

PHILIPS

Fortimo

LED

Fortimo LED Strip 1ft
1100lm 865 FC HV4



Datasheet

Fortimo LED Strip Gen4

Fortimo LED Strip systems are ideal for use in designer or miniaturized, slim linear luminaires for direct lighting in offices, banks, schools, public buildings, supermarkets and anywhere where a small, flexible form factor is appreciated.

Key features and benefits

- State-of-the-art LED module efficiency of up to 182 lm/W
- Long life-time: >50,000 hours
- High color rendering (CRI >80 and >90)
- Excellent color consistency of 3 SDCM
- Choice of color temperatures (3000 K, 4000 K and 5000 K)
- Two lumen packages: 650 lm and 1100 lm per foot
- Small LED module width of only 20mm
- Tunable lumen output, efficacy and lifetime
- Wide temperature (Tc) range from -40 °C to +80 °C
- Push-in connectors enabling automated wiring
- Five year system warranty

November 2017

 **Zhaga**

Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo LED Strip 1ft 1100lm 865 FC HV4	8718696 655016 00	9290 015 25106	168

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Strip 1ft 1100lm 865 FC HV4	276	390	417	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)

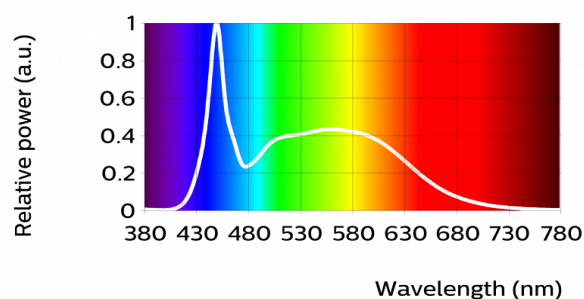
Fortimo LED Strip 1ft 1100lm 865 FC HV4

Parameter	Min	Typ	Max	Unit
Luminous flux	1020	1100	1180	lm
Module efficacy	160	178	196	lm/W
Correlated color temperature (CCT)		6500		K
Color coordinates (CIEx, CIEy)		(0.309, 0.324)		-
Color consistency			3	SDCM
CRI	80			
Radiation angle		120		deg
Photobiological safety			RG1	
Energy efficiency label		A++		
$\Delta u'v'$ at 6000 hours			0.007	

R9=14

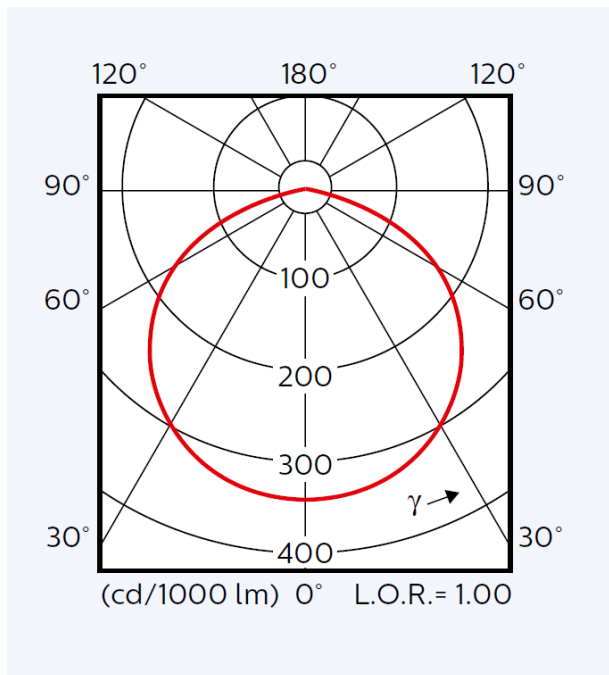
Measurement precision $\pm 5\%$ for the flux data and $\pm 6\%$ for the efficacy data. Measurement precision for color coordinates ± 0.005 . Measurement precision for CRI ± 1.5

Operation point	865	lm	lm/W
80% I nom 221mA	Tc 25 °C	915	186
	Tc-nom 45 °C	897	184
	Tc-life 70 °C	868	180
I nom 276mA	Tc 25 °C	1123	180
	Tc-nom 45 °C	1100	178
	Tc-life 70 °C	1064	174
I life 390mA	Tc 25 °C	1529	169
	Tc-nom 45 °C	1496	167
	Tc-life 70 °C	1445	163



Beam shape

The Philips LED module generates a Lambertian beam shape, which is a pragmatic starting point for OEMs wishing to design secondary optics.



