PHILIPS

Fortimo

LED

Fortimo FastFlex LED 4x8up PR G5

Datasheet

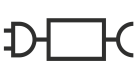
Xtreme Efficiency enabling optical flexibility with third party lenses

FastFlex G5

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

Key features and benefits
- Xtreme module efficiency for fixture performance
- Enables OEM optical differentiation with lenses from third party portfolios matching project's needs
- 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

February 2020



Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo FastFlex LED 4x8up/730 PR G5	8718699 707910 00	9290 016 92206	96
Fortimo FastFlex LED 4x8up/740 PR G5	8718699 707934 00	9290 016 92306	96
Fortimo FastFlex LED 4x8up/757 PR G5	8718699 707835 00	9290 016 92406	24
Fortimo FastFlex LED 4x8up/827 PR G5	8718699 707859 00	9290 016 92506	24
Fortimo FastFlex LED 4x8up/830 PR G5	8718699 707873 00	9290 016 92606	24
Fortimo FastFlex LED 4x8up/840 PR G5	8718699 707897 00	9290 016 92706	24

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo FastFlex LED 4x8up PR G5	530	see performance window	1050	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

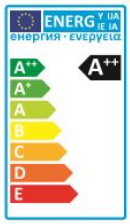
** Value at which life time is specified

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

Optical characteristics - table per color (CCT)

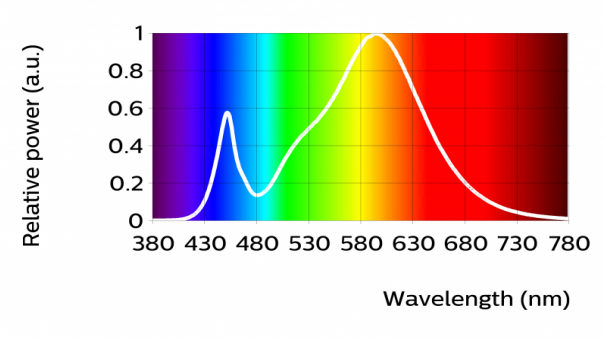
Fortimo FastFlex LED 4x8up/730 PR G5

Parameter	Min	Typ	Max	Unit
Luminous flux	3570	3967	4363	lm
Module efficacy	153	170		lm/W
Correlated color temperature (CCT)		3000		K
Color consistency			5	SDCM
CRI	70			
Photometric code		730/349		
Photobiological safety			RG2	
Ethr			921	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	2247	193
	Tc-nom 80 °C	2074	184
	Tc-max 95 °C	2019	181
I-nom 530mA	Tc 25 °C	4323	180
	Tc-nom 80 °C	3967	170
	Tc-max 95 °C	3853	167
I-max 1050mA	Tc 25 °C	7986	161
	Tc-nom 80 °C	7263	151
	Tc-max 95 °C	7030	147

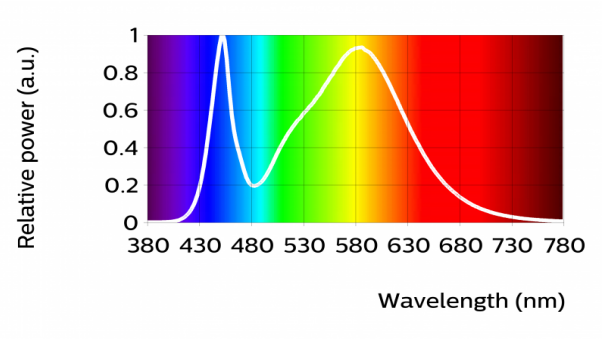


Fortimo FastFlex LED 4x8up/740 PR G5

Parameter	Min	Typ	Max	Unit
Luminous flux	3780	4200	4620	lm
Module efficacy	162	181		lm/W
Correlated color temperature (CCT)		4000		K
Color consistency			5	SDCM
CRI	70			
Photometric code		740/349		
Photobiological safety			RG2	
Ethr			921	lux

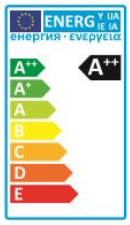
Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5

Operation point	740	lm	lm/W
50% I-nom 265mA	Tc 25 °C	2377	204
	Tc-nom 80 °C	2195	195
	Tc-max 95 °C	2137	191
I-nom 530mA	Tc 25 °C	4576	191
	Tc-nom 80 °C	4200	181
	Tc-max 95 °C	4079	177
I-max 1050mA	Tc 25 °C	8460	171
	Tc-nom 80 °C	7697	160
	Tc-max 95 °C	7451	156



