

PHILIPS

LED Modules

Fortimo DLM Gen 5



The Philips Fortimo LED downlight module (DLM) gen 5 brings enhanced quality of light features, increasing even further the value of its remote phosphor technology and its color consistency over life³. Moreover, high-energy efficiency, compliance with current regulations and market standards and the Philips five-year limited warranty¹ help to make Fortimo DLM gen 5 one of the best LED solutions for architectural commercial downlight luminaires.

Commercial Product Name	12NC
Fortimo LED DLM 1100 13W/927 Gen 5	929001518806
Fortimo LED DLM 1100 12W/930 Gen 5	929001518906
Fortimo LED DLM 1100 12W/935 Gen 5	929001519006
Fortimo LED DLM 1100 11W/940 Gen 5	929001519106
Fortimo LED DLM 1500 18W/927 Gen 5	929001519206
Fortimo LED DLM 1500 17W/930 Gen 5	929001519306
Fortimo LED DLM 1500 16W/935 Gen 5	929001519406
Fortimo LED DLM 1500 15W/940 Gen 5	929001519506
Fortimo LED DLM 2000 23W/927 Gen 5	929001519606
Fortimo LED DLM 2000 22W/930 Gen 5	929001519706
Fortimo LED DLM 2000 22W/935 Gen 5	929001519806
Fortimo LED DLM 2000 20W/940 Gen 5	929001519906
Fortimo LED DLM 3000 35W/927 Gen 5	929001520006
Fortimo LED DLM 3000 34W/930 Gen 5	929001520106
Fortimo LED DLM 3000 33W/935 Gen 5	929001520206
Fortimo LED DLM 3000 31W/940 Gen 5	929001520306

For driver compatibility and different current/performance options, please visit our Easy Design-In Tool: (<https://www.na.easydesign-intool.philips.com/select-module/24.jsessionid=3D6516B1EAF7E-DA04D2F765F1727E7F>).

See next page for footnotes.

Fortimo LED DLM gen 5

Features

- CRI90 & R9>50
- 2SDCM²
- Self-cooling possibility up to 2000lm
 - Eliminates the need of external heat sink
 - Improves luminaire manufacturability and serviceability³
- One-stop shop for your system (detailed list of complementary partners in design-in guide)

Benefits

- State-of-art color consistency maintenance over life
- Increased quality of light (CRI 90 and 2SDCM^{2,3})
- Flexibility to tune the performance as needed by modifying the operating point
- UL SREC compliance enables fixture design without additional thermal protection
- Improved temperature management³
- Smart systems with Philips Advance Xitanium drivers with SimpleSet technology
- Supported by the Philips warranty¹
- Best-in-class lumen maintenance
- Easy design-in (backward compatible across Fortimo DLM family)

Application

- Offices (areas such as hallways, receptions, boardrooms, etc.)
- Hotel lobbies and receptions areas
- High-end retail shops

1. View limited warranty at <http://www.usa.lighting.philips.com/support/support/warranty> for details and restrictions.

2. Color consistency <2SDCM within 95% (not higher than 2,5SDCM). For higher accuracy level up to 2SDCM, bin structure is available. For more details please refer to product's design-in guide.

3. Improved over Philips Fortimo DLM gen 4.

Fortimo LED DLM gen 5

Optical Characteristics – Table per CCT

Fortimo LED DLM 1100 13W/927 Gen 5

Parameter	Typ*	Unit
Luminous Flux	1100	lm
Module Efficiency	98.0	lm/W
Nominal Current	594.1	mA
Correlated Color Temperature	2700	K
Color Consistency	<2 ²	SDCM
CRI	>90 (R9 >50)	-
Radiation Angle	114	deg

Fortimo LED DLM 1100 12W/930 Gen 5

Parameter	Typ*	Unit
Luminous Flux	1100	lm
Module Efficiency	105.3	lm/W
Nominal Current	555.9	mA
Correlated Color Temperature	3000	K
Color Consistency	<2 ²	SDCM
CRI	>90 (R9 >50)	-
Radiation Angle	114	deg

Fortimo LED DLM 1100 12W/935 Gen 5

Parameter	Typ*	Unit
Luminous Flux	1100	lm
Module Efficiency	107.9	lm/W
Nominal Current	542.2	mA
Correlated Color Temperature	3500	K
Color Consistency	<2 ²	SDCM
CRI	>90 (R9 >50)	-
Radiation Angle	114	deg

Fortimo LED DLM 1100 11W/940 Gen 5

Parameter	Typ*	Unit
Luminous Flux	1100	lm
Module Efficiency	110.7	lm/W
Nominal Current	528.6	mA
Correlated Color Temperature	4000	K
Color Consistency	<2 ²	SDCM
CRI	>90 (R9 >50)	-
Radiation Angle	114	deg

* Note: Specifications stated at Tc nom = 85 °C. Flux range -10% to +20%.
Vf range -4% to + 4%. Power range -4% to + 4%.
Efficiency range respective to flux and power ranges.

