

PHILIPS

Fortimo

LED

Fortimo SLM VO 1208
LES15 G1



Datasheet

Fortimo SLM VO 1208 LES15 G1

The Fortimo SLM VO gen1 is a range of LED modules which aims at making a good performance accessible in downlights and spot lights without sacrificing lifetime. It offers a good Lm/W performance and there's a wide choice of CCT's available in CRI80 or CRI90. Due to it's dimensions, the Fortimo SLM VO gen1 can easily be used with a wide range of holders and reflectors which are available in the market.

Key features and benefits

- Extensive range of CCT's in CRI >80 and CRI >90
- Multiple lumen packages
- Typical 148 Lm/W (3000K CRI>80, at Tc 85°C)
- Lifetime: >50,000 hours
- System proposition: COB + holder + driver
- Five years system warranty when combined with Xitanium drivers

September 2021



Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo SLM VO 827 1208 LES15 G1	8718699 725457 00	9290 021 34906	225
Fortimo SLM VO 830 1208 LES15 G1	8718699 725471 00	9290 021 35006	225
Fortimo SLM VO 835 1208 LES15 G1	8718699 725495 00	9290 021 35106	225
Fortimo SLM VO 840 1208 LES15 G1	8718699 725518 00	9290 021 35206	225
Fortimo SLM VO 850 1208 LES15 G1	8718699 725532 00	9290 021 35306	225
Fortimo SLM VO 927 1208 LES15 G1	8718699 725556 00	9290 021 35406	225
Fortimo SLM VO 930 1208 LES15 G1	8718699 725570 00	9290 021 35506	225
Fortimo SLM VO 935 1208 LES15 G1	8718699 725594 00	9290 021 35606	225
Fortimo SLM VO 940 1208 LES15 G1	8718699 725617 00	9290 021 35706	225

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo SLM VO 1208 LES15 G1	590	see performance window	1500	mA

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T _c (case temperature at T _c point)	85	see performance window	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

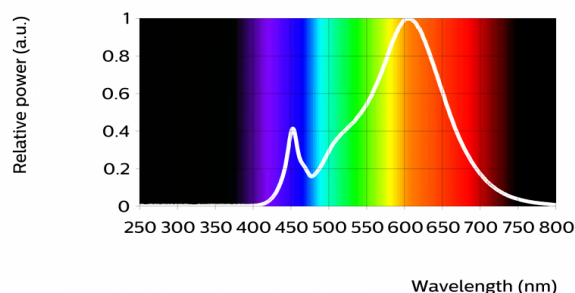
Optical characteristics - table per color (CCT)

Fortimo SLM VO 827 1208 LES15 G1

Parameter	Min	Typ	Max	Unit
Luminous flux	2643	2842	3126	lm
Module efficacy	132	141		lm/W
Correlated color temperature (CCT)		2700		K
Color coordinates (CIEx, CIEy)		(0.458, 0.410)		-
Color consistency			3	SDCM
CRI	80	82		
Photometric code		827/359		
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%, for efficacy +/- 6%, for x, y +/- 0.005, for CRI +/- 1.5

Operation point	827	lm	lm/W
50% I-nom 295mA	Tc 25 °C	1642	168
	Tc-nom 85 °C	1511	158
	Tc-max 95 °C	1484	156
I-nom 590mA	Tc 25 °C	3119	152
	Tc-nom 85 °C	2842	141
	Tc-max 95 °C	2784	139
I-max 1500mA	Tc 25 °C	6953	119
	Tc-nom 85 °C	6202	108
	Tc-max 95 °C	6045	106

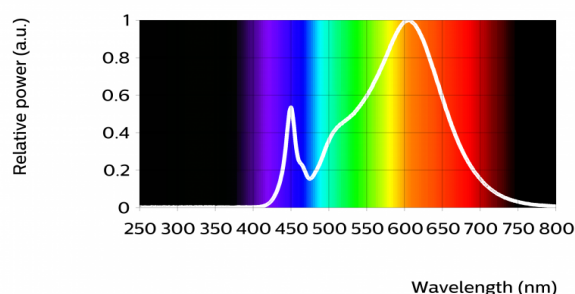


Fortimo SLM VO 830 1208 LES15 G1

Parameter	Min	Typ	Max	Unit
Luminous flux	2773	2981	3279	lm
Module efficacy	138	148		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.434, 0.403)		-
Color consistency			3	SDCM
CRI	80	82		
Photometric code		830/359		
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%, for efficacy +/- 6%, for x, y +/- 0.005, for CRI +/- 1.5

