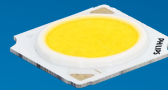


# PHILIPS

## Fortimo

### LED

Fortimo SLM C 8xx 1204  
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](http://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 1204 L09 1313 G8N HE	8720169 381100 00	9290 038 99780	2093633	20
Fortimo SLM C 830 1204 L09 1313 G8N HE	8720169 381131 00	9290 038 99880	2093710	20
Fortimo SLM C 835 1204 L09 1313 G8N HE	8720169 381162 00	9290 038 99980	2093724	20
Fortimo SLM C 840 1204 L09 1313 G8N HE	8720169 381193 00	9290 039 00080	2093718	20
Fortimo SLM C 850 1204 L09 1313 G8N HE	8720169 381223 00	9290 039 00180	2093659	20
Fortimo SLM C 830 PW 1204 L09 1313 G8N HE	8720169 381254 00	9290 039 00280	2093624	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 1204 L09 1313 G8N HE	360	720	720	mA

## Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T <sub>c</sub> (case temperature at T <sub>c</sub> 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

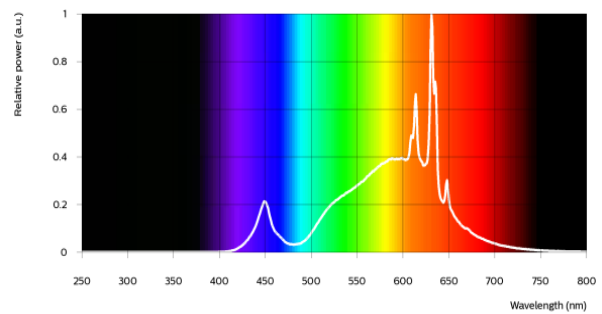
## Optical characteristics - table per color (CCT)

### Fortimo SLM C 827 1204 L09 1313 G8N HE


Parameter	Min	Typ	Max	Unit
Luminous flux	1876	1975	2172	lm
Efficacy		159		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  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$ .

Operation point	827	lm	lm/W
80% I-nom 288mA	Tc 25 °C	1691	171
	Tc-nom 65 °C	1608	166
	Tc-max 95 °C	1520	157
I-nom 360mA	Tc 25 °C	2078	166
	Tc-nom 65 °C	1975	159
	Tc-max 95 °C	1864	152
I-max 720mA	Tc 25 °C	3858	142
	Tc-nom 65 °C	3646	136
	Tc-max 95 °C	3419	129

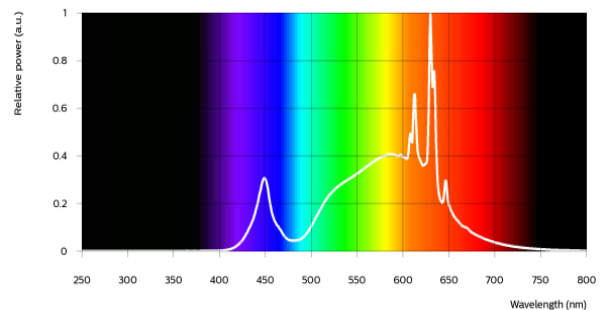


### Fortimo SLM C 830 1204 L09 1313 G8N HE


Parameter	Min	Typ	Max	Unit
Luminous flux	1928	2030	2233	lm
Efficacy		164		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  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$ .

Operation point	830	lm	lm/W
80% I-nom 288mA	Tc 25 °C	1738	176
	Tc-nom 65 °C	1653	170
	Tc-max 95 °C	1562	161
I-nom 360mA	Tc 25 °C	2136	171
	Tc-nom 65 °C	2030	164
	Tc-max 95 °C	1917	156
I-max 720mA	Tc 25 °C	3966	146
	Tc-nom 65 °C	3748	139
	Tc-max 95 °C	3515	132

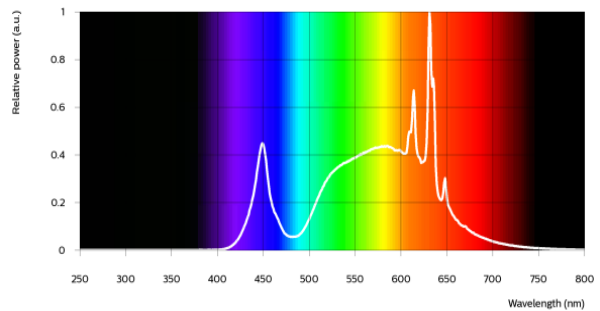


Fortimo SLM C 835 1204 L09 1313 G8N HE


Parameter	Min	Typ	Max	Unit
Luminous flux	1976	2080	2288	lm
Efficacy		168		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 ± 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 288mA	Tc 25 °C	1781	180
	Tc-nom 65 °C	1694	175
	Tc-max 95 °C	1601	165
I-nom 360mA	Tc 25 °C	2188	175
	Tc-nom 65 °C	2080	168
	Tc-max 95 °C	1964	160
I-max 720mA	Tc 25 °C	4064	149
	Tc-nom 65 °C	3842	143
	Tc-max 95 °C	3603	135

