

PHILIPS

Fortimo

LED

Fortimo LED SLM PW
1211 L19 2828 G6



Datasheet

Experience bright and vivid colors

Fortimo LED SLM PW 1211 L19 2828 G6

Fortimo LED SLM Gen6 continues to focus on the combination of Quality of Light and performance. By offering the CoB separate from the holder, even more flexibility in possible system combinations and specifications is achieved. This results in an extensive portfolio of lumen ranges, CCTs and spectra. Please also check the online Easy Design-in Tool for your perfect system combination (www.easydesignintool.com)

Key features and benefits

- Best quality of light available for all applications
- Extensive range of CCT's
- Small LES for narrow beam angles and small reflector designs
- Flexibility to select a different lumen output between 800 and 10000 lm
- State of the art Chip-on-Board (CoB) technology, enabling highest system efficacy
- System proposition (CoB + Holder + driver)
- Flexibility to optimize luminaire performance (lm/W or high lm output)
- Xitanium window drivers with SimpleSet for maximum flexibility
- Mini drivers for smallest possible luminaire designs
- Five years system warranty with over 50,000 hours lifetime
- Three dedicated product lines:
 - SLM Gen6 Premium White
 - SLM Gen6 CrispWhite
 - SLM Gen6 Food

July 2017

Ordering data

| Commercial product name | EOC | 12NC | Box quantity |
|---------------------------------------|-------------------|----------------|--------------|
| Fortimo SLM C 830 PW 1211 L19 2828 G6 | 8718696 649480 00 | 9290 014 48106 | 10 |
| Fortimo SLM C 930 PW 1211 L19 2828 G6 | 8718696 649503 00 | 9290 014 48206 | 10 |
| Fortimo SLM C 935 PW 1211 L19 2828 G6 | 8718696 649527 00 | 9290 014 48306 | 10 |
| Fortimo SLM C 940 PW 1211 L19 2828 G6 | 8718696 649541 00 | 9290 014 48406 | 10 |

Not all products are globally available by default.

Please contact your local Philips Lighting representative for local availability.

Drive currents

| Parameter | Nominal* | Life** | Max*** | Unit |
|-------------------------------------|----------|--------|--------|------|
| Fortimo LED SLM PW 1211 L19 2828 G6 | 1200 | 2000 | 2000 | mA |

Module temperatures

| Parameter | Nominal* | Life** | Max*** | Unit |
|---|----------|--------|--------|------|
| T _c (case temperature at T _c point) | 85 | 85 | 95 | °C |

* Nominal value at which typical performance is specified

** Value at which life time is specified

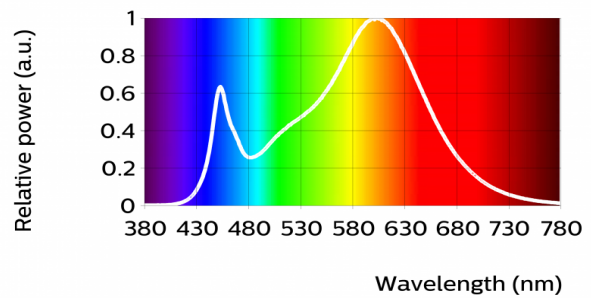
*** Maximum value for safe operation, do not operate above this value

Optical characteristics - table per color (CCT)

Fortimo SLM C 830 PW 1211 L19 2828 G6

| Parameter | Min | Typ | Max | Unit |
|------------------------------------|------|----------------|------|------|
| Luminous flux | 5170 | 5740 | 6320 | lm |
| Module efficacy | | 139 | | lm/W |
| Correlated color temperature (CCT) | | 3000 | | K |
| Color coordinates (CIEx, CIEy) | | (0.422, 0.386) | | - |
| Color consistency | | | 3 | SDCM |
| CRI | 80 | 82 | | |
| Photobiological safety | | | RG1 | |
| Energy efficiency label | | A++ | | |

