

PHILIPS

Fortimo

LED

Fortimo LED Strip 1ft
1100lm HV4+



Datasheet

Fortimo LED Strip CRI90 HE HV4

Key features and benefits

- LED module efficiency up to 175 lm/W
- Long life-time: >50,000 hours
- High color rendering (CRI >90)
- Color consistency of 3 SDCM
- Choice of color temperatures (2700, 3000 K, 4000 K and 6500 K)
- Half-foot (140 mm), one-foot (280 mm), and two-foot (560 mm) lengths
- 1100 lm per foot
- Small LED module width of only 20mm
- Push-in connectors enabling automated wiring

May 2019



Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo LED Strip 1ft 1100lm 927 HV4 +	8718699 694142 00	9290 021 10806	168
Fortimo LED Strip 1ft 1100lm 930 HV4 +	8718699 694180 00	9290 021 11006	168
Fortimo LED Strip 1ft 1100lm 940 HV4 +	8718699 694203 00	9290 021 11106	168
Fortimo LED Strip 1ft 1100lm 965 HV4 +	8718699 694166 00	9290 021 10906	168

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Strip 1ft 1100lm 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

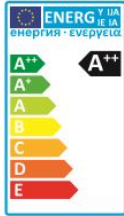
** Value at which life time is specified

*** Maximum value for safe operation, do not operate above this value

Optical characteristics - table per color (CCT)

Fortimo LED Strip 1ft 1100lm 927 HV4 +

Parameter	Min	Typ	Max	Unit
Luminous flux	955	1005	1055	lm
Module efficacy	154	163		lm/W
Correlated color temperature (CCT)		2700		K
Color coordinates (CIEx, CIEy)		(0.457, 0.406)		-
Color consistency			3	SDCM
CRI	90			
R9	50			
Photometric code		927/359		
Radiation angle		120		deg
Photobiological safety			RG1 unlimited	
$\Delta u'v'$ at 6000 hours			0.007	



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	927	lm	lm/W
80% I-nom 221mA	Tc 25 °C	834	169
	Tc-nom 45 °C	812	166
	Tc-max 80 °C	766	159
I-nom 276mA	Tc 25 °C	1033	165
	Tc-nom 45 °C	1005	163
	Tc-max 80 °C	949	155
I-life 390mA	Tc 25 °C	1431	157
	Tc-nom 45 °C	1393	154
	Tc-max 80 °C	1314	147

Fortimo LED Strip 1ft 1100lm 930 HV4 +

Parameter	Min	Typ	Max	Unit
Luminous flux	985	1036	1088	lm
Module efficacy	159	168		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.433, 0.399)		-
Color consistency			3	SDCM
CRI	90			
R9	50			
Photometric code		930/359		
Radiation angle		120		deg
Photobiological safety			RG1 unlimited	
$\Delta u'v'$ at 6000 hours			0.007	



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	930	lm	lm/W
80% I-nom 221mA	Tc 25 °C	860	174
	Tc-nom 45 °C	837	171
	Tc-max 80 °C	790	164
I-nom 276mA	Tc 25 °C	1065	170
	Tc-nom 45 °C	1036	168
	Tc-max 80 °C	978	159
I-life 390mA	Tc 25 °C	1475	162
	Tc-nom 45 °C	1436	159
	Tc-max 80 °C	1355	152

Fortimo LED Strip 1ft 1100lm 940 HV4 +

Parameter	Min	Typ	Max	Unit
Luminous flux	1047	1102	1157	lm
Module efficacy	169	178		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.381, 0.376)		-
Color consistency			3	SDCM
CRI	90			
R9	50			
Photometric code		940/359		
Radiation angle		120		deg
Photobiological safety			RG1 unlimited	
$\Delta u'v'$ at 6000 hours			0.007	



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	940	lm	lm/W
80% I-nom 221mA	Tc 25 °C	914	185
	Tc-nom 45 °C	890	182
	Tc-max 80 °C	840	174
I-nom 276mA	Tc 25 °C	1132	181
	Tc-nom 45 °C	1102	178
	Tc-max 80 °C	1040	170
I-life 390mA	Tc 25 °C	1569	172
	Tc-nom 45 °C	1527	169
	Tc-max 80 °C	1441	161

