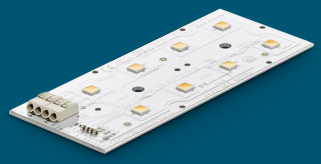
Xitanium

Datasheet

Fortimo FastFlex LED 2x4 DA HE



High efficiency in familiar form factor

Fortimo FastFlex 2x4 DA HE

Choose Fortimo FastFlex DA HE for high efficiencies in industry familiar form factors
Application:

- Road lighting
- Urban street lighting
- Flood and area lighting
- Tunnel lighting
- High bay lighting

Key features and benefits

- High efficiencies on LED module level in familiar form factors
- Various combinations of size, CRI and CCT available
- Mechanically backwards compatible with DA Gen 4+/Gen 5
- Reliability testing for OEM peace of mind
- Embedded module surge protection
- Philips system warranty



Ordering data

Commercial product name	EOC	12NC	EPREL No.	EPREL model ID	Box quantity
Fortimo FastFlex LED 2x4/722 DA HE	8720169 284623 00	9290 039 67606	2883582	929003967606X	25
Fortimo FastFlex LED 2x4/727 DA HE	8719514 403130 00	9290 034 01106	2883621	929003401106X	25
Fortimo FastFlex LED 2x4/730 DA HE	8719514 403154 00	9290 034 01206	2883619	929003401206X	25
Fortimo FastFlex LED 2x4/740 DA HE	8719514 403178 00	9290 034 01306	2883579	929003401306X	25

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo FastFlex LED 2x4 DA HE	480	1050	1500	mA

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T_c (case temperature at T_c point)	80	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 2x4/722 DA HE
Fortimo FastFlex LED 2x4/727 DA HE
Fortimo FastFlex LED 2x4/730 DA HE
Fortimo FastFlex LED 2x4/740 DA HE

	2200K	2700K	3000K	4000K	Unit
Luminous flux (Φuse)*	1730	1770	1945	2005	lm
Efficacy*	162	167	183	189	lm/W
Max. Efficacy	178	197	211	221	lm/W
Max. Color consistency	5	5	5	5	SDCM
Color coordinates (CIEx, CIEy)	0.505, 0.417	0.455, 0.409	0.433, 0.404	0.379, 0.379	
Min. CRI	70	70	70	70	
Min. R9	-50	-50	-50	-50	
Max. Photobiological safety	RG1 unlimited	RG1 unlimited	RG1 unlimited	RG1 unlimited	
Energy label EPREL	D 	D 	C 	C 	

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

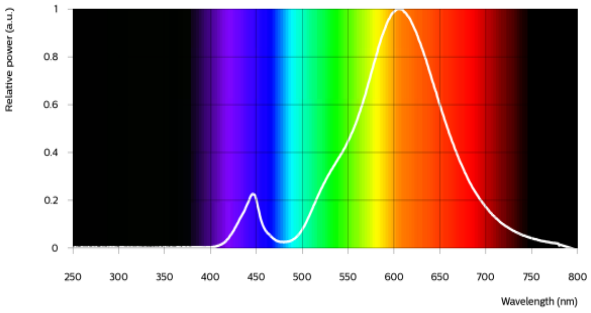
* Luminous flux(Φuse) and Efficacy refer to Single Lighting Regulation (SLR). Luminous flux(Φuse) means the part of the luminous flux of a light source that is considered when determining its energy efficiency: – for non-directional light sources it is the total flux emitted in a solid angle of 4π sr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

