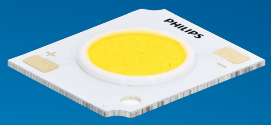
PHILIPS

Fortimo

LED

Fortimo SLM C 8xx 1203
L09 1619 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 1203 L09 1619 G8 HE	8720169 376694 00	9290 038 85080	2093841	20
Fortimo SLM C 830 1203 L09 1619 G8 HE	8720169 376724 00	9290 038 85180	2093847	20
Fortimo SLM C 835 1203 L09 1619 G8 HE	8720169 376755 00	9290 038 85280	2093674	20
Fortimo SLM C 840 1203 L09 1619 G8 HE	8720169 376786 00	9290 038 85380	2093862	20
Fortimo SLM C 850 1203 L09 1619 G8 HE	8720169 376816 00	9290 038 85480	2093672	20
Fortimo SLM C 830 PW 1203 L09 1619 G8 HE	8720169 376847 00	9290 038 85580	2093671	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 1619 G8 HE	300	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

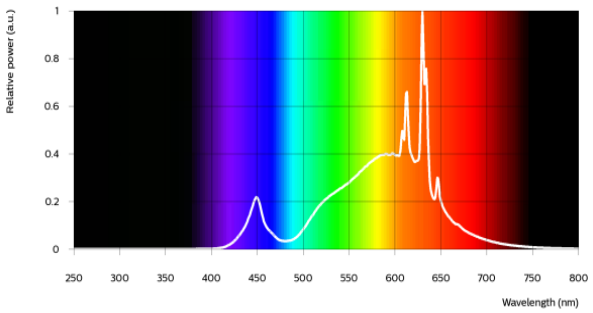
Optical characteristics - table per color (CCT)

Fortimo SLM C 827 1203 L09 1619 G8 HE

Parameter	Min	Typ	Max	Unit
Luminous flux	1601	1685	1854	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 240mA	Tc 25 °C	1451	175
	Tc-nom 65 °C	1373	167
	Tc-max 95 °C	1307	161
I-nom 300mA	Tc 25 °C	1781	170
	Tc-nom 65 °C	1685	162
	Tc-max 95 °C	1603	156
I-max 540mA	Tc 25 °C	3004	149
	Tc-nom 65 °C	2837	143
	Tc-max 95 °C	2693	136

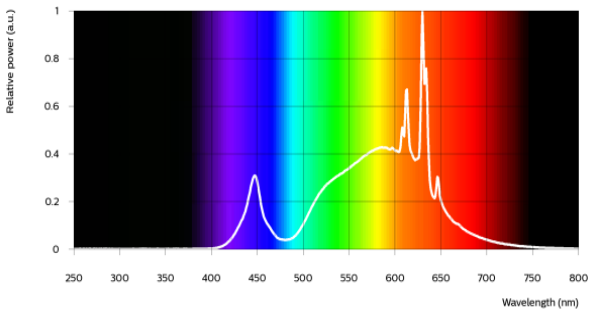


Fortimo SLM C 830 1203 L09 1619 G8 HE

Parameter	Min	Typ	Max	Unit
Luminous flux	1653	1740	1914	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 240mA	Tc 25 °C	1498	181
	Tc-nom 65 °C	1418	173
	Tc-max 95 °C	1350	167
I-nom 300mA	Tc 25 °C	1839	175
	Tc-nom 65 °C	1740	167
	Tc-max 95 °C	1655	161
I-max 540mA	Tc 25 °C	3102	154
	Tc-nom 65 °C	2930	147
	Tc-max 95 °C	2781	140

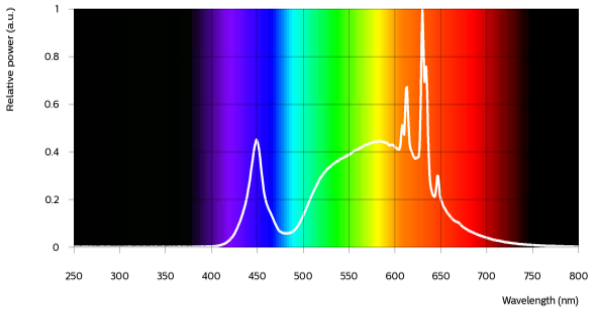


Fortimo SLM C 835 1203 L09 1619 G8 HE

Parameter	Min	Typ	Max	Unit
Luminous flux	1691	1780	1958	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 240mA	Tc 25 °C	1533	185
	Tc-nom 65 °C	1451	177
	Tc-max 95 °C	1381	170
I-nom 300mA	Tc 25 °C	1881	179
	Tc-nom 65 °C	1780	171
	Tc-max 95 °C	1693	164
I-max 540mA	Tc 25 °C	3174	157
	Tc-nom 65 °C	2997	150
	Tc-max 95 °C	2846	144