Measurement precision for flux +/- 5%. Measurement precision for efficacy +/- 6%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

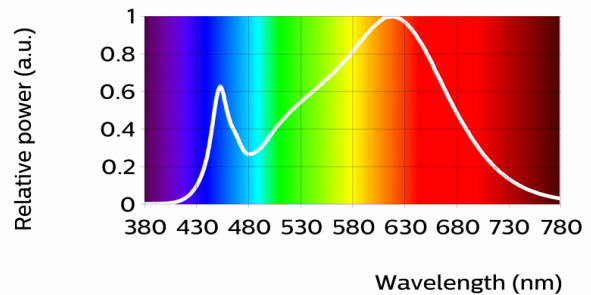


| R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | R11 | R12 | R13 | R14 |
|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| 83 | 95 | 92 | 80 | 84 | 93 | 80 | 58 | 10 | 88 | 79 | 79 | 86 | 96 |

Fortimo SLM C 930 PW 1211 L19 2828 G6

| Parameter | Min | Typ | Max | Unit |
|------------------------------------|------|----------------|------|------|
| Luminous flux | 4430 | 4920 | 5413 | lm |
| Module efficacy | | 119 | | lm/W |
| Correlated color temperature (CCT) | | 3000 | | K |
| Color coordinates (CIEx, CIEy) | | (0.422, 0.386) | | - |
| Color consistency | | | 3 | SDCM |
| CRI | 90 | 92 | | |
| Photobiological safety | | | RG1 | |
| Energy efficiency label | | A++ | | |

Measurement precision for flux +/- 5%. Measurement precision for efficacy +/- 6%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

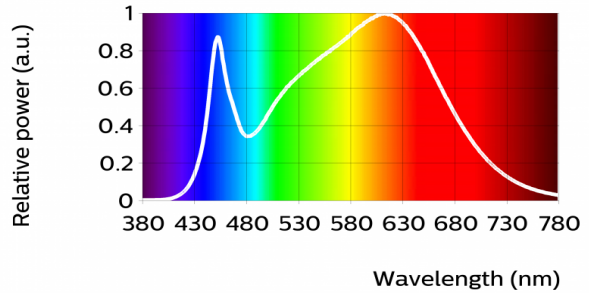


| R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | R11 | R12 | R13 | R14 | R15 |
|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|
| 93 | 97 | 97 | 91 | 93 | 95 | 90 | 80 | 58 | 93 | 91 | 83 | 95 | 99 | |

Fortimo SLM C 935 PW 1211 L19 2828 G6

| Parameter | Min | Typ | Max | Unit |
|------------------------------------|------|----------------|------|------|
| Luminous flux | 4620 | 5130 | 5650 | lm |
| Module efficacy | | 124 | | lm/W |
| Correlated color temperature (CCT) | | 3500 | | K |
| Color coordinates (CIEx, CIEy) | | (0.398, 0.376) | | - |
| Color consistency | | | 3 | SDCM |
| CRI | 90 | 92 | | |
| Photobiological safety | | | RG1 | |
| Energy efficiency label | | A++ | | |

Measurement precision for flux +/- 5%. Measurement precision for efficacy +/- 6%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5



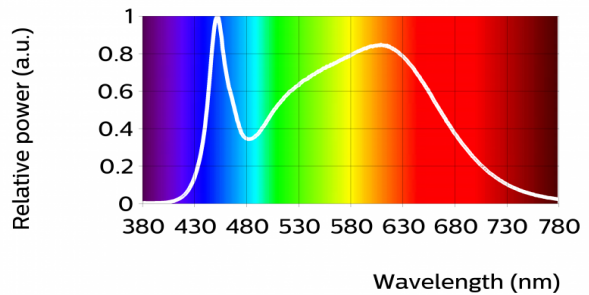
| R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | R11 | R12 | R13 | R14 | R15 |
|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|
| 93 | 96 | 97 | 91 | 92 | 93 | 92 | 82 | 59 | 89 | 91 | 77 | 94 | 98 | |

