



ICE

Integral conversion emergency solution



actual size*

ICE



Multiple
luminaire
application

The advent of LED's has introduced an issue for many OEM's trying to adapt their LED luminaires to operate in an emergency. ICE is a unique solution from Mackwell that overcomes this challenge.

ICE achieves this by acting as a sustained emergency solution, using 6 high performance LEDs.

ICE is suitable for multiple luminaire applications, from bulkhead amenity lighting to recessed lighting and can be used in new light fittings or retrofitted into existing gear trays. This offers a significant stock unit reduction and enables the OEM to have a standard emergency product offering across their range.

Key features:

- Easy to install
- Available with standard and DALI AutoTest® drivers
- Integrated low-voltage test switch and bi-colour status indicator
- Can be recessed into a luminaire
- High performance
- Separate test switch and LED status indicators available
- SELV compliant (except N-light EC versions)

* When printing out, your printer might adjust size, actual size: 61mm x 19mm



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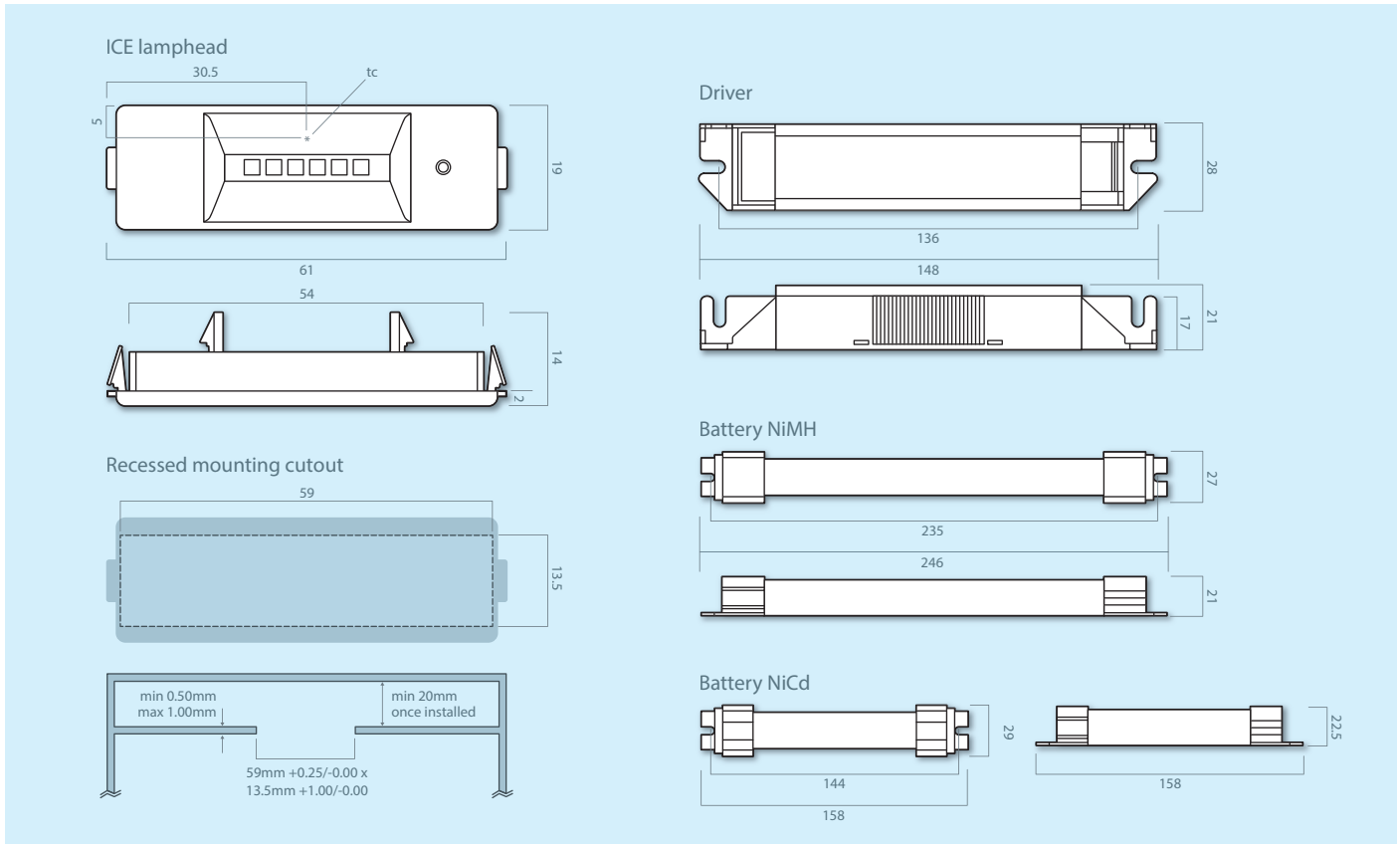
In partnership with:



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Dimensions



Specifications

LED Module Specifications

Lumen output	:	180lm
Drive current	:	550mA
Typical CCT	:	5700K
Typical CRI	:	>80
Distribution	:	Lambertian
Beam angle	:	120°
Power rating	:	1.7W nominal
Eye protection rating	:	Risk group 1
Ambient temperature (ta)	:	0 to +45°C
Max case temperature (tc)	:	+75°C

Driver Specification

Supply voltage	:	230Vac
Supply frequency	:	50/60Hz
Supply current	:	30mA maximum
Battery charge current	:	200 to 250mA (NiMH variants)
Battery charge current	:	110 to 130mA (NiCd variants)
Battery charge voltage	:	3.0V to 4.6V
Battery discharge current	:	0.45A to 0.65A
Battery discharge voltage	:	2.4 to 4.4V
Rated duration	:	3 hours
Vout max	:	4Vdc (5.2V fault condition)
Conductor size	:	0.2 to 0.5mm ²

N-light EC specifications

Battery charge current	:	160mA Nominal
Ambient temperature (ta)	:	0 to +45°C
Max case temperature (tc)	:	+75°C
Conductor Size	:	0.2 to 0.5mm ²

Test switch

As part of its fully integrated design, the ICE has an integrated low voltage test switch and bi-colour LED status indicator. The status indicator can also be used as part of the N-Light® system to aid identifying the device. Separate test switch and LED status indicator are available for different applications.

Relevant Standards

EN 61347-2-7
 EN 61347-2-13
 EN 5266-1:2005
 EN 62034
 EN 62031
 EN 62471
 ICEL 1004

Batteries

ICE includes a rechargeable battery pack for 3 hours operation. When ICE no longer meets 3 hour duration replace the batteries, observing the battery polarity, as permanent damage to the control gear will occur if they are reversed.

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Spacing information

ICE - Glare Evaluation

Gamma	C0 (cd)	C90 (cd)	C0-C360 (cd)
60°-90°	30.3	30.3	30.3
0°-180°	62.6	62.6	62.6

Escape Route Spacings based on EN1838:2013 for 1 lux

Mounting Height (m)	Distance Luminaire to Luminaire (m)	Distance Luminaire to wall (m)
2.0	8.30	3.30
2.5	9.00	3.60
3.0	9.65	3.70
3.5	10.10	3.75
4.0	10.50	3.75

