PHILIPS

Fortimo

LED

Fortimo LED-R 1ft MF 8xx FC HV5

Datasheet

Fortimo LED-R 1ft MF 8xx FC HV5

The Fortimo LED-R LED modules are designed together with the BJB OptiLine Louvres. These modules and optics are perfectly fitted for each other which leads to a high performance on both efficiency and uniformity. Besides that, installation in a fixture is extremely easy due to the one-click-system which allows installation without screwing. The range of modules is very complete and offers a solution for many different applications and includes regular CRI80, CRI90 High Efficiency, FlexTune and BioUp CED.

Key features and benefits

- High typical module efficacy
- Long life time: >50,000 hours
- Excellent color consistency of 3 SDCM
- Available in 2700K, 3000K and 4000K
- 1ft and 2ft lengths
- Good light quality: CRI80
- Extremely easy to install in combination with BJB OptiLine Louvres
- Available in High Voltage (HV) and Low Voltage (LV)
- Five year system warranty when paired with Xitanium drivers

May 2022

Ordering data

Commercial product name	EOC	12NC	EPREL registration #	Box quantity
Fortimo LED-R 1ft MF 827 FC HV5	8719514 447431 00	9290 034 03706	1227068	110
Fortimo LED-R 1ft MF 830 FC HV5	8719514 447455 00	9290 034 03806	1227061	110
Fortimo LED-R 1ft MF 840 FC HV5	8719514 447479 00	9290 034 03906	1227064	110

These LED-modules are designed to be used with BJB LED OptiLine Louvre Optcs.
Contact your Signify sales representative or BJB for more info.

9290 029 36906 Medium beam lens 1ft (35.306.1001.85)
9290 029 37006 Wide beam lens 1ft (35.306.1002.85)
9290 029 37406 black raster 1ft (35.306.2001.80)
9290 029 37306 white raster 1ft (35.306.2001.50)
9290 029 36806 black raster 2ft (35.312.2001.80)
9290 029 36706 white raster 2ft (35.312.2001.50)

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED-R 1ft MF 8xx FC HV5	275	450	600	mA

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T_c (case temperature at T_c point)	45	75	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

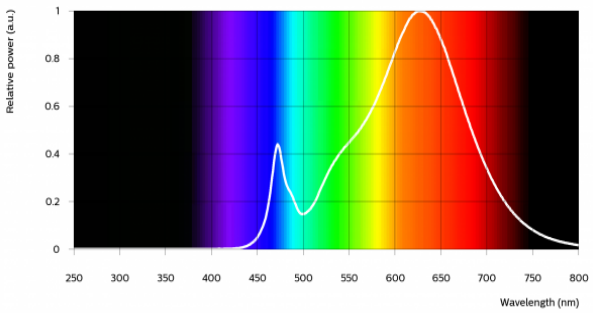
Optical characteristics - table per color (CCT)

Fortimo LED-R 1ft MF 827 FC HV5

Parameter	Min	Typ	Max	Unit
Luminous flux	940	973	1050	lm
Efficacy	153	160	178	lm/W
Correlated color temperature (CCT)		2700		K
Color coordinates (CIEx, CIEy)		(0.456, 0.408)		-
Color consistency			3	SDCM
CRI	80			
R9	0			
Photometric code		827/339		
Photobiological safety			RG1 unlimited	

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
80% I-nom 220mA	Tc 25 °C	802	166
	Tc-nom 45 °C	785	164
	Tc-max 85 °C	745	157
I-nom 275mA	Tc 25 °C	994	163
	Tc-nom 45 °C	973	160
	Tc-max 85 °C	923	154
I-max 600mA	Tc 25 °C	2072	146
	Tc-nom 45 °C	2028	144
	Tc-max 85 °C	1923	138

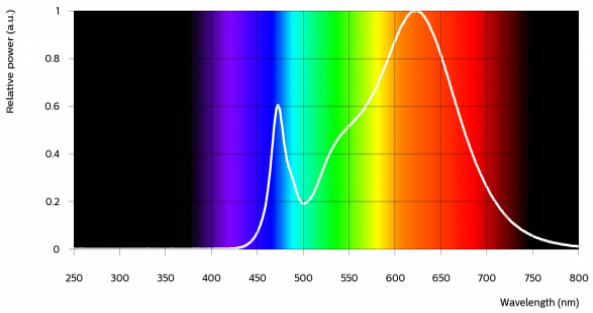


Fortimo LED-R 1ft MF 830 FC HV5

Parameter	Min	Typ	Max	Unit
Luminous flux	1000	1035	1120	lm
Efficacy	160	167	187	lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.431, 0.400)		-
Color consistency			3	SDCM
CRI	80			
R9	0			
Photometric code		830/339		
Photobiological safety			RG1 unlimited	

