Ref. Certif. No.

DK-44510-UL

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE

CERTIFICAT D'ESSAI OC

Product Produit	Built-in LED Module
Name and address of the applicant Nom et adresse du demandeur	Philips Lighting B.V. High Tech Campus 45 Eindhoven, 5656 AE Netherlands
Name and address of the manufacturer Nom et adresse du fabricant	Philips Lighting B.V. High Tech Campus 45 Eindhoven, 5656 AE Netherlands
Name and address of the factory Nom et adresse de l'usine Note: *When more than one factory, please report on page 2* Note: *Lorsque il y plus d'une usine, veuillez utiliser la 2ème page*	Philips Lighting Poland S.A. ul. Przemyslowa 29,64-920 Pila Poland ☒ Additional Information on page 4
Ratings and principal characteristics Valeurs nominales et caractéristiques principales	HV: Imax: 650 mA DC Current LV: Imax: 800 mA DC Current (see Pages 2 and 3 for further ratings)
Trademark (if any) Marque de fabrique (si elle existe)	PHILIPS
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	
Model / Type Ref. Ref. De type	Fortimo LED line xft ylm zcc qR eVg a See Page 2
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire,, peuvent être indiqués sur la 2ème page	Additionally evaluated to EN 62031:2008/A1:2013/A2:2015. ☐ Additional Information on page 2
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 62031(ed.1), IEC 62031(ed.1);am1, IEC 62031(ed.1);am2
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat	4786810297-2 issued on 2015-03-27

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme **National de Certification**

☐ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☒ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2015-03-31

Signature:

Jan-Erik Storgaard

Model Details:

Main series: Fortimo LED line *x*ft *y*lm *zcc q*R *e*V*g a*

Where:

x = Product length in feet (one digit or three characters (for example 1.5))
y = Lumen output (three or four digits);
z = CRI of LED divided by 10 (one digit, may be "8" or "9");
cc = Color temperature of LED divided by 100 (two digits, may be a value between 30 and 65);
q = Number of LED's rows (one digit, may be "1" or "3");
e = Voltage type (one character, may be "H" or "L");
g = Number of LED module's generation (one digit, may be "2" or "3");
a = Alphanumeric commercial suffix for commercial purposes (optional)

Maximum ratings of the series:

Type	DC Current [mA]	Power [W]	Number of LEDs	t_c [°C]	Maximum working voltage for basic insulation to mounting surface [Vdc]
HV	400 ($V_{f\,tot}$ 70 V)	28	44	80	420
HV (°)	650 ($V_{f\,tot}$ 36 V)	23,4	33	95	420
LV	800 ($V_{f\,tot}$ 36 V)	28,8	44	80	120
(°): Only for model Fortimo LED line 1ft 2000lm *zcc* 3R HV*g a*					

Variant series: LBA *bs* xft** *y*lm *zcc eh a***

Where:

b = Platform shape (1-5 characters, may be "Area" or "Line" or "Slim" or "Point" or "Round");
s = Segment (one character, Commercial application);
x = Product length (or diameter) in feet (one digit or three characters (for example 1.5)
y = Lumen output (three or four digits);
z = CRI of LED divided by 10 (one digit, may be "8" or "9");
cc = Color temperature of LED divided by 100 (two digits, may be a value between 30 and 65);
e= Voltage type (one character, may be "H" or "L");
h = Last digit of release year (one digit);
a= Alphanumeric commercial suffix for commercial purposes (optional)

The variant series differs from the main series for the different commercial product key and three additional models ("Slim", "Point" and "Round").

Additional information (if necessary)
Information complémentaire (si nécessaire)

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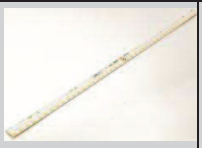
See the following table for the Platform shapes allowed (*b* field of the Product Key):

Area	Line	Slim	Point	Round
				
3 rows of LEDs	1 row of LEDs	1 row of LEDs	LEDs placed in groups of 6	1 or 2 circular rows of LEDs
LEDs used: 5630HE Series 5630SC Series 7030 Series	LEDs used: 5630HE Series	LEDs used: 5630HE Series	LEDs used: 7030 Series	LEDs used: 5630HE Series

Maximum ratings of the series

Platform shape (*b* field on Product Key)	DC Current [mA]	Power [W]	Number of LEDs	t_c [°C]	Maximum working voltage for basic insulation to mounting surface [Vdc]
Area and **Line** (HV Type)	400 ($V_{f\,tot}$ 70 V)	28	44	80	420
Area (°) (HV Type)	650 ($V_{f\,tot}$ 36 V)	23,4	33	95	420
Area and **Line** (LV Type)	800 ($V_{f\,tot}$ 36 V)	28,8	44	80	120
Slim	700 ($V_{f\,tot}$ 35 V)	24,5	44	80	120
Point	560 ($V_{f\,tot}$ 20 V)	11,2	12	85	420
Round	4 x 188 mA ($V_{f\,tot}$ 4x 40-80 V)	43,2	80	80	150 (And between adjacent independent strings)
(°): Only for model LBA Areas 1ft 2000lm *zcc* H*h a*					

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Additional information:

- The insulation between active parts of LED module and accessible conductive parts (metal mounting surface) is tested for basic insulation related to 420 Vdc for HV modules (150 Vdc for Platform shape *b* in the Product Key of variant series = “Round”) and related to 120 Vdc for LV modules.

- HV modules and modules with Platform shape *b* in the Product Key of variant series = “Slim” shall use PCBs with PTI > 600 V.

- Manufacturer and customers shall maintain clearances and creepage distances between tracks on PCB and screws/accessible conductive parts in compliance with table 11.1 of IEC/EN 60598-1 using working voltage values of 420 Vdc for HV modules (150 Vdc for Platform shape *b* in the Product Key of variant series = “Round”) and 120 Vdc for LV modules and considering basic insulation.

- M4 fixing screws with diameter of their heads not exceeding 8 mm shall be used (if in metallic material). Manufacturer recommends the use of washers made in insulating material. The fasters used to secure the module to the mounting surface must be tightened with a torque between 0,6 and 1 Nm.

- 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 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.

- HV (High Voltage) modules can be used in series configuration if the total voltage of the load of LED controlgear does not exceed 420 Vdc (150 Vdc for Platform shape *b* in the Product Key of variant series = “Round”).
- LV (Low Voltage) modules can be used in parallel configuration if the current per module does not exceed its rated current and the current in the chain of modules does not exceed 1,8 A.

Additional information (if necessary)
Information complémentaire (si nécessaire)

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