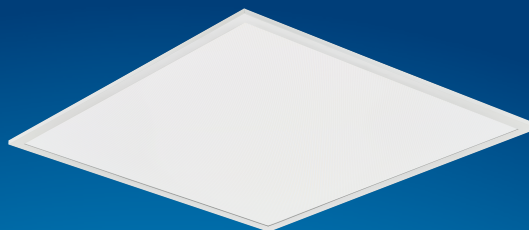




Fortimo



LED

Fortimo HE BL Panel 6060
MD3

Datasheet

The Fortimo HE BL LED Panels are designed to light up spaces in office and commercial buildings. They offer an excellent performance (151 lm/W at 4000K CRI80), reliability (50,000 hours) and quality of light. It's designed to meet the standards for office lighting (UGR possible). Different sizes and color temperatures available to meet the different office requirements. The Fortimo HE BL Panels can be combined with a wide choice of Xitanium drivers to perfectly match your application.

Key features and benefits

- Efficacy up to 151 lm/W on module level
- Different color temperatures selectable via dipswitch for all standard versions
- Excellent light uniformity
- Meeting office standards for low UGR
- Good quality of light (CRI >80 and CRI > 90 versions available)
- High flexibility of lumen output due to wide driver choice
- 5-year system warranty
- MasterConnect version with integrated sensor available
- MasterConnect version with wireless driver available
- Module is provided with integrated quick install connector
- Excellent color consistency of 3 SDCM
- Single packaging for each panel

December 2023



Ordering data

Commercial product name	EOC	12NC	EPREL registration #	Box quantity
Fortimo HE BL Panel 6060 830/840 MD3	8710163 617213 00	9290 034 32806	1877558	5
Fortimo HE BL Panel 6060 835/865 MD3	8710163 617244 00	9290 034 32906	1877566	5
Fortimo HE BL Panel 6060 930/940 MD3	8710163 617909 00	9290 034 57806	1877561	5

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo HE BL Panel 6060 MD3	700	1200	1300	mA

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T _c (case temperature at T _c point)	45	65	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

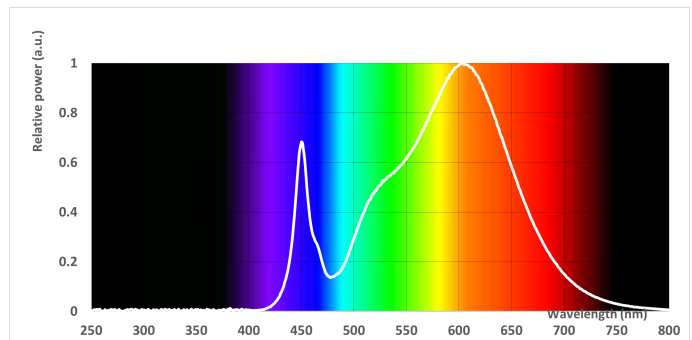
Optical characteristics - table per color (CCT)

Fortimo HE BL Panel 6060 830/840 MD3_3000K

Parameter	Min	Typ	Max	Unit
Luminous flux	2979	3310	3972	lm
Efficacy		143		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.436, 0.402)		-
CRI	80			
R9	0			
Photometric code		830/359		
Radiation angle		90		deg
Photobiological safety			RG0	

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

Operation point	830	lm	lm/W
80% I-nom 560mA	Tc 25 °C	2748	149
	Tc-nom 45 °C	2676	146
	Tc-max 75 °C	2559	141
I-nom 700mA	Tc 25 °C	3400	146
	Tc-nom 45 °C	3310	143
	Tc-max 75 °C	3164	139
I-max 1300mA	Tc 25 °C	6046	136
	Tc-nom 45 °C	5881	133
	Tc-max 75 °C	5612	128



