

PHILIPS

Fortimo

LED system

DLM EaseSelect
2000 lm Gen1



Datasheet

State of the art integration for downlight solutions

Fortimo DLM ES 2000 lm Gen1

Fortimo DLM EaseSelect is a high performance driver on board (DoB) solution, delivering an excellent quality of light with low flicker. Having an integrated driver and the same mechanical footprint as existing DLM solutions (DLM Flex), enables easy and hassle free design-in. The Fortimo brand promise brings with it the assurance of quality, reliability and performance.

Key features and benefits

- Low flicker (<30%)
- Ease of design - in
- High system efficacy of up to 114 lm/W
- Long life-time: 50,000 hours
- Excellent color consistency of 3 SDCM
- Full portfolio with all typical downlight lumen packages and CCTs
- 5 years system warranty

December 2015

This product is available in the following options. Please note that the ordering code includes the housing. It is possible to use these as a module (PCB + housing) only.

Ordering data

Commercial product name	12NC	EOC
Fortimo DLM ES 2000/830 G1	9290 009 78503	8718696 534571 00
Fortimo DLM ES 2000/840 G1	9290 009 78603	8718696 534595 00
Fortimo DLM ES 2000/865 G1*	9290 009 78803	8718696 534618 00

* Available in APR, please contact your local sales representative if availability in EU is needed.

Drive currents and case temperatures

Parameter	Nominal*	Life**	Max***	Unit
Tc (case temperature at Tc point)	70	70	85	°C

* Nominal value at which typical performance is specified.

** Value at which lifetime is specified.

*** Maximum value for safe operation; do not operate above this value.

Electrical characteristics

Parameter	Min	Typ	Max	Unit
Nominal Input Voltage		220-240		Vac
Nominal input current		0.080		A
Nominal Input Frequency		50-60		Hz
Power @230 V AC 50 Hz		17.5		W
Power Factor @ 230 V AC 50 Hz		> 0.9		-
THD @ 220-240 V			40	%
Dimming		None		-

Specifications stated at Tc-nom and preset I.

Absolute maximum ratings

Parameter	Min	Typ	Max	Unit
Ambient temperature	-20	25	35	°C
Ambient Relative Humidity (non-condensing)	0		90	%
Storage temperature	-40		65	°C
Storage Relative Humidity (non-condensing)	5		95	%

Optical characteristics - table per color (CCT)

Fortimo DLM ES 2000 lm 830

Parameter	Min	Typ	Max	Unit
Luminous Flux		1930		lm
Efficacy		110		lm/W
Correlated color temperature (CCT) range		3000		K
CRI	80			-
Energy Efficiency Label		A+		-
Radiation Angle		90		deg

Color consistency of 3 SDCM, averaged over the module.

Tolerance for flux data is -10% - +20%. Measurement tolerance is ±5%.

Tolerance for efficacy data is dependent on the above mentioned tolerances.

Measurement tolerance for CRI is 1.5.

Fortimo DLM ES 2000 lm 840

Parameter	Min	Typ	Max	Unit
Luminous Flux		2000		lm
Efficacy		114		lm/W
Correlated color temperature (CCT) range		4000		K
CRI	80			-
Energy Efficiency Label		A+		-
Radiation Angle		90		deg

Color consistency of 3 SDCM, averaged over the module.

Tolerance for flux data is -10% - +20%. Measurement tolerance is ±5%.

Tolerance for efficacy data is dependent on the above mentioned tolerances.

Measurement tolerance for CRI is 1.5.

Fortimo DLM ES 2000 lm 865

Parameter	Min	Typ	Max	Unit
Luminous Flux		2000		lm
Efficacy		114		lm/W
Correlated color temperature (CCT) range		6500		K
CRI	80			-
Energy Efficiency Label		A+		-
Radiation Angle		90		deg

Color consistency of 3 SDCM, averaged over the module.

