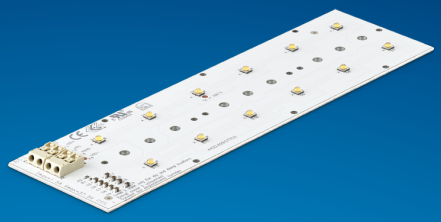
PHILIPS

Fortimo

LED

Fortimo FastFlex 2x6
DA G4+



Datasheet

Optical differentiation with third party lenses

FastFlex DA G4+

Applications
- Road lighting
- Urban street lighting
- Flood and Area lighting
- Tunnel lighting
- High bay lighting

Key features and benefits
- Enables OEM optical differentiation with lenses from third party portfolios matching every project's needs
- Unparalleled module efficiency for fixture performance
- Best in class reliability testing for OEM peace of mind
- Philips system warranty
- Best in class current and thermal operating range
- Temperature and driving current designed for fixture optimization
- Patented module surge protection
- Optical flexibility via third party lenses
- Flexible lumen output
- Range of CCT and CRI versions
- Mechanically and Optically backwards compatible with Gen4

February 2020

Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo FastFlex LED 2x6/730 DA G4+	8718699 708634 00	9290 021 17306	25
Fortimo FastFlex LED 2x6/740 DA G4+	8718699 708658 00	9290 021 17606	25
Fortimo FastFlex LED 2x6/827 DA G4+	8718699 708870 00	9290 021 17406	25
Fortimo FastFlex LED 2x6/830 DA G4+	8718699 708894 00	9290 021 17506	25
Fortimo FastFlex LED 2x6/840 DA G4+	8718699 708672 00	9290 021 17706	25

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo FastFlex 2x6 DA G4+	530	see performance window	1500	mA

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T_c (case temperature at T_c point)	80	see performance window	95	°C

* Nominal value at which typical performance is specified

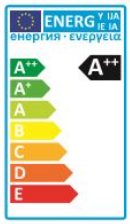
** Value at which life time is specified

*** Maximum value for safe operation, do not operate above this value

Optical characteristics - table per color (CCT)

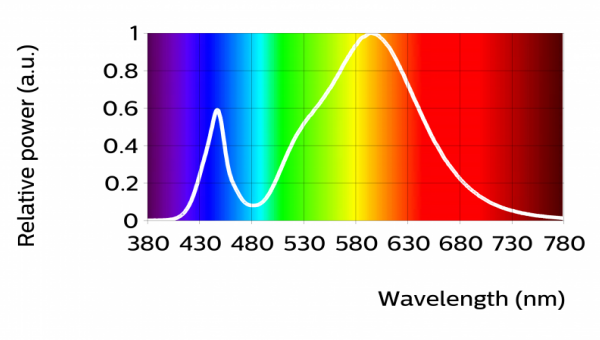
Fortimo FastFlex LED 2x6/730 DA G4+

Parameter	Min	Typ	Max	Unit
Luminous flux	2486	2762	3038	lm
Module efficacy	141	157		lm/W
Correlated color temperature (CCT)		3000		K
Color consistency			4	SDCM
CRI	70			
Photometric code		730/349		
Photobiological safety			RG2	
Ethr			540	lux



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

Operation point	730	lm	lm/W
50% I-nom 265mA	Tc 25 °C	1619	183
	Tc-nom 80 °C	1500	175
	Tc-max 95 °C	1461	171
I-nom 530mA	Tc 25 °C	3016	166
	Tc-nom 80 °C	2762	157
	Tc-max 95 °C	2678	153
I-max 1500mA	Tc 25 °C	6961	128
	Tc-nom 80 °C	6163	116
	Tc-max 95 °C	5896	112

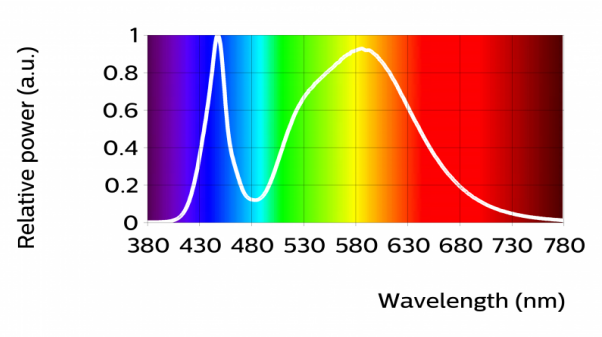


Fortimo FastFlex LED 2x6/740 DA G4+

Parameter	Min	Typ	Max	Unit
Luminous flux	2622	2914	3205	lm
Module efficacy	149	165		lm/W
Correlated color temperature (CCT)		4000		K
Color consistency			4	SDCM
CRI	70			
Photometric code		740/349		
Photobiological safety			RG2	
Ethr			540	lux

