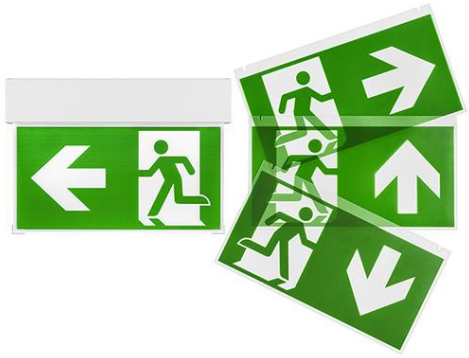
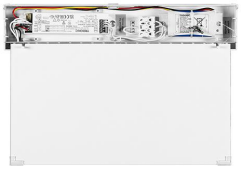
TRIDONIC

EM ready2apply BASIC Exit 30m

EM ready2apply





Product description

_ LED emergency exit sign suitable for various mounting options (ceiling, wall)
_ Complete set with integrated electronics, pictograms (5 pcs. included) and battery
_ Emergency lighting function for manual testing
_ EM = Emergency

Properties

_ Viewing distance up to 30 m, single and double sided
_ Non-maintained and maintained operation
_ Very low stand-by power loss
_ 3 h rated duration
_ Two breakable entrance holes at the back and top
_ Simple connection of Lithium Iron Phosphate battery with plug-in system
_ Integrated status LED and test switch
_ 5 years guarantee electronic (LED driver) (conditions at https://www.tridonic.com/en/int/services/manufacturer-guarantee-conditions)
_ 3 years guarantee battery (conditions at https://www.tridonic.com/en/int/services/manufacturer-guarantee-conditions)

Website

http://www.tridonic.com/28004646

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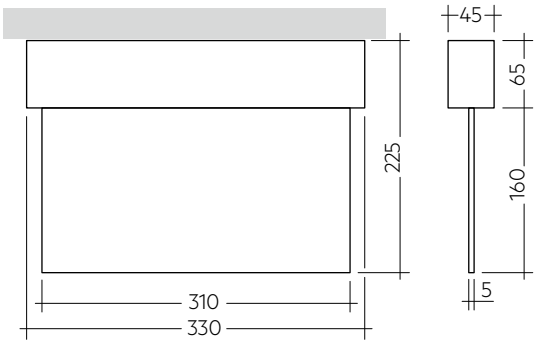


Ordering data

Type	Article number	Rated duration	Number of cells	Packaging, carton	Packaging, pallet	Weight per pc.
EM r2a Exit BASIC 30m	**28004646**	3 h	2	1 pc(s).	198 pc(s).	1 kg

Technical data

Rated supply voltage	220 – 240 V
Input voltage range AC (tolerance for safety)	198 – 264 V
Input voltage range AC (tolerance for performance)	198 – 254 V
Mains frequency	50 / 60 Hz
Overvoltage protection	320 V (for 48 h)
Starting time (Emergency operation)	< 0.5 s from detection of emergency event
Output current tolerance	± 10 %
LF current ripple	± 5 %
Ambient temperature range	+5 … +40 °C
Mains voltage changeover threshold	According to EN 60598-2-22
Type of protection	IP40
Impact protection degree	IK03
Protection class	II
Colour temperature	6,500 K
Colour tolerance	Mac Adams 3
Colour rendering index CRI	> 80
Lifetime	up to 50,000 h

Approval marks

SELV EL CE UKCA RoHS

Standards

EN 50172, EN 55015, EN 60068-2-6, EN 60068-2-30, EN 60598-1, EN 60598-2-2, EN 60598-2-22, EN 61000-3-2, EN 61000-3-3, EN 61347-1, EN 61347-2-7, EN 61347-2-13, EN 61547, EN 62384, IEC 62133 (related to Lithium Iron battery), UN 38.3 (related to Lithium Iron battery), EN 62031, EN 62471, ISO 3864-1, ISO 7010

