PHILIPS

Fortimo

LED

Fortimo LED Strip CES 1ft 1100lm LV5



Datasheet

A true Human Centric Lighting solution for office applications

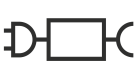
Fortimo LED Strip CES 1ft 1100lm LV5 F

The impact of lighting on the human body is the subject of many research studies. Several studies have proven that the light spectrum influences the body's creation of the sleep hormone melatonin. In this area of human centric lighting (HCL) the Fortimo LED Strip CES HV/LV5 provides the right spectrum of light to help the human body to suppress the creation of melatonin during the day. This is being achieved by adding cyan light to the LED modules and combine them with white LEDs to create a neutral white color temperature. This technology is called Cyan Enhanced Static (CES) and is based on the Fortimo LED Strip platform. CES technology helps to achieve the highest MDER possible at a comfortable light quality.

Key features and benefits

- Upgrade your existing fixture easily to an HCL solution by applying Fortimo LED Strip CES
- MDER ≥ 0.86 possible at 500lux with comfortable light quality
- 4200K, CRI > 80, R9 >50
- Available in 1ft and 2ft
- Choose from high voltage or low voltage boards
- Highly efficient HCL solution: 161 lm/W
- Excellent color consistency of 3 SDCM
- Long lifetime solution: >70.000 hours
- Five years system warranty

October 2020







Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo LED Strip CES 1ft 1100lm LV5 F	8718699 768171 00	9290 021 99006	168

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Strip CES 1ft 1100lm LV5	250	500	600	mA

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

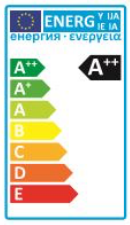
** Value at which life time is specified

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

Optical characteristics - table per color (CCT)

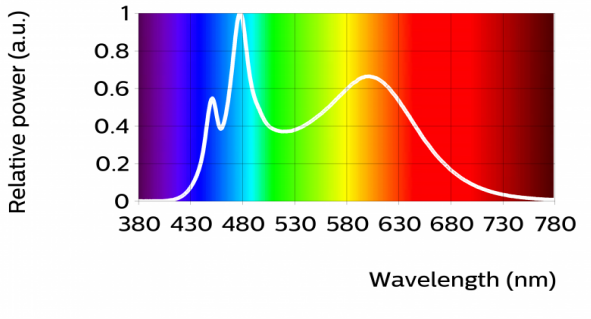
Fortimo LED Strip CES 1ft 1100lm LV5 F

Parameter	Min	Typ	Max	Unit
Luminous flux	1045	1100	1155	lm
Module efficacy	152	161		lm/W
Correlated color temperature (CCT)		4200		K
Color coordinates (CIEx, CIEy)		(0.368, 0.360)		-
Color consistency			3	SDCM
CRI	80			
R9	50			
Photometric code		842/359		
Photobiological safety			RG1 unlimited	



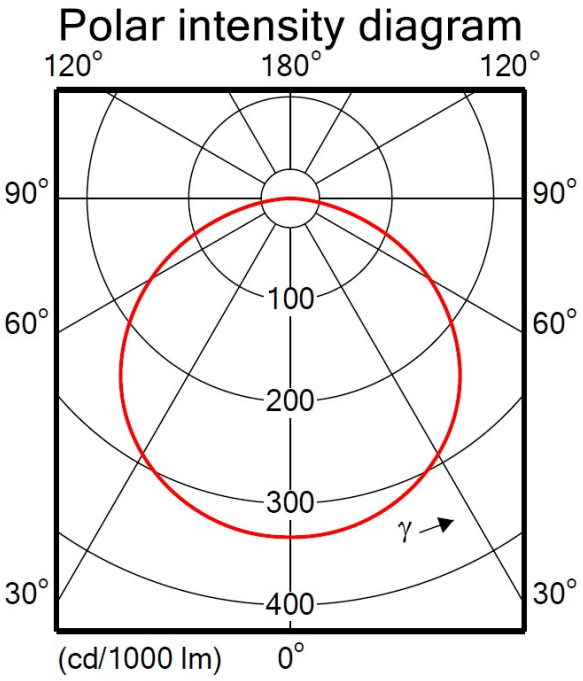
Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	842	lm	lm/W
80% I-nom 200mA	Tc 25 °C	902	165
	Tc-nom 45 °C	891	163
	Tc-max 85 °C	834	153
I-nom 250mA	Tc 25 °C	1113	163
	Tc-nom 45 °C	1100	161
	Tc-max 85 °C	1030	151
I-max 600mA	Tc 25 °C	2478	151
	Tc-nom 45 °C	2449	150
	Tc-max 85 °C	2303	141



