

ENEC LICENSE

License No. ENEC-01127-P9

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Date of Issue 2023-03-17

License Holder SIGNIFY NETHERLANDS B.V.
HIGH TECH CAMPUS 48 EINDHOVEN 5656 AE
NETHERLANDS

Production site

Certification Mark See Annex 1

Certified Product Built-in LED Module

Model Main series: **Fortimo LED line** *p xu ylm zcc qR eVgd a*
See page 3, 4, 6 for additional Information

Trademark



Ratings HV: I_{max}: 1200 mA ---
LV: I_{max}: 2000 mA ---

See page 3, 5 for additional ratings

Tested acc. to EN IEC 62031:2020, EN IEC 62031:2020/A11:2021

Test Report No. 4790778539-1 issued on 2023-03-16

Additional Information This certificate replaces previous certificate no. ENEC-01127-P8-M2 issued on 2021-11-29

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 License, in accordance with the ENEC Requirements. The Designated License 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 License shall remain valid unless terminated earlier in accordance with the Service Agreement including without limitation if the Standard identified on this License is amended or withdrawn prior the Date of Withdrawal of conflicting Standard(s).

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Additional Model(s):

Product Key:

Main series: Fortimo LED line *p xu ylm zcc qR eVgd a*

Where:

- p* = Performance (may be blank or "PR" or "ST" or "VO");
x = Product length in feet or mm or inch (1-4 digits/characters (for example 1.5 or 102));
u = Measurement unit for product length (two characters, may be "ft" or "mm" or "in");
y = Lumen output (three or four or five 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 73);
q = Number of LED's rows (one digit, may be "1" or "2" or "3" or "4" or "6" or "9" or "T");
e = Voltage type (one character, may be "H" or "L");
g = Number of LED module's generation (one digit, may be "2" or "3" or "4" or "5");
d = Connector designator (may be blank or "F" = front connector, or "B" = back connector, or "D" = dual entry connector);
a = Commercial suffix for commercial purposes (optional)

Maximum ratings of the series:

Type	Supply DC Current [mA]	Power [W]	Number of LEDs	t _c [°C]	Max. working voltage for basic insulation to mount. surface [V]
HV	570	40	72	90	420 (°)
HV (*)	1000	93,6	176	95	420
HV (**)	1000	40	120	85	420
HV (***)	640 (V _{f tot} 81,5 V) or 320 (V _{f tot} 163 V)	52,2	46	95	420
HV (****)	1200	86,4	184	85	420 (°°)
HV (*****)	800	21	32	80	350 (°°°)
LV	1120	40	44	90	120
LV(#)	1440	47,52	88	85	120

(*): High flux modules (≥ 2000 lm/ft), T_c: 85 if g=5.

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

(***): When q = "T" in the product key. Maximum current depends on connecting method of the module.

(****): For model Lunux (Fortimo LED line 415mm 12000lm zcc 9R HV4 L)

(*****) : For model Fortimo LED line 1ft 800lm zcc 4R HV4 L

(°): 450 V for model Fortimo LED line 1ft ylm zcc 3R HV4B T with parameter y ≤ 1500 lm

(°°): When 1 mm additional creepage to mounting surface is taken near the supply terminal (to be verified in the final product)

(°°°): When insulating washers (or plastic optics) are used on fixing screws.

(#) Middle Flux module (between 700 and 1700lm per ft)

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Product Key:

Variant series 1: *b Strip p w xu yl t zcc s d eVgD a*

Where:

- b* = Family name (may be "Fortimo LED" or "CertaFlux LED" or "FO" or "CF");
- p* = Performance (may be blank or "PR" or "ST" or "VO" or "OC" or "CES" or "ST FT" or "PR FT");
- w* = Product width in mm (optional) (two digits, if it is omitted width is 20 mm);
- x* = Product length in feet or mm or inch (1-4 digits/characters (for example 1.5 or 102));
- u* = Measurement unit for product length (two characters, may be "ft" or "mm" or "in");
- y* = Value of Lumen output or Value of Lumen output divided by 100 (1-4 digits);
- l* = Measurement unit for Lumen output (may be "lm" or "L");
- t* = Connector designator, optional in case of "ft" or "in" (may be blank or "FC" = front connector or "BC" = back connector);
- z* = CRI of LED divided by 10 (one digit (or blank when *p* = "CES"), may be "8" or "9");
- cc* = Color temperature of LED divided by 100 (two digits or six characters (or blank when *p* = "CES"), may be a value between 27 to 65 (or "27-865" or "27-965" (when *p* = "PR FT" or "ST FT")));
- s* = Specials (may be blank or "HE" = High Efficiency, or "PW" = Premium White);
- d* = Connector designator in case of "ft" or "in" (may be blank or "NA" or "1R" or "FC" = front connector or "BC" = back connector);
- e* = Voltage type (one character, may be "H" or "L");
- g* = Number of LED module's generation (one or two digits, may be "1" or "2" or "3" or "4" or "4+" or "5" or "6");
- D* = Connector designator in case of "mm" (may be blank or "F" = front connector, or "B" = back connector);
- a* = Commercial suffix for commercial purposes (optional)

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Maximum ratings of the series:

Type	Flux Type	Flux [lm]	Supply DC Current [mA]	LED Current [mA]	Power [W]	Number of LEDs	t _c [°C]	Max. working voltage for basic insulation to mount. surface [V]
HV	-	5500	600	190	89,1	180	85	420 (350 for $b = \text{Fortimo}$ and $g \geq 4$) (350 for $b = \text{CertaFlux}$ and $g \geq 3$)
	-	2200	600	150	35,64	72	80	
	-	2200 (°)	2 x 480	240	2 x 38,4	96	80	
	-	2300 (§)	720	240	37	48	95	
	-	2200 (§§)	1000	200	69	100	85	
	-	4400	720	180	71,3	144	90	
	-	6400 (*)	600	200	93,6	138	95	
	HF	6000	720	240	60,48	84	95	
	HF	6900 (**)	720	180	59,04	96	85	
	-	5500	600	240	89,4	45	80	
	-	4400	600	200	71,28	36	80	
	-	275	600	200	3.96	8	85	
LV	-	5500	1900	190	72	144	85	120 (350 for Fortimo LED Strip 1450mm 5500lm LV5F)
	-	5500	2000	150	71,3	144	80	
	-	2200 (°)	2 x 700	175	2 x 30,8	112	95	
	-	2200 (§)	800	200	30	48	85	
	-	2200 (§§)	2000	200	69	100	80	
	HF	4000	400	200	39	72	95	
		8000	1800	150	63	144	95	
	-	5500	2000	240	79,2	12	80	

(°): When $p = \text{"ST FT"}$ or "PR FT" in the product key. LED Modules with 2 separated circuits not insulated from each other.
 (§): When $p = \text{"OC"}$ in the product key
 (§§): When $p = \text{"CES"}$ in the product key
 (*): When $w = \text{"12"}$ in the product key
 HF means Flux $\geq 2000 \text{ lm/ft}$
 (**): When $a = \text{"T"}$ in the product key

Note: "HV/LV" term above indicates that the module can be used in both HV mode or LV mode.

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Variant series 2: *b Strip p w x u y z c c s d e V g D a*

Where:

- b* = Family name (may be "Fortimo LED" or "CertaFlux LED" or "FO" or "CF");
- p* = Performance (may be blank or "PR" or "ST" or "VO" or "OC" or "CES" or "ST FT" or "PR FT" or "CED");
- w* = Product width in mm (optional) (two digits, if it is omitted width is 20 mm);
- x* = Product length in feet or mm or inch (1-4 digits/characters (for example 1.5 or 102));
- u* = Measurement unit for product length (two characters, may be "ft" or "mm" or "in");
- y* = lumen output classification (may be "LF", or "MF", or "SMF", or "HF", or "VHF");
- z* = CRI of LED divided by 10 (one digit (or blank when p = "CES" or "CED"), may be "8" or "9");
- cc* = Color temperature of LED divided by 100 (two digits or six characters (or blank when p = "CES" or "CED"), may be a value between 27 to 65 (or "27-865" or "27-965" (when p = "PR FT" or "ST FT")));
- s* = Specials (may be blank or "HE" = High Efficiency, or "PW" = Premium White);
- d* = Connector designator in case of "ft" or "in" (may be blank or "NA" or "1R" or "FC" = front connector or "BC" = back connector);
- e* = Voltage type (one character, may be "H" or "L");
- g* = Number of LED module's generation (one or two digits, may be "1" or "2" or "3" or "4" or "4+" or "5" or "6");
- D* = Connector designator in case of "mm" (may be blank or "F" = front connector, or "B" = back connector);
- a* = Commercial suffix for commercial purposes (optional, 1-2 digits/characters);

Variant series 3: Fortimo LED Line *p x u y z c c q R e g d a*

Where:

- p* = Performance (may be blank or "PR" or "ST" or "VO");
- x* = Product length in feet or mm or inch (1-4 digits/characters (for example 1.5 or 102));
- u* = Measurement unit for product length (two characters, may be "ft" or "mm" or "in");
- y* = lumen output classification (may be "LF", or "MF", or "SMF", or "HF", or "VHF");
- 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 73);
- q* = Number of LED's rows (one digit, may be "1" or "2" or "3" or "4" or "6" or "9" or "T");
- e* = Voltage type (characters, may be "HV" for High voltage or "LV" for Low Voltage or "HV/LV" for High voltage and Low voltage are compatible);
- g* = Number of LED module's generation (one digit, may be "2" or "3" or "4" or "5");
- d* = Connector designator (may be blank or "F" = front connector, or "B" = back connector, or "D" = dual entry connector);
- a* = Commercial suffix for commercial purposes (optional)

Certification Body

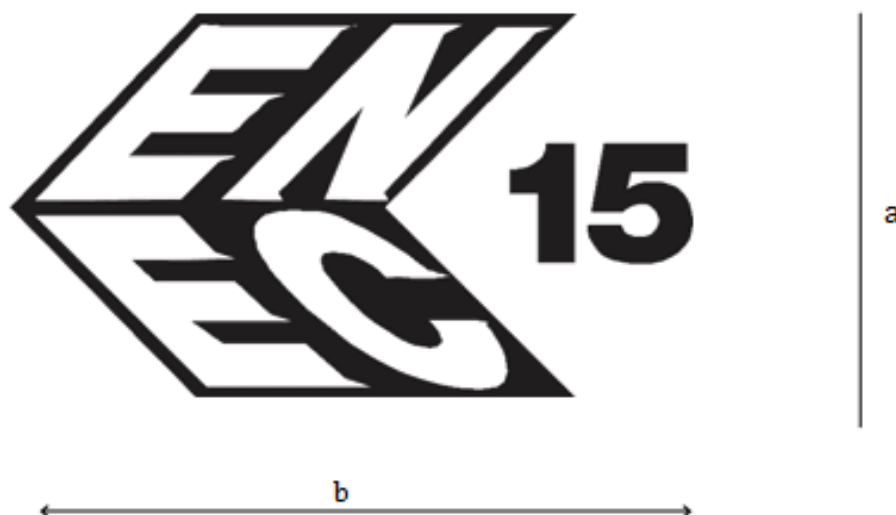
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Annex 1 to License No.

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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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