

## EM SELFTEST G2, 220 – 240 V SELFTEST version

### Product description

- Emergency lighting supply unit with self-test function
- For linear and compact fluorescent lamps
- Low-profile casing (21 x 30 mm cross-section)
- 5-year guarantee

### Properties

- Non maintained operation
- Self-test as per IEC 62034
- 1 or 3 h rated duration
- Operating time selectable with plug (duration link)
- Compatible with all electronic ballasts
- 5-pole technology: 4-pole lamp changeover and delayed power switching for the ballast
- High-frequency ac operation of the lamp
- Power control technology ensures maximum emergency ballast lumen factors (EBLF) for all lamps
- Gentle on the lamp thanks to preheated lamp start and permanent cathode heating in emergency mode
- 5,5 min. boost start for rapid heating of the lamp, more light in the startup phase and optimum lamp life
- Standard and high ballast lumen factor for 1-hour types
- Electronic multi-level charge system
- „Rest mode“ function
- Automatic commissioning
- Automatic function and duration test at time of low risk
- Two-colour status display LED
- Deep discharge protection
- Very low energy consumption from the battery after activation of the deep discharge protection
- Short-circuit-proof battery connection
- Polarity reversal protection for battery
- Self-test:
  - Status of the battery
  - Status of the lamp
  - Charge condition
  - Function test
  - Duration test



### Batteries

- High-temperature cells
- NiCd or NiMH batteries
- D- Cs- or LA cells
- 4-year design life
- 1-year guarantee
- For battery compatibility refer to chapter „Ballast-Lumen-Factor (BLF)“



**Standards**, page 13

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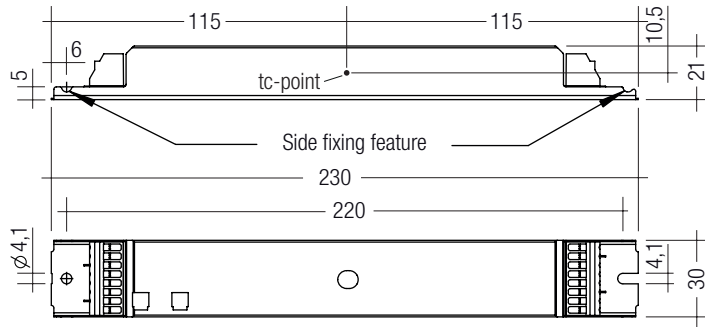


## EM SELFTEST G2, 220 – 240 V

SELFTEST version

### Technical data

|  |   |
|--|---|
| Rated supply voltage                                 | 220 – 240 V                             |
| Mains frequency                                      | 50 / 60 Hz                              |
| Mains current  | 60 mA                                   |
| Rated power  | < 10 W                                  |
| Overvoltage protection                               | 320 V (for 1 h)                         |
| Maximum operating voltage (U-OUT of the ECG)         | 460 V                                   |
| Battery charging time 1 h                            | 10 h                                    |
| Battery charging time 3 h                            | 15 h                                    |
| Discharge current, Standard BLF                      | 1 A                                     |
| Discharge current, High Output BLF                   | 2.2 A                                   |
| Time to light  | 1.2 s from detection of emergency event |
| Leakage current (PE)                                 | 0.5 mA                                  |
| Ambient temperature $t_a$                            | -5 ... +60 °C                           |
| Max. casing temperature $t_c$                        | +70 °C                                  |
| Mains voltage changeover threshold                   | according to EN 60598-2-22              |
| Min. lamp starting temperature (emergency operation) | -5 °C                                   |
| Type of protection                                   | IP20                                    |
| Rest mode max. number of emergency units             | 100                                     |
| Rest mode max. wiring distance                       | 1,000 m                                 |



Note: Control gear supplied with duration link in 3 hours position. Remove duration link for 1 hour duration. Duration link must be set before battery and mains connection.

### Ordering data

| Type®   | Article number | Battery type | Number of cells | Packaging, carton | Packaging, pallet | Weight per pc. |
|---|----------------|--------------|-----------------|-------------------|-------------------|----------------|
| <b>Rated operating time 1/3 h, Standard BLF</b> |                |              |                 |                   |                   |                |
| EM 03 ST G2                                     | 89800198       | NiCd         | 3               | 10 pc(s).         | 700 pc(s).        | 0.156 kg       |
| EM 04 ST G2                                     | 89800201       | NiCd         | 4               | 10 pc(s).         | 700 pc(s).        | 0.156 kg       |
| EM 05 ST G2                                     | 89800204       | NiCd         | 5               | 10 pc(s).         | 700 pc(s).        | 0.156 kg       |
| EM 06 ST G2                                     | 89800207       | NiCd         | 6               | 10 pc(s).         | 700 pc(s).        | 0.156 kg       |
| EM 03 ST NiMH G2                                | 89800336       | NiMH         | 3               | 10 pc(s).         | 700 pc(s).        | 0.156 kg       |
| EM 04 ST NiMH G2                                | 89800337       | NiMH         | 4               | 10 pc(s).         | 700 pc(s).        | 0.156 kg       |
| EM 05 ST NiMH G2                                | 89800338       | NiMH         | 5               | 10 pc(s).         | 700 pc(s).        | 0.156 kg       |
| EM 06 ST NiMH G2                                | 89800339       | NiMH         | 6               | 10 pc(s).         | 700 pc(s).        | 0.156 kg       |
| <b>Rated operating time 1 h, High Output</b>    |                |              |                 |                   |                   |                |
| EM 13 HO ST G2                                  | 89800229       | NiCd         | 3               | 10 pc(s).         | 700 pc(s).        | 0.156 kg       |
| EM 14 HO ST G2                                  | 89800232       | NiCd         | 4               | 10 pc(s).         | 700 pc(s).        | 0.156 kg       |
| EM 15 HO ST G2                                  | 89800235       | NiCd         | 5               | 10 pc(s).         | 700 pc(s).        | 0.156 kg       |
| EM 16 HO ST G2                                  | 89800238       | NiCd         | 6               | 10 pc(s).         | 700 pc(s).        | 0.156 kg       |
| EM 13 HO ST NiMH G2                             | 89800340       | NiMH         | 3               | 10 pc(s).         | 700 pc(s).        | 0.156 kg       |
| EM 14 HO ST NiMH G2                             | 89800341       | NiMH         | 4               | 10 pc(s).         | 700 pc(s).        | 0.156 kg       |
| EM 15 HO ST NiMH G2                             | 89800342       | NiMH         | 5               | 10 pc(s).         | 700 pc(s).        | 0.156 kg       |
| EM 16 HO ST NiMH G2                             | 89800343       | NiMH         | 6               | 10 pc(s).         | 700 pc(s).        | 0.156 kg       |

## Specific technical data

| Type <sup>①</sup>                             | Charge current / Battery charging time |                          |                                  |
|---|--|--------------------------|----------------------------------|
|   | Initial charge / duration              | Fast recharge / duration | Trickle charge, continuously     |
| <b>Rated operating time 1 h, Standard BLF</b> |  |                          |                                  |
| EM 03 ST G2                                   | 130 mA / 20 h                          | 210 mA / 10 h            | 50 mA                            |
| EM 04 ST G2                                   | 130 mA / 20 h                          | 210 mA / 10 h            | 50 mA                            |
| EM 05 ST G2                                   | 130 mA / 20 h                          | 210 mA / 10 h            | 50 mA                            |
| EM 06 ST G2                                   | 130 mA / 20 h                          | 210 mA / 10 h            | 50 mA                            |
| EM 03 ST NiMH G2                              | 130 mA / 20 h                          | 210 mA / 10 h            | 130 mA / 4 min. – 0 mA / 16 min. |
| EM 04 ST NiMH G2                              | 130 mA / 20 h                          | 210 mA / 10 h            | 130 mA / 4 min. – 0 mA / 16 min. |
| EM 05 ST NiMH G2                              | 130 mA / 20 h                          | 210 mA / 10 h            | 130 mA / 4 min. – 0 mA / 16 min. |
| EM 06 ST NiMH G2                              | 130 mA / 20 h                          | 210 mA / 10 h            | 130 mA / 4 min. – 0 mA / 16 min. |
| <b>Rated operating time 3 h, Standard BLF</b> |  |                          |                                  |
| EM 03 ST G2                                   | 300 mA / 20 h                          | 330 mA / 15 h            | 130 mA                           |
| EM 04 ST G2                                   | 300 mA / 20 h                          | 330 mA / 15 h            | 130 mA                           |
| EM 05 ST G2                                   | 300 mA / 20 h                          | 330 mA / 15 h            | 130 mA                           |
| EM 06 ST G2                                   | 300 mA / 20 h                          | 330 mA / 15 h            | 130 mA                           |
| EM 03 ST NiMH G2                              | 300 mA / 20 h                          | 330 mA / 15 h            | 200 mA / 4 min. – 0 mA / 16 min. |
| EM 04 ST NiMH G2                              | 300 mA / 20 h                          | 330 mA / 15 h            | 200 mA / 4 min. – 0 mA / 16 min. |
| EM 05 ST NiMH G2                              | 300 mA / 20 h                          | 330 mA / 15 h            | 200 mA / 4 min. – 0 mA / 16 min. |
| EM 06 ST NiMH G2                              | 300 mA / 20 h                          | 330 mA / 15 h            | 200 mA / 4 min. – 0 mA / 16 min. |
| <b>Rated operating time 1 h, High Output</b>  |  |                          |                                  |
| EM 13 HO ST G2                                | 300 mA / 20 h                          | 330 mA / 15 h            | 130 mA                           |
| EM 14 HO ST G2                                | 300 mA / 20 h                          | 330 mA / 15 h            | 130 mA                           |
| EM 15 HO ST G2                                | 300 mA / 20 h                          | 330 mA / 15 h            | 130 mA                           |
| EM 16 HO ST G2                                | 300 mA / 20 h                          | 330 mA / 15 h            | 130 mA                           |
| EM 13 HO ST NiMH G2                           | 300 mA / 20 h                          | 330 mA / 15 h            | 200 mA / 4 min. – 0 mA / 16 min. |
| EM 14 HO ST NiMH G2                           | 300 mA / 20 h                          | 330 mA / 15 h            | 200 mA / 4 min. – 0 mA / 16 min. |
| EM 15 HO ST NiMH G2                           | 300 mA / 20 h                          | 330 mA / 15 h            | 200 mA / 4 min. – 0 mA / 16 min. |
| EM 16 HO ST NiMH G2                           | 300 mA / 20 h                          | 330 mA / 15 h            | 200 mA / 4 min. – 0 mA / 16 min. |

<sup>①</sup> EM = Emergency

RoHS

ACCES-  
SORIES

### Test switch EM3

#### Product description

- For connection to the emergency lighting unit
- For checking the device function
- Plug connection



