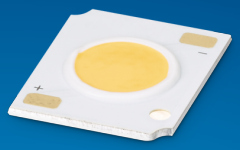
PHILIPS

Fortimo

LED

Fortimo SLM 1202 L06 1215 G7+



Datasheet

Experience bright and vivid colors

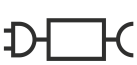
Fortimo SLM 1202 L06 1215 G7+

Fortimo LED SLM Gen 7+ continues to focus on the combination of Quality of Light and performance. Fortimo SLM Gen 7+ range further enhance the efficacy performance Vs Gen 7 with dedicated design. With this upgrade, we try to offer a more reliable solution to help our OEM customer to achieve compact luminaire design or narrow beam angle design. 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 application
- Extensive ranges of CCTs
- Small LES for narrow beam angels and small reflector designs
- State of the art Chip-on-Board (CoB) technology, enable highest system efficacy
- System proposition (Module + Driver + Holder)
- Flexibility to optimize luminaire performance (high efficacy or high lm output)
- 50,000 hours lifetime
- Instant full light

October 2020



Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo SLM C 827 1202 L06 1215 G7+	8718699 765958 00	9290 021 94506	100
Fortimo SLM C 830 1202 L06 1215 G7+	8718699 765972 00	9290 021 94606	100
Fortimo SLM C 835 1202 L06 1215 G7+	8718699 765996 00	9290 021 94706	100
Fortimo SLM C 840 1202 L06 1215 G7+	8718699 766016 00	9290 021 94806	100
Fortimo SLM C 850 1202 L06 1215 G7+	8718699 766030 00	9290 021 94906	100
Fortimo SLM C 857 1202 L06 1215 G7+	8718699 766054 00	9290 021 95006	100
Fortimo SLM C 927 1202 L06 1215 G7+	8718699 766078 00	9290 021 95106	100
Fortimo SLM C 930 1202 L06 1215 G7+	8718699 766092 00	9290 021 95206	100

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo SLM 1202 L06 1215 G7+	200	see performance window	480	mA

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T_c (case temperature at T_c point)	85	see performance window	95	°C

* Nominal value at which typical performance is specified

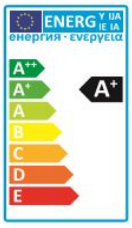
** Value at which life time is specified

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

Optical characteristics - table per color (CCT)

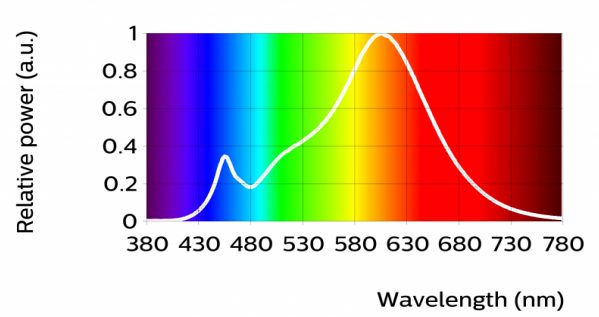
Fortimo SLM C 827 1202 L06 1215 G7+

Parameter	Min	Typ	Max	Unit
Luminous flux	828	890	979	lm
Module efficacy	121	130		lm/W
Correlated color temperature (CCT)		2700		K
Color coordinates (CIEx, CIEy)		(0.458, 0.410)		-
Color consistency			3	SDCM
CRI	81	83		
Photometric code		827/359		
Photobiological safety			RG1 unlimited	



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

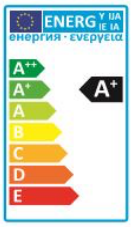
Operation point	827	lm	lm/W
80% I-nom 160mA	Tc 25 °C	810	148
	Tc-nom 85 °C	733	137
	Tc-max 95 °C	721	135
I-nom 200mA	Tc 25 °C	991	142
	Tc-nom 85 °C	890	130
	Tc-max 95 °C	874	129
I-max 480mA	Tc 25 °C	2046	110
	Tc-nom 85 °C	1798	99
	Tc-max 95 °C	1758	97