Electrical characteristics

Fortimo LED Strip 1ft 1100lm 865 FC HV4

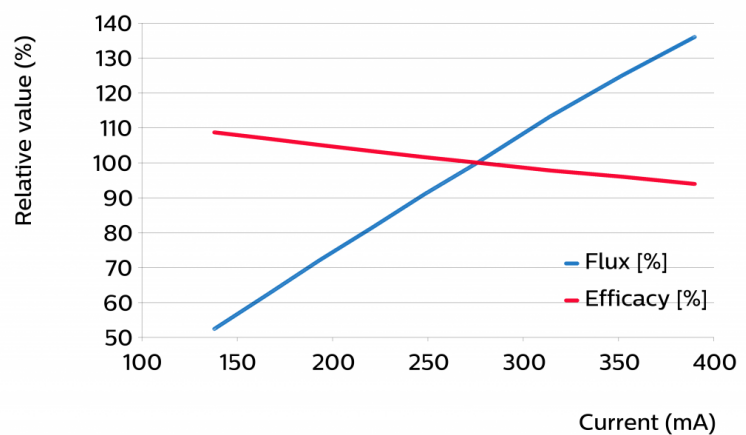
Parameter	Min	Typ	Max	Unit
Forward voltage	21.4	22.4	23.4	V
Power consumption	5.9	6.2	6.5	W
Number of modules in series per chain			12	

Measurement precision for Vf +/- 3%. Measurement precision for power +/- 3.3%
Specifications stated at Tc-nom and I-nom

Tuning information

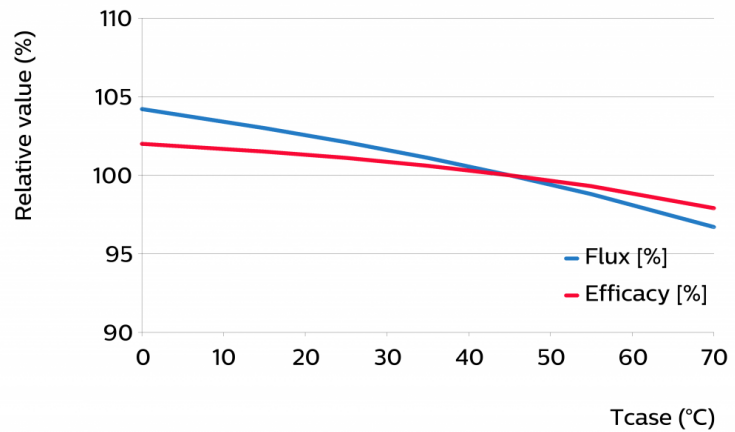
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
390	136	94
352	125	96
314	113	98
276	100	100
248	91	102
221	82	103
193	72	105
166	62	107
138	52	109



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

Tcase [°C]	Flux [%]	Efficacy [%]
70	97	98
55	99	99
45	100	100
35	101	101
25	102	101
15	103	102
0	104	102



