PHILIPS

Fortimo

LED

Fortimo SLM C 8xx 1216
L23 2828 G8 HE

Datasheet

Best combination of quality of light and efficacy

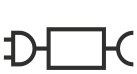
Fortimo LED SLM CRI80 G8 HE

Philips continues to develop its tried and trusted high efficiency COB range of products (since 2020) by introducing the third generation Fortimo SLM G8 HE with an expanded offer featuring CRI 80 products. The Fortimo SLM CRI80 G8 HE range boasts an impressive 7% - 12% increase in efficacy and enhanced color consistency of 2 SDCM compared to its predecessor, the Fortimo SLM CRI80 G7. Drawing on our four years of industry and R&D experience with high efficacy COB platforms, we have further optimized the quality of light and enhanced the product's robustness. With the Color Rendering Index extension, Fortimo SLM G8 HE helps unlock the extraordinary potential of light, facilitating innovation and inspiring the next generation of luminaire design for our OEM customers. Check out 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
- 7%~12% efficacy improvement vs. current Fortimo SLM G7 CRI80 range
- Excellent color consistency management (2 SDCM)
- System proposition (Module + Driver + Holder)
- Flexibility to optimize luminaire performance (high efficacy or high lm output)
- 50,000 hours lifetime

October 2024



Ordering data

Commercial product name	EOC	12NC	EPREL registration #	Box quantity
Fortimo SLM C 827 1216 L23 2828 G8 HE	8720169 379398 00	9290 038 94080	2093765	10
Fortimo SLM C 830 1216 L23 2828 G8 HE	8720169 379428 00	9290 038 94180	2093767	10
Fortimo SLM C 835 1216 L23 2828 G8 HE	8720169 379459 00	9290 038 94280	2093712	10
Fortimo SLM C 840 1216 L23 2828 G8 HE	8720169 379480 00	9290 038 94380	2093871	10
Fortimo SLM C 850 1216 L23 2828 G8 HE	8720169 379510 00	9290 038 94480	2093706	10
Fortimo SLM C 830 PW 1216 L23 2828 G8 HE	8720169 379541 00	9290 038 94580	2093733	10

Not all products are globally available by default.
Please contact your local sales representative for local availability and activation conditions.

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo SLM C 8xx 1216 L23 2828 G8 HE	1600	2880	2880	mA

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T_c (case temperature at T_c point)	65	95	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

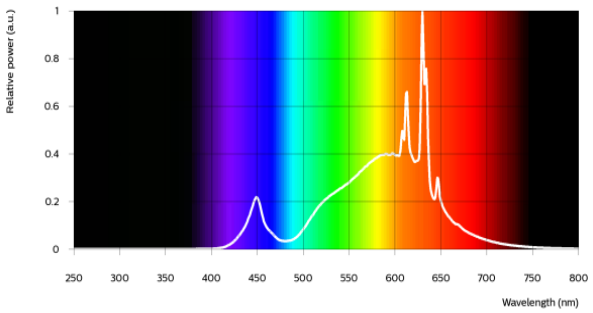
Optical characteristics - table per color (CCT)

Fortimo SLM C 827 1216 L23 2828 G8 HE

Parameter	Min	Typ	Max	Unit
Luminous flux	8697	9155	10070	lm
Efficacy		162		lm/W
Correlated color temperature (CCT)		2700		K
Color coordinates (CIEx, CIEy)		(0.458, 0.410)		-
Color consistency			2	SDCM
CRI	80			
R9	>0			
Photometric code		827/259		
Photobiological safety		RG1 unlimited		

Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

Operation point	827	lm	lm/W
80% I-nom 1280mA	Tc 25 °C	7838	175
	Tc-nom 65 °C	7423	168
	Tc-max 95 °C	7030	161
I-nom 1600mA	Tc 25 °C	9672	169
	Tc-nom 65 °C	9155	162
	Tc-max 95 °C	8664	155
I-max 2880mA	Tc 25 °C	16634	149
	Tc-nom 65 °C	15701	143
	Tc-max 95 °C	14813	136