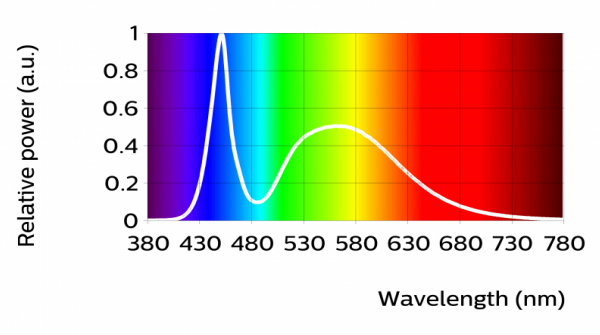
Fortimo FastFlex LED 4x8up/757 PR G5

Parameter	Min	Typ	Max	Unit
Luminous flux	3780	4200	4620	lm
Module efficacy	162	181		lm/W
Correlated color temperature (CCT)		5700		K
Color consistency			5	SDCM
CRI	70			
Photometric code		757/349		
Photobiological safety			RG2	
Ethr			921	lux



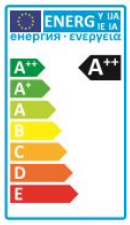
Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5

Operation point	757	lm	lm/W
50% I-nom 265mA	Tc 25 °C	2377	204
	Tc-nom 80 °C	2195	195
	Tc-max 95 °C	2137	191
I-nom 530mA	Tc 25 °C	4576	191
	Tc-nom 80 °C	4200	181
	Tc-max 95 °C	4079	177
I-max 1050mA	Tc 25 °C	8460	171
	Tc-nom 80 °C	7697	160
	Tc-max 95 °C	7451	156



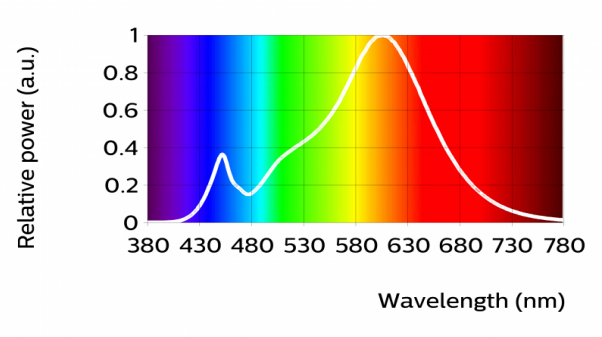
Fortimo FastFlex LED 4x8up/827 PR G5

Parameter	Min	Typ	Max	Unit
Luminous flux	3045	3383	3722	lm
Module efficacy	131	145		lm/W
Correlated color temperature (CCT)		2700		K
Color consistency			5	SDCM
CRI	80			
Photometric code		827/349		
Photobiological safety			RG2	
Ethr			921	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	1919	165
	Tc-nom 80 °C	1771	157
	Tc-max 95 °C	1724	154
I-nom 530mA	Tc 25 °C	3689	154
	Tc-nom 80 °C	3383	145
	Tc-max 95 °C	3285	142
I-max 1050mA	Tc 25 °C	6802	138
	Tc-nom 80 °C	6179	129
	Tc-max 95 °C	5979	125

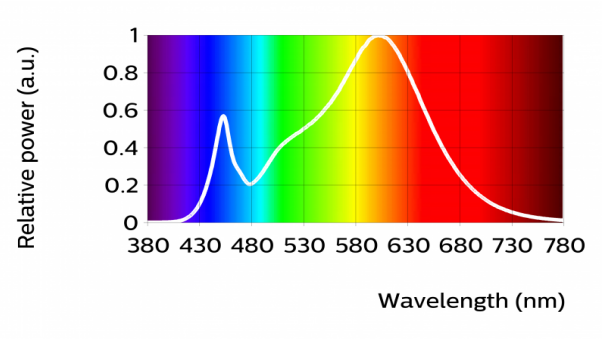


Fortimo FastFlex LED 4x8up/830 PR G5

Parameter	Min	Typ	Max	Unit
Luminous flux	3360	3733	4107	lm
Module efficacy	144	160		lm/W
Correlated color temperature (CCT)		3000		K
Color consistency			5	SDCM
CRI	80			
Photometric code		830/349		
Photobiological safety			RG2	
Ethr			921	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	2116	182
	Tc-nom 80 °C	1953	173
	Tc-max 95 °C	1901	170
I-nom 530mA	Tc 25 °C	4069	170
	Tc-nom 80 °C	3733	160
	Tc-max 95 °C	3626	157
I-max 1050mA	Tc 25 °C	7512	152
	Tc-nom 80 °C	6829	142
	Tc-max 95 °C	6609	138

