

ENEC LICENCE

Licence No. ENEC-01358-P1-A3
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Date of Issue 2017-10-27

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

Production site



Certification Mark See Annex 1
Certified Product Built-in LED Module
Model Fortimo FastFlex t NxK / zcc XXXxYYY v Gg a
See Page 2
Trademark

PHILIPS

Rated Voltage / Frequency
Rated Current / Power

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Imax: 1,5 A ---
See Page 2

Insulation Class
Degree of protection (IP)
Tested acc. to

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

Test Report No. 4787875133-1 issued on 2017-10-23
Additional

Certification Manager
Jan-Erik Storgaard

Certification Body

This is to certify that representative sample(s) of the Product 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 entitled 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 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with the Service Agreement including without limitation if the Standard identified on this Certificate is amended or withdrawn prior the Date of Withdrawal of certifying Standard(s).

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Model Details:
Product Key:

Fortimo FastFlex *t NxK / zcc XXXxYYY v Gg a*

Where:

t = Product type (may be "LED" or "LED board" or blank);
N = Number of LEDs in width (one digit, may be a value between 1 and 6);
x = Fixed character;
K = Number of LEDs in length (one digit, may be a value between 1 and 16);
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 27 and 65);
XXXx = Width of module in mm or blank;
YYY = Length of module in mm or blank;
v = Alphanumeric version indication of module (may be "DA" or "DAX" or "DS" or "DP" or "DPX" or "X" or "DC" or "DAS" or "DHE" or blank);
G = Fixed character;
g = Number of LED module's generation (one digit, may be "3" or "4");
a = Commercial suffix for commercial purposes (optional)

Maximum ratings:

Field von the Product Key	DC Current [A]	Power [W]	t_c [°C]	Maximum working voltage for basic insulation to mounting surface [V]	With Secondary Optics
LED Module's Generation 3					
Blank	1,05	55	85	680	Yes
DA	1,05	55	85	400 (*)	No (*)
DS	1,05	55	85	200	No
LED Module's Generation 4					
Blank or X	1,5	75	85	680	Yes
DA or DAX	1,5	75	105	330 (*)	No (*)
DP or DPX	1,5	75	105	670	No
DA (**)	1,05	163,8	85	330 (*)	No (*)
DC	1,5	72	85	340	No
DAS	1,05	52,5	85	400 (*)	No (*)
DHE	0,72	37,44	95	260 (*)	No (*)
(*) : See Additional information					
(**) : For modules having field <i>a</i> = 					

Factories:

Philips Lighting Electronics Mexico
 AV DEL AGUILA REAL NUM. 19451
 PARQUE INDUSTRIAL BAJAMAQ
 EL AGUILA
 TIJUANA, BC 22215 Mexico

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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 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 the working voltages listed in the table of maximum ratings.
 - Module having Field v on the Product Key = "DA" or "DAX" or "DAS" can be used with insulating washers (or insulating optic lens) made of suitable material, having 2 mm minimum thickness, with the internal hole suitable for only M3 screws and having the external diameter not less than 6 mm. In this case the module complies with insulation between active parts and accessible conductive parts for a working voltage of 680 V.
 - Module having Field v on the Product Key = "DHE" can be used with insulating washers (or insulating optic lens) made of suitable material, having 2 mm minimum thickness, with the internal hole suitable for only M3 screws and having the external diameter not less than 6 mm. In this case the module complies with insulation between active parts and accessible conductive parts for a working voltage of 570 V.
 - Module having Field v = "DA" or "DAX" and Field a = "AOI" on the Product Key is provided with insulating optic lens (secondary optic).
 - The module 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 (330 V for Generation 4 modules having Field v on the Product Key = "DA" or "DAX", 200 V for modules having Field v on the Product Key = "DS", 340 V for modules having Field v on the Product Key = "DC", 260 V for modules having Field v on the Product Key = "DHE").
 - The model Fortimo FastFlex LED 2x6 / 757 DA G4 Alu is identical to the model Fortimo FastFlex LED 2x6 / 757 DA G4, the difference between names is only for commercial purpose.
 - 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):
- LED Modules Generation 3** are classified 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). LED Modules Generation 3 provided with secondary optics having CCT equal to 4000 K or less and having rated current equal to 550 mA or less are classified RISK GROUP 1.
- LED Modules Generation 4** are classified RISK GROUP 1 UNLIMITED (For modules with Samsung LM301B LEDs) or RISK GROUP 2 (E_{thr} = 823,6 lx for modules with Cree XP-G2 LEDs, E_{thr} = 520 lx for modules with Cree XP-G3 LEDs, E_{thr} = 1359 lx for modules with OSRAM OSLO SQUARE LEDs, E_{thr} = 708,5 lx for modules with Cree XHP50.2 12V LEDs). LED Modules Generation 4 provided with secondary optics having CCT equal to 4000 K or less and having rated current equal to 530 mA or less are classified RISK GROUP 1.

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

- Addition of models "DAS" and "DHE" of LED module's family, one new PCB material and one new LED Chip

This certificate replaces the certificate no. ENEC-01358-P1-A2 issued on 2017-09-26

Certification Body

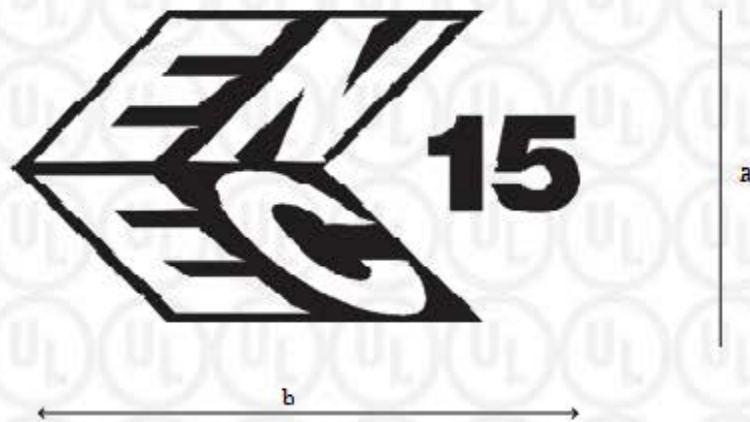
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Annex 1 to Licence No.

ENEC-01358-P1-A3

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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This is to certify that representative sample(s) of the Product 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 entitled to use the ENEC 15 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 Services 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 from said Standard(s).