R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
82	93	94	81	83	94	81	57	7	85	81	79	85	97	73

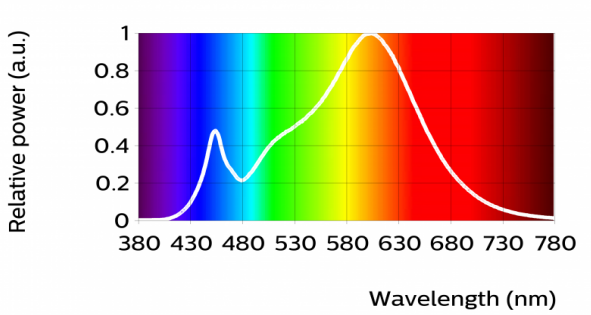
Fortimo SLM C 830 1202 L06 1215 G7+

Parameter	Min	Typ	Max	Unit
Luminous flux	867	932	1026	lm
Module efficacy	127	137		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.434, 0.403)		-
Color consistency			3	SDCM
CRI	81	83		
Photometric code		830/359		
Photobiological safety			RG2	
Ethr			867	lux



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

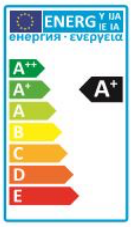
Operation point	830	lm	lm/W
80% I-nom 160mA	Tc 25 °C	848	155
	Tc-nom 85 °C	768	143
	Tc-max 95 °C	755	141
I-nom 200mA	Tc 25 °C	1038	149
	Tc-nom 85 °C	932	137
	Tc-max 95 °C	915	135
I-max 480mA	Tc 25 °C	2145	115
	Tc-nom 85 °C	1884	104
	Tc-max 95 °C	1843	102



R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
82	92	95	81	83	91	82	59	7	83	81	76	86	98	74

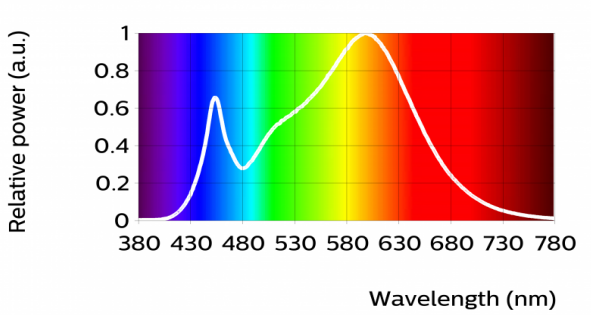
Fortimo SLM C 835 1202 L06 1215 G7+

Parameter	Min	Typ	Max	Unit
Luminous flux	890	957	1053	lm
Module efficacy	130	140		lm/W
Correlated color temperature (CCT)		3500		K
Color coordinates (CIEx, CIEy)		(0.407, 0.392)		-
Color consistency			3	SDCM
CRI	81	83		
Photometric code		835/359		
Photobiological safety			RG2	
Ethr			684	lux



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

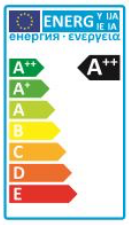
Operation point	835	lm	lm/W
80% I-nom 160mA	Tc 25 °C	870	159
	Tc-nom 85 °C	788	147
	Tc-max 95 °C	775	145
I-nom 200mA	Tc 25 °C	1065	153
	Tc-nom 85 °C	957	140
	Tc-max 95 °C	940	138
I-max 480mA	Tc 25 °C	2204	119
	Tc-nom 85 °C	1936	106
	Tc-max 95 °C	1893	104



R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
81	91	96	81	82	89	84	60	5	80	80	71	84	98	74

