhanced lamp striking technology combined with a high level of continuous lamp cathode heating throughout the emergency operation period, which assists the prevention of common problems such as severely reduced lamp life and blackening of the lamp cathodes.

Perferm™ conversion modules are available in various formats to give the end user cost-effective performance and flexibility dependent on the type of mains control gear employed in their luminaires.

The switched supply delay relay within PLR and PHR modules ensure that electronic ballasts have time to reset and will never encounter the "no lamp" condition that can occur when a keyswitch is used to remove only the permanent main feed to the emergency luminaire during testing. Electronic ballasts can 'lock out' under these conditions and may require their mains supply to be disconnected for a short period to reset the lamp failure circuitry.

## SPECIFICATION

- Perferm™ technology is subject to change as and when further lamps/data become available.
- We strongly recommend that modules incorporating Perferm™ technology are used in emergency luminaires and conversions to provide the ultimate future proofing against lamp evolution.
- Perferm™ technology incorporates over-temperature and charger short circuit protection.
- Mains supply 230V - 6% + 10% 50/60Hz (other supply Voltages are available to order).
- Output circuitry uses a high efficiency sinusoidal inverter, with a nominal operating current of 1.1A.
- Available as standard in 3 hour operation (other durations are available to order).
- All modules have battery over-discharge protection as standard (DDP) to prevent discharge below 1 Volt per cell.
- Reverse battery polarity protected.
- All connections are via terminal blocks.
- Power consumption 8VA.
- Module operating temperature range 0 to 70°C (centre side of case).
- When using Perferm™ modules in conjunction with 4Ah Nickel Cadmium (NiCAD) and Nickel Metal Hydride (NiMH) battery cells, the emergency lighting duration will be 3 hours.
- When using Perferm™ modules in conjunction with 1.5Ah Nickel Cadmium (NiCAD) battery cells, the emergency lighting duration will be 1 hour.
- Perferm™ modules are supplied with a green LED to indicate charging conditions, along with appropriate connectors to fix to the relevant battery.

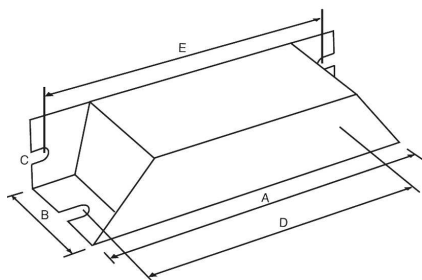
Please see overleaf for module dimensions and ballast lumen factors, or contact our technical department for further assistance.

# PERFORM™ BALLAST

## LUMEN FACTORS

Cat No			Battery	T8				T12	T5										
				18W	36W	58W	70W		8W	14W	21W	24W	28W	35W	39W	49W	54W	80W	
PH4001P3	PL4001P3	PLR5001P3	3 x 4Ah	12															
PH4003P3	PL4003P3	PLR5003P3	3 x 4Ah		9														
PH4007P3	PL4007P3	PLR5007P3	4 x 4Ah			10													
PH4009P3	PL4009P3	PLR5009P3	5 x 4Ah				7												
PH4013P3	PL4013P3	PLR5013P3	3 x 4Ah						25										
PH4018P3	PL4018P3	PLR5018P3	3 x 4Ah																
PH4418P3	PL4418P3	PLR5418P3	4 x 4Ah	23					42										
PH4005P3	PL4005P3	PLR5005P3	4 x 4Ah	11	10					30		21							
PH4506P3	PL4506P3	PLR5506P3	5 x 4Ah	13							28	25							
PH4008P3	PL4008P3	PLR5008P3	5 x 4Ah		11								21						
PH4011P3	PL4011P3	PLR5011P3	5 x 4Ah																
PH4560P3	PL4560P3	PLR5560P3	5 x 4Ah																
	PHR5607P3		6 x 4Ah		18														
	PHR5608P3		6 x 4Ah			11	10												
	PHR5809P3		8 x 4Ah			15	14	9						27	24	20	17		
	PHR5108P3		10 x 4Ah				17	10										10	

## DIMENSIONS



Module	A	B	C	D	E	Kg
PH	154	42	35	144	138	0.33
PL	203	42	28	193	187	0.34
PLR	216	42	28	206	200	0.35
PHR	216	42	35	206	200	0.54

- All ballast lumen factors are shown as worst case.
- All figures are based on an ambient temperature of 25°C.
- All figures quoted assume integral conversions.
- Because of the variability of fluorescent lamps, this lamp and module chart is for guidance only and does not cover all of the available lamp types. If you require information on lamps not shown in this table or connection diagrams for our conversion modules, please contact our technical department at [technical@orbik.co.uk](mailto:technical@orbik.co.uk).



	T5 Circular				2D				TC-L						TC-S/E		TC-D/E			TC-T/E Amalgam							
	22W	40W	55W	60W	16W	28W	38W	55W	18W	24W	34W	36W	40W	55W	9W	11W	13W	18W	26W	13W	14W	17W	18W	26W	32W	42W	57W
															25	22	30										
	10				16	12																					
															40	42	30										
	12				25	17			18	13		12						17	16	25	23	21					
						15											28	25	22				22	20			
							13	11	24	29	14	15	14	11													
	14	11																									
			9	7																							
					16	15					13	14												20			
							12							12													
													30	15											18		
																										13	

# BATTERIES



## SPECIFICATION

### CELLS

1.5Ah Nickel Cadmium cells are used with 1 hour duration modules; 4Ah Nickel Cadmium cells are used with 3 hours duration modules.

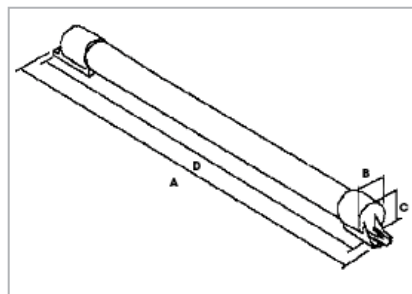
### PERMITTED CELL TEMPERATURE

Minimum 0°C and maximum 54°C to give the specified performance for an expected life of 4 years.

### BATTERY FIXING & CONNECTIONS

Batteries are supplied with plastic end-caps or metal plates with provision for screw fixings and a non-reversible plug with the exception of in-line versions, which are fitted with tag connections. The appropriate connections are supplied with the batteries.

## STANDARD BATTERY FORMATIONS



IN-LINE

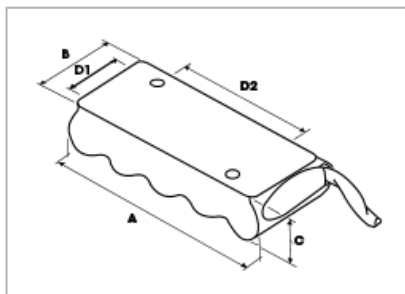
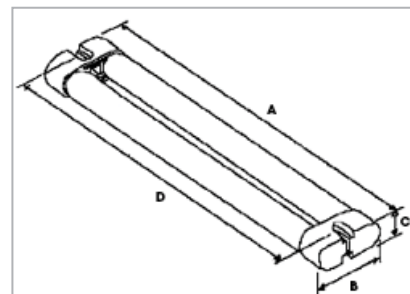
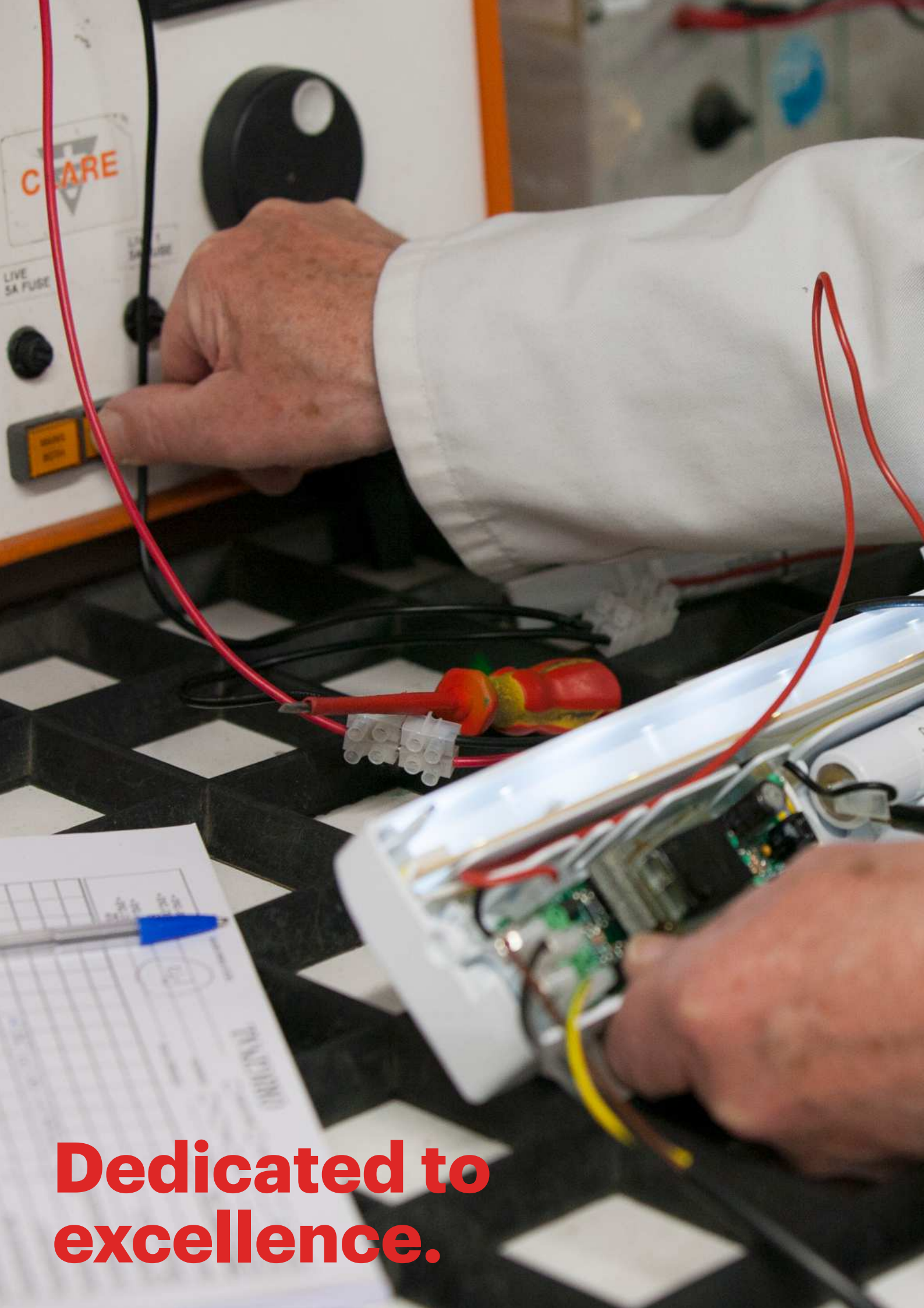