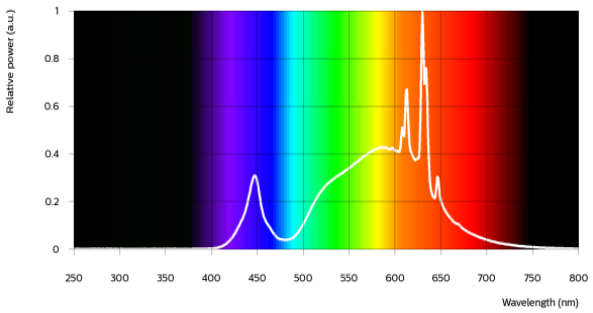


Fortimo SLM C 830 1216 L23 2828 G8 HE

Parameter	Min	Typ	Max	Unit
Luminous flux	8968	9440	10384	lm
Efficacy		167		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.434, 0.403)		-
Color consistency			2	SDCM
CRI	80			
R9	>0			
Photometric code		830/259		
Photobiological safety		RG1 unlimited		

Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

Operation point	830	lm	lm/W
80% I-nom 1280mA	Tc 25 °C	8081	180
	Tc-nom 65 °C	7654	173
	Tc-max 95 °C	7249	165
I-nom 1600mA	Tc 25 °C	9973	174
	Tc-nom 65 °C	9440	167
	Tc-max 95 °C	8935	160
I-max 2880mA	Tc 25 °C	17153	154
	Tc-nom 65 °C	16192	147
	Tc-max 95 °C	15277	140

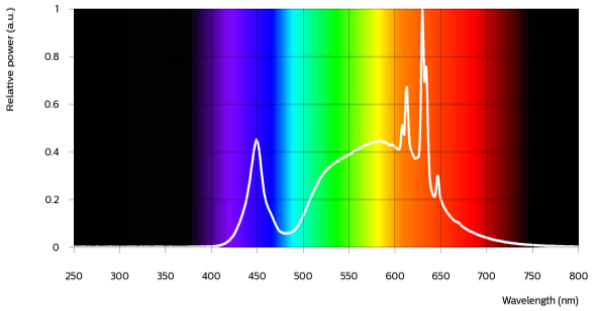


Fortimo SLM C 835 1216 L23 2828 G8 HE

Parameter	Min	Typ	Max	Unit
Luminous flux	9182	9665	10632	lm
Efficacy		171		lm/W
Correlated color temperature (CCT)		3500		K
Color coordinates (CIEx, CIEy)		(0.407, 0.392)		-
Color consistency			2	SDCM
CRI	80			
R9	>0			
Photometric code		835/259		
Photobiological safety		RG1 unlimited		

Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

Operation point	835	lm	lm/W
80% I-nom 1280mA	Tc 25 °C	8273	184
	Tc-nom 65 °C	7836	177
	Tc-max 95 °C	7422	169
I-nom 1600mA	Tc 25 °C	10210	178
	Tc-nom 65 °C	9665	171
	Tc-max 95 °C	9148	163
I-max 2880mA	Tc 25 °C	17563	158
	Tc-nom 65 °C	16580	151
	Tc-max 95 °C	15646	143

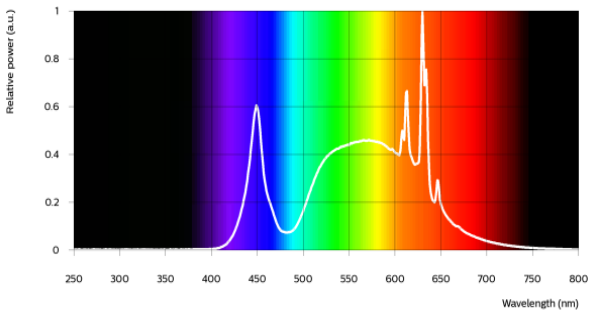


Fortimo SLM C 840 1216 L23 2828 G8 HE

Parameter	Min	Typ	Max	Unit
Luminous flux	9229	9715	10686	lm
Efficacy		172		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.382, 0.380)		-
Color consistency			2	SDCM
CRI	80			
R9	>0			
Photometric code		840/259		
Photobiological safety		RG1 unlimited		

Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

Operation point	840	lm	lm/W
80% I-nom 1280mA	Tc 25 °C	8316	185
	Tc-nom 65 °C	7877	178
	Tc-max 95 °C	7460	170
I-nom 1600mA	Tc 25 °C	10262	179
	Tc-nom 65 °C	9715	172
	Tc-max 95 °C	9195	164
I-max 2880mA	Tc 25 °C	17654	158
	Tc-nom 65 °C	16668	151
	Tc-max 95 °C	15729	144

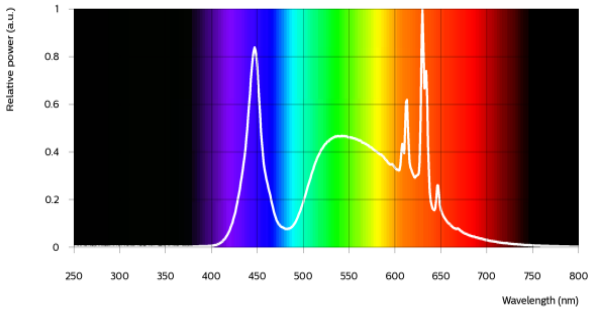


Fortimo SLM C 850 1216 L23 2828 G8 HE

Parameter	Min	Typ	Max	Unit
Luminous flux	9186	9670	10637	lm
Efficacy		171		lm/W
Correlated color temperature (CCT)		5000		K
Color coordinates (CIEx, CIEy)		(0.345, 0.355)		-
Color consistency			2	SDCM
CRI	80			
R9	>0			
Photometric code		850/259		
Photobiological safety		RG1 unlimited		

Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

Operation point	850	lm	lm/W
80% I-nom 1280mA	Tc 25 °C	8276	184
	Tc-nom 65 °C	7840	177
	Tc-max 95 °C	7425	170
I-nom 1600mA	Tc 25 °C	10214	178
	Tc-nom 65 °C	9670	171
	Tc-max 95 °C	9153	163
I-max 2880mA	Tc 25 °C	17575	158
	Tc-nom 65 °C	16594	151
	Tc-max 95 °C	15662	144