Operation point	830	lm	lm/W
50% I-nom 295mA	Tc 25 °C	1711	175
	Tc-nom 85 °C	1583	165
	Tc-max 95 °C	1559	163
I-nom 590mA	Tc 25 °C	3288	160
	Tc-nom 85 °C	2981	148
	Tc-max 95 °C	2924	146
I-max 1500mA	Tc 25 °C	7293	125
	Tc-nom 85 °C	6466	113
	Tc-max 95 °C	6311	110



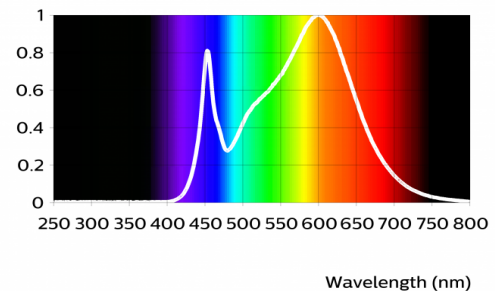
Fortimo SLM VO 835 1208 LES15 G1

Parameter	Min	Typ	Max	Unit
Luminous flux	2841	3055	3360	lm
Module efficacy	141	152		lm/W
Correlated color temperature (CCT)		3500		K
Color coordinates (CIEx, CIEy)		(0.408, 0.393)		-
Color consistency			3	SDCM
CRI	80	82		
Photometric code		835/359		
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%, for efficacy +/- 6%., for x, y +/- 0.005, for CRI +/- 1.5

Operation point	835	lm	lm/W
50% I-nom 295mA	Tc 25 °C	1770	181
	Tc-nom 85 °C	1625	170
	Tc-max 95 °C	1597	168
I-nom 590mA	Tc 25 °C	3364	164
	Tc-nom 85 °C	3055	152
	Tc-max 95 °C	2995	150
I-max 1500mA	Tc 25 °C	7474	127
	Tc-nom 85 °C	6667	116
	Tc-max 95 °C	6510	114

Relative power (a.u.)



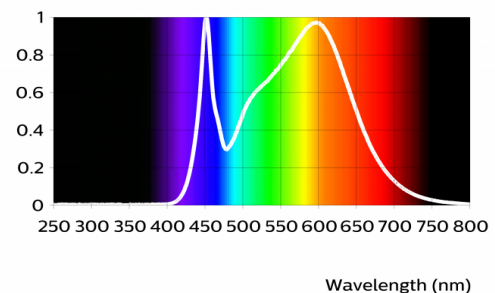
Fortimo SLM VO 840 1208 LES15 G1

Parameter	Min	Typ	Max	Unit
Luminous flux	2907	3125	3438	lm
Module efficacy	145	155		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.382, 0.380)		-
Color consistency			3	SDCM
CRI	80	82		
Photometric code		840/359		
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%, for efficacy +/- 6%., for x, y +/- 0.005, for CRI +/- 1.5

Operation point	840	lm	lm/W
50% I-nom 295mA	Tc 25 °C	1808	184
	Tc-nom 85 °C	1659	173
	Tc-max 95 °C	1628	170
I-nom 590mA	Tc 25 °C	3441	168
	Tc-nom 85 °C	3125	155
	Tc-max 95 °C	3063	153
I-max 1500mA	Tc 25 °C	7665	132
	Tc-nom 85 °C	6832	120
	Tc-max 95 °C	6660	117

Relative power (a.u.)

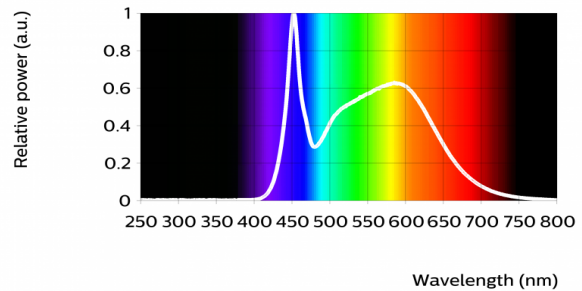


Fortimo SLM VO 850 1208 LES15 G1

Parameter	Min	Typ	Max	Unit
Luminous flux	2919	3139	3453	lm
Module efficacy	145	156		lm/W
Correlated color temperature (CCT)		5000		K
Color coordinates (CIEx, CIEy)		(0.345, 0.355)		-
Color consistency			3	SDCM
CRI	80	82		
Photometric code		850/359		
Photobiological safety			RG2	
Ethr			1203	lux

Measurement precision for flux +/- 5%, for efficacy +/- 6%., for x, y +/- 0.005, for CRI +/- 1.5

