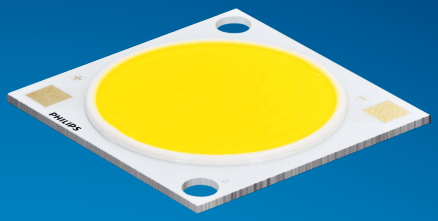
PHILIPS

Fortimo

LED

Fortimo SLM C 8xx 1216
L22 2828 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 1216 L22 2828 G8N HE	8720169 384040 00	9290 039 09580	2093799	10
Fortimo SLM C 830 1216 L22 2828 G8N HE	8720169 384071 00	9290 039 09680	2093812	10
Fortimo SLM C 835 1216 L22 2828 G8N HE	8720169 384101 00	9290 039 09780	2093810	10
Fortimo SLM C 840 1216 L22 2828 G8N HE	8720169 384132 00	9290 039 09880	2093648	10
Fortimo SLM C 850 1216 L22 2828 G8N HE	8720169 384163 00	9290 039 09980	2093623	10
Fortimo SLM C 830 PW 1216 L22 2828 G8N HE	8720169 384194 00	9290 039 10080	2093639	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 L22 2828 G8N HE	1440	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

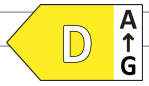
** Value at which life time is specified

*** Maximum value for safe operation, do not operate above this value

Optical characteristics - table per color (CCT)

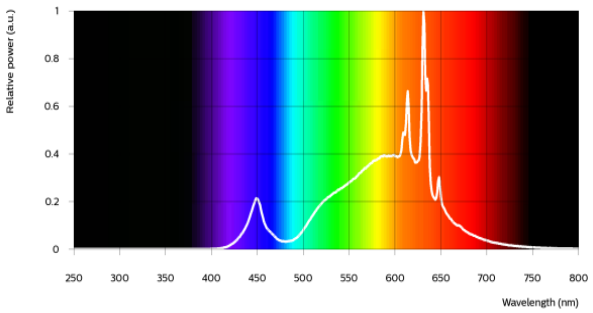
Fortimo SLM C 827 1216 L22 2828 G8N HE

Parameter	Min	Typ	Max	Unit
Luminous flux	7952	8370	9207	lm
Efficacy		167		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		



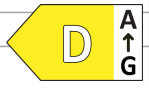
Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

Operation point	827	lm	lm/W
80% I-nom 1152mA	Tc 25 °C	7141	181
	Tc-nom 65 °C	6779	174
	Tc-max 95 °C	6495	168
I-nom 1440mA	Tc 25 °C	8817	175
	Tc-nom 65 °C	8370	167
	Tc-max 95 °C	8018	162
I-max 2880mA	Tc 25 °C	16710	150
	Tc-nom 65 °C	15848	143
	Tc-max 95 °C	15170	138



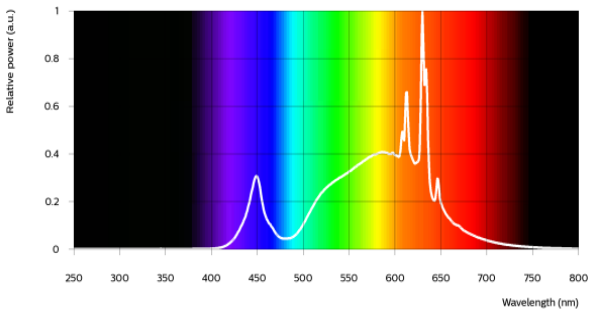
Fortimo SLM C 830 1216 L22 2828 G8N HE

Parameter	Min	Typ	Max	Unit
Luminous flux	8156	8585	9444	lm
Efficacy		172		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 1152mA	Tc 25 °C	7324	186
	Tc-nom 65 °C	6953	178
	Tc-max 95 °C	6662	172
I-nom 1440mA	Tc 25 °C	9044	179
	Tc-nom 65 °C	8585	172
	Tc-max 95 °C	8224	166
I-max 2880mA	Tc 25 °C	17140	154
	Tc-nom 65 °C	16256	147
	Tc-max 95 °C	15560	142

