

PHILIPS

Fortimo

LED

Fortimo LED Strip 1ft
650lm 9xx HV5



Datasheet

Fortimo LED Strip 1ft 650lm 9xx HV5

The Fortimo LED Strip is a uniquely wide portfolio which can be used in all kind of linear indoor luminaire types. It's form factor makes it easy to design-in and handle in production as it complies to Zhaga standards. Due to the availability from 0.5ft up to 5ft lengths only one product family is needed to cover a wide range of needs.

Key features and benefits

- Typical module efficacy of 185 lm/W (at 4000K CRI80)
- High performance for CRI90 of 175 lm/W (at 4000K CRI90)
- Long life-time: >50,000 hours
- Excellent color consistency of 3 SDCM
- Two lumen packages per length available
- CCTs available: 3000K and 4000K
- Available in High Voltage (HV) and Low Voltage (LV)
- Small LED module width of only 20mm
- Wide temperature (Tc) range -40°C to +80°C
- Five year system warranty

August 2020



Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo LED Strip 1ft 650lm 927 FC HV5	8718699 717933 00	9290 021 19906	168
Fortimo LED Strip 1ft 650lm 930 FC HV5	8718699 717957 00	9290 021 20006	168
Fortimo LED Strip 1ft 650lm 940 FC HV5	8718699 717971 00	9290 021 20106	168

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Strip 1ft 650lm 9xx HV5	270	480	600	mA

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)

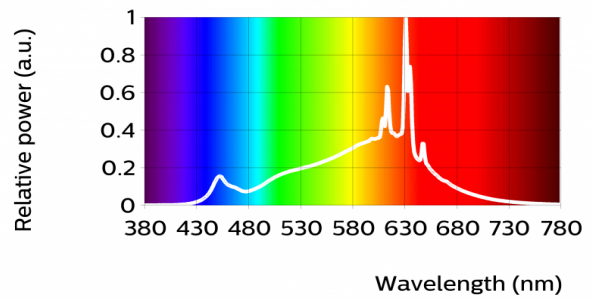
Fortimo LED Strip 1ft 650lm 927 FC HV5

Parameter	Min	Typ	Max	Unit
Luminous flux	541	585	629	lm
Module efficacy	143	155		lm/W
Correlated color temperature (CCT)		2700		K
Color coordinates (CIEx, CIEy)		(0.462, 0.408)		-
Color consistency			3	SDCM
CRI	90			
R9	50			
Photometric code		927/369		
Radiation angle		120		deg
Photobiological safety			RG1 unlimited	



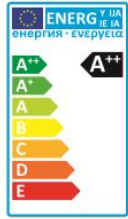
Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	927	lm	
		lm	lm/W
50% I-nom 135mA	Tc 25 °C	308	169
	Tc-nom 45 °C	301	166
	Tc-max 80 °C	285	160
I-nom 270mA	Tc 25 °C	599	158
	Tc-nom 45 °C	585	155
I-max 600mA	Tc 25 °C	1244	136
	Tc-nom 45 °C	1215	134
	Tc-max 80 °C	1147	128



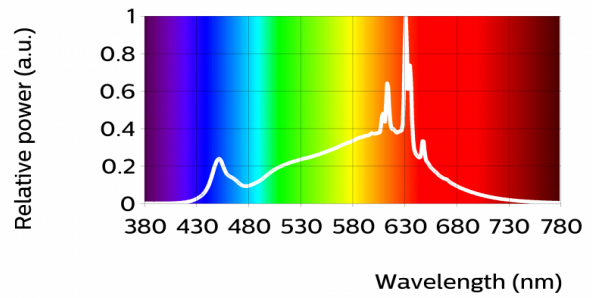
Fortimo LED Strip 1ft 650lm 930 FC HV5

Parameter	Min	Typ	Max	Unit
Luminous flux	564	620	656	lm
Module efficacy	149	164		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.437, 0.399)		-
Color consistency			3	SDCM
CRI	90			
R9	50			
Photometric code		930/369		
Radiation angle		120		deg
Photobiological safety			RG1 unlimited	



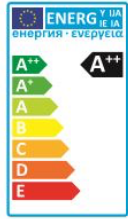
Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	930	lm	lm/W
50% I-nom 135mA	Tc 25 °C	326	179
	Tc-nom 45 °C	319	177
	Tc-max 80 °C	302	169
I-nom 270mA	Tc 25 °C	635	167
	Tc-nom 45 °C	620	164
	Tc-max 80 °C	587	158
I-max 600mA	Tc 25 °C	1319	144
	Tc-nom 45 °C	1288	142
	Tc-max 80 °C	1217	136