Operation point	850	lm	lm/W
50% I-nom 295mA	Tc 25 °C	1829	186
	Tc-nom 85 °C	1668	173
	Tc-max 95 °C	1636	171
I-nom 590mA	Tc 25 °C	3480	170
	Tc-nom 85 °C	3139	156
	Tc-max 95 °C	3075	153
I-max 1500mA	Tc 25 °C	7755	134
	Tc-nom 85 °C	6869	120
	Tc-max 95 °C	6690	118

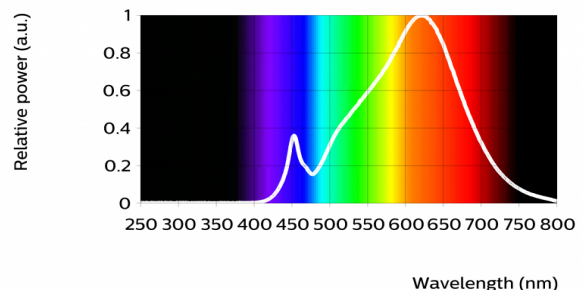


Fortimo SLM VO 927 1208 LES15 G1

Parameter	Min	Typ	Max	Unit
Luminous flux	2261	2431	2674	lm
Module efficacy	112	121		lm/W
Correlated color temperature (CCT)		2700		K
Color coordinates (CIEx, CIEy)		(0.458, 0.410)		-
Color consistency			3	SDCM
CRI	90	92		
R9	50			
Photometric code		927/359		
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%, for efficacy +/- 6%., for x, y +/- 0.005, for CRI +/- 1.5

Operation point	927	lm	lm/W
50% I-nom 295mA	Tc 25 °C	1396	143
	Tc-nom 85 °C	1292	135
	Tc-max 95 °C	1271	133
I-nom 590mA	Tc 25 °C	2648	129
	Tc-nom 85 °C	2431	121
	Tc-max 95 °C	2384	119
I-max 1500mA	Tc 25 °C	5864	100
	Tc-nom 85 °C	5279	92
	Tc-max 95 °C	5158	90

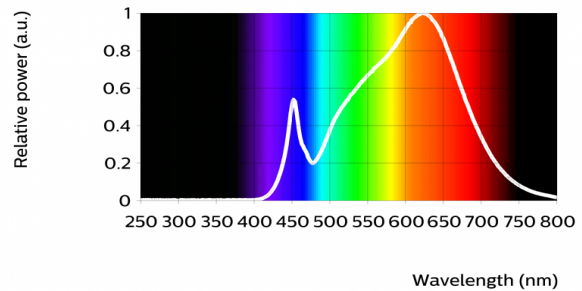


Fortimo SLM VO 930 1208 LES15 G1

Parameter	Min	Typ	Max	Unit
Luminous flux	2372	2550	2805	lm
Module efficacy	118	127		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.434, 0.403)		-
Color consistency			3	SDCM
CRI	90	92		
R9	50			
Photometric code		930/359		
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%, for efficacy +/- 6%, for x, y +/- 0.005, for CRI +/- 1.5

Operation point	930	lm	lm/W
50% I-nom 295mA	Tc 25 °C	1466	150
	Tc-nom 85 °C	1352	141
	Tc-max 95 °C	1329	139
I-nom 590mA	Tc 25 °C	2784	136
	Tc-nom 85 °C	2550	127
	Tc-max 95 °C	2501	125
I-max 1500mA	Tc 25 °C	6168	106
	Tc-nom 85 °C	5552	97
	Tc-max 95 °C	5426	95

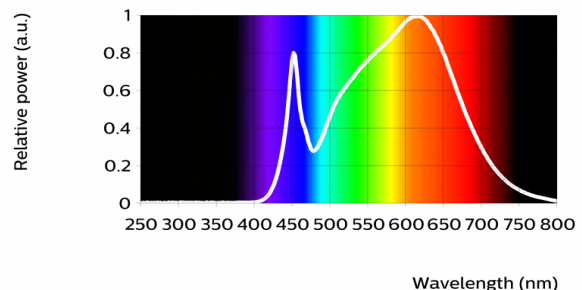


Fortimo SLM VO 935 1208 LES15 G1

Parameter	Min	Typ	Max	Unit
Luminous flux	2454	2639	2903	lm
Module efficacy	122	131		lm/W
Correlated color temperature (CCT)		3500		K
Color coordinates (CIEx, CIEy)		(0.408, 0.393)		-
Color consistency			3	SDCM
CRI	90	92		
R9	50			
Photometric code		935/359		
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%, for efficacy +/- 6%, for x, y +/- 0.005, for CRI +/- 1.5

