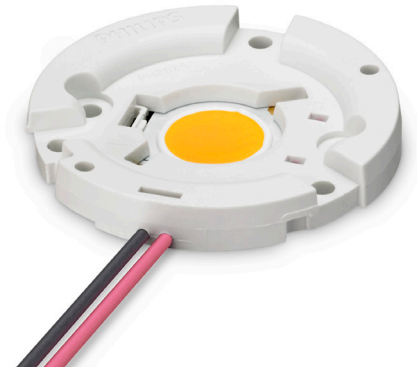


PHILIPS

LED Modules

Fortimo SLM

Fortimo LED SLM Gen 4 1100lm L9



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 1100lm 827 L9 G4 NA	9290 009 56606
Fortimo LED SLM 1100lm 830 L9 G4 NA	9290 009 56706
Fortimo LED SLM 1100lm 835 L9 G4 NA	9290 009 56806
Fortimo LED SLM 1100lm 840 L9 G4 NA	9290 009 56906
Fortimo LED SLM 1100lm 927 L9 G4 NA	9290 009 57006

Associated Rsets

Commercial product name	12NC	Value (Ω)	Type
Fortimo LED Rset2 NA 300mA	929000727713	560	Push-in
Fortimo LED Rset2 NA 500mA	929000727813	1200	Push-in

Associated Drivers

Driver List	Dimming Mechanism	Current Setting Mechanism
XI013C030V048DNM1	0-10V dimming	Rset2
XI020C050V042RNP1*	Leading Edge and Trailing Edge	Dip Switch
XI025C100V045DNM1	0-10V dimming	Rset2

* Max allowed current can only be set to 450mA for this module.

Fortimo LED SLM Gen 4 1100lm L9

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 1100lm L9 827

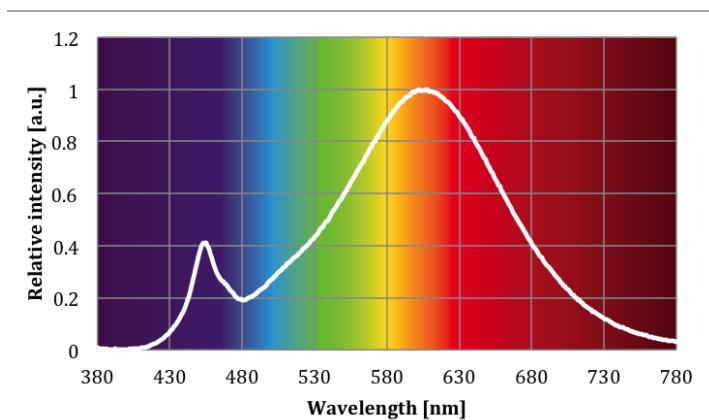
Parameter	Min	Typ	Max	Unit
Luminous Flux	990	1100	1210	lm
Module Efficiency		104		lm/W
Correlated Color Temperature		2700		K
Color Coordinates		(0.458, 0.410)		-
Color Consistency		3		SDCM
CRI		>80		-
Radiation Angle		115		deg
Thermal Power		7.7		W

Note: Specifications stated at Tc nom = 85°C and I nom = 300 mA

Parameter	Min	Typ	Max	Unit
Luminous Flux	1530	1700	1870	lm
Module Efficiency		89		lm/W
Thermal Power		14.7		W

Note: Specifications stated at Tc nom = 85°C and I = 500 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 1100lm L9

Optical Characteristics – Table per CCT

Fortimo LED SLM 1100lm L9 830

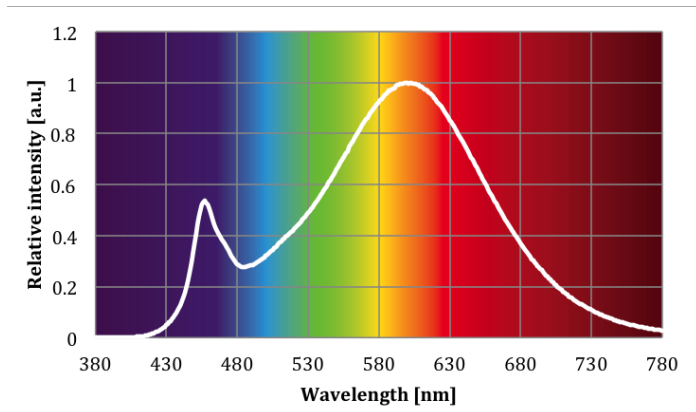
Parameter	Min	Typ	Max	Unit
Luminous Flux	1080	1200	1320	lm
Module Efficiency		113		lm/W
Correlated Color Temperature		3000		K
Color Coordinates		(0.434, 0.403)		-
Color Consistency		3		SDCM
CRI		>80		-
Radiation Angle		115		deg
Thermal Power		7.4		W