Beam shape

The module has a Lambertian light distribution



Electrical characteristics

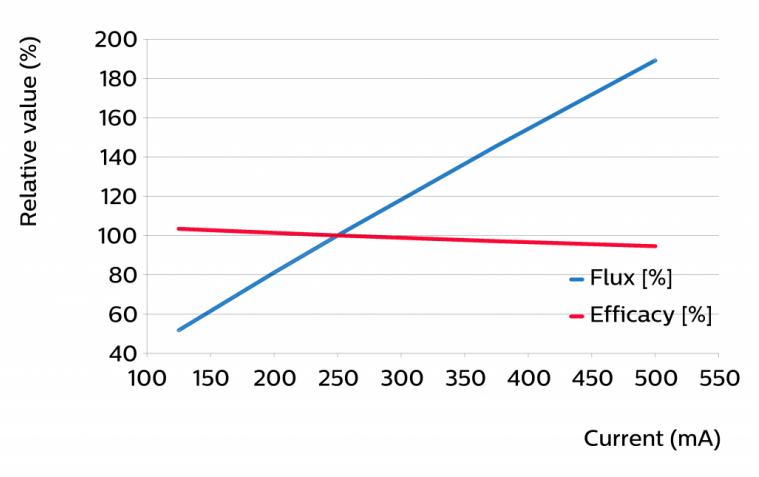
Parameter	Min	Typ	Max	Unit
Forward voltage	27.3	27.3	28.4	V
Power consumption	6.8	6.8	7.1	W = kWh/1000h
Number of modules in series per chain			1	
Number of modules in parallel per chain			4	

Measurement precision for Vf +/- 3%. Measurement precision for power +/- 3.3%.

Tuning information

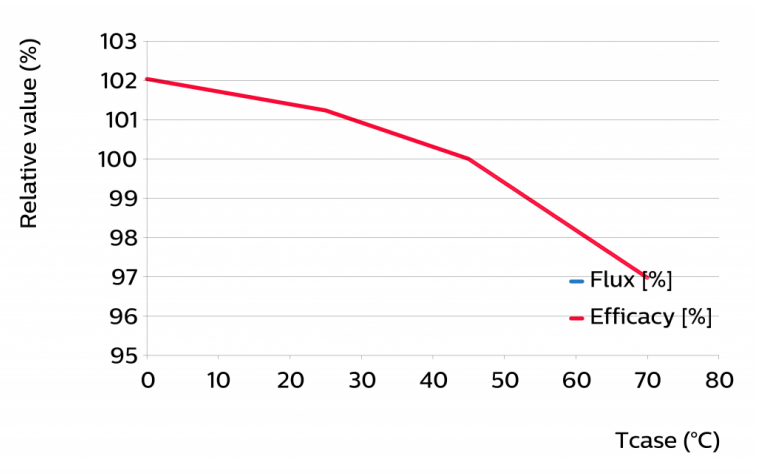
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
500	189	95
375	146	97
250	100	100
200	81	101
125	52	103