Fortimo SLM C 940 PW 1211 L19 2828 G6

| Parameter | Min | Typ | Max | Unit |
|------------------------------------|------|----------------|------|------|
| Luminous flux | 4750 | 5270 | 5800 | lm |
| Module efficacy | | 128 | | lm/W |
| Correlated color temperature (CCT) | | 4000 | | K |
| Color coordinates (CIEx, CIEy) | | (0.374, 0.364) | | - |
| Color consistency | | | 3 | SDCM |
| CRI | 90 | 92 | | |
| Photobiological safety | | | RG1 | |
| Energy efficiency label | | A++ | | |

At currents higher than 1676 mA the module might be classified as RG2

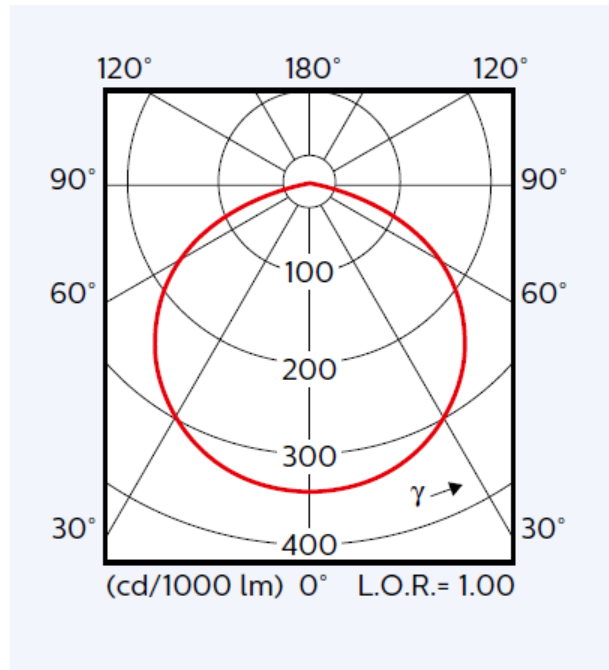
Measurement precision for flux +/- 5%. Measurement precision for efficacy +/- 6%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI +/- 1.5



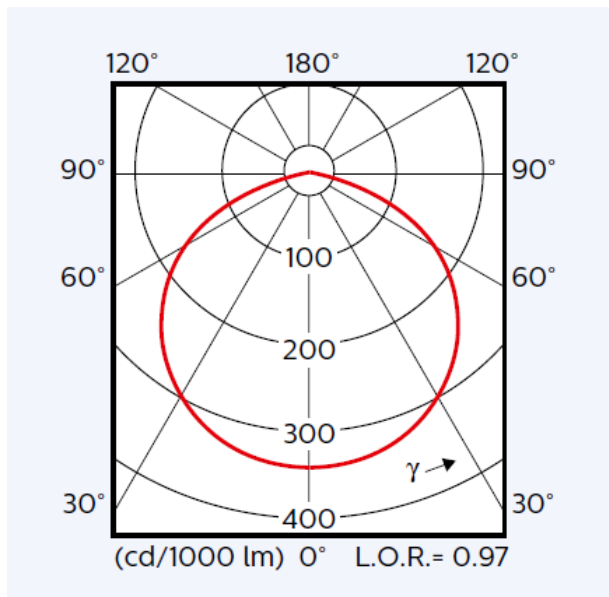
| R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | R11 | R12 | R13 | R14 | R15 |
|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|
| 92 | 96 | 96 | 91 | 92 | 92 | 92 | 83 | 60 | 88 | 90 | 72 | 94 | 97 | |

