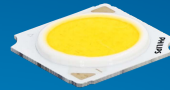


PHILIPS

Fortimo

LED

Fortimo SLM C 8xx 1203
L09 1313 G8N HE



Datasheet

Best combination of quality of light and efficacy with industry standard footprint

Fortimo LED SLM CRI80 G8N 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

- Most widely used footprint to enable ease of use
- Best quality of light available for all applications
- 7%~12% efficacy improvement vs. current Fortimo SLM CRI80 G7N 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 1203 L09 1313 G8N HE	8720169 380684 00	9290 038 98380	2093636	20
Fortimo SLM C 830 1203 L09 1313 G8N HE	8720169 380714 00	9290 038 98480	2093737	20
Fortimo SLM C 835 1203 L09 1313 G8N HE	8720169 380745 00	9290 038 98580	2093618	20
Fortimo SLM C 840 1203 L09 1313 G8N HE	8720169 380776 00	9290 038 98680	2093651	20
Fortimo SLM C 850 1203 L09 1313 G8N HE	8720169 380806 00	9290 038 98780	2093630	20
Fortimo SLM C 830 PW 1203 L09 1313 G8N HE	8720169 384460 00	9290 038 98880	2093814	20

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 1203 L09 1313 G8N HE	270	540	540	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

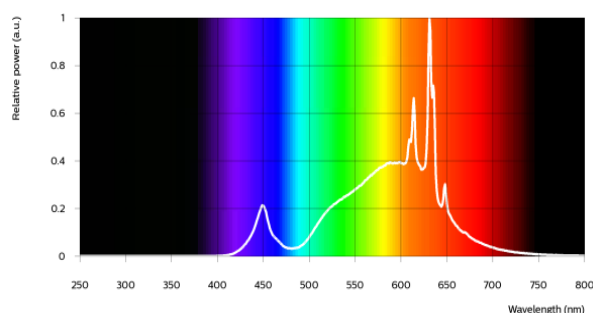
Optical characteristics - table per color (CCT)

Fortimo SLM C 827 1203 L09 1313 G8N HE

Parameter	Min	Typ	Max	Unit
Luminous flux	1439	1515	1666	lm
Efficacy		163		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 $\pm 5\%$ for the flux data and $\pm 6\%$ 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 216mA	Tc 25 °C	1300	176
	Tc-nom 65 °C	1233	169
	Tc-max 95 °C	1160	161
I-nom 270mA	Tc 25 °C	1599	170
	Tc-nom 65 °C	1515	163
	Tc-max 95 °C	1424	155
I-max 540mA	Tc 25 °C	2977	146
	Tc-nom 65 °C	2807	139
	Tc-max 95 °C	2622	131

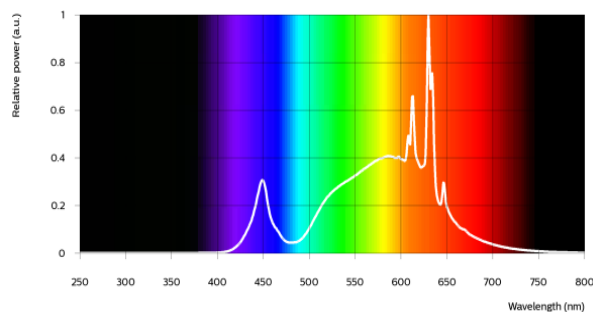


Fortimo SLM C 830 1203 L09 1313 G8N HE

Parameter	Min	Typ	Max	Unit
Luminous flux	1477	1555	1710	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 $\pm 5\%$ for the flux data and $\pm 6\%$ 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 216mA	Tc 25 °C	1335	180
	Tc-nom 65 °C	1265	173
	Tc-max 95 °C	1191	165
I-nom 270mA	Tc 25 °C	1641	175
	Tc-nom 65 °C	1555	167
	Tc-max 95 °C	1462	159
I-max 540mA	Tc 25 °C	3056	150
	Tc-nom 65 °C	2881	143
	Tc-max 95 °C	2692	135