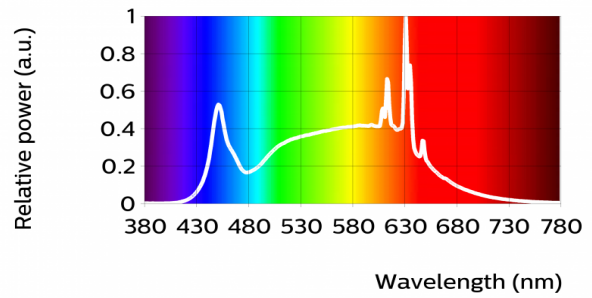
Fortimo LED Strip 1ft 650lm 940 FC HV5

Parameter	Min	Typ	Max	Unit
Luminous flux	601	650	699	lm
Module efficacy	159	172		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.384, 0.377)		-
Color consistency			3	SDCM
CRI	90			
R9	50			
Photometric code		940/369		
Radiation angle		120		deg
Photobiological safety			RG1 unlimited	



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

Operation point	940	lm	lm/W
50% I-nom 135mA	Tc 25 °C	342	188
	Tc-nom 45 °C	333	185
	Tc-max 80 °C	314	177
I-nom 270mA	Tc 25 °C	667	176
	Tc-nom 45 °C	650	172
	Tc-max 80 °C	612	165
I-max 600mA	Tc 25 °C	1396	153
	Tc-nom 45 °C	1360	150
	Tc-max 80 °C	1279	143



Electrical characteristics

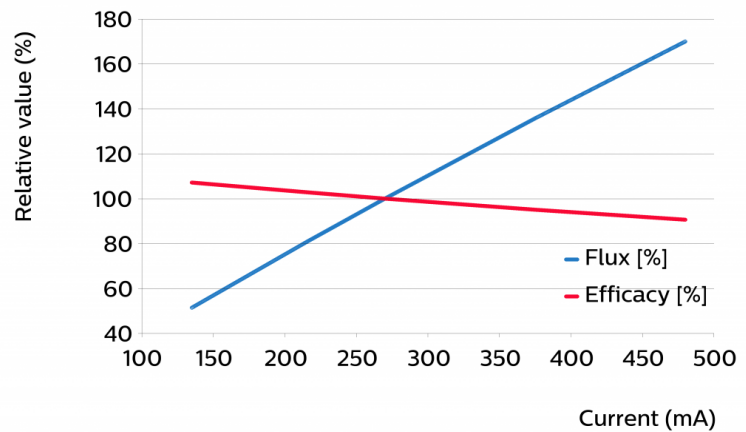
Parameter	Min	Typ	Max	Unit
Forward voltage	13.5	14.0	14.5	V
Power consumption	3.6	3.8	3.9	W = kWh/1000h
Number of modules in series per chain			20	
Number of modules in parallel			1	

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

Tuning information

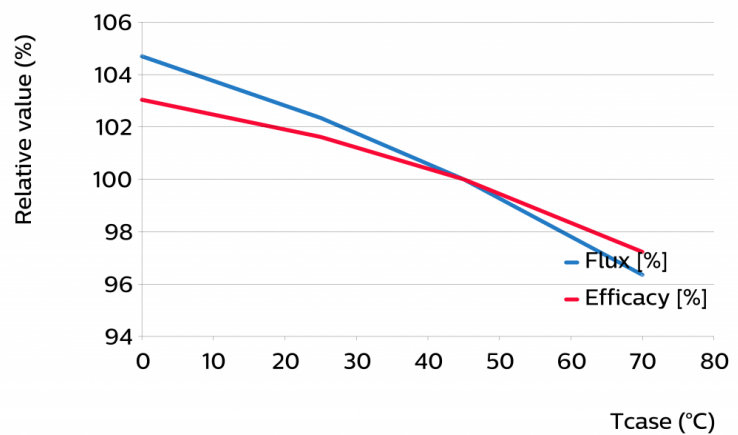
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
480	170	91
375	136	95
270	100	100
216	81	103
135	51	107



