PHILIPS

LED Modules

Fortimo DLM Flex L2

24 G1 NA

Fortimo LED DLM flex L2 expands solution beyond downlight applications.
The Philips Fortimo LED downlight module (DLM) flex L2 brings even more application possibilities than the previous DLM flex generation. DLM flex L2 expands applications to include high-bay and other sectors. It is a product covered by the Fortimo brand promise of light quality and a smart system. We provide you with a system proposition ranging from 1,100 lm to 10,000 lm, from high performance to low cost, all in one flexible portfolio. Models can be easily tuned to meet your needs through Philips Advance Xitanium LED drivers with SimpleSet technology.

Commercial Product Name	12NC
Fortimo LED DLM Flex L2 827 24 G1 NA	929000749613
Fortimo LED DLM Flex L2 830 24 G1 NA	929000749713
Fortimo LED DLM Flex L2 835 24 G1 NA	929000749813
Fortimo LED DLM Flex L2 840 24 G1 NA	929000749913
Fortimo LED DLM Thermal Accessory G1	929000765413
Fortimo LED DLM Flex Cover NA	929000765313

For drivers' compatibility, please visit our Easy Design-In Tool:
https://www.na.easydesignintool.philips.com/select-module/24;jsessionid=B48812A82EB79F03366908351B479626

Fortimo LED DLM L2 24 G1 NA

Features

- Wide lumen output range: from 1,100 to 10,000lm
- Variation of color temperatures (2700K, 3000K, 3500K and 4000K)
- Lifetime > 50,000hrs[1] (B50L70 at Tc 85°C)
- High color consistency: 3SDCM
- Various mechanical interface options
  - Enabling standard or slim designs
  - Self-cooled option for up to 3,000lm[2]
  - No additional heat sink needed

Benefits

- High energy efficiency (up to 159lm/W at Tc 85°C), also enabling excellent thermal management
- Flexible output/performance when set through our Philips Advance Xitanium LED drivers with SimpleSet technology
- Limited glare
- Integrated thermal protection, enabling universal voltage fixtures and low power consumption (compliant with UL SREC/991)
- Reduced effort with thermal design and testing[3]
- 5-year limited system warranty with Philips Advance Xitanium LED drivers[4]

Application

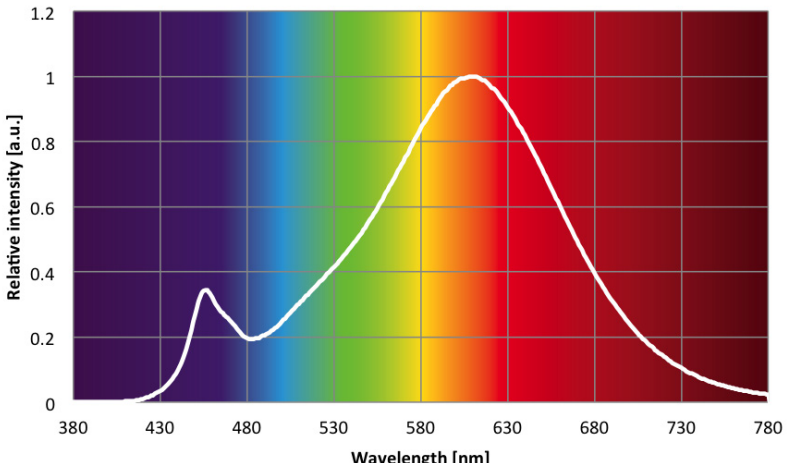
- Recessed downlights
  - Offices
  - Hospitality
  - Education
  - Retail
- High-bay
  - Warehouses
  - Industries
- Surface mount luminaries
  - Residential
  - Hospitality
  - Offices

Optical Characteristics – Table per CCT

Fortimo LED DLM Flex L2 827 24 G1 NA

Parameter	Typ*	Max**	Unit
Luminous Flux	1,260	3,150	lm
Luminous Flux with DLM Flex Cover	1,046	2,614	lm
Module Efficiency	138	104	lm/W
Module Efficiency with DLM Flex Cover	115	86	lm/W
Nominal Current	274	800	mA
Correlated Color Temperature	2700		K
Color Consistency	3		SDCM
CRI	>80		-
Radiation Angle	120		deg