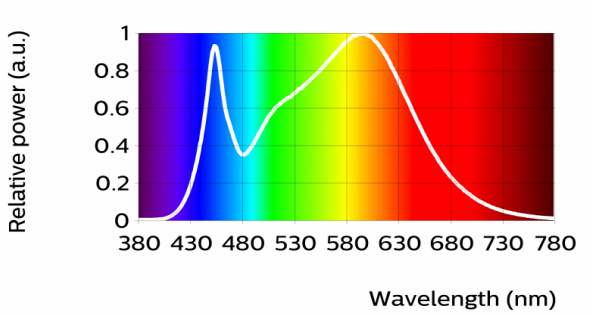
Fortimo SLM C 840 1202 L06 1215 G7+

Parameter	Min	Typ	Max	Unit
Luminous flux	912	981	1079	lm
Module efficacy	134	144		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.382, 0.380)		-
Color consistency			3	SDCM
CRI	81	83		
Photometric code		840/359		
Photobiological safety			RG2	
Ethr			560	lux



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

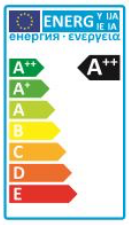
Operation point	840	lm	lm/W
80% I-nom 160mA	Tc 25 °C	892	163
	Tc-nom 85 °C	808	151
	Tc-max 95 °C	794	149
I-nom 200mA	Tc 25 °C	1092	156
	Tc-nom 85 °C	981	144
	Tc-max 95 °C	963	142
I-max 480mA	Tc 25 °C	2260	122
	Tc-nom 85 °C	1985	109
	Tc-max 95 °C	1941	107



R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
82	90	95	82	83	88	86	64	9	79	81	67	85	98	75

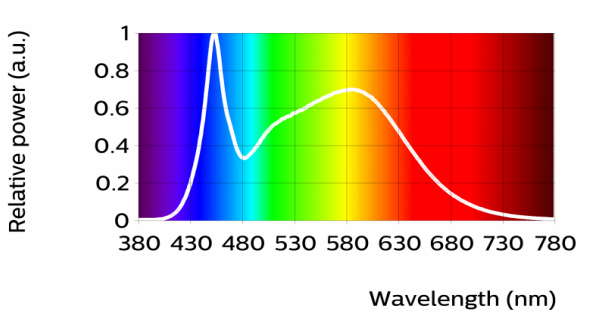
Fortimo SLM C 850 1202 L06 1215 G7+

Parameter	Min	Typ	Max	Unit
Luminous flux	916	984	1083	lm
Module efficacy	134	144		lm/W
Correlated color temperature (CCT)		5000		K
Color coordinates (CIEx, CIEy)		(0.345, 0.355)		-
Color consistency			3	SDCM
CRI	81	83		
Photometric code		850/359		
Photobiological safety			RG2	
Ethr			415	lux



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

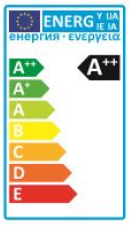
Operation point	850	lm	lm/W
80% I-nom 160mA	Tc 25 °C	895	163
	Tc-nom 85 °C	811	151
	Tc-max 95 °C	797	149
I-nom 200mA	Tc 25 °C	1096	157
	Tc-nom 85 °C	984	144
	Tc-max 95 °C	967	142
I-max 480mA	Tc 25 °C	2271	122
	Tc-nom 85 °C	1994	109
	Tc-max 95 °C	1950	107



R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
82	90	95	83	83	86	86	64	7	77	82	67	84	98	76

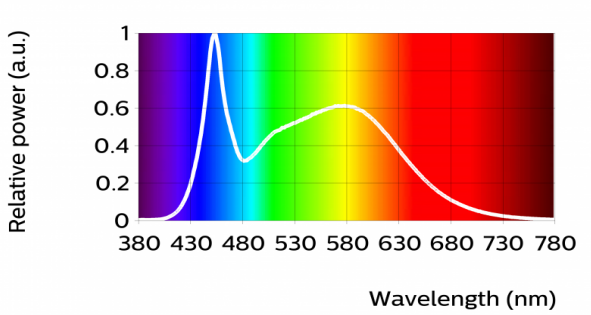
Fortimo SLM C 857 1202 L06 1215 G7+

Parameter	Min	Typ	Max	Unit
Luminous flux	921	991	1090	lm
Module efficacy	135	145		lm/W
Correlated color temperature (CCT)		5700		K
Color coordinates (CIEx, CIEy)		(0.329, 0.342)		-
Color consistency			3	SDCM
CRI	81	83		
Photometric code		857/359		
Photobiological safety			RG2	
Ethr			365	lux