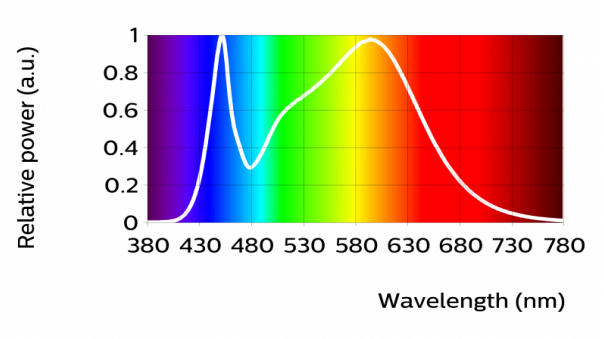


Fortimo FastFlex LED 4x8up/840 PR G5

Parameter	Min	Typ	Max	Unit
Luminous flux	3360	3733	4107	lm
Module efficacy	144	160		lm/W
Correlated color temperature (CCT)		4000		K
Color consistency			5	SDCM
CRI	80			
Photometric code		840/349		
Photobiological safety			RG2	
Ethr			921	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	2116	182
	Tc-nom 80 °C	1953	173
	Tc-max 95 °C	1901	170
I-nom 530mA	Tc 25 °C	4069	170
	Tc-nom 80 °C	3733	160
	Tc-max 95 °C	3626	157
I-max 1050mA	Tc 25 °C	7512	152
	Tc-nom 80 °C	6829	142
	Tc-max 95 °C	6609	138



Electrical characteristics

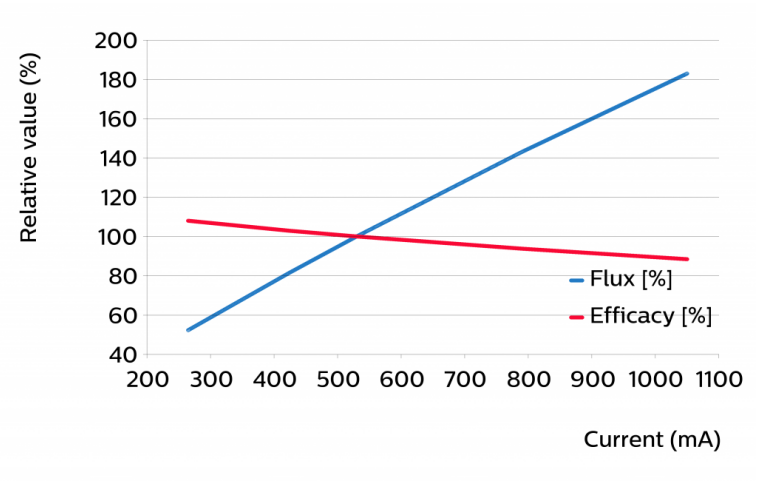
Parameter	Min	Typ	Max	Unit
Forward voltage	41.7	43.9	46.1	V
Power consumption	22.1	23.3	24.4	W = kWh/1000h
Number of modules in series per chain			6	
Number of modules in parallel per chain			1	
Number of modules in parallel			1	

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

Tuning information

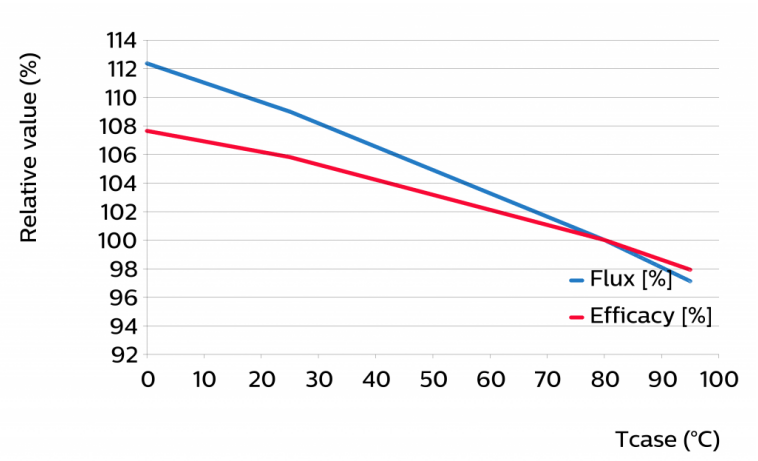
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
1050	183	88
790	143	94
530	100	100
424	81	103
265	52	108



