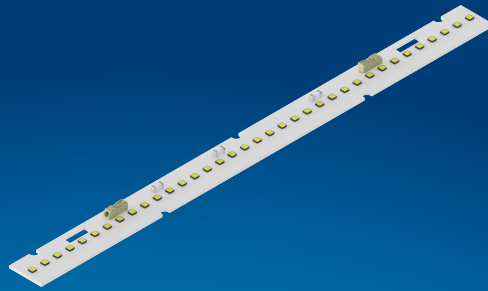


PHILIPS

Fortimo

LED

Fortimo LED Strip 1ft
2000lm HE HV4



Datasheet

Fortimo LED Strip 1ft 2000lm HE HV4

The High Efficiency (HE) range of modules in our popular Fortimo LED Strip product family offers the highest efficiency available. This performance is validated on module level in real application conditions and allows for luminaires to achieve the highest energy savings.

The High Flux version (offering 2000 lumen/foot) is ideally positioned for industrial applications. The Mid Flux version (1100 lumen/foot) is positioned for a broad range of applications from office to retail and industry.

Key features and benefits

- State of the art LED module efficiency of up to 200 lm/W
- Long life-time: > 50,000 hours
- Good color rendering (CRI80) and color consistency (3 SDCM)
- Available in the popular Fortimo LED Strip form factor (20 mm wide), with lengths of 1 and 2 foot.
- Choice of color temperatures (3000, 4000 and 5000K)
- Tunable lumen output, efficacy and lifetime
- Wide temperature (Tc) range from -40°C up to +80°C
- Five year system warranty

November 2018



 Zhaga

Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo LED Strip 1ft 2000lm 830 HE HV4	8718699 612696 00	9290 016 57606	168
Fortimo LED Strip 1ft 2000lm 840 HE HV4	8718699 612719 00	9290 016 57706	168
Fortimo LED Strip 1ft 2000lm 850 HE HV4	8718699 612733 00	9290 016 57806	168

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Strip 1ft 2000lm HE HV4	318	540	600	mA

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T _c (case temperature at T _c point)	55	80	95	°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)

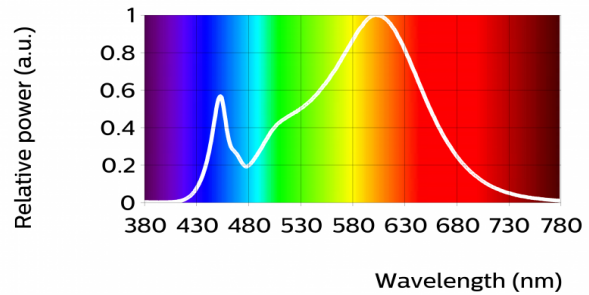
Fortimo LED Strip 1ft 2000lm 830 HE HV4

Parameter	Min	Typ	Max	Unit
Luminous flux	1792	1886	1981	lm
Module efficacy	162	180		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.433, 0.403)		-
Color consistency			3	SDCM
CRI	80			
Photobiological safety			RG1 unlimited	



Measurement precision for flux +/- 5%. Measurement precision for efficacy +/- 6%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	830	lm	lm/W
80% I-nom 254mA	Tc 25 °C	1568	186
	Tc-nom 55 °C	1530	185
	Tc-max 95 °C	1465	181
I-nom 318mA	Tc 25 °C	1934	182
	Tc-nom 55 °C	1886	180
	Tc-max 95 °C	1805	177
I-life 540mA	Tc 25 °C	3146	168
	Tc-nom 55 °C	3068	167
	Tc-max 95 °C	2932	163



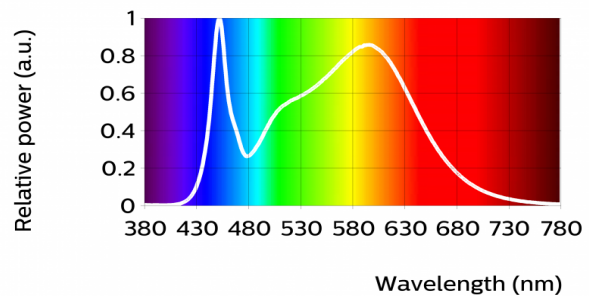
Fortimo LED Strip 1ft 2000lm 840 HE HV4

Parameter	Min	Typ	Max	Unit
Luminous flux	1907	2008	2108	lm
Module efficacy	173	192		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.378, 0.375)		-
Color consistency			3	SDCM
CRI	80			
Photobiological safety			RG1 unlimited	



