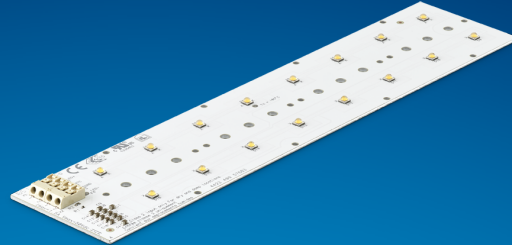


**PHILIPS**

**Fortimo**

**LED**

Fortimo FastFlex 2x8  
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 2x8/730 DA G4+	8718699 708450 00	9290 021 17806	25
Fortimo FastFlex LED 2x8/740 DA G4+	8718699 708696 00	9290 021 17906	25
Fortimo FastFlex LED 2x8/757 DA G4+	8718699 708719 00	9290 021 18006	25
Fortimo FastFlex LED 2x8/822 DA G4+	8718699 740542 00	9290 021 18206	25
Fortimo FastFlex LED 2x8/827 DA G4+	8718699 708740 00	9290 021 18306	25
Fortimo FastFlex LED 2x8/830 DA G4+	8718699 708771 00	9290 021 18406	25
Fortimo FastFlex LED 2x8/840 DA G4+	8718699 708795 00	9290 021 18506	25

## Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo FastFlex 2x8 DA G4+	530	see performance window	1500	mA

## Module temperatures

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

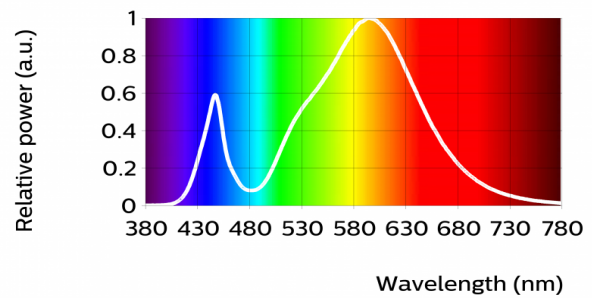
### Fortimo FastFlex LED 2x8/730 DA G4+

Parameter	Min	Typ	Max	Unit
Luminous flux	3315	3683	4051	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  $\pm 5\%$  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
50% I-nom 265mA	Tc 25 °C	2159	183
	Tc-nom 80 °C	2000	175
	Tc-max 95 °C	1948	171
I-nom 530mA	Tc 25 °C	4021	166
	Tc-nom 80 °C	3683	157
	Tc-max 95 °C	3571	153
I-max 1500mA	Tc 25 °C	9282	128
	Tc-nom 80 °C	8217	116
	Tc-max 95 °C	7861	112



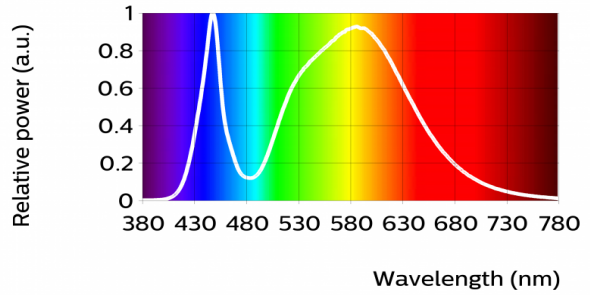
Fortimo FastFlex LED 2x8/740 DA G4+

Parameter	Min	Typ	Max	Unit
Luminous flux	3496	3885	4274	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



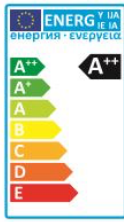
Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5

Operation point	740	lm	lm/W
	50% I-nom 265mA	Tc 25 °C	2275
Tc-nom 80 °C		2109	184
Tc-max 95 °C		2054	181
I-nom 530mA	Tc 25 °C	4240	175
	Tc-nom 80 °C	3885	165
	Tc-max 95 °C	3768	161
I-max 1500mA	Tc 25 °C	9806	135
	Tc-nom 80 °C	8691	123
	Tc-max 95 °C	8317	119



