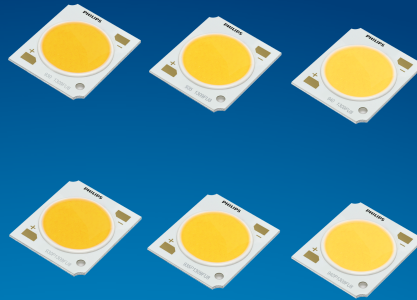


PHILIPS

Fortimo

LED

Fortimo SLM C 1309 L15
2024 G8 UHE



Datasheet

200lm/W chip-on-board that makes sense!

Fortimo SLM C 1309 L15 2024 G8 UHE

200lm/W claims are not new in the market for COB. While such claims, at a closer look, are either at very low temperature like 25°C, or at very low driving current and flux output, which doesn't make sense to real applications like retail. To further build on the success of Fortimo SLM G7 HE and HE+ which is well recognized by the market, PHILIPS Fortimo SLM G8 UHE offers first-of-its-kind 200lm/W at 2000lm from LES 15mm and 4000lm from LES 23mm, at tc temperature of 50°C, which meets the actual application requirements.

Key features and benefits

Specially engineered chip for optimal quantum efficiency at low driving current (contributing to the high efficacy)
Further optimized phosphor recipe based on HE+ technology for even higher efficacy without sacrificing QoL and Reliability
Lower thermal resistance to enable lower operating temperature (better performance) or luminaire miniaturization
Same footprint as Fortimo G7 (L15 2024 and L23 2828), ensuring compatibility with existing holders and optics
Optimized string configuration for higher system efficiency together with the existing PHILIPS indoor point drivers
Available in both standard color and Premium White

January 2024



Ordering data

Commercial product name	EOC	12NC	EPREL registration #	Box quantity
Fortimo SLM C 940 1309 L15 2024 G8 UHE	8720169 325197 00	9290 038 72980	1865325	20
Fortimo SLM C 935 1309 L15 2024 G8 UHE	8720169 325166 00	9290 038 72880	1865329	20
Fortimo SLM C 930 1309 L15 2024 G8 UHE	8720169 325135 00	9290 038 72780	1865322	20
Fortimo SLM C 940 PW 1309 L15 2024 G8 UHE	8720169 325289 00	9290 038 73280	1865324	20
Fortimo SLM C 935 PW 1309 L15 2024 G8 UHE	8720169 325258 00	9290 038 73180	1865320	20
Fortimo SLM C 930 PW 1309 L15 2024 G8 UHE	8720169 325227 00	9290 038 73080	1865321	20

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo SLM C 1309 L15 2024 G8 UHE	300	750	750	mA

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T _c (case temperature at T _c point)	50	85	85	°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)

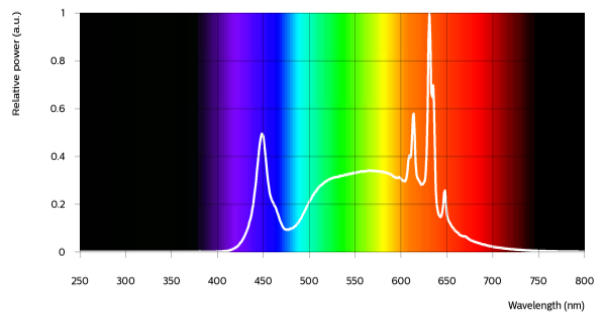
Fortimo SLM C 940 1309 L15 2024 G8 UHE

Parameter	Min	Typ	Max	Unit
Luminous flux	2014	2120	2332	lm
Efficacy		202		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.382, 0.380)		-
Color consistency			2	SDCM
CRI	90			
R9	50			
Photometric code		940/259		
Photobiological safety		RG1 unlimited		



