

ENEC LICENCE

Licence No. ENEC-01358-A1
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Date of Issue 2016-05-16

Licence Holder Philips Lighting B.V.
High Tech Campus 45
Eindhoven, 5656 AE Netherlands

Production site



Certification Mark
Certified Product

See Page 2
See Annex 1
Built-in LED Module
Model Fortimo FastFlex LED board NxK / zcc vv Gg a
See Page 2

Trademark

PHILIPS

Rated Voltage / Frequency

Vmax: 55 V ===

Rated Current / Power

Imax: 1,05 A

Insulation Class

-

Degree of protection (IP)

-

Tested acc. to

EN 62031:2008/A1:2013, EN 62031:2008/A2:2015, EN 62031:2008

Test Report No.

4787284852-2 issued on 2016-05-13

Additional

Certification Manager
Jan-Erik Storgaard

Certification Body

This is to certify that representative sample(s) of the Product(s) described herein ("Certified Product") have been investigated and found in compliance with the Standard(s) indicated on this Licence, in accordance with the ENEC Requirements. The Designated Licence holder is certified to use the ENEC 16 Mark (as shown in annex 1) for the Certified Product manufactured at the production site(s) identified above in accordance with the ENEC Mark Service Agreement including without limitation the ENEC Mark Testing and Certification Service Service Terms. Only those Products bearing the ENEC Mark should be considered as being covered by UL's ENEC Mark Service. This Licence shall remain valid unless terminated earlier in accordance with the Service Agreement including without limitation if the Standard identified on this Certificate is amended or withdrawn prior the Date of Withdrawal of existing Standard(s).

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Model Details:

Product Key:

Fortimo FastFlex LED board $N \times K / zcc vv Gg a$

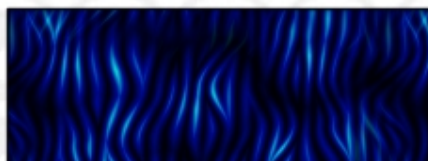
Where:

N = Number of LEDs in width (one digit, may be a value between 1 and 2);
 K = Number of LEDs in length (one digit, may be a value between 1 and 8);
 z = CRI of LED divided by 10 (one digit, may be "7" or "8");
 cc = Color temperature of LED divided by 100 (two digits, may be between 30 and 57);
 vv = Alphanumeric version indication of module (may be "DA" or "DS" or blank);
 g = Number of LED module's generation (one digit, may be "3");
 a = Alphanumeric commercial suffix for commercial purposes (optional)

Maximum ratings:

Field vv on the Product Key	DC Current [A]	Power [W]	t_c [°C]	Maximum working voltage for basic insulation to mounting surface [Vdc]	With Secondary Optics
Blank	1.05	55	85	680	Yes
DA	1.05	55	85	400	No
DS	1.05	55	85	200	No

Production Sites:



Additional Information:

The customer is obligated to add an appropriated cooling system to the LED module in order to not exceed t_c value and the maximum temperatures of the module's components. Temperature test shall be performed on the final product to verify the effectiveness of this cooling system.

- M3 fixing screws with diameter of their heads not exceeding 6,3 mm shall be used (if in metallic material).
- The insulation between active parts of LED module and accessible conductive parts (metal mounting surface) is tested for basic insulation related to 680 V for modules having Field vv on the Product Key = blank, 400 V for modules having Field vv on the Product Key = "DA" and 200 V for modules having Field vv on the Product Key = "DS".
- Module having Field vv on the Product Key = "DA" can be used with an insulating washer (or plastic optic) having 2 mm minimum thickness, with the internal hole suitable for only M3 screws and with the external hole with diameter not less than 6,3 mm. In this case the module complies with 680 V of insulation between active parts of LED module and accessible conductive parts.

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- The modules can be supplied only by electronic LED controlgears separately approved according to IEC/EN 61347-2-13 and protected against output short-circuit and overload. The maximum working voltage U_{out} (r.m.s.) of LED controlgear shall not exceed $U_{out} = 350$ V (200 V for modules having Field wv on the Product Key = "DS").
- According to technical documentation NTC circuit is a temperature sensing circuit that the customer shall use only for lifetime warranty reasons; it has been considered not isolated to the LED's circuit.
- The modules have been also evaluated according to IEC TR 62778: 2014 (Second Edition): Modules are classified as RISK GROUP 2 ($E_{thr} = 847$ lx for modules with Lumileds Luxeon T LEDs, $E_{thr} = 773$ lx for modules with Cree XP-G2 LEDs). Modules provided with secondary optics having CCT equal to 4000 K or less and having rated current equal to 550 mA or less are classified as RISK GROUP 1 UNLIMITED. See also photobiological test report number 4787284852-4 for more information. See also photobiological test report number 4787284852-4 for more information.

The original Test Report was modified to include the following changes/additions:

- Increase of maximum working voltage for basic insulation of "DA" models when they are used with secondary plastic optic.

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Annex 1 to Licence No.

ENEC-01358-A1

Annex of the form of the Mark



* 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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