Disclaimer: Tolerance of ± 0.005 on color coordinates in CIE 1931 color space.
Tolerance of ± 1.5 on CRI. Tolerance of ± 5% on flux.

Tolerance of ± 3% on Vf. Tolerance of ± 3.3% on power. Tolerance of ± 6% on efficacy.

2. Color consistency <2SDCM within 95% (not higher than 2,5SDCM). For higher accuracy level up to 2SDCM, bin structure is available.

Fortimo LED DLM gen 5

Optical Characteristics – Table per CCT

Fortimo LED DLM 1500 18W/927 Gen 5

Parameter	Typ*	Unit
Luminous Flux	1500	lm
Module Efficiency	95.4	lm/W
Nominal Current	823.4	mA
Correlated Color Temperature	2700	K
Color Consistency	<2 ²	SDCM
CRI	>90 (R9 >50)	-
Radiation Angle	114	deg

Fortimo LED DLM 1500 17W/930 Gen 5

Parameter	Typ*	Unit
Luminous Flux	1500	lm
Module Efficiency	99.7	lm/W
Nominal Current	787.9	mA
Correlated Color Temperature	3000	K
Color Consistency	<2 ²	SDCM
CRI	>90 (R9 >50)	-
Radiation Angle	114	deg

Fortimo LED DLM 1500 16W/935 Gen 5

Parameter	Typ*	Unit
Luminous Flux	1500	lm
Module Efficiency	104.2	lm/W
Nominal Current	757.9	mA
Correlated Color Temperature	3500	K
Color Consistency	<2 ²	SDCM
CRI	>90 (R9 >50)	-
Radiation Angle	114	deg

Fortimo LED DLM 1500 15W/940 Gen 5

Parameter	Typ*	Unit
Luminous Flux	1500	lm
Module Efficiency	107.7	lm/W
Nominal Current	733.3	mA
Correlated Color Temperature	4000	K
Color Consistency	<2 ²	SDCM
CRI	>90 (R9 >50)	-
Radiation Angle	114	deg

* Note: Specifications stated at Tc nom = 85 °C. Flux range -10% to +20%.
Vf range -4% to + 4%. Power range -4% to + 4%.
Efficiency range respective to flux and power ranges.

Disclaimer: Tolerance of ± 0.005 on color coordinates in CIE 1931 color space.
Tolerance of ± 1.5 on CRI. Tolerance of ± 5% on flux.

Tolerance of ± 3% on Vf. Tolerance of ± 3.3% on power. Tolerance of ± 6% on efficacy.

2. Color consistency <2SDCM within 95% (not higher than 2,5SDCM). For higher accuracy level up to 2SDCM, bin structure is available.

Fortimo LED DLM gen 5

Optical Characteristics – Table per CCT

Fortimo LED DLM 2000 23W/927 Gen 5

Parameter	Typ*	Unit
Luminous Flux	2000	lm
Module Efficiency	93.2	lm/W
Nominal Current	872.6	mA
Correlated Color Temperature	2700	K
Color Consistency	<2 ²	SDCM
CRI	>90 (R9 >50)	-
Radiation Angle	114	deg

Fortimo LED DLM 2000 22W/930 Gen 5

Parameter	Typ*	Unit
Luminous Flux	2000	lm
Module Efficiency	97.4	lm/W
Nominal Current	834.3	mA
Correlated Color Temperature	3000	K
Color Consistency	<2 ²	SDCM
CRI	>90 (R9 >50)	-
Radiation Angle	114	deg

Fortimo LED DLM 2000 22W/935 Gen 5

Parameter	Typ*	Unit
Luminous Flux	2000	lm
Module Efficiency	99.1	lm/W
Nominal Current	823.4	mA
Correlated Color Temperature	3500	K
Color Consistency	<2 ²	SDCM
CRI	>90 (R9 >50)	-
Radiation Angle	114	deg

