# ENEC LICENSE

**License No.** ENEC-03304-M3
**Page** 1/5
**Date of Issue** 2022-12-29

| | |
|---|---|
| **License Holder** | TCI TELECOMUNICAZIONI ITALIA S.R.L<br>VIA PARMA 14 SARONNO, VA, 21047<br>ITALY |
| **Production site** | TCI TELECOMUNICAZIONI ITALIA S.R.L<br>VIA PARMA 14 SARONNO, VA, 21047<br>ITALY |
| **Certification Mark** | See Annex 1 |
| **Certified Product** | Built-in LED Module |
| **Model** | **aaMbxxxx/yyyeezzzp nnnnnn/iccss**<br>See Page 2-3 for additional Information |
| **Trademark** | TCI or TN101 or TCI or or or TCI or TCI or |
| **Ratings** | Max: 2000 mA DC tc: 90 °C.<br>See Page 2-3 for additional ratings |
| **Tested acc. to** | EN IEC 62031:2020, EN IEC 62031:2020/A11:2021 |
| **Test Report No.** | 4789799721-1 issued on 2022-12-21 |
| **Additional Information** | The report was revised to include technical modifications. |

**Certification Manager**
Jan-Erik Storgaard

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**Certification Body**

**UL International Demko A/S, Borupvang 5A, DK-2750 Ballerup, Denmark, Tel. +45 44 85 65 65, info.dk@ul.com**
**www.ul.com**

# ENEC LICENSE

**License No.** ENEC-03304-M3
**Page** 2/5
**Date of Issue** 2022-12-29

**Additional Model Detail(s):**

| Type | Max. input current (A) at 0 Hz | Max. input power (W) | Max. power density (W/cm²) | $t_c$ (°C) | **Notes** |
|---|---|---|---|---|---|
| aaMxxxx/yyyeezzzp nnnnnn/iccss | 1,75 | 72 | 0,94 | 85 | 0,34…0,75 mm² terminal block or headers connector or pads |
| aaMbxxxx/yyyeezzzp nnnnnn/iccss | 0,7 | 7 | 0,2 | 80 | Cable with connector or tails |
| SLMxxxx/yyyeezzzp nnnnnn/iccss | 2,0 | 151,2 | 0,7 | 90 | Metal core pwb 0,34…0,75 mm² terminal block or headers connector or pads |

**Speaking code meaning:**

- **aa**= one or two characters for shape: **L** (linear module); **BL (linear module)**; **S** (square module); **F** (finger module); **R** (round module).
- **M**= fixed character = Module.
- **b**= one character (it may be missing) for enclosure type (if present); **P**=enclosure extruded white; **N**=nero, enclosure extruded black.
- **xxxx**= one to four characters, 1st module dimension: length or diameter (20-1400 mm).
- **/**= fixed character, separator, missing if 2nd module dimension is not present.
  **yyy**= one to three characters (it may be missing), 2nd module dimension: width (10-233 mm).
- **ee**= one or two characters; any alphanumeric character(s).
- **zzz**= one to three characters; LED numbers (1-160).
- **p**= one character; position of connector; it may be missing when mounted on the top side or **L** when mounted on the bottom side; **P** pads for soldering of connections.
- **nnnnnn**= Six characters; commercial code.
- **/**= fixed character, separator, missing if following characters are not present.
- **i**= one character (**7- 9**); color rendering index (CRI/10).
- **cc**= two characters (**27-65**); correlated colour temperature, CCT/100;
  **T1** is tunable white with 2700/4000 K;
  **T2** is tunable white with 2700/5700 K;
  **T3** is tunable white with 2700/6500 K;
  **T4** is tunable white with 3000/5000 K;
  **T5** is tunable white with 2700/5000 K;
  **T6** is tunable white with 3000/4000 K (except for LED LM281B+);
  **T7** is tunable white with 2000/3000 K;
  **T8** is tunable white with 2400/3000 K;
  **T9** is tunable white with 2000/4000 K (except for LED LM281B+).

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- **ss**= Missing or one or two characters:

| **LED type** | **ss** | **parameters** |
|---|---|---|
| LM561B | R or missing | max. $I_F$=180 mA |
| LM561B+ | S | max. $I_F$=180 mA |
| LM281B | E | max. $I_F$=150 mA |
| LM301B | V | max. $I_F$=200 mA |
| 2835C (Luxeon) | L | max. $I_F$=240 mA |
| LM281B+ | H<br>BB,<br>BC, CA, W, WR, AD | max. $I_F$=160 mA<br>max. $I_F$=200 mA<br>max. $I_F$=200 mA |
| LM281B+ PRO | BR, BS, BX<br>CK | max. $I_F$=200 mA<br>max. $I_F$=250 mA |
| **LM301D** | **AP** | **max. $I_F$=180 mA** |
| LM302D | AM | max. $I_F$=200 mA |
| LH351B | M | max. $I_F$=1500 mA |
| LH351C | I | max. $I_F$=2000 mA |
| LH502C | BE | max. $I_F$=880 mA |
| **LH502D** | **CV** | **max. $I_F$=800 mA** |

**Ratings:**
The maximum voltage of LED module is:

| LED model/type | Max. voltage | Minimum distance for insulation design | Working voltage for insulation design |
|---|---|---|---|
| LM837/14L80 128636/8.0L<br>LM837/14E80 128636/8.0AD<br>LM558/14E36L 128828/8.0AD | 125 V | 3,1 mm<br>basic | 310 V<br>(between traces ↔ lateral accessible surface) |
| representative models of aaMxxxx**/**yyyeezzzp nnnnnn**/**iccss | 120 V | 2,7 mm<br>SELV | 270 V<br>(between traces ↔ lateral accessible surface) |
| representative models of aaMbxxxx**/**yyyeezzzp nnnnnn**/**iccss | 10 V | 3,2 mm<br>basic | 320 V<br>(between tails ↔ accessible surface of enclosure/cable) |
| representative models of SLMxxxx**/**yyyeezzzp nnnnnn/iccss | 76,6 V | 4,2 mm<br>SELV | 420 V<br>(between traces ↔ lateral accessible surface) |
| | | through insulation<br>basic | 150 V<br>(between traces ↔ metal core) |

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# ENEC LICENSE

**License No.** ENEC-03304-M3
**Page** 4/5
**Date of Issue** 2022-12-29

**Additional information:**
The original report was modified to include the following changes/additions:
-Added new LED modules with LED type LM301D and LH502D
-Updated Critical components table.
-Updated EN standards

This certificate replaces certificate no. ENEC-03304-M2 issued on 2021-11-19.

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# Annex 1 to License No.

# ENEC-03304-M3

**Annex of the form of the Mark**


15 is the identification number of the Certification Body

Size of the mark:

The size of the mark may be reduced on the condition that it remains legible and that the ratio b/a=1,7 is kept.

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