

PHILIPS

Fortimo

LED

Fortimo LED Strip
1450mm 5500lm 8xx LV4



Datasheet

Fortimo LED Strip

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, slim 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)
- Five module lengths: 0,5ft/140mm, 1ft/280mm, 2ft/560mm, 1150mm or 1450mm
- Slim module width of only 20mm
- Three lumen packages: 650 lm, 1100 lm and 2000 lm per foot/280 mm
- Choice of front-side or back-side connector
- Tunable lumen output, efficacy and lifetime
- Push-in connectors enabling automated wiring
- Wide temperature (Tc) range from -40 °C up to +90 °C
- Five year system warranty

October 2017

Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo LED Strip 1450mm 5500lm 830 LV4F	6947939 131846 00	9290 015 49506	96
Fortimo LED Strip 1450mm 5500lm 840 LV4F	6947939 131860 00	9290 015 49606	96
Fortimo LED Strip 1450mm 5500lm 850 LV4F	6947939 131884 00	9290 015 49706	96
Fortimo LED Strip 1450mm 5500lm 830 LV4B	6947939 132324 00	9290 015 51906	96
Fortimo LED Strip 1450mm 5500lm 840 LV4B	6947939 132348 00	9290 015 52006	96
Fortimo LED Strip 1450mm 5500lm 850 LV4B	6947939 132362 00	9290 015 52106	96

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Strip 1450mm 5500lm 8xx LV4	920	1300	1389	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 1450mm 5500lm 830 LV4F

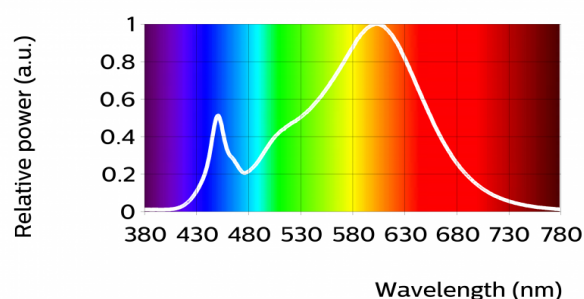
Fortimo LED Strip 1450mm 5500lm 830 LV4B

Parameter	Min	Typ	Max	Unit
Luminous flux	4828	5219	5610	lm
Module efficacy	152	169	186	lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.432, 0.401)		-
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=8

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	830	lm	lm/W
80% I nom 736mA	Tc 25 °C	4336	176
	Tc-nom 45 °C	4251	175
	Tc-life 70 °C	4118	171
I nom 920mA	Tc 25 °C	5325	171
	Tc-nom 45 °C	5219	169
	Tc-life 70 °C	5055	166
I life 1300mA	Tc 25 °C	7265	161
	Tc-nom 45 °C	7117	159
	Tc-life 70 °C	6888	156



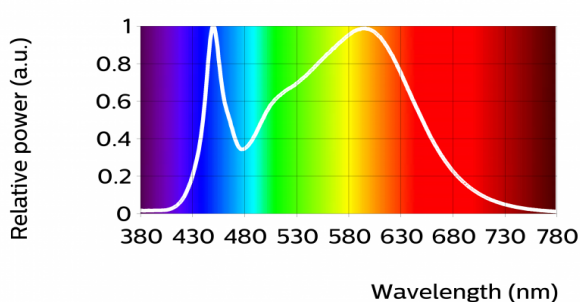
Fortimo LED Strip 1450mm 5500lm 840 LV4F
Fortimo LED Strip 1450mm 5500lm 840 LV4B

Parameter	Min	Typ	Max	Unit
Luminous flux	5088	5500	5913	lm
Module efficacy	160	178	196	lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.380, 0.377)		-
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=9

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	840	lm	lm/W
80% I nom 736mA	Tc 25 °C	4569	186
	Tc-nom 45 °C	4479	184
	Tc-life 70 °C	4340	181
I nom 920mA	Tc 25 °C	5611	180
	Tc-nom 45 °C	5500	178
	Tc-life 70 °C	5328	175
I life 1300mA	Tc 25 °C	7657	169
	Tc-nom 45 °C	7502	168
	Tc-life 70 °C	7261	164