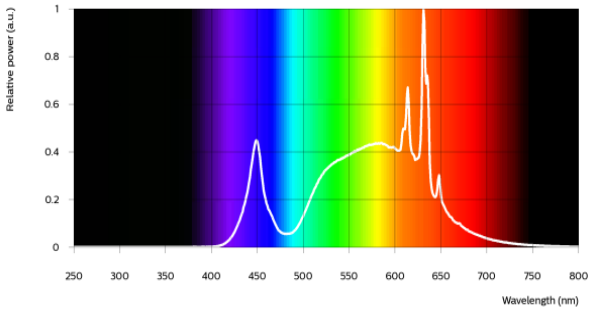


Fortimo SLM C 835 1216 L22 2828 G8N HE

Parameter	Min	Typ	Max	Unit
Luminous flux	8355	8795	9674	lm
Efficacy		176		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 1152mA	Tc 25 °C	7503	190
	Tc-nom 65 °C	7123	183
	Tc-max 95 °C	6824	176
I-nom 1440mA	Tc 25 °C	9265	184
	Tc-nom 65 °C	8795	176
	Tc-max 95 °C	8425	170
I-max 2880mA	Tc 25 °C	17562	158
	Tc-nom 65 °C	16656	151
	Tc-max 95 °C	15943	145

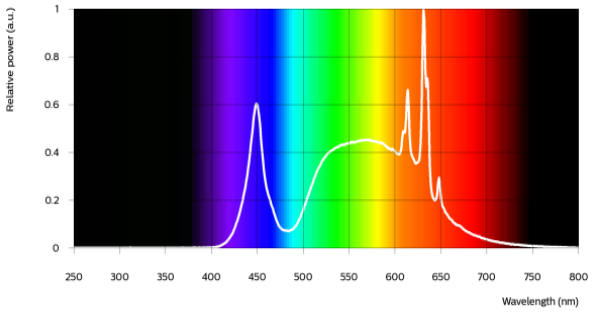


Fortimo SLM C 840 1216 L22 2828 G8N HE

Parameter	Min	Typ	Max	Unit
Luminous flux	8393	8835	9718	lm
Efficacy		177		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 1152mA	Tc 25 °C	7537	191
	Tc-nom 65 °C	7156	183
	Tc-max 95 °C	6855	177
I-nom 1440mA	Tc 25 °C	9307	185
	Tc-nom 65 °C	8835	177
	Tc-max 95 °C	8463	171
I-max 2880mA	Tc 25 °C	17643	158
	Tc-nom 65 °C	16733	151
	Tc-max 95 °C	16017	146



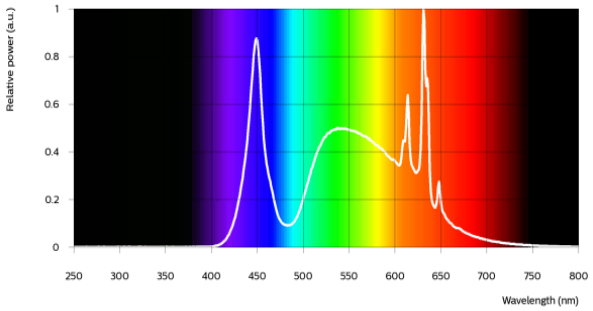
Fortimo SLM C 850 1216 L22 2828 G8N HE

Parameter	Min	Typ	Max	Unit
Luminous flux	8398	8840	9724	lm
Efficacy		177		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 1152mA	Tc 25 °C	7541	191
	Tc-nom 65 °C	7159	184
	Tc-max 95 °C	6859	177
I-nom 1440mA	Tc 25 °C	9312	185
	Tc-nom 65 °C	8840	177
	Tc-max 95 °C	8468	171
I-max 2880mA	Tc 25 °C	17656	158
	Tc-nom 65 °C	16746	152
	Tc-max 95 °C	16029	146



