

# ENEC+ LICENSE

License No. ENEC-01182-P6-A1-PLUS-UL  
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 Date of Issue 2020-07-21

**License Holder** Signify Netherlands B.V.  
 High Tech Campus 48  
 Eindhoven, 5656 AE Netherlands

**Production site**

**ENEC License No. (safety)**

ENEC-01182-P6-A1-UL

**Certification Mark**

See Annex 1

**Certified Product**

Built-in LED Module

**Model**

Main series: Fortimo SLM C zcc d m Lee s Gi a

See Page 2 to Page 5

**Trademark**

**PHILIPS**

**Rated Voltage / Frequency**

I<sub>max</sub> 2750 mA — V<sub>max</sub> 44 V —

(See Page 2 to Page 6 for further ratings)

**Rated Current / Power**

See Rated Voltage / Frequency

**Insulation Class**

-

**Degree of protection (IP)**

-

**Complying with the following EPRS  
 standard for performance**

PD EPRS 001:2018-05 (based on EN 62717:2017)

**EPRS Test Report No.**

4789456081.3.1-1 issued on 2020-07-20

**Additional Information**

This certificate replaces certificate no. ENEC-01182-P4-PLUS-UL issued on 2020-01-09

**Certification Manager**  
 Jan-Erik Storgaard

**Certification Body**

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## Model details:

### Product Key:

Main series: Fortimo SLM C zcc d m Lee s Gi a

### Where:

z = CRI of LED divided by 10 (one digit, may be "7" or "8" or "9");  
 cc = Color temperature of LED divided by 100 (two digits, may be a value between 25 and 57);  
 d = Flavor of light (two or three characters, may be "CW" or "FP" or "FPR" or "FW" or "FWW" or "PW" or blank);  
 m = Die matrix (4 digits, may be "1202" or "1203" or "1204" or "1205" or "1208" or "1211");  
 ee = Diameter of Light Emitting Surface (LES) in mm (one or two digits, may be a value between 9 and 19);  
 s = CoB size in mm (four digits, example 2828: CoB dimensions = 28 mm x 28 mm));  
 i = Number of generation of CoB (one digit, may be "4" or "5");  
 a = Suffix for commercial purposes (optional)

### Maximum ratings of the series:

CoB Type (Die matrix)	Diameter of LES of CoB [mm]	CCT [K]	DC Current [mA]	Power [W]	Power Density of CoB [W/mm <sup>2</sup> ]	t <sub>c</sub> [°C]
1211	19	≤ 4000	2400 (V <sub>f tot</sub> 37,5 V)	90	0,32	105
		> 4000	1500 (V <sub>f tot</sub> 36 V) *	54	0,19	
1208	15	≤ 4000	1690 (V <sub>f tot</sub> 36 V)	60,8	0,34	105
		> 4000	935 (V <sub>f tot</sub> 36 V) *	33,7	0,19	
1205	13	≤ 4000	1200 (V <sub>f tot</sub> 36 V)	43,2	0,33	105
		> 4000	700 (V <sub>f tot</sub> 36 V) *	25,2	0,19	
1204	13	≤ 4000	960 (V <sub>f tot</sub> 36 V)	34,6	0,26	105
		> 4000	700 (V <sub>f tot</sub> 36 V) *	25,2	0,19	
1203	9	≤ 4000	600 (V <sub>f tot</sub> 36 V)	21,6	0,34	105
		> 4000	340 (V <sub>f tot</sub> 36 V) *	12,2	0,19	
1202	9	≤ 4000	480 (V <sub>f tot</sub> 36 V)	17,3	0,27	105
		> 4000	340 (V <sub>f tot</sub> 36 V) *	12,2	0,19	

\* : See additional information

Higher numeric generations of CoB is a suitable replacement for lower numeric generations without additional normal temperature test on the final product if:

- The final product thermal management construction is not reduced, and
- The CoB size is identical, and
- The rated power of CoB is lower or equal.