Tuning table

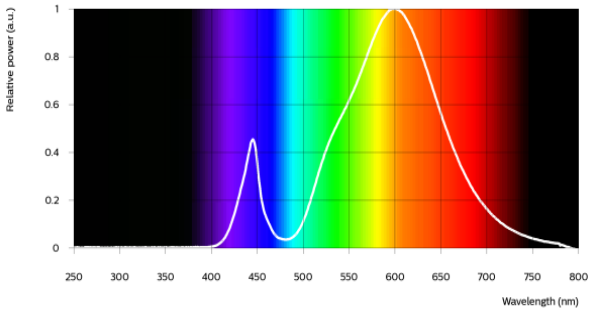
Operation Point		Current	2200K	2700K	3000K	4000K	Unit
Tc = 25°C	Luminous flux	80% I-nom 384mA	1491	1525	1676	1727	lm
		I-nom 480mA	1846	1889	2075	2139	lm
		I-max 1500mA	5335	5460	6005	6192	lm
	Efficacy	80% I-nom 384mA	173	178	196	202	lm/W
		I-nom 480mA	169	174	192	198	lm/W
		I-max 1500mA	139	144	158	163	lm/W
Tc = 80°C	Luminous flux	80% I-nom 384mA	1398	1430	1571	1620	lm
		I-nom 480mA	1730	1770	1945	2005	lm
		I-max 1500mA	4943	5061	5571	5746	lm
	Efficacy	80% I-nom 384mA	165	171	188	194	lm/W
		I-nom 480mA	162	167	183	189	lm/W
		I-max 1500mA	131	136	149	154	lm/W
Tc = 95°C	Luminous flux	80% I-nom 384mA	1366	1397	1535	1582	lm
		I-nom 480mA	1689	1728	1899	1958	lm
		I-max 1500mA	4805	4921	5418	5589	lm
	Efficacy	80% I-nom 384mA	163	168	184	190	lm/W
		I-nom 480mA	159	164	180	186	lm/W
		I-max 1500mA	128	132	146	150	lm/W

Spectral characteristics

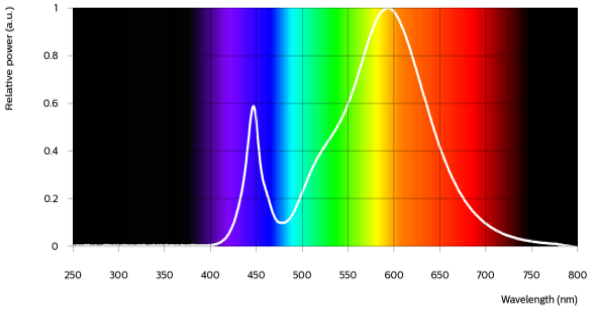
CRI70 2200K



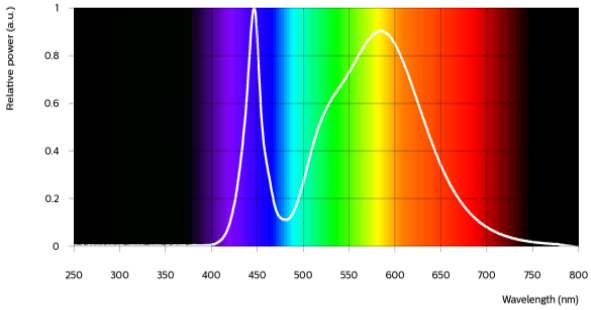
CRI70 2700K



CRI70 3000K



CRI70 4000K



Electrical characteristics

Fortimo FastFlex LED 2x4/727 DA HE
Fortimo FastFlex LED 2x4/730 DA HE
Fortimo FastFlex LED 2x4/740 DA HE

Parameter	Min	Typ	Max	Unit
Forward voltage	21.2	22.1	22.8	V
Power consumption	10.2	10.6	10.9	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%