Note: Specifications stated at Tc nom = 85°C and I nom = 300 mA

Parameter	Min	Typ	Max	Unit
Luminous Flux	1660	1850	2040	lm
Module Efficiency		97		lm/W
Thermal Power		14.4		W

Note: Specifications stated at Tc nom = 85°C and I = 500 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 1100lm L9

Optical Characteristics – Table per CCT

Fortimo LED SLM 1100lm L9 835

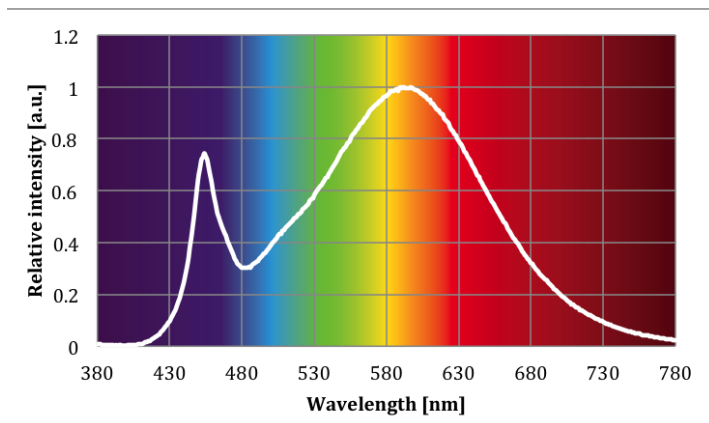
Parameter	Min	Typ	Max	Unit
Luminous Flux	1120	1250	1380	lm
Module Efficiency		118		lm/W
Correlated Color Temperature		3500		K
Color Coordinates		(0.407, 0.392)		-
Color Consistency		3		SDCM
CRI		>80		-
Radiation Angle		115		deg
Thermal Power		7.3		W

Note: Specifications stated at Tc nom = 85°C and I nom = 300 mA

Parameter	Min	Typ	Max	Unit
Luminous Flux	1720	1920	2120	lm
Module Efficiency		101		lm/W
Thermal Power		14.2		W

Note: Specifications stated at Tc nom = 85°C and I = 500 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 1100lm L9

Optical Characteristics – Table per CCT

Fortimo LED SLM 1100lm L9 840

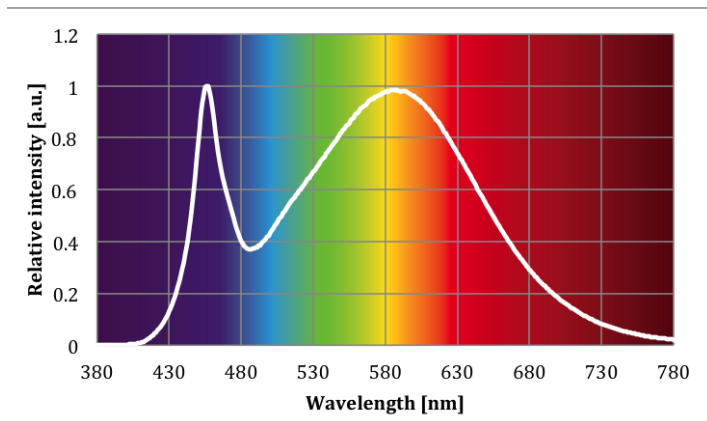
Parameter	Min	Typ	Max	Unit
Luminous Flux	1140	1270	1400	lm
Module Efficiency		120		lm/W
Correlated Color Temperature		4000		K
Color Coordinates		(0.382, 0.380)		-
Color Consistency		3		SDCM
CRI		80		-
Radiation Angle		115		deg
Thermal Power		7.3		W

Note: Specifications stated at Tc nom = 85°C and I nom = 300 mA

Parameter	Min	Typ	Max	Unit
Luminous Flux	1760	1960	2160	lm
Module Efficiency		103		lm/W
Thermal Power		14.1		W

Note: Specifications stated at Tc nom = 85°C and I nom = 500 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 1100lm L9