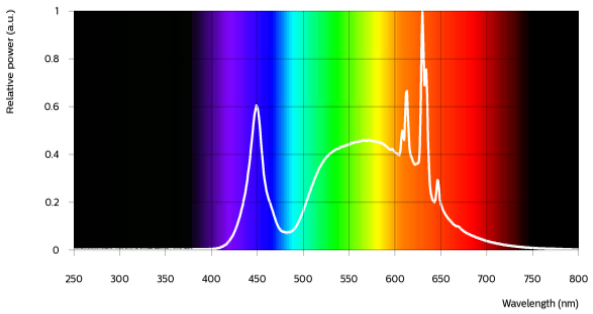


Fortimo SLM C 840 1203 L09 1619 G8 HE

Parameter	Min	Typ	Max	Unit
Luminous flux	1700	1790	1969	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 240mA	Tc 25 °C	1541	186
	Tc-nom 65 °C	1459	178
	Tc-max 95 °C	1388	171
I-nom 300mA	Tc 25 °C	1892	180
	Tc-nom 65 °C	1790	172
	Tc-max 95 °C	1703	165
I-max 540mA	Tc 25 °C	3192	158
	Tc-nom 65 °C	3014	151
	Tc-max 95 °C	2862	145

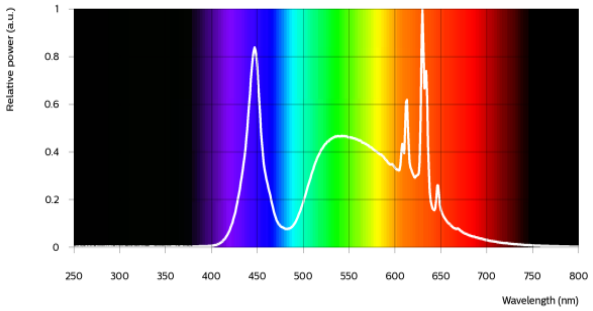


Fortimo SLM C 850 1203 L09 1619 G8 HE

Parameter	Min	Typ	Max	Unit
Luminous flux	1691	1780	1958	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 240mA	Tc 25 °C	1533	185
	Tc-nom 65 °C	1451	177
	Tc-max 95 °C	1381	170
I-nom 300mA	Tc 25 °C	1881	179
	Tc-nom 65 °C	1780	171
	Tc-max 95 °C	1693	164
I-max 540mA	Tc 25 °C	3174	157
	Tc-nom 65 °C	2997	150
	Tc-max 95 °C	2846	144

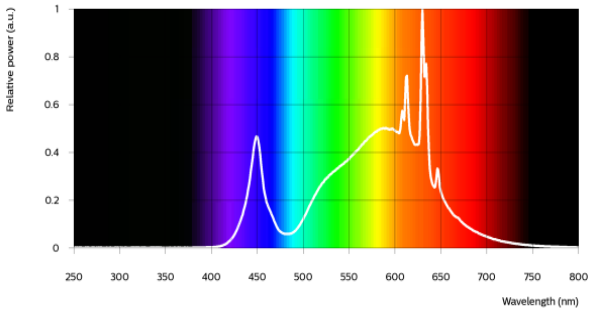


Fortimo SLM C 830 PW 1203 L09 1619 G8 HE

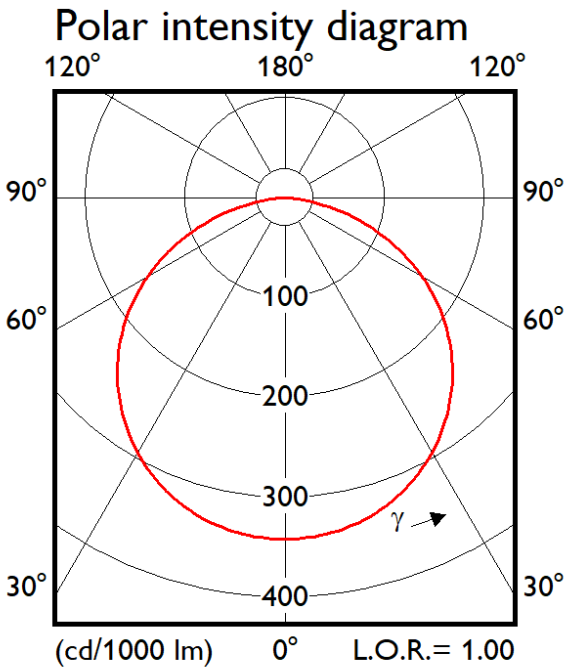
Parameter	Min	Typ	Max	Unit
Luminous flux	1624	1710	1881	lm
Efficacy		164		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.422, 0.386)		-
Color consistency			2	SDCM
CRI	80			
R9	>0			
Photometric code		830/259		
Photobiological safety		RG1 unlimited		