Fortimo FastFlex LED 2x4/722 DA HE

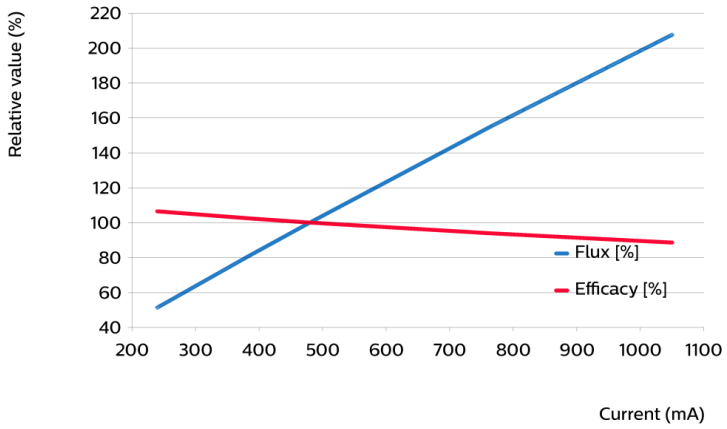
Parameter	Min	Typ	Max	Unit
Forward voltage	21.2	22.3	22.8	V
Power consumption	10.2	10.7	10.9	W = kWh/1000h
Number of modules in series per chain			10	
Number of modules in parallel			1	

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

Tuning information

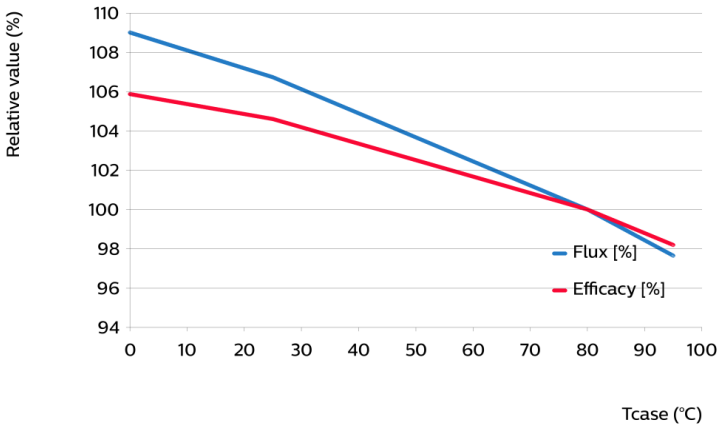
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
1050	208	89
765	155	94
480	100	100
384	81	102
240	51	106



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

Tc [°C]	Flux [%]	Efficacy [%]
95	98	98
80	100	100
25	107	105
0	109	106



Lumen maintenance

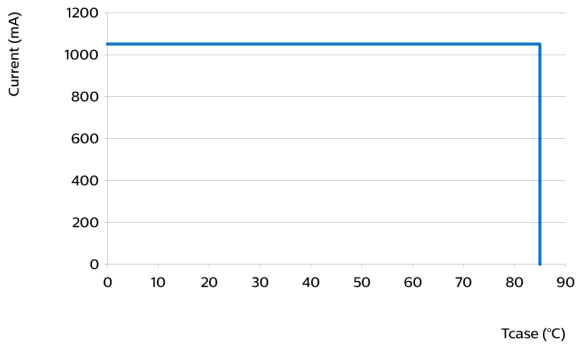
Operation point	Lumen maintenance x 1000 hours	L70 B50	L70 B20	L70 B10	L80 B50	L80 B20	L80 B10	L90 B50	L90 B20	L90 B10
I 480mA	Tc 25°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc 65°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc 85°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
I 700mA	Tc 25°C	>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



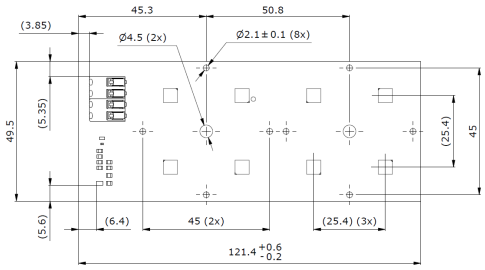
Wiring

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

Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	121.2	121.4	122	mm
Width	49.3	49.5	49.7	mm
Height including connector		6.1		mm
Height PCB		1.6		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	-40	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. Certification applies to selected products. Visit the Zhaga website for details: https://www.zhagastandard.org/

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

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