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

Operation point	740	lm	lm/W
50% I-nom 265mA	Tc 25 °C	1707	193
	Tc-nom 80 °C	1582	184
	Tc-max 95 °C	1540	181
I-nom 530mA	Tc 25 °C	3180	175
	Tc-nom 80 °C	2914	165
	Tc-max 95 °C	2826	161
I-max 1500mA	Tc 25 °C	7355	135
	Tc-nom 80 °C	6518	123
	Tc-max 95 °C	6238	119

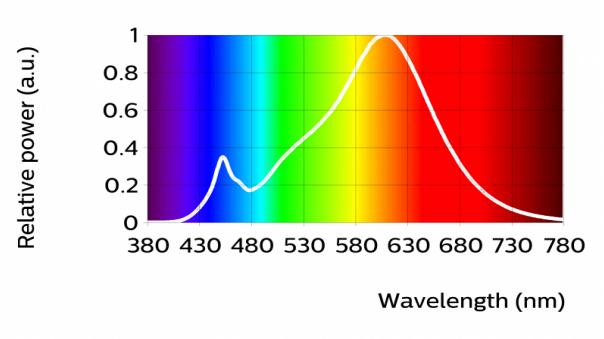


Fortimo FastFlex LED 2x6/827 DA G4+

Parameter	Min	Typ	Max	Unit
Luminous flux	2135	2373	2610	lm
Module efficacy	120	134		lm/W
Correlated color temperature (CCT)		2700		K
Color consistency			4	SDCM
CRI	80			
Photometric code		827/349		
Photobiological safety			RG2	
Ethr			540	lux

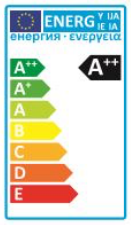
Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5

Operation point	827	lm	lm/W
50% I-nom 265mA	Tc 25 °C	1391	156
	Tc-nom 80 °C	1285	150
	Tc-max 95 °C	1248	147
I-nom 530mA	Tc 25 °C	2582	140
	Tc-nom 80 °C	2373	134
	Tc-max 95 °C	2300	131
I-max 1500mA	Tc 25 °C	5987	106
	Tc-nom 80 °C	5313	98
	Tc-max 95 °C	5077	94



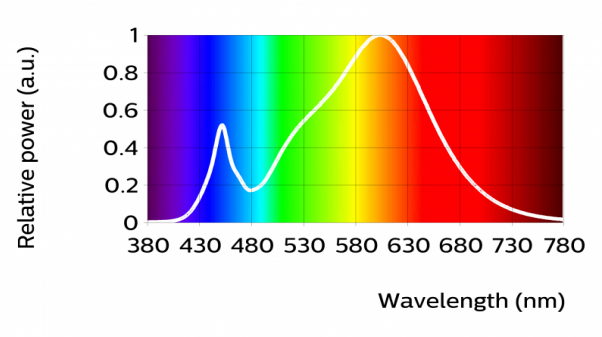
Fortimo FastFlex LED 2x6/830 DA G4+

Parameter	Min	Typ	Max	Unit
Luminous flux	2241	2490	2739	lm
Module efficacy	126	140		lm/W
Correlated color temperature (CCT)		3000		K
Color consistency			4	SDCM
CRI	80			
Photometric code		830/349		
Photobiological safety			RG2	
Ethr			540	lux



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

Operation point	830	lm	lm/W
50% I-nom 265mA	Tc 25 °C	1458	163
	Tc-nom 80 °C	1348	157
	Tc-max 95 °C	1309	155
I-nom 530mA	Tc 25 °C	2709	146
	Tc-nom 80 °C	2490	140
	Tc-max 95 °C	2414	137
I-max 1500mA	Tc 25 °C	6289	111
	Tc-nom 80 °C	5587	103
	Tc-max 95 °C	5341	99