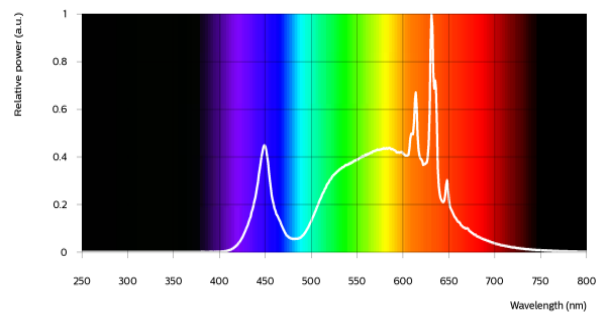


Fortimo SLM C 835 1203 L09 1313 G8N HE

Parameter	Min	Typ	Max	Unit
Luminous flux	1510	1590	1749	lm
Efficacy		171		lm/W
Correlated color temperature (CCT)		3500		K
Color coordinates (CIEx, CIEy)		(0.408, 0.393)		-
Color consistency			2	SDCM
CRI	80			
R9	>0			
Photometric code		835/259		
Photobiological safety		RG1 unlimited		

Measurement precision $\pm 5\%$ for the flux data and $\pm 6\%$ 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 216mA	Tc 25 °C	1365	184
	Tc-nom 65 °C	1294	177
	Tc-max 95 °C	1218	169
I-nom 270mA	Tc 25 °C	1678	179
	Tc-nom 65 °C	1590	171
	Tc-max 95 °C	1495	163
I-max 540mA	Tc 25 °C	3125	153
	Tc-nom 65 °C	2947	146
	Tc-max 95 °C	2754	138

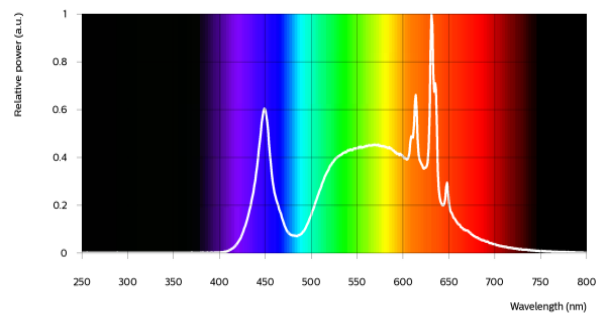


Fortimo SLM C 840 1203 L09 1313 G8N HE

Parameter	Min	Typ	Max	Unit
Luminous flux	1520	1600	1760	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 $\pm 5\%$ for the flux data and $\pm 6\%$ 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 216mA	Tc 25 °C	1373	186
	Tc-nom 65 °C	1302	178
	Tc-max 95 °C	1225	170
I-nom 270mA	Tc 25 °C	1689	180
	Tc-nom 65 °C	1600	172
	Tc-max 95 °C	1505	164
I-max 540mA	Tc 25 °C	3145	154
	Tc-nom 65 °C	2966	147
	Tc-max 95 °C	2772	139

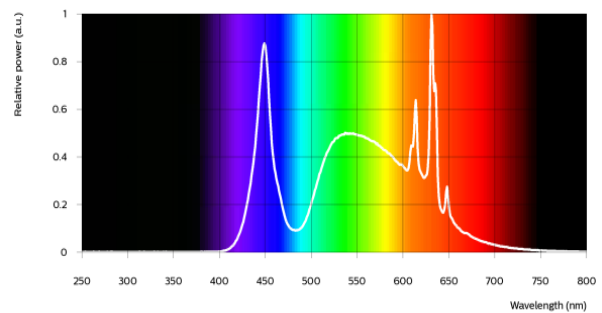


Fortimo SLM C 850 1203 L09 1313 G8N HE

Parameter	Min	Typ	Max	Unit
Luminous flux	1520	1600	1760	lm
Efficacy		172		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 $\pm 5\%$ for the flux data and $\pm 6\%$ 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 216mA	Tc 25 °C	1373	186
	Tc-nom 65 °C	1302	178
	Tc-max 95 °C	1225	170
I-nom 270mA	Tc 25 °C	1689	180
	Tc-nom 65 °C	1600	172
	Tc-max 95 °C	1505	164
I-max 540mA	Tc 25 °C	3145	154
	Tc-nom 65 °C	2966	147
	Tc-max 95 °C	2772	139

