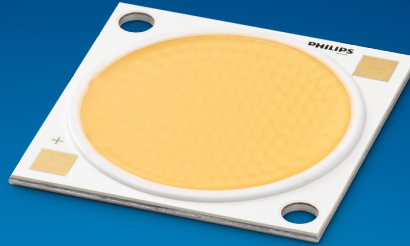


PHILIPS

Fortimo

LED

Fortimo SLM PW
1216 L23 2828 G7



Datasheet

Experience bright and vivid colors

Fortimo LED SLM PW 1216 L23 2828 G7

Fortimo LED SLM Gen7 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 CCTs
- 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
- Instant full light

November 2019



Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo SLM C 830 PW 1216 L23 2828 G7	8718699 591014 00	9290 015 94606	10
Fortimo SLM C 930 PW 1216 L23 2828 G7	8718699 591045 00	9290 015 94706	10
Fortimo SLM C 935 PW 1216 L23 2828 G7	8718699 591076 00	9290 015 94806	10
Fortimo SLM C 940 PW 1216 L23 2828 G7	8718699 591106 00	9290 015 94906	10

Not all products are globally available by default.

Please contact your local Philips Lighting representative for local availability and activation.

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo SLM PW 1216 L23 2828 G7	1600	see performance window	2400	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)

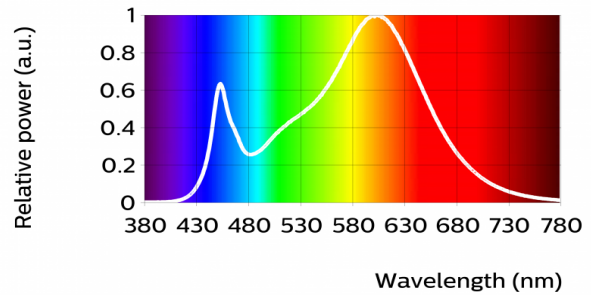
Fortimo SLM C 830 PW 1216 L23 2828 G7

Parameter	Min	Typ	Max	Unit
Luminous flux	7317	8130	8943	lm
Module efficacy	133	148		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.422, 0.386)		-
Color consistency			3	SDCM
CRI	80	82		
Photometric code		830/359		
Photobiological safety			RG1 unlimited	



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

Operation point	830	lm	lm/W
80% I-nom 1280mA	Tc 25 °C	7269	165
	Tc-nom 85 °C	6689	155
	Tc-max 95 °C	6579	153
I-nom 1600mA	Tc 25 °C	8880	158
	Tc-nom 85 °C	8130	148
	Tc-max 95 °C	7987	146
I-max 2400mA	Tc 25 °C	12586	142
	Tc-nom 85 °C	11417	131
	Tc-max 95 °C	11194	129



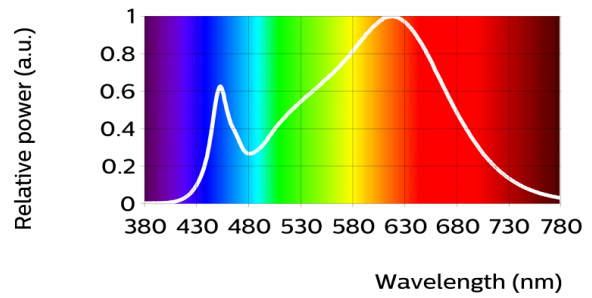
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
83	95	92	80	84	93	80	58	10	88	79	79	86	96

Parameter	Min	Typ	Max	Unit
Luminous flux	6237	6930	7623	lm
Module efficacy	113	126		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.422, 0.386)		-
Color consistency			3	SDCM
CRI	90	92		
R9	50			
Photometric code		930/359		
Photobiological safety			RG1 unlimited	



