

**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)
- Available in 60x60 and 30x120
- High flexibility of lumen output due to wide driver choice
- 5 year system warranty
- Module is provided with integrated quick install connector

October 2019



## 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 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 <sub>c</sub> (case temperature at T <sub>c</sub> 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)

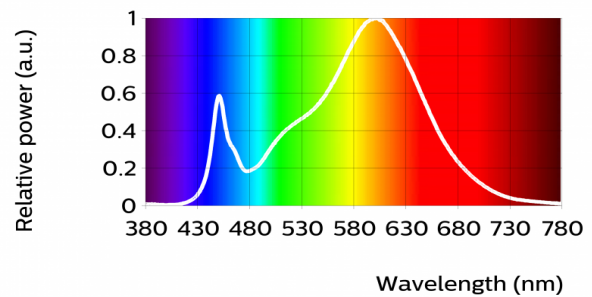
### Fortimo LED Panel 6060 830 MD2

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			4	SDCM
CRI	80			
Photometric code		830/469		
Radiation angle		80		deg
Photobiological safety			RG0	



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

Operation point	830	lm	lm/W
50% I-nom 400mA	Tc 25 °C	1715	126
	Tc-nom 45 °C	1663	123
	Tc-max 75 °C	1570	117
I-nom 800mA	Tc 25 °C	3327	118
	Tc-nom 45 °C	3220	115
I-max 1150mA	Tc 25 °C	4632	112
	Tc-nom 45 °C	4473	108
	Tc-max 75 °C	4189	103



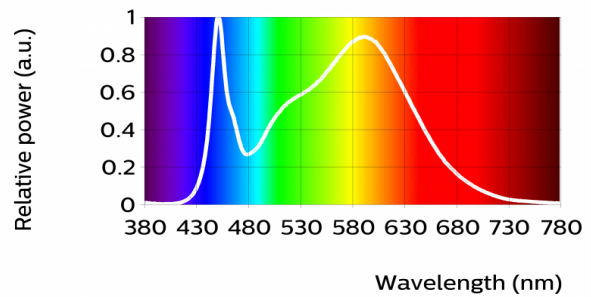
Fortimo LED Panel 6060 840 MD2

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			4	SDCM
CRI	80			
Photometric code		840/469		
Radiation angle		80		deg
Photobiological safety			RG0	



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
	50% I-nom 400mA	Tc 25 °C	1810
Tc-nom 45 °C		1756	130
Tc-max 75 °C		1657	124
I-nom 800mA	Tc 25 °C	3513	125
	Tc-nom 45 °C	3400	121
	Tc-max 75 °C	3197	115
I-max 1150mA	Tc 25 °C	4892	118
	Tc-nom 45 °C	4725	115
	Tc-max 75 °C	4425	108



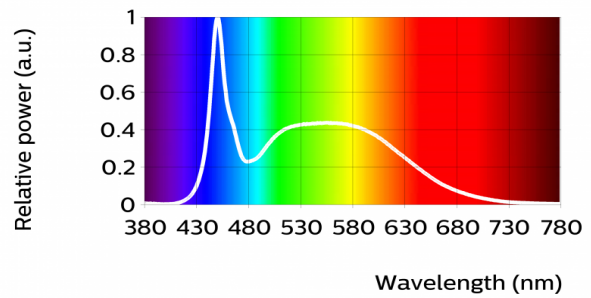
Fortimo LED Panel 6060 865 MD2

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			4	SDCM
CRI	80			
Photometric code		865/469		
Radiation angle		80		deg
Photobiological safety			RG0	



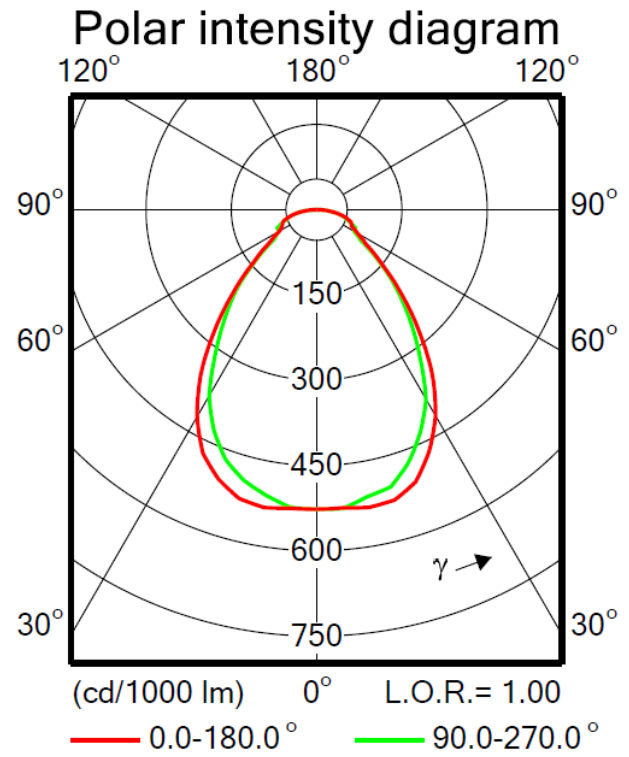
Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5