Fortimo LED DLM 2000 20W/940 Gen 5

Parameter	Typ*	Unit
Luminous Flux	2000	lm
Module Efficiency	106.6	lm/W
Nominal Current	766.1	mA
Correlated Color Temperature	4000	K
Color Consistency	<2 ²	SDCM
CRI	>90 (R9 >50)	-
Radiation Angle	114	deg

* Note: Specifications stated at Tc nom = 85 °C. Flux range -10% to +20%.
Vf range -4% to + 4%. Power range -4% to + 4%.
Efficiency range respective to flux and power ranges.

Disclaimer: Tolerance of ± 0.005 on color coordinates in CIE 1931 color space.
Tolerance of ± 1.5 on CRI. Tolerance of ± 5% on flux.

Tolerance of ± 3% on Vf. Tolerance of ± 3.3% on power. Tolerance of ± 6% on efficacy.

2. Color consistency <2SDCM within 95% (not higher than 2,5SDCM). For higher accuracy level up to 2SDCM, bin structure is available.

Fortimo LED DLM gen 5

Optical Characteristics – Table per CCT

Fortimo LED DLM 3000 35W/927 Gen 5

Parameter	Typ*	Unit
Luminous Flux	3000	lm
Module Efficiency	90.8	lm/W
Nominal Current	1000.9	mA
Correlated Color Temperature	2700	K
Color Consistency	<2 ²	SDCM
CRI	>90 (R9 >50)	-
Radiation Angle	114	deg

Fortimo LED DLM 3000 34W/930 Gen 5

Parameter	Typ*	Unit
Luminous Flux	3000	lm
Module Efficiency	95.3	lm/W
Nominal Current	957.2	mA
Correlated Color Temperature	3000	K
Color Consistency	<2 ²	SDCM
CRI	>90 (R9 >50)	-
Radiation Angle	114	deg

Fortimo LED DLM 3000 33W/935 Gen 5

Parameter	Typ*	Unit
Luminous Flux	3000	lm
Module Efficiency	100.7	lm/W
Nominal Current	905.3	mA
Correlated Color Temperature	3500	K
Color Consistency	<2 ²	SDCM
CRI	>90 (R9 >50)	-
Radiation Angle	114	deg

Fortimo LED DLM 3000 31W/940 Gen 5

Parameter	Typ*	Unit
Luminous Flux	3000	lm
Module Efficiency	104.2	lm/W
Nominal Current	878.0	mA
Correlated Color Temperature	4000	K
Color Consistency	<2 ²	SDCM
CRI	>90 (R9 >50)	-
Radiation Angle	114	deg

* Note: Specifications stated at Tc nom = 85 °C. Flux range -10% to +20%.
Vf range -4% to + 4%. Power range -4% to + 4%.
Efficiency range respective to flux and power ranges.