Specific technical data

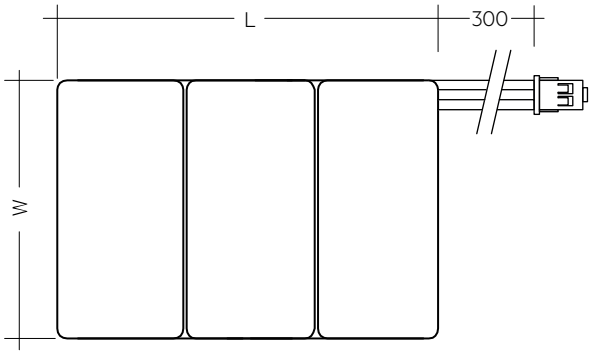
					Non-maintained operation		Maintained operation	
Type①	Rated duration	Number of LEDs	Typ. λ (at 230 V, 50 Hz)	Forward voltage range LED module②③	Mains current in charging④ operation	Mains power in charging④ operation	Mains current in charging④ operation	Mains power in charging④ operation
EM r2a Exit BASIC 30m	3 h	1	0.55C	2.4 – 3.4 V	16 / 9 mA	1.6 / 0.8 W	27 / 21 mA	3.5 / 2.5 W

① EM = Emergency
② When exceeding the rated power of 1 respectively 2 W the LED current is reduced proportionally.
③ Tolerance range for electrical data: ±10 %.
④ For LiFePO4 batteries voltage dependent constant current charging is used. The values displayed are for charging on / charging off.

LiFePO4 Accus 1.5 – 9.0 Ah

Accessory

Side by side



Side by side

Product description
_ High-temperature LiFePO4 cells only for use with Tridonic emergency lighting units
_ LiFePO4: up to 12 years design life
_ 8 years guarantee for LiFePO4 batteries (conditions at https://www.tridonic.com/en/int/services/manufacturer-guarantee-conditions)

Properties
_ Environmental friendly technology
_ High energy density
_ Low profile cross-section with removable end caps
_ Constant high-temperature operation
_ Good charging properties at high temperature
_ Electronic thermal battery management
_ High energy maintenance of the charged battery
_ Long shelf life
_ Integrated electronics
_ Safety features incorporated
_ Certified quality manufacturer
_ In various configurations
_ Simple connection with plug-in system
_ With polycarbonate fixing caps
_ Suitable for emergency lighting equipment as per IEC 60598-2-22

Website
http://www.tridonic.com/28002319

Ordering data

Type	Article number	Number of cells	Capacity	Packaging, carton	Packaging, outer box	Weight per pc.
LiFePO4 cells – side by side, 3.0 – 9.0 Ah						
ACCU-LiFePO4 3.0Ah 2B CON	**28002319**	2 x 1	3.0 Ah	5 pc(s).	25 pc(s).	0.100 kg

1. Standards

according to EN 50172
EN 55015
EN 60068-2-6
according to EN 60068-2-30
EN 60598-1
EN 60598-2-2
EN 60598-2-22
EN 61000-3-2
EN 61000-3-3
EN 61347-1
EN 61347-2-7
EN 61347-2-7/A1
EN 61347-2-13
EN 61347-2-13/A1
EN 61547
EN 62384
IEC 62133 (related to Lithium Iron battery)
UN 38.3 (related to Lithium Iron battery)
EN 62031
EN 62471
ISO 3864-1
ISO 7010

1.1 Glow-wire test

according to EN 60598-1 with increased temperature of 850 °C passed.

2. Thermal data

2.1 Temperature range

According to the standard IEC 60598-1 a LED driver for remote installation has a max. case temperature of 90 °C. The ambient temperature range ta for the EM R2A BASIC is defined to meet this requirement.

2.2 Expected lifetime

Average lifetime 50,000 hours under rated conditions with a failure rate of less than 10 %. Average failure rate of 0.2 % per 1000 operating hours.

Expected lifetime

Type	ta	25 °C	35 °C	40 °C
EM R2A BASIC	lifetime	> 100,000 h	> 50,000 h	50,000 h

2.3 Storage conditions

- Humidity 5 % up to max. 85 %, not condensed (max. 56 days/year at 85 %)

Note: The devices have to be within the specified temperature range (ta) before they are operated.

