

PHILIPS

Fortimo

LED

Fortimo LED Strip CED 1ft
MF FC LV5



Datasheet

BioUp CED technology brings all aspects of human centric lighting together

Fortimo LED Strip CED 1ft MF FC LV5

By combining FlexTune tunable white technology together with high MDER spectra it's now possible to create a dynamic lighting system that enables a biological effect whilst not compromising on the visual and emotional benefits. BioUp CED technology is tunable from 2700K up till 5000K. One of the unique features is that there is no MDER enhancement at 2700K so an ideal evening setting can be created. Whilst the MDER at 5000K reaches its peak up to 0.95, this increases the biological activation of the light source significantly.

Key features and benefits

- CCT tunable: 2700K – 5000K
- High MDER at 5000K of up to 0.95
- Quality of light: CRI >80, R9 >50 (2700K CRI >90, R9 >50)
- Available in 1ft and 2ft
- Excellent color consistency of 3 SDCM
- Long lifetime solution: >70.000 hours
- Same dimensions and form-factors as other Fortimo LED Strip products enables an easy upgrade of existing luminaires

March 2022



Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo LED Strip CED 1ft MF FC LV5	87195143 85702 00	9290 029 24206	120

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Strip CED 1ft MF FC LV5	215	400	400	mA

For FlexTune driver configuration use 0.3114, 0.3134 (1001lm) and 0.4590, 0.4065 (1100lm) for cool and warm LED, at a rated current of 215mA for both.

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T _c (case temperature at T _c point)	45	70	80	°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

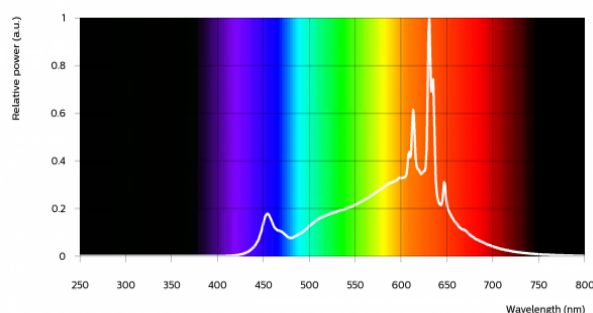
Optical characteristics - table per color (CCT)

Fortimo LED Strip CED 1ft MF FC LV5 [2700K]

Parameter	Min	Typ	Max	Unit
Luminous flux	1018	1100	1183	lm
Efficacy	130	145		lm/W
Correlated color temperature (CCT)		2700		K
Color coordinates (CIEx, CIEy)		(0.459, 0.407)		-
Color consistency			3	SDCM
CRI	90			
R9	50			
Photometric code		927/369		
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5 Reference control settings according to CR (EU) 2019/2020

Operation point	927	lm	lm/W
80% I-nom 172mA	Tc 25 °C	921	154
	Tc-nom 45 °C	899	151
	Tc-max 70 °C	850	145
I-nom 215mA	Tc 25 °C	1130	148
	Tc-nom 45 °C	1100	145
	Tc-max 70 °C	1043	139
I-max 400mA	Tc 25 °C	1966	127
	Tc-nom 45 °C	1918	125
	Tc-max 70 °C	1809	119

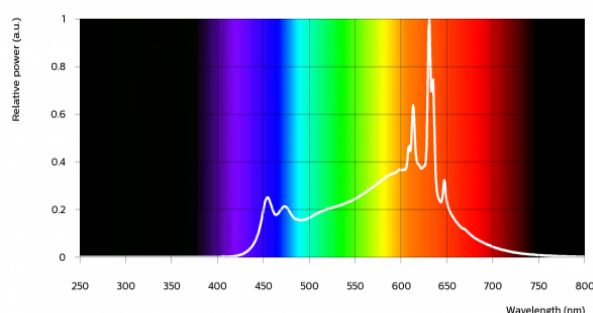


Fortimo LED Strip CED 1ft MF FC LV5 [3000K]

Parameter	Min	Typ	Max	Unit
Luminous flux	1003	1084	1165	lm
Efficacy	129	143		lm/W
Correlated color temperature (CCT)		3000		K
Color consistency			3	SDCM
CRI	80			
R9	50			
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	830	lm	lm/W
80% I-nom 172mA	Tc 25 °C	907	152
	Tc-nom 45 °C	887	149
	Tc-max 70 °C	840	143
I-nom 215mA	Tc 25 °C	1112	146
	Tc-nom 45 °C	1084	143
	Tc-max 70 °C	1029	137
I-max 400mA	Tc 25 °C	1928	125
	Tc-nom 45 °C	1883	123
	Tc-max 70 °C	1779	117