Optical Characteristics – Table per CCT

Fortimo LED SLM 1100lm L9 927

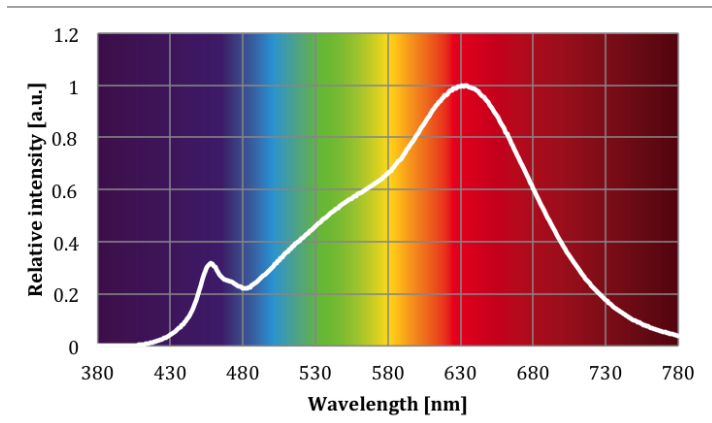
Parameter	Min	Typ	Max	Unit
Luminous Flux	830	930	1030	lm
Module Efficiency		88		lm/W
Correlated Color Temperature		2700		K
Color Coordinates		(0.458, 0.410)		-
Color Consistency		3		SDCM
CRI		97		-
Radiation Angle		115		deg
Thermal Power		7.8		W

Note: Specifications stated at Tc nom = 85°C and I nom = 300 mA

Parameter	Min	Typ	Max	Unit
Luminous Flux	1280	1430	1580	lm
Module Efficiency		75		lm/W
Thermal Power		14.9		W

Note: Specifications stated at Tc nom = 85°C and I = 500 mA

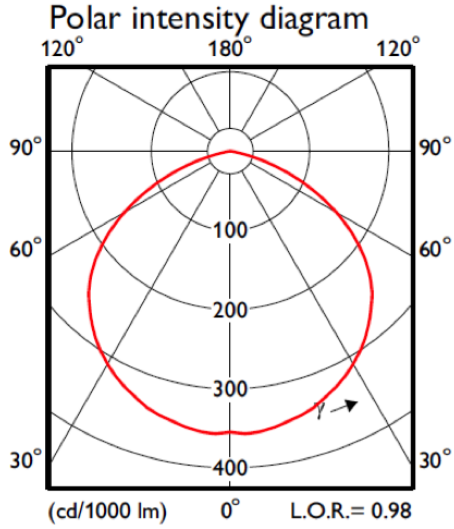
Ri	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
97	99	100	98	98	98	98	95	91	81	97	100	88	99	98	96



Fortimo LED SLM Gen 4 1100lm L9

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	300	mA
Forward Voltage	35.4	V
Power Consumption	10.6	W

Note: Specifications stated at $T_c \text{ nom} = 85^\circ\text{C}$ and $I \text{ nom} = 300 \text{ mA}$

Parameter	Typ	Unit
Nominal Current	500	mA
Forward Voltage	38.1	V
Power Consumption	19	W

Note: Specifications stated at $T_c \text{ nom} = 85^\circ\text{C}$ and $I = 500 \text{ mA}$

Fortimo LED SLM Gen 4 1100lm L9

Lifetime

Parameter	Min	Typ	Max	Unit
Lumen Maintenance B50L70	50000			hrs
$\Delta u/v'$ at 6000 Hours			0.002	-
Critical Failures (10%)	50000			hrs

Note: Specifications stated at $T_c \text{ nom} = 85^\circ\text{C}$ and $I \text{ nom} = 300 \text{ mA}$

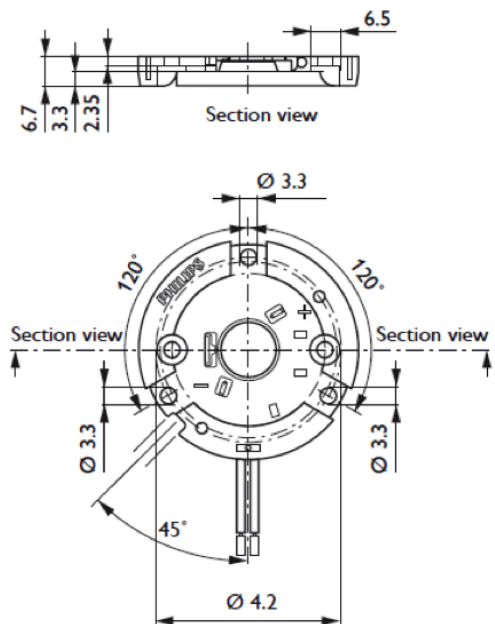
Parameter	Nominal ¹	Max ²
T_c ($^\circ\text{C}$)	85	95
Current (mA)	300	530

