PHILIPS

Fortimo

LED

Fortimo LED Strip CES 2ft 2200lm LV5

Datasheet

A true Human Centric Lighting solution for office applications

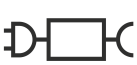
Fortimo LED Strip CES 2ft 2200lm LV5 F

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 2021



Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo LED Strip CES 2ft 2200lm LV5 F	8718699 768218 00	9290 021 99106	84

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Strip CES 2ft 2200lm LV5	500	1000	1200	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

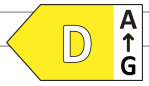
** Value at which life time is specified

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

Optical characteristics - table per color (CCT)

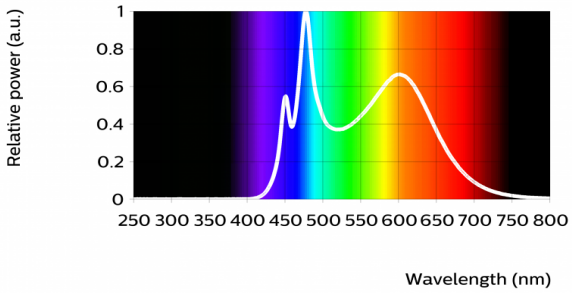
Fortimo LED Strip CES 2ft 2200lm LV5 F

Parameter	Min	Typ	Max	Unit
Luminous flux	1998	2160	2322	lm
Module efficacy	152	158	171	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	



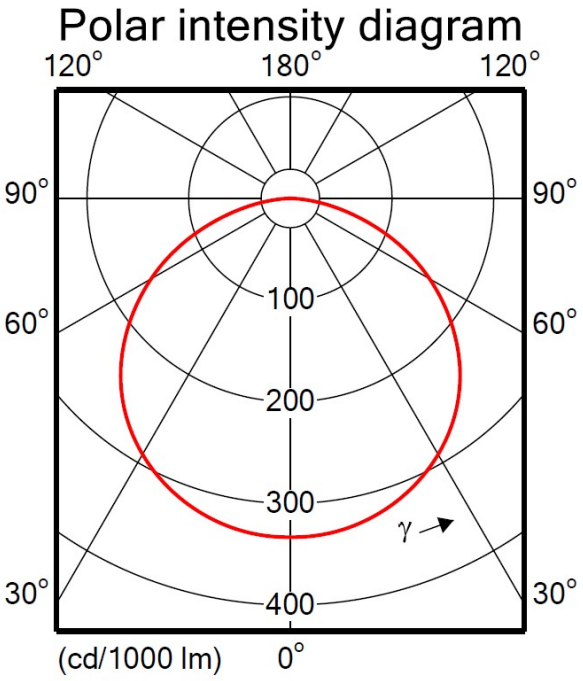
Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	842	lm	lm/W
80% I-nom 400mA	Tc 25 °C	1805	165
	Tc-nom 45 °C	1782	163
	Tc-max 70 °C	1667	153
I-nom 500mA	Tc 25 °C	2225	163
	Tc-nom 45 °C	2160	158
	Tc-max 70 °C	2061	151
I-max 1200mA	Tc 25 °C	4956	151
	Tc-nom 45 °C	4898	150
	Tc-max 70 °C	4604	141



Beam shape

The module has a Lambertian light distribution



Electrical characteristics

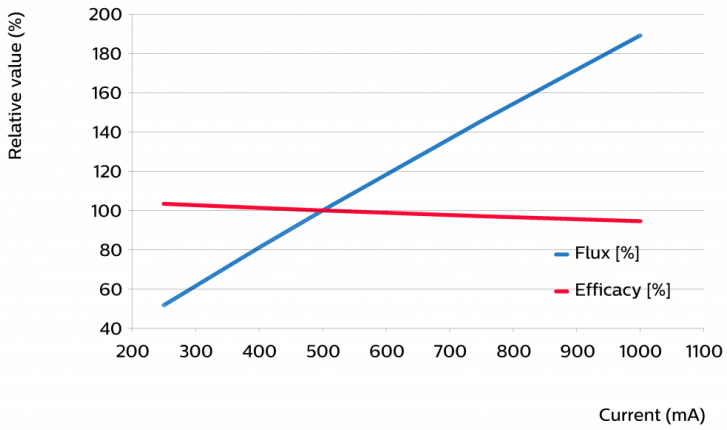
Parameter	Min	Typ	Max	Unit
Forward voltage	27.3	27.3	28.4	V
Power consumption	13.7	13.7	14.2	W = kWh/1000h
Number of modules in series per chain			1	
Number of modules per chain			2	