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

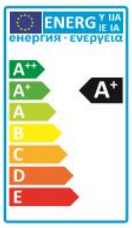
Operation point	857	lm	lm/W
80% I-nom 160mA	Tc 25 °C	901	164
	Tc-nom 85 °C	816	152
	Tc-max 95 °C	802	150
I-nom 200mA	Tc 25 °C	1103	158
	Tc-nom 85 °C	991	145
	Tc-max 95 °C	973	143
I-max 480mA	Tc 25 °C	2286	123
	Tc-nom 85 °C	2007	110
	Tc-max 95 °C	1963	108



R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
81	90	94	81	82	85	86	66	2	75	80	64	83	97	75

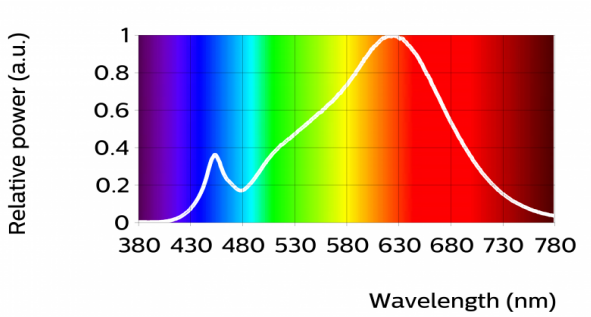
Fortimo SLM C 927 1202 L06 1215 G7+

Parameter	Min	Typ	Max	Unit
Luminous flux	705	758	834	lm
Module efficacy	103	111		lm/W
Correlated color temperature (CCT)		2700		K
Color coordinates (CIEx, CIEy)		(0.458, 0.410)		-
Color consistency			3	SDCM
CRI	91	93		
R9	50			
Photometric code		927/359		
Photobiological safety			RG2	
Ethr			1090	lux



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

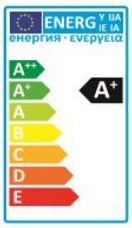
Operation point	927	lm	lm/W
80% I-nom 160mA	Tc 25 °C	690	126
	Tc-nom 85 °C	625	116
	Tc-max 95 °C	614	115
I-nom 200mA	Tc 25 °C	844	121
	Tc-nom 85 °C	758	111
	Tc-max 95 °C	745	110
I-max 480mA	Tc 25 °C	1743	94
	Tc-nom 85 °C	1531	84
	Tc-max 95 °C	1497	83



R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
93	97	98	93	93	96	92	82	60	91	94	86	94	98	89

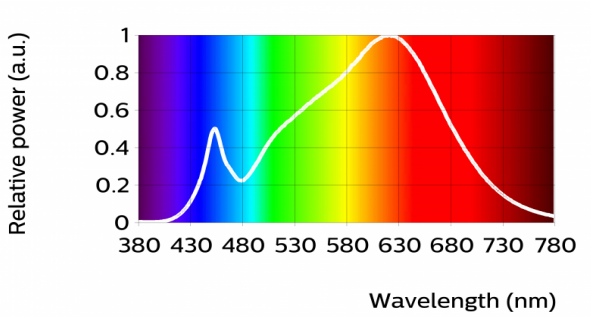
Fortimo SLM C 930 1202 L06 1215 G7+

Parameter	Min	Typ	Max	Unit
Luminous flux	742	798	877	lm
Module efficacy	109	117		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.434, 0.403)		-
Color consistency			3	SDCM
CRI	91	93		
R9	50			
Photometric code		930/359		
Photobiological safety			RG2	
Ethr			867	lux