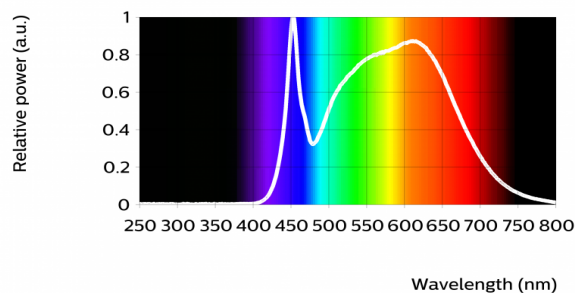
Operation point	935	lm	lm/W
50% I-nom 295mA	Tc 25 °C	1522	156
	Tc-nom 85 °C	1400	146
	Tc-max 95 °C	1377	144
I-nom 590mA	Tc 25 °C	2892	141
	Tc-nom 85 °C	2639	131
	Tc-max 95 °C	2589	129
I-max 1500mA	Tc 25 °C	6411	110
	Tc-nom 85 °C	5757	100
	Tc-max 95 °C	5629	98



Parameter	Min	Typ	Max	Unit
Luminous flux	2522	2711	2982	lm
Module efficacy	125	135		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.382, 0.380)		-
Color consistency			3	SDCM
CRI	90	92		
R9	50			
Photometric code		940/359		
Photobiological safety			RG1 unlimited	

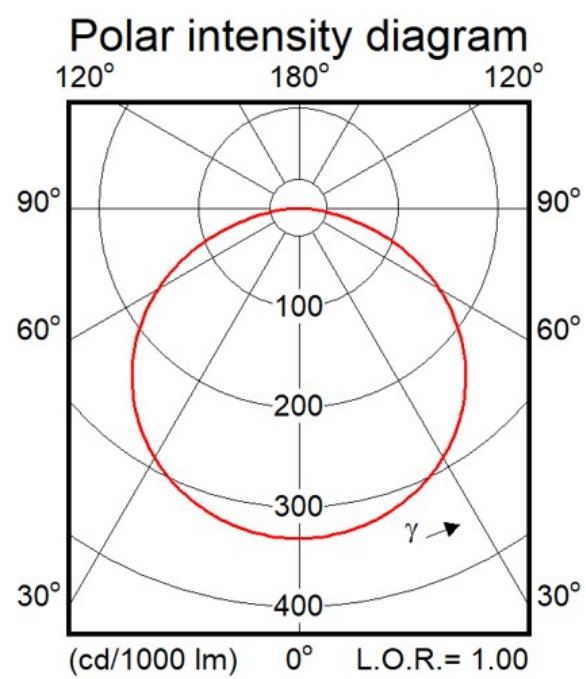
Measurement precision for flux +/- 5%, for efficacy +/- 6%., for x, y +/- 0.005, for CRI +/- 1.5

Operation point	940	lm	lm/W
50% I-nom 295mA	Tc 25 °C	1559	159
	Tc-nom 85 °C	1436	150
	Tc-max 95 °C	1412	148
I-nom 590mA	Tc 25 °C	2972	145
	Tc-nom 85 °C	2711	135
	Tc-max 95 °C	2660	133
I-max 1500mA	Tc 25 °C	6611	114
	Tc-nom 85 °C	5927	104
	Tc-max 95 °C	5789	102



Beam shape

Bare CoB



Electrical characteristics

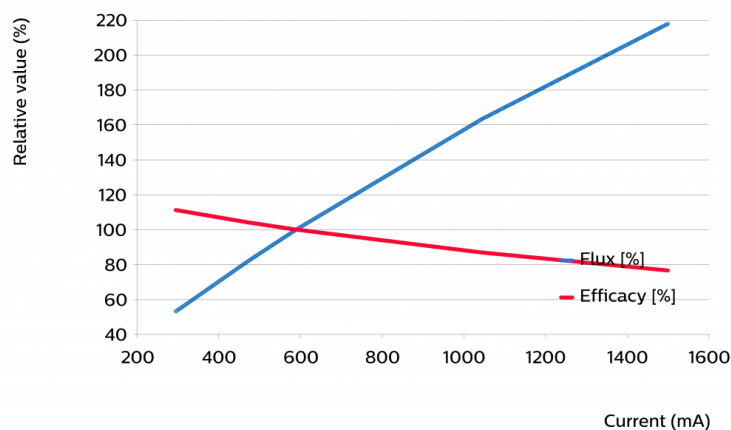
Parameter	Min	Typ	Max	Unit
Forward voltage	30.3	34.1	36.3	V
Power consumption	17.9	20.1	21.4	W = kWh/1000h