Fortimo LED Strip 1ft 1100lm 965 HV4 +

Parameter	Min	Typ	Max	Unit
Luminous flux	1047	1102	1157	lm
Module efficacy	169	178		lm/W
Correlated color temperature (CCT)		6500		K
Color coordinates (CIEx, CIEy)		(0.311, 0.325)		-
Color consistency			3	SDCM
CRI	90			
R9	50			
Photometric code		965/359		
Radiation angle		120		deg
Photobiological safety			RG1 unlimited	
$\Delta u'v'$ at 6000 hours			0.007	

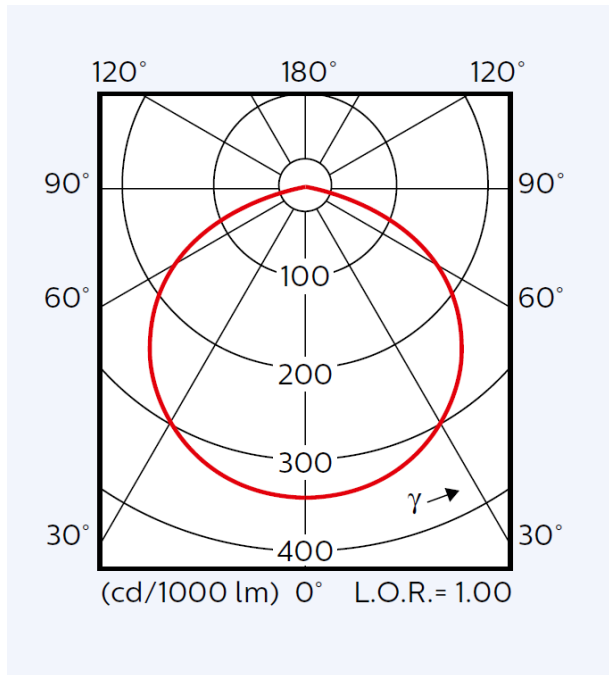


Measurement precision $\pm 5\%$ for the flux data and $\pm 6\%$ for the efficacy data. Measurement precision for color coordinates ± 0.005 . Measurement precision for CRI ± 1.5

Operation point	965	lm	lm/W
80% I-nom 221mA	Tc 25 °C	914	185
	Tc-nom 45 °C	890	182
	Tc-max 80 °C	840	174
I-nom 276mA	Tc 25 °C	1132	181
	Tc-nom 45 °C	1102	178
	Tc-max 80 °C	1040	170
I-life 390mA	Tc 25 °C	1569	172
	Tc-nom 45 °C	1527	169
	Tc-max 80 °C	1441	161

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

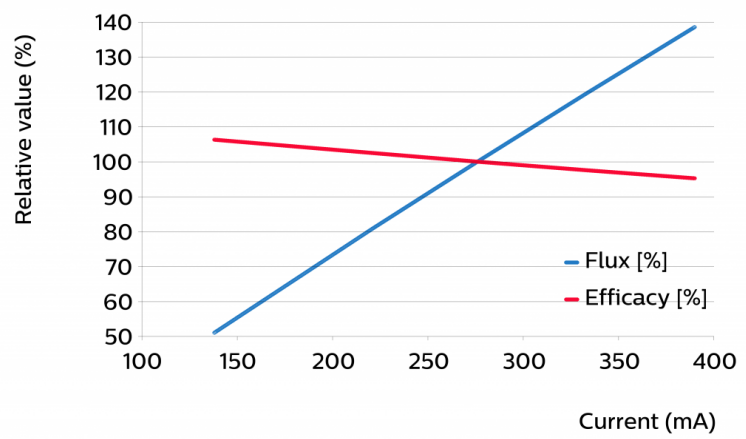
Parameter	Min	Typ	Max	Unit
Forward voltage	21.3	22.4	23.5	V
Power consumption	5.9	6.2	6.5	W = kWh/1000h
Number of modules in series per chain			12	
Number of modules in parallel			1	

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

Tuning information

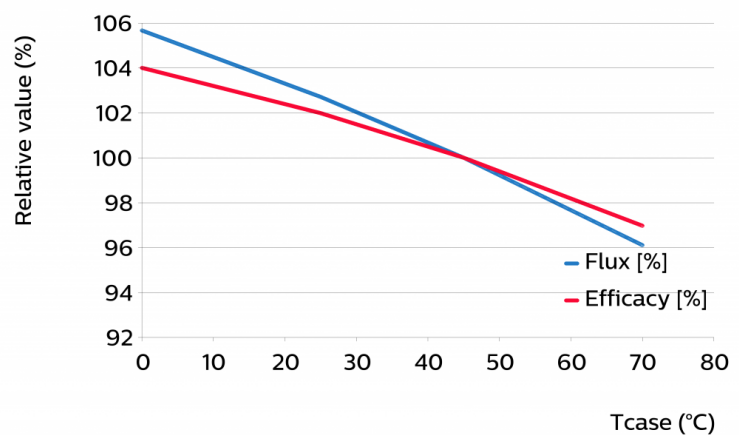
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
390	139	95
333	119	98
276	100	100
221	81	102
138	51	106