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
80% I-nom 220mA	Tc 25 °C	853	173
	Tc-nom 45 °C	835	171
	Tc-max 85 °C	793	164
I-nom 275mA	Tc 25 °C	1057	170
	Tc-nom 45 °C	1035	167
	Tc-max 85 °C	982	161
I-max 600mA	Tc 25 °C	2204	152
	Tc-nom 45 °C	2158	150
	Tc-max 85 °C	2045	144

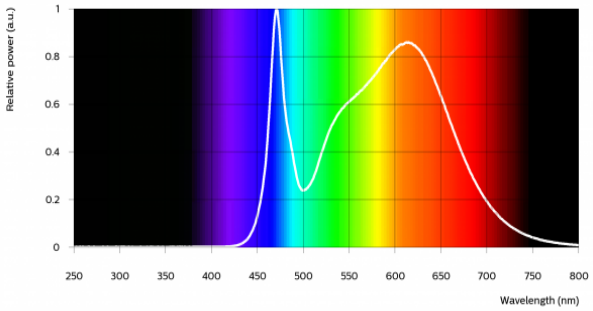


Fortimo LED-R 1ft MF 840 FC HV5

Parameter	Min	Typ	Max	Unit
Luminous flux	1070	1100	1190	lm
Efficacy	171	178	198	lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.379, 0.376)		-
Color consistency			3	SDCM
CRI	80			
R9	0			
Photometric code		840/339		
Photobiological safety			RG1 unlimited	

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
80% I-nom 220mA	Tc 25 °C	907	184
	Tc-nom 45 °C	888	182
	Tc-max 85 °C	843	175
I-nom 275mA	Tc 25 °C	1123	180
	Tc-nom 45 °C	1100	178
	Tc-max 85 °C	1044	171
I-max 600mA	Tc 25 °C	2343	162
	Tc-nom 45 °C	2293	160
	Tc-max 85 °C	2174	153



Electrical characteristics

Fortimo LED-R 1ft MF 827 FC HV5

Parameter	Min	Typ	Max	Unit
Forward voltage	21.4	22.1	22.3	V
Power consumption	5.89	6.07	6.13	W = kWh/1000h
Number of modules in series per chain			14	
Number of modules in parallel			1	

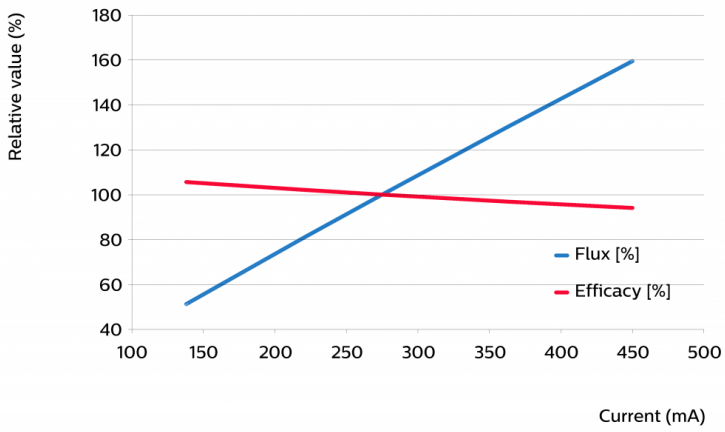
Fortimo LED-R 1ft MF 830 FC HV5
Fortimo LED-R 1ft MF 840 FC HV5

Parameter	Min	Typ	Max	Unit
Forward voltage	21.8	22.5	22.7	V
Power consumption	6.00	6.19	6.25	W = kWh/1000h
Number of modules in series per chain			14	
Number of modules in parallel			1	

Tuning information

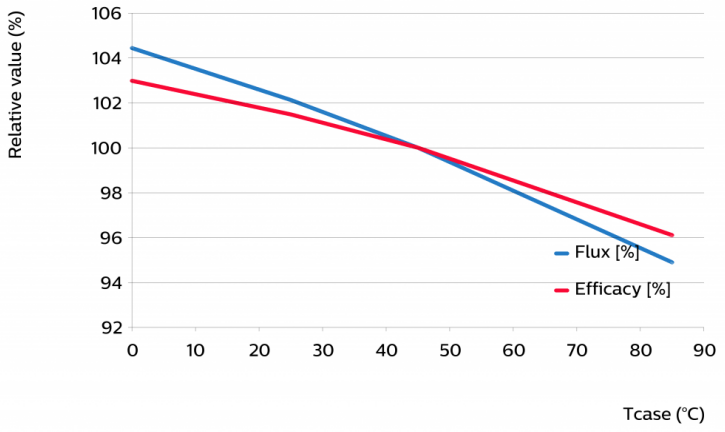
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
450	159	94
363	130	97
275	100	100
220	81	102
138	51	106