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Variants:

## Product Key:

Variant series 1: Fortimo SLM zcc Lee hh s Gij a

Where:

**z** = CRI of LED divided by 10 (one digit, may be "7" or "8" or "9");  
**cc** = Color temperature of LED divided by 100 (two digits, may be a value between 25 and 57);  
**ee** = Diameter of Light Emitting Surface (LES) in mm (one or two digits, may be a value between 9 and 19);  
**hh** = Holder type (two characters or none, may be "DL" or "PI" or "ZP" or "ZPw" or blank);  
**s** = CoB size in mm (four digits, example 2828: CoB dimensions = 28 mm x 28 mm));  
**i** = Number of generation of CoB (one digit, may be "4" or "5");  
**j** = Number of generation of Holder (one digit, may be "1" or "2");  
**a** = Suffix for commercial purposes (optional)

The variant series 1 differs from the main series for different product key and for the presence of LED CoB + LED Holder.

## Maximum ratings of the series:

CoB Type	Diameter of LES of CoB [mm]	CCT [K]	DC Current [mA]	Power [W]	Power Density of CoB [W/mm <sup>2</sup> ]	t <sub>c</sub> [°C]	T Holder [°C]
1211	19	≤ 4000	2400 (V <sub>f tot</sub> 37,5 V)	90	0,32	105	100
		> 4000	1500 (V <sub>f tot</sub> 36 V) *	54	0,19		
1208	15	≤ 4000	1690 (V <sub>f tot</sub> 36 V)	60,8	0,34	105	100
		> 4000	935 (V <sub>f tot</sub> 36 V) *	33,7	0,19		
1205	13	≤ 4000	1200 (V <sub>f tot</sub> 36 V)	43,2	0,33	105	100
		> 4000	700 (V <sub>f tot</sub> 36 V) *	25,2	0,19		
1204	13	≤ 4000	960 (V <sub>f tot</sub> 36 V)	34,6	0,26	105	100
		> 4000	700 (V <sub>f tot</sub> 36 V) *	25,2	0,19		
1203	9	≤ 4000	600 (V <sub>f tot</sub> 36 V)	21,6	0,34	105	100
		> 4000	340 (V <sub>f tot</sub> 36 V) *	12,2	0,19		

1202	9	≤ 4000	480 (V <sub>f tot</sub> 36 V)	17,3	0,27	105	100
		> 4000	340 (V <sub>f tot</sub> 36 V) *	12,2	0,19		

\* : See additional information

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## Product Key:

Variant series 2: Fortimo SLM C zcc d m Lee s Gi a

## Where:

- z** = CRI of LED divided by 10 (one digit, may be "7" or "8" or "9");  
**cc** = Color temperature of LED divided by 100 (two digits, may be a value between 22 and 65);  
**d** = Flavor of light (two or three characters, may be "CW" or "FP" or "FPR" or "FW" or "FWW" or "PW" or blank);  
**m** = Die matrix (4 digits, may be "1202" or "1203" or "1204" or "1205" or "1208" or "1211" or "1216")  
**ee** = Diameter of Light Emitting Surface (LES) in mm (two digits, may be a value Between 06 and 23);  
**s** = CoB size in mm (four digits, example 2828: CoB dimensions = 28 mm x 28 mm);  
**i** = Number of generation of CoB (one digit, may be "6", "7");  
**a** = Suffix for commercial purposes (optional)

## Maximum ratings of the series:

CoB Type (Die matrix)	Diameter of LES of CoB [mm]	DC Current [mA]	Power [W]	Power Density of CoB [W/mm <sup>2</sup> ]	t <sub>c</sub> [°C]
1216	23 *	2750 (V <sub>f tot</sub> 41 V)	113	0,27	105
1211	18.5*	2400 (V <sub>f tot</sub> 41 V)	98	0,37	105
1208	15 *	1710 (V <sub>f tot</sub> 41 V)	70	0,40	105
1206	13 *	1200 (V <sub>f tot</sub> 41 V)	49	0,37	105
1205	13 *	1050 (V <sub>f tot</sub> 41 V)	43	0,32	105
1204	13 ^	850 (V <sub>f tot</sub> 41 V)	35	0,26	105
	9 **	1350 (V <sub>f tot</sub> 44 V)	59	0,93	105
	9 ^	740 (V <sub>f tot</sub> 41 V)	30	0,48	105
1203	9 *	570 (V <sub>f tot</sub> 41 V)	23	0,37	105
1202	6,5 ^	380 (V <sub>f tot</sub> 41 V)	16	0,47	105
	6,5 **	675 (V <sub>f tot</sub> 44 V)	30	0,90	105