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

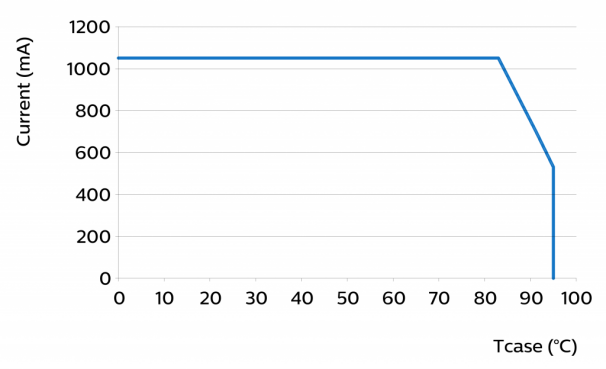
Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
I 530mA	Tc 60°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc 70°C	>100	>100	>100	>100	>100	>100	>100	>100	100
	Tc 80°C	>100	>100	>100	>100	>100	>100	>100	100	100
I 700 mA	Tc 60°C	>100	>100	>100	>100	>100	>100	>100	120	100
	Tc 70°C	>100	>100	>100	>100	>100	>100	>100	100	100
	Tc 80°C	>100	>100	>100	>100	>100	>100	>100	100	100
I 1050 mA	Tc 60°C	>100	>100	>100	>100	>100	>100	>100	100	100
	Tc 70°C	>100	>100	>100	>100	>100	>100	>100	100	100
	Tc 80°C	>100	>100	>100	>100	>100	>100	100	100	90

Lifetime

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

Lifetime information is generated by a Philips designed lifetime model. Lumen depreciation based on TM21 calculations with LM80 data.

Performance Window

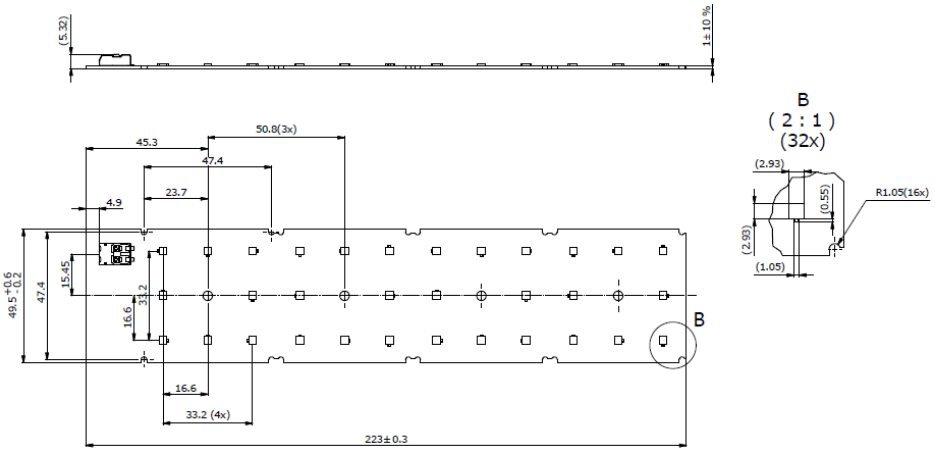


Wiring

Specification item	Value	Unit	Condition
Input wire cross-section	0.25…0.75	mm²	solid wire
	18…24	AWG	solid wire
Input wire strip length	7.5…8.5	mm	
Input wire cross-section	0.33…0.5	mm²	stranded wire
	20…22	AWG	stranded wire
Input wire strip length	7.5…8.5	mm	

Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	222.7	223	223.3	mm
Width	49.3	49.5	50.1	mm
Height PCB	0.9	1	1.1	mm
Height with connector		5.33		mm
Product mass		23		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		1050	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_{dc}
Ambient temperature	-40		°C

Application information

Certificates and Standards
CE
ENEC
ENEC+
UL

Environmental
RoHS/REACH

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

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