At currents higher than 734mA the module might be as classified as RG2, threshold illuminance for RG2 is 1415lux. 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	940	lm	lm/W
80% I-nom 240mA	Tc 25 °C	1757	210
	Tc-nom 50 °C	1700	205
	Tc-max 85 °C	1610	196
I-nom 300mA	Tc 25 °C	2191	208
	Tc-nom 50 °C	2120	202
	Tc-max 85 °C	2007	194
I-max 750mA	Tc 25 °C	5327	191
	Tc-nom 50 °C	5152	186
	Tc-max 85 °C	4876	178



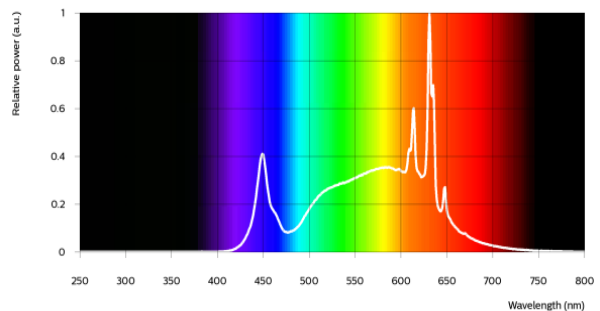
Fortimo SLM C 935 1309 L15 2024 G8 UHE

Parameter	Min	Typ	Max	Unit
Luminous flux	1995	2100	2310	lm
Efficacy		201		lm/W
Correlated color temperature (CCT)		3500		K
Color coordinates (CIEx, CIEy)		(0.407, 0.392)		-
Color consistency			2	SDCM
CRI	90			
R9	50			
Photometric code		935/259		
Photobiological safety		RG1 unlimited		




At currents higher than 734mA the module might be as classified as RG2, threshold illuminance for RG2 is 1415lux. 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	935	lm	lm/W
80% I-nom 240mA	Tc 25 °C	1741	208
	Tc-nom 50 °C	1684	203
	Tc-max 85 °C	1595	194
I-nom 300mA	Tc 25 °C	2170	206
	Tc-nom 50 °C	2100	201
	Tc-max 85 °C	1988	192
I-max 750mA	Tc 25 °C	5276	189
	Tc-nom 50 °C	5104	184
	Tc-max 85 °C	4830	176

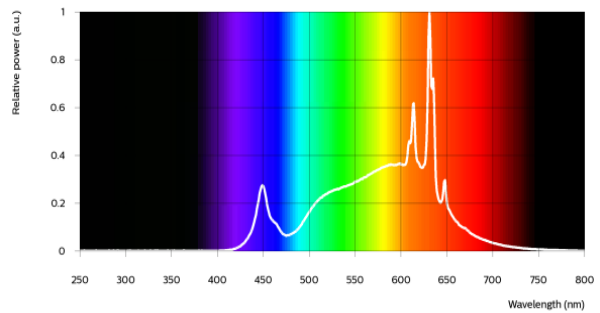


Fortimo SLM C 930 1309 L15 2024 G8 UHE


Parameter	Min	Typ	Max	Unit
Luminous flux	1933	2035	2238	lm
Efficacy		194		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.434, 0.403)		-
Color consistency			2	SDCM
CRI	90			
R9	50			
Photometric code		930/259		
Photobiological safety		RG1 unlimited		

At currents higher than 734mA the module might be as classified as RG2, threshold illuminance for RG2 is 1415lux.
 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	930	lm	lm/W
80% I-nom 240mA	Tc 25 °C	1687	202
	Tc-nom 50 °C	1632	197
	Tc-max 85 °C	1545	188
I-nom 300mA	Tc 25 °C	2103	199
	Tc-nom 50 °C	2035	194
	Tc-max 85 °C	1927	186
I-max 750mA	Tc 25 °C	5113	183
	Tc-nom 50 °C	4946	178
	Tc-max 85 °C	4680	171

