

PHILIPS

Fortimo

LED

Fortimo LED Panel 6060



Datasheet

Fortimo LED Panel

The Fortimo LED Panels are designed to light up spaces in office and commercial buildings. With their ultra-slim design they can be installed easily. The Fortimo panels offer an excellent performance (120 Lm/W at 4000K CRI80), reliability (50,000 hours) and quality of light. It's designed to meet the standards for office lighting (UGR <19 possible). A wide range of choices in different sizes (60x60; 62x62; 30x120; 60x120) and color temperatures can be combined with a wide choice of Xitanium drivers to perfectly match your application.

Key features and benefits

- Efficacy up to 121 lm/W on module level
- Ultra-slim LED module
- Excellent light uniformity
- Meeting office standards for low UGR
- Good quality of light (CRI >80)
- A wide range of different sizes (60x60, 62x62, 30x120 and 60x120)
- High flexibility of lumen output due to wide driver choice
- 5 year system warranty
- Module is provided with integrated quick install connector
- Excellent color consistency of 3 SDCM

December 2020



Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo LED Panel 6060 830 MD2	8718699 676254 00	9290 016 87706	5
Fortimo LED Panel 6060 835 MD2	8719514 286863 00	9290 028 28006	5
Fortimo LED Panel 6060 840 MD2	8718699 676278 00	9290 016 87806	5
Fortimo LED Panel 6060 865 MD2	8718699 676292 00	9290 016 87906	5

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Panel 6060	800	1050	1150	mA

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T _c (case temperature at T _c point)	45	70	75	°C

* Nominal value at which typical performance is specified

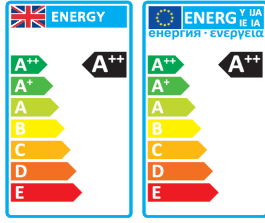
** Value at which life time is specified

*** Maximum value for safe operation, do not operate above this value

Optical characteristics - table per color (CCT)

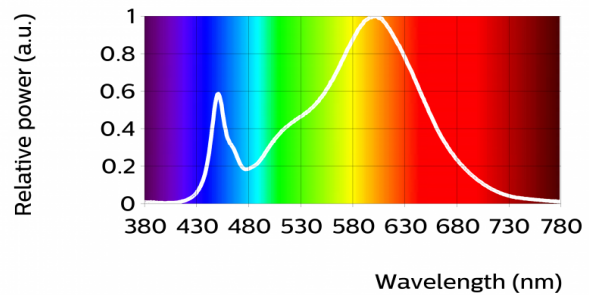
Fortimo LED Panel 6060 830 MD2

Parameter	Min	Typ	Max	Unit
Luminous flux	2898	3220	3542	lm
Flux within 120° cone		2841		lm
Flux within 90° cone		2338		lm
Module efficacy		115		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.442, 0.406)		-
Color consistency			3	SDCM
CRI	80			
Photometric code		830/359		
Radiation angle		80		deg



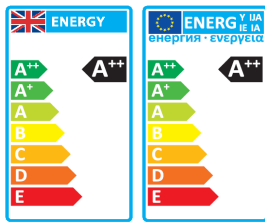
Measurement precision $\pm 5\%$ for the flux data and $\pm 6\%$ for the efficacy data. Measurement precision for color coordinates ± 0.005 . Measurement precision for CRI ± 1.5

Operation point	830	lm	lm/W
	80% I-nom 640mA	Tc 25 °C	2699
Tc-nom 45 °C		2614	118
Tc-max 75 °C		2489	114
I-nom 800mA	Tc 25 °C	3327	118
	Tc-nom 45 °C	3220	115
	Tc-max 75 °C	3062	110
I-max 1150mA	Tc 25 °C	4632	112
	Tc-nom 45 °C	4473	108
	Tc-max 75 °C	4240	104