Note: *Specifications stated at Tc nom = 85°C
**Maximum values within lifetime/warranty (at maximum Tc 75°C)



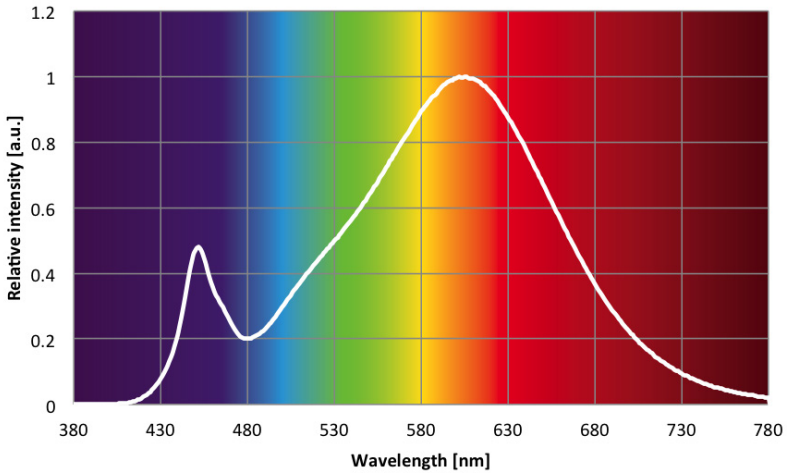
1. Average rated life is based one engineering data testing and probability analysis. The hours are at the B50, L70 point - 50,000 hours life with 70% lumen maintenance at Tc point.
2. When combined with Fortimo LED thermal accessory G1. Please refer to product design-in guide for design instructions and restrictions.
3. When combined with the Fortimo thermal accessory G1, the need for an external heat sink is eliminated (for up to 3,000lm, according to the product design-in guide rules), resulting in simplified thermal management design and testing. The Fortimo DLM flex design-in guide is available at http://www.usa.lighting.philips.com/products/oem-components/led-modules-literature.html.
4. View limited warranty at http://www.usa.lighting.philips.com/support/support/warranty for details and restrictions.

Fortimo LED DLM L2 24 G1 NA

Optical Characteristics – Table per CCT

Fortimo LED DLM Flex L2 830 24 G1 NA			
Parameter	**Typ***	**Max****	**Unit**
Luminous Flux	1,330	3,307	lm
Luminous Flux with DLM Flex Cover	1,104	2,745	lm
Module Efficiency	145	109	lm/W
Module Efficiency with DLM Flex Cover	120	91	lm/W
Nominal Current	274	800	mA
Correlated Color Temperature	3000		K
Color Consistency	3		SDCM
CRI	>80		-
Radiation Angle	120		deg

Note: *Specifications stated at Tc nom = 85°C
**Maximum values within lifetime/warranty (at maximum Tc 75°C)
Tolerance for flux data is -10% +20%.
Tolerance for efficacy data is ±10%.