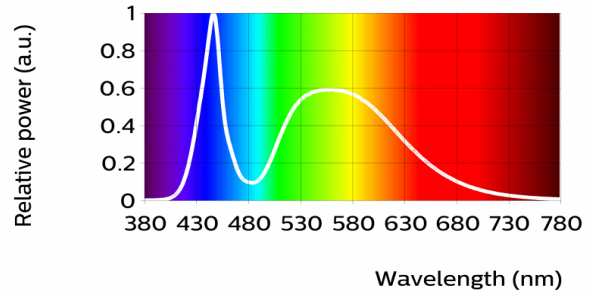
Fortimo FastFlex LED 2x8/757 DA G4+

Parameter	Min	Typ	Max	Unit
Luminous flux	3315	3683	4051	lm
Module efficacy	141	157		lm/W
Correlated color temperature (CCT)		5700		K
Color consistency			4	SDCM
CRI	70			
Photometric code		757/349		
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	757	lm	lm/W
50% I-nom 265mA	Tc 25 °C	2159	183
	Tc-nom 80 °C	2000	175
	Tc-max 95 °C	1948	171
I-nom 530mA	Tc 25 °C	4021	166
	Tc-nom 80 °C	3683	157
	Tc-max 95 °C	3571	153
I-max 1500mA	Tc 25 °C	9282	128
	Tc-nom 80 °C	8217	116
	Tc-max 95 °C	7861	112



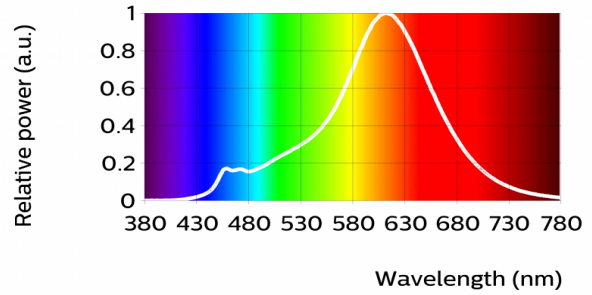
Fortimo FastFlex LED 2x8/822 DA G4+

Parameter	Min	Typ	Max	Unit
Luminous flux	2135	2755	2610	lm
Module efficacy	90	116		lm/W
Correlated color temperature (CCT)		2200		K
Color consistency			4	SDCM
CRI	80			
Photometric code		822/349		
Photobiological safety			RG2	
Ethr			570	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	822	lm	lm/W
50% I-nom 265mA	Tc 25 °C	1620	136
	Tc-nom 80 °C	1496	131
	Tc-max 95 °C	1453	129
I-nom 530mA	Tc 25 °C	3005	122
	Tc-nom 80 °C	2755	116
	Tc-max 95 °C	2674	114
I-max 1500mA	Tc 25 °C	6941	92
	Tc-nom 80 °C	6144	85
	Tc-max 95 °C	5866	82



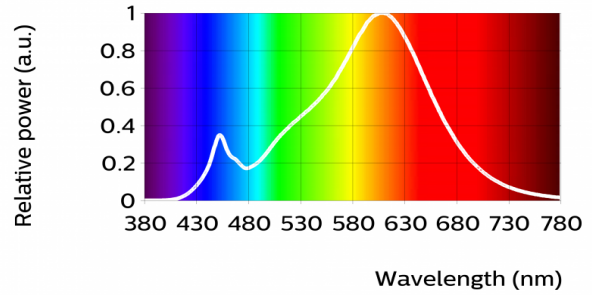
Fortimo FastFlex LED 2x8/827 DA G4+

Parameter	Min	Typ	Max	Unit
Luminous flux	2847	3164	3480	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	1854	156
	Tc-nom 80 °C	1713	150
	Tc-max 95 °C	1664	147
I-nom 530mA	Tc 25 °C	3443	140
	Tc-nom 80 °C	3164	134
	Tc-max 95 °C	3067	131
I-max 1500mA	Tc 25 °C	7982	106
	Tc-nom 80 °C	7084	98
	Tc-max 95 °C	6770	94



