


# ENEC LICENSE

License No. ENEC-01127-P8-M2

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Date of Issue 2021-11-29

<b>License Holder</b>	SIGNIFY NETHERLANDS B.V. HIGH TECH CAMPUS 48 EINDHOVEN 5656 AE THE NETHERLANDS
<b>Production site</b>	-
<b>Certification Mark</b>	See Page 2 for additional information
<b>Certified Product</b>	See Annex 1
<b>Model</b>	Built-in LED Module Fortimo LED line p xu ylm zcc qR eVgd a, b Strip p w xu yl t zcc s d eVgD a, b Strip p w xu y zcc s d eVgD a, Fortimo LED Line p xu y zcc qR egd a See page 3-6 for additional Information
<b>Trademark</b>	
<b>Ratings</b>	HV: I <sub>max</sub> : 1200 mA ——— LV: I <sub>max</sub> : 2000 mA ——— See page 3-5 for additional ratings
<b>Tested acc. to</b>	EN IEC 62031:2020
<b>Test Report No.</b>	4789718816.1.1 issued on 2021-11-24
<b>Additional Information</b>	The report was revised to include technical modifications. See page 7 for additional information

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**Certification Manager**  
Jan-Erik Storgaard

**Certification Body**

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Factories:

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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 ( $V_{f\text{tot}}$ 81,5 V) or 320 ( $V_{f\text{tot}}$ 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
<b>LV(#)</b>	<b>1440</b>	<b>47,52</b>	<b>88</b>	<b>85</b>	<b>120</b>

(\*): High flux modules ( $\geq 2000$  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  $y \leq 1500$  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 x u y l t 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”);
- 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 <sub>c</sub> [°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  $\text{"PR FT"}$  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  $\geq 2000$  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)

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## Additional information:

This certificate replaces previous certificate no. ENEC-01127-P8-M1 issued on 2021-09-10, due to:

- Update the input current for Fortimo LED Line 1ft HF 830 3R HV5 to 900mA.
- Release new PCB size for Fortimo LED Line 1ft MF 830 1R HV5 & Fortimo LED Line 2ft MF 830 1R HV5
- Update attachments, see test report

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# Annex 1 to License No.

## ENEC-01127-P8-M2

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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