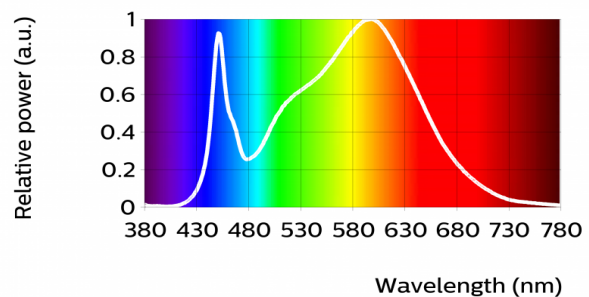
Fortimo LED Panel 6060 835 MD2

Parameter	Min	Typ	Max	Unit
Luminous flux	2898	3220	3542	lm
Flux within 120° cone		2841		lm
Flux within 90° cone		2338		lm
Module efficacy		115		lm/W
Correlated color temperature (CCT)		3500		K
Color coordinates (CIEx, CIEy)		(0.400, 0.389)		-
Color consistency			3	SDCM
CRI	80			
Photometric code		835/359		
Radiation angle		80		deg



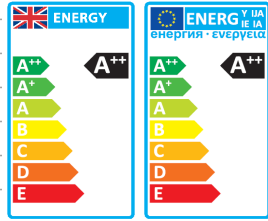
Measurement precision $\pm 5\%$ for the flux data and $\pm 6\%$ for the efficacy data. Measurement precision for color coordinates ± 0.005 . Measurement precision for CRI ± 1.5

Operation point	835	lm	lm/W
	80% I-nom 640mA	Tc 25 °C	2699
Tc-nom 45 °C		2614	118
Tc-max 75 °C		2489	114
I-nom 800mA	Tc 25 °C	3327	118
	Tc-nom 45 °C	3220	115
	Tc-max 75 °C	3062	110
I-max 1150mA	Tc 25 °C	4632	112
	Tc-nom 45 °C	4473	108
	Tc-max 75 °C	4240	104



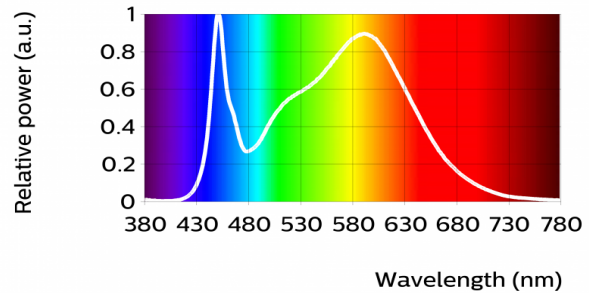
Fortimo LED Panel 6060 840 MD2

Parameter	Min	Typ	Max	Unit
Luminous flux	3060	3400	3740	lm
Flux within 120° cone		3122		lm
Flux within 90° cone		2569		lm
Module efficacy		121		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.381, 0.382)		-
Color consistency			3	SDCM
CRI	80			
Photometric code		840/359		
Radiation angle		80		deg



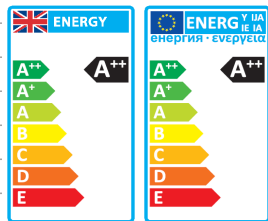
Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5

Operation point	840	lm	lm/W
	80% I-nom 640mA	Tc 25 °C	2849
Tc-nom 45 °C		2760	125
Tc-max 75 °C		2629	120
I-nom 800mA	Tc 25 °C	3513	125
	Tc-nom 45 °C	3400	121
	Tc-max 75 °C	3234	117
I-max 1150mA	Tc 25 °C	4892	118
	Tc-nom 45 °C	4725	115
	Tc-max 75 °C	4480	110



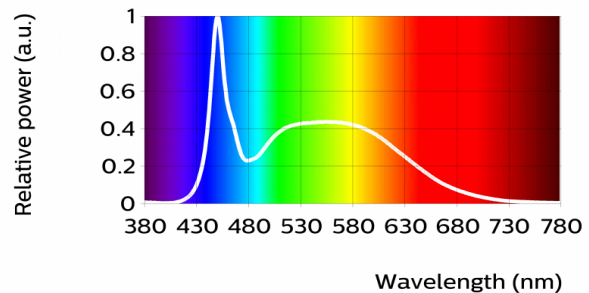
Fortimo LED Panel 6060 865 MD2

Parameter	Min	Typ	Max	Unit
Luminous flux	3060	3400	3740	lm
Flux within 120° cone		3122		lm
Flux within 90° cone		2569		lm
Module efficacy		121		lm/W
Correlated color temperature (CCT)		6500		K
Color coordinates (CIEx, CIEy)		(0.316, 0.343)		-
Color consistency			3	SDCM
CRI	80			
Photometric code		865/359		
Radiation angle		80		deg