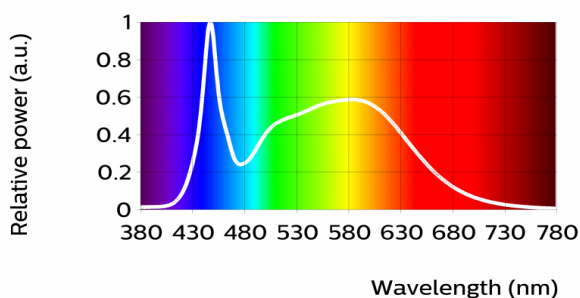
Fortimo LED Strip 1450mm 5500lm 850 LV4F
Fortimo LED Strip 1450mm 5500lm 850 LV4B

Parameter	Min	Typ	Max	Unit
Luminous flux	5139	5556	5973	lm
Module efficacy	162	180	198	lm/W
Correlated color temperature (CCT)		5000		K
Color coordinates (CIEx, CIEy)		(0.341, 0.350)		-
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=11

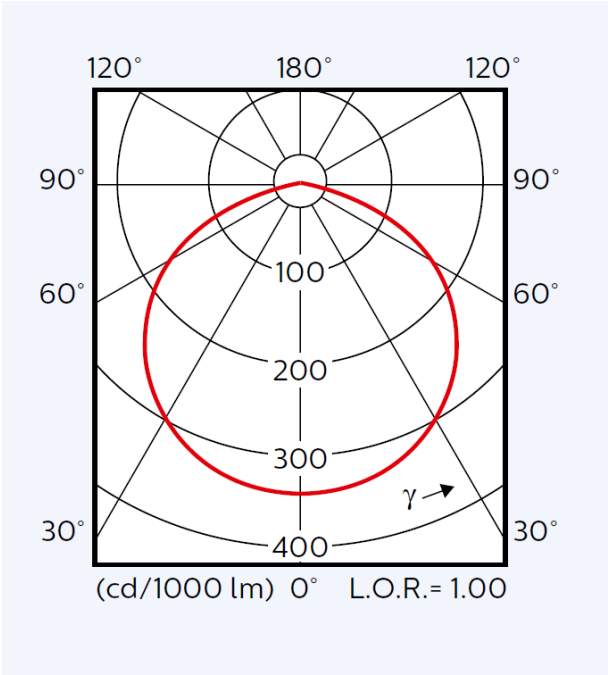
Measurement precision $\pm 5\%$ for the flux data and $\pm 6\%$ for the efficacy data. Measurement precision for color coordinates ± 0.005 . Measurement precision for CRI ± 1.5

Operation point	850	lm	lm/W
80% I nom 736mA	Tc 25 °C	4614	188
	Tc-nom 45 °C	4524	186
	Tc-life 70 °C	4384	182
I nom 920mA	Tc 25 °C	5667	182
	Tc-nom 45 °C	5556	180
	Tc-life 70 °C	5383	177
I life 1300mA	Tc 25 °C	7735	171
	Tc-nom 45 °C	7580	169
	Tc-life 70 °C	7340	166



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 1450mm 5500lm 830 LV4F
- Fortimo LED Strip 1450mm 5500lm 840 LV4F
- Fortimo LED Strip 1450mm 5500lm 850 LV4F
- Fortimo LED Strip 1450mm 5500lm 830 LV4B
- Fortimo LED Strip 1450mm 5500lm 840 LV4B
- Fortimo LED Strip 1450mm 5500lm 850 LV4B

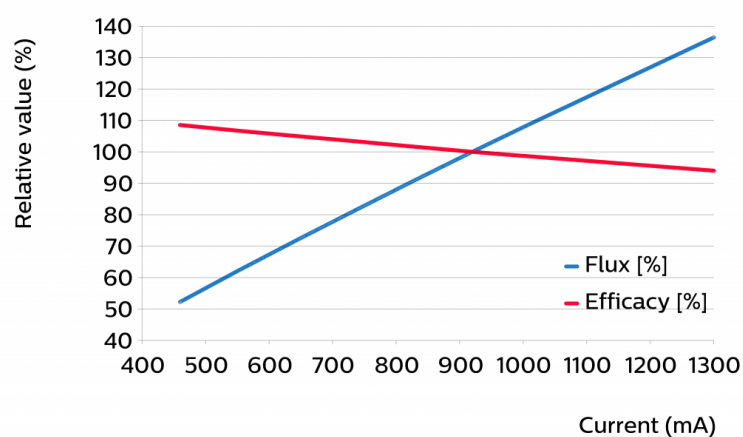
Parameter	Min	Typ	Max	Unit
Forward voltage	32.1	33.5	34.9	V
Power consumption	29.6	30.8	32.1	W
Number of modules in parallel per chain			2	