Measurement precision for flux +/- 5%. Measurement precision for efficacy +/- 6%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	840	lm	lm/W
80% I-nom 254mA	Tc 25 °C	1670	198
	Tc-nom 55 °C	1620	195
	Tc-max 95 °C	1544	190
I-nom 318mA	Tc 25 °C	2062	193
	Tc-nom 55 °C	2008	192
	Tc-max 95 °C	1905	186
I-life 540mA	Tc 25 °C	3367	180
	Tc-nom 55 °C	3264	177
	Tc-max 95 °C	3107	172



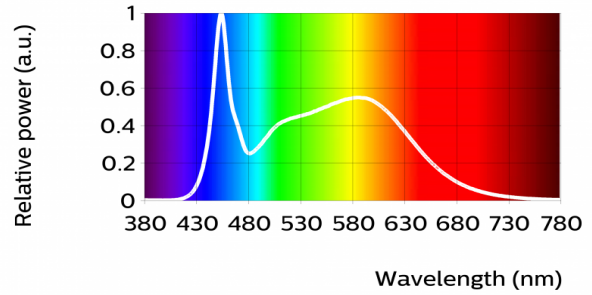
Fortimo LED Strip 1ft 2000lm 850 HE HV4

Parameter	Min	Typ	Max	Unit
Luminous flux	1887	1986	2086	lm
Module efficacy	171	190		lm/W
Correlated color temperature (CCT)		5000		K
Color coordinates (CIEx, CIEy)		(0.340, 0.350)		-
Color consistency			3	SDCM
CRI	80			
Photobiological safety			RG1 unlimited	



Measurement precision for flux +/- 5%. Measurement precision for efficacy +/- 6%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	850	lm	lm/W
80% I-nom 254mA	Tc 25 °C	1659	197
	Tc-nom 55 °C	1609	194
	Tc-max 95 °C	1533	190
I-nom 318mA	Tc 25 °C	2048	193
	Tc-nom 55 °C	1986	190
	Tc-max 95 °C	1892	185
I-life 540mA	Tc 25 °C	3344	179
	Tc-nom 55 °C	3243	176
	Tc-max 95 °C	3086	171



Beam shape

Electrical characteristics

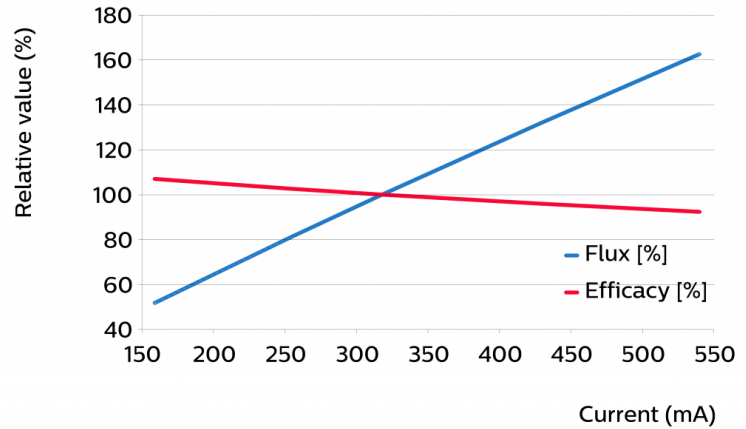
Parameter	Min	Typ	Max	Unit
Forward voltage	32.1	32.9	33.7	V
Power consumption	10.2	10.5	10.7	W = kWh/1000h
Number of modules in series per chain			8	
Number of modules in parallel per chain			2	

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

Tuning information

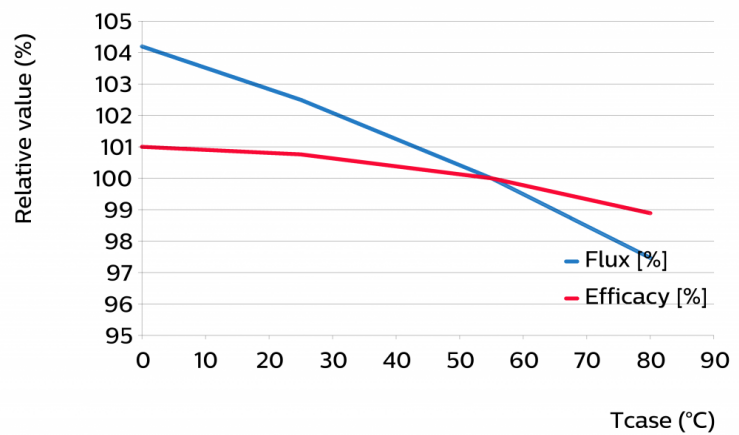
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
540	163	92
429	132	96
318	100	100
254	81	103
159	52	107