#### Ordering data

| Type             | Article number | Packaging, bag | Packaging, carton | Weight per pcs. |
|------------------|----------------|----------------|-------------------|-----------------|
| Test switch EM 3 | 89899956       | 25 pc(s).      | 200 pc(s).        | 0.013 kg        |

ACCES-  
SORIES

### Status indication bi-colour LED

#### Product description

- Two-colour status display LED
- Green: system OK, red: fault
- Plug connection



#### Ordering data

| Type   | Article number | Packaging, bag | Packaging, carton | Weight per pcs. |
|--|----------------|----------------|-------------------|-----------------|
| LED EM bi-colour, 1.0 m CON                    | 89800273       | 25 pc(s).      | 200 pc(s).        | 0.015 kg        |
| LED EM bi-colour, high brightness HO 1.0 m CON | 89800275       | 25 pc(s).      | 200 pc(s).        | 0.015 kg        |
| LED EM bi-colour, 0.6 m CON                    | 89800474       | 25 pc(s).      | 200 pc(s).        | 0.005 kg        |
| LED EM bi-colour, high brightness HO 0.6 m CON | 89800475       | 25 pc(s).      | 200 pc(s).        | 0.005 kg        |
| LED EM bi-colour, 0.3 m CON                    | 89800274       | 25 pc(s).      | 200 pc(s).        | 0.005 kg        |
| LED EM bi-colour, high brightness HO 0.3 m CON | 89800276       | 25 pc(s).      | 200 pc(s).        | 0.005 kg        |

**Ballast lumen factor (BLF) in %**

**EM SELFTTEST G2 for linear lamps, 3 or 1 h**

| Duration  | 1/3 h Standard BLF   |             |             |             |                  |                  |                  |                  |
|-----------|--|-------------|-------------|-------------|------------------|------------------|------------------|------------------|
|           | 3 cells  | 4 cells     | 5 cells     | 6 cells     | 3 cells          | 4 cells          | 5 cells          | 6 cells          |
| Type      | EM 03 ST G2  | EM 04 ST G2 | EM 05 ST G2 | EM 06 ST G2 | EM 03 ST NiMH G2 | EM 04 ST NiMH G2 | EM 05 ST NiMH G2 | EM 06 ST NiMH G2 |
| Art. no.  | 89800198   | 89800201    | 89800204    | 89800207    | 89800336         | 89800337         | 89800338         | 89800339         |
| Lamp type | Wattage  |             |             |             |                  |                  |                  |                  |
|           | BLF in emergency lighting mode in % for rated operating time |             |             |             |                  |                  |                  |                  |
| T5        | 6 W  |             |             |             |                  |                  |                  |                  |
|           | 8 W  | 32.4        | 40.0        |             |                  | 32.4             | 40.0             |                  |
|           | 13 W   |             |             |             |                  |                  |                  |                  |
| ECO T5    | 13 W   |             | 22.0        |             |                  |                  | 22.0             |                  |
|           | 20 W   |             | 15.4        |             |                  |                  | 15.4             |                  |
|           | 25 W   |             |             |             | 16.8             |                  |                  | 16.8             |
|           | 32 W   |             |             |             | 13.4             |                  |                  | 13.4             |
|           | 45 W   |             |             |             | 8.1              |                  |                  | 8.1              |
|           | 50 W   |             |             |             | 5.8              |                  |                  | 5.8              |
|           | 73 W   |             |             |             | 4.1              |                  |                  | 4.1              |
| T5 FH     | 14 W   |             | 24.0        |             |                  | 24.0             |                  |                  |
|           | 21 W   |             |             | 18.0        |                  |                  | 18.0             |                  |
|           | 28 W   |             |             |             | 15.0             |                  |                  | 15.0             |
|           | 35 W   |             |             |             | 11.0             |                  |                  | 11.0             |
| T5 FO     | 24 W   |             | 15.6        |             |                  | 15.6             |                  |                  |
|           | 39 W   |             |             |             | 10.0             |                  |                  | 10.0             |
|           | 49 W   |             |             |             | 6.7              |                  |                  | 6.7              |
|           | 54 W   |             |             |             | 5.3              |                  |                  | 5.3              |
|           | 80 W   |             |             |             | 4.2              |                  |                  | 4.2              |
| T8        | 15 W   |             | 17.0        |             |                  | 17.0             |                  |                  |
|           | 18 W   |             | 18.0        |             |                  | 18.0             |                  |                  |
|           | 30 W   |             |             |             |                  |                  |                  |                  |
|           | 36 W   |             | 11.0        |             |                  | 11.0             |                  |                  |
|           | 38 W   |             |             |             |                  |                  |                  |                  |
|           | 58 W   |             |             | 7.5         |                  |                  | 7.5              |                  |
| 70 W      |  |             |             | 4.5         |                  |                  | 4.5              |                  |

| Technology and capacity | Design        | Number of cells      | Type                 | Article number | Assignable batteries |     |     |     |     |     |     |  |  |
|-------------------------|---------------|----------------------|----------------------|----------------|----------------------|-----|-----|-----|-----|-----|-----|--|--|
| NiCd 4 Ah D cells       | Stick         | 3                    | Accu-NiCd 3A         | 89895960       | 3 h                  |     |     |     |     |     |     |  |  |
|                         | Side by side  | 3                    | Accu-NiCd 3B 55      | 89800384       | 3 h                  |     |     |     |     |     |     |  |  |
|                         | Stick         | 4                    | Accu-NiCd 4A 55      | 89800089       |                      | 3 h |     |     |     |     |     |  |  |
|                         | Side by side  | 4                    | Accu-NiCd 4B 55      | 89800385       |                      | 3 h |     |     |     |     |     |  |  |
|                         | Stick + Stick | 2 + 2                | Accu-NiCd 4C         | 89895978       |                      | 3 h |     |     |     |     |     |  |  |
|                         | Stick         | 5                    | Accu-NiCd 5A         | 89895973       |                      | 3 h |     |     |     |     |     |  |  |
|                         | Stick + Stick | 2 + 3                | Accu-NiCd 5C 55      | 89800090       |                      | 3 h |     |     |     |     |     |  |  |
| NiMH 2.2Ah Cs cells     | Stick + Stick | 3 + 3                | Accu-NiCd 6C 55      | 89800388       |                      |     | 3 h |     |     |     |     |  |  |
|                         | Stick         | 3                    | Accu-NiMH 3A         | 28002088       | 1 h                  |     |     | 1 h |     |     |     |  |  |
|                         | Stick         | 4                    | Accu-NiMH 4A         | 28002089       |                      | 1 h |     |     | 1 h |     |     |  |  |
|                         | Stick         | 5                    | Accu-NiMH 5A         | 28002090       |                      |     | 1 h |     |     | 1 h |     |  |  |
|                         | Stick         | 6                    | Accu-NiMH 6A         | 28002091       |                      |     | 1 h |     |     |     | 1 h |  |  |
| NiMH 4 Ah LA cells      | Stick + Stick | 3 + 3                | Accu-NiMH 6C         | 28002092       |                      |     | 1 h |     |     |     | 1 h |  |  |
|                         | Stick         | 3                    | Accu-NiMH 4Ah 3A CON | 89800441       |                      |     |     | 3 h |     |     |     |  |  |
|                         | Stick         | 4                    | Accu-NiMH 4Ah 4A CON | 89800442       |                      |     |     |     | 3 h |     |     |  |  |
|                         | Stick + Stick | 2 + 2                | Accu-NiMH 4Ah 4C CON | 89800438       |                      |     |     |     | 3 h |     |     |  |  |
|                         | Stick + Stick | 2 + 3                | Accu-NiMH 4Ah 5C CON | 89800439       |                      |     |     |     |     | 3 h |     |  |  |
| Stick + Stick           | 3 + 3         | Accu-NiMH 4Ah 6C CON | 89800440             |                |                      |     |     |     |     |     | 3 h |  |  |

### Ballast lumen factor (BLF) in %

#### EM SELFTEST G2 for compact lamps, 3 or 1 h

| Lamp type           | Duration          | 1/3 h Standard BLF   |             |             |             |                  |                  |                  |                  |
|---------------------|-------------------|--|-------------|-------------|-------------|------------------|------------------|------------------|------------------|
|                     |                   | 3 cells  | 4 cells     | 5 cells     | 6 cells     | 3 cells          | 4 cells          | 5 cells          | 6 cells          |
| Type                |                   | EM 03 ST G2  | EM 04 ST G2 | EM 05 ST G2 | EM 06 ST G2 | EM 03 ST NiMH G2 | EM 04 ST NiMH G2 | EM 05 ST NiMH G2 | EM 06 ST NiMH G2 |
| Article no.         |                   | 89800198   | 89800201    | 89800204    | 89800207    | 89800336         | 89800337         | 89800338         | 89800339         |
| Wattage             |                   | BLF in emergency lighting mode in % for rated operating time |             |             |             |                  |                  |                  |                  |
| TC-DD               | 10 W              |  |             |             |             |                  |                  |                  |                  |
|                     | 16 W              |  | 23.6        |             |             |                  | 23.6             |                  |                  |
|                     | 21 W              |  | 15.4        |             |             |                  | 15.4             |                  |                  |
|                     | 28 W              |  | 13.7        |             |             |                  | 13.7             |                  |                  |
|                     | 38 W              |  |             |             | 10.3        |                  |                  |                  | 10.3             |
|                     | 55 W              |  |             |             | 5.9         |                  |                  |                  | 5.9              |
| TC-SEL              | 7 W               |  |             |             |             |                  |                  |                  |                  |
|                     | 9 W               | 18.3   | 27.6        |             |             | 18.3             | 27.6             |                  |                  |
|                     | 11 W              | 17.4   | 31.0        |             |             | 17.4             | 31.0             |                  |                  |
| TC-DEL              | 10 W              |  |             |             |             |                  |                  |                  |                  |
|                     | 13 W              | 18.6   | 25.6        |             |             | 18.6             | 25.6             |                  |                  |
|                     | 18 W              |  | 17.0        |             |             |                  | 17.0             |                  |                  |
|                     | 26 W              |  | 14.4        |             |             |                  | 14.4             |                  |                  |
| TC-TEL <sup>®</sup> | 13 W              | 17.0 / 10.9  | 25.2 / 17.1 |             |             | 17.0 / 10.9      | 25.2 / 17.1      |                  |                  |
|                     | 18 W              |  | 17.5 / 14.1 | 17.8 / 21.0 |             |                  | 17.5 / 14.1      | 17.8 / 21.0      |                  |
|                     | 26 W <sup>®</sup> |  | 11.5 / 10.0 | 13.0        | 14.0        |                  | 11.5 / 10.0      | 13.0             | 14.0             |
|                     | 32 W <sup>®</sup> |  |             | 14.0 / 5.6  | x / 8.0     |                  |                  | 14.0 / 5.6       | x / 8.0          |
|                     | 42 W              |  |             |             | 7.4 / 7.3   |                  |                  |                  | 7.4 / 7.3        |
|                     | 57 W              |  |             |             |             |                  |                  |                  |                  |
| T5c                 | 22 W              |  | 16.9        |             |             |                  | 16.9             |                  |                  |
|                     | 40 W              |  |             |             | 7.4         |                  |                  |                  | 7.4              |
|                     | 55 W              |  |             |             | 5.1         |                  |                  |                  | 5.1              |
| TC-F                | 18 W              |  | 18.0        |             |             |                  | 18.0             |                  |                  |
|                     | 24 W              |  |             | 21.0        |             |                  |                  | 21.0             |                  |
|                     | 36 W              |  |             | 13.0        |             |                  |                  | 13.0             |                  |
| TC-L                | 18 W              |  | 17.4        |             |             |                  | 17.4             |                  |                  |
|                     | 24 W              |  |             | 17.0        |             |                  |                  | 17.0             |                  |
|                     | 36 W              |  |             | 12.0        |             |                  |                  | 12.0             |                  |
|                     | 40 W              |  |             | 8.8         |             |                  |                  | 8.8              |                  |
|                     | 55 W              |  |             |             | 5.4         |                  |                  |                  | 5.4              |
| TC-R                | 14 W              |  | 20.0        |             |             |                  | 20.0             |                  |                  |
|                     | 17 W              |  | 15.0        |             |             |                  | 15.0             |                  |                  |