Beam shape

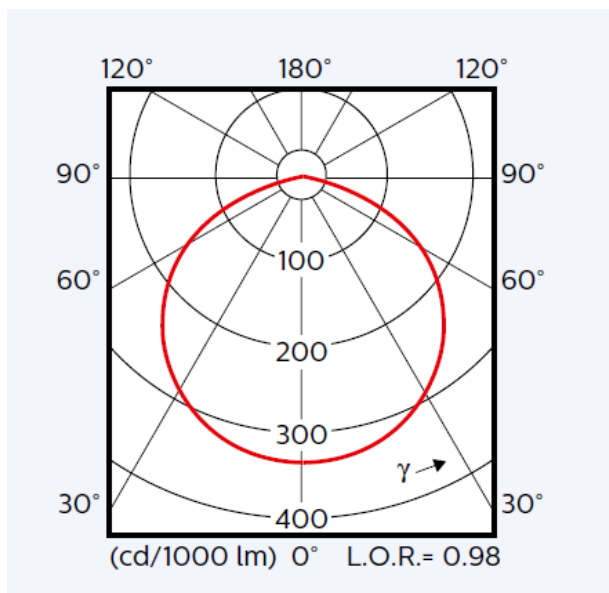
Bare CoB



CoB with a standard/ down-light/ Zhaga poke-in holder



CoB with a poke-in holder



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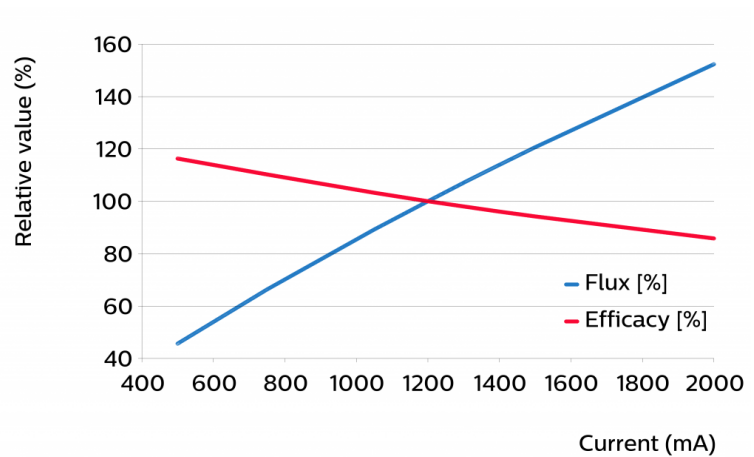
| Parameter | Min | Typ | Max | Unit |
|-------------------|-----|------|------|------|
| Forward voltage | | 34.4 | 36.9 | V |
| Power consumption | | 41.2 | 44.3 | W |
| Thermal power | | 24.2 | | W |

Measurement precision for Vf +/- 3%. Measurement precision for power +/- 3.3%

Tuning information

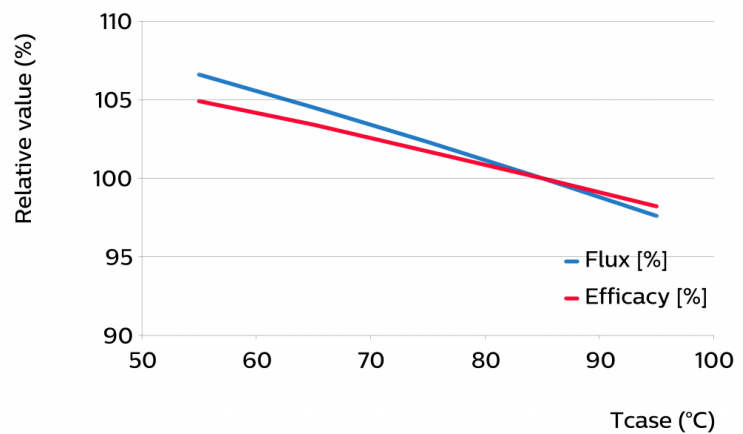
Flux and efficacy versus current (at Tc nominal)

| I [mA] | Flux [%] | Efficacy [%] |
|--------|----------|--------------|
| 500 | 46 | 116 |
| 750 | 66 | 110 |
| 1050 | 89 | 103 |
| 1200 | 100 | 100 |
| 1300 | 107 | 98 |
| 1400 | 114 | 96 |
| 1500 | 121 | 94 |
| 2000 | 152 | 86 |