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

Tuning information

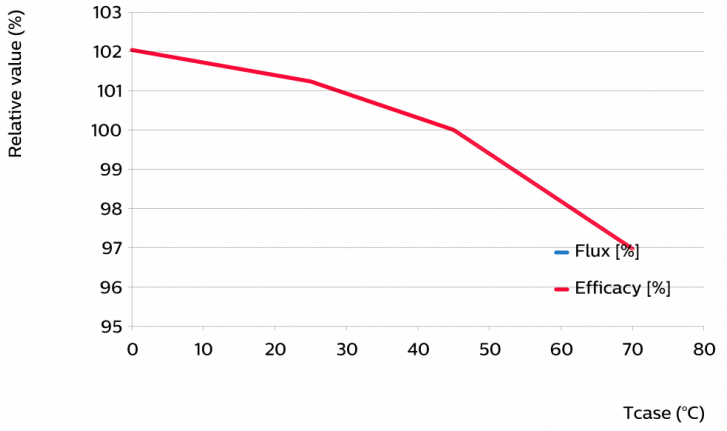
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
1000	189	95
750	146	97
500	100	100
400	81	101
250	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



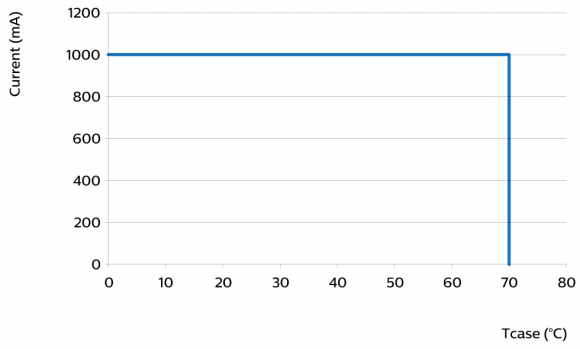
Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% I_nom 400mA	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 500 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 1000 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

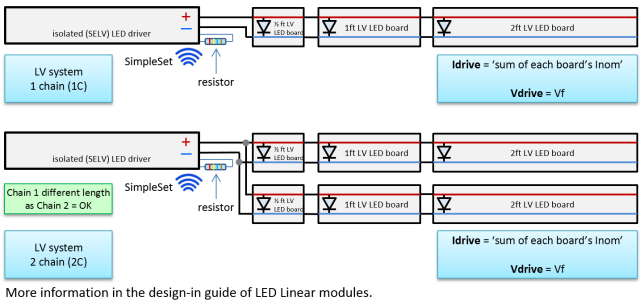
Parameter	Value	Unit
M70F50 nominal	>70000	hours
M70F50 life	>70000	hours

Performance Window



Wiring

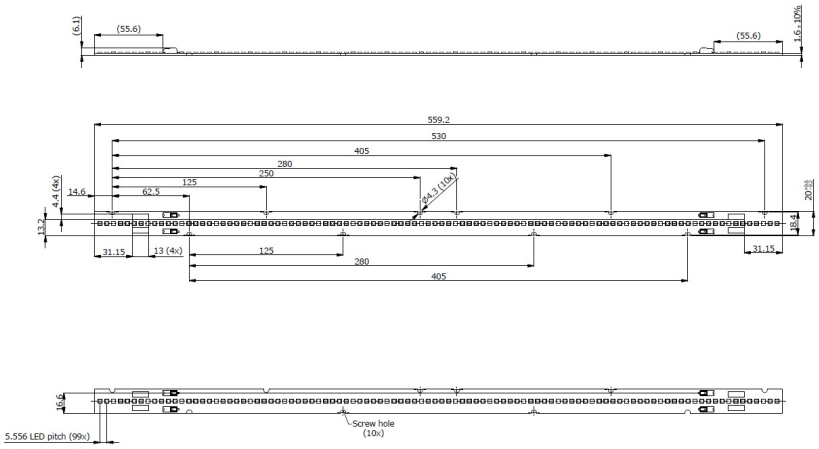
Specification item	Value	Unit	Condition
Input wire cross-section	0.25…0.75	mm²	solid wire
	18…24	AWG	solid wire
Input wire strip length	7.5…8.5	mm	
Input wire cross-section	0.33…0.5	mm²	stranded wire
	20…22	AWG	stranded wire
Input wire strip length	7.5…8.5	mm	



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

Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	558.3	559.2	559.5	mm
Width	19.8	20	20.6	mm
Height PCB	1.44	1.6	1.76	mm
Height total		6.1		mm
Product mass		37		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		1200	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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