| Technology and capacity | Design        | Number of cells | Type                 | Article number | Assignable batteries |     |     |     |     |
|-------------------------|---------------|-----------------|----------------------|----------------|----------------------|-----|-----|-----|-----|
| NiCd 4 Ah<br>D cells    | Stick         | 3               | Accu-NiCd 3A         | 89895960       | 3 h                  |     |     |     |     |
|                         | Side by side  | 3               | Accu-NiCd 3B 55      | 89800384       | 3 h                  |     |     |     |     |
|                         | Stick         | 4               | Accu-NiCd 4A 55      | 89800089       |                      | 3 h |     |     |     |
|                         | Side by side  | 4               | Accu-NiCd 4B 55      | 89800385       |                      | 3 h |     |     |     |
|                         | Stick + Stick | 2+2             | Accu-NiCd 4C         | 89895978       |                      | 3 h |     |     |     |
|                         | Stick         | 5               | Accu-NiCd 5A         | 89895973       |                      | 3 h |     |     |     |
|                         | Stick + Stick | 2+3             | Accu-NiCd 5C 55      | 89800090       |                      | 3 h |     |     |     |
| NiMH 2.2 Ah<br>Cs cells | Stick + Stick | 3+3             | Accu-NiCd 6C 55      | 89800388       |                      |     | 3 h |     |     |
|                         | Stick         | 3               | Accu-NiMH 3A         | 28002088       | 1 h                  |     |     | 1 h |     |
|                         | Stick         | 4               | Accu-NiMH 4A         | 28002089       |                      | 1 h |     | 1 h |     |
|                         | Stick         | 5               | Accu-NiMH 5A         | 28002090       |                      | 1 h |     |     | 1 h |
|                         | Stick         | 6               | Accu-NiMH 6A         | 28002091       |                      | 1 h |     |     | 1 h |
| NiMH 4 Ah<br>LA cells   | Stick + Stick | 3+3             | Accu-NiMH 6C         | 28002092       |                      | 1 h |     |     | 1 h |
|                         | Stick         | 3               | Accu-NiMH 4Ah 3A CON | 89800441       |                      |     | 3 h |     |     |
|                         | Stick         | 4               | Accu-NiMH 4Ah 4A CON | 89800442       |                      |     |     | 3 h |     |
|                         | Stick + Stick | 2 + 2           | Accu-NiMH 4Ah 4C CON | 89800438       |                      |     |     | 3 h |     |
|                         | Stick + Stick | 2 + 3           | Accu-NiMH 4Ah 5C CON | 89800439       |                      |     |     |     | 3 h |
|                         | Stick + Stick | 3 + 3           | Accu-NiMH 4Ah 6C CON | 89800440       |                      |     |     |     | 3 h |

<sup>®</sup> The first figure is related to non-amalgam lamps, the second figure is related to amalgam lamps (e.g. 14 / 9.5).

<sup>®</sup> For best performance of 26W and 32W TC lamps, and especially amalgam filled lamps, we recommend the use of EM 06 ST G2 resp. EM 16 HO ST G2.

**Ballast lumen factor (BLF) in %**

**EM SELFTTEST G2 for linear lamps, 1 h High Output**

| Lamp type  | Wattage | 1 h High Output BLF |                |                |                |                     |                     |                     |                     |
|--|---------|---------------------|----------------|----------------|----------------|---------------------|---------------------|---------------------|---------------------|
|  |         | 3 cells             | 4 cells        | 5 cells        | 6 cells        | 3 cells             | 4 cells             | 5 cells             | 6 cells             |
| Type   |         | EM 13 HO ST G2      | EM 14 HO ST G2 | EM 15 HO ST G2 | EM 16 HO ST G2 | EM 13 HO ST NiMH G2 | EM 14 HO ST NiMH G2 | EM 15 HO ST NiMH G2 | EM 16 HO ST NiMH G2 |
| Art. no.   |         | 89800229            | 89800232       | 89800235       | 89800238       | 89800340            | 89800341            | 89800342            | 89800343            |
| BLF in emergency lighting mode in % for rated operating time |         |                     |                |                |                |                     |                     |                     |                     |
| T5   | 6 W     |                     |                |                |                |                     |                     |                     |                     |
|  | 8 W     | 58.0                | 68.0           |                |                | 58.0                | 68.0                |                     |                     |
|  | 13 W    |                     |                |                |                |                     |                     |                     |                     |
| ECO T5   | 13 W    |                     | 47.0           |                |                |                     | 47.0                |                     |                     |
|  | 20 W    |                     | 33.0           |                |                |                     | 33.0                |                     |                     |
|  | 25 W    |                     |                |                | 41.0           |                     |                     |                     | 41.0                |
|  | 32 W    |                     |                |                | 32.7           |                     |                     |                     | 32.7                |
|  | 45 W    |                     |                |                | 31.6           |                     |                     |                     | 31.6                |
|  | 50 W    |                     |                |                | 22.6           |                     |                     |                     | 22.6                |
| T5 FH  | 73 W    |                     |                |                | 16.0           |                     |                     |                     | 16.0                |
|  | 14 W    |                     | 46.0           |                |                |                     | 46.0                |                     |                     |
|  | 21 W    |                     |                | 41.0           |                |                     |                     | 41.0                |                     |
|  | 28 W    |                     |                |                | 39.0           |                     |                     |                     | 39.0                |
| T5 FQ  | 35 W    |                     |                |                | 28.6           |                     |                     |                     | 28.6                |
|  | 24 W    |                     | 33.4           |                |                |                     | 33.4                |                     |                     |
|  | 39 W    |                     |                |                | 34.3           |                     |                     |                     | 34.3                |
|  | 49 W    |                     |                |                | 23.0           |                     |                     |                     | 23.0                |
|  | 54 W    |                     |                |                | 18.2           |                     |                     |                     | 18.2                |
| T8   | 80 W    |                     |                |                | 14.4           |                     |                     |                     | 14.4                |
|  | 15 W    |                     | 37.6           |                |                |                     | 37.6                |                     |                     |
|  | 18 W    |                     | 39.8           |                |                |                     | 39.8                |                     |                     |
|  | 30 W    |                     |                |                |                |                     |                     |                     |                     |
|  | 36 W    |                     | 21.0           |                |                |                     | 21.0                |                     |                     |
|  | 38 W    |                     |                |                |                |                     |                     |                     |                     |
| 58 W   |         |                     | 18.0           |                |                |                     |                     | 18.0                |                     |
| 70 W   |         |                     |                |                |                |                     |                     |                     |                     |

| Technology and capacity | Design        | Number of cells | Type                 | Article number | Assignable batteries |     |     |     |     |
|-------------------------|---------------|-----------------|----------------------|----------------|----------------------|-----|-----|-----|-----|
| NiCd 4 Ah D cells       | Stick         | 3               | Accu-NiCd 3A         | 89895960       | 1 h                  |     |     |     |     |
|                         | Stick         | 4               | Accu-NiCd 4A 55      | 89800089       |                      | 1 h |     |     |     |
|                         | Side by side  | 4               | Accu-NiCd 4B         | 89895977       |                      | 1 h |     |     |     |
|                         | Stick + Stick | 2 + 2           | Accu-NiCd 4C         | 89895978       |                      | 1 h |     |     |     |
|                         | Stick         | 5               | Accu-NiCd 5A         | 89895973       |                      |     | 1 h |     |     |
|                         | Stick + Stick | 2 + 3           | Accu-NiCd 5C 55      | 89800090       |                      |     | 1 h |     |     |
| NiMH 4 Ah LA cells      | Stick + Stick | 3 + 3           | Accu-NiCd 6C         | 89895963       |                      |     | 1 h |     |     |
|                         | Stick         | 3               | Accu-NiMH 4Ah 3A CON | 89800441       |                      |     | 1 h |     |     |
|                         | Stick         | 4               | Accu-NiMH 4Ah 4A CON | 89800442       |                      |     |     | 1 h |     |
|                         | Stick + Stick | 2 + 2           | Accu-NiMH 4Ah 4C CON | 89800438       |                      |     |     | 1 h |     |
|                         | Stick + Stick | 2 + 3           | Accu-NiMH 4Ah 5C CON | 89800439       |                      |     |     |     | 1 h |
|                         | Stick + Stick | 3 + 3           | Accu-NiMH 4Ah 6C CON | 89800440       |                      |     |     |     | 1 h |

