

PHILIPS

Fortimo

LED

Fortimo LED-R BioUP CED
1ft FC LV5



Datasheet

Fortimo LED-R BioUP CED 1ft FC LV5

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

- BioUp Cyan Enhanced Dynamic
- Designed to work together with the Xitanium FlexTune drivers
- Color tunable from 2700K to 5000K
- MDER enhancement from 3000K to 5000K
- MDER of 0,95 at 5000K
- Long life time: >50,000 hours
- Excellent color consistency of 3 SDCM
- 1ft and 2ft lengths
- Good light quality: CRI80, R9 >50
- Extremely easy to install in combination with BJB OptiLine Louvres
- Rotated LED positions to enable better color mixing
- Available in High Voltage (HV) and Low Voltage (LV)
- Five year system warranty when paired with Xitanium drivers

June 2022



Ordering data

Commercial product name	EOC	12NC	EPREL registration #	Box quantity
Fortimo LED-R BioUP CED 1ft FC LV5	8719514 448018 00	9290 034 06606	1227076	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 BioUP CED 1ft FC LV5	160	240	240	mA

For FlexTune driver configuration use 0.313, 0.310 (800lm) and 0.459, 0.405 (715lm) for cool and warm LED, at a rated current of 160mA for both.

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T _c (case temperature at T _c point)	45	70	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)

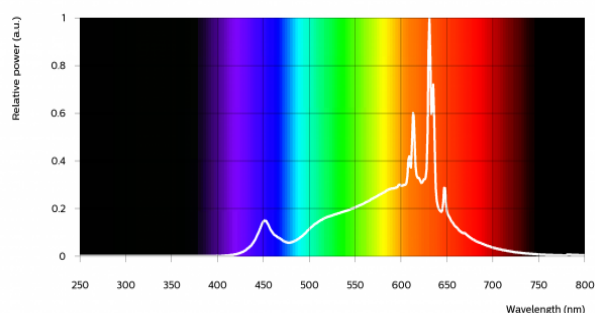
Fortimo LED-R BioUP CED 1ft FC LV5 [2700K]

Parameter	Min	Typ	Max	Unit
Luminous flux	780	800	860	lm
Efficacy	130	135	149	lm/W
Correlated color temperature (CCT)		2700		K
Color coordinates (CIEx, CIEy)		(0.459, 0.405)		-
Color consistency			3	SDCM
CRI	90			
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 ± 0.005 . Measurement precision for CRI ± 1.5 .

Operation point	927	lm	lm/W
80% I-nom 128mA	Tc 25 °C	674	145
	Tc-nom 45 °C	658	143
	Tc-max 85 °C	616	135
I-nom 160mA	Tc 25 °C	819	137
	Tc-nom 45 °C	800	135
	Tc-max 85 °C	747	127
I-max 240mA	Tc 25 °C	1155	120
	Tc-nom 45 °C	1127	118
	Tc-max 85 °C	1050	111

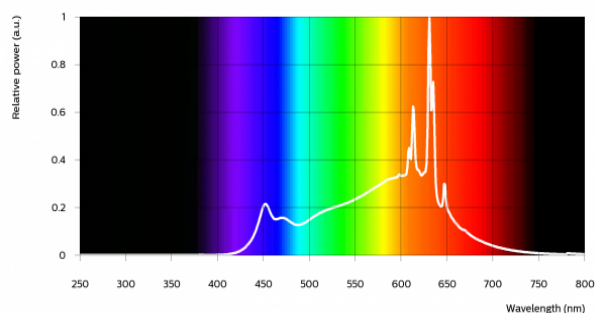


Fortimo LED-R BioUP CED 1ft FC LV5 [3000K]

Parameter	Min	Typ	Max	Unit
Luminous flux	760	785	850	lm
Efficacy	127	133	148	lm/W
Correlated color temperature (CCT)		3000		K
Color consistency			3	SDCM
CRI	80			
R9	0			
Photobiological safety			RG1 unlimited	

Measurement precision $\pm 5\%$ for the flux data and $\pm 6\%$ 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 128mA	Tc 25 °C	663	143
	Tc-nom 45 °C	648	141
	Tc-max 85 °C	607	134
I-nom 160mA	Tc 25 °C	804	135
	Tc-nom 45 °C	785	133
	Tc-max 85 °C	735	126
I-max 240mA	Tc 25 °C	1132	118
	Tc-nom 45 °C	1105	116
	Tc-max 85 °C	1032	110