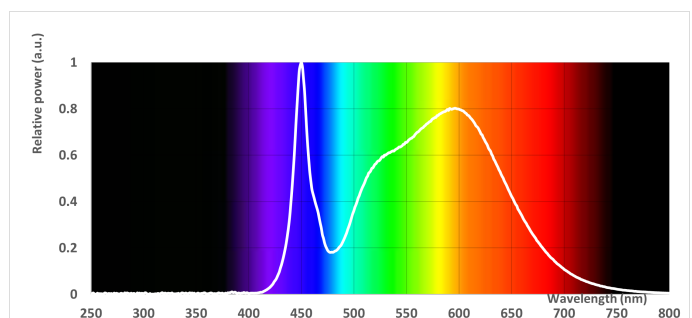
This product contains a light source of energy efficiency class C. EPREL model identifier: 929003432806LS. Registration number: 1877558

Fortimo HE BL Panel 6060 830/840 MD3_4000K

Parameter	Min	Typ	Max	Unit
Luminous flux	3150	3500	4200	lm
Efficacy		152		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.385, 0.382)		-
CRI	80			
R9	0			
Photometric code		840/359		
Radiation angle		90		deg
Photobiological safety			RG0	

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	840	lm	lm/W
80% I-nom 560mA	Tc 25 °C	2905	157
	Tc-nom 45 °C	2829	154
	Tc-max 75 °C	2706	149
I-nom 700mA	Tc 25 °C	3595	154
	Tc-nom 45 °C	3500	152
	Tc-max 75 °C	3346	147
I-max 1300mA	Tc 25 °C	6395	143
	Tc-nom 45 °C	6220	141
	Tc-max 75 °C	5937	136



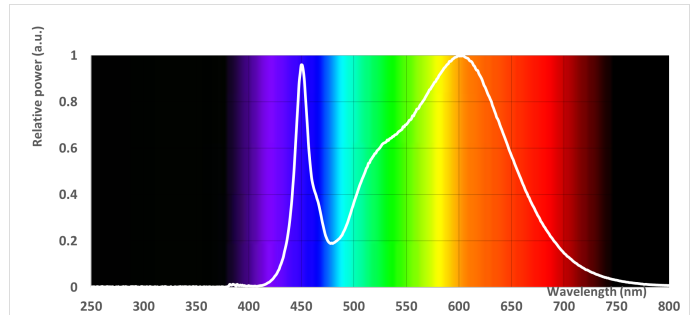
This product contains a light source of energy efficiency class C. EPREL model identifier: 929003432806LS. Registration number: 1877558

Fortimo HE BL Panel 6060 835/865 MD3_35000K

Parameter	Min	Typ	Max	Unit
Luminous flux	3051	3390	4068	lm
Efficacy		147		lm/W
Correlated color temperature (CCT)		3500		K
Color coordinates (CIEx, CIEy)		(0.409, 0.390)		-
CRI	80			
R9	0			
Photometric code		835/359		
Radiation angle		90		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	835	lm	lm/W
80% I-nom 560mA	Tc 25 °C	2814	152
	Tc-nom 45 °C	2741	150
	Tc-max 75 °C	2621	145
I-nom 700mA	Tc 25 °C	3482	150
	Tc-nom 45 °C	3390	147
	Tc-max 75 °C	3241	142
I-max 1300mA	Tc 25 °C	6193	139
	Tc-nom 45 °C	6024	136
	Tc-max 75 °C	5749	131



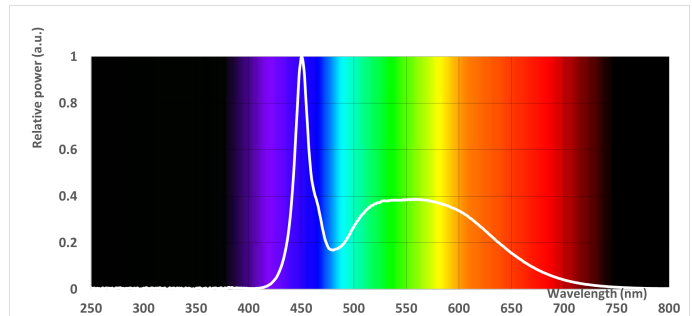
This product contains a light source of energy efficiency class C. EPREL model identifier: 929003432906LS. Registration number: 1877566