Flux and efficacy versus temperature at Tc (at I nominal)

| Tcase [°C] | Flux [%] | Efficacy [%] |
|------------|----------|--------------|
| 55 | 107 | 105 |
| 65 | 105 | 103 |
| 75 | 102 | 102 |
| 85 | 100 | 100 |
| 95 | 98 | 98 |



Lumen maintenance

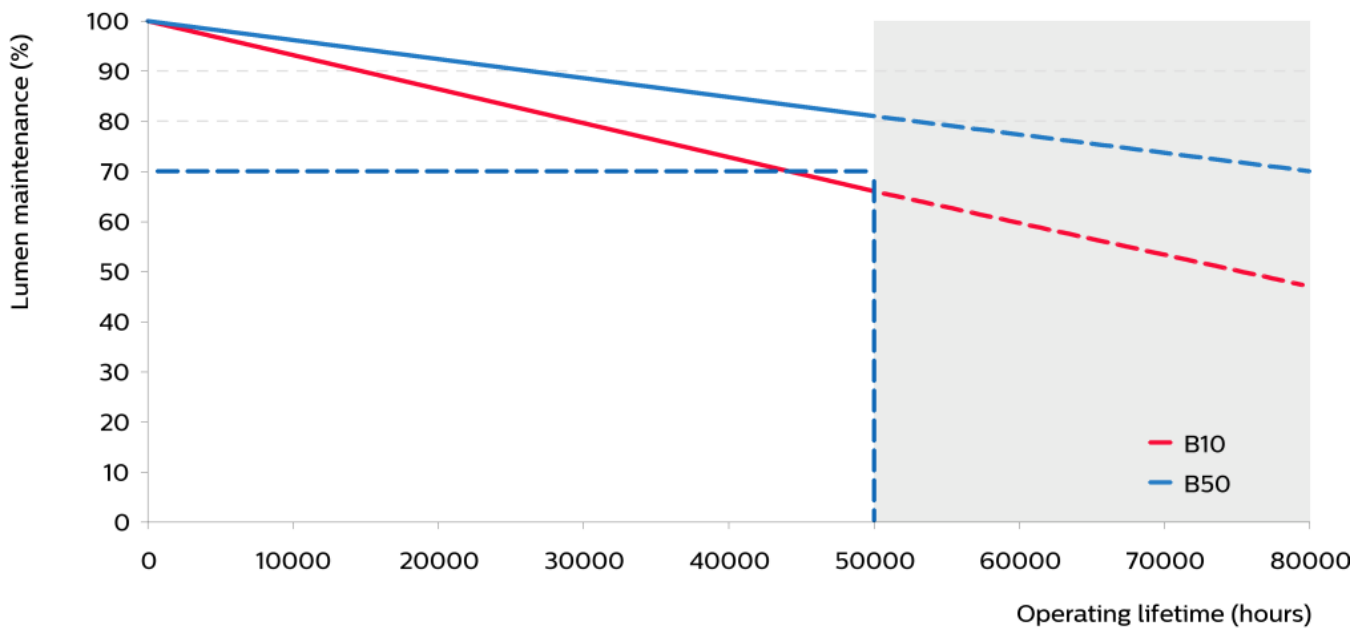
| Operation point | Lumen maintenance x 1000 hours | L70 | | | L80 | | | L90 | | |
|------------------|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | B50 | B20 | B10 | B50 | B20 | B10 | B50 | B20 | B10 |
| 80% i nom 960 mA | Tc 65°C | >50 | >50 | >50 | >50 | >50 | >50 | >50 | >50 | 43 |
| | Tc nom 85°C | >50 | >50 | >50 | >50 | 50 | 40 | 36 | 24 | 19 |
| | Tc max 95°C | >50 | >50 | 44 | >50 | 34 | 27 | 25 | 16 | 13 |
| i nom 1200 mA | Tc 65°C | >50 | >50 | >50 | >50 | >50 | >50 | >50 | 50 | 40 |
| | Tc nom 85°C | >50 | >50 | >50 | >50 | 46 | 37 | 33 | 22 | 18 |
| | Tc max 95°C | >50 | >50 | 71 | 48 | 32 | 25 | 23 | 15 | 12 |
| I life 2000 mA | Tc 65°C | >50 | >50 | >50 | >50 | >50 | >50 | >50 | 36 | 29 |
| | Tc nom 85°C | >50 | >50 | 45 | >50 | 35 | 28 | 25 | 16 | 13 |
| | Tc max 95°C | >50 | 39 | 31 | 37 | 24 | 19 | 17 | 11 | 9 |