- Store batteries within the specified temperature range in low humidity conditions. Optimal storage conditions are:
  – Temperature: -20 … +35 °C for up to 15 months
  – Relative humidity: 65 % ±5 %
- Avoid atmosphere with corrosive gas
- Disconnect batteries before store or delivery
- Avoid storage of discharged batteries

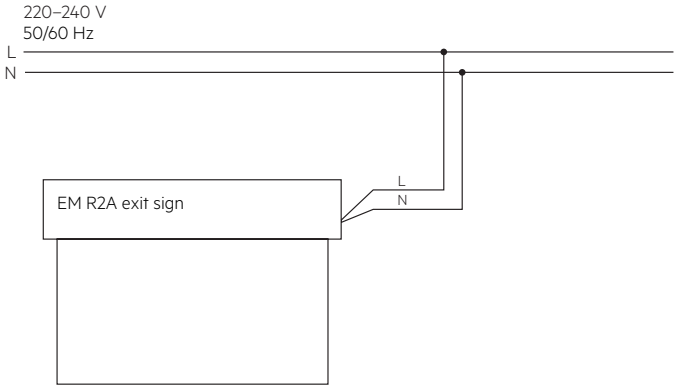
3. Installation / Wiring

3.1 Luminaire assembly

- Wear gloves when mounting the EM ready2apply Exit.
- Use a screwdriver for opening the front cover of the housing.
- Select mounting option:
  - Ceiling
  - Wall
- The mounting holes on the back plate are prepared and can be drilled through with a screwdriver or a drill.
- The mounting holes for ceiling mounting are on the top side and the mounting holes for wall mounting are on the front side of the back plate.
- Fix the back plate on the ceiling or on the wall.
- Wire the mains terminal block
- Plug the battery into the connector.
- Attach the back plate for the pictograms to the back plate of the housing. Fix the back plate with the hook to the cable ties of the battery to prevent it from falling down.
- Fix the front plate of the housing to the back box. A click will be heard when front plate is inserted correctly.
- Attach a pictogram to the back plate and fix it with brackets at the corners.
  For use with one sign: use a white back plate.
  For use with two signs: use without a white back plate.

Take care when drilling to prevent damage to internal components.

3.2 Wiring diagrams

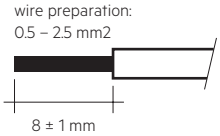


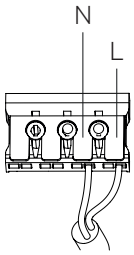
Note: Battery must be connected before mains connection.

3.3 Wiring type and cross-section

Wiring
Mains (N, L)

Cable: low smoke, halogen free





Installation of the luminaire only by a qualified person.

4. Mechanical data

4.1 Housing properties

- Polycarbonate white, similar to RAL 9016

4.2 Battery connection

Battery pack connection
3-pole plug connection

4.3 Fixing

Several mounting options possible:
- Ceiling
- Wall

Two easy breakable entry holes at rear and upper part for cable entry.

5. Electrical data

5.1 Maximum loading of automatic circuit breakers

Automatic circuit breaker type	B10	B13	B16	B20	C10	C13	C16	C20	Inrush current	
Installation Ø	1.5 mm²	1.5 mm²	2.5 mm²	2.5 mm²	1.5 mm²	1.5 mm²	2.5 mm²	2.5 mm²	I_{max}	time
EM R2A BASIC	90	130	130	130	180	260	260	260	5 A	55 µs

5.2 Insulation matrix

	Mains	Switched Live	Battery, LED, Test switch, Indicator LED
Mains	–	•	• •
Switched Live	•	–	• •
Battery, LED, Test switch, Indicator LED	• •	• •	–

• Represents basic insulation

• • Represents double or reinforced insulation

5.3 Battery charge regime / discharge

EM R2A BASIC Exit 30m, 3 h

	Type	**EM R2A BASIC Exit 30m**
	Article no.	**28004646**
	Cells	**2 cells**
	Duration	**3 h**
Battery charge time	Initial	24 h
	Trickle charge	continuously and battery voltage controlled
Typ. charge current[①]	Initial charge	455 – 505 mA
	Trickle charge[①]	455 – 505 mA / 0 mA
Charge voltage range[②]		2.0 – 3.6 V per cell
Discharge voltage range		2.3 – 3.6 V per cell

[①] Automatic recharge when battery voltage falls below 3.4 V. Charger off (0 mA) when battery voltage exceeds 3.6 V.

