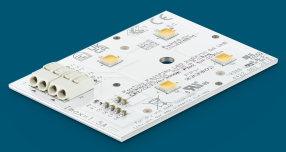
xitanium



Datasheet

Fortimo FastFlex LED 2x2 DA CR

Light up your city with ColorRevive

Fortimo FastFlex 2x2 DA CR

Experience exceptional Quality of Light with ColorRevive
Application:
•Urban and residential street lighting
•Parks and recreation area lighting
•Road lighting
•Flood and area lighting
•Tunnel lighting
•High bay lighting

Key features and benefits

•Enhanced color contrast at low light levels
•Increased feeling of safety and comfort
•Zhaga Book 15 compliancy for easy design-in and maintenance
•Embedded module surge protection
•Philips system warranty



Ordering data

Commercial product name	EOC	12NC	EPREL No.	EPREL model ID	Box quantity
Fortimo FastFlex LED 2x2/827 DA CR	8721103 060006 00	9290 040 01406	2883578	929004001406X	25
Fortimo FastFlex LED 2x2/830 DA CR	8721103 060020 00	9290 040 01506	2883647	929004001506X	25

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo FastFlex LED 2x2 DA CR	450	900	1500	mA

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T_c (case temperature at T_c point)	65	85	95	°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

Fortimo FastFlex LED 2x2/827 DA CR
Fortimo FastFlex LED 2x2/830 DA CR

	2700K	3000K	Unit
Luminous flux (Φuse)*	788	825	lm
Efficacy*	158	166	lm/W
Max. Efficacy	174	182	lm/W
Max. Color consistency	5	5	SDCM
Color coordinates (CIEx, CIEy)	0.440, 0.375	0.421, 0.378	
Min. CRI	80	80	
Min. R9	0	0	
Photobiological safety	RG1 unlimited	RG1 unlimited	
Energy label EPREL	D 	D 	

Measurement precision for flux +/- 5%. Measurement precision for efficacy +/- 6%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5.

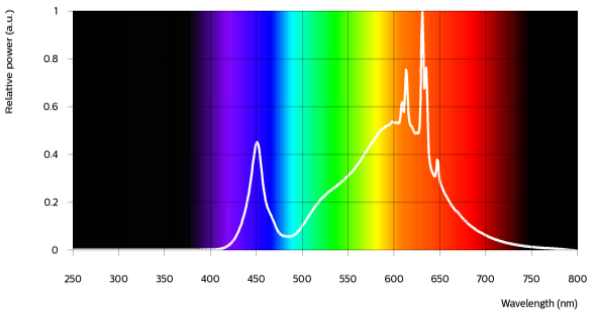
* Luminous flux(Φuse) and Efficacy refer to Single Lighting Regulation (SLR). Luminous flux(Φuse) means the part of the luminous flux of a light source that is considered when determining its energy efficiency: – for non-directional light sources it is the total flux emitted in a solid angle of 4π sr (corresponding to a 360° sphere)

Tuning table

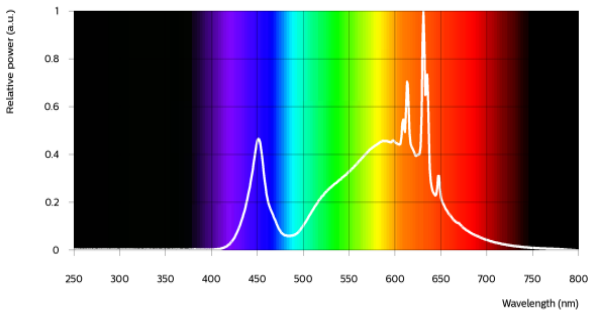
Operation Point		Current	2700K	3000K	Unit
Tc = 25°C	Luminous flux	80% I-nom 360mA	664	703	lm
		I-nom 450mA	824	871	lm
		I-max 1500mA	2542	2665	lm
	Efficacy	80% I-nom 360mA	166	176	lm/W
		I-nom 450mA	165	174	lm/W
		I-max 1500mA	132	140	lm/W
Tc = 65°C	Luminous flux	80% I-nom 360mA	636	666	lm
		I-nom 450mA	788	825	lm
		I-max 1500mA	2416	2515	lm
	Efficacy	80% I-nom 360mA	163	171	lm/W
		I-nom 450mA	158	166	lm/W
		I-max 1500mA	128	133	lm/W
Tc = 95°C	Luminous flux	80% I-nom 360mA	609	636	lm
		I-nom 450mA	755	788	lm
		I-max 1500mA	2299	2394	lm
	Efficacy	80% I-nom 360mA	156	163	lm/W
		I-nom 450mA	154	161	lm/W
		I-max 1500mA	122	128	lm/W