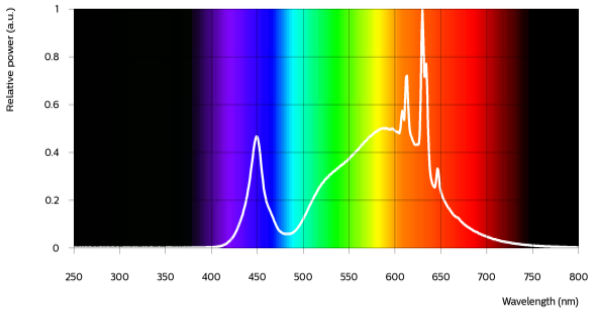


Fortimo SLM C 830 PW 1216 L23 2828 G8 HE

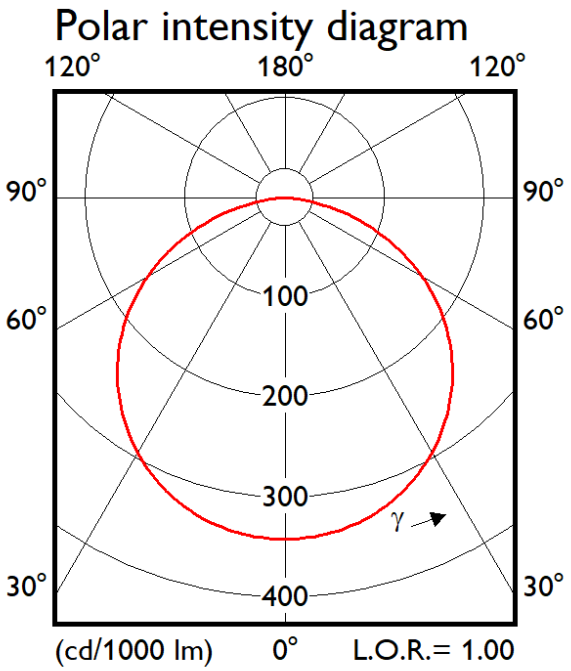
Parameter	Min	Typ	Max	Unit
Luminous flux	8840	9305	10236	lm
Efficacy		164		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.422, 0.386)		-
Color consistency			2	SDCM
CRI	80			
R9	>0			
Photometric code		830/259		
Photobiological safety		RG1 unlimited		

Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

Operation point	830	lm	lm/W
80% I-nom 1280mA	Tc 25 °C	7965	177
	Tc-nom 65 °C	7545	170
	Tc-max 95 °C	7145	163
I-nom 1600mA	Tc 25 °C	9830	172
	Tc-nom 65 °C	9305	164
	Tc-max 95 °C	8807	157
I-max 2880mA	Tc 25 °C	16908	152
	Tc-nom 65 °C	15961	145
	Tc-max 95 °C	15061	138



Beam shape


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

Electrical characteristics

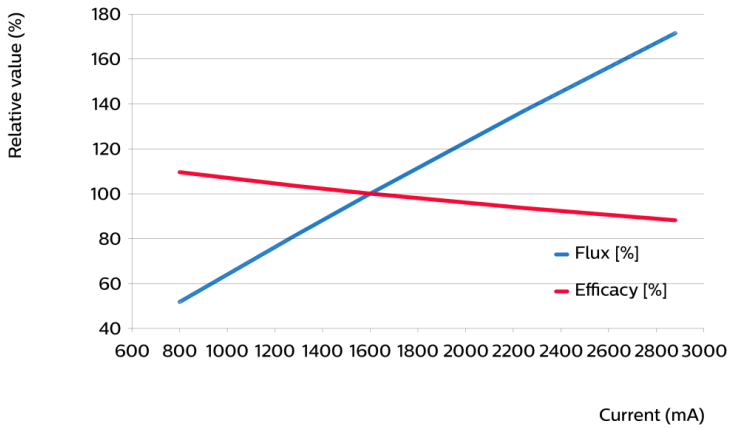
Parameter	Min	Typ	Max	Unit
Forward voltage	32.5	35.4	37.0	V
Power consumption	52.0	56.6	59.2	W = kWh/1000h
Number of modules in series per chain			1	
Number of modules per chain			1	
Number of modules in parallel			1	

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

Tuning information

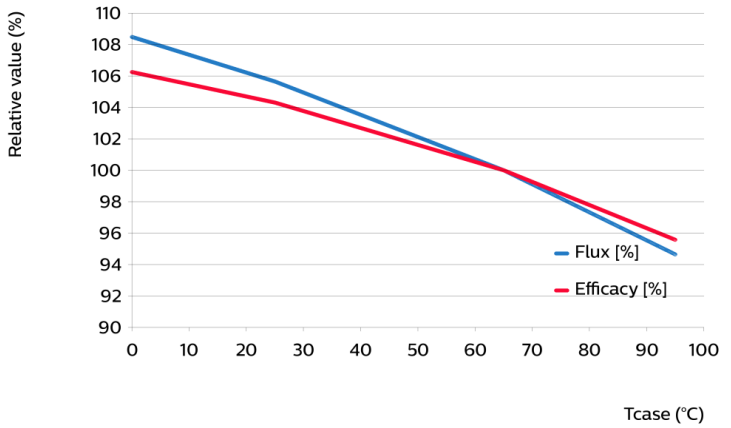
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
2880	171	88
2240	137	94
1600	100	100
1280	81	104
800	52	110