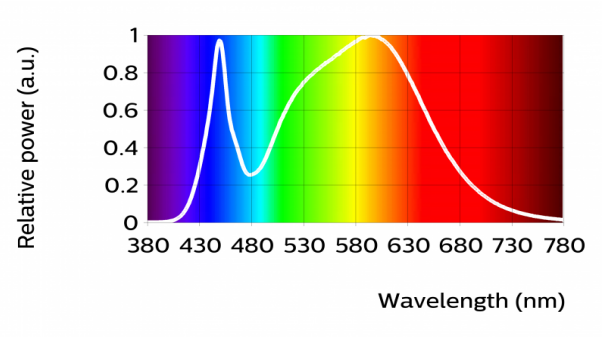


Fortimo FastFlex LED 2x6/840 DA G4+

Parameter	Min	Typ	Max	Unit
Luminous flux	2376	2640	2904	lm
Module efficacy	134	149		lm/W
Correlated color temperature (CCT)		4000		K
Color consistency			4	SDCM
CRI	80			
Photometric code		840/349		
Photobiological safety			RG2	
Ethr			540	lux

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

Operation point	840	lm	lm/W
50% I-nom 265mA	Tc 25 °C	1545	173
	Tc-nom 80 °C	1428	167
	Tc-max 95 °C	1388	164
I-nom 530mA	Tc 25 °C	2872	155
	Tc-nom 80 °C	2640	149
	Tc-max 95 °C	2560	146
I-max 1500mA	Tc 25 °C	6679	118
	Tc-nom 80 °C	5941	109
	Tc-max 95 °C	5682	105



Electrical characteristics

Fortimo FastFlex LED 2x6/730 DA G4+
Fortimo FastFlex LED 2x6/740 DA G4+

Parameter	Min	Typ	Max	Unit
Forward voltage	30.5	33.3	36.6	V
Power consumption	16.2	17.6	19.4	W = kWh/1000h
Number of modules in series per chain			6	
Number of modules in parallel per chain			1	
Number of modules in parallel			1	

Measurement precision for Vf ± 3%. Measurement precision for power ± 3.3%
Specifications stated at Tc-nom and I-nom.

Fortimo FastFlex LED 2x6/827 DA G4+
Fortimo FastFlex LED 2x6/830 DA G4+
Fortimo FastFlex LED 2x6/840 DA G4+

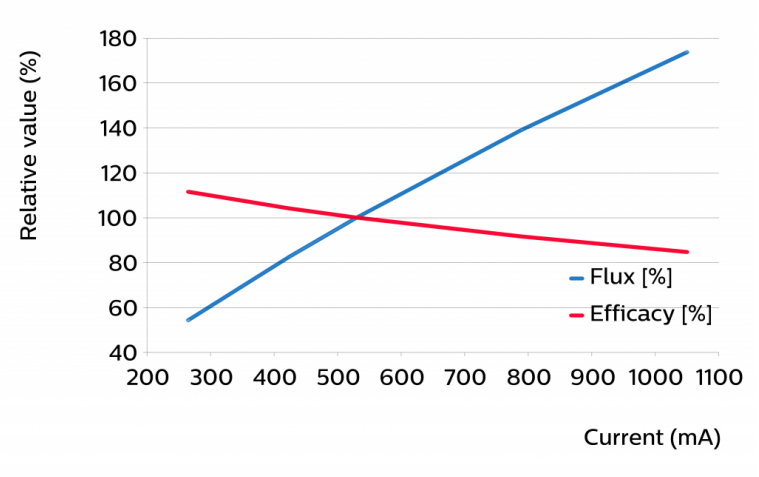
Parameter	Min	Typ	Max	Unit
Forward voltage	30.7	33.5	36.8	V
Power consumption	16.3	17.8	19.5	W = kWh/1000h
Number of modules in series per chain			6	
Number of modules in parallel per chain			1	
Number of modules in parallel			1	

Measurement precision for Vf ± 3%. Measurement precision for power ± 3.3%
Specifications stated at Tc-nom and I-nom.