Lumen maintenance

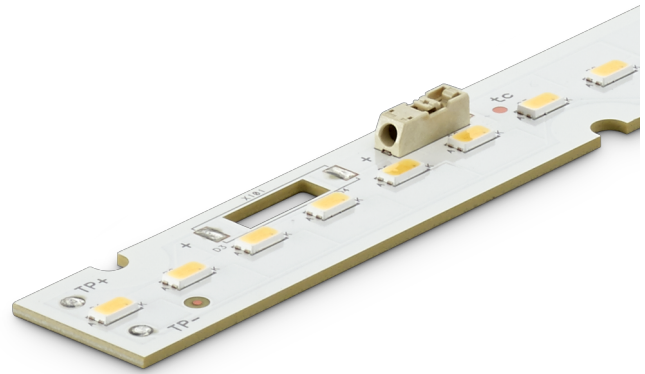
Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% I nom 221 mA	Tc 25°C	>70	>70	>70	>70	65	60	35	35	30
	Tc nom 45°C	>70	>70	>70	>70	65	60	35	35	30
	Tc life 70°C	>70	>70	>70	55	50	50	30	25	25
I nom 276 mA	Tc 25°C	>70	>70	>70	>70	65	60	35	35	30
	Tc nom 45°C	>70	>70	>70	>70	65	60	35	35	30
	Tc life 70°C	>70	>70	>70	55	50	50	30	25	25
I life 390 mA	Tc 25°C	>70	>70	>70	>70	65	60	35	35	30
	Tc nom 45°C	>70	>70	>70	>70	65	60	35	35	30
	Tc life 70°C	>70	>70	>70	55	50	50	30	25	25

Lifetime L70B50 > 70 0000 hours at I-life and Tc-life. >70 000 hours claim is based on extrapolating raw LM80-data to lower temperatures and currents by using statistical techniques.

Thermal switching table

Calculated number of switches at which the survival rate of the population >90%, at a given ambient temperature and delta T with respect to Tc (where Tc = Tambient + delta T)

		Tambient [°C]												
		-40	-30	-20	-10	0	10	20	30	40	50	60	70	
delta T [°C] (delta T = Tc - Tambient)	10	Continuous operation or dimming only	>100 k	>100 k	>100 k	>100 k	>100 k	>100 k	>100 k	>100 k	>100 k	>100 k	>30 k	
	20		>100 k	>100 k	>100 k	>100 k	>100 k	>100 k	>100 k	>100 k	>100 k	>30 k	>30 k	X
	30		>100 k	>100 k	>100 k	>100 k	>100 k	>100 k	>100 k	>30 k	>30 k	26 k	X	X
	40		>30 k	>30 k	>30 k	>30 k	>30 k	>30 k	>30 k	>30 k	18 k	X	X	X
	50		21 k	21 k	20 k	20 k	20 k	18 k	13 k	X	X	X	X	X
	60		11 k	11 k	11 k	11 k	10 k	9 k	X	X	X	X	X	X
	70		6 k	6 k	6 k	6 k	6 k	X	X	X	X	X	X	X
	80		4 k	4 k	4 k	4 k	4 k	X	X	X	X	X	X	X
	90		2 k	2 k	2 k	X	X	X	X	X	X	X	X	X



Fortimo LED Strip 1ft 1100lm 865 FC HV4				
Parameter	Min	Typ	Max	Unit
Length	278.9	279.2	279.5	mm
Width	19.8	20	20.6	mm
Height excl. connector	1.45	1.6	1.75	mm
Height incl. connector	3.85	4.2	4.55	mm

Absolute ratings				
Parameter	Min	Typ	Max	Unit
Current through the LED module (I-max)			570	mA
Case temperature (Tc-max)			80	°C
Power at rated Vf-max and I-max			14.8	W
ESD (direct contact)			8	kV
ESD (air)			15	kV
Working voltage			350	V _{dc}
Voltage strength	1700			V _{ac}
Ambient temperature	-40			°C

Application information

Certificates and Standards

IEC 62031:2008 (First Edition) + A1:2012 + A2:2014

EN 62031:2008 (First Edition) + A1:2013 + A2:2015

Relevant clauses of IEC 62471:2006 (Incl. IEC/TR 62471-2: 2009 and IEC/TR 62778: 2014)

Relevant clauses of EN 62471:2008 (With IEC/TR 62471-2: 2009 and IEC/TR 62778: 2014)

UL 8750

ENEC+

CE

ENEC

Environmental

RoHS/REACH

Zhaga

Compliant*

*Book 7

Application

IP rating

None

Overheating protection

No

Luminaire class

Class I

Dimming

Yes



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