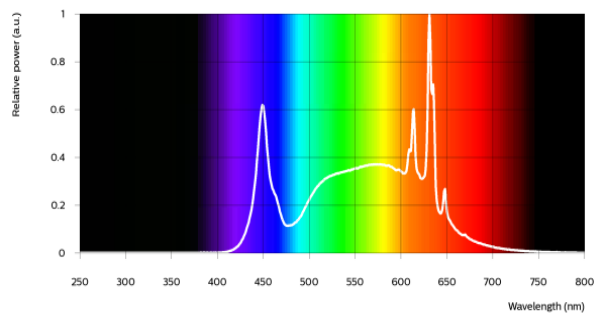


Fortimo SLM C 940 PW 1309 L15 2024 G8 UHE


Parameter	Min	Typ	Max	Unit
Luminous flux	1962	2065	2272	lm
Efficacy		197		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.374, 0.364)		-
Color consistency			2	SDCM
CRI	90			
R9	50			
Photometric code		940/259		
Photobiological safety		RG1 unlimited		

At currents higher than 734mA the module might be as classified as RG2, threshold illuminance for RG2 is 1415lux.
 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	940	lm	lm/W
80% I-nom 240mA	Tc 25 °C	1713	205
	Tc-nom 50 °C	1658	200
	Tc-max 85 °C	1570	191
I-nom 300mA	Tc 25 °C	2136	202
	Tc-nom 50 °C	2065	197
	Tc-max 85 °C	1957	189
I-max 750mA	Tc 25 °C	5194	186
	Tc-nom 50 °C	5024	181
	Tc-max 85 °C	4754	173

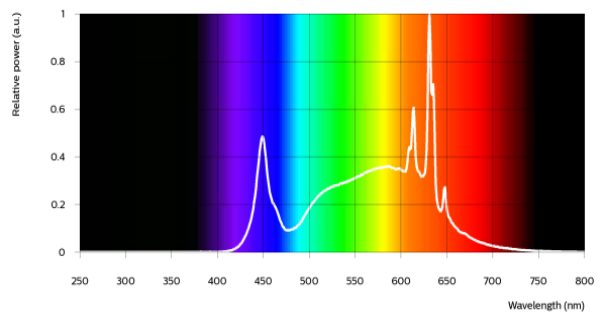


Fortimo SLM C 935 PW 1309 L15 2024 G8 UHE


Parameter	Min	Typ	Max	Unit
Luminous flux	1943	2045	2250	lm
Efficacy		195		lm/W
Correlated color temperature (CCT)		3500		K
Color coordinates (CIEx, CIEy)		(0.398, 0.376)		-
Color consistency			2	SDCM
CRI	90			
R9	50			
Photometric code		935/259		
Photobiological safety		RG1 unlimited		

At currents higher than 734mA the module might be as classified as RG2, threshold illuminance for RG2 is 1415lux.
 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	935	lm	lm/W
80% I-nom 240mA	Tc 25 °C	1696	203
	Tc-nom 50 °C	1641	198
	Tc-max 85 °C	1554	189
I-nom 300mA	Tc 25 °C	2114	200
	Tc-nom 50 °C	2045	195
	Tc-max 85 °C	1937	187
I-max 750mA	Tc 25 °C	5140	184
	Tc-nom 50 °C	4972	179
	Tc-max 85 °C	4705	171

