PHILIPS

Fortimo

LED

Fortimo LED Strip
0.5ft 550lm 8xx LV4

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

August 2018

Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo LED Strip 0.5ft 550lm 830 FC LV4	8718696 654712 00	9290 015 23906	56
Fortimo LED Strip 0.5ft 550lm 840 FC LV4	8718696 654736 00	9290 015 24006	56
Fortimo LED Strip 0.5ft 550lm 850 FC LV4	8718696 654750 00	9290 015 24106	56

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Strip 0.5ft 550lm 8xx LV4	92	130	190	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)

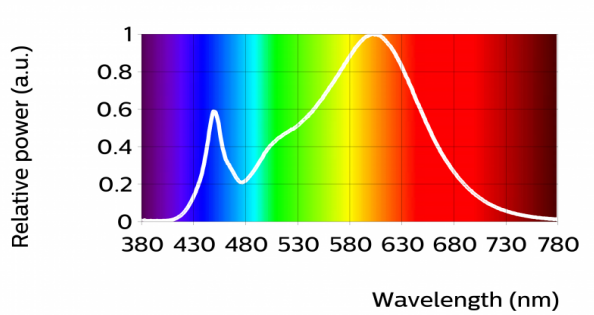
Fortimo LED Strip 0.5ft 550lm 830 FC LV4

Parameter	Min	Typ	Max	Unit
Luminous flux	483	522	561	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 unlimited	
Energy efficiency label		A++		
Δu'v' at 6000 hours			0.007	

R9=10

Measurement precision ± 5% for the flux data and ± 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 74mA	Tc 25 °C	435	177
	Tc-nom 45 °C	424	174
	Tc-life 80 °C	403	167
I-nom 92mA	Tc 25 °C	535	172
	Tc-nom 45 °C	522	169
	Tc-life 80 °C	495	162
I-life 130mA	Tc 25 °C	734	162
	Tc-nom 45 °C	714	159
	Tc-life 80 °C	675	152



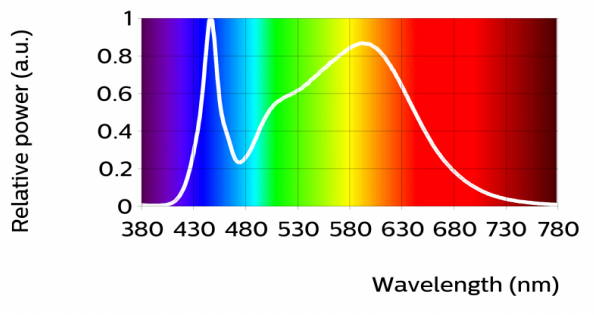
Fortimo LED Strip 0.5ft 550lm 840 FC LV4

Parameter	Min	Typ	Max	Unit
Luminous flux	509	550	591	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 unlimited	
Energy efficiency label		A++		
Δu'v' at 6000 hours			0.007	

R9=5

Measurement precision ± 5% for the flux data and ± 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 74mA	Tc 25 °C	458	186
	Tc-nom 45 °C	447	183
	Tc-life 80 °C	424	176
I-nom 92mA	Tc 25 °C	564	181
	Tc-nom 45 °C	550	178
	Tc-life 80 °C	521	171
I-life 130mA	Tc 25 °C	774	171
	Tc-nom 45 °C	753	167
	Tc-life 80 °C	711	160



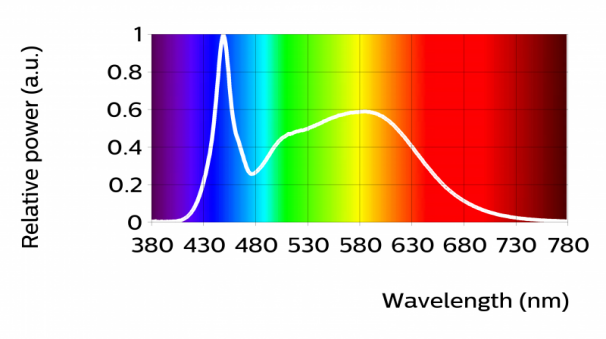
Fortimo LED Strip 0.5ft 550lm 850 FC LV4

Parameter	Min	Typ	Max	Unit
Luminous flux	513	555	597	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 unlimited	
Energy efficiency label		A++		
Δu'v' at 6000 hours			0.007	