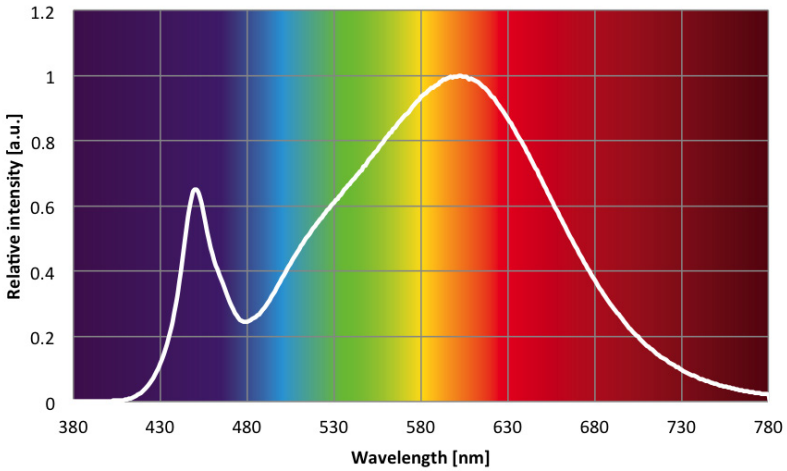


Fortimo LED DLM L2 24 G1 NA

Optical Characteristics – Table per CCT

Fortimo LED DLM Flex L2 835 24 G1 NA			
Parameter	**Typ***	**Max****	**Unit**
Luminous Flux	1,330	3,307	lm
Luminous Flux with DLM Flex Cover	1,104	2,745	lm
Module Efficiency	145	109	lm/W
Module Efficiency with DLM Flex Cover	120	91	lm/W
Nominal Current	274	800	mA
Correlated Color Temperature	3500		K
Color Consistency	3		SDCM
CRI	>80		-
Radiation Angle	120		deg

Note: *Specifications stated at Tc nom = 85°C
**Maximum values within lifetime/warranty (at maximum Tc 75°C)

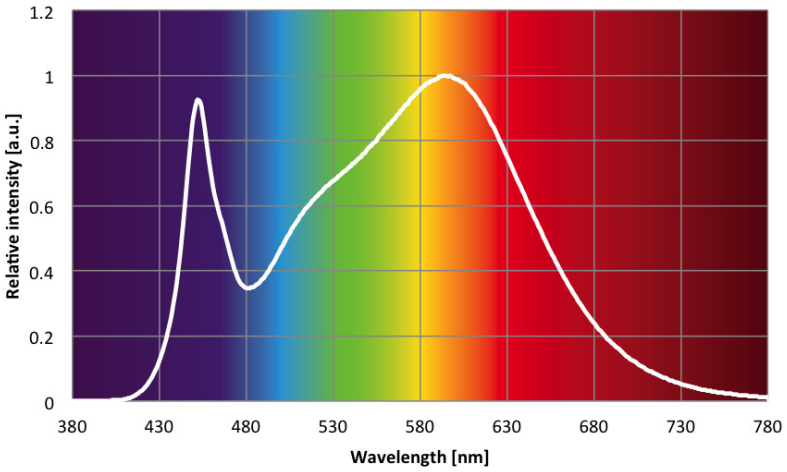


Fortimo LED DLM L2 24 G1 NA

Optical Characteristics – Table per CCT

Fortimo LED DLM Flex L2 840 24 G1 NA			
Parameter	**Typ***	**Max****	**Unit**
Luminous Flux	1430	3,555	lm
Luminous Flux with DLM Flex Cover	1,187	2,951	lm
Module Efficiency	155	117	lm/W
Module Efficiency with DLM Flex Cover	129	97	lm/W
Nominal Current	274	800	mA
Correlated Color Temperature	4000		K
Color Consistency	3		SDCM
CRI	>80		-
Radiation Angle	120		deg

Note: *Specifications stated at Tc nom = 85°C
**Maximum values within lifetime/warranty (at maximum Tc 75°C)