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 240mA	Tc 25 °C	1472	177
	Tc-nom 65 °C	1394	170
	Tc-max 95 °C	1326	164
I-nom 300mA	Tc 25 °C	1807	172
	Tc-nom 65 °C	1710	164
	Tc-max 95 °C	1627	158
I-max 540mA	Tc 25 °C	3049	151
	Tc-nom 65 °C	2879	145
	Tc-max 95 °C	2733	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

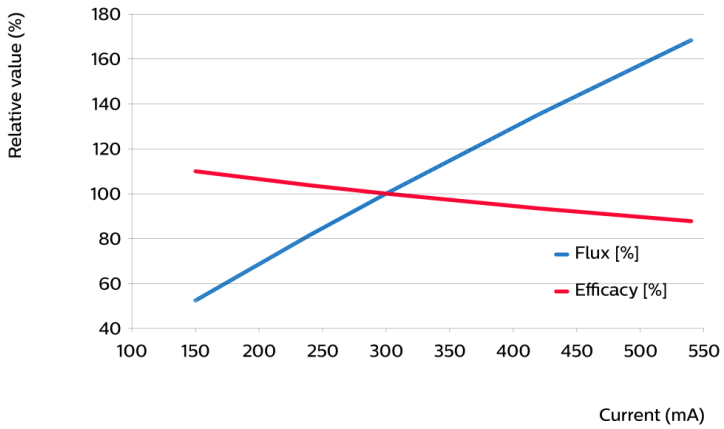
Parameter	Min	Typ	Max	Unit
Forward voltage	32.5	34.7	37.0	V
Power consumption	9.8	10.4	11.1	W = kWh/1000h
Number of modules in series per chain			1	
Number of modules per chain			1	
Number of modules in parallel			1	

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

Tuning information

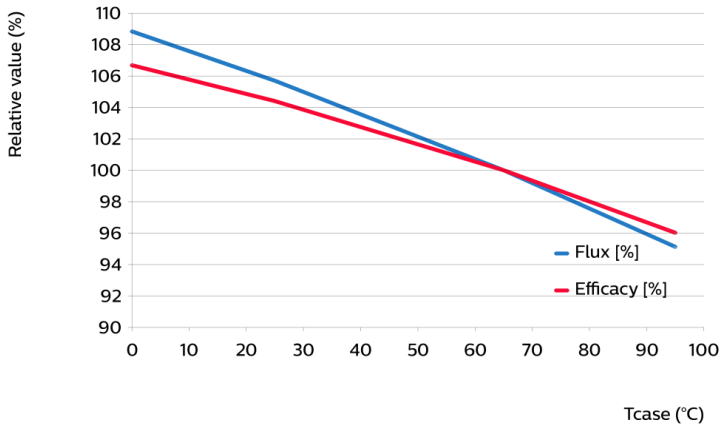
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
540	168	88
420	135	93
300	100	100
240	82	104
150	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	109	107



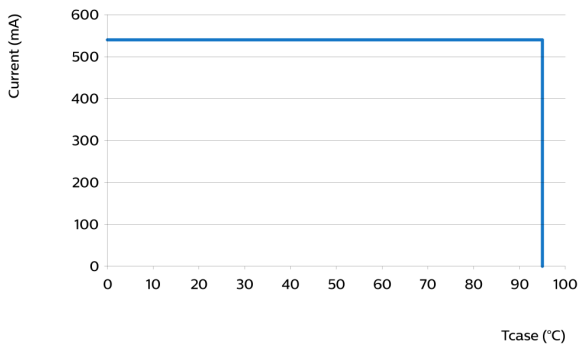
Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% I-nom 240mA	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 300mA	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 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

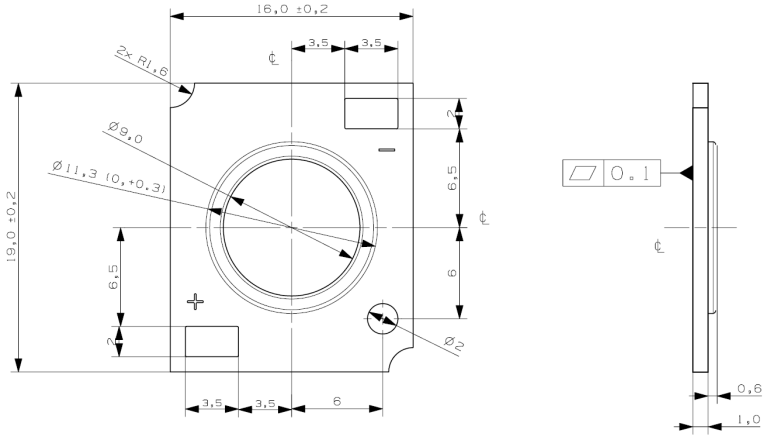
Parameter	Value	Unit
M70F50 nominal	>66000	hours

Performance Window



Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	18.8	19	19.2	mm
Width	15.8	16	16.2	mm
Height	0.9	1	1.1	mm
Height	1.3	1.6	1.9	mm
Product mass		0.81		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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