PLATE (SIDE-BY-SIDE)



DUAL IN-LINE

Cat No	Cells	Battery Type	Battery Style	Duration	Length (A)	Width (B)	Depth (C)	Fixing Centres (D)	Weight
BH164	2 x 4Ah	Nickel Metal Hydride	In-Line	3 Hours	140mm	20mm	20mm	70mm	0.14Kg
BH167	3 x 4Ah	Nickel Metal Hydride	In-Line	3 Hours	210mm	20mm	20mm	70mm	0.21Kg
B163/215	2 x 1.5Ah	Nickel Cadmium	In-Line	1 Hour	125mm	27mm	25mm	113mm	0.10Kg
B164/24	2 x 4Ah	Nickel Cadmium	In-Line	3 Hours	164mm	36mm	36mm	149mm	0.29Kg
B161/2X4	2 x 4Ah	Nickel Cadmium	Side by Side	3 Hours	65mm	72mm	36mm	-	0.28Kg
B165/315	3 x 1.5Ah	Nickel Cadmium	In-Line	1 Hour	167mm	27mm	25mm	155mm	0.15Kg
B166/3X4	3 x 4Ah	Nickel Cadmium	Plate	3 Hours	99mm	65mm	34mm	40mm x 33mm	0.47Kg
B167/34	3 x 4Ah	Nickel Cadmium	In-Line	3 Hours	226mm	36mm	36mm	214mm	0.43Kg
B168/415	4 x 1.5Ah	Nickel Cadmium	In-Line	1 Hour	209mm	27mm	25mm	197mm	0.20Kg
B169/4X4	4 x 4Ah	Nickel Cadmium	Plate	3 Hours	130mm	65mm	34mm	40mm x 65mm	0.59Kg
B702/4X4	4 x 4Ah	Nickel Cadmium	Dual In-Line	3 Hours	123mm	75mm	36mm	108mm	0.58Kg
B170/44	4 x 4Ah	Nickel Cadmium	In-Line	3 Hours	285mm	36mm	36mm	270mm	0.57Kg
B171/515	5 x 1.5Ah	Nickel Cadmium	In-Line	1 Hour	251mm	27mm	25mm	239mm	0.25Kg
B172/5X4	5 x 4Ah	Nickel Cadmium	Plate	3 Hours	163mm	65mm	34mm	40mm x 97mm	0.78Kg
B173/54	5 x 4Ah	Nickel Cadmium	In-Line	3 Hours	346mm	36mm	36mm	331mm	0.70Kg
B174/615	6 x 1.5Ah	Nickel Cadmium	In-Line	1 Hour	293mm	27mm	25mm	281mm	0.30Kg
B176/64	6 x 4Ah	Nickel Cadmium	In-Line	3 Hours	406mm	36mm	36mm	391mm	0.83Kg
B701/6X4	6 x 4Ah	Nickel Cadmium	Dual In-Line	3 Hours	182mm	75mm	36mm	167mm	0.84Kg
B878/84	8 x 4Ah	Nickel Cadmium	In-Line	3 Hours	525mm	36mm	36mm	510mm	1.00Kg
B879/8X4	8 x 4Ah	Nickel Cadmium	Dual In-Line	3 Hours	242mm	75mm	36mm	227mm	1.35Kg
B177/1015	10 x 1.5Ah	Nickel Cadmium	Dual In-Line	1 Hour	451mm	54mm	25mm	239mm	0.50Kg
B178/104	10 x 4Ah	Nickel Cadmium	In-Line	3 Hours	648mm	36mm	36mm	633mm	1.40Kg
B179/10X4	10 x 4Ah	Nickel Cadmium	Dual In-Line	3 Hours	300mm	75mm	36mm	285mm	1.35Kg



**Dedicated to  
excellence.**

# LED MAINS DRIVERS



## FEATURES

- Constant current output up to 33W.
- Wide output Voltage range.
- Input Voltage 220V-240V AC/DC 50/60Hz.
- Power factor corrected >0.95.
- IP20 polycarbonate housing.
- Class 2 protection.
- Supplied with strain relief cable clamps.
- Designed and manufactured in accordance with BS EN61347-2-13, BS EN62384, BS EN55015, BS EN61000-3-2 and BS EN61000-3-3.

## OVERVIEW

At the request of many customers, we have designed a comprehensive range of reliable, high performance, energy saving LED drivers for single or multiple LED arrays powered from the mains supply.

Suitable for most types of LED luminaires, this new range of high quality drivers are manufactured in our ISO9001 approved factory.

Our design incorporates high specification components ensuring peace of mind on product performance, with exceptional operating efficiency with a constant lumen output, and also allowing for future LED efficacy upgrades.

Our in-house manufacturing and design systems offer flexibility to our global customer base, and this range of drivers are available with various output currents available on request to optimise specific requirements.

## SPECIFICATION

Cat No	LMD15350	LMD33700	LMD331050
Input Voltage	220V - 240V AC/DC		
Mains Frequency	50/60Hz		
Maximum Output Power	15W	33W	33W
Output Voltage Range (DC)	3V - 45V	3V - 45V	6V - 30V
Constant Current Output ( $\pm 5\%$ )	350mA	700mA	1050mA
Operating Ambient Temperature (ta)	50°C		
Power Factor $\lambda$	>0.95		
Enclosure	White polycarbonate		
Wire Size	1.5mm <sup>2</sup>		

## DIMENSIONS

Cat No	LMD15350	LMD33700	LMD331050
Dimensions L x W x H (mm)	Length 168 x Width 44 x Height 30		Length 225 x Width 44 x Height 30
Fixing Centres (mm)	148		205
Weight (Kg)	0.14		0.19

Various output currents are available to order, contact our technical department at [technical@orbik.co.uk](mailto:technical@orbik.co.uk) for further information.

# CENTRAL SYSTEM LED CONTROL GEAR

## FEATURES

- Suitable for a wide range of single or multiple LED modules (arrays).
- Output Voltage range 3V - 80V DC.
- Constant power output.
- Supplied as standard with a 240V AC hold off relay.
- IP20 polycarbonate housing.
- Class 2 protection.
- Supplied with strain relief cable clamps.
- Designed and manufactured in accordance with BS EN61347-2-13, BS EN62384, BS EN55015, BSEN 61000-3-2 and BS EN61000-3-3.



## OVERVIEW

Designed and manufactured in our ISO9001 approved factory, this new range of energy saving LED inverters is suitable for 24, 50, 110 and 220V AC/DC central systems.

Their design incorporates high quality, fully approved components from approved suppliers, and these inverters are supplied as standard in a compact IP20 polycarbonate housing, suitable for use with many LED luminaires operating from a central system.

This impressive range of LED inverters can allow the mains luminaires the option of night-light operation for use with CCTV systems.

The design of the 220V AC/DC version offers a more efficient and universal distribution of emergency lighting, resulting in cost effective and energy saving lower power systems required.

