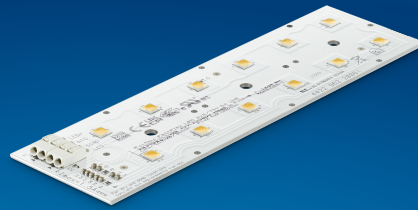


# PHILIPS

## Fortimo

### LED

Fortimo FastFlex LED 2x6  
DA UHE



Datasheet

# Ultra-High Efficiency with Zhaga standards

## Fortimo FastFlex 2x6 DA UHE

Experience increased efficiency levels of  $\geq 200\text{lm/W}$  – 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
- Patented module surge protection
- Philips system warranty

December 2023



## Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo FastFlex LED 2x6/730 DA UHE	8720169 284708 00	9290 039 68006	25
Fortimo FastFlex LED 2x6/740 DA UHE	8720169 284722 00	9290 039 68106	25

## Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo FastFlex LED 2x6 DA UHE	450	1050	1500	mA

## Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T <sub>c</sub> (case temperature at T <sub>c</sub> point)	65	85	85	°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)

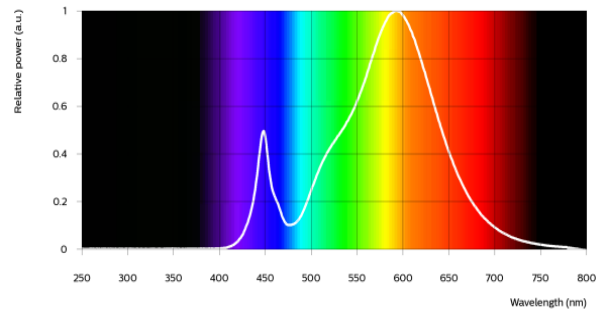
### Fortimo FastFlex LED 2x6/730 DA UHE

Parameter	Min	Typ	Max	Unit
Luminous flux	2700	3000	3300	lm
Efficacy	180	200	220	lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.435, 0.419)		-
Color consistency			5	SDCM
CRI	70			
R9	-50			
Photobiological safety			RG1 unlimited	



Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$ .

Operation point	730	lm	lm/W
80% I-nom 360mA	Tc 25 °C	2529	211
	Tc-nom 65 °C	2422	205
	Tc-max 85 °C	2355	201
I-nom 450mA	Tc 25 °C	3134	206
	Tc-nom 65 °C	3000	200
	Tc-max 85 °C	2917	196
I-max 1500mA	Tc 25 °C	9655	169
	Tc-nom 65 °C	9180	163
	Tc-max 85 °C	8884	158



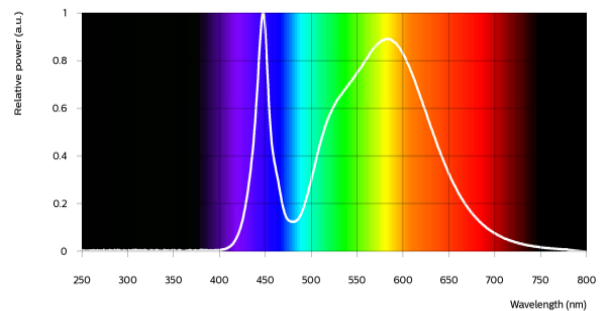
### Fortimo FastFlex LED 2x6/740 DA UHE

Parameter	Min	Typ	Max	Unit
Luminous flux	2741	3045	3350	lm
Efficacy	183	203	224	lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.379, 0.391)		-
Color consistency			5	SDCM
CRI	70			
R9	-50			
Photobiological safety			RG1 unlimited	



Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$ .

Operation point	740	lm	lm/W
80% I-nom 360mA	Tc 25 °C	2567	214
	Tc-nom 65 °C	2458	208
	Tc-max 85 °C	2391	204
I-nom 450mA	Tc 25 °C	3181	209
	Tc-nom 65 °C	3045	203
	Tc-max 85 °C	2961	199
I-max 1500mA	Tc 25 °C	9802	171
	Tc-nom 65 °C	9321	165
	Tc-max 85 °C	9021	161



## Electrical characteristics

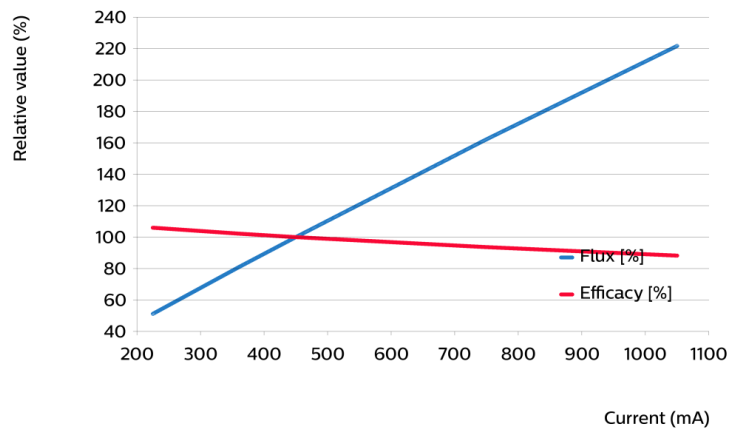
Parameter	Min	Typ	Max	Unit
Forward voltage	31.6	33.3	34.1	V
Power consumption	14.2	15.0	15.4	W = kWh/1000h
Number of modules in series per chain			10	
Number of modules in parallel			1	