Operation point	865	lm	lm/W
	Tc 25 °C	1810	133
50% I-nom 400mA	Tc-nom 45 °C	1756	130
	Tc-max 75 °C	1657	124
	Tc 25 °C	3513	125
I-nom 800mA	Tc-nom 45 °C	3400	121
	Tc-max 75 °C	3197	115
	Tc 25 °C	4892	118
I-max 1150mA	Tc-nom 45 °C	4725	115
	Tc-max 75 °C	4425	108



## 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

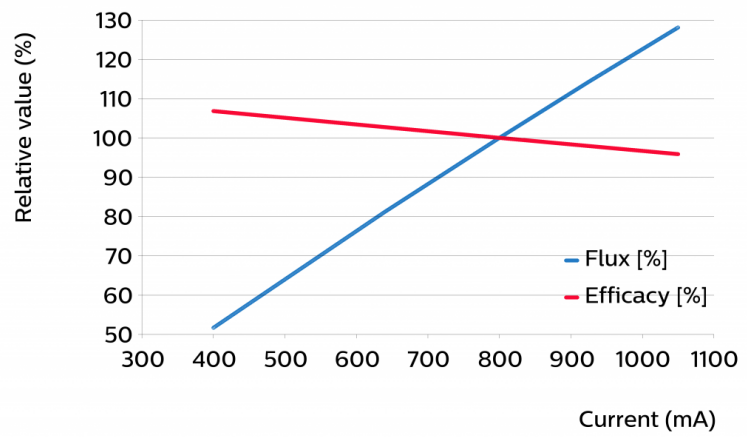
Parameter	Min	Typ	Max	Unit
Forward voltage	32.5	35.0	37.5	V
Power consumption	26.6	28.0	29.4	W = kWh/1000h
Number of modules in series per chain			1	
Number of modules in parallel			1	

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

## Tuning information

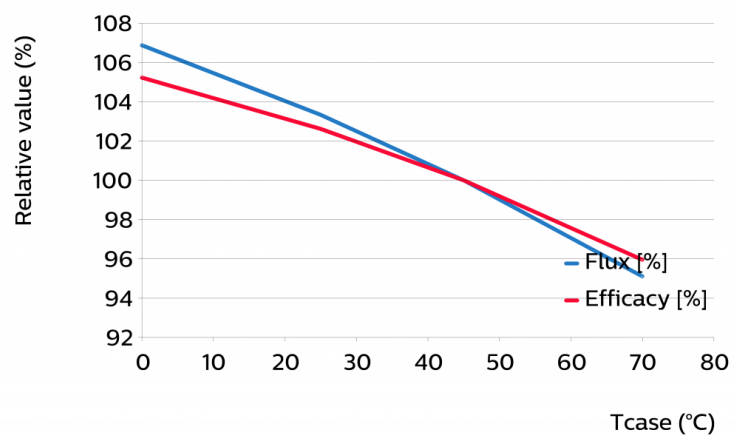
Flux and efficacy versus current (at Tc nominal)

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



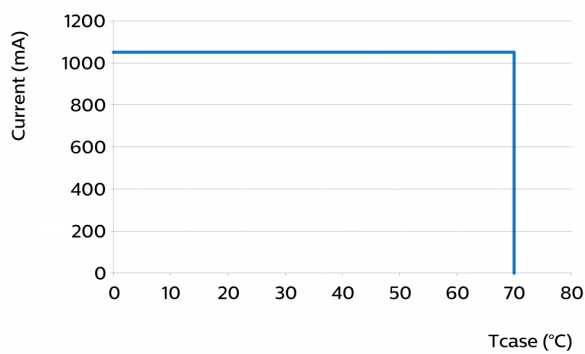
## Lumen maintenance

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

## Performance Window



## Wiring

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

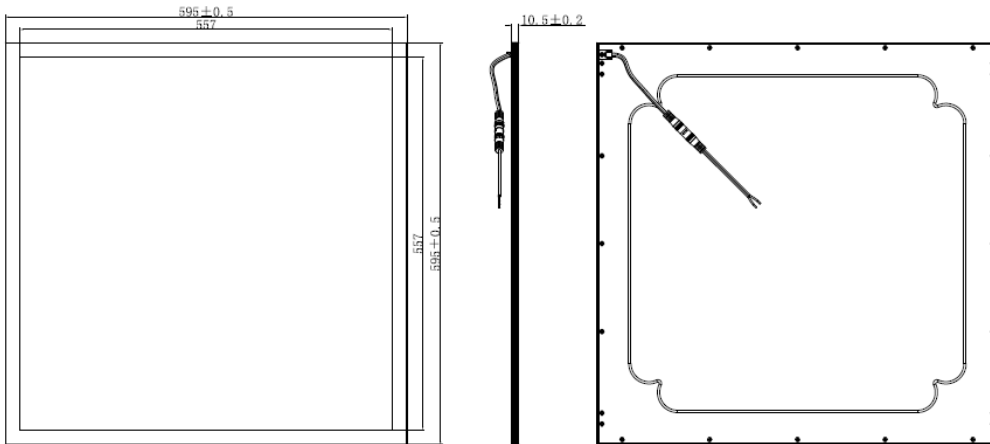




The LED module is provided with a quick install connector pair. Color coding for lead wires: Brown = + and Blue = -

### 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 <sub>dc</sub>
Ambient temperature	-10	45	°C
Storage temperature	-20	60	°C

## Application information

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### 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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