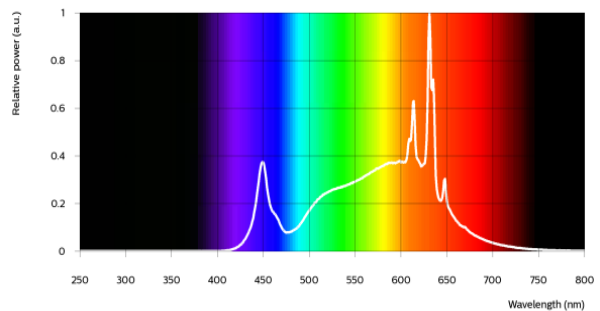


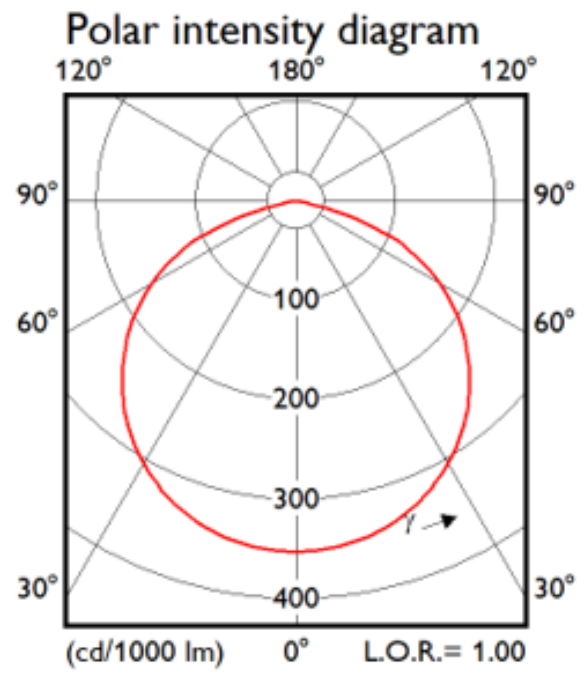
Fortimo SLM C 930 PW 1309 L15 2024 G8 UHE

Parameter	Min	Typ	Max	Unit
Luminous flux	1924	2025	2228	lm
Efficacy		193		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.422, 0.386)		-
Color consistency			2	SDCM
CRI	90			
R9	50			
Photometric code		930/259		
Photobiological safety		RG1 unlimited		

At currents higher than 734mA the module might be as classified as RG2, threshold illuminance for RG2 is 1415lux.
 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	930	lm	lm/W
80% I-nom 240mA	Tc 25 °C	1679	201
	Tc-nom 50 °C	1624	196
	Tc-max 85 °C	1538	188
I-nom 300mA	Tc 25 °C	2093	198
	Tc-nom 50 °C	2025	193
	Tc-max 85 °C	1917	185
I-max 750mA	Tc 25 °C	5088	182
	Tc-nom 50 °C	4921	177
	Tc-max 85 °C	4657	170





Electrical characteristics

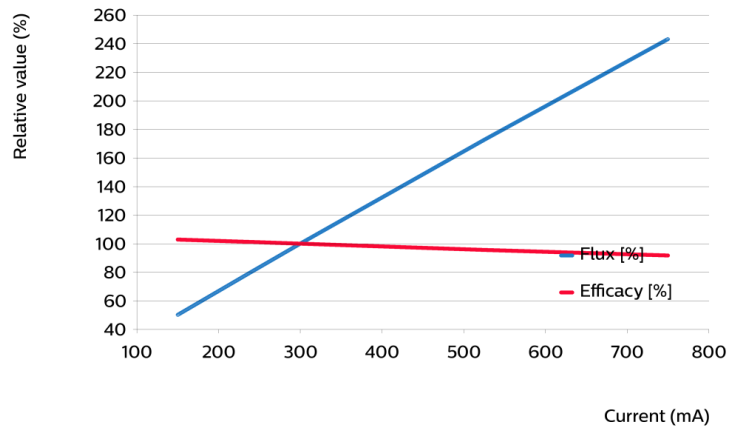
Parameter	Min	Typ	Max	Unit
Forward voltage	33.0	34.9	37.0	V
Power consumption	9.9	10.5	11.1	W = kWh/1000h
Number of modules in series per chain			1	
Number of modules per chain			1	
Number of modules in parallel			1	

