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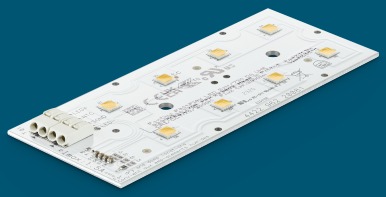


Datasheet

Fortimo FastFlex LED 2x4 DA UHE

Ultra-High Efficiency with Zhaga standards

Fortimo FastFlex 2x4 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

indirect

100%
instant

Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo FastFlex LED 2x4/730 DA UHE	8720169 284647 00	9290 039 67706	25
Fortimo FastFlex LED 2x4/740 DA UHE	8720169 284661 00	9290 039 67806	25

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo FastFlex LED 2x4 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 2x4/730 DA UHE
Fortimo FastFlex LED 2x4/740 DA UHE

	3000K	4000K	Unit
Luminous flux (Φuse)*	2000	2030	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.

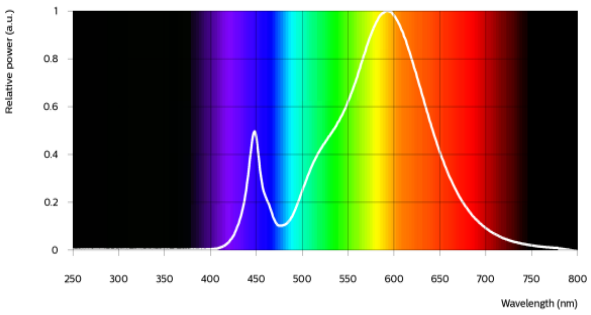
* Luminous flux(Φuse) and Efficacy refer to Single Lighting Regulation (SLR). Luminous flux(Φuse) means the part of the luminous flux of a light source that is considered when determining its energy efficiency: – for non-directional light sources it is the total flux emitted in a solid angle of 4π sr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

Tuning table

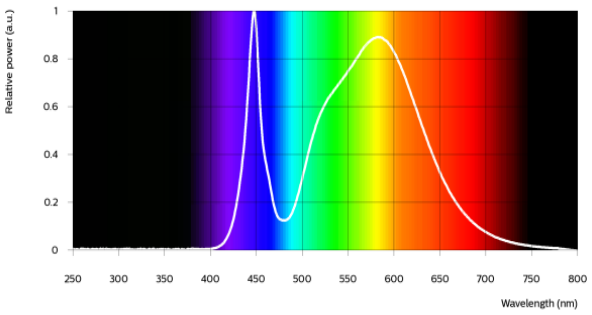
Operation Point		Current	3000K	4000K	Unit
Tc = 25°C	Luminous flux	80% I-nom 360mA	1727	1753	lm
		I-nom 450mA	2139	2171	lm
		I-max 1500mA	6538	6638	lm
	Efficacy	80% I-nom 360mA	216	219	lm/W
		I-nom 450mA	210	213	lm/W
		I-max 1500mA	171	174	lm/W
Tc = 65°C	Luminous flux	80% I-nom 360mA	1616	1640	lm
		I-nom 450mA	2000	2030	lm
		I-max 1500mA	6041	6134	lm
	Efficacy	80% I-nom 360mA	205	208	lm/W
		I-nom 450mA	200	203	lm/W
		I-max 1500mA	160	163	lm/W
Tc = 95°C	Luminous flux	80% I-nom 360mA	1508	1531	lm
		I-nom 450mA	1865	1893	lm
		I-max 1500mA	5552	5639	lm
	Efficacy	80% I-nom 360mA	193	196	lm/W
		I-nom 450mA	188	191	lm/W
		I-max 1500mA	149	151	lm/W