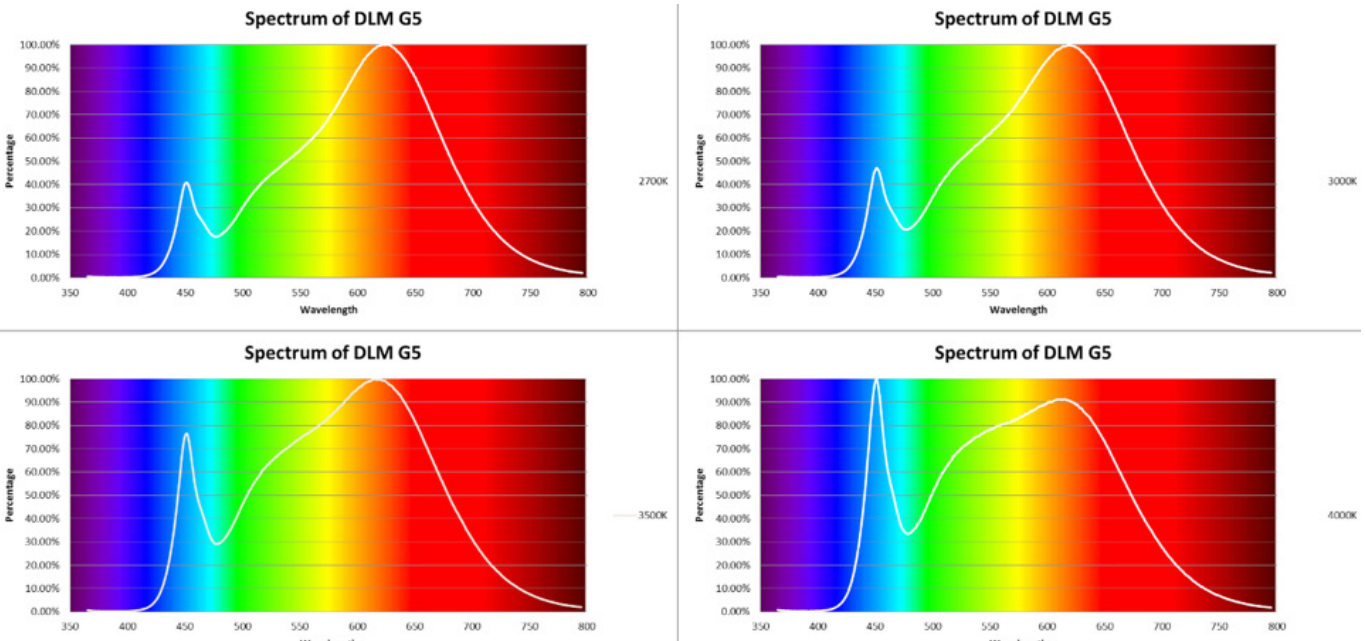
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Tolerance of ± 1.5 on CRI. Tolerance of ± 5% on flux.

Tolerance of ± 3% on Vf. Tolerance of ± 3.3% on power. Tolerance of ± 6% on efficacy.

2. Color consistency <2SDCM within 95% (not higher than 2,5SDCM). For higher accuracy level up to 2SDCM, bin structure is available.

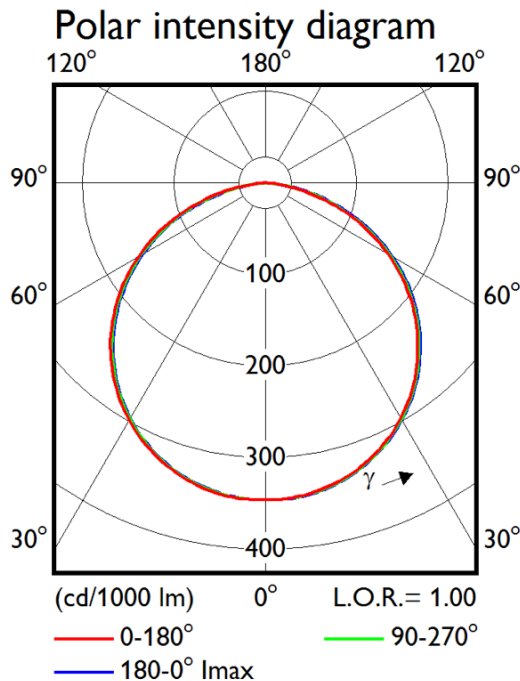
Fortimo LED DLM gen 5

Relative Spectral Power per CCT for DLM Gen 5



Beam Shape

The Philips Fortimo DLM gen 5 generates a Lambertian beam shape, which is a pragmatic starting point for OEMs wishing to design secondary optics.



Fortimo LED DLM gen 5

Electrical Characteristics

Parameter	Nominal Current (mA)	Typ Forward Voltage (V)	Typ Module Power (W)
Fortimo LED DLM 1100 13W/927 Gen 5	594.1	18.9	11.2
Fortimo LED DLM 1100 12W/930 Gen 5	555.9	18.8	10.5
Fortimo LED DLM 1100 12W/935 Gen 5	542.2	18.8	10.2
Fortimo LED DLM 1100 11W/940 Gen 5	528.6	18.8	9.9
Fortimo LED DLM 1500 18W/927 Gen 5	823.4	19.1	15.7
Fortimo LED DLM 1500 17W/930 Gen 5	787.9	19.1	15.0
Fortimo LED DLM 1500 16W/935 Gen 5	757.9	19.0	14.4
Fortimo LED DLM 1500 15W/940 Gen 5	733.3	19.0	13.9
Fortimo LED DLM 2000 23W/927 Gen 5	872.6	24.6	21.5
Fortimo LED DLM 2000 22W/930 Gen 5	834.3	24.6	20.5
Fortimo LED DLM 2000 22W/935 Gen 5	823.4	24.5	20.2
Fortimo LED DLM 2000 20W/940 Gen 5	766.1	24.5	18.8
Fortimo LED DLM 3000 35W/927 Gen 5	1000.9	33.0	33.0
Fortimo LED DLM 3000 34W/930 Gen 5	957.2	32.9	31.5
Fortimo LED DLM 3000 33W/935 Gen 5	905.3	32.9	29.8
Fortimo LED DLM 3000 31W/940 Gen 5	878.0	32.8	28.8

Note: Specifications stated at Tc nom = 85 °C.