Ballast lumen factor (BLF) in %

EM SELFTEST G2 for compact lamps, 1 h High Output

|                     | Duration          | 1 h High Output BLF  |                |                |                |                     |                     |                     |                     |
|---------------------|-------------------|--|----------------|----------------|----------------|---------------------|---------------------|---------------------|---------------------|
|                     |                   | Cells  | 3 cells        | 4 cells        | 5 cells        | 6 cells             | 3 cells             | 4 cells             | 5 cells             |
| Type                |                   | EM 13 HO ST G2   | EM 14 HO ST G2 | EM 15 HO ST G2 | EM 16 HO ST G2 | EM 13 HO ST NiMH G2 | EM 14 HO ST NiMH G2 | EM 15 HO ST NiMH G2 | EM 16 HO ST NiMH G2 |
| Article no.         |                   | 89800229   | 89800232       | 89800235       | 89800238       | 89800340            | 89800341            | 89800342            | 89800343            |
| Lamp type           | Wattage           | BLF in emergency lighting mode in % for rated operating time |                |                |                |                     |                     |                     |                     |
| TC-DD               | 10 W              |  |                |                |                |                     |                     |                     |                     |
|                     | 16 W              |  |                |                |                |                     |                     |                     |                     |
|                     | 21 W              |  |                |                |                |                     |                     |                     |                     |
|                     | 28 W              |  |                |                |                |                     |                     |                     |                     |
|                     | 38 W              |  |                |                |                |                     |                     |                     |                     |
|                     | 55 W              |  |                |                |                |                     |                     |                     |                     |
| TC-SEL              | 7 W               |  |                |                |                |                     |                     |                     |                     |
|                     | 9 W               | 46.3   | 42.8           |                |                | 46.3                | 42.8                |                     |                     |
|                     | 11 W              | 44.0   | 48.0           |                |                | 44.0                | 48.0                |                     |                     |
| TC-DEL              | 10 W              |  |                |                |                |                     |                     |                     |                     |
|                     | 13 W              | 43.0   | 53.0           |                |                | 43.0                | 53.0                |                     |                     |
|                     | 18 W              |  | 39.3           |                |                |                     | 39.3                |                     |                     |
|                     | 26 W              |  | 29.8           |                |                |                     | 29.8                |                     |                     |
|                     | 55 W              |  |                |                |                |                     |                     |                     |                     |
| TC-TEL <sup>®</sup> | 13 W              | 39.3 / 38.0  | 52.2 / 48.0    |                |                | 39.3 / 38.0         | 52.2 / 48.0         |                     |                     |
|                     | 18 W              |  | 37.3 / 35.3    |                |                |                     | 37.3 / 35.3         |                     |                     |
|                     | 26 W <sup>®</sup> |  | 28.0 / 25.0    |                |                |                     | 28.0 / 25.0         |                     |                     |
|                     | 32 W <sup>®</sup> |  |                | 28.5 / 9.1     |                |                     |                     | 28.5 / 9.1          |                     |
|                     | 42 W              |  |                | 15.0 / 18.0    |                |                     |                     | 15.0 / 18.0         |                     |
|                     | 57 W              |  |                |                |                |                     |                     |                     |                     |
| T5c                 | 22 W              |  | 36.2           |                |                |                     | 36.2                |                     |                     |
|                     | 40 W              |  |                |                | 25.4           |                     |                     |                     | 25.4                |
|                     | 55 W              |  |                |                | 17.5           |                     |                     |                     | 17.5                |
| TC-F                | 18 W              |  | 31.0           |                |                |                     | 31.0                |                     |                     |
|                     | 24 W              |  |                | 40.3           |                |                     |                     | 40.3                |                     |
|                     | 36 W              |  |                | 25.0           |                |                     |                     | 25.0                |                     |
| TC-L                | 18 W              |  | 33.0           |                |                |                     | 33.0                |                     |                     |
|                     | 24 W              |  |                | 37.4           |                |                     |                     | 37.4                |                     |
|                     | 36 W              |  |                | 30.6           |                |                     |                     | 30.6                |                     |
|                     | 40 W              |  |                | 22.5           |                |                     |                     | 22.5                |                     |
|                     | 55 W              |  |                |                |                |                     |                     |                     |                     |
| TC-R                | 14 W              |  | 52.7           |                |                |                     | 52.7                |                     |                     |
|                     | 17 W              |  | 39.5           |                |                |                     | 39.5                |                     |                     |

| Technology and capacity | Design        | Number of cells | Type                 | Article number | Assignable batteries |     |     |     |     |
|-------------------------|---------------|-----------------|----------------------|----------------|----------------------|-----|-----|-----|-----|
| NiCd 4 Ah D cells       | Stick         | 3               | Accu-NiCd 3A         | 89895960       | 1 h                  |     |     |     |     |
|                         | Stick         | 4               | Accu-NiCd 4A 55      | 89800089       |                      | 1 h |     |     |     |
|                         | Side by side  | 4               | Accu-NiCd 4B         | 89895977       |                      | 1 h |     |     |     |
|                         | Stick + Stick | 2+2             | Accu-NiCd 4C         | 89895978       |                      | 1 h |     |     |     |
|                         | Stick         | 5               | Accu-NiCd 5A         | 89895973       |                      | 1 h |     |     |     |
|                         | Stick + Stick | 2+3             | Accu-NiCd 5C 55      | 89800090       |                      | 1 h |     |     |     |
|                         | Stick + Stick | 3+3             | Accu-NiCd 6C         | 89895963       |                      | 1 h |     |     |     |
| NiMH 4 Ah LA cells      | Stick         | 3               | Accu-NiMH 4Ah 3A CON | 89800441       |                      |     | 1 h |     |     |
|                         | Stick         | 4               | Accu-NiMH 4Ah 4A CON | 89800442       |                      |     |     | 1 h |     |
|                         | Stick + Stick | 2+2             | Accu-NiMH 4Ah 4C CON | 89800438       |                      |     |     | 1 h |     |
|                         | Stick + Stick | 2+3             | Accu-NiMH 4Ah 5C CON | 89800439       |                      |     |     |     | 1 h |
|                         | Stick + Stick | 3+3             | Accu-NiMH 4Ah 6C CON | 89800440       |                      |     |     |     | 1 h |

<sup>®</sup> The first figure is related to non-amalgam lamps, the second figure is related to amalgam lamps (e.g. 14 / 9,5).

<sup>®</sup> For best performance of 26W and 32W TC lamps, and especially amalgam filled lamps, we recommend the use of EM 06 ST G2 resp. EM 16 HO ST G2.



Emergency Ballast Lumen Factor (EBLF) in %<sup>①</sup>

## EM SELFTTEST G2, 3 or 1 h

|                     | Duration          | 1/3 h Standard BLF  |                |                |                |                     |                     |                     |                     |
|---------------------|-------------------|---|----------------|----------------|----------------|---------------------|---------------------|---------------------|---------------------|
|                     |                   | 3 cells   | 4 cells        | 5 cells        | 6 cells        | 3 cells             | 4 cells             | 5 cells             | 6 cells             |
|                     | Cells             | EM 03<br>ST G2  | EM 04<br>ST G2 | EM 05<br>ST G2 | EM 06<br>ST G2 | EM 03 ST<br>NiMH G2 | EM 04 ST<br>NiMH G2 | EM 05 ST<br>NiMH G2 | EM 06 ST<br>NiMH G2 |
|                     | Article no.       | 89800198  | 89800201       | 89800204       | 89800207       | 89800336            | 89800337            | 89800338            | 89800339            |
| Lamp type           | Wattage           | EBLF in emergency lighting mode in % for rated operating time |                |                |                |                     |                     |                     |                     |
| T5                  | 6 W               |   |                |                |                |                     |                     |                     |                     |
|                     | 8 W               | 29.0  | 36.0           |                |                | 29.0                | 36.0                |                     |                     |
|                     | 13 W              |   |                |                |                |                     |                     |                     |                     |
| ECO T5              | 13 W              |   | 19.7           |                |                |                     | 19.7                |                     |                     |
|                     | 20 W              |   | 13.9           |                |                |                     | 13.9                |                     |                     |
|                     | 25 W              |   |                |                | 14.9           |                     |                     |                     | 14.9                |
|                     | 32 W              |   |                |                | 11.9           |                     |                     |                     | 11.9                |
|                     | 45 W              |   |                |                | 7.3            |                     |                     |                     | 7.3                 |
|                     | 50 W              |   |                |                | 5.9            |                     |                     |                     | 5.9                 |
|                     | 73 W              |   |                |                | 4.1            |                     |                     |                     | 4.1                 |
| T5 FH               | 14 W              |   | 22.0           |                |                |                     | 22.0                |                     |                     |
|                     | 21 W              |   |                | 17.0           |                |                     |                     | 17.0                |                     |
|                     | 28 W              |   |                |                | 14.0           |                     |                     |                     | 14.0                |
|                     | 35 W              |   |                |                | 10.5           |                     |                     |                     | 10.5                |
| T5 FQ               | 24 W              |   | 14.1           |                |                |                     | 14.1                |                     |                     |
|                     | 39 W              |   |                |                | 9.1            |                     |                     |                     | 9.1                 |
|                     | 49 W              |   |                |                | 6.4            |                     |                     |                     | 6.4                 |
|                     | 54 W              |   |                |                | 5.7            |                     |                     |                     | 5.7                 |
|                     | 80 W              |   |                |                | 4.2            |                     |                     |                     | 4.2                 |
| T8                  | 15 W              |   | 16.0           |                |                |                     | 16.0                |                     |                     |
|                     | 18 W              |   | 16.5           |                |                |                     | 16.5                |                     |                     |
|                     | 30 W              |   |                |                |                |                     |                     |                     |                     |
|                     | 36 W              |   | 10.2           |                |                |                     | 10.2                |                     |                     |
|                     | 38 W              |   |                |                |                |                     |                     |                     |                     |
|                     | 58 W              |   |                | 6.5            |                |                     |                     | 6.5                 |                     |
|                     | 70 W              |   |                |                | 3.7            |                     |                     |                     | 3.7                 |
| TC-DD               | 10 W              |   |                |                |                |                     |                     |                     |                     |
|                     | 16 W              |   | 20.0           |                |                |                     | 20.0                |                     |                     |
|                     | 21 W              |   | 13.9           |                |                |                     | 13.9                |                     |                     |
|                     | 28 W              |   | 12.2           |                |                |                     | 12.2                |                     |                     |
|                     | 38 W              |   |                |                | 8.9            |                     |                     |                     | 8.9                 |
|                     | 55 W              |   |                |                | 5.5            |                     |                     |                     | 5.5                 |
| TC-SEL              | 7 W               |   |                |                |                |                     |                     |                     |                     |
|                     | 9 W               | 13.6  | 21.8           |                |                | 13.6                | 21.8                |                     |                     |
|                     | 11 W              | 16.0  | 28.0           |                |                | 16.0                | 28.0                |                     |                     |
| TC-DEL              | 10 W              |   |                |                |                |                     |                     |                     |                     |
|                     | 13 W              | 13.9  | 21.3           |                |                | 13.9                | 21.3                |                     |                     |
|                     | 18 W              |   | 15.5           |                |                |                     | 15.5                |                     |                     |
|                     | 26 W              |   | 13.0           |                |                |                     | 13.0                |                     |                     |
| TC-TEL <sup>®</sup> | 13 W              | 14.3 / 8.2  | 21.8 / 9.7     |                |                | 14.3 / 8.2          | 21.8 / 9.7          |                     |                     |
|                     | 18 W              |   | 14.5 / 8.6     | 15.3 / 14.1    |                |                     | 14.5 / 8.6          | 15.3 / 14.1         |                     |
|                     | 26 W <sup>®</sup> |   | 10.4 / 8.5     | 9.7            | 11.9           |                     | 10.4 / 8.5          | 9.7                 | 11.9                |
|                     | 32 W <sup>®</sup> |   |                | 12.8 / 4.8     | x / 7.7        |                     |                     | 12.8 / 4.8          | x / 7.7             |
|                     | 42 W              |   |                |                | 7.2 / 6.7      |                     |                     |                     | 7.2 / 6.7           |
|                     | 57 W              |   |                |                |                |                     |                     |                     |                     |
| T5c                 | 22 W              |   | 14.7           |                |                |                     | 14.7                |                     |                     |
|                     | 40 W              |   |                |                | 7.7            |                     |                     |                     | 7.7                 |
|                     | 55 W              |   |                |                | 4.4            |                     |                     |                     | 4.4                 |
| TC-F                | 18 W              |   | 16.5           |                |                |                     | 16.5                |                     |                     |
|                     | 24 W              |   |                | 19.5           |                |                     |                     | 19.5                |                     |
|                     | 36 W              |   |                | 12.0           |                |                     |                     | 12.0                |                     |
| TC-L                | 18 W              |   | 15.3           |                |                |                     | 15.3                |                     |                     |
|                     | 24 W              |   |                | 15.5           |                |                     |                     | 15.5                |                     |
|                     | 36 W              |   |                | 10.5           |                |                     |                     | 10.5                |                     |
|                     | 40 W              |   |                | 8.4            |                |                     |                     | 8.4                 |                     |
|                     | 55 W              |   |                |                | 4.8            |                     |                     |                     | 4.8                 |
| TC-R                | 14 W              |   | 18.2           |                |                |                     | 18.2                |                     |                     |
|                     | 17 W              |   | 13.3           |                |                |                     | 13.3                |                     |                     |