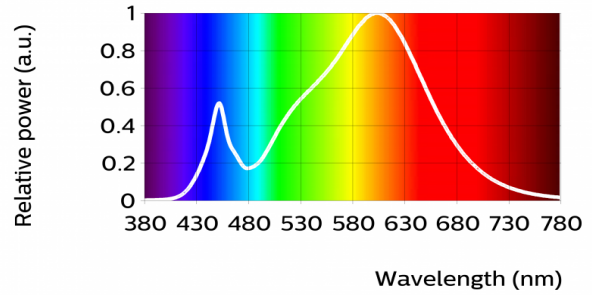
Fortimo FastFlex LED 2x8/830 DA G4+

Parameter	Min	Typ	Max	Unit
Luminous flux	2988	3319	3651	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	1944	163
	Tc-nom 80 °C	1797	157
	Tc-max 95 °C	1746	155
I-nom 530mA	Tc 25 °C	3612	146
	Tc-nom 80 °C	3319	140
	Tc-max 95 °C	3218	137
I-max 1500mA	Tc 25 °C	8386	111
	Tc-nom 80 °C	7449	103
	Tc-max 95 °C	7121	99





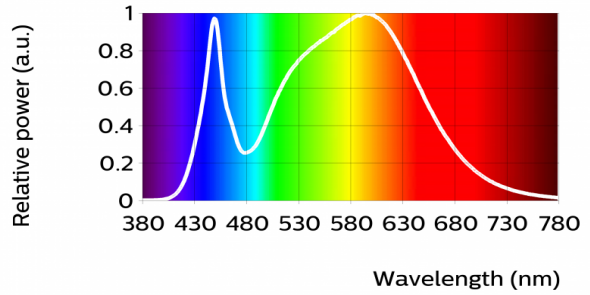
Fortimo FastFlex LED 2x8/840 DA G4+

Parameter	Min	Typ	Max	Unit
Luminous flux	3168	3520	3872	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	2060	173
	Tc-nom 80 °C	1904	167
	Tc-max 105 °C	1811	162
I-nom 530mA	Tc 25 °C	3829	155
	Tc-nom 80 °C	3520	149
	Tc-max 105 °C	3335	143
I-max 1500mA	Tc 25 °C	8904	118
	Tc-nom 80 °C	7920	109
	Tc-max 105 °C	7323	103



## Electrical characteristics

[Fortimo FastFlex LED 2x8/730 DA G4+](#)

[Fortimo FastFlex LED 2x8/740 DA G4+](#)

[Fortimo FastFlex LED 2x8/757 DA G4+](#)

Parameter	Min	Typ	Max	Unit
Forward voltage	40.7	44.4	48.8	V
Power consumption	21.6	23.5	25.9	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 2x8/822 DA G4+](#)

[Fortimo FastFlex LED 2x8/827 DA G4+](#)

[Fortimo FastFlex LED 2x8/830 DA G4+](#)

[Fortimo FastFlex LED 2x8/840 DA G4+](#)

Parameter	Min	Typ	Max	Unit
Forward voltage	40.9	44.7	49.1	V
Power consumption	21.7	23.7	26.0	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	

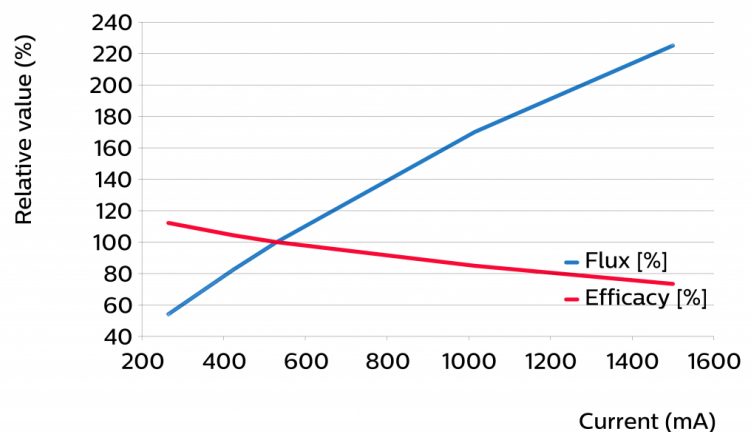
Measurement precision for Vf ± 3%. Measurement precision for power ± 3.3%

Specifications stated at Tc-nom and I-nom.