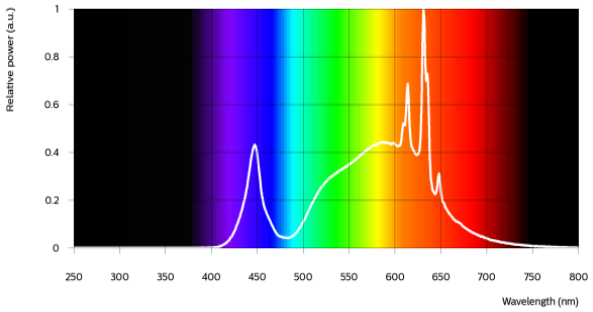
Fortimo SLM C 830 PW 1216 L22 2828 G8N HE

Parameter	Min	Typ	Max	Unit
Luminous flux	8037	8460	9306	lm
Efficacy		169		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		

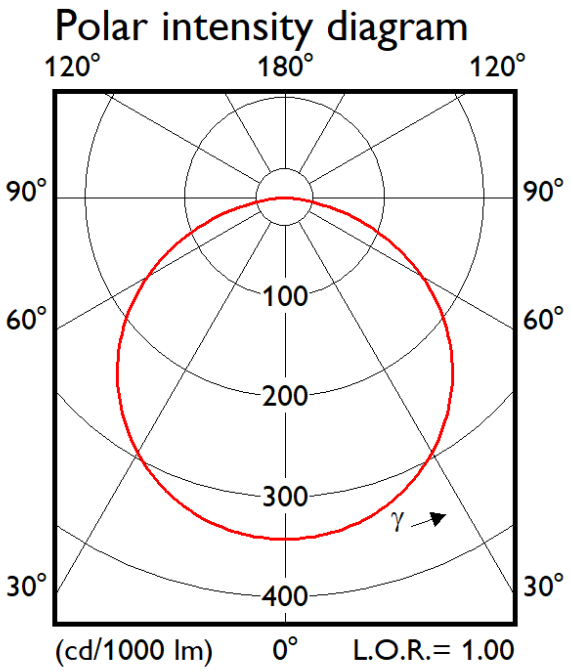


Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

Operation point	830	lm	lm/W
80% I-nom 1152mA	Tc 25 °C	7217	183
	Tc-nom 65 °C	6852	176
	Tc-max 95 °C	6565	170
I-nom 1440mA	Tc 25 °C	8912	177
	Tc-nom 65 °C	8460	169
	Tc-max 95 °C	8104	164
I-max 2880mA	Tc 25 °C	16892	151
	Tc-nom 65 °C	16021	145
	Tc-max 95 °C	15335	140



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

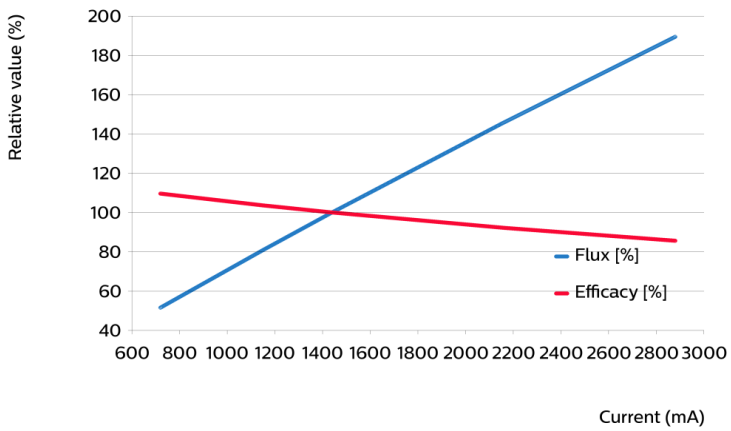
Parameter	Min	Typ	Max	Unit
Forward voltage	32.5	34.7	37.0	V
Power consumption	46.8	50.0	53.3	W = kWh/1000h
Number of modules in series per chain			1	
Number of modules per chain			1	
Number of modules in parallel			1	