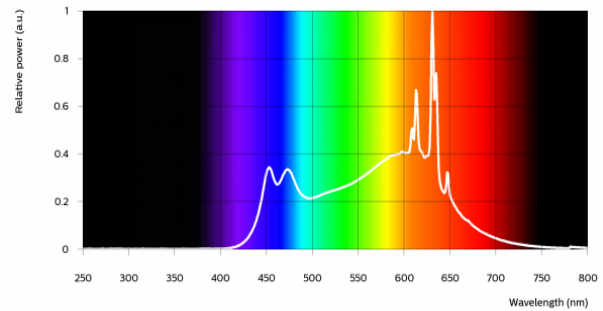


Fortimo LED-R BioUP CED 1ft FC LV5 [3500K]

Parameter	Min	Typ	Max	Unit
Luminous flux	750	770	830	lm
Efficacy	126	130	145	lm/W
Correlated color temperature (CCT)		3500		K
Color consistency			3	SDCM
CRI	80			
R9	0			
Photobiological safety			RG1 unlimited	

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

Operation point	835	lm	lm/W
80% I-nom 128mA	Tc 25 °C	648	140
	Tc-nom 45 °C	634	138
	Tc-max 85 °C	596	131
I-nom 160mA	Tc 25 °C	785	132
	Tc-nom 45 °C	770	130
	Tc-max 85 °C	721	124
I-max 240mA	Tc 25 °C	1102	116
	Tc-nom 45 °C	1077	114
	Tc-max 85 °C	1008	108

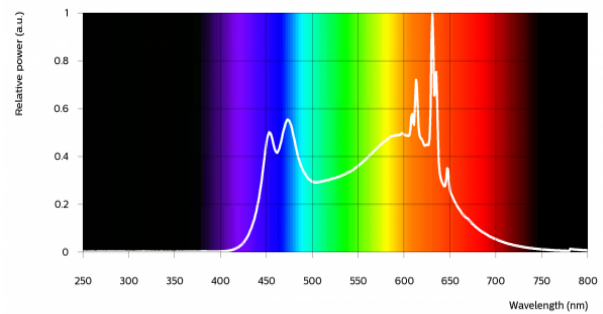


Fortimo LED-R BioUP CED 1ft FC LV5 [4000K]

Parameter	Min	Typ	Max	Unit
Luminous flux	730	755	820	lm
Efficacy	122	128	143	lm/W
Correlated color temperature (CCT)		4000		K
Color consistency			3	SDCM
CRI	80			
R9	0			
Photobiological safety			RG1 unlimited	

Measurement precision $\pm 5\%$ for the flux data and $\pm 6\%$ 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 128mA	Tc 25 °C	637	138
	Tc-nom 45 °C	624	136
	Tc-max 85 °C	587	130
I-nom 160mA	Tc 25 °C	771	130
	Tc-nom 45 °C	755	128
	Tc-max 85 °C	709	122
I-max 240mA	Tc 25 °C	1080	114
	Tc-nom 45 °C	1056	112
	Tc-max 85 °C	990	106

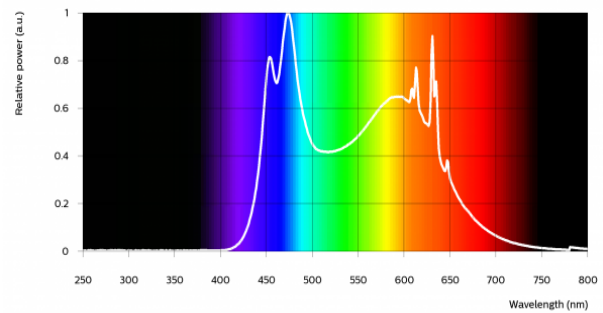


Fortimo LED-R BioUP CED 1ft FC LV5 [5000K]

Parameter	Min	Typ	Max	Unit
Luminous flux	710	735	790	lm
Efficacy	119	125	138	lm/W
Correlated color temperature (CCT)		5000		K
Color consistency			3	SDCM
CRI	80			
R9	0			
Photobiological safety			RG1 unlimited	

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

Operation point	850	lm	lm/W
80% I-nom 128mA	Tc 25 °C	621	135
	Tc-nom 45 °C	609	133
	Tc-max 85 °C	574	127
I-nom 160mA	Tc 25 °C	750	127
	Tc-nom 45 °C	735	125
	Tc-max 85 °C	693	120
I-max 240mA	Tc 25 °C	1047	111
	Tc-nom 45 °C	1025	109
	Tc-max 85 °C	964	104