| Parameter | Value | Unit |
|----------------|-------|-------|
| C10 at Tc life | 50000 | hours |

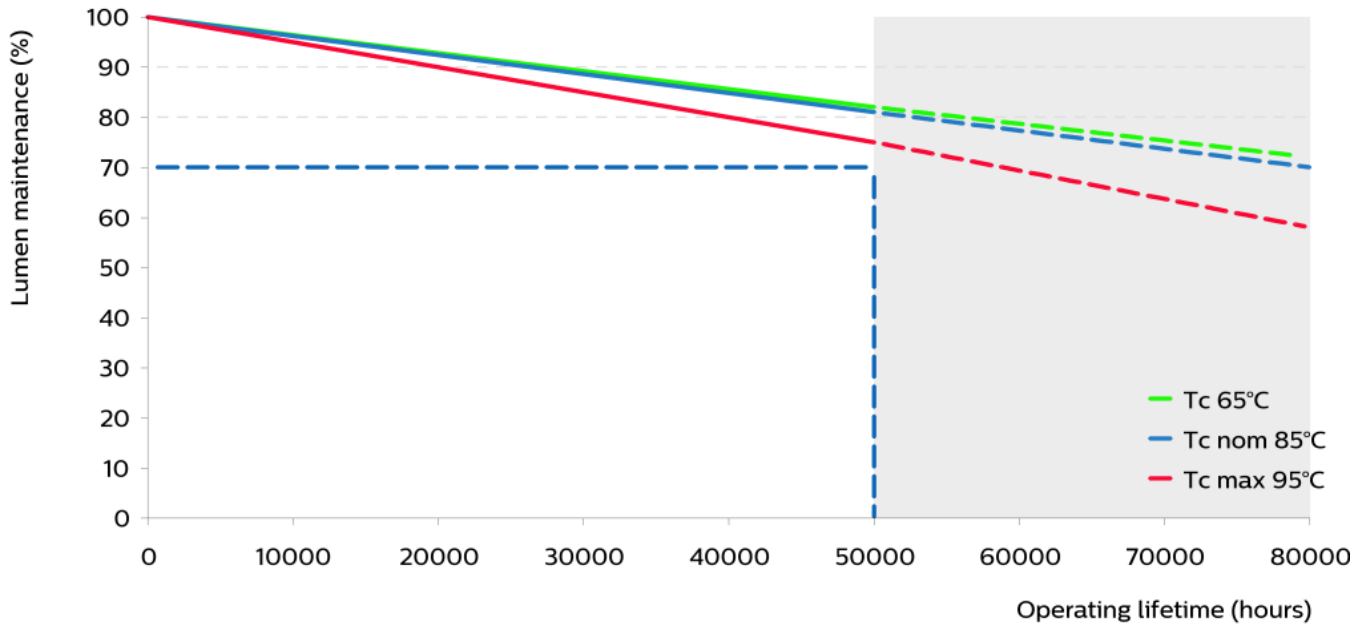
Please refer to the warranty window to ensure that your operating conditions are covered.
 >50 k hours claim is based on extrapolating raw LM80-data by using statistical techniques.