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

Tc [°C]	Flux [%]	Efficacy [%]
80	97	99
55	100	100
25	102	101
0	104	101



Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80 % I-nom: 254 mA	Tc 25 °C	>100	>100	>100	>100	>100	>100	83	85	81
	Tc_nom 55 °C	>100	>100	>100	>100	>100	>100	72	70	70
	Tc_life 80°C	>100	>100	>100	>100	>100	>100	63	62	61
100 % I-nom: 318 mA	Tc 25 °C	>100	>100	>100	>100	>100	>100	75	74	73
	Tc_nom 55 °C	>100	>100	>100	88	86	85	41	41	40
	Tc_life 80°C	>100	>100	>100	81	79	78	38	37	37
Ilife: 540mA	Tc 25 °C	>100	>100	>100	>100	>100	>100	59	58	57
	Tc_nom 55 °C	>100	>100	>100	84	83	82	40	39	39
	Tc_life 80°C	>100	>100	>100	76	75	74	36	35	35

Lifetime

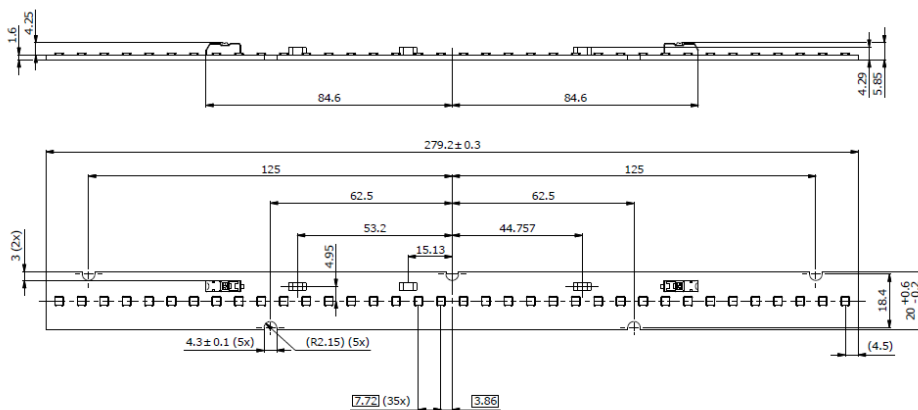
Switching cycles in accordance to EU 1194/2012: >15000.

Wiring

Specification item	Value	Unit	Condition
Input wire cross-section	0.2...0.75	mm ²	solid wire, stranded wire
	18...24	AWG	solid wire, stranded wire
Input wire strip length	7...9	mm	

Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	278.9	279.2	279.5	mm
Width	19.8	20	20.6	mm
Height excl. connector	1.4	1.6	1.8	mm
Height incl. connector	5.65	5.85	6.05	mm



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		600	mA
Case temperature (Tc-max)		95	°C
Power at rated Vf-max and I-max		20.2	W
ESD (direct contact)		8	kV
ESD (air)		15	kV
Working voltage		350	V _{dc}
Voltage strength	1700		V _{ac}
Ambient temperature	-20		°C
Storage temperature	-40	85	°C

Application information

Certificates and Standards

IEC 62384

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

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

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

CE

ENEC (Products are tested for safety and operation AND IEC approved by an accredited testhouse)

ENEC+

Zhaga

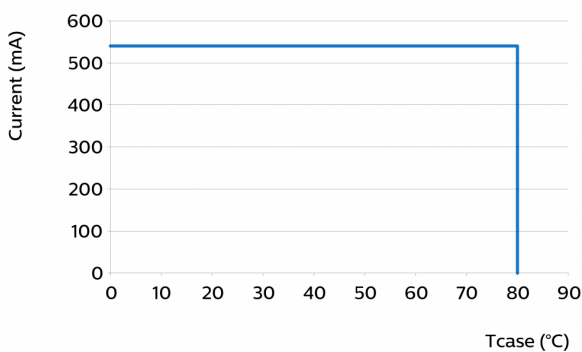
Compliant*

*Book 7, L28W2

Application

IP rating	No IP-rating
Overheating protection	No protection
Luminaire class	IEC Class I and IEC Class II
Dimming	Yes

Performance Window





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