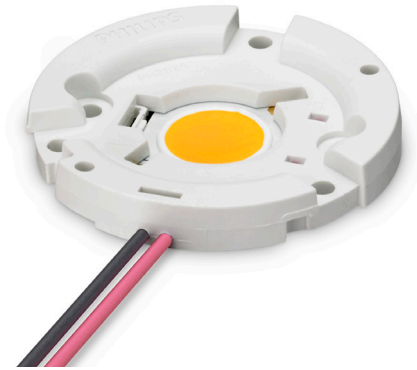


PHILIPS

LED Modules

Fortimo SLM

Fortimo LED SLM Gen 4 3000lm L15



The Fortimo LED SLM Gen 4 is a next generation solution for spotlight and downlight applications. It is a product in line with the Fortimo brand promise of light quality and a smart system. We provide you with a system proposition ranging from 1100lm to 4500lm in preset outputs, with the flexibility to tune as per your needs.

This module is available in the following options. It is possible to combine these with any of the drivers as described in the design-in guide available at www.philips.com/ledmodulesna. A list of possible Rsets is provided below to set the output current of Philips Xitanium LED driver at different levels. More information about tuning can be found further on in the document.

Commercial Product Name	12NC
Fortimo LED SLM 3000lm 827 L15 G4	9290 009 49906
Fortimo LED SLM 3000lm 830 L15 G4	9290 009 02306
Fortimo LED SLM 3000lm 835 L15 G4	9290 009 50006
Fortimo LED SLM 3000lm 840 L15 G4	9290 009 02406

Associated Rsets

Commercial Product Name	12NC	Value (Ω)	Type
Fortimo LED Rset 300mA	929000727713	560	Poke-in
Fortimo LED Rset 500mA	929000727813	1200	Poke-in
Fortimo LED Rset 750mA	929000727913	2050	Poke-in
Fortimo LED Rset 950mA	929000728013	3090	Poke-in
Fortimo LED Rset 1200mA	929000728113	4780	Poke-in

Associated Drivers

Driver List	Dimming Mechanism	Current Setting Mechanism
XI036C100V048DNMX	0-10V dimming	Rset2
XI050C100V054DNMX	0-10V dimming	Rset2
XI050C100V054XPL1	Trailing Edge and 0-10V dimming @ 120V only	Rset1, Rset2 or programmable
XI095C275V054DNF1	0-10V dimming	Rset3

Fortimo LED SLM Gen 4 3000lm L15

Features

- Ability to operate your module at a desired current to get a certain lumen output with a high lm/W or lm/S
- High lumen output out of small Light Emitting Surface (LES) sizes for narrow beam angles and small reflector designs with punch
- High Tc nominal of 85°C
- Zhaga standardized high quality holder concept
- High quality of light

- Dedicated solutions for special needs including the SLM Crisp White
- One-stop shop for your system (detailed list of complementary partners in design-in guide)

Benefits

- High energy efficiency
- Flexibility to tune the performance as per your need by modifying the operating point
- Luminaire manufacturability and ease of design-in
- Excellent thermal management
- Smart systems with Xitanium drivers
- Covered by Philips limited warranty¹

Application

- SLM Gen 4 for accent lighting and down lighting for retail, hospitality and supermarkets
- SLM Crisp White is ideal when bright and clean whites and rich and saturated colors are needed

Optical Characteristics – Table per CCT

Fortimo LED SLM 3000lm L15 827

Parameter	Min	Typ	Max	Unit
Luminous Flux	2480	2760	3040	lm
Module Efficiency		106		lm/W
Correlated Color Temperature		2700		K
Color Coordinates		(0.458, 0.410)		-
Color Consistency		3		SDCM
CRI		>80		-
Radiation Angle		115		deg
Thermal Power		18.3		W