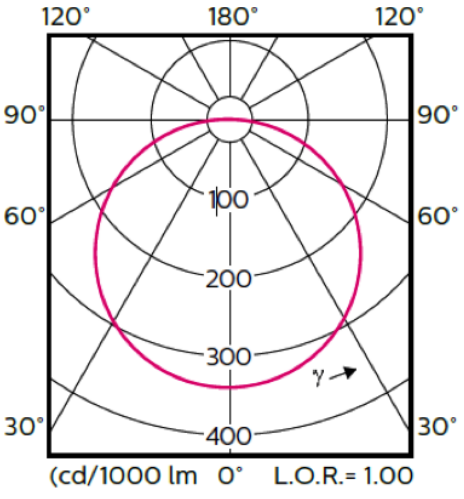
Fortimo LED DLM L2 24 G1 NA

Beam Shape

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

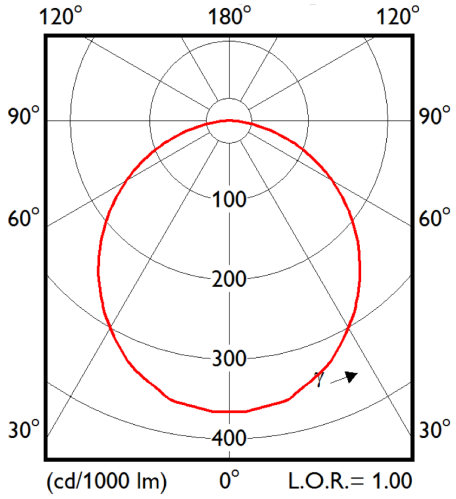
Polar Intensity Diagram

DLM Flex L2 24



Polar Intensity Diagram

DLM Flex L2 24 with DLM Flex Cover



Electrical Characteristics

Parameter	Min	Typ	Max	Unit
Current		274		mA
Forwards Voltage	31.7	33.5	36	V
Power Consumption	8.7	9.2	9.9	W

Lifetime

Parameter	Min	Unit
Lumen Maintenance B50L70	50,000	hrs

Note: Lifetime stated at Tc nom = 85°C and nominal current of module

Parameter	Nominal[3]	Max[4]	Max. Current[5]
Tc [°C]	85	95	75

3. Nominal value at which performance is specified.
4. Maximum value for safety.
5. Maximum TC allowed at maximum current within warranty window

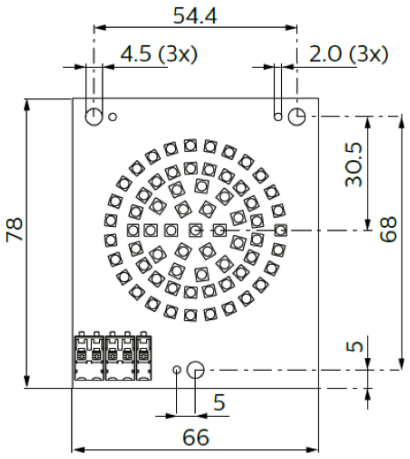
Fortimo LED DLM L2 24 G1 NA

Abs Max Ratings

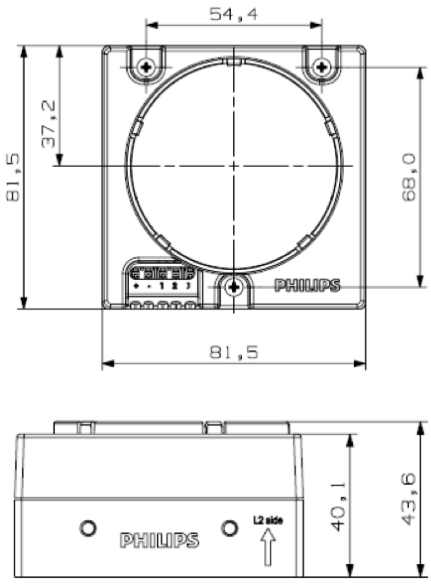
Parameter	Min	Typ	Max	Unit
Current Imax			800	mA
Case Temperature Tc Max			95	°C
ESD Human Body Model (HBM) Class 3A JESD22-A114-E			1	kV
Storage Temperature	-40		100	°C