Spectral characteristics

CRI80 2700K



CRI80 3000K



Electrical characteristics

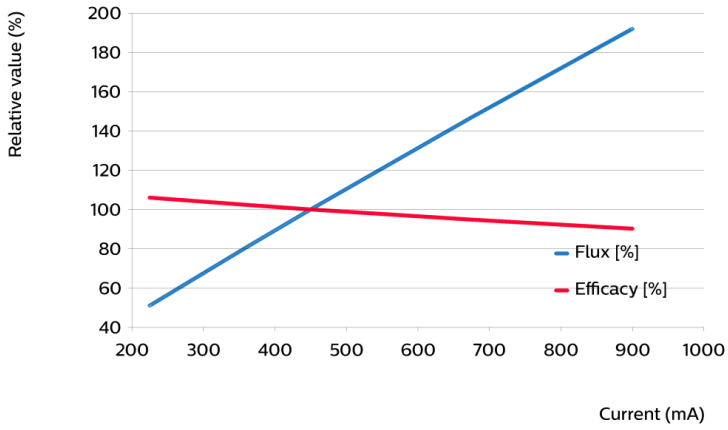
Parameter	Min	Typ	Max	Unit
Forward voltage	10.5	11.1	11.3	V
Power consumption	4.7	5.0	5.1	W = kWh/1000h
Number of modules in series per chain			10	
Number of modules in parallel			1	

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

Tuning information

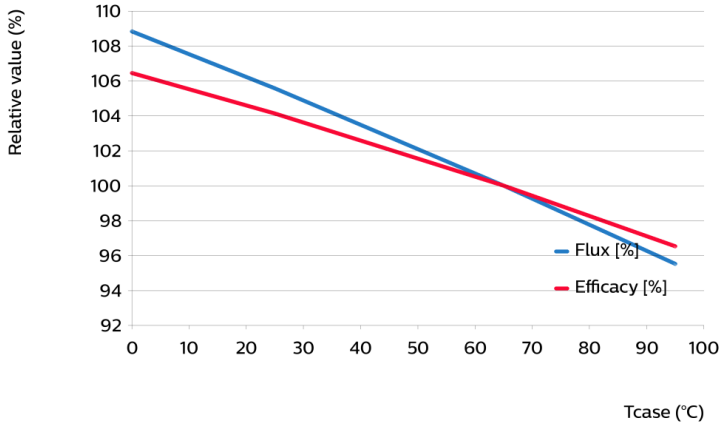
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
900	192	90
675	147	95
450	100	100
360	81	102
225	51	106



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

Tc [°C]	Flux [%]	Efficacy [%]
95	96	97
65	100	100
25	106	104
0	109	106



Lumen maintenance

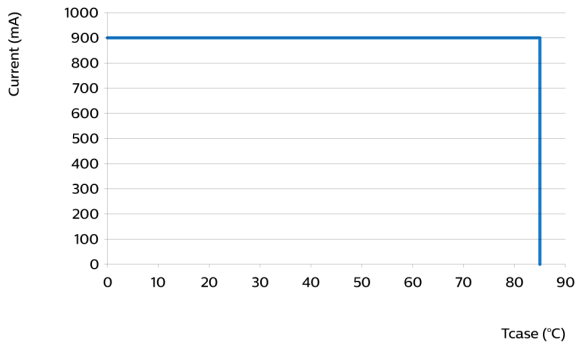
Operation point	Lumen maintenance x 1000 hours	L70 B50	L70 B20	L70 B10	L80 B50	L80 B20	L80 B10	L90 B50	L90 B20	L90 B10
80% Inom=360mA	Tc= 25C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc= 45C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc= 65C	>100	>100	>100	>100	>100	>100	>100	>100	>100
Inom=450mA	Tc= 25C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc= 45C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc= 65C	>100	>100	>100	>100	>100	>100	>100	>100	>100
I=600mA	Tc= 25C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc= 45C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc= 65C	>100	>100	>100	>100	>100	>100	>100	>100	>100

We use a Philips designed lifetime model, which uses LM80 data as only one of its inputs and assumes a continues operation of the module.
*B20 and B10 values are calculated by means of statistical techniques.

Lifetime

Parameter	Value	Unit
M70F50 nominal	>100000	hours
M70F50 life	>100000	hours

Performance Window

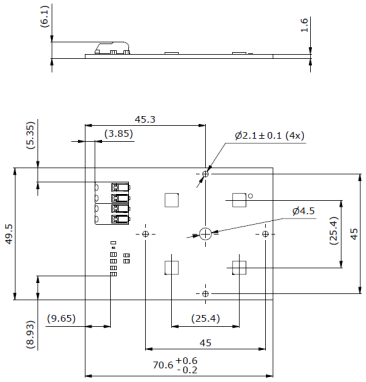


Wiring

Specification item	Value	Unit	Condition
Input wire cross-section	0.33...0.5	mm²	stranded wire
	20...22	AWG	stranded wire
Input wire strip length	7.5...8.5	mm	
Input wire cross-section	0.25...0.75	mm²	solid wire
	18...24	AWG	solid wire
Input wire strip length	7.5...8.5	mm	

Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	70.4	70.6	71.2	mm
Width	49.2	49.5	49.8	mm
Height PCB	1.44	1.6	1.76	mm
Height total	5.5	6.1	6.7	mm
Product mass		16		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		1500	mA
Case temperature (Tc-max)		95	°C
Power at rated Vf-max and I-max		18.05	W
ESD (direct contact)	8		kV
ESD (air)	15		kV
Working voltage		575	V_{dc}
Ambient temperature	-30	50	°C
Storage temperature	-20	80	°C

Application information

Certificates and Standards
CE
cULus
ENEC
ENEC+

Environmental
RoHS/REACH

Application	
Overheating protection	NTC 15L Ohm B=3987K + 390 Ohm in series
Dimming	Yes

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