Note: Specifications stated at Tc nom = 85°C and I nom = 750 mA

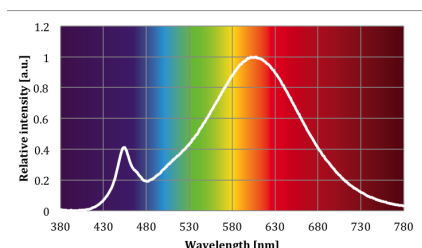
Parameter	Min	Typ	Max	Unit
Luminous Flux	3180	3540	3900	lm
Module Efficiency		99		lm/W
Thermal Power		26.2		W

Note: Specifications stated at Tc nom = 85°C and I = 1000 mA

Parameter	Min	Typ	Max	Unit
Luminous Flux	3690	4110	4530	lm
Module Efficiency		93		lm/W
Thermal Power		33.2		W

Note: Specifications stated at Tc nom = 85°C and I = 1200 mA

Ri	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
82	80	91	96	77	79	88	83	60	14	79	74	72	82	98	74



1. View limited warranty at http://www.usa.lighting.philips.com/connect/tools_literature/warranties.wpd for details and restrictions.

Fortimo LED SLM Gen 4 3000lm L15

Optical Characteristics – Table per CCT

Fortimo LED SLM 3000lm L15 830

Parameter	Min	Typ	Max	Unit
Luminous Flux	2670	2970	3270	lm
Module Efficiency		114		lm/W
Correlated Color Temperature		3000		K
Color Coordinates		(0.434, 0.403)		-
Color Consistency		3		SDCM
CRI		>80		-
Radiation Angle		115		deg
Thermal Power		17.9		W

Note: Specifications stated at Tc nom = 85°C and I nom = 750 mA

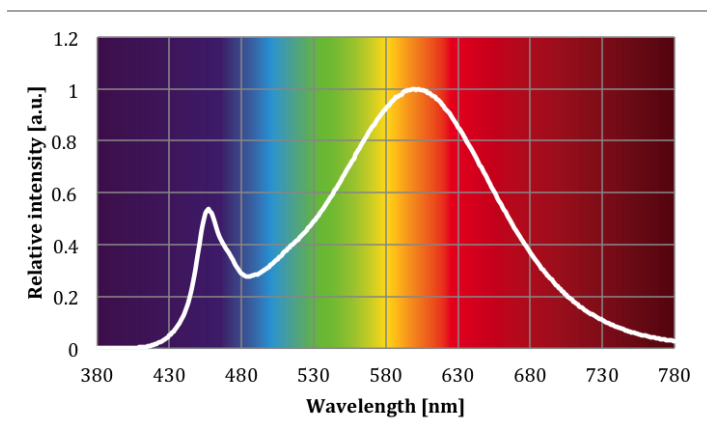
Parameter	Min	Typ	Max	Unit
Luminous Flux	3420	3800	4180	lm
Module Efficiency		106		lm/W
Thermal Power		25.7		W

Note: Specifications stated at Tc nom = 85°C and I nom = 1000 mA

Parameter	Min	Typ	Max	Unit
Luminous Flux	3970	4420	4870	lm
Module Efficiency		100		lm/W
Thermal Power		32.6		W

Note: Specifications stated at Tc nom = 85°C and I = 1200 mA

Ri	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
82	80	92	95	76	79	89	83	60	12	81	72	68	83	98	74



Fortimo LED SLM Gen 4 3000lm L15

Optical Characteristics – Table per CCT

Fortimo LED SLM 3000lm L15 835

Parameter	Min	Typ	Max	Unit
Luminous Flux	2780	3090	3400	lm
Module Efficiency		119		lm/W
Correlated Color Temperature		3500		K
Color Coordinates		(0.407, 0.392)		-
Color Consistency		3		SDCM
CRI		>80		-
Radiation Angle		115		deg
Thermal Power		17.6		W