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

Tuning information

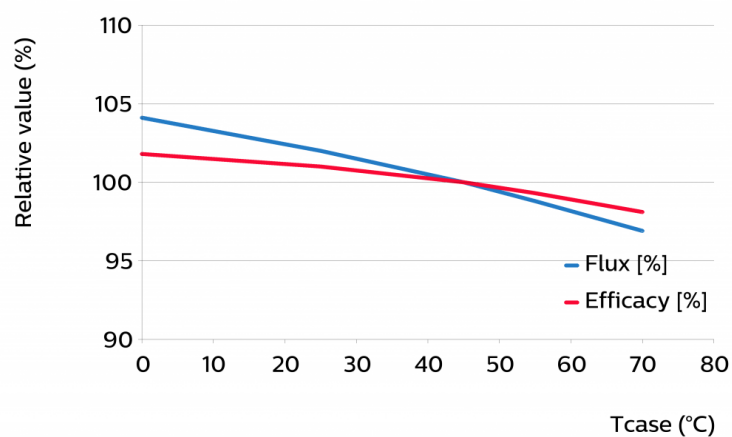
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
1300	136	94
1012	109	99
966	105	99
920	100	100
828	91	102
736	81	103
644	72	105
552	62	107
460	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
25	102	101
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 736 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 920 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 1300 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.

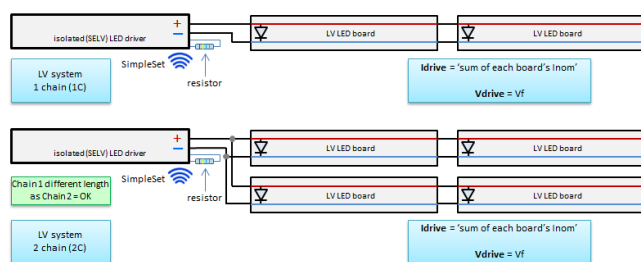
Thermal switching table

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)

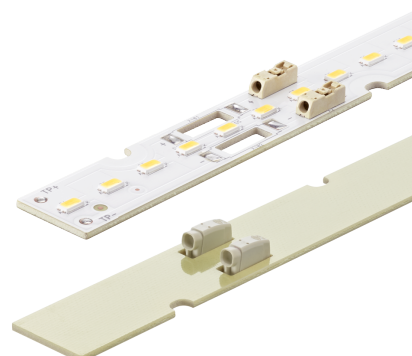
		Tambient [°C]											
		-40	-30	-20	-10	0	10	20	30	40	50	60	70
delta T [°C] (delta T = Tc - Tambient)	10	Continuous operation or dimming only	>100k	>100k	>100k	>100k	>100k	>100k	>100k	>100k	>100k	>100k	>30k
	20		>100k	>100k	>100k	>100k	>100k	>100k	>100k	>30k	>30k	27k	X
	30		>100k	>100k	>100k	>100k	>100k	>30k	>30k	29k	17k	X	X
	40		>30k	>30k	>30k	>30k	>30k	>30k	21k	12k	X	X	X
	50		21 k	21 k	20 k	20 k	20 k	18 k	10k	X	X	X	X
	60		11 k	11 k	11 k	11 k	10 k	8k	X	X	X	X	X
	70		6 k	6 k	6 k	6 k	6 k	X	X	X	X	X	X
	80		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
	100		1 k	1 k	X	X	X	X	X	X	X	X	X