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

Tc [°C]	Flux [%]	Efficacy [%]
70	97	97
45	100	100
25	101	101
0	102	102



Lumen maintenance

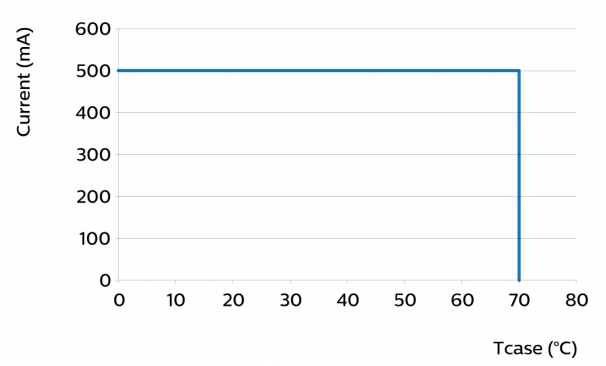
Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% I_nom 200mA	Tc 25°C	>70	>70	>70	>70	>70	>70	52	52	51
	Tc_nom 45°C	>70	>70	>70	>70	>70	>70	44	43	43
	Tc_life 70°C	>70	>70	>70	>70	>70	>70	38	38	38
I_nom 250 mA	Tc 25°C	>70	>70	>70	>70	>70	>70	52	52	51
	Tc_nom 45°C	>70	>70	>70	>70	>70	>70	44	43	43
	Tc_life 70°C	>70	>70	>70	>70	>70	>70	38	38	38
I_life 500 mA	Tc 25°C	>70	>70	>70	>70	>70	>70	49	49	48
	Tc_nom 45°C	>70	>70	>70	>70	>70	>70	43	42	42
	Tc_life 70°C	>70	>70	>70	>70	>70	>70	36	35	35

Lifetime

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

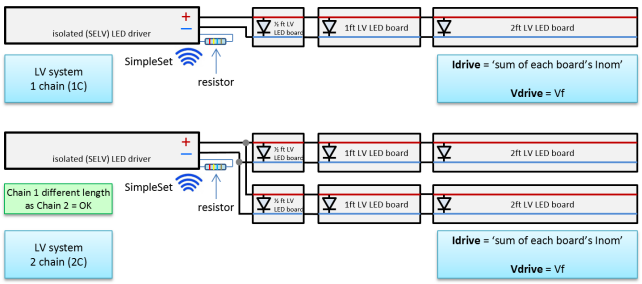
Switching cycles in accordance to EU 1194/2012: >15000.

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	

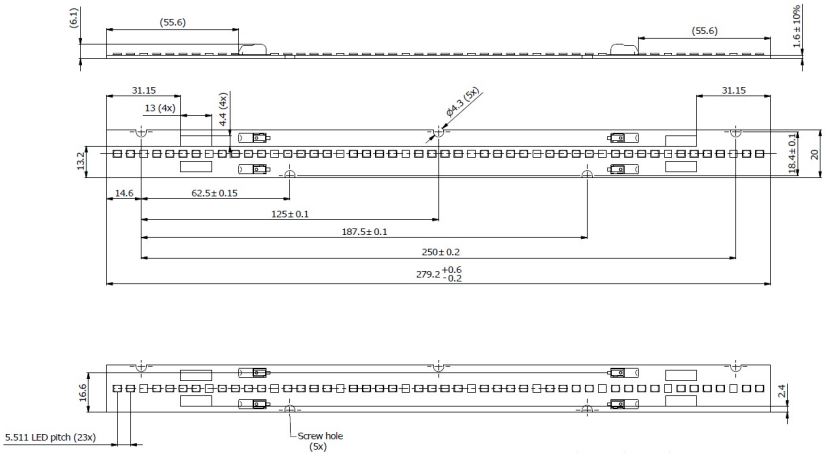


More information in the design-in guide of LED Linear modules.



Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	279	279.2	279.8	mm
Width	19.8	20	20.2	mm
Height PCB	1.44	1.6	1.76	mm
Height total		6.1		mm
Product mass		19		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		120	V_{dc}
Ambient temperature	-20		°C

Application information

Certificates and Standards

CE
ENEC
ENEC+
UL

Environmental

RoHS/REACH

Application	
Dimming	Yes



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