Spectral characteristics

CRI70 3000K



CRI70 4000K



Electrical characteristics

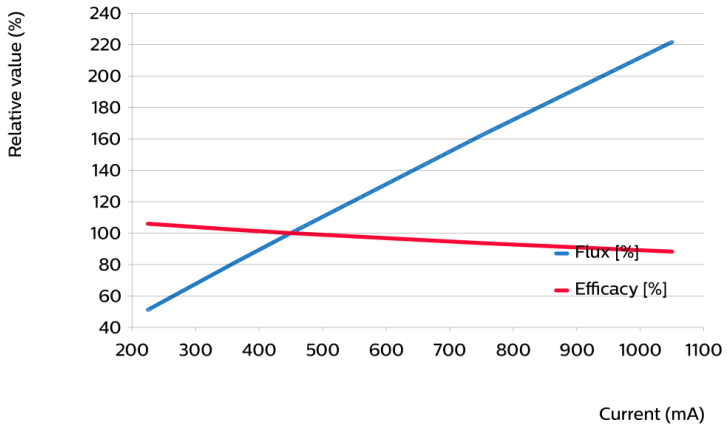
Parameter	Min	Typ	Max	Unit
Forward voltage	21.1	22.2	22.8	V
Power consumption	9.5	10.0	10.3	W = kWh/1000h
Number of modules in series per chain			10	
Number of modules in parallel			1	

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

Tuning information

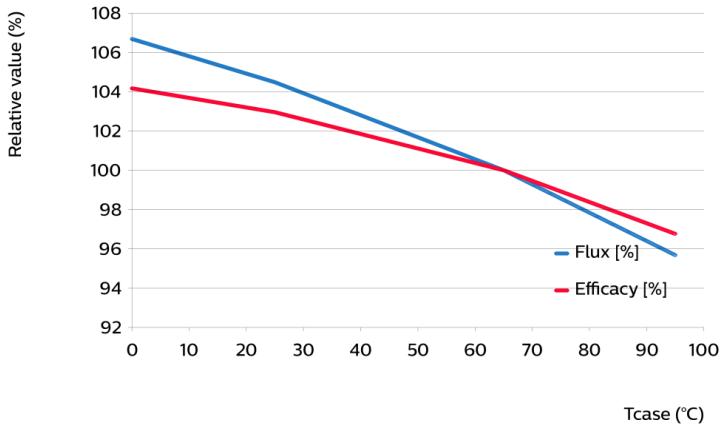
Flux and efficacy versus current (at Tc nominal)

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

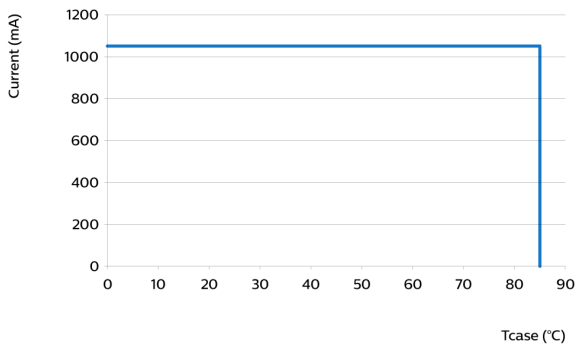
Operation point	Lumen maintenance x 1000 hours	L70 B50	L70 B20	L70 B10	L80 B50	L80 B20	L80 B10	L90 B50	L90 B20	L90 B10
I 450mA	Tc 25°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc 65°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc 85°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
I 700mA	Tc 25°C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

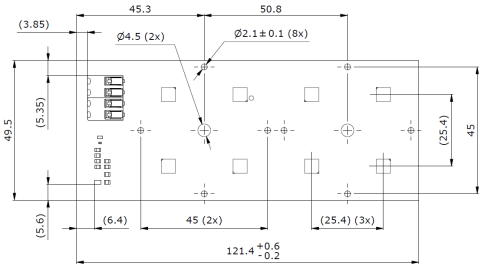


Wiring

Specification item	Value	Unit	Condition
Input wire cross-section	0.33...0.5	mm^2	stranded wire
	20...22	AWG	stranded wire
Input wire strip length	7.5...8.5	mm	
Input wire cross-section	0.25...0.75	mm^2	solid wire
	18...24	AWG	solid wire
Input wire strip length	7.5...8.5	mm	

Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	121.2	121.4	122	mm
Width	49.3	49.5	49.7	mm
Height PCB		1.6		mm
Height total		6.1		mm
Product mass		27.7		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		37.6	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, 2x4-DA	

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

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