Fortimo HE BL Panel 6060 835/865 MD_6500K

Parameter	Min	Typ	Max	Unit
Luminous flux	3150	3500	4200	lm
Efficacy		152		lm/W
Correlated color temperature (CCT)		6500		K
Color coordinates (CIEx, CIEy)		(0.314, 0.331)		-
CRI	80			
R9	0			
Photometric code		865/359		
Radiation angle		90		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
80% I-nom 560mA	Tc 25 °C	2905	157
	Tc-nom 45 °C	2829	154
	Tc-max 75 °C	2706	149
I-nom 700mA	Tc 25 °C	3595	154
	Tc-nom 45 °C	3500	152
	Tc-max 75 °C	3346	147
I-max 1300mA	Tc 25 °C	6395	143
	Tc-nom 45 °C	6220	141
	Tc-max 75 °C	5937	136



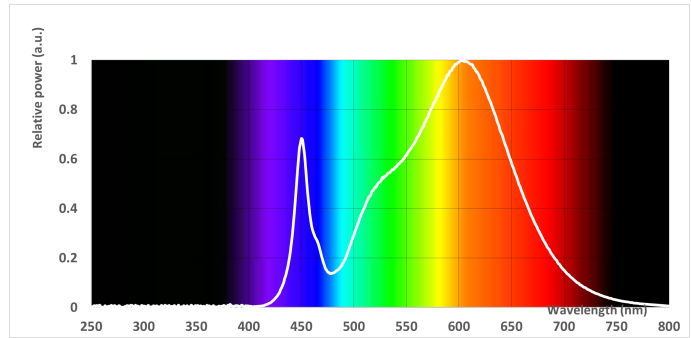
This product contains a light source of energy efficiency class C. EPREL model identifier: 929003432906LS. Registration number: 1877566

Fortimo HE BL Panel 6060 930/940 MD3_3000K

Parameter	Min	Typ	Max	Unit
Luminous flux	2502	2780	3336	lm
Efficacy		120		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.432, 0.402)		-
CRI	90			
R9	50			
Photometric code		930/359		
Radiation angle		90		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	930	lm	lm/W
80% I-nom 560mA	Tc 25 °C	2309	125
	Tc-nom 45 °C	2248	123
	Tc-max 75 °C	2150	119
I-nom 700mA	Tc 25 °C	2856	123
	Tc-nom 45 °C	2780	120
	Tc-max 75 °C	2657	116
I-max 1300mA	Tc 25 °C	5073	114
	Tc-nom 45 °C	4934	111
	Tc-max 75 °C	4708	108



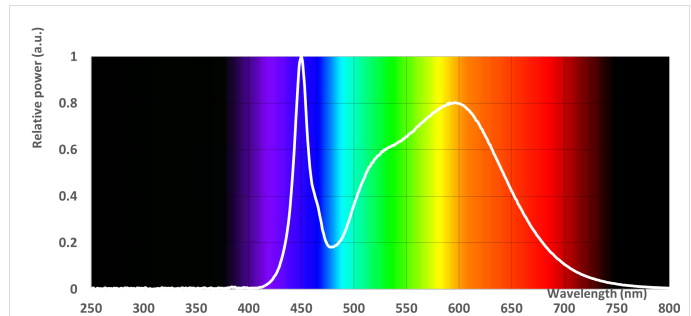
This product contains a light source of energy efficiency class D. EPREL model identifier: 929003457806LS. Registration number: 1877561

Fortimo HE BL Panel 6060 930/940 MD3_4000K

Parameter	Min	Typ	Max	Unit
Luminous flux	2655	2950	3540	lm
Efficacy		128		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.380, 0.378)		-
CRI	90			
R9	50			
Photometric code		940/359		
Radiation angle		90		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.