R9=5

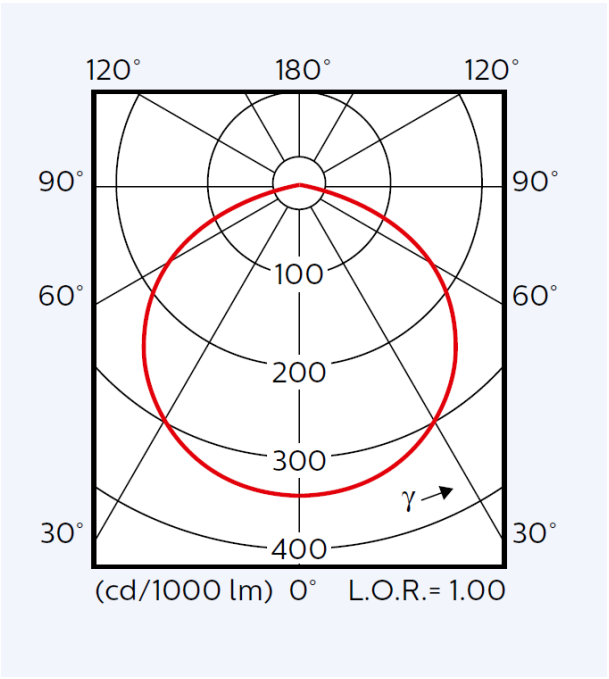
Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5

Operation point	850	lm	lm/W
80% I-nom 74mA	Tc 25 °C	462	188
	Tc-nom 45 °C	451	185
	Tc-life 80 °C	428	178
I-nom 92mA	Tc 25 °C	569	182
	Tc-nom 45 °C	555	180
	Tc-life 80 °C	526	172
I-life 130mA	Tc 25 °C	781	172
	Tc-nom 45 °C	760	169
	Tc-life 80 °C	718	162



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 0.5ft 550lm 830 FC LV4
Fortimo LED Strip 0.5ft 550lm 840 FC LV4
Fortimo LED Strip 0.5ft 550lm 850 FC LV4

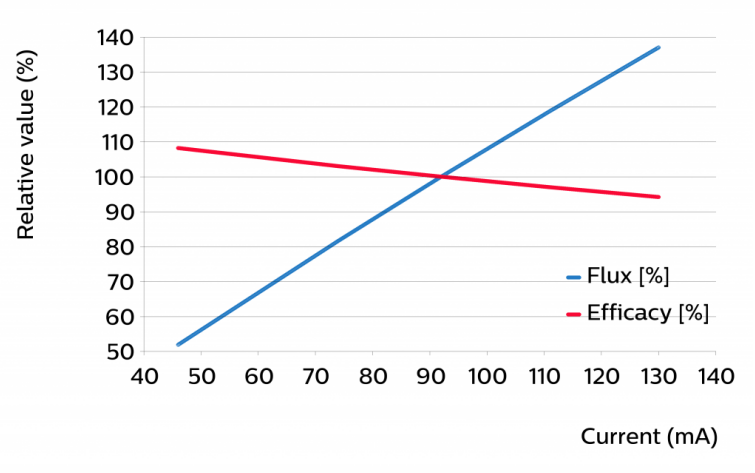
Parameter	Min	Typ	Max	Unit
Forward voltage	32.1	33.6	35.1	V
Power consumption	3.0	3.1	3.2	W
Number of modules in series per chain			1	
Number of modules in parallel per chain			12	

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

Tuning information

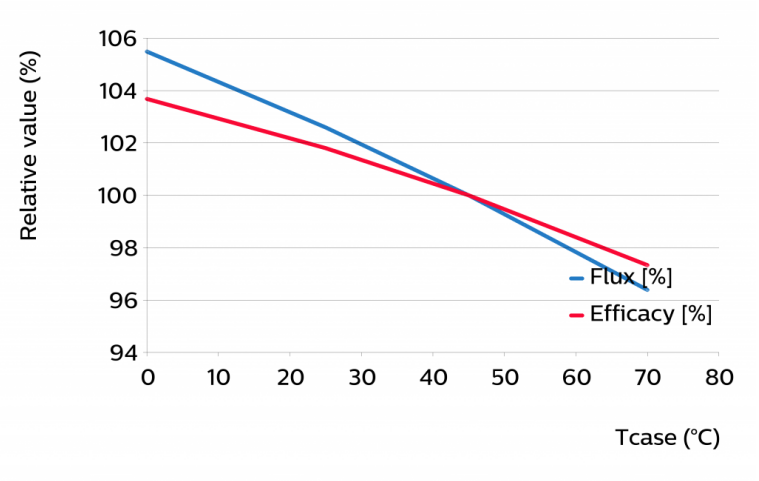
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
130	137	94
111	119	97
92	100	100
74	82	103
46	52	108