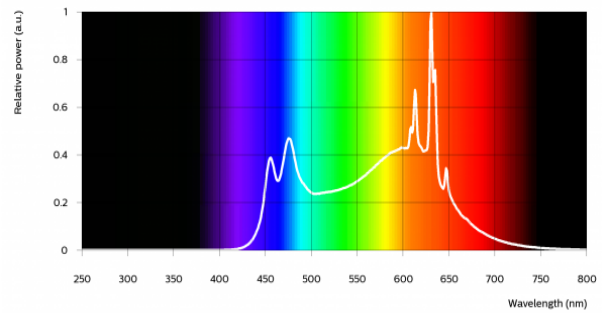


Fortimo LED Strip CED 1ft MF FC LV5 [3500K]

Parameter	Min	Typ	Max	Unit
Luminous flux	983	1063	1143	lm
Efficacy	126	140		lm/W
Correlated color temperature (CCT)		3500		K
Color consistency			3	SDCM
CRI	80			
R9	50			
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	835	lm	lm/W
80% I-nom 172mA	Tc 25 °C	890	149
	Tc-nom 45 °C	871	147
	Tc-max 70 °C	826	141
I-nom 215mA	Tc 25 °C	1089	143
	Tc-nom 45 °C	1063	140
	Tc-max 70 °C	1011	135
I-max 400mA	Tc 25 °C	1880	122
	Tc-nom 45 °C	1838	120
	Tc-max 70 °C	1739	115

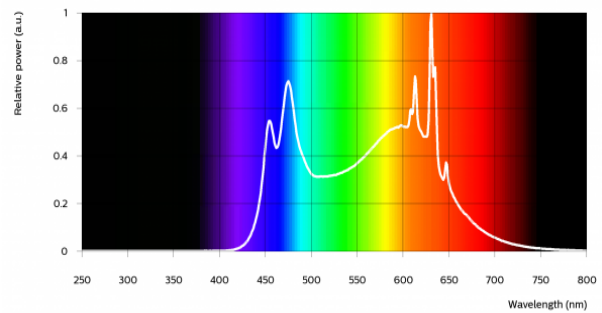


Fortimo LED Strip CED 1ft MF FC LV5 [4000K]

Parameter	Min	Typ	Max	Unit
Luminous flux	968	1047	1126	lm
Efficacy	125	139		lm/W
Correlated color temperature (CCT)		4000		K
Color consistency			3	SDCM
CRI	80			
R9	50			
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	840	lm	lm/W
80% I-nom 172mA	Tc 25 °C	876	147
	Tc-nom 45 °C	858	145
	Tc-max 70 °C	816	140
I-nom 215mA	Tc 25 °C	1071	141
	Tc-nom 45 °C	1047	139
	Tc-max 70 °C	997	134
I-max 400mA	Tc 25 °C	1843	120
	Tc-nom 45 °C	1803	118
	Tc-max 70 °C	1709	113

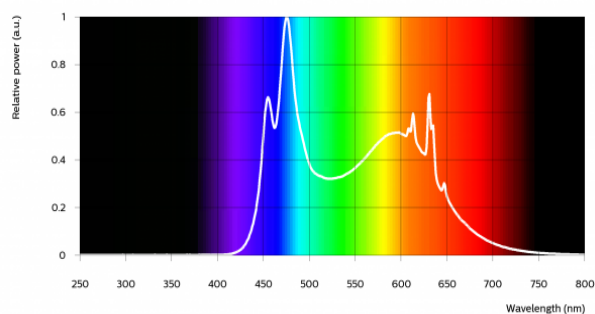


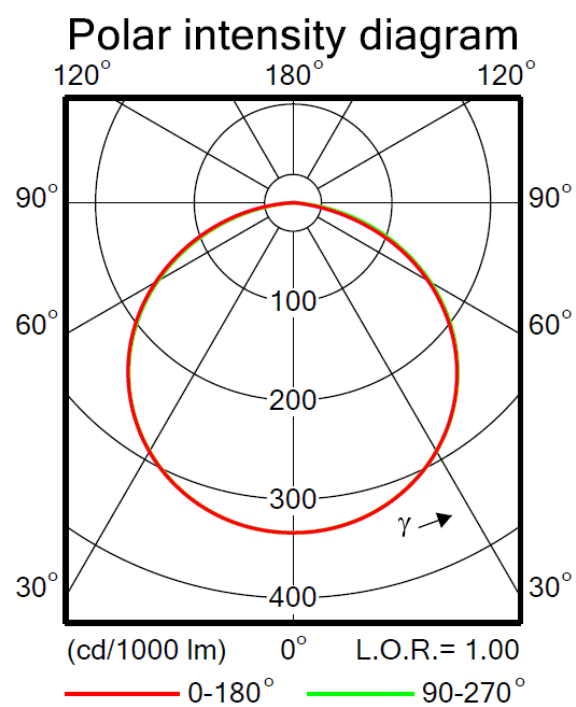
Fortimo LED Strip CED 1ft MF FC LV5 [5000K]