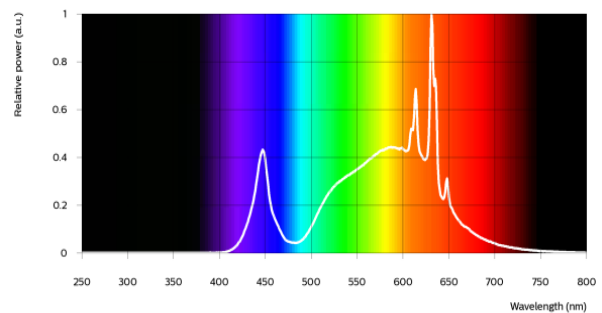


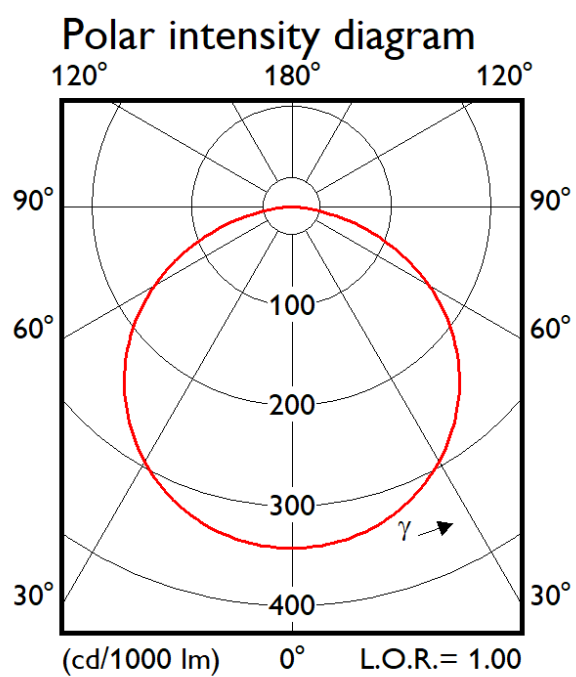
Fortimo SLM C 830 PW 1203 L09 1313 G8N HE

Parameter	Min	Typ	Max	Unit
Luminous flux	1454	1530	1683	lm
Efficacy		165		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 $\pm 5\%$ for the flux data and $\pm 6\%$ 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 216mA	Tc 25 °C	1313	177
	Tc-nom 65 °C	1245	171
	Tc-max 95 °C	1172	163
I-nom 270mA	Tc 25 °C	1615	172
	Tc-nom 65 °C	1530	165
	Tc-max 95 °C	1439	156
I-max 540mA	Tc 25 °C	3007	147
	Tc-nom 65 °C	2835	140
	Tc-max 95 °C	2649	132





Electrical characteristics

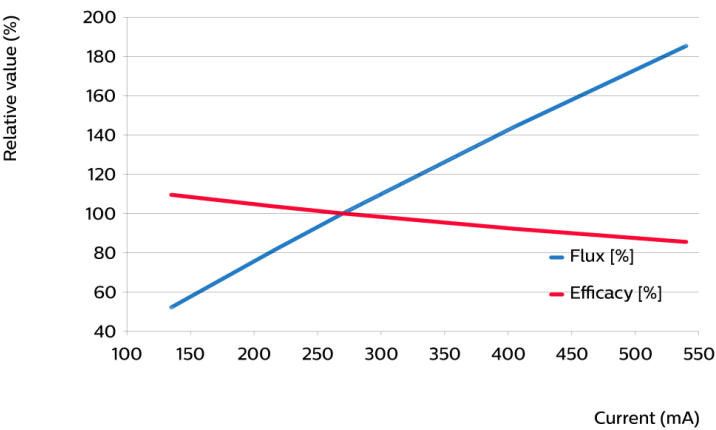
Parameter	Min	Typ	Max	Unit
Forward voltage	32.5	34.5	37.0	V
Power consumption	8.8	9.3	10.0	W = kWh/1000h
Number of modules in series per chain			1	
Number of modules per chain			1	
Number of modules in parallel			1	