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}			530	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



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

Fortimo LED SLM Gen 4 1100lm L9

Application Information

Compliance and Approval

CSA/UL

Environmental

RoHS

Application Information

Zhaga	1100lm L9 827	1100lm L9 830	1100lm L9 835	1100lm L9 840	1100lm L9 927
LES Diameter [mm]	9	9	9	9	9
Rotational Symmetry S	0.9	0.9	0.9	0.9	0.9
Uniformity Parameter U	100%	100%	100%	100%	100%
Correlated Color Temperature [K]	2700	3000	3500	4000	2700
Color Rendering Index	>80	>80	>80	>80	>90

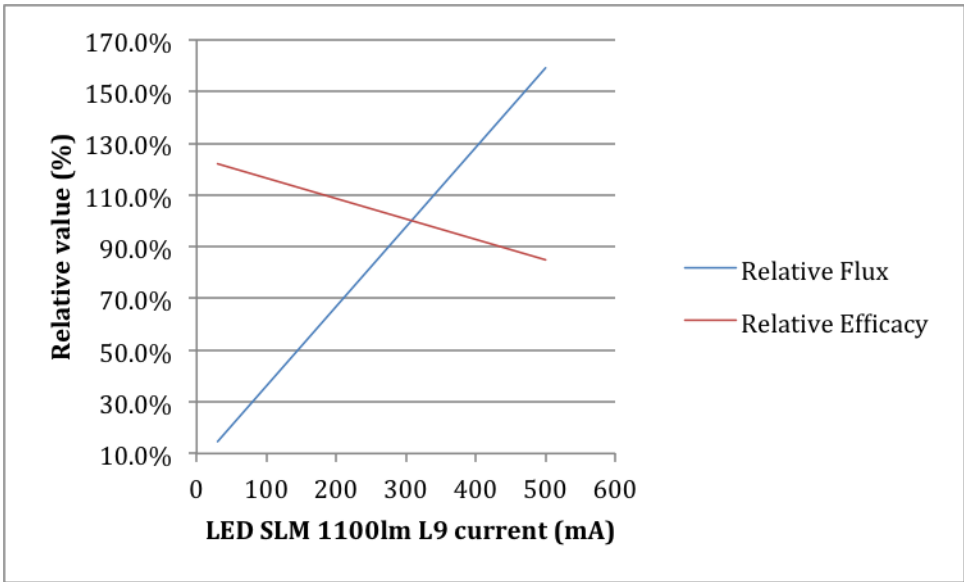
* Measurements showing compliancy to Zhaga book 3 version 1.2 have been done on the 3000lm L15 module.

IP Rating	No IP rating
Overheating Protection	No protection

Fortimo LED SLM Gen 4 1100lm L9

Tuning Information

Flux and Efficacy Versus Current (at Nominal Temperature) 1100lm L9

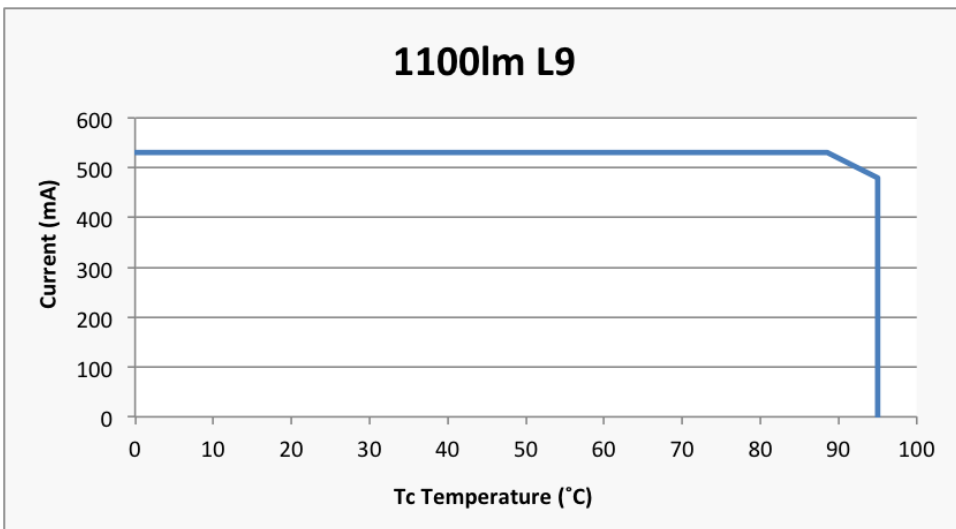


I [A]	Rel flux	Rel effic
30	10.9%	120.2%
50	18.2%	122.1%
120	43.6%	116.3%
200	70.0%	108.7%
210	72.7%	107.7%
300	100.0%	100.0%
350	114.5%	96.2%
500	154.5%	85.6%