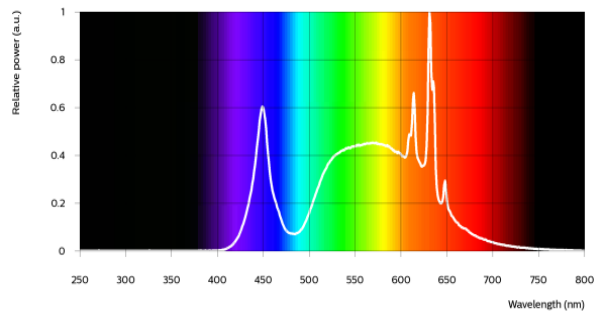


Fortimo SLM C 840 1204 L09 1313 G8N HE


Parameter	Min	Typ	Max	Unit
Luminous flux	1986	2090	2299	lm
Efficacy		169		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 288mA	Tc 25 °C	1789	181
	Tc-nom 65 °C	1702	175
	Tc-max 95 °C	1609	166
I-nom 360mA	Tc 25 °C	2199	176
	Tc-nom 65 °C	2090	169
	Tc-max 95 °C	1973	160
I-max 720mA	Tc 25 °C	4083	150
	Tc-nom 65 °C	3861	144
	Tc-max 95 °C	3621	136

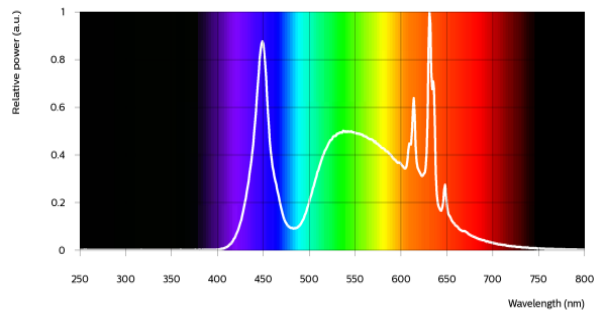


Fortimo SLM C 850 1204 L09 1313 G8N HE


Parameter	Min	Typ	Max	Unit
Luminous flux	1986	2090	2299	lm
Efficacy		169		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 288mA	Tc 25 °C	1789	181
	Tc-nom 65 °C	1702	175
	Tc-max 95 °C	1609	166
I-nom 360mA	Tc 25 °C	2199	176
	Tc-nom 65 °C	2090	169
	Tc-max 95 °C	1973	160
I-max 720mA	Tc 25 °C	4083	150
	Tc-nom 65 °C	3861	144
	Tc-max 95 °C	3621	136

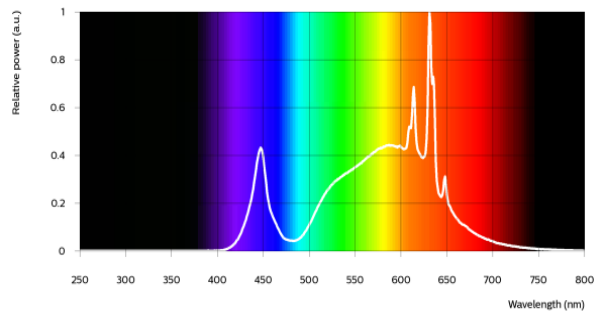


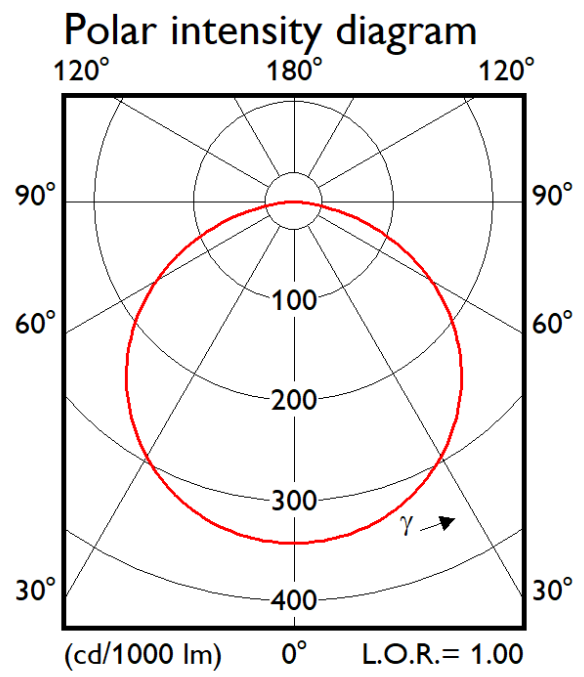
Fortimo SLM C 830 PW 1204 L09 1313 G8N HE

Parameter	Min	Typ	Max	Unit
Luminous flux	1900	2000	2200	lm
Efficacy		161		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 288mA	Tc 25 °C	1712	173
	Tc-nom 65 °C	1629	168
	Tc-max 95 °C	1539	159
I-nom 360mA	Tc 25 °C	2104	168
	Tc-nom 65 °C	2000	161
	Tc-max 95 °C	1888	154
I-max 720mA	Tc 25 °C	3907	144
	Tc-nom 65 °C	3694	137
	Tc-max 95 °C	3464	130