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

Tc [°C]	Flux [%]	Efficacy [%]
70	96	97
45	100	100
25	103	102
0	106	104



Lumen maintenance

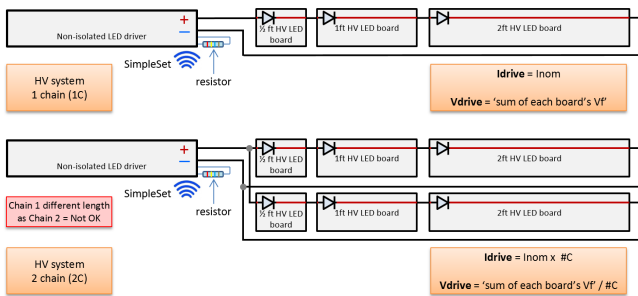
Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% I nom 221 mA	Tc 25°C	>70	>70	>70	>70	>70	>70	45	40	40
	Tc nom 45°C	>70	>70	>70	>70	>70	>70	35	30	30
	Tc life 70°C	>70	>70	>70	65	60	60	30	30	25
I nom 276 mA	Tc 25°C	>70	>70	>70	>70	>70	>70	40	40	40
	Tc nom 45°C	>70	>70	>70	>70	>70	70	35	30	30
	Tc life 70°C	>70	>70	>70	60	55	55	30	25	25
I life 390mA	Tc 25°C	>70	>70	>70	>70	>70	>70	40	35	35
	Tc nom 45°C	>70	>70	>70	70	67	66	35	30	30
	Tc life 70°C	>70	>70	>70	55	55	50	25	25	25

Lifetime

Lumen depreciation and color shift may increase at R.H >70%
Switching cycles in accordance to EU 1194/2012: >15000.

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	

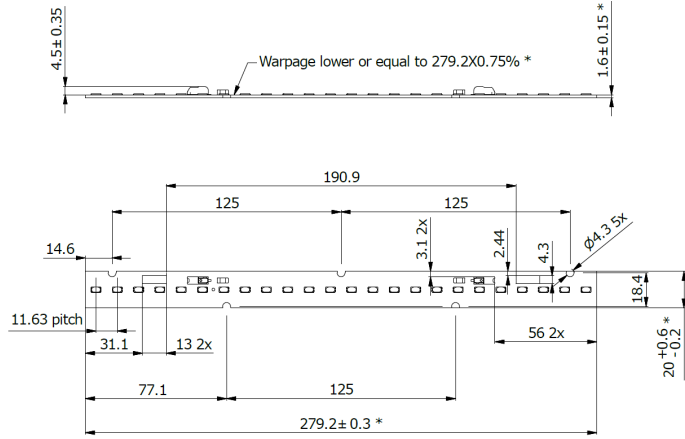


More information in the design-in guide of LED Linear modules.



Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	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
Product mass		20		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		417	mA
Case temperature (Tc-max)		80	°C
ESD (direct contact)		8	kV
Working voltage		350	V _{dc}
Ambient temperature	-40		°C
Storage temperature	-40	85	°C

Store in a dry (RH<70%) and dark place

Application information

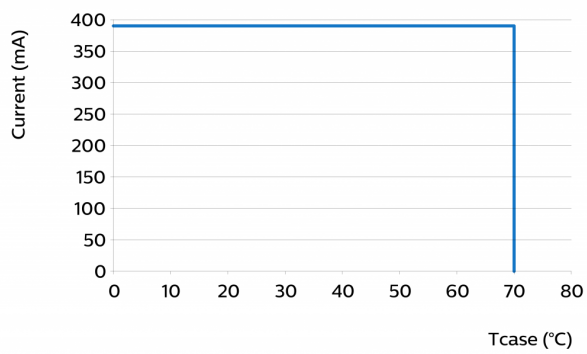
Certificates and Standards

CE
ENEC
ENEC+
IEC 62031
IEC 62717

Application

IP rating	No IP rating
Overheating protection	No protection
Dimming	Yes

Performance Window





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