## SPECIFICATION

Cat No	LVR24	LVR50	LVR110	LVR220
Low Voltage Input Supply	24V AC/DC AC $\pm 10\%$ DC $\pm 10\%$	50V AC/DC AC $\pm 10\%$ DC $\pm 10\%$	110V AC/DC AC $\pm 10\%$ DC $\pm 10\%$	220V AC/DC AC $\pm 10\%$ DC $\pm 10\%$
Input Current (Load Dependent)	70mA - 520mA	36mA - 225mA	18.5mA - 105mA	9mA - 50mA
Input Power (Load Dependent)	1.75W - 12W	1.8W - 11.5W	1.95W - 11.5W	TBC
Power Factor $\lambda$	>0.95 (load dependent)			
Hold-Off Relay Supply	240V AC 50/60Hz			
Output Voltage Range (DC)	3V - 80V			
Enclosure	White polycarbonate			
Wire Size	1.5mm <sup>2</sup>			

## DIMENSIONS

Cat No	LVR24	LVR50	LVR110	LVR220
Dimensions L x W x H (mm)	Length 168 x Width 44 x Height 30			
Fixing Centres (mm)	148			
Weight (Kg)	0.15			

These notes are to be used as a guide only and are subject to change. For up-to-date product information and for all other enquiries or assistance, please contact our technical department at [technical@orbik.co.uk](mailto:technical@orbik.co.uk).



# CENTRAL SYSTEM FLUORESCENT INVERTERS



## FEATURES

- Suitable for use with 24V, 50V or 110V central battery systems.
- Compatible with a wide fluorescent lamp range between 4W and 100W.
- Incorporates Perform™ technology to ensure extended lamp life and correct operation.
- Output uses a high efficiency sinusoidal inverter.
- All inverters feature an AC hold-off relay.
- Case temperature of 0 to 70°C (centre side of case).
- EMC compliant.
- Designed to conform to EN61347.

## OVERVIEW

We produce a range of inverter units suitable for operating fluorescent lamps from low voltage AC or DC supplies, including central battery systems of 24 Volts, 50 Volts and 110 Volts and fluorescent lamps from 4 Watts to 100 Watts.

All inverters incorporate our Perform™ technology to ensure good lamp life and correct operation with low mercury fluorescent lamps and sine-wave output to prolong lamp cathode life and prevent unpleasant visual lamp effects.

They are designed to comply with the European product standards EN50172, EN55015, EN 61547 and EN 61000.3.2 and are produced in our UK manufacturing plant which is registered to BS EN ISO9001:2000 by BSI.

AC hold-off relay are used to convert normal mains luminaires to emergency luminaires by switching the lamp from the normal mains control gear to the inverter output when the un-switched monitored mains supply fails.

## SPECIFICATION

Cat No	PVR24	PVR50	PVR110
DC Inverter Supply Range	Nominal supply –16% + 25%		
AC/DC Inverter Supply Range	Nominal supply –16% + 25% ± 10% AC supply		
Mains Frequency	50/60Hz		
Operating Temperature Range	0 to 70°C		
Enclosure	Metal		
Wire Size	1.5mm <sup>2</sup>		

## DIMENSIONS

Cat No	PVR24	PVR50	PVR110
Dimensions L x W x H (mm)	Length 216 x Width 42 x Height 28		
Fixing Centres (mm)	206		
Weight (Kg)	0.35		



## TECHNICAL SPECIFICATION

Cat No	PVR24				PVR50				PVR110			
Lamp	Power Input		BLF		Power Input		BLF		Power Input		BLF	
	AC	DC	AC	DC	AC	DC	AC	DC	AC	DC	AC	DC
18W/20WT8	18VA	8W	0.20	0.14	21VA	8W	0.24	0.20	23VA	9W	0.24	0.18
36W T8	21VA	11W	0.17	0.14	27VA	11W	0.27	0.20	28VA	11W	0.22	0.18
58W T8	24VA	13W	0.13	0.11	34VA	14W	0.29	0.22	33VA	14W	0.22	0.18
70W T8	27VA	15W	0.12	0.09	38VA	16W	0.10	0.08	36VA	17W	0.10	0.08
100W T12	27VA	14W	0.09	0.06	37VA	16W	0.15	0.10	35VA	16W	0.13	0.11
8W T5	15VA	7W	0.45	0.56	19VA	8W	0.60	0.45	21VA	9W	0.57	0.43
13W T5	16VA	8W	0.62	0.48	20VA	8W	0.64	0.50	22VA	9W	0.58	0.46
14W T5	16VA	9W	0.36	0.27	21VA	9W	0.50	0.36	23VA	9W	0.42	0.33
21W T5	19VA	10W	0.32	0.24	24VA	11W	0.44	0.34	25VA	11W	0.40	0.32
28W T5	22VA	12W	0.31	0.23	31VA	13W	0.46	0.35	30VA	13W	0.42	0.35
35W T5	25VA	14W	0.31	0.23	36VA	16W	0.45	0.33	34VA	15W	0.41	0.34
39W T5	22VA	12W	0.15	0.12	30VA	13W	0.24	0.18	30VA	13W	0.22	0.17
49W T5	26VA	15W	0.29	0.22	37VA	17W	0.44	0.28	35VA	16W	0.33	0.26
54W T5	27VA	15W	0.18	0.14	36VA	16W	0.26	0.20	35VA	16W	0.24	0.20
80W T5	30VA	17W	0.17	0.14	41VA	19W	0.28	0.22	39VA	19W	0.25	0.21
22W T5 Circular	19VA	10W	0.28	0.25	26VA	11W	0.40	0.33	26VA	11W	0.38	0.30
40W T5 Circular	24VA	13W	0.30	0.23	33VA	14W	0.45	0.35	30VA	13W	0.43	0.34
55W T5 Circular	26VA	14W	0.25	0.20	35VA	15W	0.39	0.29	33VA	15W	0.33	0.27
16W 2D	17VA	9W	0.45	0.38	21VA	9W	0.60	0.46	23VA	9W	0.56	0.44
28W 2D	19VA	9W	0.24	0.19	27VA	11W	0.36	0.27	25VA	11W	0.33	0.24
38W 2D	19VA	11W	0.16	0.13	27VA	11W	0.24	0.19	30VA	13W	0.23	0.17
55W 2D	23VA	12W	0.17	0.13	30VA	12W	0.19	0.19	30VA	13W	0.21	0.17
24W TC-L	19VA	9W	0.25	0.20	21VA	9W	0.43	0.28	24VA	10W	0.36	0.25
36W TC-L	22VA	11W	0.22	0.16	26VA	11W	0.30	0.25	29VA	12W	0.29	0.21
40W TC-L	24VA	13W	0.29	0.21	30VA	13W	0.39	0.28	31VA	14W	0.36	0.28
55W TC-L	26VA	14W	0.22	0.18	32VA	13W	0.31	0.24	33VA	15W	0.30	0.25
7W TC-S	15VA	7W	0.38	0.28	18VA	7W	0.47	0.35	20VA	8W	0.53	0.40
9W TC-S	15VA	8W	0.42	0.35	19VA	8W	0.58	0.48	21VA	9W	0.58	0.46
11W TC-S	16VA	8W	0.40	0.29	20VA	8W	0.55	0.43	22VA	9W	0.61	0.49
18W TC-D	19VA	9W	0.31	0.24	23VA	10W	0.45	0.35	24VA	10W	0.42	0.32
26W TC-D	20VA	11W	0.24	0.18	27VA	11W	0.35	0.22	26VA	11W	0.30	0.25
32W TC-T	21VA	12W	0.37	0.28	28VA	12W	0.51	0.40	29VA	12W	0.49	0.38
42W TC-T	23VA	13W	0.23	0.13	32VA	14W	0.39	0.24	32VA	13W	0.36	0.24

# CENTRAL SYSTEMS

A wide range of of central battery and BSI approved static inverter emergency lighting systems to suit even the most demanding lighting applications.





**CENTRAL BATTERY  
SYSTEMS  
116**



**LPAC SINGLE PHASE  
STATIC INVERTERS  
116**



**HPAC SINGLE PHASE  
STATIC INVERTERS  
116**



**HPAC THREE PHASE  
STATIC INVERTERS  
116**



**MINI-SINE COMPACT  
STATIC INVERTER  
116**



**SUB-CIRCUIT  
MONITOR RELAY  
116**

# CBU AC/DC CENTRAL BATTERY SYSTEMS



## FEATURES

- Output configurable to be maintained and/or non-maintained.
- Deep discharge protection for batteries.
- Microprocessor control.
- Reverse battery polarity protection.
- Modular design improving reliability and serviceability.
- Compact floor standing enclosure.
- Models range from 1.5kVA through to 10kVA in either 48, 110 or 220VAC output Voltage (larger systems available to order).
- Complies with BS EN 50171.

## ORDERING INFORMATION

- Use basic catalogue number, e.g. CBU4.
- Add either suffix /48, /110 or /220 for 48, 110 or 220VAC output Voltage.
- Add suffix /3 for standard 3 hour duration (systems for 1 hour duration can be manufactured to order, add suffix /1)
- Example ordering code is now CBU4/110/3 (4kW 110V central battery system for 3 hours duration).