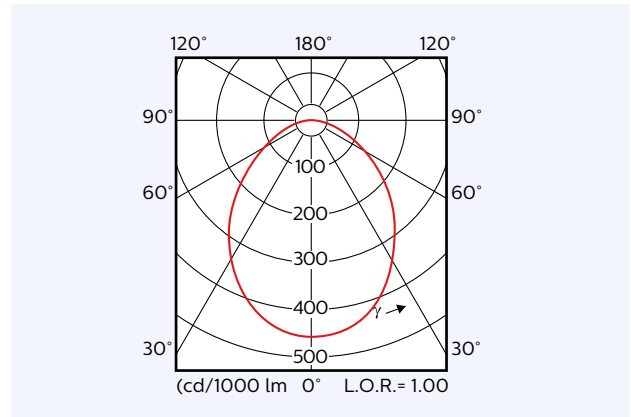
Tolerance for flux data is -10% - +20%. Measurement tolerance is ±5%.

Tolerance for efficacy data is dependent on the above mentioned tolerances.

Measurement tolerance for CRI is 1.5.

Beam shape

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

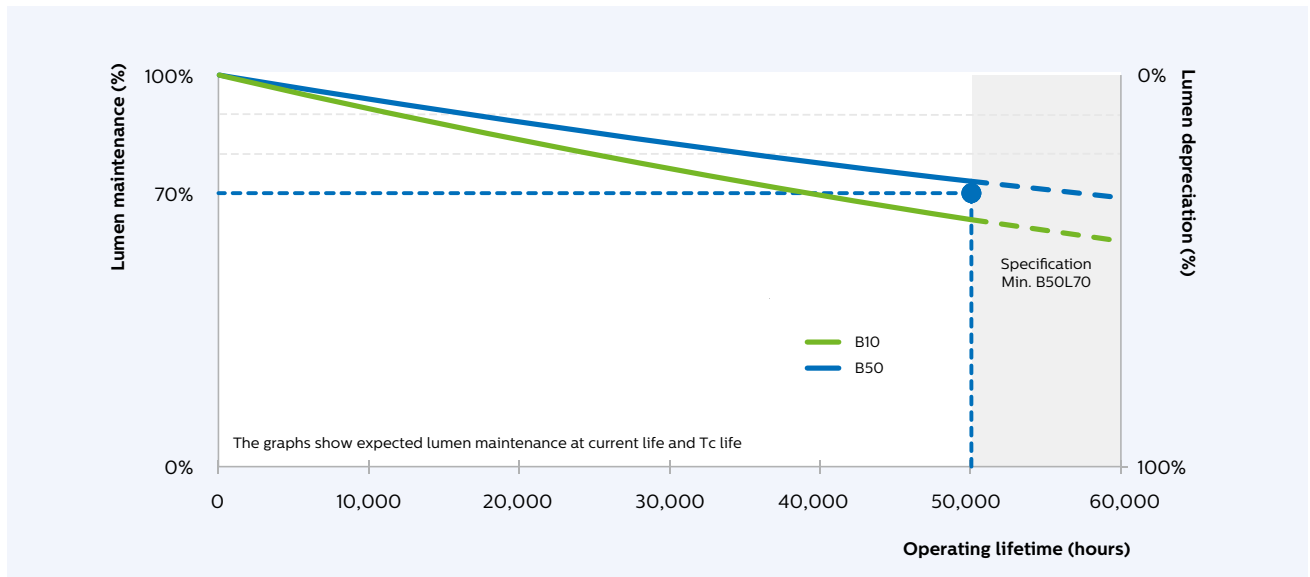


Lifetime

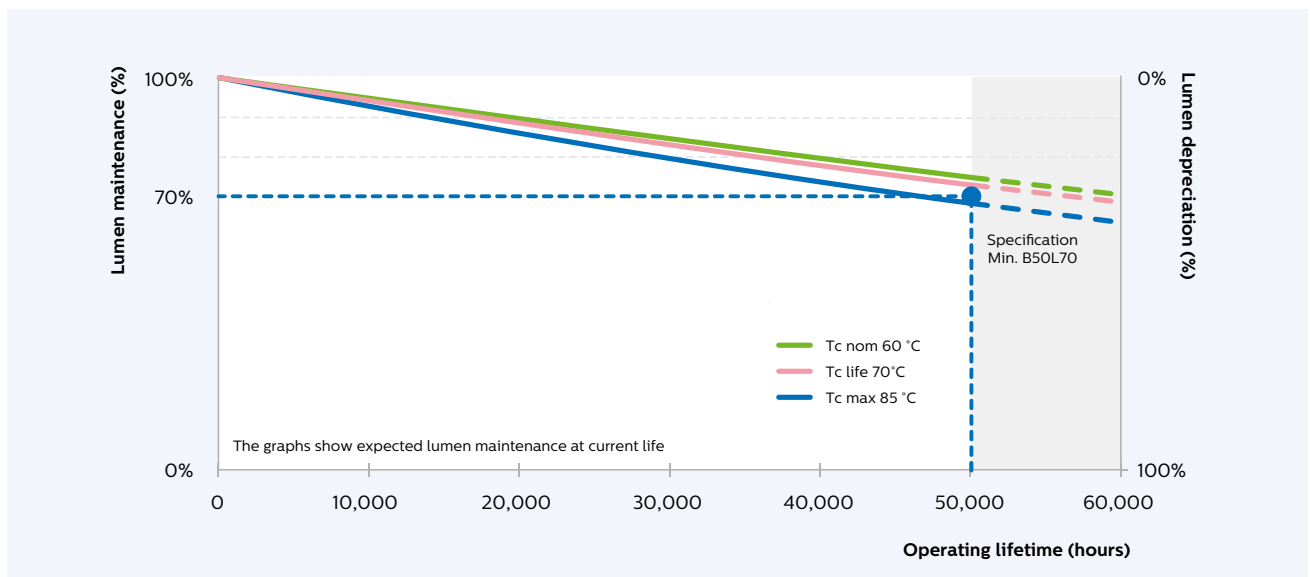
Lumen depreciation in operating hours	L70B50 @ 50 Khrs @ Tc life=70 °C
Lifetime	C10 @ 50 khrs @ Tc life=70 °C
Average operating time per year for warranty	4000 hours
Average number of on/off switching cycles over life time for warranty	3 cycles/day