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

Tcase [°C]	Flux [%]	Efficacy [%]
70	96	97
45	100	100
25	103	102
0	105	104



Lumen maintenance

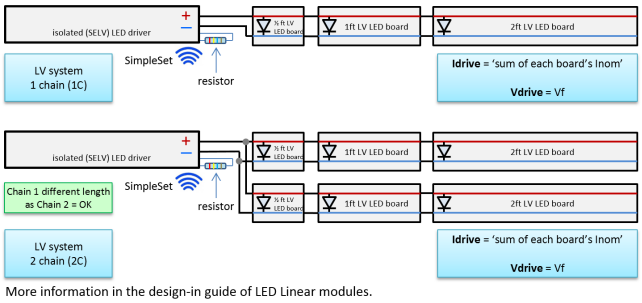
Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% I nom 74 mA	Tc 25°C	>70	>70	>70	>70	65	60	35	35	30
	Tc nom 45°C	>70	>70	>70	>70	65	60	35	35	30
	Tc life 70°C	>70	>70	>70	55	50	50	30	25	25
I nom 92 mA	Tc 25°C	>70	>70	>70	>70	65	60	35	35	30
	Tc 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 130 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

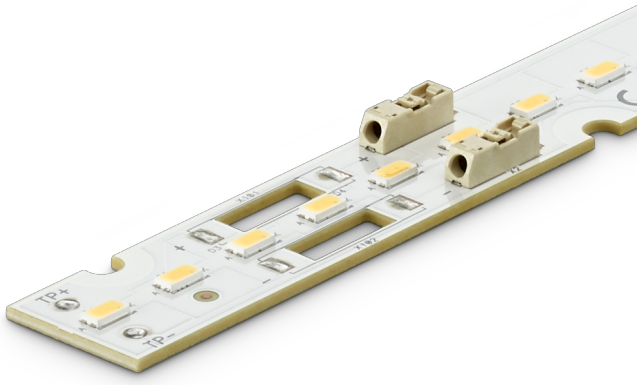
Lifetime L70B50 > 70 0000 hours at I-life and Tc-life. >70 000 hours claim is based on extrapolating raw LM80-data to lower temperatures and currents by using statistical techniques.

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	



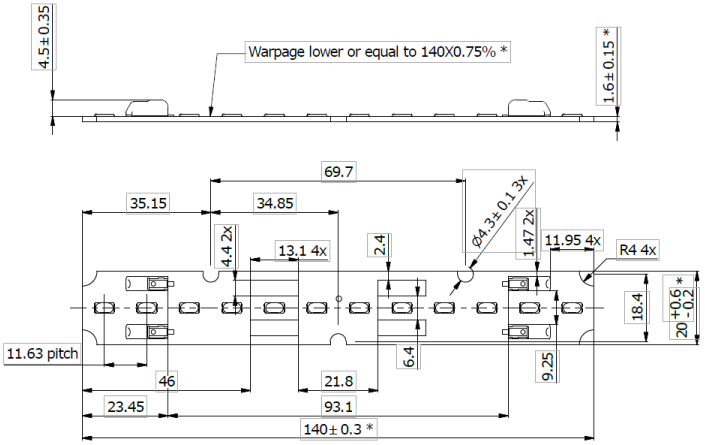
More information in the design-in guide of LED Linear modules.



Mechanical characteristics

Fortimo LED Strip 0.5ft 550lm 830 FC LV4
Fortimo LED Strip 0.5ft 550lm 840 FC LV4
Fortimo LED Strip 0.5ft 550lm 850 FC LV4

Parameter	Min	Typ	Max	Unit
Length	139.7	140	140.3	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)			139	mA
Case temperature (Tc-max)			80	°C
Power at rated Vf-max and I-max			7.4	W
ESD (direct contact)			8	kV
ESD (air)			15	kV
Working voltage			120	V_{dc}
Voltage strength	1240			V_{ac}
Ambient temperature	-40			°C

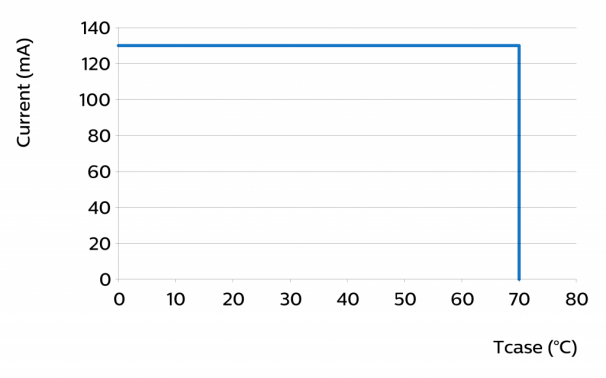
Application information

Certificates and Standards
IEC 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)
ENEC (Products are tested for safety and operation AND IEC approved by an accredited testhouse)
ENEC+
CE
UL 8750

Environmental
RoHS/REACH

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

Performance Window



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