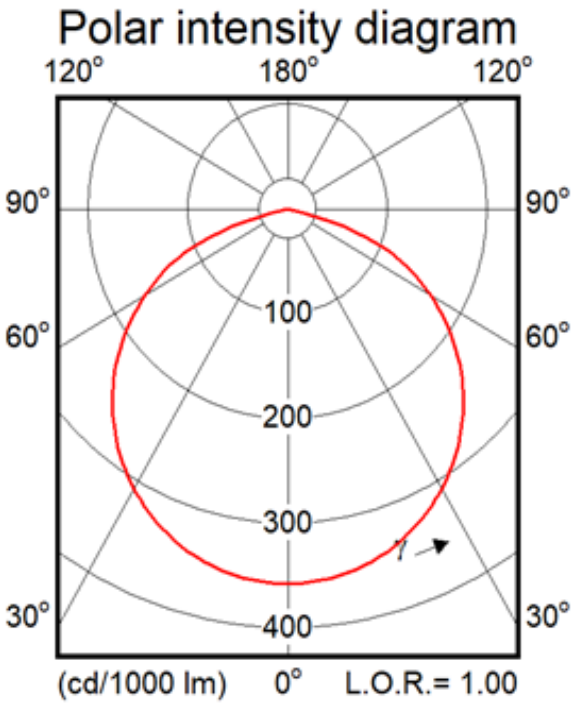
Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	930	lm	lm/W
80% I-nom 160mA	Tc 25 °C	725	132
	Tc-nom 85 °C	657	122
	Tc-max 95 °C	646	121
I-nom 200mA	Tc 25 °C	888	127
	Tc-nom 85 °C	798	117
	Tc-max 95 °C	783	115
I-max 480mA	Tc 25 °C	1834	99
	Tc-nom 85 °C	1611	89
	Tc-max 95 °C	1575	87



R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
93	96	97	93	92	94	93	83	60	89	93	81	93	98	89

Beam shape


Polar intensity diagram
120°
180°
120°
90°
90°
60°
60°
100
200
300
400
30°
30°
(cd/1000 lm)
0°
L.O.R.= 1.00

Electrical characteristics

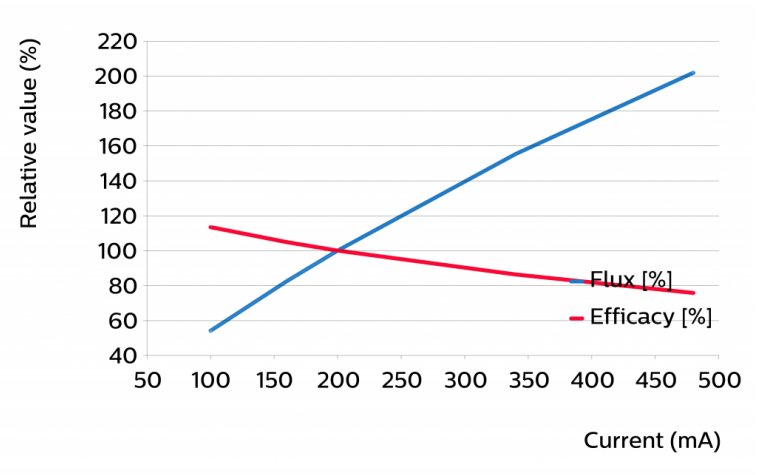
Parameter	Min	Typ	Max	Unit
Forward voltage	32.1	34.1	36.1	V
Power consumption	6.4	6.8	7.2	W = kWh/1000h
Number of modules in parallel			1	

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

Tuning information

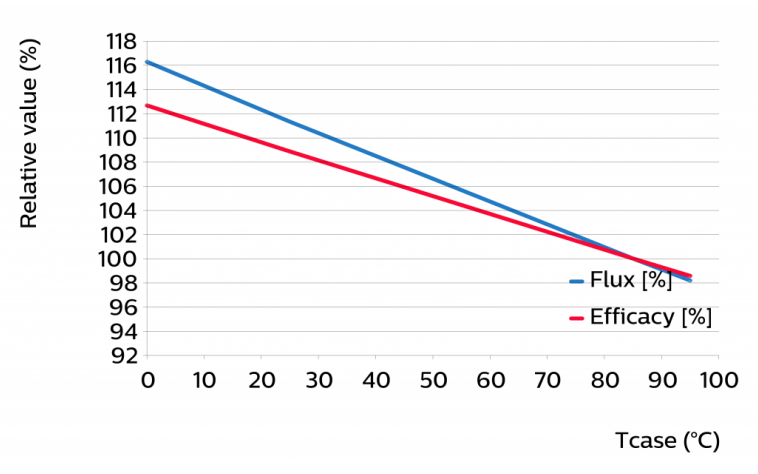
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
480	202	76
340	155	86
200	100	100
160	82	105
100	54	113