## REMOTE MONITORING/CONNECTIONS

### VOLT-FREE CONTACTS

Includes Volt-free contacts for system in **battery mode**, **charger fault**, **load alarm** and **common alarm**. Normally open and normally closed contacts are provided for each of the above alarms. Alarm relays are energised when in healthy condition and relax into the fault condition. This ensures the contacts indicate a fault condition even when the system is off or in sleep mode (no power for extended periods).

## SYSTEM OPERATION

### MAINS HEALTHY

The battery charger charges the batteries and the load is supplied via the isolation transformer and changeover. For non-maintained applications, the output is normally off and therefore the isolation transformer is not required.

### MAINS FAILURE

The load is transferred to the battery which will supply the load for the rated duration (usually one or three hours) or until the mains power is restored. Systems are generally supplied with single phase input but three phase input can be supplied if required. Three phase input systems utilise one phase from the input to supply any maintained load (via the changeover).

## PROTECTION

### OVERLOAD PROTECTION

During mains healthy conditions overall load is monitored, overload is displayed and the buzzer sounds if the rated load is exceeded for more than 5 seconds. During mains failure, overload is displayed and the buzzer sounds if the preset overload point (>120% of rated load) is exceeded for more than 5 seconds.

### BATTERY DISCONNECTION PROTECTION

Battery connection is monitored to ensure continuity and if disconnected the display will indicate that the battery is off and the buzzer will sound.

### DEEP DISCHARGE PROTECTION

During prolonged mains failures, the system will deplete the battery to protect the battery from further discharge. The discharge current is reduced to virtually zero by the system inducing sleep mode.

### REVERSE POLARITY PROTECTION

The system is protected from reverse battery protection as required by BS EN 50171.

## GENERAL SPECIFICATION

Model/Power Rating	CBU1	CBU2	CBU4	CBU6	CBU7	CBU10
Operating temperature	0 - 40°C					
Altitude	Max 1000m before de-rating					
Protection level	IP23					
Colour	RAL 7035					
Noise level	< 55dBA @ 1m (free field conditions)					

## POWER

Model/Power Rating	CBU1	CBU2	CBU4	CBU6	CBU7	CBU10
Output active power (kW)	1.50	2.70	4.00	6.00	7.00	10.00
Apparent output power (kVA)	1.50	2.70	4.00	6.00	7.00	10.00

## INPUT

Model/Power Rating	CBU1	CBU2	CBU4	CBU6	CBU7	CBU10
Number of phases	1					
Nominal input voltage (VAC)	230					
Voltage tolerance	+ / -10%					
Nominal input frequency	50Hz (+ / -5%)					

## OUTPUT

Model/Power Rating	CBU1	CBU2	CBU4	CBU6	CBU7	CBU10
Nominal output voltage	48 / 110 / 220 VAC / DC (other Voltages available on request)					
Nominal output frequency	50 Hz during mains operation / DC during battery operation					
Overload	120% continuous					

## BATTERY SPECIFICATION

Model/Power Rating	CBU1	CBU2	CBU4	CBU6	CBU7	CBU10
Type	Sealed lead acid maintenance-free					
Design life	10 years @ 20°C					

## STANDARDS

Model/Power Rating	CBU1	CBU2	CBU4	CBU6	CBU7	CBU10
Emergency lighting	BS EN 50171					
Safety	EN 62040-1					
Emissions	EN 61000-6-3					
Immunity	EN 61000-6-2					
Batteries	BS EN 6290-4					

## DIMENSIONS

Model/Power Rating	CBU1	CBU2	CBU4	CBU6	CBU7	CBU10
Enclosure W x D x H (mm)	800 x 400 x 1715		830 x 630 x 1850			
Weight (Kg)	300	500	750	1065	1125	1625



# LPAC SINGLE PHASE STATIC INVERTERS



## FEATURES

- Designed to the latest European EN50171 Specification.
- True sinewave and PWM microprocessor controlled technology up to 97% efficiency.
- System and battery test function.
- Capable of 120% continuous overload to meet European emergency lighting regulations.
- Large charger for fast recharge of batteries (ultra-fast changeover mode to battery mode).
- Two way built-in distribution panel (optional 4 way).
- LCD panel providing accurate detailed information about load, batteries, system diagnostics and manual testing facility & audible alarm.
- RS232 and dry contacts for communication and remote monitoring internal self-contained battery system.
- Generator compatible.
- Remote monitoring panel (optional).

## ORDERING INFORMATION

- Use basic catalogue number, e.g. LPAC1250.
- Add suffix /3 for standard 3 hour duration (systems for 1 hour duration can be manufactured to order, add suffix /1).
- Example ordering code is now LPAC1250/3 (1250VA single phase static inverter system for 3 hours duration).

## GENERAL SPECIFICATION

Cat No	LPAC500	LPAC1250	LPAC3000
Power - Power Rating VA/W - Power Factor	500/400 0.8	1250/1000 0.8	3000/2400 0.8
Efficiency at 100% load	>97%		
Operating Temperature (Ambient)	0-40°C		
Serial Communication	Dry contacts plus RS232		
Altitude	<1000 Metres (above sea level)		
Protection Degree	IP21		
Noise Level at 1m	<56 dBA		
Standard	Emergency lighting EN50171		



## INPUT

Cat No	LPAC500	LPAC1250	LPAC3000
Voltage/Tolerance	230 Vac single phase /184V ~ 285V		
Frequency	50Hz $\pm$ 5%		
Maximum RFI	EN50091-2 CLASS A		

## OUTPUT

Cat No	LPAC500	LPAC1250	LPAC3000
Voltage	230 Vac single phase		
Voltage Stability	Changeover mode $\pm$ 10% / battery mode $\pm$ 3%		
Voltage Recovery Time	After step load 0-100% maximum 20ms		
Frequency	50Hz (60Hz to order)		
Short Circuit Protection	Electronic short circuit		
Overload Capacity	120% continuous, 150% alarm load		

## BATTERY SPECIFICATION

Cat No	LPAC500	LPAC1250	LPAC3000
Battery Type	Sealed lead acid - maintenance free		
Float Charging Voltage	54Vdc		
End of Discharge Voltage	42Vdc		
Battery Ambient Temperature	20°C		
Battery Test	Automatic battery test / smart battery management		
Battery Protection	Double pole DC circuit breaker		

## DIMENSIONS

Cat No	LPAC500	LPAC1250	LPAC3000
Dimensions W x D x H (mm)	750 x 250 x 850	750 x 250 x 1250	750 x 400 x 1250
Weight (Kg)	120	195	445

## ORBİK TECHNICAL

Orbik's highly trained technical after-sales team are committed to ensuring that our customer's requirements continue to be met from the initial sales enquiry all the way through to the maintenance and commissioning of lighting systems.

By identifying and responding to individual customer's specific requirements, we have gained a reputation for excellent technical support, which has enabled our products to be at the forefront of many prestigious installations throughout the UK and overseas.

Our technical department are equipped to provide lighting solutions to even the most demanding of installations and can offer the client total peace-of-mind by providing photometric data and other lighting design information, including luminaire data files.

For further information, contact our technical department at [technical@orbik.co.uk](mailto:technical@orbik.co.uk).

# HPAC SINGLE PHASE STATIC INVERTERS



## FEATURES

- True double-conversion and PWM technology.
- Inverter stage output Galvanic isolation transformer included.
- Capable of 120% continuous overload to meet European Emergency Lighting regulations.
- Larger 20 Amp charger for faster recharge of batteries.
- Maintenance by-pass (for complete isolation of the inverter during maintenance).
- Unique Inverter design to suit high inrush lighting loads.
- Bypass to load (changeover mode) user selection.
- LCD panel providing accurate detailed information about the load, batteries and inverter with advanced diagnostics.
- 3 Microprocessors; main control board, rectifier board, optional parallel control board.
- Real time clock and calendar indicator.
- 64 Recorded real-time events history.
- RS232 and dry contacts for communication and remote monitoring.

## ORDERING INFORMATION

- Use basic catalogue number, e.g. HPAC8.
- Add suffix /3 for standard 3 hour duration (systems for 1 hour duration can be manufactured to order, add suffix /1).
- Example ordering code is now HPAC8/3 (8kVA single phase static inverter system for 3 hours duration).