Note: Specifications stated at Tc nom = 85°C and I nom = 750 mA

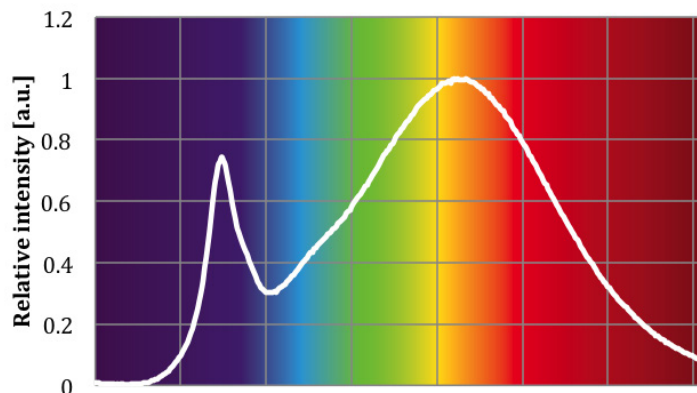
Parameter	Min	Typ	Max	Unit
Luminous Flux	3560	3960	4360	lm
Module Efficiency		110		lm/W
Thermal Power		25.3		W

Note: Specifications stated at Tc nom = 85°C and I nom = 1000 mA

Parameter	Min	Typ	Max	Unit
Luminous Flux	4140	4600	5060	lm
Module Efficiency		104		lm/W
Thermal Power		32.1		W

Note: Specifications stated at Tc nom = 85°C and I = 1200 mA

Ri	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
81	78	89	96	76	78	85	84	61	7	75	73	62	81	98	73



Fortimo LED SLM Gen 4 3000lm L15

Optical Characteristics – Table per CCT

Fortimo LED SLM 3000lm L15 840

Parameter	Min	Typ	Max	Unit
Luminous Flux	2850	3170	3490	lm
Module Efficiency		122		lm/W
Correlated Color Temperature		4000		K
Color Coordinates		(0.382, 0.380)		-
Color Consistency		3		SDCM
CRI		>80		-
Radiation Angle		115		deg
Thermal Power		17.3		W

Note: Specifications stated at Tc nom = 85°C and I nom = 750 mA

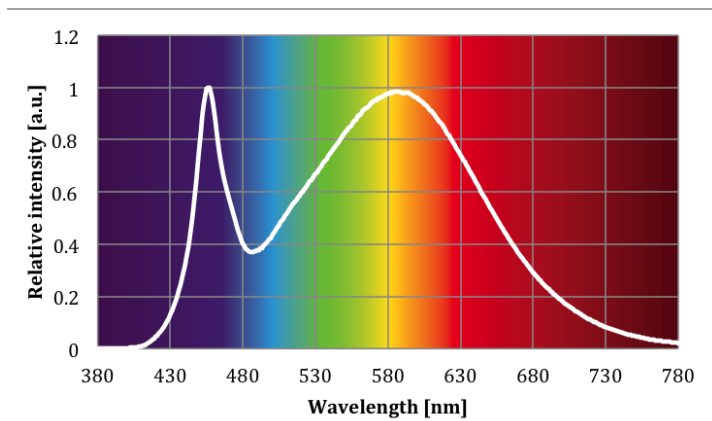
Parameter	Min	Typ	Max	Unit
Luminous Flux	3650	4060	4470	lm
Module Efficiency		113		lm/W
Thermal Power		25		W

Note: Specifications stated at Tc nom = 85°C and I nom = 1000 mA

Parameter	Min	Typ	Max	Unit
Luminous Flux	4240	4720	5200	lm
Module Efficiency		107		lm/W
Thermal Power		31.7		W