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

Operation point	930	lm	lm/W
80% I-nom 1280mA	Tc 25 °C	6198	141
	Tc-nom 85 °C	5703	132
	Tc-max 95 °C	5609	131
I-nom 1600mA	Tc 25 °C	7571	134
	Tc-nom 85 °C	6930	126
	Tc-max 95 °C	6808	124
I-max 2400mA	Tc 25 °C	10727	121
	Tc-nom 85 °C	9728	112
	Tc-max 95 °C	9538	110



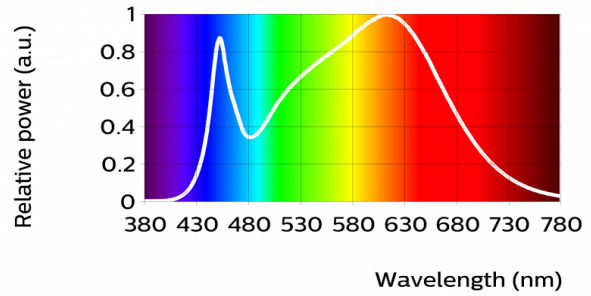
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
93	97	97	91	93	95	90	80	58	93	91	83	95	99

Parameter	Min	Typ	Max	Unit
Luminous flux	6543	7270	7997	lm
Module efficacy	119	132		lm/W
Correlated color temperature (CCT)		3500		K
Color coordinates (CIEx, CIEy)		(0.398, 0.376)		-
Color consistency			3	SDCM
CRI	90	92		
R9	50			
Photometric code		935/359		
Photobiological safety			RG1 unlimited	



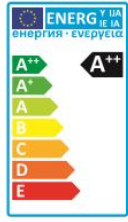
Measurement precision for flux +/- 5%. Measurement precision for efficacy +/- 6%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	935	lm	lm/W
80% I-nom 1280mA	Tc 25 °C	6501	147
	Tc-nom 85 °C	5982	139
	Tc-max 95 °C	5883	137
I-nom 1600mA	Tc 25 °C	7942	141
	Tc-nom 85 °C	7270	132
	Tc-max 95 °C	7142	130
I-max 2400mA	Tc 25 °C	11254	127
	Tc-nom 85 °C	10208	117
	Tc-max 95 °C	10008	116



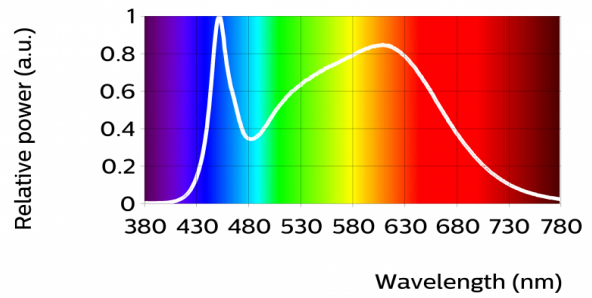
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
93	96	97	91	92	93	92	82	59	89	91	77	94	98

Parameter	Min	Typ	Max	Unit
Luminous flux	6723	7470	8217	lm
Module efficacy	122	136		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.374, 0.364)		-
Color consistency			3	SDCM
CRI	90	92		
R9	50			
Photometric code		940/359		
Photobiological safety			RG1 unlimited	