Parameter	Min	Typ	Max	Unit
Luminous flux	947	1024	1101	lm
Efficacy	122	136		lm/W
Correlated color temperature (CCT)		5000		K
Color consistency			3	SDCM
CRI	80			
R9	50			
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	850	lm	lm/W
80% I-nom 172mA	Tc 25 °C	857	144
	Tc-nom 45 °C	840	142
	Tc-max 70 °C	800	137
I-nom 215mA	Tc 25 °C	1046	138
	Tc-nom 45 °C	1024	136
	Tc-max 70 °C	976	131
I-max 400mA	Tc 25 °C	1790	117
	Tc-nom 45 °C	1753	115
	Tc-max 70 °C	1666	111





Electrical characteristics

Fortimo LED Strip CED 1ft MF FC LV5 [2700K]

Parameter	Min	Typ	Max	Unit
Forward voltage	33.5	35.3	36.0	V
Power consumption		7.59		W = kWh/1000h
Number of modules in series per chain			1	
Number of modules per chain			8	

Fortimo LED Strip CED 1ft MF FC LV5 [3000K]

Parameter	Min	Typ	Max	Unit
Forward voltage	33.5	35.3	36.0	V
Power consumption		7.58		W = kWh/1000h
Number of modules in series per chain			1	
Number of modules per chain			8	

Fortimo LED Strip CED 1ft MF FC LV5 [3500K]

Parameter	Min	Typ	Max	Unit
Forward voltage	33.4	35.2	35.9	V
Power consumption		7.57		W = kWh/1000h
Number of modules in series per chain			1	
Number of modules per chain			8	

Fortimo LED Strip CED 1ft MF FC LV5 [4000K]

Parameter	Min	Typ	Max	Unit
Forward voltage	33.4	35.2	35.9	V
Power consumption		7.56		W = kWh/1000h
Number of modules in series per chain			1	
Number of modules per chain			8	

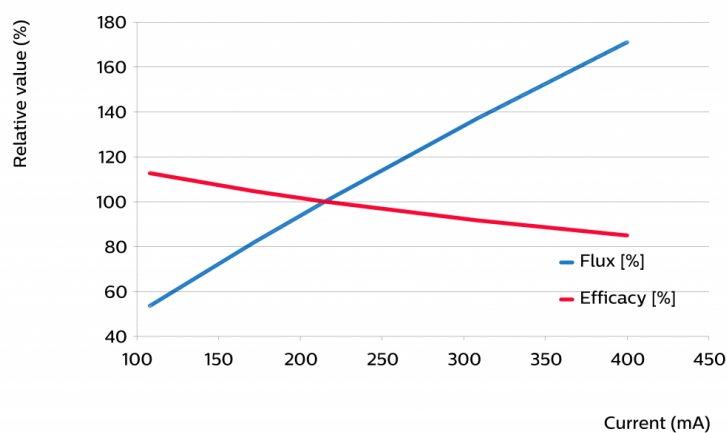
Fortimo LED Strip CED 1ft MF FC LV5 [5000K]

Parameter	Min	Typ	Max	Unit
Forward voltage	33.3	35.1	35.8	V
Power consumption		7.55		W = kWh/1000h
Number of modules in series per chain			1	
Number of modules per chain			8	

Tuning information

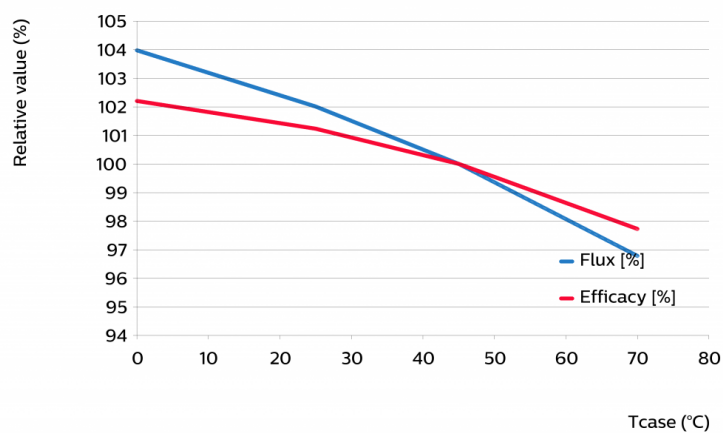
Flux and efficacy versus current (at T_c nominal)

I [mA]	Flux [%]	Efficacy [%]
400	171	85
308	137	92
215	100	100
172	82	105
108	54	113