## GENERAL SPECIFICATION

Cat No	HPAC4	HPAC5	HPAC6	HPAC8	HPAC12	HPAC20/SP
Output Rating kVA	4	5	6	8	12.5	20
Output Rating kW	3.2	4	4.8	6.4	10	14
Power Factor	0.8					
Serial Communication	Dry contacts plus RS232					
Protection Degree	IP41					
Operating Temp. (Ambient)	0-40°C					
Standard	Emergency lighting EN50171					
Ventilation	Forced air cooling					
Altitude	<1000 Metres (above sea level)					
Relative Humidity	90% maximum (non-condensing)					
Acoustic Noise at 1m	<56dBA					

## INPUT

Cat No	HPAC4	HPAC5	HPAC6	HPAC8	HPAC12	HPAC20/SP
Voltage/Tolerance	230Vac single phase, 4 wires + ground / $\pm 15\%$					
Bypass Voltage	230Vac single phase					
Input Frequency	50Hz $\pm 5\%$ (60Hz to order)					
Maximum RFI	EN 50091-2 class A					

## OUTPUT

Cat No	HPAC4	HPAC5	HPAC6	HPAC8	HPAC12	HPAC20/SP
Voltage	230Vac single phase					
Voltage Stability	Static (balanced load) $\pm 1\%$ Static (unbalanced load) $\pm 2\%$ Dynamic (step load 0-100%) $\pm 5\%$					
Voltage Recovery Time	After step load 0-100% maximum 20ms					
Frequency	50Hz (60Hz to order)					
Frequency Tolerance	Line synchronised $\pm 1\%$ Free running $\pm 0.2\%$					
Efficiency at 100% Load	>87-91%					
Crest Factor	3:1					
Short Circuit Protection	Electronic short circuit					
Overload Capacity	120% continuous, 150% load 10 minutes, 180% load 1 minute, 200% load for 1 second					
Total Harmonic Distortion	Linear load <3% Non-linear load 75% NP and CF 3:1) <5%					

## BATTERY SPECIFICATION

Cat No	HPAC4	HPAC5	HPAC6	HPAC8	HPAC12	HPAC20/SP
Battery Type	Sealed lead acid - maintenance free					
Number of 12V Blocks	16	18		20		26
Float Charging Voltage	216Vdc	243Vdc		270Vdc		354Vdc
End of Discharge Voltage	160Vdc	180Vdc		200Vdc		260Vdc
Battery Charging Characteristics	25°C					
Battery Ambient Temperature	Electronic short circuit					
Automatic Battery Test	Weekly					
Battery Protection	Circuit breaker					

## DIMENSIONS

Cat No	HPAC4	HPAC5	HPAC6	HPAC8	HPAC12	HPAC20/SP
Dimensions W x D x H (mm)	300 x 500 x 1220					TBC
Weight (Kg)	85	95	110	125	155	TBC

## OPTIONAL EXTRAS

(Models incorporating any of the following options are manufactured to order)

- Increased power with parallel operation.
- Increased reliability with 1+1 redundant operation.
- Additional battery modules for extension of autonomy.
- Wide Area Network management via SNMP.
- Remote monitoring panel RM-2000.
- Modbus connection for interface with BMS Systems.
- Input / output customisation.

# HPAC THREE PHASE STATIC INVERTERS



## FEATURES

- Designed to the latest European EN 50171 specification for emergency lighting.
- True double conversion and PWM technology.
- Inverter stage output galvanic isolation transformer included.
- Up to 91% efficiency.
- Capable of 120% continuous overload to meet European emergency lighting regulations.
- Large charger for faster recharge of batteries.
- Maintenance bypass (for complete isolation of the inverter during maintenance).
- Unique inverter design to suit high inrush lighting loads.
- Bypass to load (changeover mode) user selection.
- LCD panel providing accurate detailed information about load, batteries and inverter with advanced diagnostics.
- RS232 and dry contacts for communication and remote monitoring.

## ORDERING INFORMATION

- Use basic catalogue number, e.g. HPAC20.
- Add suffix /3 for 3 phase input.
- Add suffix /3 for 3 phase output.
- Add suffix /3 for standard 3 hour duration (systems for 1 hour duration can be manufactured to order, add suffix /1).
- Example ordering code is now HPAC20/3/3/3 (20kVA 3 phase input/output static inverter system for 3 hours duration).

## GENERAL SPECIFICATION

Cat No	HPAC10	HPAC15	HPAC20	HPAC25	HPAC30	HPAC40	HPAC60	HPAC80	HPAC100	HPAC120	HPAC160
Nominal Output Rating (kVA)	10	15	20	25	30	40	60	80	100	120	160
Nominal Output Rating (kW)	8	12	16	20	24	32	48	64	80	96	128
Power Factor	0.8										
Serial Communication	Dry contacts plus RS232										
Noise Level at 1m	<56dBA					<60dBA		<65dBA			
Operating Temperature (Ambient)	0-40°C										
Storage Temperature	-10 / +70										
Altitude	<1000 Metres (above sea level)										
Relative Humidity	90% maximum (non-condensing)										
Immunity	According to EN62040-2										
Colour	RAL 7035 (Other colours available to order)										
Protection Degree	IP41										
Standard	Emergency lighting EN50171										

## INPUT

Cat No	HPAC10	HPAC15	HPAC20	HPAC25	HPAC30	HPAC40	HPAC60	HPAC80	HPAC100	HPAC120	HPAC160
Voltage	380/400 Vac three phase										
Voltage Stability	Static (balanced load) +/- 1%, static (unbalanced load) +/- 2%, dynamic (step load 0-100%) +/- 5%										
Voltage Recovery Time	After step load 0-100% maximum 20ms										
Frequency	50Hz (60Hz to order)										
Frequency Tolerance	Line synchronised +/-1% / free running +/-0.2%										
Short Circuit Protection	Electronic short circuit										
Overload Capacity	120% continuous, 150% load 10 minutes, 180% load 1 minute, 200% load for 1 second										
Total Harmonic Distortion	Linear load <3% / non-linear load 75% NP and CF 3:1) <5%										
Output Waveform	Sine Wave										

## RECTIFIER SPECIFICATION

Cat No	HPAC10	HPAC15	HPAC20	HPAC25	HPAC30	HPAC40	HPAC60	HPAC80	HPAC100	HPAC120	HPAC160
Dc Ripple Voltage	1% rms										
Battery Recharging Characteristic	IU (DIN 41773)										
Input Protection	Fast fuses										

## BATTERY SPECIFICATION

Cat No	HPAC10	HPAC15	HPAC20	HPAC25	HPAC30	HPAC40	HPAC60	HPAC80	HPAC100	HPAC120	HPAC160
Battery Type	Sealed lead acid -maintenance free										
Battery Ambient Temperature	25°C										
Automatic Battery Test	Weekly										
Battery Protection	Circuit breaker										

## DIMENSIONS

Cat No	HPAC10	HPAC15	HPAC20	HPAC25	HPAC30	HPAC40	HPAC60	HPAC80	HPAC100	HPAC120	HPAC160
Dimensions W x D x H (mm)	530 x 720 x 1180			590 x 800 x 1450			790 x 880 x 1500	TBA			
Number of 12V Blocks	260	276	332	404	494	572	630	780	820	970	1160

## DISPLAY MEASUREMENT & ALARMS

### MEASUREMENTS

Input Voltages:	Input Voltages shown for each phase
Input Currents:	Input currents shown for each phase
Bypass Input Voltage:	Bypass input Voltage for each phase
Battery Voltage:	DC Bus and battery Voltage
Battery Charge Level:	Battery level shown as %
Output Voltage:	Output Voltage shown for each phase
Load:	Load % for each phase
Output Frequency:	Output frequency
Temperature:	Internal temperature
Alarms:	Alarms displayed with date and time

### ALARMS

Inverter Output Failure	Charger Fault
Battery Low	Overload
Mains Failure	IGBT Failure
Inverter Output Voltage Low	Fuse Failure
Bypass Input Voltage	Battery Circuit Breaker Open
Low Battery Capacity	UPA in Boost Charge
Input Phase Rotation Error	Load Sharing Fault
Inverter Performing Battery Test	Mains Healthy
Boost Charge Period Finished	
End of Autonomy	
Inverter Output Voltage High	
High Temperature	
Battery Voltage High	
Bypass Input Frequency	
Battery Fault	
Parallel Configuration Fault	
Inverter Running on Battery	
Inverter Cannot Start	

# MINI-SINE COMPACT STATIC INVERTER



## FEATURES

- Designed to operate loads up to 150 Watts at 230 Volts AC backup supply upon power failure.
- Available in either 1 hour or 3 hours emergency duration.
- Charger features short circuit and battery reversal protection.
- Thermal shutdown protected.
- Addition cooling for the charger during early charging stages provided by a quiet chassis mounted fan.
- Sine wave inverter includes over temperature and short circuit protection and is suitable for operation in an ambient of up to 30°C.
- Front panel indicators display healthy supply, power failure battery disconnect/charger failure and over charge indicator.
- High quality robust steel enclosure with powder coated finish.
- Volt free monitor contacts (1A at 30V dc maximum).

## CATALOGUE NUMBERS & INFORMATION

Cat No	Description	Compatible Light Source Emergency Loads
MS150/1	150W 1 hour compact static inverter unit	LED, high frequency fluorescent lamps, Energy saving fluorescent lamps†
MS150/3	150W 3 hours compact static inverter unit	LED, high frequency fluorescent lamps, Energy saving fluorescent lamps†

† Due to the vast range of energy saving fluorescent lamps available, please contact our technical department for compatible models

## DIMENSIONS

Height 440mm x Width 370mm x Depth 160mm.

Weight 19.9Kg including 2 x 12V 12Ah batteries (1 hour version); 32.4Kg including 4 x 12V 17Ah batteries (3 hours version)

## FRONT PANEL INDICATORS

### GREEN INDICATOR

This indicator will be illuminated when the monitored mains charger supply is present. It will extinguish when the power to the unit fails.