^: Concerning CoB's Generation 6

\*: Concerning CoB's Generation 6 and 7

\*\*: Concerning CoB's Generation 7

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## Product Key:

Variant series 3: Fortimo SLM zcc Lee hh s Gij a

Where:

<b>z</b>	= CRI of LED divided by 10 (one digit, may be "7" or "8" or "9");
<b>cc</b>	= Color temperature of LED divided by 100 (two digits, may be a value between 22 and 65);
<b>ee</b>	= Diameter of Light Emitting Surface (LES) in mm (two digits, may be a value between 06 and 23);
<b>hh</b>	= Holder type (two or three characters or none, may be "DL" or "PI" or "ZP" or "ZPw" or blank);
<b>s</b>	= CoB size in mm (four digits, example 2828: CoB dimensions = 28 mm x 28 mm));
<b>i</b>	= Number of generation of CoB (one digit, may be "6", "7");
<b>j</b>	= Number of generation of Holder (one digit, may be "1" or "2");
<b>a</b>	= Suffix for commercial purposes (optional)

The variant series 3 differs from the variant series 2 for a different product key, for the presence of LED CoB + LED Holder and for different maximum ratings for CoB Type 1216.

Maximum ratings of the series:

CoB Type	Diameter of LES of CoB [mm]	DC Current [mA]	Power [W]	Power Density of CoB [W/mm <sup>2</sup> ]	t <sub>c</sub> [°C]	T Holder [°C]
1216	23 *	2750 (V <sub>f tot</sub> 41 V)	98	0,27	105	100
1211	18,5*	2400 (V <sub>f tot</sub> 41 V)	98	0,37	105	100
1208	15 *	1710 (V <sub>f tot</sub> 41 V)	70	0,40	105	100
1206	13 *	1200 (V <sub>f tot</sub> 41 V)	49	0,37	105	100
1205	13 *	1050 (V <sub>f tot</sub> 41 V)	43	0,32	105	100
1204	13 ^	850 (V <sub>f tot</sub> 41 V)	35	0,26	105	100
	9 **	1350 (V <sub>f tot</sub> 44 V)	59	0,93	105	100
	9 ^	740 (V <sub>f tot</sub> 41 V)	30	0,48	105	100
1203	9 *	570 (V <sub>f tot</sub> 41 V)	23	0,37	105	100
1202	6,5 ^	380 (V <sub>f tot</sub> 41 V)	16	0,47	105	100
	6,5 **	675 (V <sub>f tot</sub> 44 V)	30	0,90	105	100

^: Concerning CoB's Generation 6

\*: Concerning CoB's Generation 6 and 7

\*\*: Concerning CoB's Generation 7

Higher numeric generations of CoB is a suitable replacement for lower numeric generations without additional normal temperature test on the final product if:

The final product thermal management construction is not reduced, and

The CoB size is identical, and

The rated power of CoB is lower or equal.

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Performance ratings of the series (Gen6 / Gen7 & power density @ max safety current < 0.7 W/mm<sup>2</sup>):

Max Supply Current/Voltage [mA]	Max Power [W]	Max Luminous Flux [lm]	Efficac y [lm/W]	CCT [K]	CRI
1200 mA	41,5	6500	84-156	2200-6500	70,80,90
Tp Max	85 °C				
Ambient temperature Range:	-10 + 50 °C				

Performance ratings of the series (Gen7 & power density @ max safety current 0.7 W/mm<sup>2</sup>):

Max Supply Current/Voltage [mA]	Max Power [W]	Max Luminous Flux [lm]	Efficac y [lm/W]	CCT [K]	CRI
700 mA	25,7	3100	78-145	2200-6500	70,80,90
Tp Max	85 °C				
Ambient temperature Range:	-10 + 50 °C				

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Production Sites:

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# Annex 1 to License No. ENEC-01182-P6-A1-PLUS-UL

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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