<sup>①</sup> According to EN 61347-2-7: 2006

<sup>®</sup> The first figure is related to non-amalgam lamps, the second figure is related to amalgam lamps (e.g. 14 / 9.5).

<sup>®</sup> For best performance of 26W and 32W TC lamps, and especially amalgam filled lamps, we recommend the use of EM 06 ST G2 resp. EM 16 HO ST G2.

Emergency Ballast Lumen Factor (EBLF) in %<sup>①</sup>

EM SELFTTEST G2, 1 h High Output

|                     | Duration          | 1 h High Output BLF   |                |                |                |                     |                     |                     |                     |
|---------------------|-------------------|---|----------------|----------------|----------------|---------------------|---------------------|---------------------|---------------------|
|                     |                   | 3 cells   | 4 cells        | 5 cells        | 6 cells        | 3 cells             | 4 cells             | 5 cells             | 6 cells             |
| Type                |                   | EM 13 HO ST G2  | EM 14 HO ST G2 | EM 15 HO ST G2 | EM 16 HO ST G2 | EM 13 HO ST NiMH G2 | EM 14 HO ST NiMH G2 | EM 15 HO ST NiMH G2 | EM 16 HO ST NiMH G2 |
| Article no.         |                   | 89800229  | 89800232       | 89800235       | 89800238       | 89800340            | 89800341            | 89800342            | 89800343            |
| Lamp type           | Wattage           | EBLF in emergency lighting mode in % for rated operating time |                |                |                |                     |                     |                     |                     |
| T5                  | 6 W               |   |                |                |                |                     |                     |                     |                     |
|                     | 8 W               | 46.0  | 54.5           |                |                | 46.0                | 54.5                |                     |                     |
|                     | 13 W              |   |                |                |                |                     |                     |                     |                     |
| ECO T5              | 13 W              |   | 35.0           |                |                |                     | 35.0                |                     |                     |
|                     | 20 W              |   | 25.0           |                |                |                     | 25.0                |                     |                     |
|                     | 25 W              |   |                |                | 32.5           |                     |                     |                     | 32.5                |
|                     | 32 W              |   |                |                | 25.9           |                     |                     |                     | 25.9                |
|                     | 45 W              |   |                |                | 22.3           |                     |                     |                     | 22.3                |
|                     | 50 W              |   |                |                | 18.0           |                     |                     |                     | 18.0                |
|                     | 73 W              |   |                |                | 12.5           |                     |                     |                     | 12.5                |
| T5 FH               | 14 W              |   | 40.0           |                |                |                     | 40.0                |                     |                     |
|                     | 21 W              |   |                | 33.5           |                |                     |                     | 33.5                |                     |
|                     | 28 W              |   |                |                | 34.5           |                     |                     |                     | 34.5                |
|                     | 35 W              |   |                |                | 25.8           |                     |                     |                     | 25.8                |
| T5 FQ               | 24 W              |   | 25.4           |                |                |                     | 25.4                |                     |                     |
|                     | 39 W              |   |                |                | 22.3           |                     |                     |                     | 22.3                |
|                     | 49 W              |   |                |                | 15.7           |                     |                     |                     | 15.7                |
|                     | 54 W              |   |                |                | 14.0           |                     |                     |                     | 14.0                |
|                     | 80 W              |   |                |                | 10.3           |                     |                     |                     | 10.3                |
| T8                  | 15 W              |   | 33.6           |                |                |                     | 33.6                |                     |                     |
|                     | 18 W              |   | 34.7           |                |                |                     | 34.7                |                     |                     |
|                     | 30 W              |   |                |                |                |                     |                     |                     |                     |
|                     | 36 W              |   | 17.5           |                |                |                     | 17.5                |                     |                     |
|                     | 38 W              |   |                |                |                |                     |                     |                     |                     |
|                     | 58 W              |   |                | 15.5           |                |                     |                     | 15.5                |                     |
|                     | 70 W              |   |                |                |                |                     |                     |                     |                     |
| TC-DD               | 10 W              |   |                |                |                |                     |                     |                     |                     |
|                     | 16 W              |   |                |                |                |                     |                     |                     |                     |
|                     | 21 W              |   |                |                |                |                     |                     |                     |                     |
|                     | 28 W              |   |                |                |                |                     |                     |                     |                     |
|                     | 38 W              |   |                |                |                |                     |                     |                     |                     |
|                     | 55 W              |   |                |                |                |                     |                     |                     |                     |
| TC-SEL              | 7 W               |   |                |                |                |                     |                     |                     |                     |
|                     | 9 W               | 27.2  | 43.6           |                |                | 27.2                | 43.6                |                     |                     |
|                     | 11 W              | 35.0  | 45.0           |                |                | 35.0                | 45.0                |                     |                     |
| TC-DEL              | 10 W              |   |                |                |                |                     |                     |                     |                     |
|                     | 13 W              | 25.0  | 34.5           |                |                | 25.0                | 34.5                |                     |                     |
|                     | 18 W              |   | 25.1           |                |                |                     | 25.1                |                     |                     |
|                     | 26 W              |   | 21.1           |                |                |                     | 21.1                |                     |                     |
| TC-TEL <sup>®</sup> | 13 W              | 28.6 / 15.5   | 35.5 / 15.5    |                |                | 28.6 / 15.5         | 35.5 / 15.5         |                     |                     |
|                     | 18 W              |   | 23.5 / 10.1    |                |                |                     | 23.5 / 10.1         |                     |                     |
|                     | 26 W <sup>®</sup> |   | 21.0 / 12.5    |                |                |                     | 21.0 / 12.5         |                     |                     |
|                     | 32 W <sup>®</sup> |   |                | 22.5 / 7.8     |                |                     |                     | 22.5 / 7.8          |                     |
|                     | 42 W              |   |                | 16.0 / 9.3     |                |                     |                     | 16.0 / 9.3          |                     |
|                     | 57 W              |   |                |                |                |                     |                     |                     |                     |
| T5c                 | 22 W              |   | 26.5           |                |                |                     | 26.5                |                     |                     |
|                     | 40 W              |   |                |                | 18.9           |                     |                     |                     | 18.9                |
|                     | 55 W              |   |                |                | 10.8           |                     |                     |                     | 10.8                |
| TC-F                | 18 W              |   | 26.0           |                |                |                     | 26.0                |                     |                     |
|                     | 24 W              |   |                | 35.7           |                |                     |                     | 35.7                |                     |
|                     | 36 W              |   |                | 22.0           |                |                     |                     | 22.0                |                     |
| TC-L                | 18 W              |   | 27.5           |                |                |                     | 27.5                |                     |                     |
|                     | 24 W              |   |                | 34.1           |                |                     |                     | 34.1                |                     |
|                     | 36 W              |   |                | 23.1           |                |                     |                     | 23.1                |                     |
|                     | 40 W              |   |                | 18.5           |                |                     |                     | 18.5                |                     |
|                     | 55 W              |   |                |                |                |                     |                     |                     |                     |
| TC-R                | 14 W              |   | 44.4           |                |                |                     | 44.4                |                     |                     |
|                     | 17 W              |   | 32.5           |                |                |                     | 32.5                |                     |                     |

<sup>①</sup> According to EN 61347-2-7: 2006

<sup>®</sup> The first figure is related to non-amalgam lamps, the second figure is related to amalgam lamps (e.g. 14 / 9.5).

<sup>®</sup> For best performance of 26W and 32W TC lamps, and especially amalgam filled lamps, we recommend the use of EM 06 ST G2 resp. EM 16 HO ST G2.