Note: Specifications stated at Tc nom = 85°C and I = 1200 mA

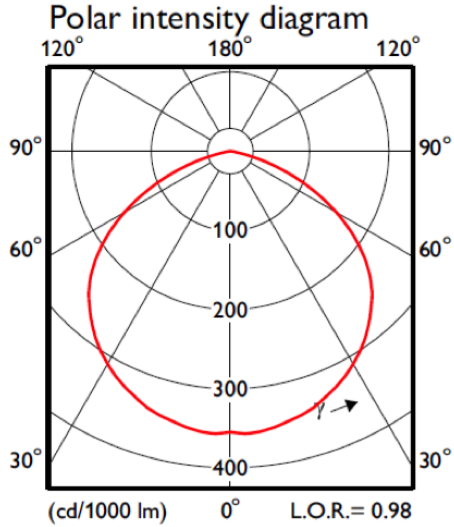
Ri	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
81	79	90	96	76	78	84	85	63	7	74	72	58	82	98	73



Fortimo LED SLM Gen 4 3000lm L15

Beam Shape

The Philips Fortimo LED SLM generates a Lambertian beam shape, which is a pragmatic starting point for OEMs wishing to design secondary optics.



Electrical Characteristics

Parameter	Typ	Unit
Nominal Current	750	mA
Forward Voltage	34.7	V
Power Consumption	26	W

Note: Specifications stated at Tc nom = 85°C and I nom = 750 mA

Parameter	Typ	Unit
Nominal Current	1000	mA
Forward Voltage	35.8	V
Power Consumption	35.8	W

Note: Specifications stated at Tc nom = 85°C and I = 1000 mA

Parameter	Typ	Unit
Nominal Current	1200	mA
Forward Voltage	36.7	V
Power Consumption	44.1	W

Note: Specifications stated at Tc nom = 85°C and I = 1200 mA

Fortimo LED SLM Gen 4 3000lm L15

Lifetime

Parameter	Min	Typ	Max	Unit
Lumen Maintenance B50L70	50,000			hrs
$\Delta u/v'$ at 6000 Hours			0.0011	-
Critical Failures (10%)	50,000			hrs

Note: Specifications stated at $T_c \text{ nom} = 85^\circ\text{C}$ and $I \text{ nom} = 750 \text{ mA}$

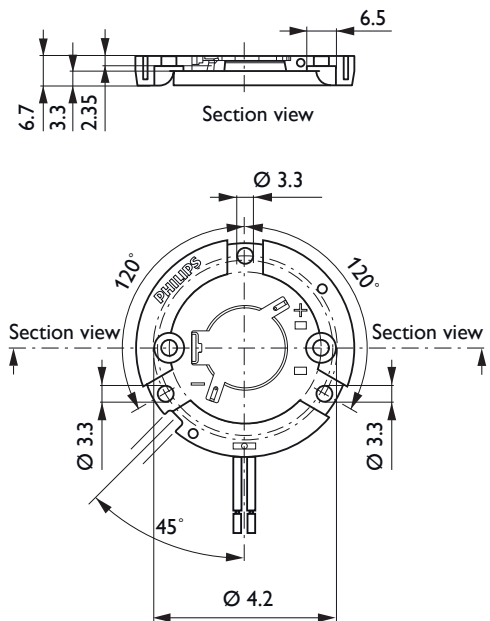
Parameter	Nominal ²	Max ³
T_c ($^\circ\text{C}$)	85	95
Current (mA)	750	1580

Note: $T_c \text{ life} \leq 85^\circ\text{C}$ (measured at 25°C ambient temperature)

Abs Max Ratings

Parameter	Min	Typ	Max	Unit
Current I_{max}			1580	mA
Case Temperature $T_c \text{ Max}$			95	$^\circ\text{C}$
ESD Human Body Model (HBM) Class 3A JESD22-A114-E			8	kV
ESD Machine Model (MM) Class B JESD22-A115-B			400	kV
Operating Ambient Temperature	-20		40	$^\circ\text{C}$
Storage Temperature	-40		80	$^\circ\text{C}$

Mechanical Characteristics



- Nominal value at which performance is specified.
- Maximum value for safety (at this temperature, warranty need not apply).