## Electrical characteristics

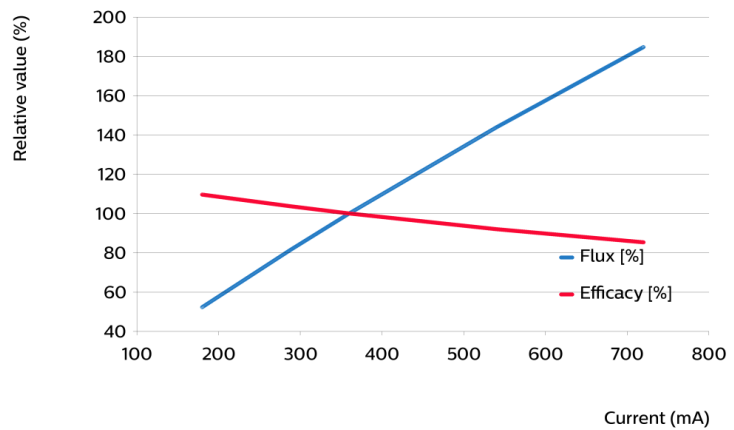
Parameter	Min	Typ	Max	Unit
Forward voltage	32.5	34.5	37.0	V
Power consumption	11.7	12.4	13.3	W = kWh/1000h
Number of modules in series per chain			1	
Number of modules per chain			1	
Number of modules in parallel			1	

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

## Tuning information

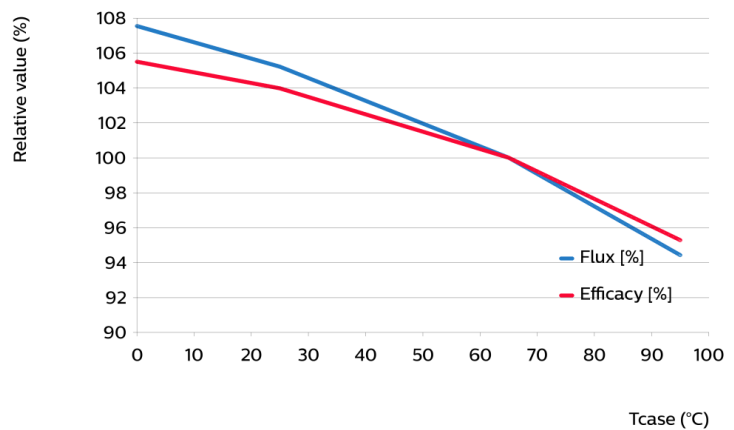
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
720	185	85
540	144	92
360	100	100
288	81	104
180	52	110



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

Tc [°C]	Flux [%]	Efficacy [%]
95	94	95
65	100	100
25	105	104
0	108	105



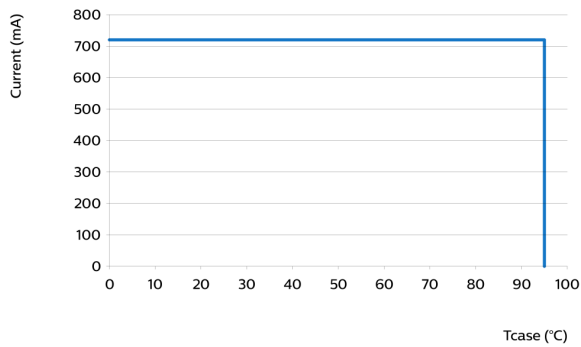
## Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% I-nom 288mA	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 360mA	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 720mA	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

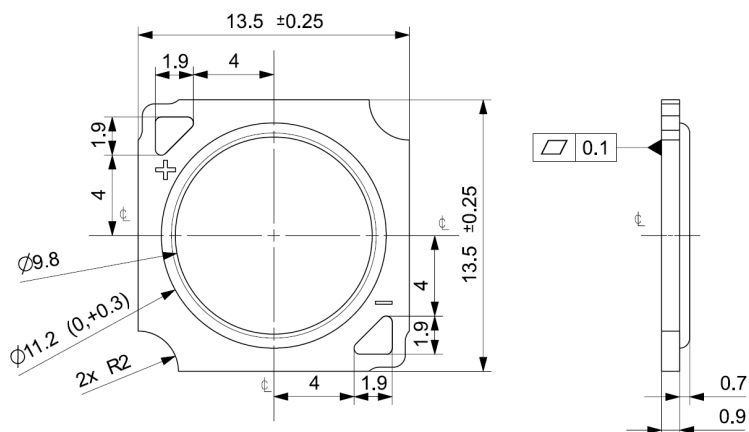
Parameter	Value	Unit
M70F50 nominal	>66000	hours

## 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		0.5		gram



## Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		720	mA
Case temperature (Tc-max)		95	°C
ESD (direct contact)	8		kV
Working voltage		60	V <sub>dc</sub>
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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