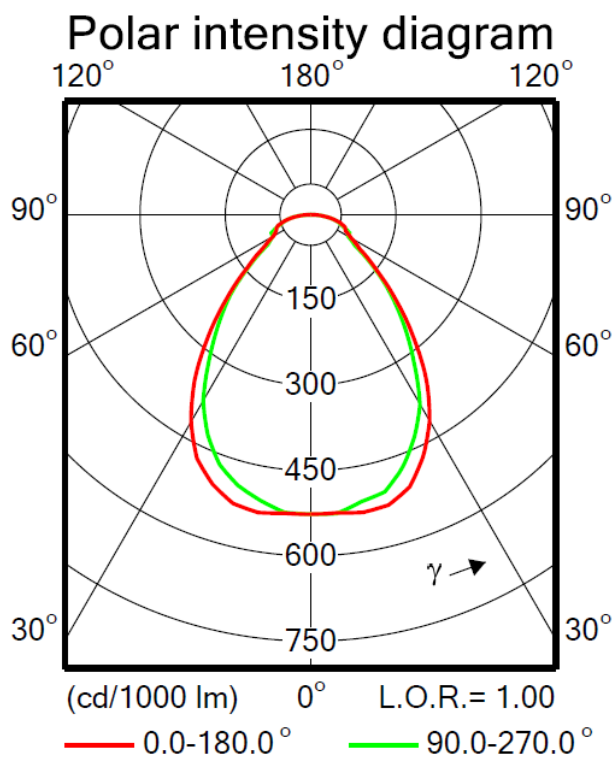
Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5

Operation point	865	lm	lm/W
	80% I-nom 640mA	Tc 25 °C	2849
Tc-nom 45 °C		2760	125
Tc-max 75 °C		2629	120
I-nom 800mA	Tc 25 °C	3513	125
	Tc-nom 45 °C	3400	121
	Tc-max 75 °C	3234	117
I-max 1150mA	Tc 25 °C	4892	118
	Tc-nom 45 °C	4725	115
	Tc-max 75 °C	4480	110



Beam shape

The Fortimo LED panel creates a 80° beam, enabling a Unified Glare Ratio of less than 19 which is a requirement for office applications.



Electrical characteristics

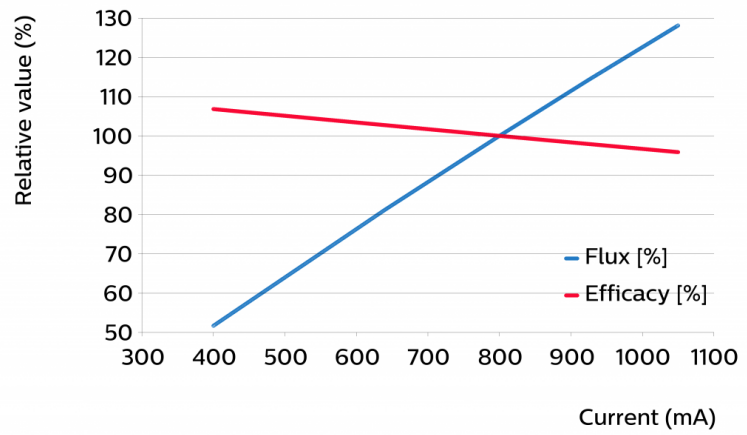
Parameter	Min	Typ	Max	Unit
Forward voltage	32.5	35.0	37.5	V
Power consumption	26.6	28.0	29.4	W = kWh/1000h
Number of modules in series per chain			1	
Number of modules in parallel			1	

Measurement precision for Vf +/- 3%. Measurement precision for power +/- 3.3%
 Specifications stated at Tc-nom and I-nom

Tuning information

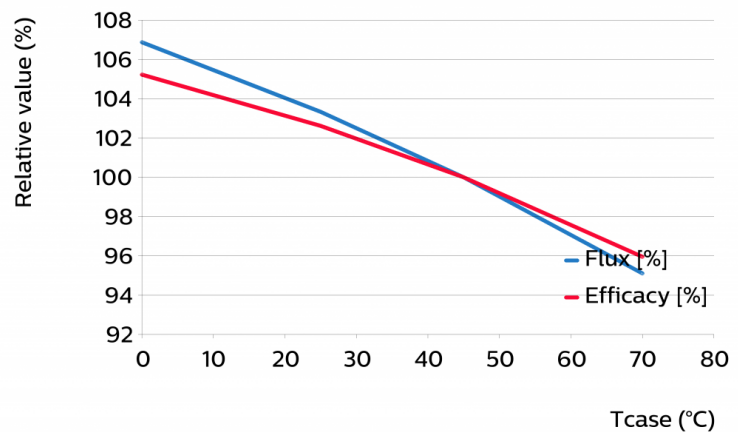
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
1050	128	96
925	114	98
800	100	100
640	81	103
400	52	107