Open-Area Spacings based on EN1838:2013 for 0.5 lux

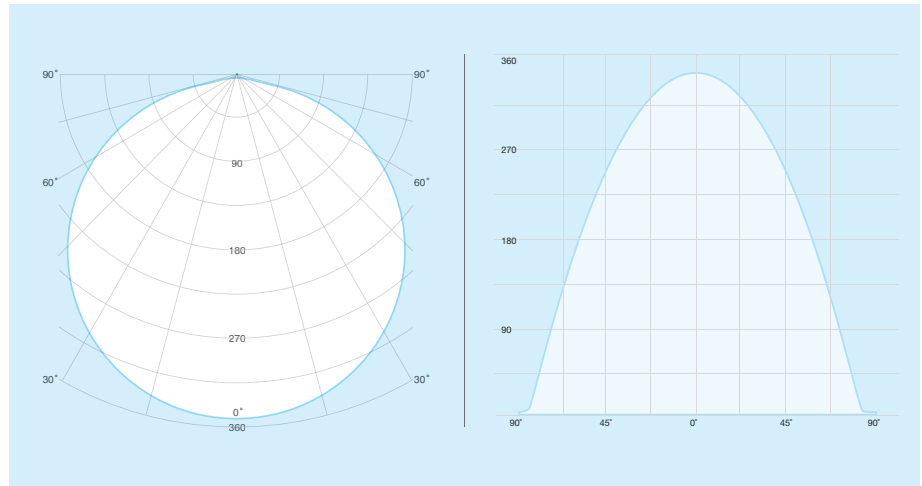
Mounting Height (m)	Distance Luminaire to Luminaire (m)	Distance Luminaire to wall (m)
2.0	7.50	3.20
2.5	8.35	3.30
3.0	9.00	4.15
3.5	9.75	4.25
4.0	10.35	4.40

The spacing tables are provided as a guide only.

Due to the nature of creating generic lighting schemes, all schemes should be simulated or calculated in full, representing as accurately as possible the final application, and ensuring compliance with local regulations.

NB: Spacing data is given for bare light engine assembly. Addition of secondary diffusion/optics will alter results

Photometric details



ICE is available with the following technology options:

✓ DALI AutoTest®

Provides further benefits by enabling testing and monitoring of an emergency lighting system either on-site or via an internet connection. DALI AutoTest® is ideal for monitoring larger buildings and multiple sites.*

✓ Non-AutoTest®

For applications where self-testing is not required or suitable, the non-AutoTest® option provides the same quality and performance expected of Mackwell products, without the AutoTest® feature.

✓ N-light® EC

Designed to work alongside Redwood's low-voltage, direct current lighting, power and intelligence building platform. Must only be used in-conjunction with the N-light® EC.

*Please note that for AutoTest® products, the start times for the tests are set automatically to ensure random testing of the units at times of minimum risk. As a consequence tests may occur at any time, and caution should be exercised in situations where this might be inconvenient.

* DALI AutoTest® product, the product will default to Mackwell AutoTest® functionality as standard, when not connected to a relevant system.

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Compatible with our N-light® CONNECT DALI monitoring system

ICE is compatible with Mackwell's N-light® CONNECT emergency lighting monitoring system to enable configuration, testing, and supervision of emergency luminaires via a 2-way communication interface.



Compatible with N-light® EC

N-light® EC allows you to power, monitor and test over category cable. The N-light® EC panel is a central component for powering and commissioning emergency lighting systems that works in harmony with general lighting operating on a smart building platform.

Order codes

Non-AutoTest

Order code	Description
9005032	ICE NiCd 2Ah Non-AutoTest 500mm
9005043	ICE NiMH 4Ah Non-AutoTest 500mm

DALI

Order code	Description
9005042	ICE NiMH 4Ah DALI 500mm
9005045	ICE NiCd 2Ah DALI 500mm

N-light® EC

Order code	Description
9005130	ICE NiMH 4Ah N-light EC 500mm
9005131	ICE NiCd 2Ah N-light EC 500mm

WARRANTY

This product is guaranteed for three years and covers faulty workmanship and materials. This "Return to Base" warranty requires that the product is used within the terms and conditions stated above, in our literature and on our website. Products returned to us under warranty must be carriage paid. Mackwell Electronics Ltd. accept no liability for cost incurred.

Mackwell maintains a policy of continuous development and reserves the right to change the details shown on this data sheet without prior notice.

The contents are intended for guidance only.

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