### YELLOW INDICATOR

This indicator shows a fault condition exists, for example, power failure to the unit, battery connections have a continuity fault or battery charger fault.

### RED INDICATOR

This indicator enables the user to establish the charging state of the batteries. It provides an analogue response to the battery charge current and its intensity will vary dependent on the charge current being supplied to the batteries. In float condition (below 1A charge current), this indicator will be extinguished.

## CHARGER SPECIFICATION

- Constant Voltage charge monitoring.
- 5 Amps sustained charge current.
- Output short circuit protection.
- Thermal shutdown protection.

## INVERTER SPECIFICATION

- Short circuit output protection.
- Over temperature protection above 55°C.
- Over load protection.
- Modified sine wave output.
- 150W continuous power output.
- Output Voltage is 230V AC RMS +/- 10% (207V > 254V).
- Output frequency 50Hz +/- 1%.
- 90% circuit efficiency.
- Soft start up (suitable for inductive loads).



# SUB-CIRCUIT MONITOR RELAY

## FEATURES

- Can be used with maintained or non-maintained luminaires powered from a static inverter.
- Provides local sub-circuit monitoring to comply with EN50171, the European Standard for centrally supplied emergency systems.
- The DRM415AC is available with a number of options such as a steel remote housing and addressable versions.
- The DRM415AC can be factory fitted in many 'free-issued' luminaires.
- For non-maintained operation, the static inverter supply is connected to the DRM415AC together with the local lighting circuits' unswitched supply.
- For maintained operation, the switched supply is also connected to the DRM415AC allowing the luminaire to be switched on and off as though it were a normal mains luminaire.
- In the event of the unswitched supply failing, the relay changes over and the luminaire is operated by the static inverter.



## CATALOGUE NUMBERS & INFORMATION

Cat No	Description	Compatible Light Source Emergency Loads
DRM415AC	1250VA static inverter sub-circuit monitor relay	LED, high frequency fluorescent lamps, Energy saving fluorescent lamps†

† Due to the vast range of energy saving fluorescent lamps available, please contact our technical department for compatible models

## DIMENSIONS

Length 216mm x Width 42mm x Depth 28mm (Fixing centres 206mm along centre line).

Weight 0.30Kg

## STANDARDS

CE Mark Compliance:	CE marked, ROHS and REACH compliant
Manufactured to Standards:	BS EN50171
Manufacturing Quality Approval:	ISO9001: 2015

## CONSTRUCTION

Housing:	Zintec coated mild steel
Finish:	Zintec finish
Protection Degree:	IP20
Insulation Class:	Class 1
Supply Voltage:	230V AC 50/60Hz
Input & Output Terminal Capacity:	2mm square screw terminations

## GEAR

Type:	Local circuit monitoring relay for emergency lighting
Radio interference Compliance:	EN55015
Harmonics Compliance:	EN61000-3-2 Class C
Maximum Load:	415V ac 1250VA 3A



**Tried.**  
**Trusted.**  
**Respected.**

# CONDITIONS OF SALE

## 1. GENERAL

- (a) In these General Conditions of Sale (the "Conditions"), the "Company" means Orbik Electronics Limited, the "goods" means any item of whatsoever nature which is to be supplied to the Purchaser by the Company in accordance with these Conditions, including any instalment or parts of the goods and the "Purchase" means the person, firm or company who purchases or agrees to purchase the goods from the Company.
- (b) These Conditions shall apply to and form part of every contract of sale entered into by the Company. The Company shall sell and the Purchaser shall purchase the goods in accordance with the Company's written quotation (if accepted by the Purchaser) or the Purchaser's written order (if accepted by the Company), subject in either case to these Conditions, which shall govern the contract to the exclusion of any other terms and conditions subject to which any such quotation is accepted or purported to be accepted, or any such order is made or purported to be made by the Purchaser.
- (c) No variation of these Conditions shall be binding unless agreed in writing between the authorised representatives of the Purchaser and the Company.

## 2. LIMITS OF CONTRACT

- (a) No order submitted by the Purchaser shall be deemed to be accepted by the Company until a written acknowledgment of order is issued by the Company or (if earlier) the Company delivers the goods to the Purchaser.
- (b) Any quotation is given by the Company on the basis that no contract will come into existence until the Company dispatches an acknowledgment of order to the Purchaser.
- (c) The Purchaser shall be responsible to the Company for ensuring the accuracy of the terms of any order (including any applicable specification) submitted by the Purchaser, and for giving the Company any necessary information relating to the goods within a sufficient time to enable the Company to perform the contract in accordance with its terms.
- (d) The quantity, quality and description of the goods and any specification for them shall be as set out in the Company's quotation (if accepted by the Purchaser) or the Purchaser's order (if accepted by the Company).

## 3. PRICES

- (a) The price payable for goods shall unless otherwise stated by the Company in writing be the Company's quoted price or, where no price has been quoted (or a quoted price is no longer valid), the list price of the Company current at the date of delivery or deemed delivery and in the case of an order for delivery by instalments the price payable for each instalment shall be the Company's quoted price or, where no price has been quoted for a quoted price is no longer valid, the list price of the Company current at the date of delivery of such instalment. Any prices quoted by the Company are valid for a period of 30 days only from the date of the quotation or until earlier acceptance by the Purchaser, provided that such prices have not previously been withdrawn by the Company, after which time they may be altered by the Company without giving notice to the Purchaser.
- (b) Unless otherwise expressly stated to be firm for a period the Company's prices are subject to variation to take account of any increase in the cost to the Company which is due to any and/or additional Company costs (such as, without limitation, significant increases in the costs of labour, materials and other costs of manufacture) (calculated by using the British Electrochemical & Allied Manufacturers' Association ("BEAMA") contract price adjustment clause and formulae. The Company reserves the right, by giving written notice to the Purchaser at any time before delivery, to increase the price of the goods accordingly.
- (c) The Company also reserves the right, by giving written notice to the Purchaser at any time before delivery, to increase the price of the goods to reflect any increase in costs to the Company arising from any delay caused by any instructions of the Purchaser or any failure of the Purchaser to give the Company adequate information or instructions.
- (d) The price for the goods shall be exclusive of value added tax and this will be charged at the applicable rate and recoverable by the Company in addition to the price.
- (e) All invoiced price discrepancies must be notified by the Purchaser to the Company within 7 days of the date of invoice.

## 4. PAYMENT

- (a) Unless otherwise agreed in writing between the Purchaser and the Company, the Company may invoice the Purchaser for the price of goods on or at any time after delivery of the goods, unless the goods are to be collected by the Purchaser or the Purchaser wrongfully fails to take delivery of the goods, in which event the Company shall be entitled to invoice the Purchaser for the price at any time after the Company has notified the Purchaser that the goods are ready for collection or (as the case may be) the Company has tendered delivery of the goods.
- (b) Unless otherwise agreed in writing, payment of the full price for the goods is due on or before the last working day of the month following the date of the invoice.
- (c) Time for payment of the price shall be of the essence of the contract. Receipts for payment will only be issued on request.
- (d) All payments payable to the Company under the contract shall become due immediately upon termination of the contract, despite any other provision of these Conditions.
- (e) Without prejudice to any other rights it may have, if the Purchaser fails to make any payment when due in accordance with these Conditions, the Purchaser will be liable to pay interest to the Company on such sum from the due date for payment at the annual rate of 2% above the base rate of HSBC Bank PLC from time to time, accruing on a daily basis until payment is made, whether before or after any judgment. The Company also reserves the right to claim interest under the Late Payment of Commercial Debts (Interest) Act 1998.
- (f) Additionally and without prejudice to its other rights the Company shall be entitled to recover all direct expenses reasonably incurred by the Company in collecting or attempting to collect amounts of the price outstanding.
- (g) If the Purchaser fails to make any payment when due in accordance with these Conditions, the Company reserves the right in its absolute discretion and without prejudice to any of its other rights or remedies to suspend all further deliveries until such payment has been made in full together with any other amounts owing to the Company whether the due date for payment has been reached or not, if so requested by the Company or, at the Company's option, to cancel the balance of the order. In either case the Company shall hold the Purchaser liable for costs incurred in respect of goods in course of manufacture or ready for dispatch.
- (h) The Company shall be entitled to bring an action for the price or part thereof whether or not delivery or deemed delivery has taken place and whether or not the property in the goods has passed.