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

Tc [°C]	Flux [%]	Efficacy [%]
85	95	96
45	100	100
25	102	101
0	104	103



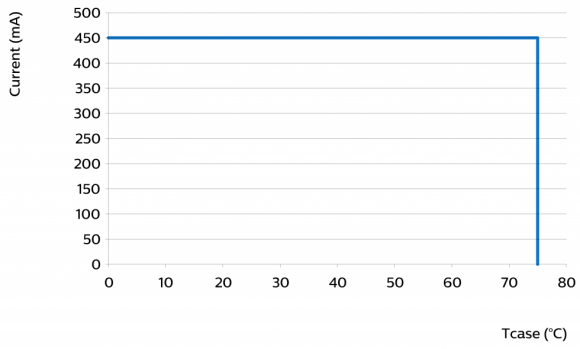
Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% Inom=220mA	Tc=25°C	>70	>70	>70	>70	>70	>70	>70	>70	>70
	Tc_nom=45°C	>70	>70	>70	>70	>70	>70	52	50	49
	Tc_life=75°C	>70	>70	>70	61	59	58	29	28	27
Inom=275mA	Tc=25°C	>70	>70	>70	>70	>70	>70	>70	>70	>70
	Tc_nom=45°C	>70	>70	>70	>70	>70	>70	49	48	47
	Tc_life=75°C	>70	>70	>70	58	56	55	27	26	26
Ilife=450mA	Tc=25°C	>70	>70	>70	>70	>70	>70	69	67	65
	Tc_nom=45°C	>70	>70	>70	>70	>70	>70	45	43	42
	Tc_life=75°C	>70	>70	>70	53	51	50	25	24	24

Lifetime

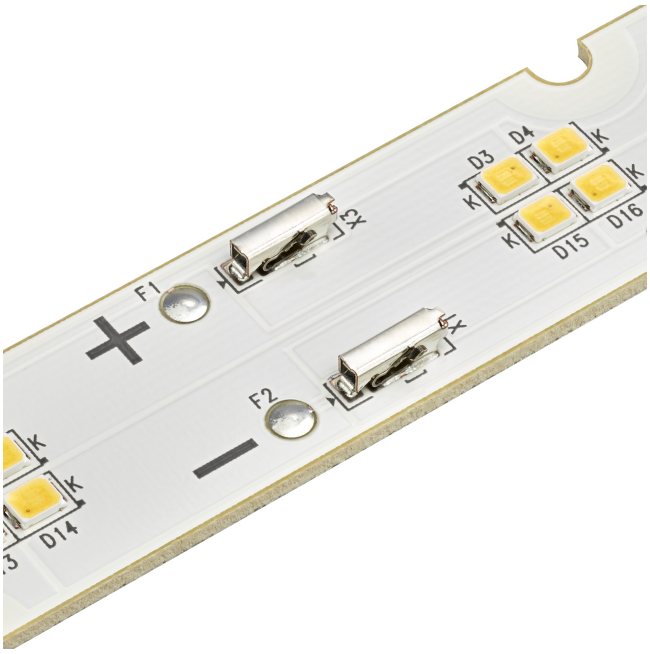
Parameter	Value	Unit
M70F50 nominal	>70000	hours
M70F50 life	>70000	hours

Performance Window



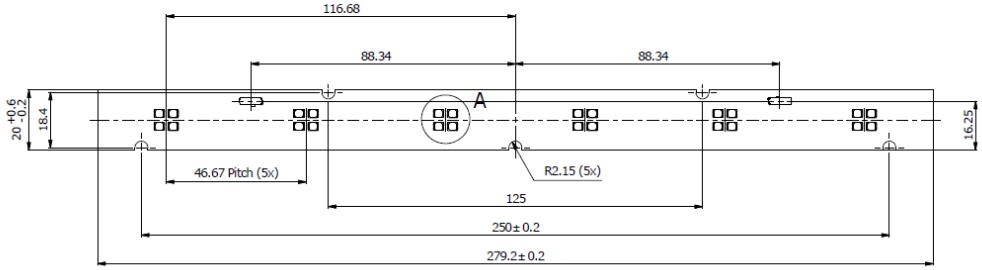
Wiring

Specification item	Value	Unit	Condition
Input wire cross-section	0.2…0.75	mm^2	solid wire, stranded wire
	18…24	AWG	solid wire, stranded wire
Input wire strip length	7.5…9.5	mm	



Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	279	279.2	279.4	mm
Width	19.8	20	20.6	mm
Height PCB		1.6		mm
Height Total		4.3		mm
Product mass		25		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		600	mA
Case temperature (Tc-max)		85	°C
ESD (direct contact)	8		kV
Working voltage		350	V_{dc}

Application information

Certificates and Standards
CE
ENEC
ENEC+
cULus

Environmental
RoHS/REACH

Application	
Overheating protection	no
Dimming	Yes

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