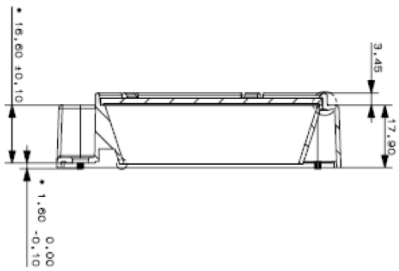
Mechanical Characteristics

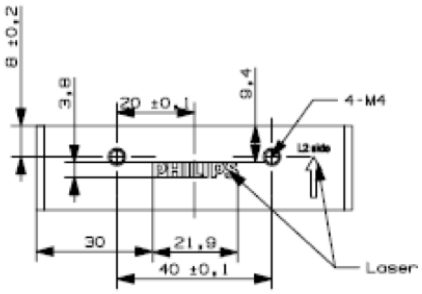
DLM Flex L2 24



DLM Flex Cover and DLM Thermal Accessory G1







Application Information

Compliance and Approval

CSA/ (UL CoA#: E336402)/ UL SREC

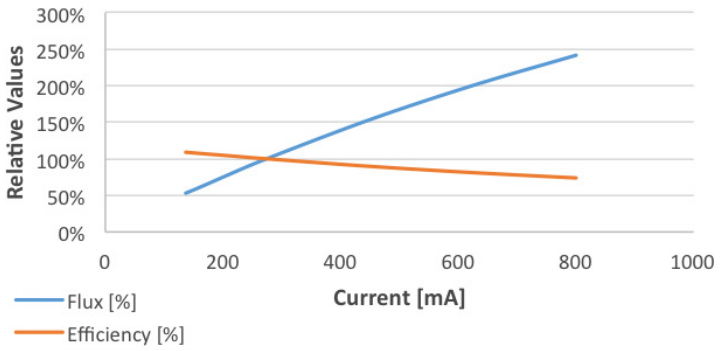
Application Information

IP Rating	No IP rating
Overheating Protection	UL SREC
Luminaire Class	UL Class 2 / Class II

Fortimo LED DLM L2 24 G1 NA

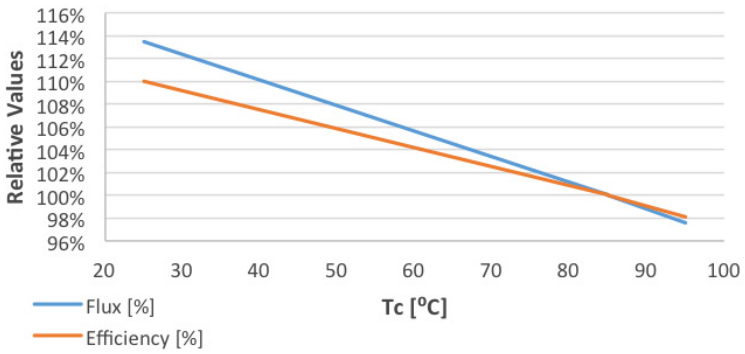
Tuning Information

Flux and Efficacy vs. Current (at Nominal Temperature) DLM Flex L2 24



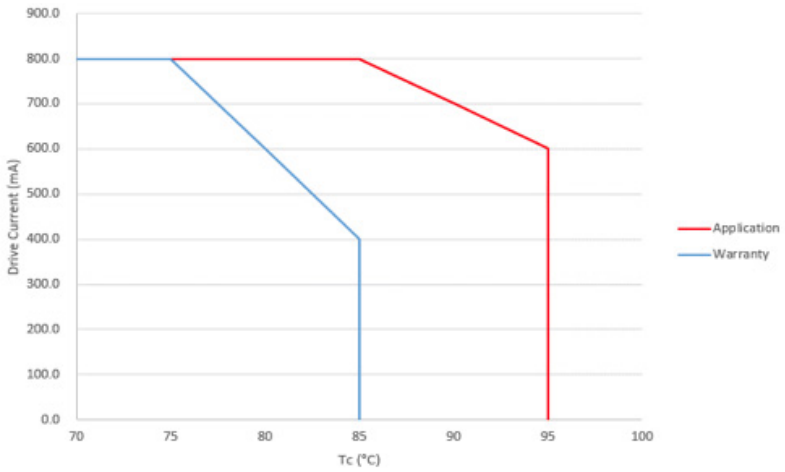
I [mA]	Flux [%]	Efficiency [%]
137	52%	109%
206	77%	104%
274	**100%**	**100%**
449	153%	90%
625	200%	81%
800	242%	74%

Flux and Efficacy vs. Temperature at Tc (at Nominal Current) DLM Flex L2 24



Tc (C)	Flux [%]	Efficiency [%]
95	98%	98%
85	100%	100%
75	**102%**	**102%**
25	113%	110%

Warranty Window



Warranted Number of Full Thermal Product Cycles @ 25°C Ambient Temperature

Case Temperature Tc [°C]	Number of Cycles
85	5625
80	7500
75	10,000
70	12,500
65	12,500
60	12,500