## 5. PAYMENT DISPUTES AND DEBIT NOTES

- (a) If the Purchaser operates a debit note system, debit notes will only be accepted by the Company if raised in respect of the following matters and otherwise in accordance with the provisions of this Condition 5:
- (i) incorrect goods supplied, subject to the provisions of Condition 2;
  - (ii) pricing discrepancies, subject to the provisions of Condition 3;
  - (iii) delivery shortages, subject to the provisions of Condition 6;
  - (iv) non-delivery, subject to the provisions of Condition 8;
  - (v) damaged goods, subject to the provisions of Conditions 8 and 13;
  - (vi) faulty goods, subject to the provisions of Condition 13, and provided that if goods returned by the Purchaser have not been opened by the Purchaser, they will be returned to the Purchaser and no credit note will be issued by the Company;
- (a) cancellation, subject to the provision of Condition 15, and provided that in each case, written evidence of the Company's consent to such cancellation is attached to the relevant debit note.
- (b) All requests to return goods to the Company must be agreed in writing by the Company before any debit note is raised by the Purchaser.
- (c) Debit notes will only be accepted by the Company if:
- (i) they include details of the Company's invoice to which they relate;
  - (ii) they are received by the Company within 7 days of the date on which the invoice is due for payment by the Purchaser;
  - (iii) they are notified to the Company on the day that they are raised; and
  - (iv) they relate to the value of goods in dispute and not the value of the whole invoice (except where the value of the whole invoice is in dispute).
- (d) In no circumstances will debit notes be accepted by the Company in relation to invoices which have either been subject to a prompt payment discount or which are the subject of a dispute raised by the Purchaser more than 5 days after the date on which the invoice is due for payment by the Purchaser.

## 6. DELIVERY

- (a) Delivery of the goods shall be made by the Purchaser collecting the goods at the Company's premises within 14 days of the Company giving notice to the Purchaser that the goods are ready for collection or, if some other date for delivery is agreed by the Company, by the Company delivering goods to that place.
- (b) Unless accepted by the Company in writing, all times or dates quoted for delivery of the goods are given in good faith but are approximate only and time for delivery shall not be of the essence of the contract. If no dates are so specified, delivery will be within a reasonable time. The goods may be delivered by the Company in advance of the quoted delivery date on giving reasonable notice to the Purchaser.
- (c) All times or dates for delivery shall be calculated from the date of acceptance by the Company of the order of the Purchaser, or from the date of receipt by the Company from the Purchaser of all information, instructions and drawings as shall be necessary to enable the Company to carry out the order, whichever shall be the later.
- (d) If the Company delivers to the Purchaser a quantity of goods of up to 5% more or less than the quantity ordered, the Purchaser shall not be entitled to object to or reject the goods or any of them by reason of the surplus or shortfall and shall pay for such goods at the pro rata contract price.
- (e) Unless otherwise stated in writing, the Company is entitled to make partial deliveries of the goods (delivery by instalments), provided that where goods are delivered in instalments, each delivery shall constitute a separate contract and failure by the Company to deliver any one or more of the instalments in accordance with these Conditions or any claim by the Purchaser in respect of any one or more instalments shall not entitle the Purchaser to treat the contract as a whole as repudiated.
- (f) Any contract shall be subject to the Company being satisfied as to the Purchaser's credit references, and without prejudice to the generality of the foregoing, the Company may (in its absolute discretion), having informed the Purchaser that the goods are ready for dispatch, and notwithstanding any other provision of these Conditions, refrain from delivering the goods until such time as the Purchaser tenders the purchase money to the Company together with any outstanding amounts which may be due to the Company on any account whatsoever.

## 7. PACKING AND CARRIAGE

- (a) The costs of crates, cases, pallets, stillages, skids or other such returnable packing will be charged to the Purchaser in addition to the price of the goods. Unless otherwise specified, full credit will be given to the Purchaser provided such packaging is returned, undamaged, to the Company (carriage paid), before the Purchaser's due payment date. No charge will be made by the Company by any other form of packaging and no credit will be allowed for its return.
- (b) Where the value of any order exceeds £50000 the cost of delivery of the goods to the Purchaser's premises on the mainland of Great Britain shall be included in the contract price. In all other cases, contract prices are exclusive of carriage and insurance to the Purchaser's premises.

## 8. NON-DELIVERY OR DAMAGE IN TRANSIT

- (a) The quantity of any consignment of goods as recorded by the Company upon dispatch from the Company's place of business shall be conclusive evidence of the quantity received by the Purchaser on delivery unless the Purchaser can provide conclusive proof to the contrary.
- (b) The Company shall not be liable for any non-delivery of goods unless written notice is given to the Company within 7 days of the date when the goods would in the ordinary course of events have been received.
- (c) Any liability of the Company for non-delivery of the goods shall be limited to replacing the goods within a reasonable time or issuing a credit note at the pro-rata contract rate against any invoice raised for such goods.
- (d) If the Purchaser fails to take delivery of the goods when they are ready for collection or the Company is unable to deliver the goods on time because the Purchaser has not provided appropriate delivery instructions, licences or authorisations, then, without limiting any other right or remedy available to the Company, the goods will be deemed to have been delivered and the Company may:
- (i) store the goods at the Company's own premises or elsewhere on the Purchaser's behalf until actual delivery and charge the Purchaser for the reasonable costs (including insurance) of storage; or
  - (ii) sell the goods at the best price readily obtainable (and after deducting all reasonable storage and selling expenses) account to the Purchaser for the excess over the price under the contract or charge the Purchaser for any shortfall below the price under the contract.
- (e) When the price quoted includes delivery, the Company shall repair or replace free of charge goods damaged in transit provided that the Company is given written notification of such damage within 7 days of the date when the goods would in the ordinary course of events have been received.
- (f) Subject to the provisions of Conditions 6 and 8, the Company will only consider claims for alleged shortage if they are received within 7 days of the receipt of the goods by the Purchaser together with sufficient information to enable the Company properly to identify the shortage including the Purchaser's Advice Note number, case number and condition of case. Where goods are collected by the Purchaser, no claim for shortage or damage will be considered.

## 9. SAMPLES

- The Company shall provide samples of goods to the Purchaser on request. Samples will be charged for under the Company's normal terms. With the prior written agreement of the Company, samples may be returned to the Company and provided they are returned in good condition (in the reasonable opinion of the Company), the Purchaser will be credited in full for such samples.

## 10. VARIATIONS

- (a) The Company shall be under no obligation to alter or vary any part of the contract or any work connected therewith. Any alteration to or drawings or to amendment or other variation of the specification, including any increase or decrease in the quantity of the goods or any alteration to any drawings or to the quality, performance, weight or measurements of any goods or any alteration or variation of advised delivery schedules, shall, if requested by the Purchaser, be subject to the agreement of the Company, with such alteration or addition to the price and to delivery dates or schedules as may be required by the Company, and shall not be binding upon the Company unless and until accepted by the Company in writing.
- (b) In the event of any variation or suspension of the work by the Purchaser's instructions or lack of instructions the Company shall be entitled to adjust the contract price to reflect any additional costs incurred, and to adjust delivery dates or schedules.

## 11. PERFORMANCE, INSPECTION AND TESTS

- (a) All technical information or performance figures provided by the Company are based on tests performed under standard conditions at the Company's premises. They are believed to be accurate but cannot be guaranteed under different conditions.
- (b) The Company's products are carefully inspected, and, where practicable, submitted to its standard tests at the Company's place of business before dispatch. If tests other than those specified or tests in the presence of the Purchaser or its representatives are required, these will be charged for. In the event of any delay on the Purchaser's part in attending tests after the Purchaser has received 7 days notice that the Company is ready to perform the tests, the tests will proceed in the Purchaser's absence and the Purchaser accordingly hereby agrees to accept and pay for such tests as if they had been performed in the Purchaser's presence.
- (c) It is the policy of the Company to endeavour to develop and improve its products, and accordingly the Company reserves the right to change all specifications without prior notification or public announcement pursuant to such policy, provided that nothing in this Condition 12 shall oblige the Purchaser to accept goods that do not reasonably comply with the contract.

## 12. DESCRIPTIVE MATTER AND ILLUSTRATIONS

- (a) All descriptions and illustrations and particulars of weights and dimensions issued by the Company in catalogues, price lists, advertising matter and forwarding specifications are by way of general descriptions and approximate only, and shall not form part of any contract or give rise to any liability on the part of the Company.
- (b) It is the policy of the Company to endeavour to develop and improve its products, and accordingly the Company reserves the right to change all specifications without prior notification or public announcement pursuant to such policy, provided that nothing in this Condition 12 shall oblige the Purchaser to accept goods that do not reasonably comply with the contract.

## 13. WARRANTY

- (a) The Company will make good by repair, or at the Company's option by the supply of a replacement, defects which, under proper storage and use appear in the goods within the period of twelve calendar months after the goods have been delivered and arise solely from faulty design (other than design made or furnished by the Purchaser), materials or workmanship.
- (b) The Warranty given in this clause is subject to the following provisos, namely:
- (i) that the Purchaser shall have followed all instructions issued by the Company in relation to the goods;
  - (ii) that in the case of defects which would have been reasonably apparent to the Purchaser on reasonable examination of the goods on delivery, the Purchaser shall notify the Company of the defects in writing within fourteen working days of delivery;
  - (iii) that in the case of any other defects, the Purchaser shall notify the Company of the defects in writing within seven working days of the date when the defect becomes apparent.