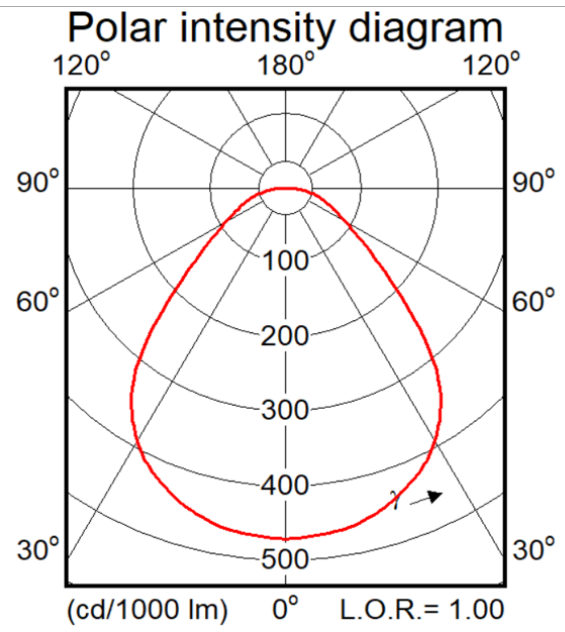
Operation point	940	lm	lm/W
80% I-nom 560mA	Tc 25 °C	2450	133
	Tc-nom 45 °C	2385	130
	Tc-max 75 °C	2281	126
I-nom 700mA	Tc 25 °C	3030	130
	Tc-nom 45 °C	2950	128
	Tc-max 75 °C	2820	123
I-max 1300mA	Tc 25 °C	5385	121
	Tc-nom 45 °C	5237	118
	Tc-max 75 °C	4998	114



This product contains a light source of energy efficiency class D. EPREL model identifier: 929003457806LS. Registration number: 1877561

Beam shape

The Fortimo LED panel creates a 90° beam, enabling a Unified Glare Ratio of less than 19 which is a requirement for office applications.



Electrical characteristics

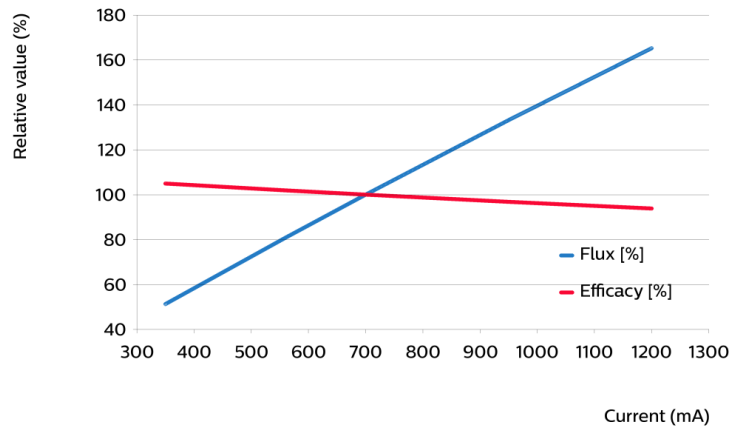
Parameter	Min	Typ	Max	Unit
Forward voltage	31.4	33.0	34.7	V
Power consumption	21.9	23.1	24.3	W = kWh/1000h
Number of modules in series per chain			1	
Number of modules per chain			1	
Number of modules in parallel			1	

Measurement precision for Vf +/- 3%. Measurement precision for power +/- 3.3%

Tuning information

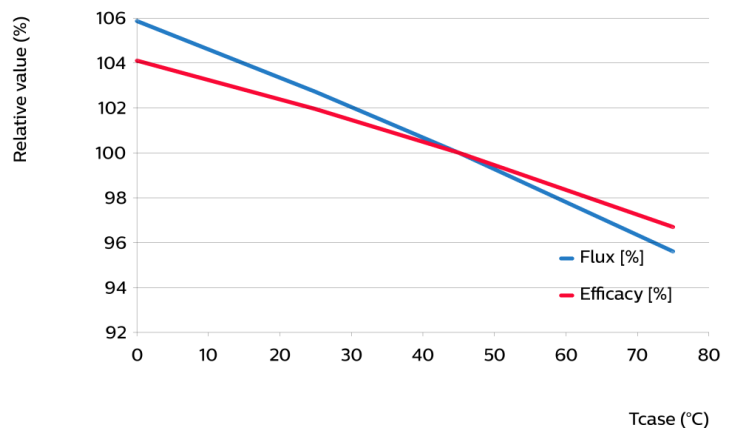
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
1200	165	94
950	133	97
700	100	100
560	81	102
350	51	105