Note: Battery protected against operation at excessive temperatures (charging stopped when battery cell temperature < 0 °C or > 60 °C)

[②] The battery will not be charged below 2.0 V.

5.4 Battery selection for replacement

EM R2A BASIC Exit 30m, 3 h

				Type	**EM R2A BASIC Exit 30m**
				Article no.	**28004646**
				Cells	**2 cells**
				Duration	**3 h**
Technology and capacity	Design	Number of cells	**Type**	**Article no.**	**Assignable batteries**
Lithium Iron Phosphate 3 Ah	side by side	2 x 1	**ACCU-LiFePO4 3.0Ah 2B CON**	**28002319**	•

Note: If the rated duration of operation cannot be reached the battery must be replaced. Remove mains during battery replacement.

6. Functions

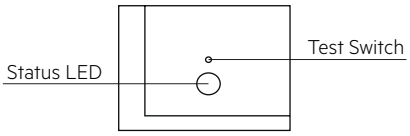
6.1 Status indication

The indication LED is integrated on the bottom left of the housing. A green LED indicates that charging current is flowing into the battery.
The battery is protected against operation at excessive temperatures (charging stops and indication LED turns off when battery cell temperature < 0 °C or > 60 °C).

6.2 Test switch

Test switch is integrated on the bottom left of the housing. This can be used to to execute function test as long as the switch pressed > 1 s

To initiate a test use a suitable tool, refer to drawing below.



Note: Press test switch carefully to avoid damaging it.

6.3 Safety

6.3.1 Deep discharge protection

When the battery remains connected without charging for a long period of time after the battery cut off of the driver the battery voltage can still drop. To make sure the cells are not damaged by this voltage drop, the battery protection prevents the battery from further discharge below 2.0 V.

6.3.2 Overcharge protection

If in case of an error or the use of a wrong driver the battery gets overcharged the battery protection will disconnect the battery from the driver at a voltage of 3.9 V. A discharge of the battery is still possible after the protection circuit was triggered to guarantee emergency operation.

6.3.3 Short-circuit protection

In case of a short circuit the battery protection opens the connection to the driver and the output is therefore free of voltage. The output will be reactivated again when the short circuit is removed.

6.3.4 Temperature protection

The battery is protected against temporary thermal overheating. If the temperature limit is exceeded the further charging of the battery is no longer possible. The temperature protection is activated below approx. 0 °C and above approx. +60 °C. The discharging of the battery is still possible to guarantee emergency operation.

6.4 Technical data batteries

Accu Lithium Iron Phosphate

International designation	IFpR 19/66
Battery voltage/cell	3.2 V
Single cell dimensions	
Diameter	18 mm
Height	65 mm
Capacity two cell pack	3.0 Ah
Max. short term temperature (reduced lifetime)	70 °C
Max. number discharge cycles	50 cycles total
Packing quantity	1 pc. per carton

Comply with UN 38.3 and IEC 62133 (safety testing) protected against over charge, over discharge, charging at excessive temperatures, short-circuit and over current.

For battery data see separate data sheet.

7. Miscellaneous

7.1 Battery replacement

After a battery replacement and a subsequent full charge cycle (24 h) a duration test is mandatory to prove that with the new battery the rated duration is achieved.

Do not damage battery and other components during battery replacement.

7.2 Black Box data recording

Recording of several parameters only accessable for Tridonic.

7.3 Additional information

Additional technical information at www.tridonic.com → Technical Data

The light source of this luminaire is not replaceable; when the light source reaches its end of life replace the whole luminaire. Lifetime declarations are informative and represent no warranty claim. No warranty if device was opened.