Fortimo LED SLM Gen 4 3000lm L15

Application Information

Compliance and Approval

CSA/UL

Environmental

RoHS

Application Information

Zhaga*	3000lm L15 827	3000lm L15 830	3000lm L15 835	3000lm L15 840
LES Diameter [mm]	15	15	15	15
Rotational Symmetry S	0.9	0.9	0.9	0.9
Uniformity Parameter U	100%	100%	100%	100%
Correlated Color temperature [K]	2700	3000	3500	4000
Color Rendering Index	>80	>80	>80	>80

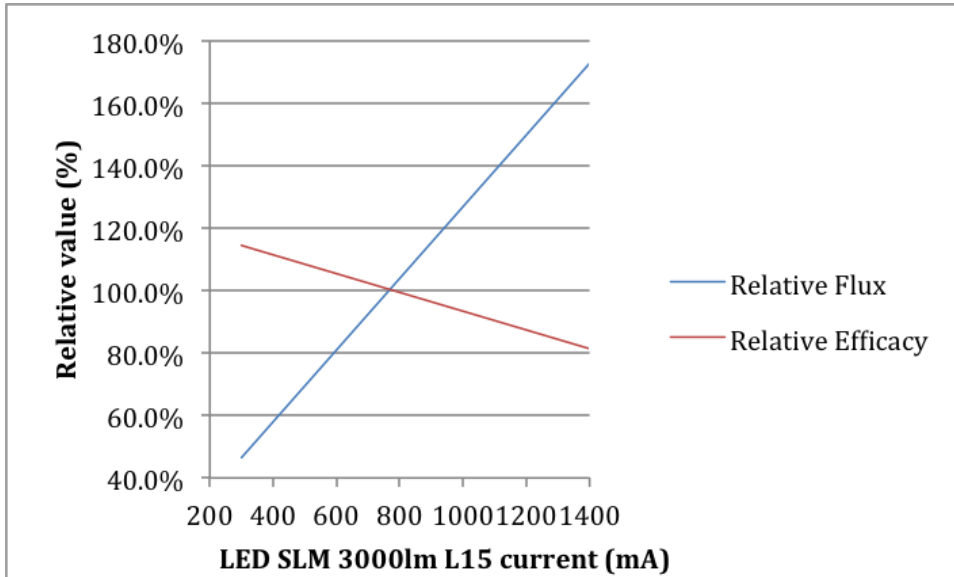
* Measurements showing compliancy to Zhaga book 3 version 1.2 have been done on the 3000lm L15 module.

IP Rating	No IP rating
Overheating Protection	No protection

Fortimo LED SLM Gen 4 3000lm L15

Tuning Information

Flux and Efficacy Versus Current (at Nominal Temperature) 3000lm L15



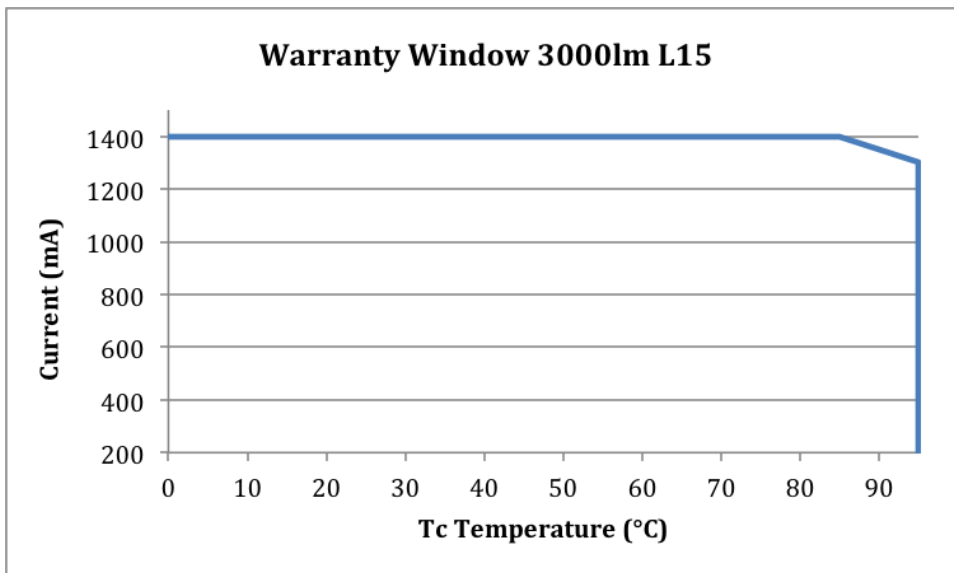
I [A]	Rel flux	Rel effic
300	43.1%	115.8%
387	55.1%	112.3%
436	61.3%	111.4%
485	67.8%	108.8%
500	70.0%	108.8%
536	74.3%	107.0%
669	90.3%	102.6%
750	100.0%	100.0%
853	111.9%	97.4%
916	118.6%	95.6%
950	122.5%	93.9%
968	123.5%	93.9%
1009	129.1%	93.0%
1200	148.6%	87.7%
1400	169.3%	83.3%