## Tuning information

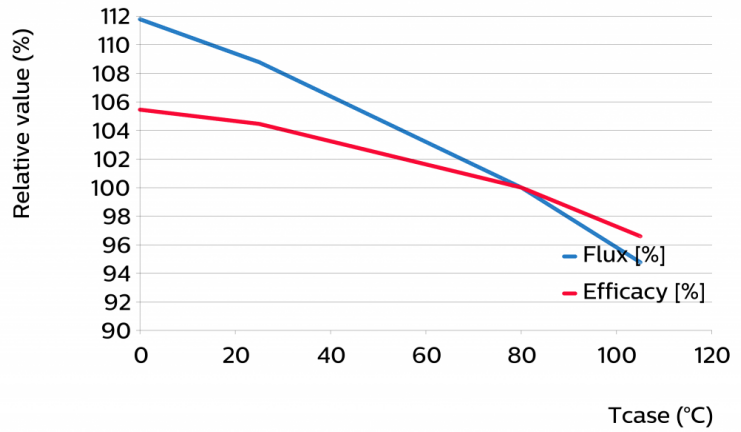
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
1500	225	73
1015	170	85
530	100	100
424	82	104
265	54	112



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

Tc [°C]	Flux [%]	Efficacy [%]
105	95	97
80	100	100
25	109	104
0	112	105



Lumen maintenance

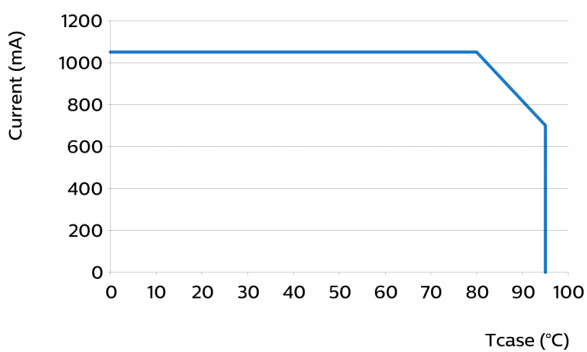
Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
I 530 mA	Tc 60°C	>100	>100	>100	>100	100	90	60	50	45
	Tc 70°C	>100	>100	>100	>100	90	85	55	45	40
	Tc 80°C	>100	>100	>100	>100	85	75	50	40	35
I 700 mA	Tc 60°C	>100	>100	>100	>100	90	80	50	40	35
	Tc 70°C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

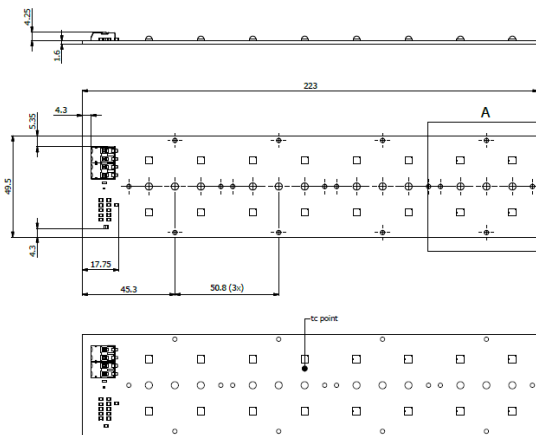


## Wiring

Specification item	Value	Unit	Condition
Input wire cross-section	0.25...0.75	mm <sup>2</sup>	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 <sup>2</sup>	stranded wire
	20...22	AWG	stranded wire
Input wire strip length	7.5...8.5	mm	

## Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	222.9	223	223.1	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		50		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		52.5	W
ESD (direct contact)		8	kV
Working voltage		575	V <sub>dc</sub>
Ambient temperature	-40		°C

## Application information

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### 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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03/02/2020