Electrical characteristics

Fortimo LED-R BioUP CED 1ft FC LV5 [2700K]

Parameter	Min	Typ	Max	Unit
Forward voltage	36.0	37.1	37.5	V
Power consumption	5.76	5.94	6.00	W = kWh/1000h
Number of modules in series per chain			1	
Number of modules per chain			6	

Fortimo LED-R BioUP CED 1ft FC LV5 [3000K]

Parameter	Min	Typ	Max	Unit
Forward voltage	35.9	37.0	37.4	V
Power consumption	5.74	5.92	5.98	W = kWh/1000h
Number of modules in series per chain			1	
Number of modules per chain			6	

Fortimo LED-R BioUP CED 1ft FC LV5 [3500K]

Fortimo LED-R BioUP CED 1ft FC LV5 [4000K]

Parameter	Min	Typ	Max	Unit
Forward voltage	35.8	36.9	37.3	V
Power consumption	5.73	5.90	5.96	W = kWh/1000h
Number of modules in series per chain			1	
Number of modules per chain			6	

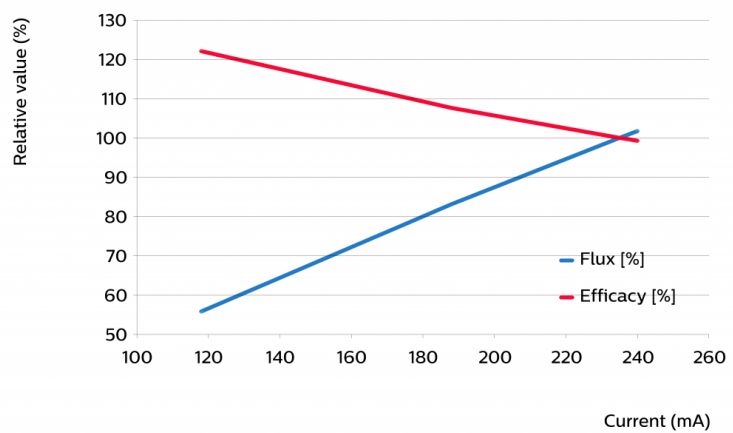
Fortimo LED-R BioUP CED 1ft FC LV5 [5000K]

Parameter	Min	Typ	Max	Unit
Forward voltage	35.7	36.8	37.2	V
Power consumption	5.71	5.89	5.95	W = kWh/1000h
Number of modules in series per chain			1	
Number of modules per chain			6	

Tuning information

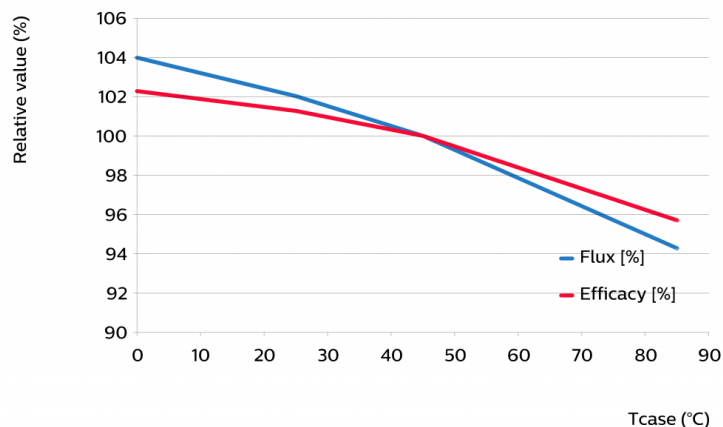
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
240	102	99
238	101	100
235	100	100
188	83	108
118	56	122