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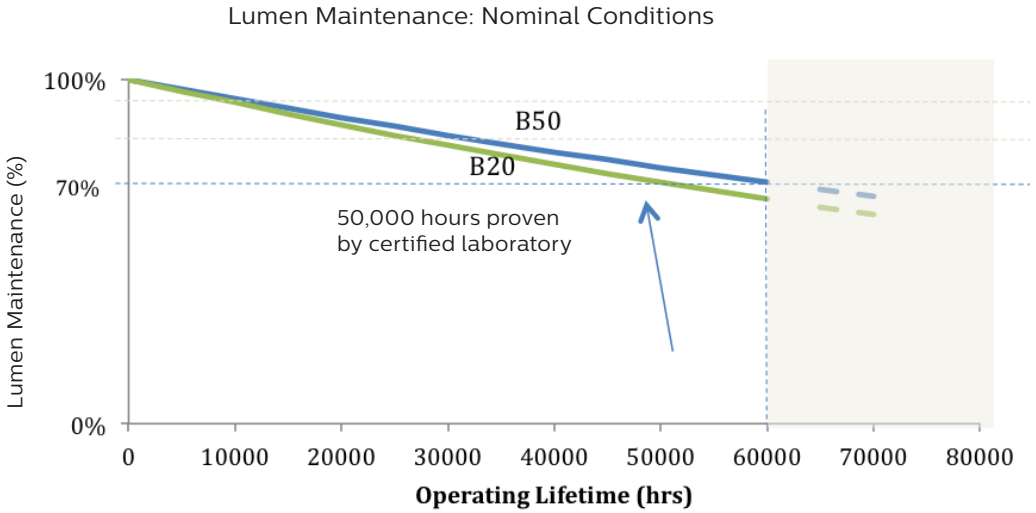
Lumen Maintenance

Fortimo LED DLM Flex L2 24 G1 NA



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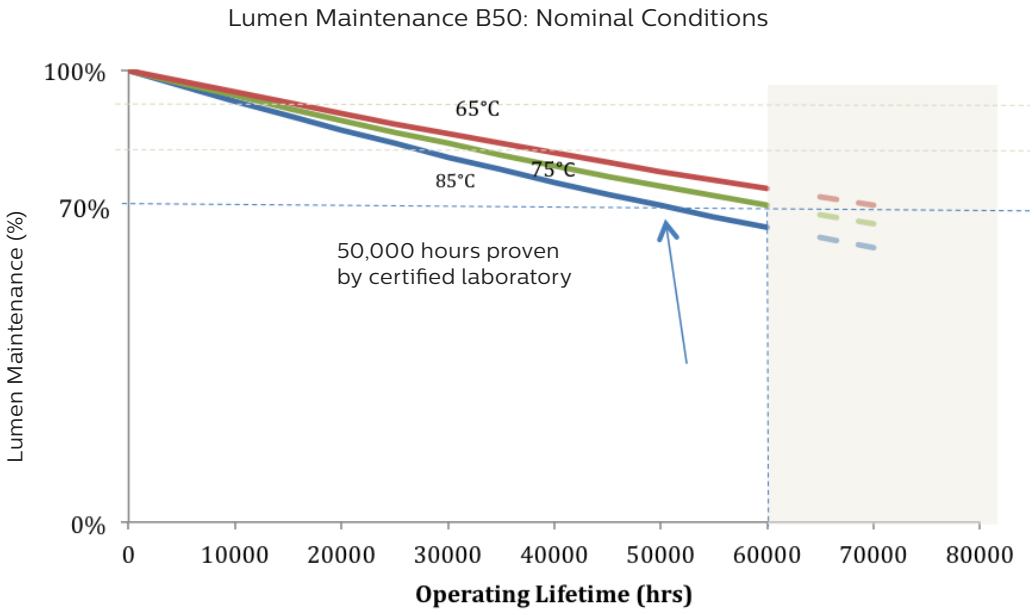

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