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

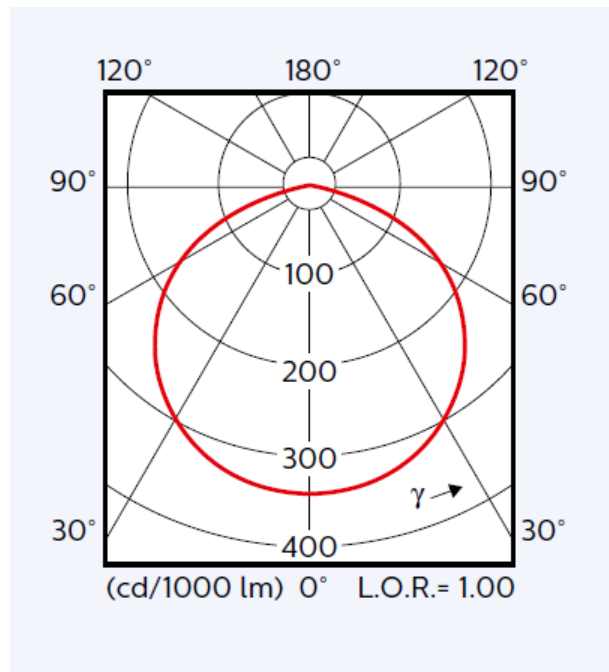
Operation point	940	lm	lm/W
80% I-nom 1280mA	Tc 25 °C	6679	151
	Tc-nom 85 °C	6147	143
	Tc-max 95 °C	6045	141
I-nom 1600mA	Tc 25 °C	8160	145
	Tc-nom 85 °C	7470	136
	Tc-max 95 °C	7339	134
I-max 2400mA	Tc 25 °C	11565	130
	Tc-nom 85 °C	10491	121
	Tc-max 95 °C	10286	119



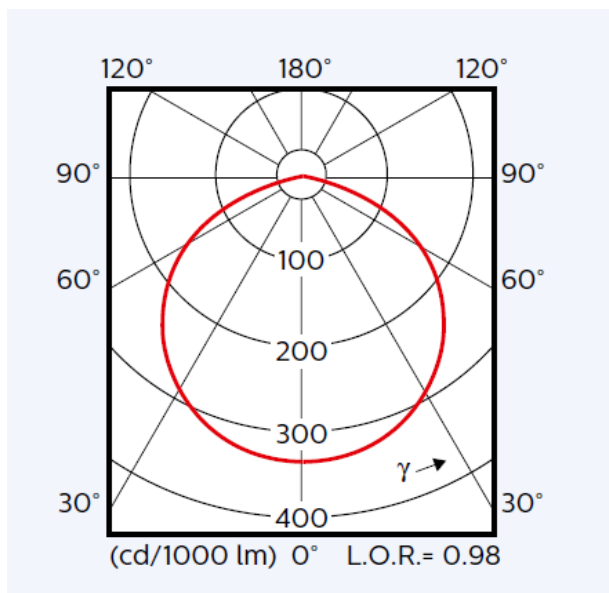
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
92	96	96	91	92	92	92	83	60	88	90	72	94	97

Beam shape

Bare CoB



CoB with a poke-in holder



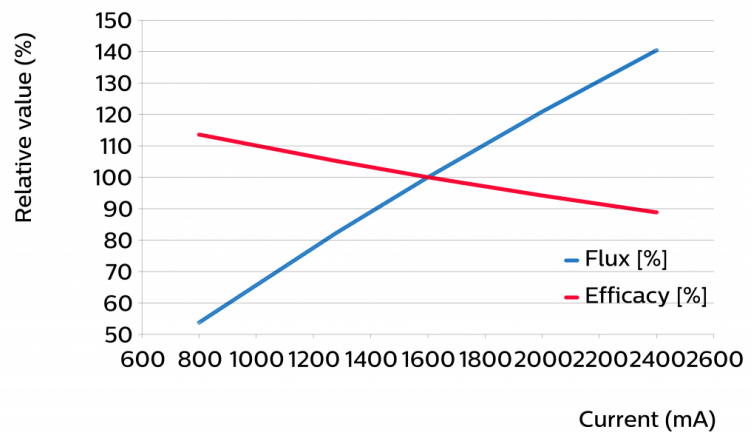
Electrical characteristics

Parameter	Min	Typ	Max	Unit
Forward voltage	32.4	34.4	37.4	V
Power consumption	51.8	55.0	59.8	W = kWh/1000h
Number of modules in series per chain			1	
Number of modules in parallel per chain			1	
Number of modules in parallel			1	