## 14. LIABILITY

- (a) Subject as expressly provided in these Conditions, and except where the goods are sold to a person dealing as a consumer (within the meaning of the Unfair Terms Act 1977), all warranties, conditions or other terms implied by law in contracts for the sale of goods are excluded to the fullest extent permitted by law.
- (b) A claim by the Purchaser which is based on any defect in the quality or condition of the goods or their failure to correspond with specification shall (whether or not delivery is refused by the Purchaser) be notified to the Company within 7 days from the date of delivery or (where the defect or failure was not apparent on reasonable inspection) within a reasonable time after discovery of the defect or failure. If delivery is not refused, and the Purchaser does not notify the Company accordingly, the Purchaser shall not be entitled to reject the goods and the Company shall have no liability for such defect or failure, and the Purchaser shall be bound to pay the price if the goods had been delivered in accordance with the contract.

## 15. REJECTION

- Unless otherwise agreed in writing, and subject to Condition 13 hereof, goods rejected as not complying with the contract must be rejected within 7 days of collection of the goods from the Company's premises or if some other place for delivery is agreed by the Company, delivery to that place.

## 16. CANCELLATION

- (a) No order which has been accepted by the Company may be terminated by the Purchaser (whether by way of cancellation or otherwise) except with the prior written agreement of the Company (at the Company's sole discretion) and on terms that the Purchaser shall indemnify the Company in full against all loss (including loss of profit), costs, damages, charges and expenses incurred by the Company as a result of the cancellation.
- (b) The provisions of Conditions 8(a) and 8(d) shall apply in relation to any goods which are the subject of a contract which is purportedly terminated by the Purchaser otherwise than in accordance with this Condition 15.

## 17. RETURN OF GOODS

- (a) Subject to Conditions 8 and 13 hereof, in no circumstances may goods supplied in accordance with a binding contract for sale be returned without the Purchaser first having applied for and obtained the written consent of the Company, provided that:
- (i) all goods returned must be in a reasonable condition, with undamaged cartons and must be in complete box quantities or minimum sales quantities;
  - (ii) goods that are specialised or that have been modified in any way from standard will not be eligible to be returned;
  - (iii) the Company will not collect goods from the Purchaser; and
  - (iv) a handling charge (to cover the Company's costs of reworking, transport and administration) will be deducted from any credit allowed by the Company; the handling charge will be calculated on the basis of 30% of the value of the returned goods, subject to a minimum handling charge in all cases of £100.
- (b) Luminaires that are sold within the UK when it reaches the end of its useful life, may be returned for recycling, subject to our Conditions of Sale.

## 18. INTELLECTUAL PROPERTY

- (a) The Purchaser will indemnify the Company against all damages, penalties, costs, losses and expenses suffered by the Company, or for which it may become liable, in respect of the infringement of any intellectual property including (but without limitation) any patent, copyright, registered design, trade mark, trade name or knowhow arising out of the Company's manufacture of goods or the application of any process to the goods in accordance with any specification, design, drawings or other data supplied by the Purchaser or its servants or agents.
- (b) All drawings and other information submitted by the Company, together with the copyright therein, shall remain the property of the Company.

## 19. FORCE MAJEURE

- The Company shall be entitled without liability on its part and without prejudice to its other rights, to terminate the contract or any unfulfilled part thereof or at its option to suspend or make partial deliveries or extend the time or times for delivery, if the manufacture of the goods by the Company or the Company's suppliers, or the delivery of the goods by the Company, is prevented or delayed by the performance of the contract is hindered or delayed whether directly or indirectly by reason of the Purchaser failing to furnish necessary instructions or information, or by war or other hostilities, acts of terrorism, protests, riot, civil commotion, act of God, government action or legislation, interruption of transport, strike, fire, explosion, flood, epidemic, locust or other form of industrial action (including, without limitation, labour disputes with the Company's or any subcontractor's employees), accidents or stoppages to works, shortage of labour, materials, equipment, fuel or power, breakdown of machinery or any other cause whatsoever beyond the reasonable control of the Company or its subcontractors, whether or not such cause exists at the date of the order provided that if the event in question continues for a continuous period in excess of 100 days, the Purchaser shall be entitled to give notice in writing to the Company to terminate the contract.

## 20. PASSING OF PROPERTY AND RISK

- (a) Risk of damage to or loss of the goods shall pass to the Purchaser:
- (i) in the case of goods to be delivered at the Company's premises, at the time when the Company notifies the Purchaser that the goods are available for collection; or
  - (ii) in the case of goods to be delivered otherwise than at the Company's premises, at the time of delivery, or, if the Purchaser wrongfully fails to take delivery of the goods, the time when the Company has tendered delivery of the goods.
- (b) Notwithstanding delivery and the passing of risk in the goods, or any other provision of these Conditions, the property in the goods shall not pass to the Purchaser until the Company has received in cash or cleared funds payment in full of the price of the goods and all other goods agreed to be sold by the Company to the Purchaser for which payment is then due.
- (c) Until such time as the property in the goods passes to the Purchaser, the Purchaser shall hold the goods as the Company's fiduciary agent and bailee, and shall keep the goods separate from those of the Purchaser and third parties and properly stored, protected and insured and identified as the Company's property, but shall be entitled to re-sell or use the goods in the ordinary course of its business.
- (d) Until such time as the property in the goods passes to the Purchaser (and provided the goods are still in existence and have not been resold), the Company shall be entitled at any time to require the Purchaser to deliver up the goods to the Company; and, if the Purchaser fails to do so forthwith, to enter upon any premises of the Purchaser or any third party where the goods are stored and repossess the goods and the Purchaser grants to the Company and its agents and employees an irrevocable licence at any time to enter any premises where the goods are or may be stored in order to inspect them or, where the Purchaser's right to possession has terminated, to recover them.
- (e) The Purchaser shall not be entitled to pledge or in any way charge by way of security for any indebtedness any of the goods which remain the property of the Company, but if the Purchaser does so all moneys owing by the Purchaser to the Company shall (without prejudice to any other right or remedy of the Company) forthwith become due and payable.

## 21. INSOLVENCY OF PURCHASER

- (a) This Condition applies if:
- (i) the Purchaser becomes insolvent or makes any voluntary arrangement with its creditors or becomes subject to an administration order or (being an individual or firm) becomes bankrupt or (being a company) goes into liquidation (otherwise than for the purposes of amalgamation or reconstruction); or
  - (ii) an encumbrancer takes possession, or a receiver or administrative receiver is appointed, of any of the property or assets of the Purchaser; or
  - (iii) the Company reasonably apprehends that any of the events mentioned above is about to occur in relation to the Purchaser and notifies the Purchaser accordingly.
- (b) If this Condition applies:
- (i) without prejudice to any other right or remedy available to the Company, the Company shall be entitled to cancel the contract or suspend any further deliveries under the contract without any liability to the Purchaser, and if the goods have been delivered but not paid for, the price shall become immediately due and payable notwithstanding any previous agreement or arrangement to the contrary; and
  - (ii) the Purchaser shall have a duty to immediately bring to the notice of any receiver, administrator or any such person or persons appointed the existence and content of Condition 19 of these Conditions (Passing of Property and Risk) and the rights of the Purchaser to use or trade on the Company's goods shall immediately terminate and any such receiver, administrator or other person or persons appointed will not be entitled to use or trade on the Company's goods unless so authorised in writing by the Company.

## 22. ARBITRATION

- If at any time any question, dispute or difference whatsoever shall arise between the Purchaser and the Company upon or in relation to or in connection with the contract, either party may give the other notice in writing of the existence of such question, dispute or difference, and the same shall be referred to the arbitration of a person to be mutually agreed upon, or failing agreement within 30 days of receipt of such notice, of some person appointed by the President for the time being of the Chartered Institute of Arbitrators. A submission to arbitration under this Condition shall be deemed to be a submission to a sole arbitrator pursuant to the Arbitration Act 1996 or any statutory modification or re-enactment thereof. Any such arbitration shall be held in London, England.

## 23. GOVERNING LAW AND JURISDICTION

- (a) All contracts to which these Conditions apply shall be governed by and construed in accordance with English Law.
- (b) Subject to Condition 21 hereof, the Purchaser agrees to submit to the non exclusive jurisdiction of the English courts.

## 24. MISCELLANEOUS

- (a) Each right or remedy of the Company under the contract is without prejudice to any other right or remedy of the Company whether under the contract or not.
- (b) A notice required or permitted to be given by either party to the other under these Conditions shall be in writing and addressed to that other party at its registered office or principal place of business or such other address as may at the relevant time have been notified pursuant to this provision to the party giving the notice. Notices shall be deemed to have been received (i) if sent by prepaid first class post, 2 days after posting; (ii) if delivered by hand on a working day prior to 400pm, on the day of delivery and otherwise on the next working day; (iii) if sent by facsimile on a working day prior to 400pm, at the time of transmission and otherwise on the next working day.
- (c) The Company or by the Company of any breach of the contract by the Purchaser shall be considered as a waiver of any subsequent breach of the same or any other provision.
- (d) If any provision of these Conditions is held by a court or other competent authority to be invalid or unenforceable in whole or in part, the validity of the other provisions of the contract and the remainder of the provision in question shall not be affected.



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