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

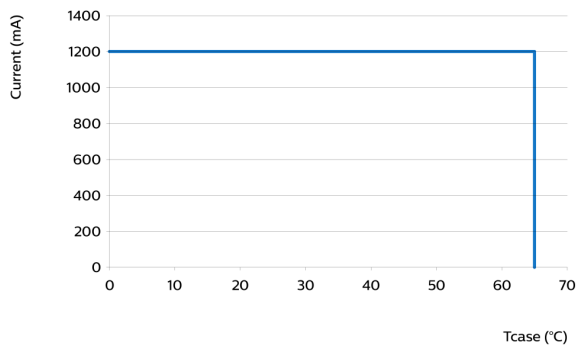
Tc [°C]	Flux [%]	Efficacy [%]
75	96	97
45	100	100
25	103	102
0	106	104



Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
I 700mA	Tc 45°C	>50	>50	>50	>50	>50	>50	>50	>50	>50
	Tc 65°C	>50	>50	>50	>50	>50	>50	>50	>50	>50
	Tc 75°C	>50	>50	>50	>50	>50	>50	>50	48	44
I 1200mA	Tc 45°C	>50	>50	>50	>50	>50	>50	>50	>50	>50
	Tc 65°C	>50	>50	>50	>50	>50	>50	>50	49	45
	Tc 75°C	>50	>50	>50	>50	>50	>50	>50	43	40
I 1300mA	Tc 45°C	>50	>50	>50	>50	>50	>50	>50	>50	>50
	Tc 65°C	>50	>50	>50	>50	>50	>50	>50	48	44
	Tc 75°C	>50	>50	>50	>50	>50	>50	>50	43	39

Performance Window



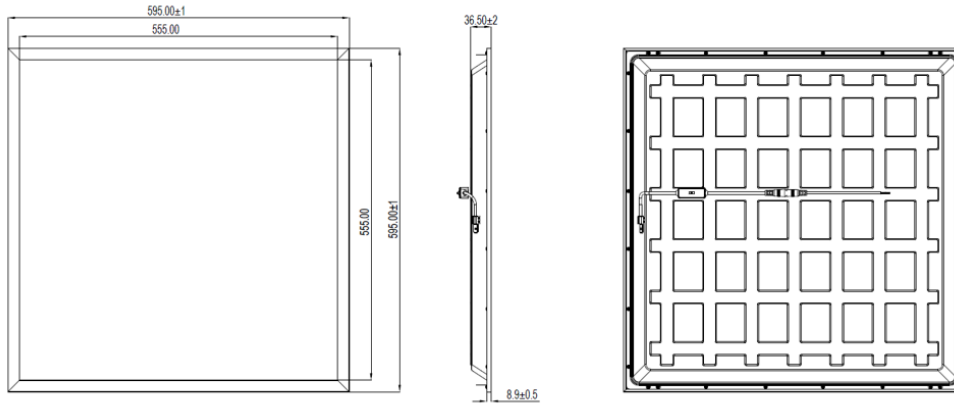
Wiring

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

Input wire color : Red: + / Black: -

Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	594.5	595	595.5	mm
Width	594.5	595	595.5	mm
Height	34.5	36.5	38.5	mm
Product mass		1760		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		1300	mA
Case temperature (Tc-max)		75	°C
Power at rated Vf-max and I-max		47.3	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/EN 60598-1
IEC/EN 60598-2-1
UKCA

Environmental

RoHS/REACH

Application

IP rating	IP40
Luminaire class	Class III Luminaire
Dimming	Yes

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27/12/2023