

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

Product  
Produit

Name and address of the applicant  
Nom et adresse du demandeur

Name and address of the manufacturer  
Nom et adresse du fabricant

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 a plus d'une usine, veuillez utiliser la 2<sup>ème</sup> page

Ratings and principal characteristics  
Valeurs nominales et caractéristiques principales

Trademark (if any)  
Marque de fabrique (si elle existe)

Type of Manufacturer's Testing Laboratories used  
Type de programme du laboratoire d'essais  
constructeur

Model / Type Ref.  
Ref. De type

Additional information (if necessary may also be  
reported on page 2)  
Les informations complémentaires (si nécessaire,,  
peuvent être indiqués sur la 2<sup>ème</sup> page

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

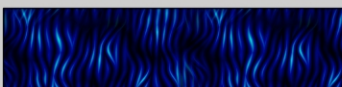
As shown in the Test Report Ref. No. which forms part  
of this Certificate  
Comme indiqué dans le Rapport d'essais numéro de  
référence qui constitue partie de ce Certificat

## CERTIFICAT D'ESSAI OC

Built in LED Module

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

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



☒ Additional Information on page 2

HV: I<sub>max</sub>: 1000 mA DC Current  
LV: I<sub>max</sub>: 1120 mA DC Current  
(for additional information see Test Report)

**PHILIPS**

Fortimo LED line xft ylm zcc qR eVg a  
See Pages 2 and 3

For further model information see test report.

☒ Additional Information on page 4

IEC 62031(ed.1), IEC 62031(ed.1);am1, IEC 62031(ed.1);am2

4786877604-2 Amendment 1 issued on 2015-09-16

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 (Denko), 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

Date: 2015-09-21  
Original Issue Date: 2015-05-25

Signature:

*Jan Erik Storgaard*

Jan-Erik Storgaard

For full legal entity names see [www.ul.com/ncbnames](http://www.ul.com/ncbnames)

Model Details:

Main series: Fortimo LED line xft ylm zcc qR eVg 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 between 27 and 65);
- q = Number of LED's rows (one digit, may be "1" or "2" 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 <sub>c</sub> [°C]	Maximum working voltage for basic insulation to mounting surface [Vdc]
HV	400 (V <sub>f tot</sub> 70 V)	28	44	85	420
HV (*)	650 (V <sub>f tot</sub> 36 V)	23,4	33	95	420
HV (**)	1000 (V <sub>f tot</sub> 40 V)	40	120	85	420
LV	1120 (V <sub>f tot</sub> 36 V)	40	44	85	120

(\*): Only for model Fortimo LED line 1ft 2000lm zcc 3R HVg a


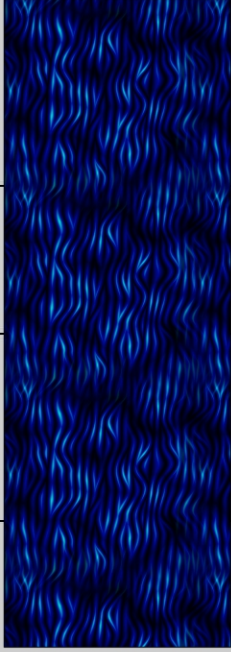



(\*\*): Only for model Fortimo LED line 2ft 1250lm zcc 2R HVg a


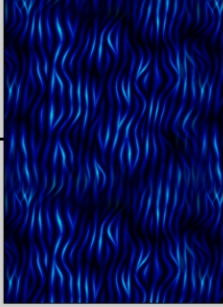

Variant series 1: LBA bs xft ylm zcc eh a

Where:

- b = Platform shape (4-5 characters, may be "Area", "2Line", "Line", "Slim", "Point", "Round");
- s = Segment (one character, Commercial application);
- x = Product length (or diameter) in feet or dimensions in mm for "Slim" shape (1-6 characters)
- 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 between 27 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)

See the following table for the Platform shapes allowed:

Platform shape (b field on Product Key)	Image of shape	Main characteristics	LED used
Area		3 rows of LEDs, HV/LV Types	
2Line		2 rows of LEDs, HV Type	
Line		1 row of LEDs, HV/LV Types	
Slim		1 row of LEDs on a slim PCB, LV Type	

Point		LEDs placed in groups of 6, HV Type	
Round		1 or 2 circular rows of LEDs, HV Type, 4 independent LED strings	

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 ( $V_{f\text{tot}}$ 70 V)	28	44	85	420
Area (HV Type) (*)	650 ( $V_{f\text{tot}}$ 36 V)	23,4	33	95	420
Area and Line (LV Type)	1120 ( $V_{f\text{tot}}$ 36 V)	40	44	85	120
2Line	1000 ( $V_{f\text{tot}}$ 40 V)	40	120	85	420
Slim	700 ( $V_{f\text{tot}}$ 35 V)	24,5	44	85	120
Point	1ft: 560 ( $V_{f\text{tot}}$ 20 V)	1ft: 11,2	1ft: 12	1ft: 85	420
	2ft: 560 ( $V_{f\text{tot}}$ 40 V)	2ft: 22,4	2ft: 24	2ft: 90	420
Round	4 x 188 mA ( $V_{f\text{tot}}$ 4 x 40-80 V)	43,2	80	85	150 (And between adjacent independent strings)