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

Tc [°C]	Flux [%]	Efficacy [%]
95	95	96
65	100	100
25	106	104
0	108	106



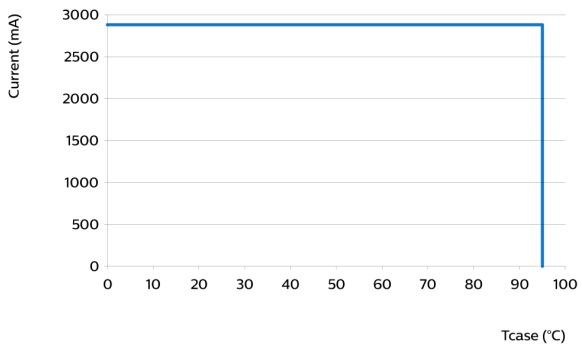
Lumen maintenance

Operation point	Lumen maintenance	L70			L80			L90		
	x 1000 hours	B50	B20	B10	B50	B20	B10	B50	B20	B10
80% I-nom 1280mA	Tc 50°C	>66	>66	>66	>66	>66	>66	>66	>66	>66
	Tc 65°C	>66	>66	>66	>66	>66	>66	>66	>66	>66
	Tc 95°C	>66	>66	>66	>66	>66	>66	>66	>66	>66
I-nom 1600mA	Tc 50°C	>66	>66	>66	>66	>66	>66	>66	>66	>66
	Tc 65°C	>66	>66	>66	>66	>66	>66	>66	>66	>66
	Tc 95°C	>66	>66	>66	>66	>66	>66	>66	56	51
I-max 2880mA	Tc 50°C	>66	>66	>66	>66	>66	>66	50	42	39
	Tc 65°C	>66	>66	>66	>66	>66	62	38	32	29
	Tc 95°C	>66	>66	60	49	41	38	23	19	17

Lifetime

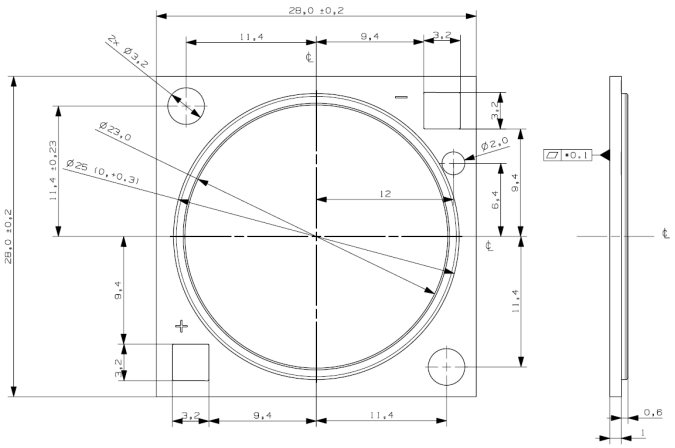
Parameter	Value	Unit
M70F50 nominal	>66000	hours

Performance Window



Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	27.8	28	28.2	mm
Width	27.8	28	28.2	mm
Height	0.9	1	1.1	mm
Height	1.3	1.6	1.9	mm
Product mass		2.2		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		2880	mA
Case temperature (Tc-max)		95	°C
ESD (direct contact)	8		kV
Working voltage		60	V_{dc}
Ambient temperature	-20	40	°C
Storage temperature	-40	80	°C

At illumination levels exceeding 1342 lux risk group classification may be RG2.

Application information

Certificates and Standards
CB
CE
ENEC
ENEC+
EPRS 001
IEC 62031
UKCA
UL
UL 8750

Environmental
RoHS/REACH

Application	
Dimming	Yes

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