Note: Specifications stated at Tc nom = 85 °C.
Vf range -4% to + 4%. Power range -4% to + 4%.
Disclaimer: Tolerance of ± 3% on Vf. Tolerance of ± 3.3% on power.
Tolerance of ± 6% on efficacy.

Lifetime

Parameter	Min	Unit
Lumen Maintenance B50L80	50,000	hrs

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

Parameter	Nominal*	Max**
Tc [°C]	85	95

* Nominal value at which performance is specified

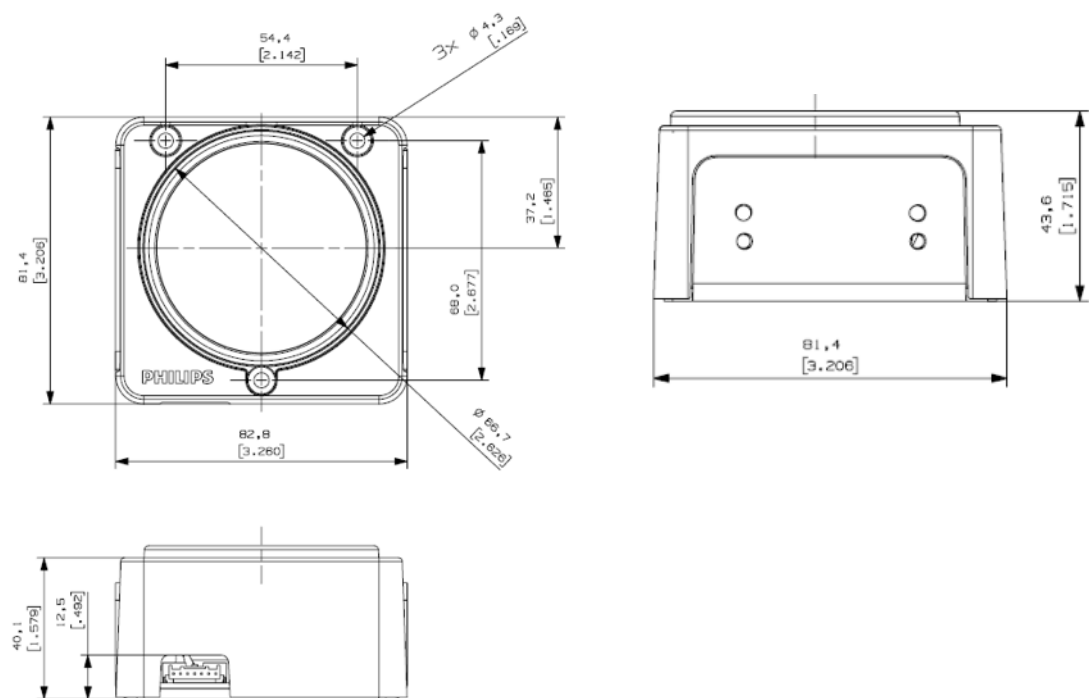
** Maximum value for safety (UL)

Abs Max Ratings

Parameter	Min	Typ	Max	Unit
Current Imax			1200	mA
Case Temperature Tc Max			95	°C
ESD Human Body Model (HBM) Class 3A JESD22-A114-E			8	kV
Storage Temperature	-40		85	°C

Fortimo LED DLM gen 5

Mechanical Characteristics



Application Information

Compliance and Approval

CSA/UL/UL SREC

Application Information

IP Rating	No IP Rating
Overheating Protection	UL SREC

Fortimo LED DLM gen 5

Tuning Information

For tuning information, please visit the product page at Philips Easy Design-in Tool (<https://www.na.easydesign-intool.philips.com/select-module/24;jsessionid=3D6516B1EAF7EDA04D2F765F1727E7F>).

Lumen Maintenance

Please contact your Philips sales representative for LM80 report.

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