The highlighted current values are available as Rsets as a part of the system.

Flux and Efficacy Versus Temperature at Tc (at Nominal Current) 3000lm L15

Tc (°C)	Flux (lm)	Efficacy (lm/W)
65	104.1%	103.5%
75	102.1%	101.7%
85	100.0%	100.0%

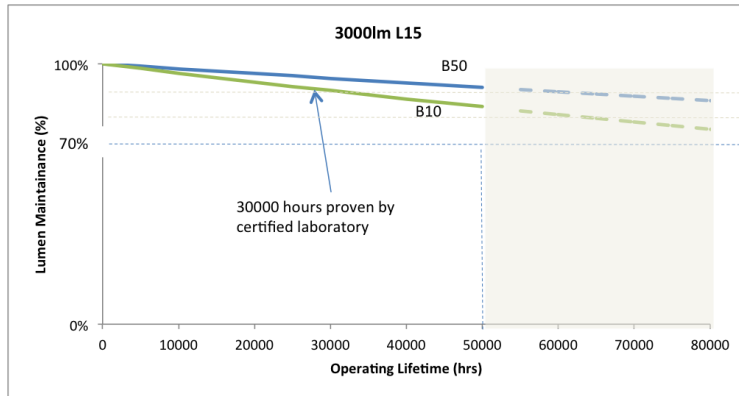
Please ensure that while tuning the product's operating point, it stays within limits of temperature (Tc) and current (I) that are covered within the warranty window.



Fortimo LED SLM Gen 4 3000lm L15

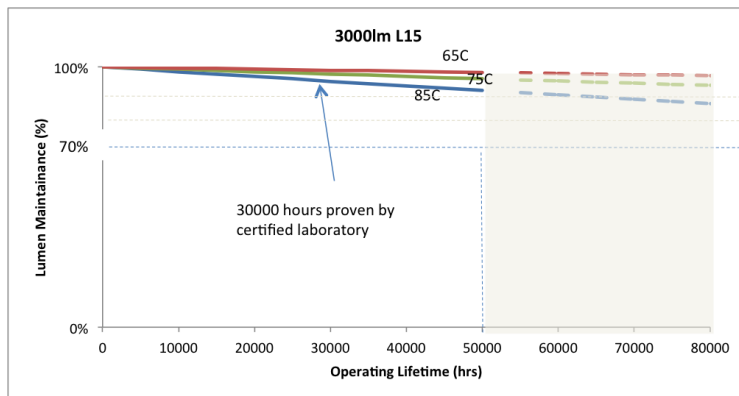
Lumen Maintenance

Fortimo LED SLM 3000lm L15



Lumen Maintenance (B50)

Fortimo LED SLM 3000lm L15



Measurements showing compliancy to Zhaga book 3 version 1.2 have been done on the 3000lm L15 module.

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