Tuning information

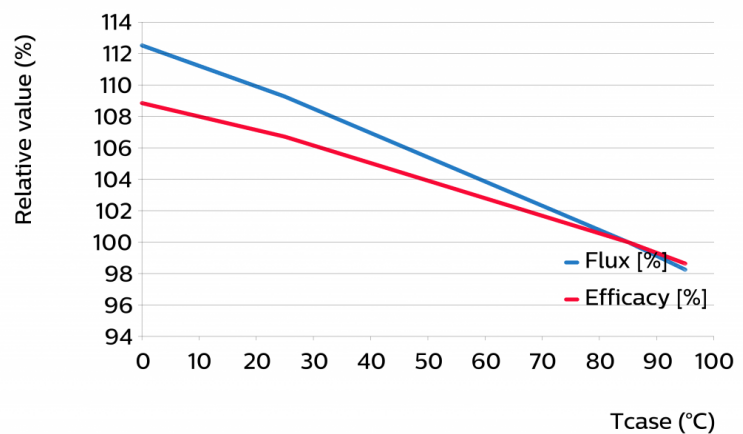
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
2400	140	89
2000	121	94
1600	100	100
1280	82	105
800	54	114



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

Tc [°C]	Flux [%]	Efficacy [%]
95	98	99
85	100	100
25	109	107
0	113	109



Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% I nom 1280mA	Tc 65°C	>50	>50	>50	>50	>50	>50	>50	46	37
	Tc nom 85°C	>50	>50	>50	>50	43	35	31	20	16
	Tc max 95°C	>50	46	37	44	29	23	21	14	11
I nom 1600mA	Tc 65°C	>50	>50	>50	>50	>50	>50	>50	40	32
	Tc nom 85°C	>50	>50	47	>50	38	30	27	18	14
	Tc max 95°C	>50	42	34	40	26	21	19	12	10
I max 2400mA	Tc 65°C	>50	>50	>50	>50	>50	46	41	27	22
	Tc nom 85°C	>50	43	34	41	27	22	19	13	10
	Tc max 95°C	46	30	24	29	19	15	16	9	7

Lifetime

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

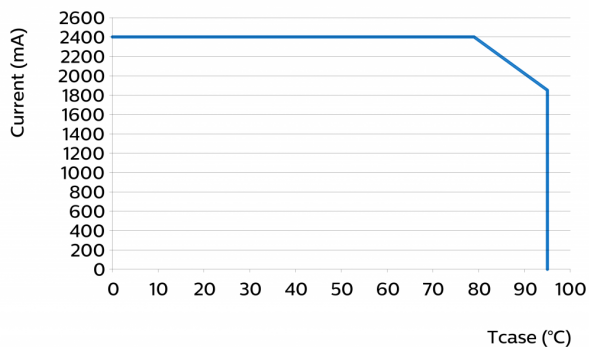
Switching cycles in accordance to EU 1194/2012: >15000

At I life L70B50>50000 hours.

Charts presenting module's lumen maintenance data are available via your sales representative.

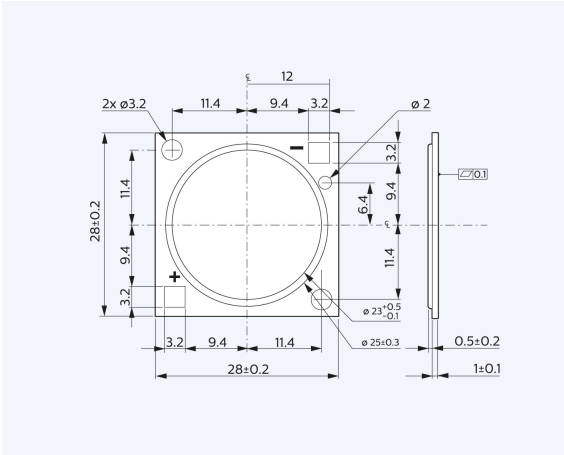
Please refer to the performance window to ensure that your operati

Performance Window



Mechanical characteristics

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
Product mass		2.09		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		2400	mA
Case temperature (Tc-max)		95	°C
Power at rated Vf-max and I-max		92.6	W
ESD (direct contact)		8	kV
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



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21/11/2019