Lamp current in emergency operation in mA

EM SELFTTEST G2, 3 or 1 h

|                     | Duration    | 1/3 h Standard BLF   |                |                |                |                     |                     |                     |                     |
|---------------------|-------------|--|----------------|----------------|----------------|---------------------|---------------------|---------------------|---------------------|
|                     |             | 3 cells  | 4 cells        | 5 cells        | 6 cells        | 3 cells             | 4 cells             | 5 cells             | 6 cells             |
|                     | Cells       | EM 03<br>ST G2   | EM 04<br>ST G2 | EM 05<br>ST G2 | EM 06<br>ST G2 | EM 03 ST<br>NiMH G2 | EM 04 ST<br>NiMH G2 | EM 05 ST<br>NiMH G2 | EM 06 ST<br>NiMH G2 |
|                     | Article no. | 89800198   | 89800201       | 89800204       | 89800207       | 89800336            | 89800337            | 89800338            | 89800339            |
| Lamp type           | Wattage     | Lamp current in emergency operation in mA for rated operating time |                |                |                |                     |                     |                     |                     |
| T5                  | 6 W         |  |                |                |                |                     |                     |                     |                     |
|                     | 8 W         | 31.5   | 40.0           |                |                | 31.5                | 40.0                |                     |                     |
|                     | 13 W        |  |                |                |                |                     |                     |                     |                     |
| ECO T5              | 13 W        |  | 34.0           |                |                |                     | 34.0                |                     |                     |
|                     | 20 W        |  | 34.2           |                |                |                     | 34.2                |                     |                     |
|                     | 25 W        |  |                |                | 24.0           |                     |                     |                     | 24.0                |
|                     | 32 W        |  |                |                | 20.3           |                     |                     |                     | 20.3                |
|                     | 45 W        |  |                |                | 17.2           |                     |                     |                     | 17.2                |
|                     | 50 W        |  |                |                | 12.9           |                     |                     |                     | 12.9                |
|                     | 73 W        |  |                |                | 15.4           |                     |                     |                     | 15.4                |
| T5 FH               | 14 W        |  | 26.0           |                |                |                     | 26.0                |                     |                     |
|                     | 21 W        |  |                | 22.0           |                |                     |                     | 22.0                |                     |
|                     | 28 W        |  |                |                | 19.0           |                     |                     |                     | 19.0                |
|                     | 35 W        |  |                |                | 15.0           |                     |                     |                     | 15.0                |
| T5 FQ               | 24 W        |  | 32.9           |                |                |                     | 32.9                |                     |                     |
|                     | 39 W        |  |                |                | 19.2           |                     |                     |                     | 19.2                |
|                     | 49 W        |  |                |                | 14.0           |                     |                     |                     | 14.0                |
|                     | 54 W        |  |                |                | 12.0           |                     |                     |                     | 12.0                |
|                     | 80 W        |  |                |                | 15.2           |                     |                     |                     | 15.2                |
| T8                  | 15 W        |  | 42.0           |                |                |                     | 42.0                |                     |                     |
|                     | 18 W        |  | 38.0           |                |                |                     | 38.0                |                     |                     |
|                     | 30 W        |  | 26.3           |                |                |                     | 26.3                |                     |                     |
|                     | 36 W        |  |                |                |                |                     |                     |                     |                     |
|                     | 38 W        |  |                |                |                |                     |                     |                     |                     |
|                     | 58 W        |  |                | 22.8           |                |                     |                     | 22.8                |                     |
|                     | 70 W        |  |                |                | 13.0           |                     |                     |                     | 13.0                |
| TC-DD               | 10 W        |  |                |                |                |                     |                     |                     |                     |
|                     | 16 W        |  | 29.5           |                |                |                     | 29.5                |                     |                     |
|                     | 21 W        |  | 34.2           |                |                |                     | 34.2                |                     |                     |
|                     | 28 W        |  | 22.9           |                |                |                     | 22.9                |                     |                     |
|                     | 38 W        |  |                |                | 21.8           |                     |                     |                     | 21.8                |
|                     | 55 W        |  |                |                | 20.5           |                     |                     |                     | 20.5                |
| TC-SEL              | 7 W         |  |                |                |                |                     |                     |                     |                     |
|                     | 9 W         | 35.8   | 44.5           |                |                | 35.8                | 44.5                |                     |                     |
|                     | 11 W        | 28.0   | 32.0           |                |                | 28.0                | 32.0                |                     |                     |
| TC-DEL              | 10 W        |  |                |                |                |                     |                     |                     |                     |
|                     | 13 W        | 26.8   | 30.4           |                |                | 26.8                | 30.4                |                     |                     |
|                     | 18 W        |  | 31.4           |                |                |                     | 31.4                |                     |                     |
|                     | 26 W        |  | 20.0           |                |                |                     | 20.0                |                     |                     |
| TC-TEL <sup>®</sup> | 13 W        | 27.0 / 26.0  | 32.5 / 31.8    |                |                | 27.0 / 26.0         | 32.5 / 31.8         |                     |                     |
|                     | 18 W        |  | 31.9 / 31.4    | 32.4 / 32.3    |                |                     | 31.9 / 31.4         | 32.4 / 32.3         |                     |
|                     | 26 W        |  | 26.7           | 29.9           | 29.9           |                     | 26.7                | 29.9                | 29.9                |
|                     | 32 W        |  |                | 21.0 / 19.0    | x / 17.0       |                     |                     | 21.0 / 19.0         | x / 17.0            |
|                     | 42 W        |  |                |                | 14.0 / 12.0    |                     |                     |                     | 14.0 / 12.0         |
|                     | 57 W        |  |                |                |                |                     |                     |                     |                     |
| T5c                 | 22 W        |  | 30.1           |                |                |                     | 30.1                |                     |                     |
|                     | 40 W        |  |                |                | 16.4           |                     |                     |                     | 16.4                |
|                     | 55 W        |  |                |                | 16.3           |                     |                     |                     | 16.3                |
| TC-F                | 18 W        |  | 40.0           |                |                |                     | 40.0                |                     |                     |
|                     | 24 W        |  |                | 42.0           |                |                     |                     | 42.0                |                     |
|                     | 36 W        |  |                | 26.0           |                |                     |                     | 26.0                |                     |
| TC-L                | 18 W        |  | 41.4           |                |                |                     | 41.4                |                     |                     |
|                     | 24 W        |  |                | 36.0           |                |                     |                     | 36.0                |                     |
|                     | 36 W        |  |                | 25.0           |                |                     |                     | 25.0                |                     |
|                     | 40 W        |  |                | 16.0           |                |                     |                     | 16.0                |                     |
|                     | 55 W        |  |                |                | 16.4           |                     |                     |                     | 16.4                |
| TC-R                | 14 W        |  | 20.9           |                |                |                     | 20.9                |                     |                     |
|                     | 17 W        |  | 15.4           |                |                |                     | 15.4                |                     |                     |

<sup>®</sup> The first figure is related to non-amalgam lamps, the second figure is related to amalgam lamps (e.g. 15/16).

Lamp current in emergency operation in mA

EM SELFTTEST G2, 1 High Output

|                     | Duration | 1 h High Output BLF  |                |                |                |                     |                     |                     |                     |
|---------------------|----------|--|----------------|----------------|----------------|---------------------|---------------------|---------------------|---------------------|
|                     |          | 3 cells  | 4 cells        | 5 cells        | 6 cells        | 3 cells             | 4 cells             | 5 cells             | 6 cells             |
| Type                |          | EM 13 HO ST G2   | EM 14 HO ST G2 | EM 15 HO ST G2 | EM 16 HO ST G2 | EM 13 HO ST NiMH G2 | EM 14 HO ST NiMH G2 | EM 15 HO ST NiMH G2 | EM 16 HO ST NiMH G2 |
| Article no.         |          | 89800229   | 89800232       | 89800235       | 89800238       | 89800340            | 89800341            | 89800342            | 89800343            |
| Lamp type           | Wattage  | Lamp current in emergency operation in mA for rated operating time |                |                |                |                     |                     |                     |                     |
| T5                  | 6 W      |  |                |                |                |                     |                     |                     |                     |
|                     | 8 W      | 69.7   | 84.8           |                |                | 69.7                | 84.8                |                     |                     |
|                     | 13 W     |  |                |                |                |                     |                     |                     |                     |
| ECO T5              | 13 W     |  | 68.2           |                |                |                     | 68.2                |                     |                     |
|                     | 20 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 25 W     |  |                |                | 58.0           |                     |                     |                     | 58.0                |
|                     | 32 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 45 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 50 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 73 W     |  |                |                | 40.2           |                     |                     |                     | 40.2                |
| T5 FH               | 14 W     |  | 61.5           |                |                |                     | 61.5                |                     |                     |
|                     | 21 W     |  |                | 51.7           |                |                     |                     | 51.7                |                     |
|                     | 28 W     |  |                |                | 52.9           |                     |                     |                     | 52.9                |
|                     | 35 W     |  |                |                |                |                     |                     |                     |                     |
| T5 FQ               | 24 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 39 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 49 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 54 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 80 W     |  |                |                | 37.2           |                     |                     |                     | 37.2                |
| T8                  | 15 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 18 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 30 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 36 W     |  | 49.7           |                |                |                     | 49.7                |                     |                     |
|                     | 38 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 58 W     |  |                | 53.5           |                |                     |                     | 53.5                |                     |
|                     | 70 W     |  |                |                |                |                     |                     |                     |                     |
| TC-DD               | 10 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 16 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 21 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 28 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 38 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 55 W     |  |                |                |                |                     |                     |                     |                     |
| TC-SEL              | 7 W      |  |                |                |                |                     |                     |                     |                     |
|                     | 9 W      |  |                |                |                |                     |                     |                     |                     |
|                     | 11 W     | 52.2   | 68.9           |                |                | 52.2                | 68.9                |                     |                     |
| TC-DEL              | 10 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 13 W     | 46.8   | 62.3           |                |                | 46.8                | 62.3                |                     |                     |
|                     | 18 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 26 W     |  |                |                |                |                     |                     |                     |                     |
| TC-TEL <sup>®</sup> | 13 W     | x / 50.6   | x / 64.0       |                |                | x / 50.6            | x / 64.0            |                     |                     |
|                     | 18 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 26 W     |  | 52.5 / 55.1    |                |                |                     | 52.5 / 55.1         |                     |                     |
|                     | 32 W     |  |                | 57.3           |                |                     |                     | 57.3                |                     |
|                     | 42 W     |  |                | x / 44.9       |                |                     |                     | x / 44.9            |                     |
|                     | 57 W     |  |                |                |                |                     |                     |                     |                     |
| T5c                 | 22 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 40 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 55 W     |  |                |                |                |                     |                     |                     |                     |
| TC-F                | 18 W     |  | 83.8           |                |                |                     | 83.8                |                     |                     |
|                     | 24 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 36 W     |  |                |                |                |                     |                     |                     |                     |
| TC-L                | 18 W     |  | 81.3           |                |                |                     | 81.3                |                     |                     |
|                     | 24 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 36 W     |  |                |                |                |                     |                     |                     |                     |
|                     | 40 W     |  |                | 50.9           |                |                     |                     | 50.9                |                     |
|                     | 55 W     |  |                |                |                |                     |                     |                     |                     |
| TC-R                | 14 W     |  | 43.3           |                |                |                     | 43.3                |                     |                     |
|                     | 17 W     |  |                |                |                |                     |                     |                     |                     |

<sup>®</sup> The first figure is related to non-amalgam lamps, the second figure is related to amalgam lamps (e.g. 15/16).

### Standards

- according to EN 50172
- according to EN 60598-2-22
- EN 61347-2-7
- EN 60925
- EN 62034
- EN 55015
- EN 61000-3-2
- EN 61000-3-3
- EN 61547
- EN 60068-2-64
- EN 60068-2-29
- EN 60068-2-30

### Commissioning

After installation of the luminaire and initial connection of the mains supply and battery supply to the EM ST G2 the unit will commence charging the batteries for 20 hours (initial charge). The 20 hours recharge occurs also if a new battery is connected or the module exits the rest mode condition. The following automatic commissioning duration test is only performed when a battery is replaced and fully charged (after 20 hours).