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

Tuning information

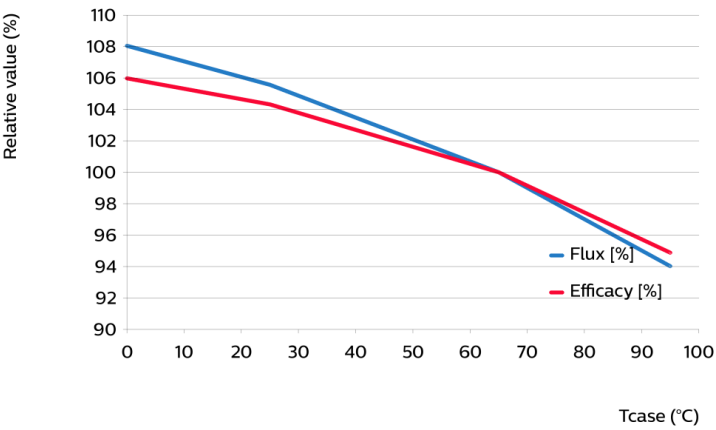
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
540	185	86
405	144	92
270	100	100
216	81	104
135	52	109



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

Tc [°C]	Flux [%]	Efficacy [%]
95	94	95
65	100	100
25	106	104
0	108	106



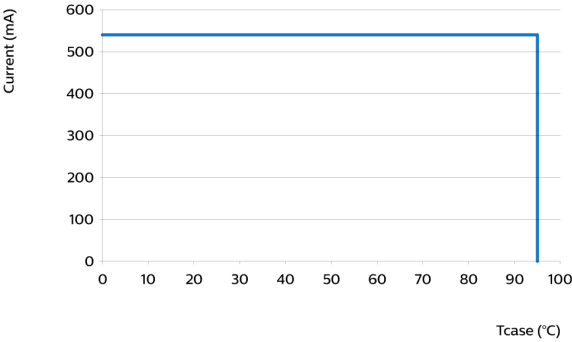
Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% I-nom 216mA	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 270mA	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	62
I-max 540mA	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

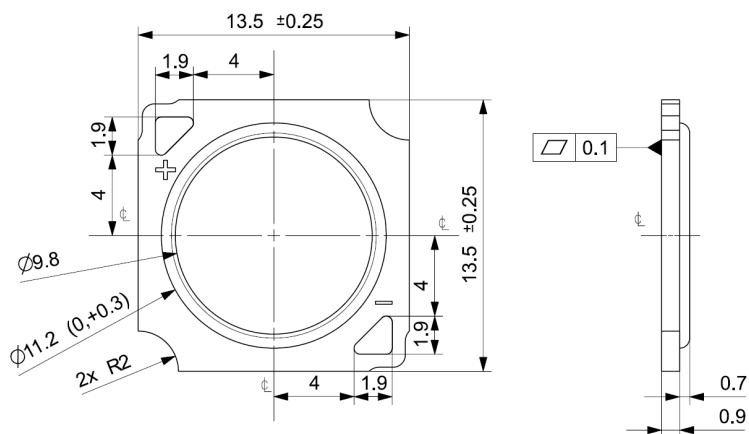
Parameter	Value	Unit
M70F50 nominal	>66000	hours

Performance Window



Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	13.25	13.5	13.75	mm
Width	13.25	13.5	13.75	mm
Height	0.8	0.9	1	mm
Height	1.3	1.6	1.9	mm
Product mass		0.48		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		540	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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