Lumen maintenance graphs

Lumen maintenance at I-life and Tc-life conditions



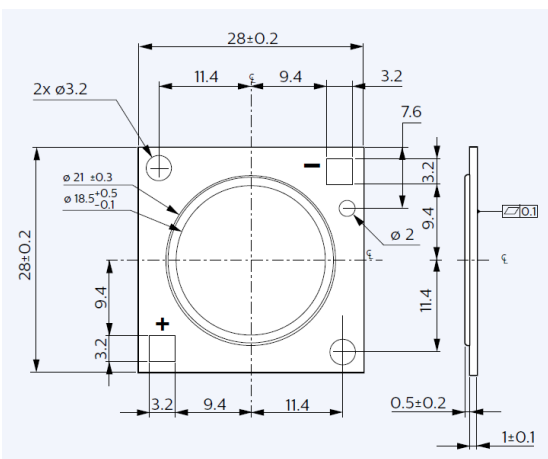
Lumen maintenance for B50 at current I-life conditions



Mechanical characteristics

Fortimo SLM C 830 PW 1211 L19 2828 G6
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 Fortimo SLM C 940 PW 1211 L19 2828 G6

| Parameter | Min | Typ | Max | Unit |
|----------------------|------|-----|------|------|
| Length | 27.8 | 28 | 28.2 | mm |
| Width | 27.8 | 28 | 28.2 | mm |
| Height PCB | 0.9 | 1 | 1.1 | mm |
| Height including dam | 1.2 | 1.5 | 1.8 | mm |



Absolute ratings

| Parameter | Min | Typ | Max | Unit |
|--|-----|-----|------|------|
| Current through the LED module (I-max) | | | 2000 | mA |
| Case temperature (Tc-max) | | | 95 | °C |
| Power at rated Vf-max and I-max | | | 78.1 | W |
| ESD (direct contact) | | | 8 | kV |
| ESD (air) | | | 400 | kV |
| Ambient temperature | -20 | | 40 | °C |
| Storage temperature | -40 | | 80 | °C |

Application information

Certificates and Standards

IEC 62031:2008 (First Edition) + A1:2012 + A2:2014

EN 62031:2008 (First Edition) + A1:2013 + A2:2015

Relevant clauses of IEC 62471:2006 (Incl. IEC/TR 62471-2: 2009 and IEC/TR 62778: 2014)

Relevant clauses of IEC 60838-1:2004 + A1:2008 + A2:2011 with IEC 60838-2-2:2006 + A1:2012

Relevant clauses of EN 62471:2008 (With IEC/TR 62471-2: 2009 and IEC/TR 62778: 2014)

Relevant clauses of EN 60838-1:2004 + A1:2008 + A2:2011 with EN 60838-2-2:2006 + A1:2012

UL 8750

ENEC+

CE

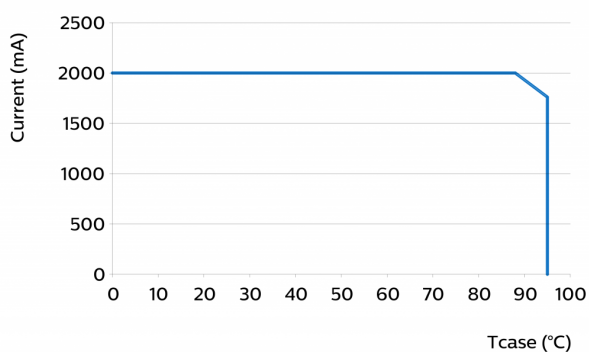
Environmental

RoHS/REACH

Application

| | |
|------------------------|--------------------------|
| IP rating | No IP-rating |
| Overheating protection | No |
| Luminaire class | IEC Class I and Class II |
| Dimming | Yes |

Operating Window





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