### Testing:

#### Commissioning test

A full commissioning test is carried out automatically after permanent connection of the supply for 5 days. The easy commissioning feature will set the initial test day and time to ensure random testing of units.

#### Functional test

Functional tests are carried out for 30 seconds on a weekly basis under the control of the Micro controller. Initiation and timing of these tests is set during the commissioning of the luminaire.

#### Duration test

A full duration test (3 hr. resp. 1 hr.) is carried out yearly to check the capacity of the batteries. For a full description of commissioning and test features please refer to application notes.

#### Test switch

An optional test switch can be wired to each EM ST G2. This can be used to to:

- initiate a 5 seconds function test: press 200 ms < T < 1 s
- execute function test as long as switch pressed: press > 1 s
- reset selftest timer (adjust local timing): press > 10 s

#### Timer reset functionality

The timer for function and duration test can be set to a particular time of the day by either pressing the test switch for longer than 10 seconds or cycling the unswitched line supply 5 times within 1 minute. The timer adjustment will enable the test start time to be defined manually at time in day when the timer was reset. It will also disable the adaptive test algorithm thereby forcing the unit to perform the test at the same time rather than it being defined by the adaptive algorithm. This function will only work provided the interval time is greater than zero (automatic test mode enabled). The delay timer value set when the unit was commissioned will be reloaded in order to randomise the tests between adjacent units.

### Status indication

System status is indicated by a bi-colour LED.

| LED indication                                      | Status                    | Comment   |
|---|---------------------------|---|
| Permanent green                                     | System OK                 | AC mode   |
| Fast flashing green<br>(0,1 sec on – 0,1 sec off)   | Function test<br>underway |   |
| Slow flashing green<br>(1 sec on – 1 sec off)       | Duration test<br>underway |   |
| Red LED on  | Load failure              | Open circuit / Short circuit / lamp failure   |
| Slow flashing red<br>(1 sec on – 1 sec off)         | Battery failure           | Battery failed the duration test or function test / Battery is defect or deep discharged/ Incorrect battery voltage |
| Fast flashing red<br>(0,1 sec on – 0,1 sec off)     | Charging failure          | Incorrect charging current  |
| Double pulsing green                                | Inhibit mode              | Switching into inhibit mode via controller  |
| Binary transmission of address<br>via green/red LED | Address<br>identification | During address identification mode  |
| Green and red off                                   | DC mode                   | Battery operation (emergency mode)  |

**Technical data batteries**

**Accu-NiCd**

**4.2 / 4.5 Ah**

|   |   |
|---|---|
| Battery voltage/cell                                    | 1.2 V   |
| Cell type   | D   |
| Case temperature range<br>to ensure 4 years design life | +5 °C to +55 °C   |
| Max. short term temperature (reduced life-time)         | 70 °C   |
| Max. number discharge cycles                            | 4 cycles per year plus<br>4 cycles during<br>comissioning |
| Max. storage time                                       | 6 months  |

**Accu-NiMH**

**2.2 Ah**

|   |  |
|---|--|
| Battery voltage/cell                                    | 1.2 V  |
| Cell type   | Cs   |
| Case temperature range<br>to ensure 4 years design life | +5 °C to +50 °C  |
| When used with EM xx ST G2                              | +5 °C to +55 °C  |
| When used with EM xx ST NiMH G2                         | 70 °C  |
| Max. short term temperature (reduced life-time)         | 4 cycles per year plus<br>30 cycles during<br>comissioning |
| Max. number discharge cycles                            | 6 months   |
| Max. storage time                                       | 6 months   |

**4.0 Ah**

|   |  |
|---|--|
| Battery voltage/cell                                    | 1.2 V  |
| Cell type   | LA   |
| Case temperature range<br>to ensure 4 years design life | +5 °C to +45 °C  |
| When used with EM xx ST G2                              | +5 °C to +50 °C  |
| When used with EM xx ST NiMH G2                         | 70 °C  |
| Max. short term temperature (reduced life-time)         | 4 cycles per year plus<br>30 cycles during<br>comissioning |
| Max. number discharge cycles                            | 6 months   |
| Max. storage time                                       | 6 months   |

For further informations refer to corresponding battery datasheet.

**Storage, installation and commissioning**

Relevant information about storage conditions, installation and commissioning are provided in the battery datasheets.

**Mechanical details**

Channel manufactured from galvanised steel.  
Cover manufactured from white pre-coated steel.

LED bi-colour status indicator

- Green / red
- Mounting hole 6.5 mm dia
- Lead length 0.3 m / 1.0 m
- Insulation rating: 90 °C
- Plug connection

Test switch

- Mounting hole 7.0 mm dia
- Lead length 0.55 m
- Plug connection

Battery leads

- Quantity: 1 red and 1 black
- Length: 1.3 m
- Wire type: 0.5 mm<sup>2</sup> solid conductor
- Insulation rating: 90 °C

Battery end termination

Push on 4.8 mm receptacle to suit battery spade fitted with insulating cover

Module end termination

8.0 mm stripped insulation

Two-piece batteries are supplied with a 200 mm lead with 4.8 mm receptacles at each end and insulating covers to connect the separate sticks together.

**Rest Mode / Inhibit Mode**

Emergency operation is automatically started when the mains supply is switched off. If the Rest Mode is activated, the discharging of the battery will be minimized by switching off the lamp. If the Inhibit Mode has been activated before the mains supply is switched off, Rest Mode will be automatically activated if the mains supply is switched off within 15 minutes.

Rest Mode and Inhibit Mode can be initiated by applying a short pulse between 9.5 and 22.5 V<sub>DC</sub> in amplitude for a period of 150 to 1,000 ms. This pulse shall be applied to terminals marked Rest.

After a mains reset the EM ST G2 exits the Rest Mode. Rest Mode and Inhibit Mode can both be disabled by applying a voltage pulse of 1,000 to 2,000 ms to the terminals marked as Rest to send the RE-LIGHT/ RESET INHIBIT command.

| Pulse/Mode       | Standby        | Emergency | Rest     |
|------------------|----------------|-----------|----------|
| 150 – 1,000 ms   | Inhibit        | Rest      | –        |
| 1,000 – 2,000 ms | Cancel inhibit | –         | re-light |

**Isolation and electric strength testing of luminaires**

Electronic devices can be damaged by high voltage. This has to be considered during the routine testing of the luminaires in production.

According to IEC 60598-1 Annex Q (informative only!) or ENEC 303-Annex A, each luminaire should be submitted to an isolation test with 500 V<sub>DC</sub> for 1 second. This test voltage should be connected between the interconnected phase and neutral terminals and the earth terminal. The isolation resistance must be at least 2 MΩ.

As an alternative, IEC 60598-1 Annex Q describes a test of the electrical strength with 1,500 V<sub>AC</sub> (or 1,414 x 1,500 V<sub>DC</sub>). To avoid damage to the electronic devices this test must not be conducted.

**Batteries**

Connection method: 4.8 x 0.5 mm spade tag welded to end of cell  
 For stick packs this connection is accessible after the battery caps have been fitted.

To inhibit inverter operation disconnect the batteries by removing the connector from the battery spade tag.

For battery data see separate data sheet.

**Life-time**

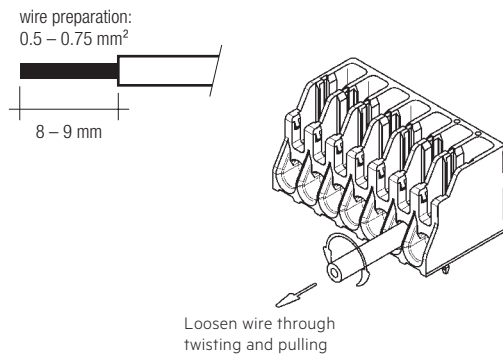
Average life-time 50,000 hours under rated conditions with a failure rate of less than 10 %. Average failure rate of 0.2 % per 1000 operating hours.

**Electrical connections**

An earthed starting aid is recommended. The module should be earthed by the fixings used to attach it to the luminaire.

**Wiring**

**Lamp/ballast/supply**



**Note:**

Basic insulation between supply and battery circuit.

**IDC interface**



- solid wire with a cross section of 0.5 mm<sup>2</sup> according to the specification from IDC terminals

**Maximum lamp lead capacitance**

terminals 5 and 6 (\* hot leads) 100 pF <sup>1)</sup>  
 terminals 3 and 4 200 pF <sup>1)</sup>

<sup>1)</sup> Note: care should be taken not to exceed the total maximum lamp lead capacitance for HF ballast. Leads should always be kept as short as possible.

**Duration link selection**

| Duration | Usage duration link  |
|----------|--|
| 3 h      | <br>With link    |
| 1 h      | <br>Without link |

Control gear supplied with duration link in 3 hours position.

The position of the link will only be read on first power up. If it is changed afterwards both the battery and mains supply must be disconnected for 10 seconds to enable the EM ST G2 to read the new link position on reconnection of the battery and mains. It will lead to a false battery failure indication if the link is changed after installation without this reset.

**Wiring guidelines**

To ensure that a luminaire containing high frequency emergency units complies with EN 55015 for radio frequency conducted interference in both normal and emergency mode it is essential to follow good practice in the wiring layout.

Within the luminaire the switched and unswitched 50 Hz supply wiring must be routed as short as possible and be kept as far away as possible from the lamp leads.

This means, for example, in a linear T8 or T5 luminaire the mains wiring should be routed along one side of the luminaire body, while the wires to the emergency lamp from the emergency module are routed along the other side.

The high frequency emergency lamp wiring contains “hot” leads at pins 5 and 6, which have high voltage to earth. These should be kept as short as possible and separated from other wiring to minimize coupling. They also have a restriction on capacitance to other wiring and earth of 100 pF, which must be observed to ensure good lamp starting.

With an earth connection of the metal case of the emergency module the noise suppression can be further improved. The wiring of the earth should be kept as short as possible.

Through wiring may affect the emc performance of the luminaire.

With the use of the fifth pole possible compatibility problems between the products can be prevented.

Depending on the luminaire wiring the radio suppression in the emergency mode of operation can be further improved.

Capacitive loading limits of lamp leads must not be exceeded. Note the capacitance of the emergency lamp leads adds to the capacitance of the leads from the ballast to the EM ST G2 module when considering ballast loading.

The LED and test switch wiring should be routed separately and kept as far away as possible from the high frequency lamp leads to avoid coupling.