Flux and Efficacy Versus Temperature at Tc (at Nominal Current) 1100lm L9

Tc (°C)	Flux (lm)	Efficacy (lm/W)
65	103.6%	103.1%
75	101.8%	101.1%
85	100.0%	100.00%

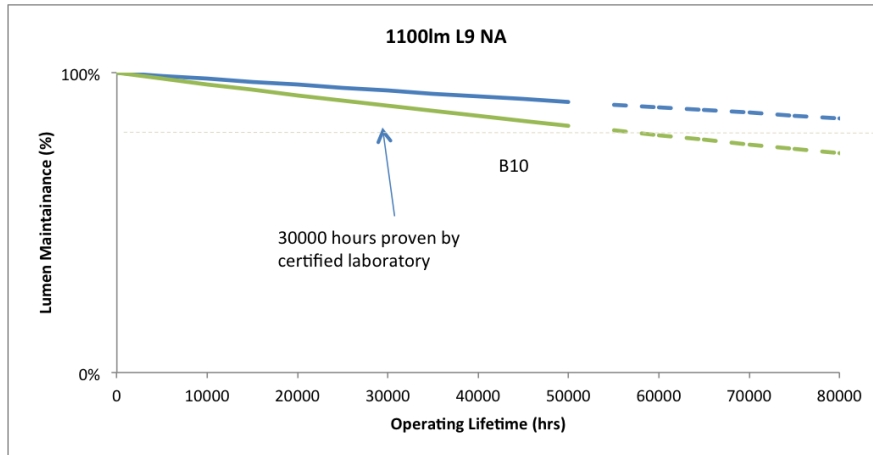
Please ensure that while tuning the product's operating point, it stays within limits of temperature (Tc) and current (I) that are covered within the warranty window.



Fortimo LED SLM Gen 4 1100lm L9

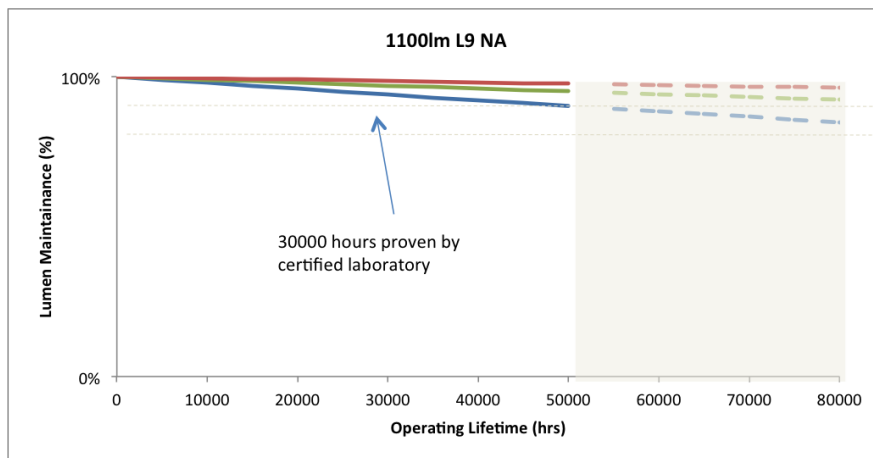
Lumen Maintenance

Fortimo LED SLM 1100lm L9



Lumen Maintenance (B50)

Fortimo LED SLM 1100lm L9



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

© 2014 Koninklijke Philips N.V. All rights reserved.
Philips reserves the right to make changes in specifications and/or to discontinue any product at any time without notice or obligation and will not be liable for any consequences resulting from the use of this publication.
philips.com/leddrivers



Philips Lighting North America Corporation
10275 W. Higgins Road, Rosemont IL 60018
Tel: 800-322-2086 Fax: 888-423-1882
Customer/Technical Service: 800-372-3331
OEM Support: 866-915-5886

Imported by: Philips Lighting
A division of Philips Electronics Ltd.
281 Hillmount Rd, Markham, ON, Canada L6C 2S3
Tel. 800-668-9008