Tuning information

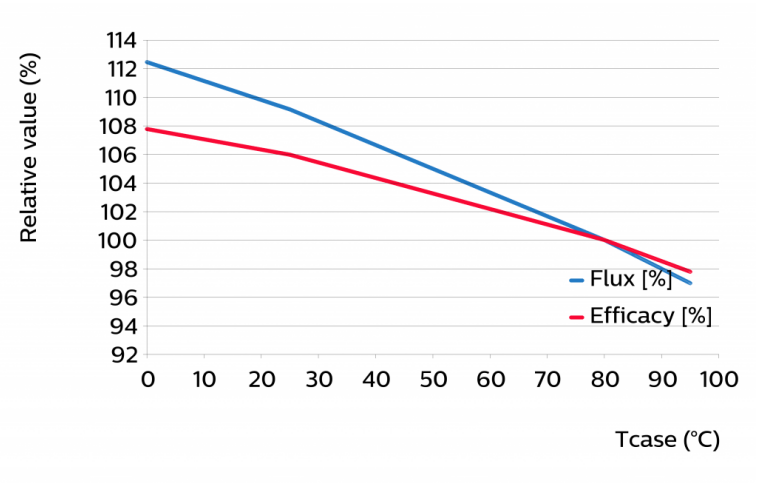
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
1050	174	85
790	139	92
530	100	100
424	83	104
265	54	112



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

Tc [°C]	Flux [%]	Efficacy [%]
95	97	98
80	100	100
25	109	106
0	112	108



Lumen maintenance

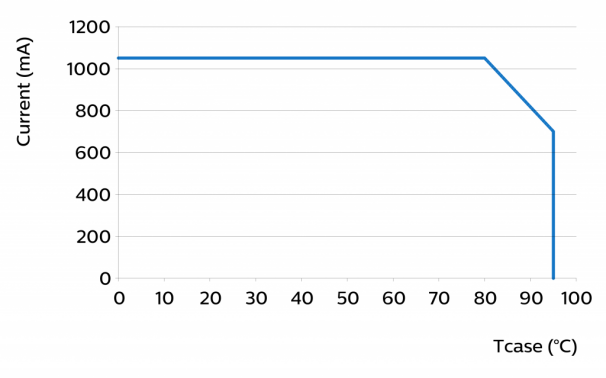
Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
I 530 mA	Tc 60°C	>100	>100	>100	>100	100	90	60	50	45
	Tc 70°C	>100	>100	>100	>100	90	85	55	45	40
	Tc 80°C	>100	>100	>100	>100	85	75	50	40	35
I 700 mA	Tc 60°C	>100	>100	>100	>100	90	80	50	40	35
	Tc 70°C	>100	>100	>100	100	80	70	45	35	35
	Tc 80°C	>100	>100	>100	90	70	65	45	35	30
I 1050 mA	Tc 60°C	>100	>100	>100	90	70	65	45	35	30
	Tc 70°C	>100	>100	95	80	65	60	40	30	25
	Tc 80°C	>100	95	85	75	60	55	35	30	25

Lifetime

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

We use a Philips designed lifetime model, which uses LM80 data as one of its inputs and assumes a continues operation of the module. >120k hour is based on extrapolating LM80-data by using statistical techniques.

Performance Window

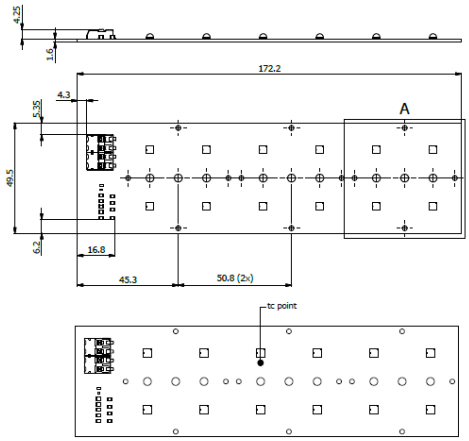


Wiring

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	171.1	172.2	172.3	mm
Width	49.4	49.5	49.6	mm
Height excl.connector	1.5	1.6	1.7	mm
Height incl. connector	5.75	5.85	5.95	mm
Product mass		39		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		39.4	W
ESD (direct contact)		8	kV
Working voltage		575	V_{dc}
Ambient temperature	-40		°C

Application information

Certificates and Standards
CE
ENEC
ENEC+
IEC 62031
IEC 62717
UL 8750

Application	
IP rating	No IP-rating
Overheating protection	Yes
Dimming	Yes

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