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

Tuning information

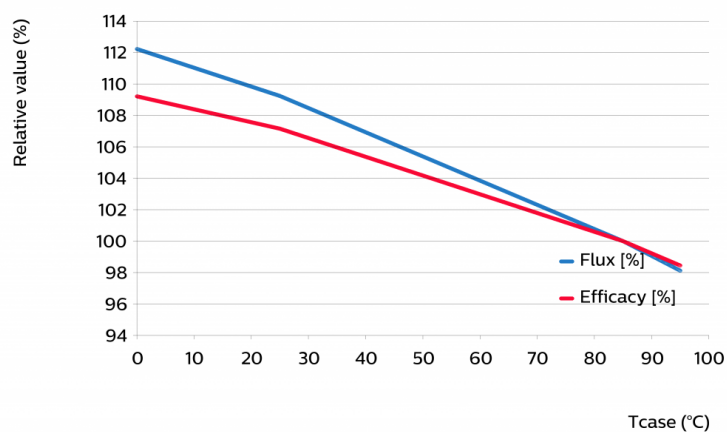
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
1500	218	77
1045	163	87
590	100	100
472	82	104
295	53	111



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

Tc [°C]	Flux [%]	Efficacy [%]
95	98	98
85	100	100
25	109	107
0	112	109



Lumen maintenance

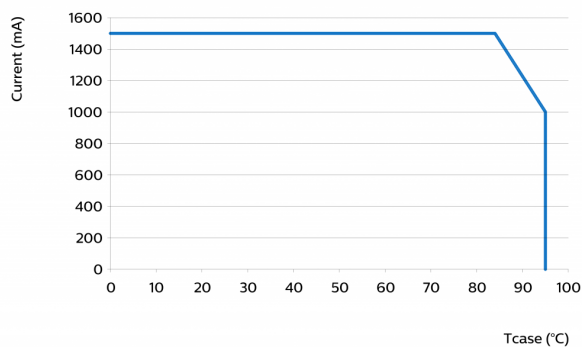
Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80%I-nom 472mA	Tc 65°C	>50	>50	>50	>50	>50	>50	>50	44	35
	Tc-nom 85°C	>50	>50	>50	>50	40	32	29	19	15
	Tc-max 95°C	>50	44	35	42	28	22	20	13	10
I-nom 590 mA	Tc 65°C	>50	>50	>50	>50	>50	>50	>50	40	32
	Tc-nom 85°C	>50	>50	48	>50	38	30	27	18	14
	Tc-max 95°C	>50	41	33	39	26	21	19	12	10
I-max 1500 mA	Tc 65°C	>50	>50	>50	>50	40	32	29	19	15
	Tc-nom 85°C	46	30	24	29	19	15	14	9	7
	Tc-max 95°C	33	22	17	21	14	11	10	6	5

Lifetime

Parameter	Value	Unit
M70F50 nominal	>50000	hours

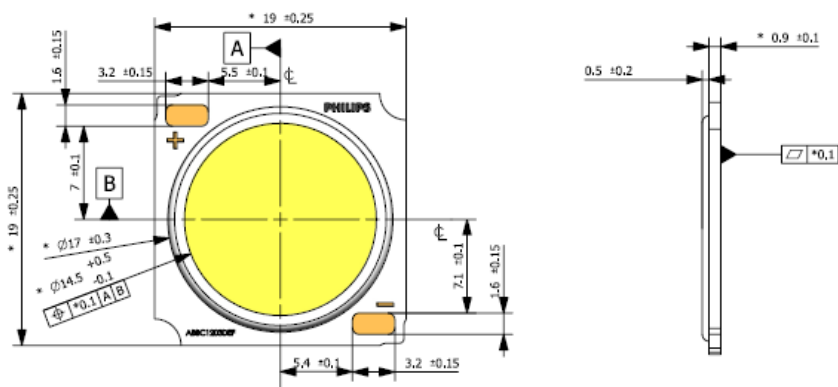
Switching cycles in accordance to EU 1194/2012: >15000

Performance Window



Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	18.75	19	19.25	mm
Width	18.75	19	19.25	mm
Height PCB	0.8	0.9	1	mm
Product mass		0.93		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		1500	mA
Case temperature (Tc-max)		95	°C
ESD (direct contact)	2		kV
Working voltage		60	V _{dc}
Ambient temperature	-20	40	°C
Storage temperature	-40	80	°C

Application information

Certificates and Standards

CE
 ENEC
 ENEC+
 IEC 62031
 IEC/TR 62778
 UL
 UL 8750

Application

IP rating	No IP-rating
Overheating protection	No
Luminaire class	IEC Class I and Class II
Dimming	Yes



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