To avoid the damage of the control gear, the wiring must be protected against short circuits to earth (sharp edged metal parts, metal cable clips, louver, etc.).

### Maximum loading of automatic circuit breakers

| Automatic circuit breaker type | B10                 | B13                 | B16                 | B20                 | C10                 | C13                 | C16                 | C20                 | Inrush current   |        |
|--------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------------------|--------|
| Installation Ø                 | 1.5 mm <sup>2</sup> | 1.5 mm <sup>2</sup> | 1.5 mm <sup>2</sup> | 2.5 mm <sup>2</sup> | 1.5 mm <sup>2</sup> | 1.5 mm <sup>2</sup> | 1.5 mm <sup>2</sup> | 2.5 mm <sup>2</sup> | I <sub>max</sub> | time   |
| EM 03 ST G2                    | 90                  | 130                 | 130                 | 130                 | 180                 | 260                 | 260                 | 260                 | 10 A             | 120 µs |
| EM 04 ST G2                    | 90                  | 130                 | 130                 | 130                 | 180                 | 260                 | 260                 | 260                 | 10 A             | 120 µs |
| EM 05 ST G2                    | 90                  | 130                 | 130                 | 130                 | 180                 | 260                 | 260                 | 260                 | 10 A             | 120 µs |
| EM 06 ST G2                    | 90                  | 130                 | 130                 | 130                 | 180                 | 260                 | 260                 | 260                 | 10 A             | 120 µs |
| EM 03 ST NiMH G2               | 90                  | 130                 | 130                 | 130                 | 180                 | 260                 | 260                 | 260                 | 10 A             | 120 µs |
| EM 04 ST NiMH G2               | 90                  | 130                 | 130                 | 130                 | 180                 | 260                 | 260                 | 260                 | 10 A             | 120 µs |
| EM 05 ST NiMH G2               | 90                  | 130                 | 130                 | 130                 | 180                 | 260                 | 260                 | 260                 | 10 A             | 120 µs |
| EM 06 ST NiMH G2               | 90                  | 130                 | 130                 | 130                 | 180                 | 260                 | 260                 | 260                 | 10 A             | 120 µs |
| EM 13 HO ST G2                 | 90                  | 130                 | 130                 | 130                 | 180                 | 260                 | 260                 | 260                 | 10 A             | 120 µs |
| EM 14 HO ST G2                 | 90                  | 130                 | 130                 | 130                 | 180                 | 260                 | 260                 | 260                 | 10 A             | 120 µs |
| EM 15 HO ST G2                 | 90                  | 130                 | 130                 | 130                 | 180                 | 260                 | 260                 | 260                 | 10 A             | 120 µs |
| EM 16 HO ST G2                 | 90                  | 130                 | 130                 | 130                 | 180                 | 260                 | 260                 | 260                 | 10 A             | 120 µs |
| EM 13 HO ST NiMH G2            | 90                  | 130                 | 130                 | 130                 | 180                 | 260                 | 260                 | 260                 | 10 A             | 120 µs |
| EM 14 HO ST NiMH G2            | 90                  | 130                 | 130                 | 130                 | 180                 | 260                 | 260                 | 260                 | 10 A             | 120 µs |
| EM 15 HO ST NiMH G2            | 90                  | 130                 | 130                 | 130                 | 180                 | 260                 | 260                 | 260                 | 10 A             | 120 µs |
| EM 16 HO ST NiMH G2            | 90                  | 130                 | 130                 | 130                 | 180                 | 260                 | 260                 | 260                 | 10 A             | 120 µs |

### EM FLT1 filter

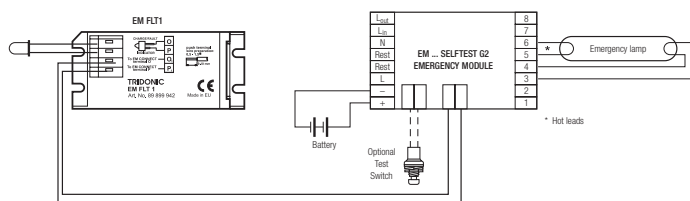
When the EM ST G2 is used in a remote application, where the lamp leads and LED indicator leads are routed together in close proximity, it is possible to have electrical interference picked up in the indicator leads.

Under certain conditions this interference can cause a lock-up of the EM ST G2 micro-controller.

To overcome this problem in such applications it is necessary to fit the filter EM FLT1 between the indicator LED and the EM ST G2 unit. To be effective the filter must be connected close to the EM ST G2 module.

For further information please contact Tridonic.

### Circuit diagram with EM FLT1 filter



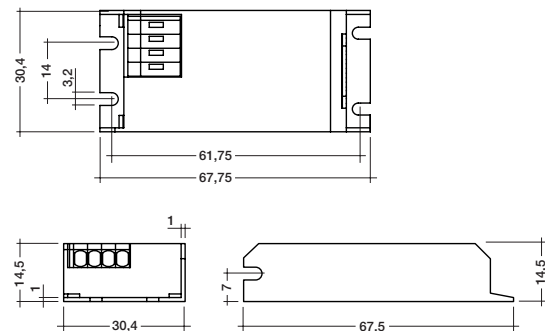
Technical data:

Push wire terminals 0.5–1.5 mm<sup>2</sup> solid conductor

### Ordering data

| Type    | Article number | Packaging, carton | Packaging, pallet | Weight per pcs. |
|---------|----------------|-------------------|-------------------|-----------------|
| EM FLT1 | 89899942       | 50 pc(s).         | 1,000 pc(s).      | 0.022 kg        |

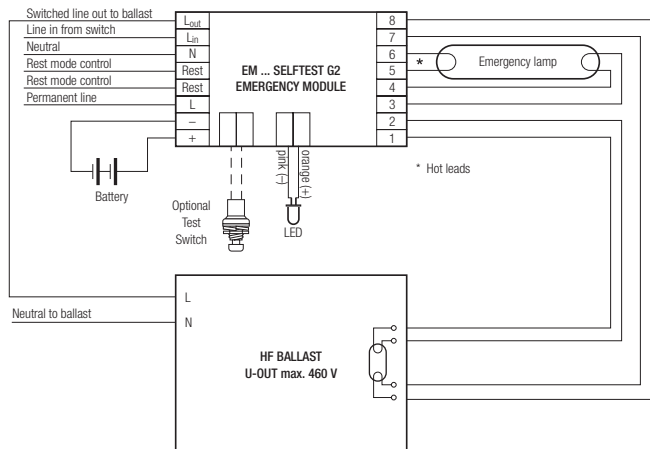
### EM FLT1 filter



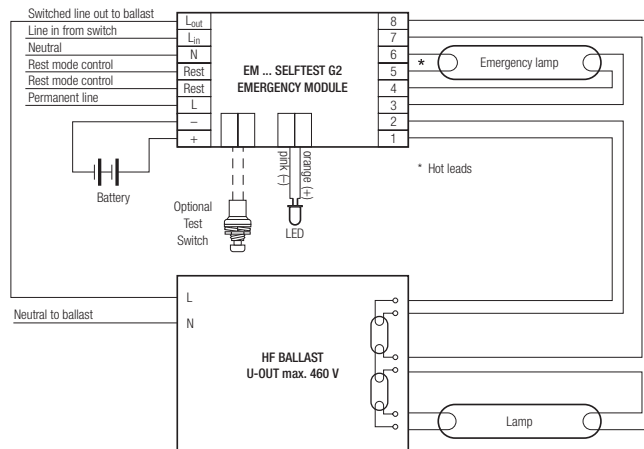


EM ... SELFTEST G2 emergency module wiring diagrams

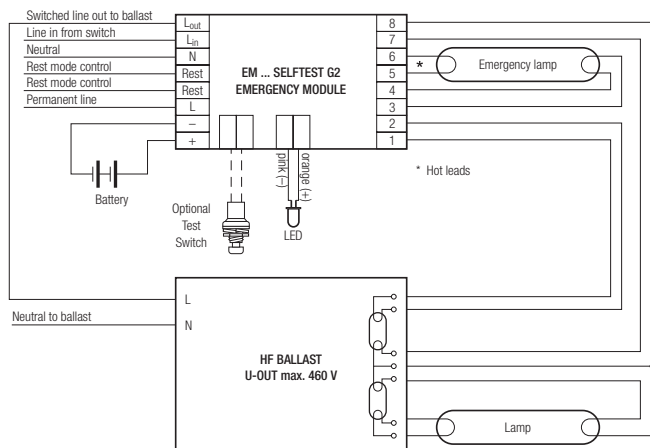
Not for use with magnetic ballasts and switch start circuits



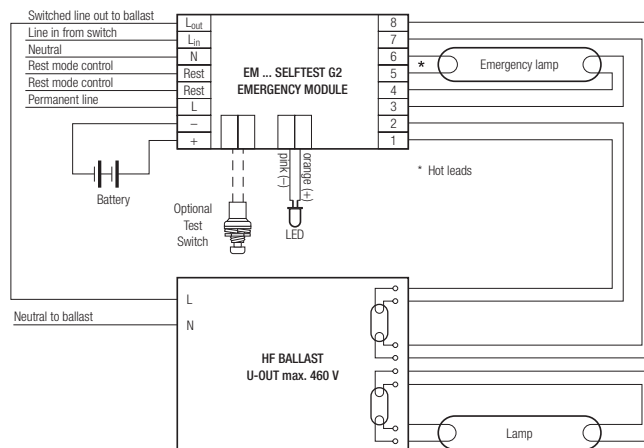
Wiring diagram for single lamp high frequency ballasts



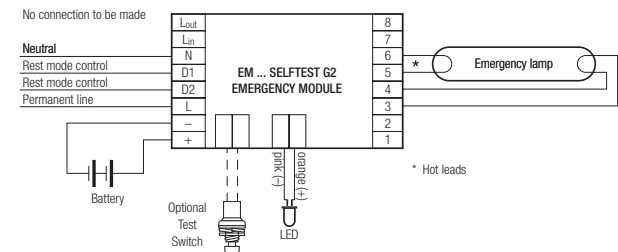
Wiring diagram for twin lamp high frequency ballasts with 6 terminals



Wiring diagram for twin lamp high frequency ballasts with 7 terminals



Wiring diagram for twin lamp high frequency ballasts with 8 terminals



Wiring diagram for non-maintained operation

**Note:** All hot leads normally marked with an \* should be kept as short as possible. For comprehensive wiring diagrams and instructions consult the Tridonic website [www.tridonic.com](http://www.tridonic.com)

**Additional information**

Additional technical information at [www.tridonic.com](http://www.tridonic.com) → Technical Data

Guarantee conditions at [www.tridonic.com](http://www.tridonic.com) → Services

Life-time declarations are informative and represent no warranty claim. No warranty if device was opened.