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

T _c [°C]	Flux [%]	Efficacy [%]
70	97	98
45	100	100
25	102	101
0	104	102



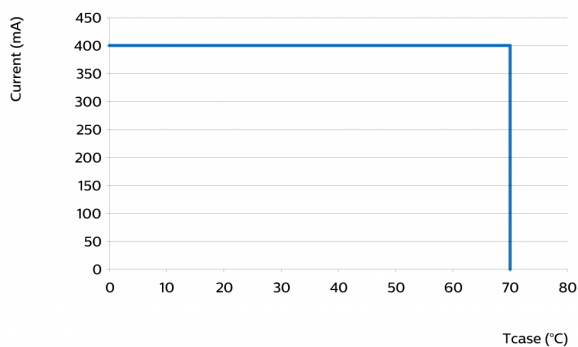
Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% I-nom 172mA	Tc 25°C	>70	>70	>70	>70	>70	>70	>70	>70	>70
	Tc-nom 45°C	>70	>70	>70	>70	>70	>70	70	68	67
	Tc-life 70°C	>70	>70	>70	>70	>70	>70	54	52	52
I-nom 215 mA	Tc 25°C	>70	>70	>70	>70	>70	>70	>70	>70	>70
	Tc-nom 45°C	>70	>70	>70	>70	>70	>70	67	65	64
	Tc-life 70°C	>70	>70	>70	>70	>70	>70	51	50	49
I-life 400mA	Tc 25°C	>70	>70	>70	>70	>70	>70	>70	>70	>70
	Tc-nom 45°C	>70	>70	>70	>70	>70	>70	59	58	57
	Tc-life 70°C	>70	>70	>70	>70	>70	>70	45	44	44

Lifetime

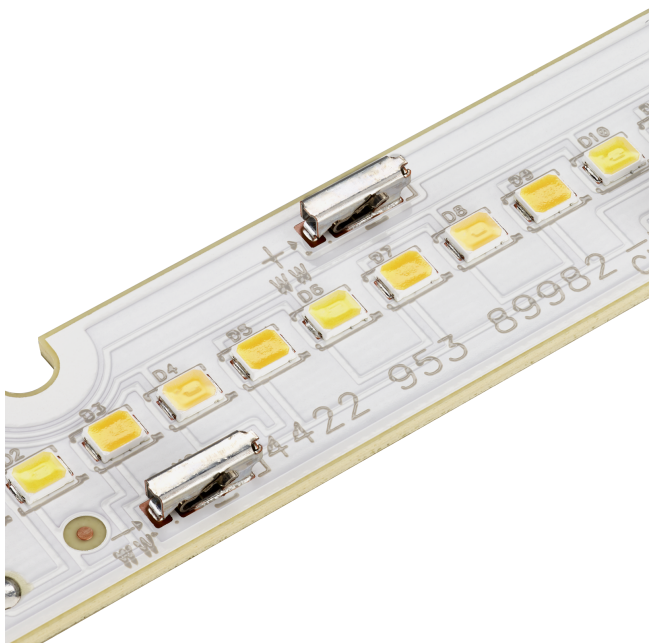
Parameter	Value	Unit
M70F50 nominal	>70000	hours
M70F50 life	>70000	hours

Performance Window



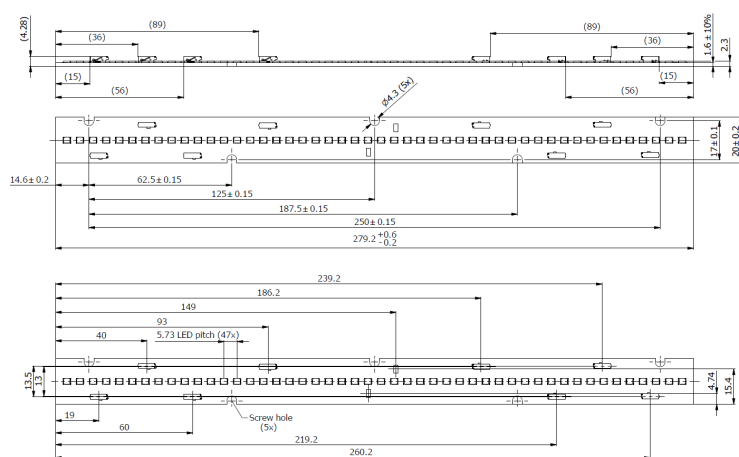
Wiring

Specification item	Value	Unit	Condition
Input wire cross-section	0.25...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	279	279.2	279.8	mm
Width	19.8	20	20.2	mm
Height PCB	1.45	1.6	1.75	mm
Height total		4.3		mm
Product mass		20		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		400	mA
Case temperature (Tc-max)		80	°C
Working voltage		60	V _{dc}

Application information

Certificates and Standards

CE
ENEC
ENEC+
cULus

Environmental

RoHS/REACH

Application

Dimming	Yes
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