Flux and efficacy versus temperature at Tc (at I nominal)

Tc [°C]	Flux [%]	Efficacy [%]
70	95	96
45	100	100
25	103	103
0	107	105



Lumen maintenance

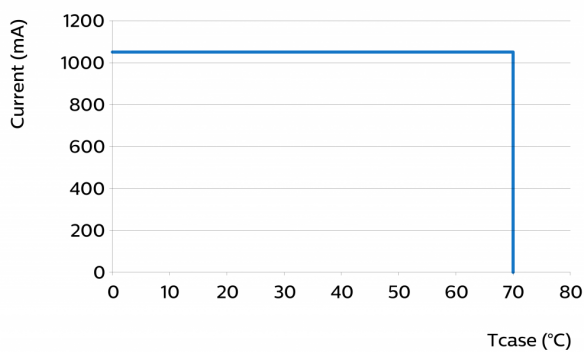
Operation point	Lumen maintenance x 1000 hours	L70		
		B50	B20	B10
I niom 800mA	Tc 45°C	>50	>50	>50
	Tc 70°C	>50	>50	>50
	Tc 75°C	>50	>50	>50
I life 1050mA	Tc 45°C	>50	>50	>50
	Tc 70°C	>50	>50	>50
	Tc 75°C	>50	45	41

Lifetime

Parameter	Value	Unit
C10 at Tc life	>50000	hours
M70F50 nominal	>50000	hours
M70F50 life	>50000	hours

Switching cycles in accordance to EU 1194/2012: >15000

Performance Window



Wiring

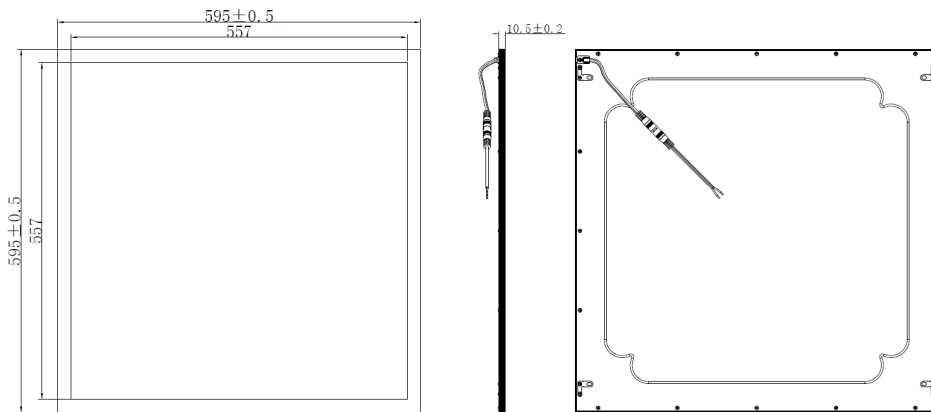
Specification item	Value	Unit	Condition
Input wire cross-section	0.5...0.5	mm ²	stranded
Input wire cross-section	20...20	AWG	stranded
Input wire strip length	7...9	mm	



The LED module is provided with a quick install connector pair. Color coding for lead wires: Brown = + and Blue = -

Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	594.5	595	595.5	mm
Width	594.5	595	595.5	mm
Height	10.3	10.5	10.7	mm
Product mass		2600		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		1150	mA
Case temperature (Tc-max)		75	°C
Power at rated Vf-max and I-max		38	W
ESD (direct contact)	8		kV
ESD (air)	15		kV
Working voltage		60	V _{dc}
Ambient temperature	-10	45	°C
Storage temperature	-20	60	°C

Application information

Certificates and Standards

CB
CE
ENEC
IEC 62031
IEC 60598-1
IEC 60598-2-1
IEC 60598-2-2

Environmental

RoHS/REACH

Application

IP rating	IP40
Overheating protection	No protection
Luminaire class	IEC Class I, II and III. SELV input only.
Dimming	Yes



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