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

## Tuning information

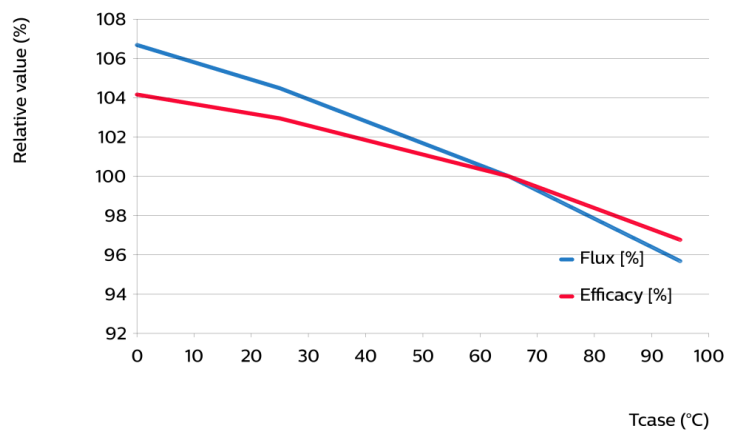
Flux and efficacy versus current (at Tc nominal)

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



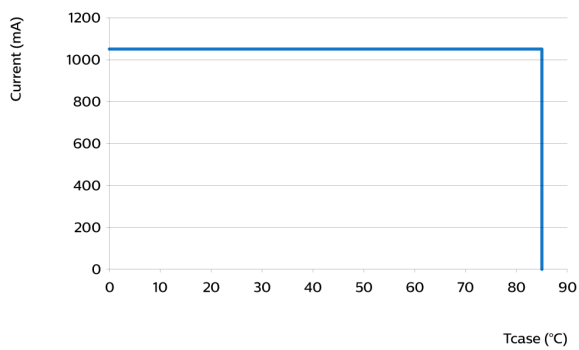
## Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% Inom=360mA	Tc=25°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc_nom=65°C	>100	>100	>100	>100	>100	>100	89	85	82
	Tc_life=85°C	>100	>100	>100	>100	>100	>100	68	65	63
Inom=450mA	Tc=25°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc_nom=65°C	>100	>100	>100	>100	>100	>100	85	81	79
	Tc_life=85°C	>100	>100	>100	>100	>100	>100	65	62	60
Ilife=700mA	Tc=25°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc_nom=65°C	>100	>100	>100	>100	>100	>100	78	74	72
	Tc_life=85°C	>100	>100	>100	>100	>100	>100	60	57	55

## Lifetime

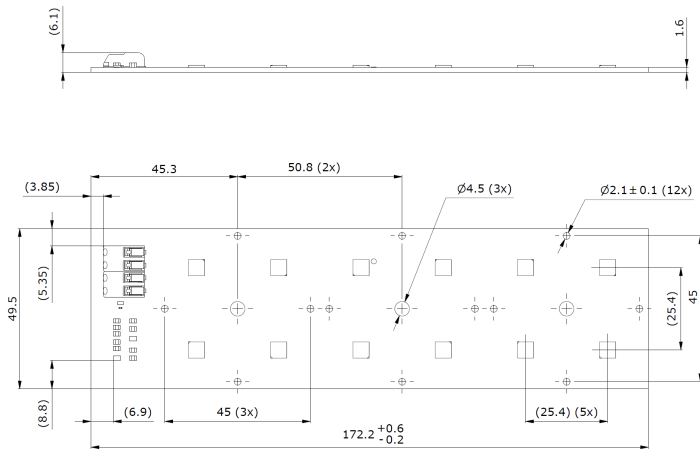
Parameter	Value	Unit
M70F50 nominal	>100000	hours
M70F50 life	>100000	hours

## Performance Window



## Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	172	172.2	172.8	mm
Width	49.3	49.5	49.7	mm
Height including connector		6.1		mm
Height PCB		1.6		mm
Product mass		39.2		gram



## Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		1500	mA
Case temperature (Tc-max)		85	°C
Power at rated Vf-max and I-max		56.3	W
ESD (direct contact)	8		kV
ESD (air)	15		kV
Working voltage		575	V <sub>dc</sub>
Ambient temperature	-30	40	°C
Storage temperature	-20	80	°C

## Application information

### Certificates and Standards

CE  
ENEC  
cULus

### Environmental

RoHS/REACH

### Application

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



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08/12/2023