Lumen maintenance

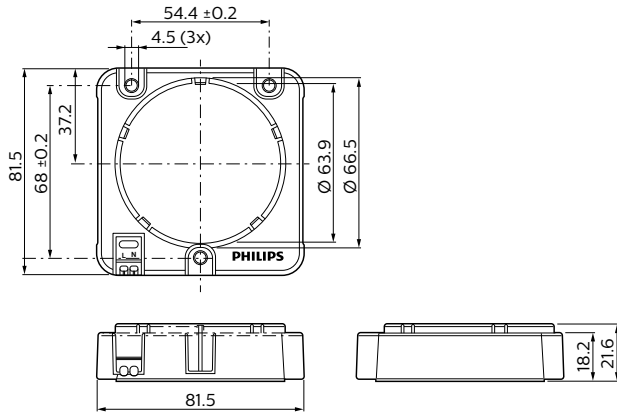
Lumen maintenance at Tc life



Lumen maintenance B50



Mechanical Characteristics



Wiring

Specification item	Value	Unit
Input wire cross-section	0.25-0.75	mm ²
	18-24	AWG
Input wire strip length	6-7	mm
Strain Relief	To be handled at luminaire level	

Application information

Compliance and approval

Approval marks: CE/ENEC

IEC/EN 62031, IEC/EN 62471, IEC/EN 61347-2-13, IEC/EN 62384, IEC 61000-3-3 :2008, IEC 61547 :2009

Environmental

ROHS, REACH

IP Rating	20 for Tc < 85 °C
Overheating protection	No Protection