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	



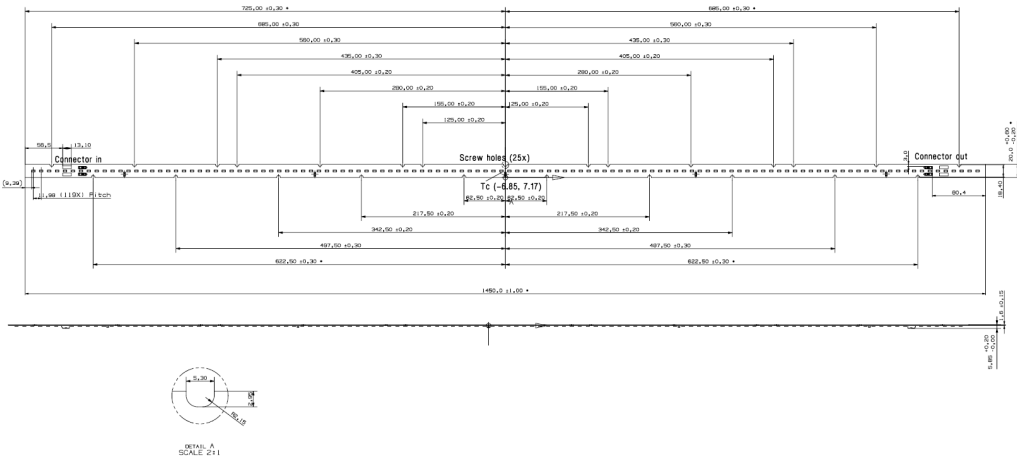
More information in the design-in guide of LED Linear modules.



Mechanical characteristics

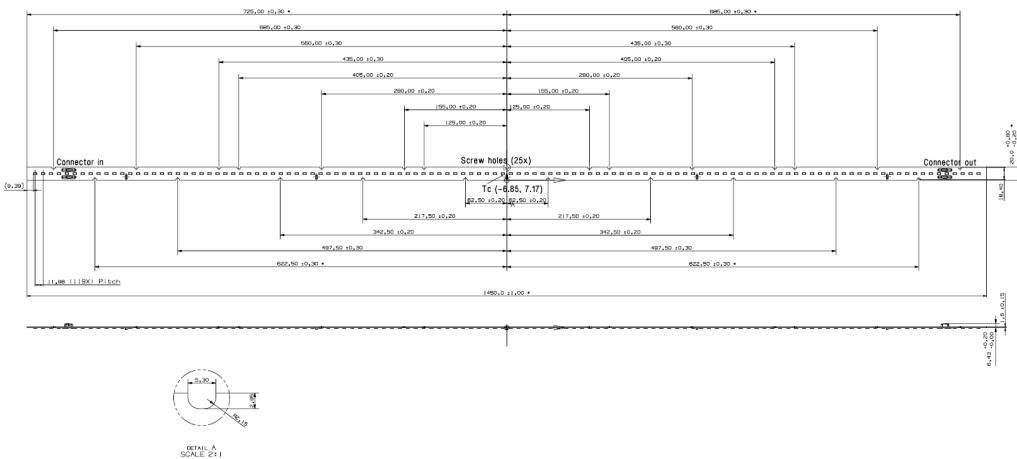
Fortimo LED Strip 1450mm 5500lm 830 LV4F
Fortimo LED Strip 1450mm 5500lm 840 LV4F
Fortimo LED Strip 1450mm 5500lm 850 LV4F

Parameter	Min	Typ	Max	Unit
Length	1449	1450	1451	mm
Width	19.8	20	20.6	mm
Height excl. connector	2.53	5.53	2.73	mm
Height incl. connector	5.5	5.85	6.2	mm



Fortimo LED Strip 1450mm 5500lm 830 LV4B
Fortimo LED Strip 1450mm 5500lm 840 LV4B
Fortimo LED Strip 1450mm 5500lm 850 LV4B

Parameter	Min	Typ	Max	Unit
Length	1449	1450	1451	mm
Width	19.8	20	20.6	mm
Height excl. connector	2.53	5.53	2.73	mm
Height incl. connector	7.05	7.4	7.75	mm



Absolute ratings

Parameter	Min	Typ	Max	Unit
Current through the LED module (I-max)			1389	mA
Case temperature (Tc-max)			80	°C
Power at rated Vf-max and I-max			52.2	W
ESD (direct contact)			8	kV
ESD (air)			15	kV
Working voltage			120	V _{dc}
Voltage strength	1240			V _{ac}
Ambient temperature	-40			°C

Application information

Certificates and Standards

IEC/TR 62278:2014

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

UL 8750

ENEC+

CE

Environmental

RoHS/REACH

Application

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



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