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

Tuning information

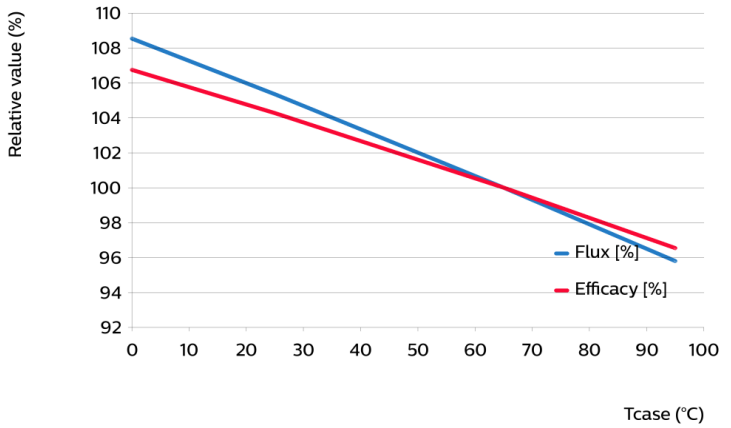
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
2880	189	86
2160	146	92
1440	100	100
1152	81	104
720	52	110



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

Tc [°C]	Flux [%]	Efficacy [%]
95	96	97
65	100	100
25	105	104
0	109	107



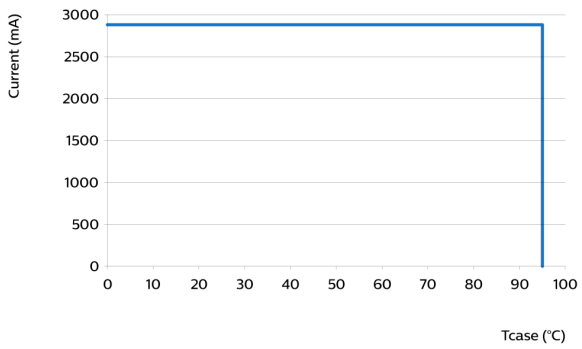
Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% I-nom 1152mA	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 1440mA	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 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

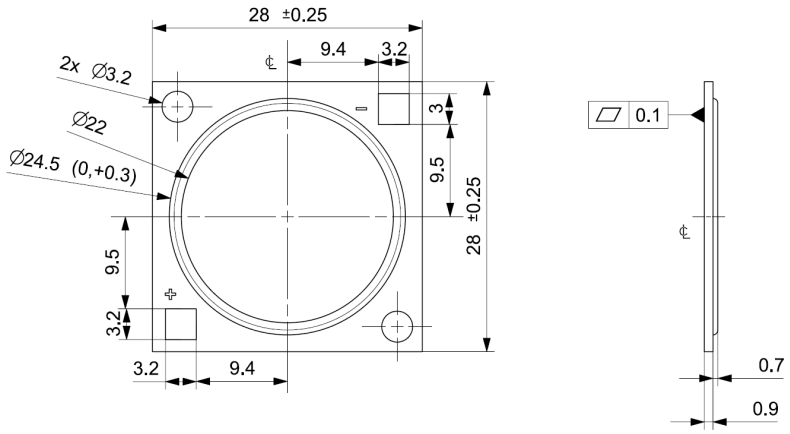
Parameter	Value	Unit
M70F50 nominal	>66000	hours

Performance Window



Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	27.75	28	28.25	mm
Width	27.75	28	28.25	mm
Height	0.8	0.9	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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11/10/2024

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