(\*): Only for model LBA Areas 1ft 2000lm *zcc eHh a*

#### Variant series 2: *b LED Strip xu ylm zcc eVg a*

Where:

- b* = Family name (may be "Fortimo" or "CertaFlux")
- x* = Product length in feet or mm (one digit or three characters (for example 1.5 or 102))
- u* = Measurement unit for product length (two characters, may be "ft" or "mm")
- 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 between 27 and 65);
- 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)

The variant series 2 differs from the main series for the different rectangular shape (only 1 row of LEDs placed on a slim PCB).

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	480 ( $V_{f\text{tot}}$ 80 V)	38,4	48	85	420
LV	600 ( $V_{f\text{tot}}$ 36 V)	21,6	48	85	120

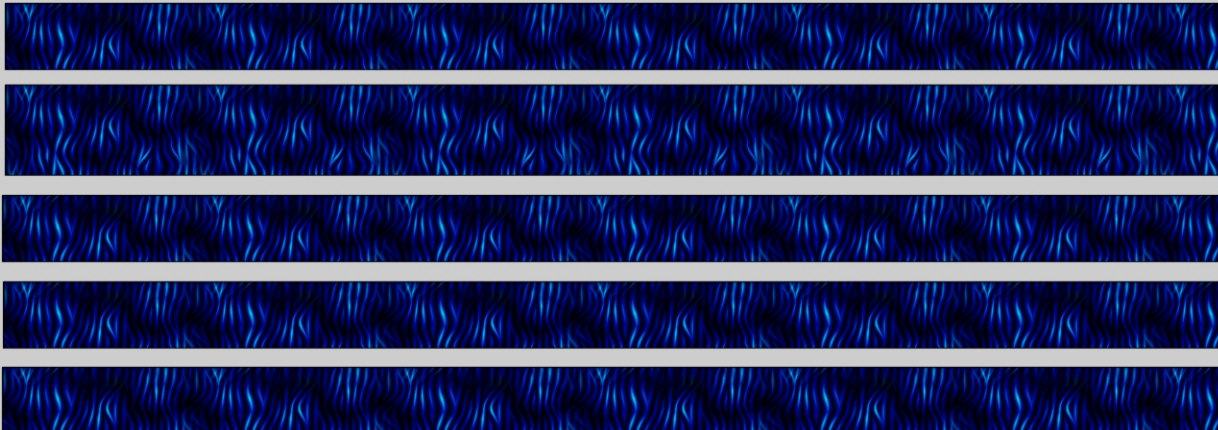


#### Additional Information:

- Modules having Platform shape b in the Product Key of variant series 1 = "Slim" can be named also with dimensions x in mm instead in feet (for example: LBA SlimS 595x20 500lm 830 L5)
  - 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 1 = "Round") and related to 120 Vdc for LV modules.
  - HV modules, modules having Platform shape b in the Product Key of variant series 1 = "Slim", module "LBA LineP 2ft 4000lm zcc L5", module "Fortimo LED line 2ft 4000lm zcc 1R LV3" and all modules of variant series 2 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 1 = "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). Modules having Number of LED's rows q in the Product Key of main series = "2" or Platform shape b in the Product Key of variant series 1 = "2Line" shall use M3 fixing screws with diameter of their heads not exceeding 5,6 mm. Manufacturer recommends for all modules the use of washers made in insulating material. The fasteners 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 tc 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 1 = "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 for modules with terminals Molex Lite-Trap and WAGO and 1 A for modules with terminals Molex Flexi-Mate.
  - The modules have been also evaluated according to IEC TR 62778 (Second Edition): RISK GROUP 1 UNLIMITED with exception of modules having LED 3020 series which are classified RISK GROUP 2 (Worst value of Ethr = 338 lx) (See also photobiological test reports for more information).
- The original Test Report Ref. 4786877604-2, dated 2015-05-19 has been modified on 2015-09-16 to cover the following changes and/or additions:
- Addition of a new variant series to the model list (variant series 2) and new Factory.
  - Addition of new LEDs used (757D series and 3020 series), new screwless terminal and two new PCB materials. Increase maximum CCT of LEDs 7030 series and 5630D series.
  - Increase maximum rated current of model LBA PointP 2ft, LBA LineP 2ft (LV Type) and Fortimo LED line 2ft 4000lm zcc 1R (LV Type).
  - Update of description on General Product Information and correction of some typo errors.

Also investigated to: EN 62031:2008/A1:2013/A2:2015

#### Factories:



#### Additional information (if necessary)

#### Information complémentaire (si nécessaire)



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