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

Tc [°C]	Flux [%]	Efficacy [%]
95	98	99
85	100	100
25	111	109
0	116	113



Lumen maintenance

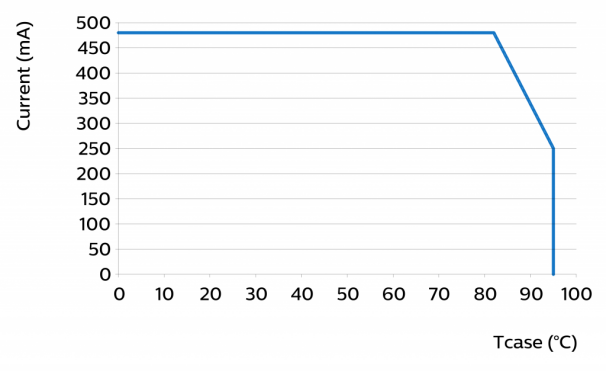
Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80%I nom 160 mA	Tc 75°C	>50	>50	>50	>50	>50	>50	39	34	30
	Tc nom 85°C	>50	>50	>50	50	43	39	24	20	19
	Tc max 95°C	50	43	39	31	27	25	15	13	12
I nom 200 mA	Tc 75°C	>50	>50	>50	>50	>50	>50	33	28	25
	Tc nom 85°C	>50	>50	>50	42	36	33	20	17	15
	Tc max 95°C	42	36	33	26	23	21	12	11	10
I max 480 mA	Tc 75°C	49	37	29	35	23	18	17	11	9
	Tc nom 85°C	40	26	21	25	16	13	12	8	6
	Tc max 95°C	29	19	15	18	12	9	8	6	4

Lifetime

Parameter	Value	Unit
C10 at Tc life	50000	hours
M70F50 nominal	>50000	hours
M70F50 life	>50000	hours

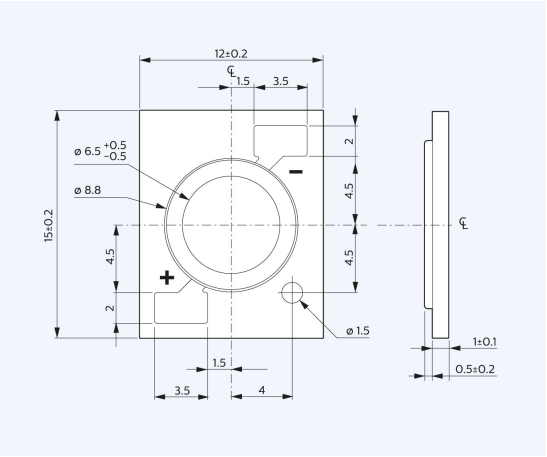
Switching cycles in accordance to EU 1194/2012: >15000

Performance Window



Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	14.8	15	15.2	mm
Width	11.8	12	12.2	mm
Height PCB	0.9	1	1.1	mm
Height including dam	1.2	1.5	1.8	mm
Product mass		0.5		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		480	mA
Case temperature (Tc-max)		95	°C
Power at rated Vf-max and I-max		18.7	W
ESD (direct contact)	8		kV
Working voltage		180	V_{dc}
Ambient temperature	-20	40	°C
Storage temperature	-40	80	°C

Application information

Certificates and Standards
IEC 62031:2008/A1:2012/A2:2014
EN 62031:2008/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

www.philips.com/oem

13/10/2020