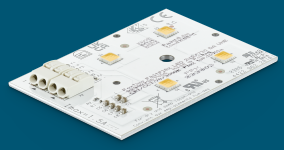
xitanium



Datasheet

Fortimo FastFlex LED 2x2 DA UHE

Ultra-High Efficiency with Zhaga standards

Fortimo FastFlex 2x2 DA UHE

Experience increased efficiency levels of ≥200lm/W – all within Zhaga standards
Application:
•Road lighting
•Urban and residential street lighting
•Parks and recreation area lighting
•Flood and area lighting
•Tunnel lighting
•High bay lighting

Key features and benefits

•Ultra-High Efficiency on LED module level in Zhaga standards
•Extensive reliability testing for OEM peace of mind
•Mechanically backwards compatible with DA Gen 4+/Gen 5 and DA HE
•Embedded module surge protection
•Philips system warranty



Ordering data

Commercial product name	EOC	12NC	EPREL No.	EPREL model ID	Box quantity
Fortimo FastFlex LED 2x2/730 DA UHE	8720169 284586 00	9290 039 67406	2883639	929003967406X	25
Fortimo FastFlex LED 2x2/740 DA UHE	8720169 284609 00	9290 039 67506	2883612	929003967506X	25

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo FastFlex LED 2x2 DA UHE	450	1050	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 2x2/730 DA UHE
Fortimo FastFlex LED 2x2/740 DA UHE

	3000K	4000K	Unit
Luminous flux (Φuse)*	1000	1015	lm
Efficacy*	200	203	lm/W
Max. Efficacy	220	223	lm/W
Max. Color consistency	5	5	SDCM
Color coordinates (CIEx, CIEy)	0.435, 0.419	0.379, 0.391	
Min. CRI	70	70	
Min. R9	-50	-50	
Max. Photobiological safety	RG1 unlimited	RG1 unlimited	
Energy label EPREL	B 	B 	

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

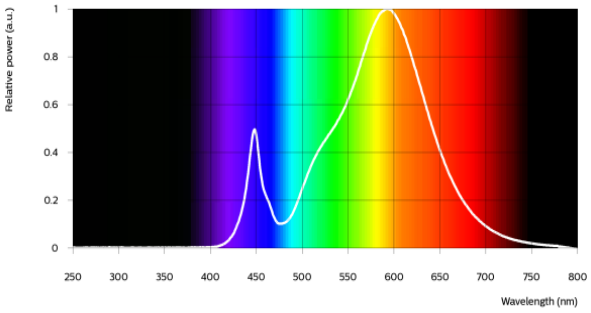
* Luminous flux(Φuse) and Efficacy refer to Single Lighting Regulation (SLR). Luminous flux(Φuse) means the part of the luminous flux of a light source that is considered when determining its energy efficiency: – for non-directional light sources it is the total flux emitted in a solid angle of 4π sr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

Tuning table

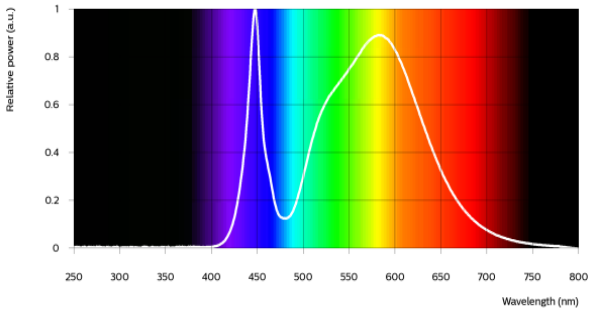
Operation Point		Current	3000K	4000K	Unit
Tc = 25°C	Luminous flux	80% I-nom 360mA	843	856	lm
		I-nom 450mA	1045	1060	lm
		I-max 1500mA	3218	3267	lm
	Efficacy	80% I-nom 360mA	210	213	lm/W
		I-nom 450mA	206	209	lm/W
		I-max 1500mA	168	171	lm/W
Tc = 65°C	Luminous flux	80% I-nom 360mA	807	819	lm
		I-nom 450mA	1000	1015	lm
		I-max 1500mA	3060	3107	lm
	Efficacy	80% I-nom 360mA	204	207	lm/W
		I-nom 450mA	200	203	lm/W
		I-max 1500mA	162	165	lm/W
Tc = 85°C	Luminous flux	80% I-nom 360mA	785	797	lm
		I-nom 450mA	972	987	lm
		I-max 1500mA	2961	3007	lm
	Efficacy	80% I-nom 360mA	200	203	lm/W
		I-nom 450mA	196	199	lm/W
		I-max 1500mA	158	161	lm/W