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

Tc [°C]	Flux [%]	Efficacy [%]
70	96	97
45	100	100
25	102	102
0	105	103



Lumen maintenance

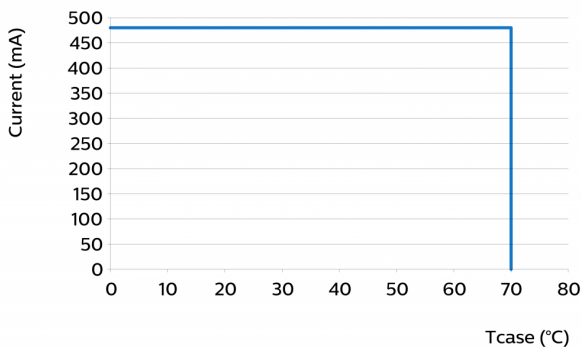
Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% I nom 216 mA	Tc 25°C	>60	>60	>60	>60	>60	>60	>60	>60	>60
	Tc nom 45°C	>60	>60	>60	>60	>60	>60	52	50	49
	Tc life 70°C	>60	>60	>60	>60	>60	>60	40	38	37
I nom 270 mA	Tc 25°C	>60	>60	>60	>60	>60	>60	>60	>60	>60
	Tc nom 45°C	>60	>60	>60	>60	>60	>60	52	50	49
	Tc life 70°C	>60	>60	>60	>60	>60	>60	40	38	37
I life 480 mA	Tc 25°C	>60	>60	>60	>60	>60	>60	58	55	54
	Tc nom 45°C	>60	>60	>60	>60	>60	>60	45	43	42
	Tc life 70°C	>60	>60	>60	>60	>60	>60	35	33	32

Lifetime

Parameter	Value	Unit
M70F50 nominal	>60000	hours
M70F50 life	>60000	hours

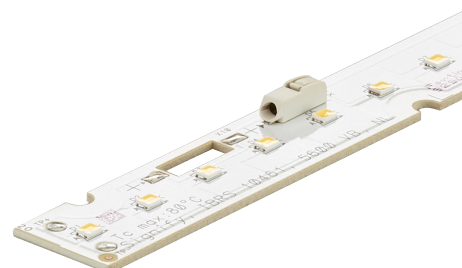
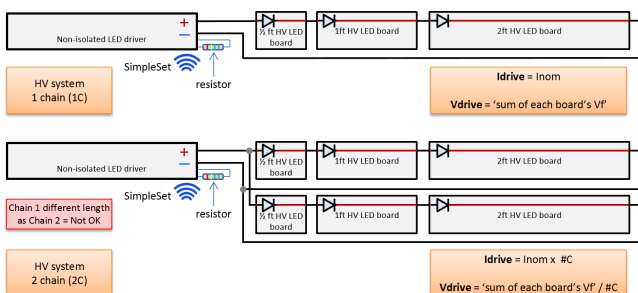
Switching cycles in accordance to EU 1194/2012: >15000

Performance Window



Wiring

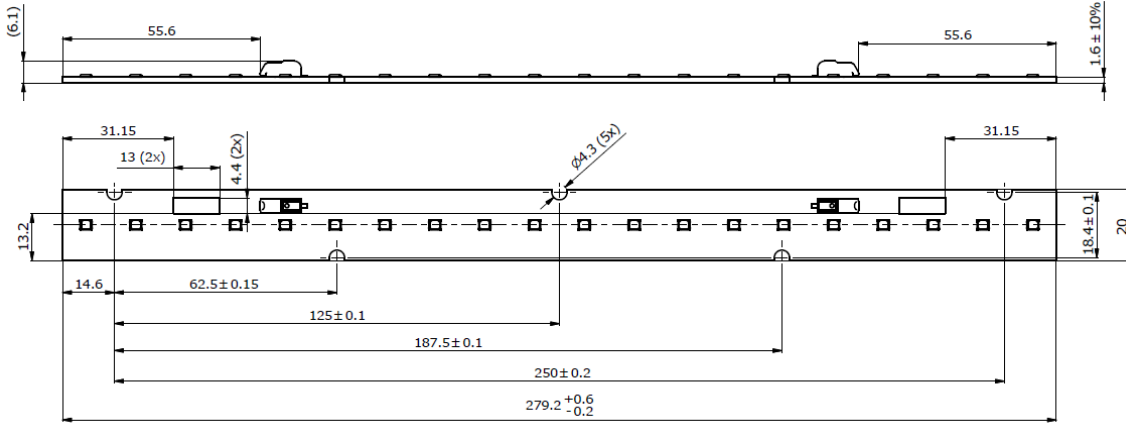
Specification item	Value	Unit	Condition
Input wire cross-section	0.25...0.75	mm ²	solid wire
	18...24	AWG	solid wire
Input wire strip length	7.5...8.5	mm	
Input wire cross-section	0.33...0.5	mm ²	stranded wire
	20...22	AWG	stranded wire
Input wire strip length	7.5...8.5	mm	



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 excl. connector		1.6		mm
Height incl. connector		6.1		mm
Product mass		20		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		600	mA
Case temperature (Tc-max)		80	°C
ESD (direct contact)		8	kV
Working voltage		350	V _{dc}

Application information

Certificates and Standards

CE
 ENEC
 ENEC+
 UL

Environmental

RoHS/REACH

Application

Dimming | Yes



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