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

Tuning information

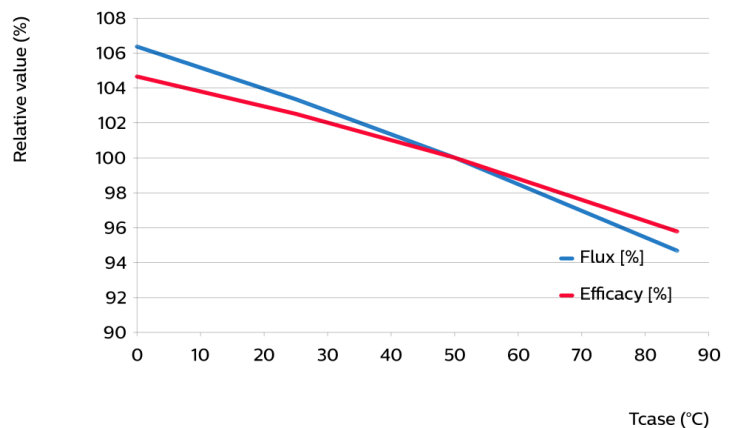
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
750	243	92
525	173	96
300	100	100
240	80	101
150	50	103



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

Tc [°C]	Flux [%]	Efficacy [%]
85	95	96
50	100	100
25	103	103
0	106	105



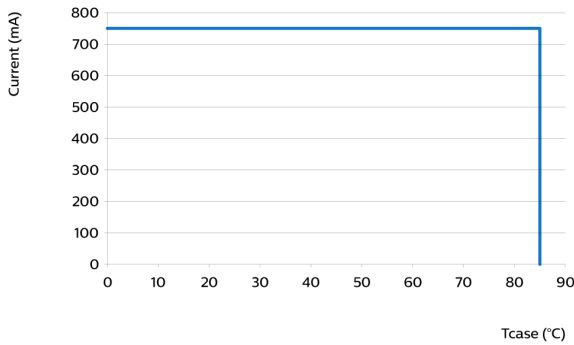
Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% I-nom 240mA	Tc 50°C	>110	>110	>110	>110	>110	>110	>110	106	97
	Tc 65°C	>110	>110	>110	>110	>110	>110	107	90	83
	Tc 85°C	>110	>110	>110	>110	>110	>110	88	75	68
I-nom 300mA	Tc 50°C	>110	>110	>110	>110	>110	>110	>110	101	93
	Tc 65°C	>110	>110	>110	>110	>110	>110	102	86	79
	Tc 85°C	>110	>110	>110	>110	>110	>110	84	71	65
I-max 750mA	Tc 50°C	>110	>110	>110	>110	>110	>110	100	84	77
	Tc 65°C	>110	>110	>110	>110	>110	>110	85	72	66
	Tc 85°C	>110	>110	>110	>110	>110	>110	70	59	54

Lifetime

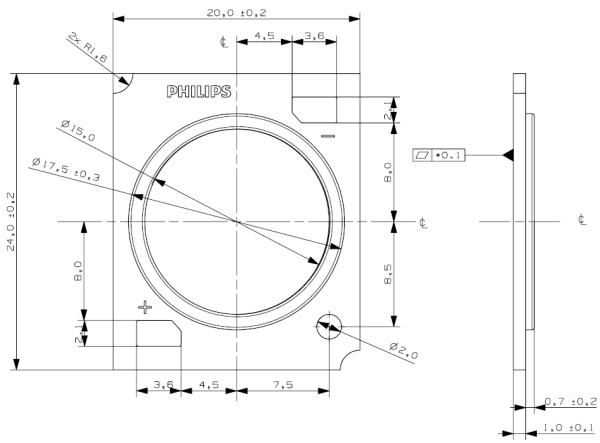
Parameter	Value	Unit
M70F50 nominal	>110000	hours

Performance Window



Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	23.8	24	24.2	mm
Width	19.8	20	20.2	mm
Height	0.9	1	1.1	mm
Height	1.5	1.7	1.9	mm
Product mass		1.34		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		750	mA
Case temperature (Tc-max)		85	°C
ESD (direct contact)	8		kV
Working voltage		60	V _{dc}
Ambient temperature	-20	40	°C
Storage temperature	-40	80	°C

Application information

Certificates and Standards

CB
 CE
 ENEC
 ENEC+
 EPRS 001
 IEC/EN 62031
 UKCA
 UL
 UL 8750

Environmental

RoHS/REACH

Application

Dimming	Yes
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