Spectral characteristics

CRI70 3000K



CRI70 4000K



Electrical characteristics

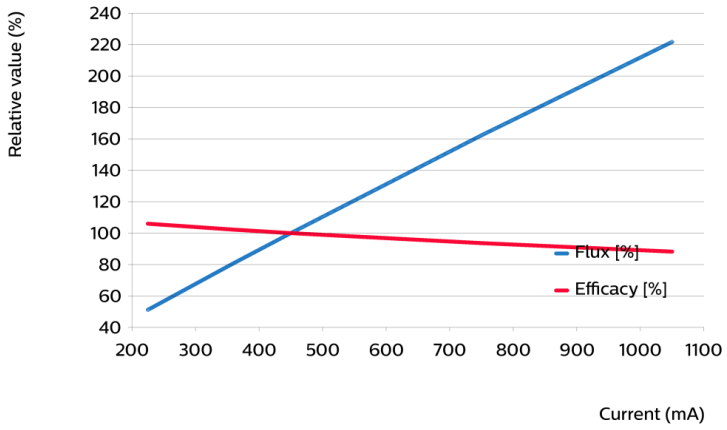
Parameter	Min	Typ	Max	Unit
Forward voltage	10.6	11.1	11.4	V
Power consumption	4.8	5.0	5.1	W = kWh/1000h
Number of modules in series per chain			10	
Number of modules in parallel			1	

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

Tuning information

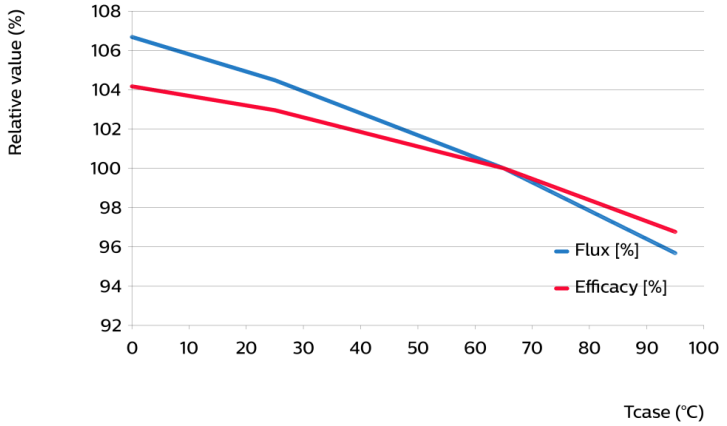
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
1050	222	88
750	162	94
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	104	103
0	107	104



Lumen maintenance

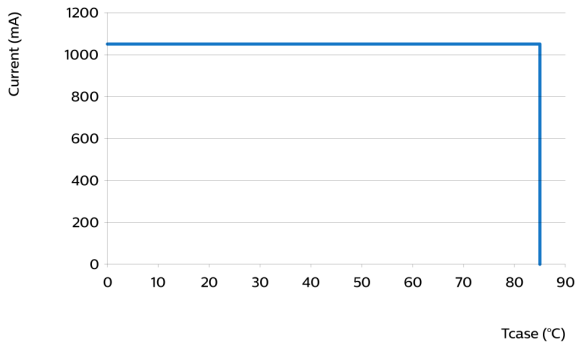
Operation point	Lumen maintenance x 1000 hours	L70 B50	L70 B20	L70 B10	L80 B50	L80 B20	L80 B10	L90 B50	L90 B20	L90 B10
I 450mA	Tc 25°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc 65°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc 85°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
I 700mA	Tc 25°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc 65°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc 85°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
I 1050mA	Tc 25°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc 65°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc 85°C	>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

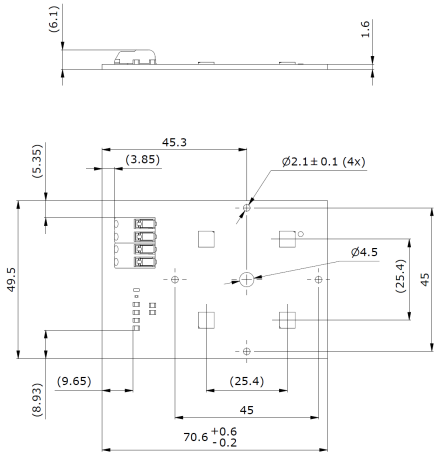


Wiring

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	49.3	49.5	49.7	mm
Height PCB		1.6		mm
Height total		6.1		mm
Product mass		16.6		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		18.8	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
ENEC
cULus
ENEC+

Environmental
RoHS/REACH

Zhaga	Compliant*
*Book 15, 2x2-DA	

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

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