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

Tc [°C]	Flux [%]	Efficacy [%]
85	94	96
45	100	100
25	102	101
0	104	102



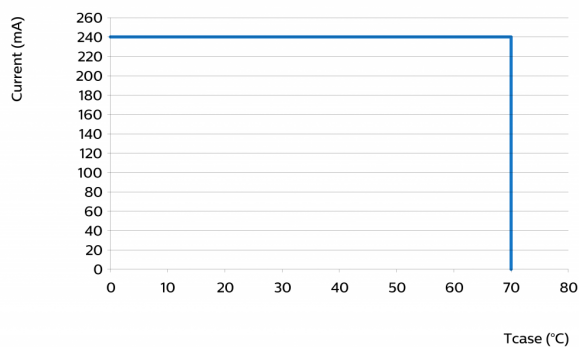
Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% Inom=128mA	Tc=25°C	>70	>70	>70	>70	>70	>70	>70	>70	>70
	Tc_nom=45°C	>70	>70	>70	>70	>70	>70	65	63	61
	Ilife=450mA	>70	>70	>70	>70	>70	>70	50	48	47
Inom=160mA	Tc=25°C	>70	>70	>70	>70	>70	>70	>70	>70	>70
	Tc_nom=45°C	>70	>70	>70	>70	>70	>70	62	60	59
	Ilife=450mA	>70	>70	>70	>70	>70	>70	47	46	45
Ilife=240mA	Tc=25°C	>70	>70	>70	>70	>70	>70	>70	80	68
	Tc_nom=45°C	>70	>70	>70	>70	>70	>70	57	55	54
	Ilife=450mA	>70	>70	>70	>70	>70	>70	44	42	42

Lifetime

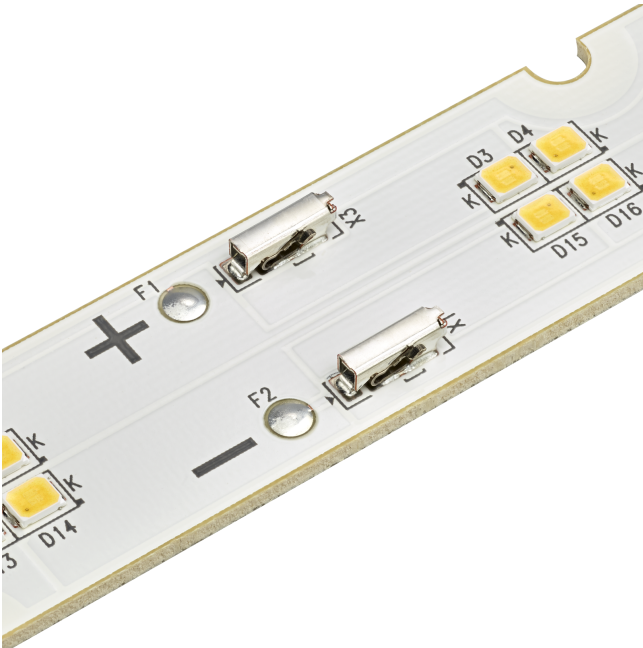
Parameter	Value	Unit
M70F50 nominal	>70000	hours
M70F50 life	>70000	hours

Performance Window



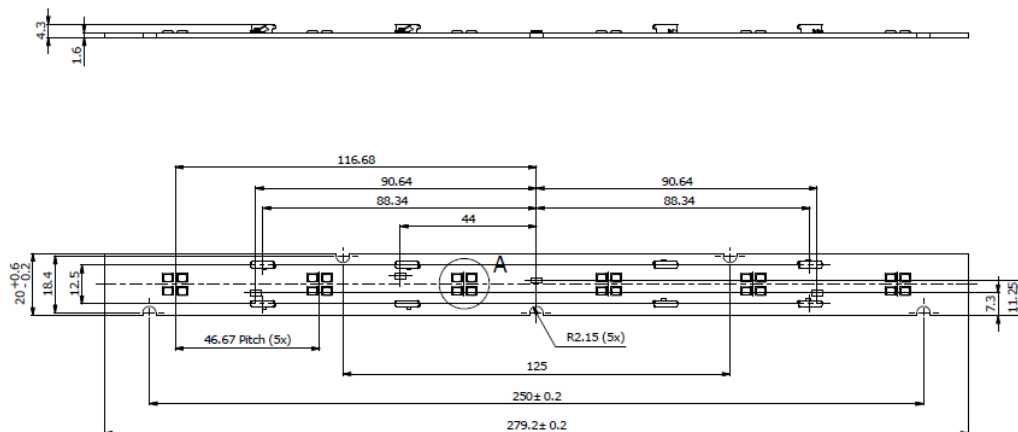
Wiring

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)		240	mA
Case temperature (Tc-max)		85	°C
ESD (direct contact)	8		kV
Working voltage		120	V _{dc}

Application information

Certificates and Standards

CE
ENEC
ENEC+
cULus

Application

Overheating protection	no
Dimming	Yes



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