

# PHILIPS

## LED Modules

### Fortimo LED Strip Value Offer

2ft 1400lm LV1



Philips Fortimo LED strip value offer (VO) is designed to enable cost breakthrough in recessed ambient LED lighting applications. With its optimized design and high overdrive capability of up to 1100 lm/ft, it offers high design flexibility to lighting fixture manufacturers, and the module's cost provides excellent price-per-lumen value.

With module efficacies of up to 150 lm/W, CRI80, 3SDCM color consistency, 50,000 hrs life<sup>1</sup> and a five-year limited system warranty<sup>2</sup>, Fortimo LED strip VO is designed to meet all the basic needs of indoor linear lighting applications for maximum customer satisfaction.

Commercial Product Name	12NC
Fortimo LED Strip VO 2ft 1400lm 830 LV1	929000759813
Fortimo LED Strip VO 2ft 1400lm 835 LV1	929000759913
Fortimo LED Strip VO 2ft 1400lm 840 LV1	929000760013
Fortimo LED Strip VO 2ft 1400lm 850 LV1	929000760113

# Fortimo LED Strip Value Offer 2ft 1400lm LV1

## Features

- High overdrive capability with up to 1100 lm/ft
- High energy efficacy with up to 150 lm/W (at 700 lm/ft, Tc 45°C)
- High quality of light with 3 SDCM color consistency and CRI 80
- Long lifetime – 50,000 hrs<sup>1</sup>
- Push-in connectors enabling easy wiring and daisy chaining
- Mechanical footprint compatible with LED Strip LV3 and Zhaga

## Benefits

- Enables easy and economical fixture design for existing LED luminaires utilizing 20mm linear LED modules
- 5-year limited system warranty with Philips Advance Xitanium LED drivers<sup>2</sup>
- Perfectly married system components offer low system cost and excellent system performance

## Applications

- Office
- Healthcare
- Retail
- Industry

## Optical Characteristics – Table per CCT

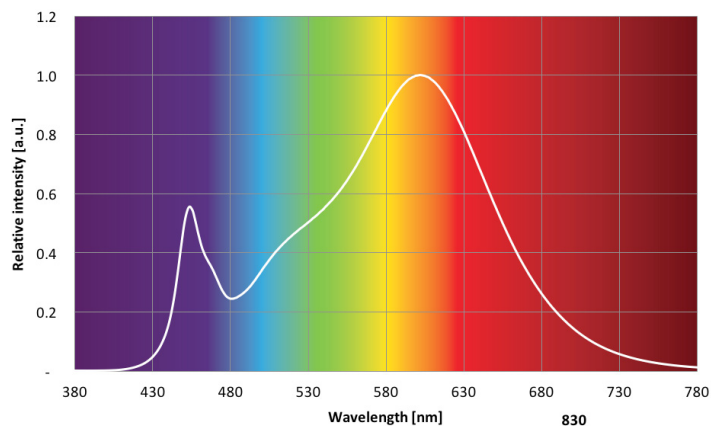
**Fortimo LED Strip VO 2ft 1400lm 830 LV1**

Parameter at Typical Conditions <sup>3</sup>	Min	Typ	Unit
Luminous Flux		1280	Lm
Lumen Efficiency		137	Lm/W
Forward Current		224	mA
Correlated Color Temperature (CCT) Target		3000	K
CRI	80		-
Radiation Angle		120	deg

Parameter at Lifetime Conditions	Typ	Unit
Luminous Flux	2008	Lm
Lumen Efficiency	120	Lm/W
Forward Current	375	mA

Color consistency of 3 SDCM, averaged over the module.

Nominal temperature for performance specification: Tc = 45°C.



1. Average rated life is based on engineering data testing and probability analysis. The hours are at the B50, L70 point – 50,000 hours life with 70% lumen maintenance at Tc point.
2. View limited warranty at <http://www.usa.lighting.philips.com/support/support/warranty> for details and restrictions.
3. Tolerance for flux data is ±7.5%. Tolerance for efficacy data is ±10%. Measurements tolerance +/- 5% for flux and efficacy, 0.005 on x,y, +/-1.5 on CRI.

# Fortimo LED Strip Value Offer 2ft 1400lm LV1

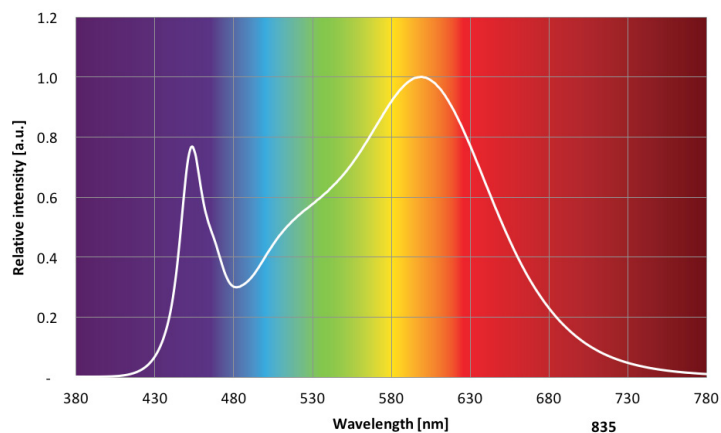
## Optical Characteristics – Table per CCT

Fortimo LED Strip VO 2ft 1400lm 835 LV1			
Parameter at Typical Conditions <sup>3</sup>	Min	Typ	Unit
Luminous Flux		1330	Lm
Lumen Efficiency		142	Lm/W
Forward Current		224	mA
Correlated Color Temperature (CCT) Target		3500	K
CRI	80		-
Radiation Angle		120	deg

Parameter at Lifetime Conditions	Typ	Unit
Luminous Flux	2085	Lm
Lumen Efficiency	124	Lm/W
Forward Current	375	mA

Color consistency of 3 SDCM, averaged over the module.

Nominal temperature for performance specification: T<sub>c</sub> = 45°C.



3. Tolerance for flux data is  $\pm 7.5\%$ . Tolerance for efficacy data is  $\pm 10\%$ . Measurements tolerance  $\pm 5\%$  for flux and efficacy, 0.005 on x,y,  $\pm 1.5$  on CRI.

# Fortimo LED Strip Value Offer 2ft 1400lm LV1

## Optical Characteristics – Table per CCT

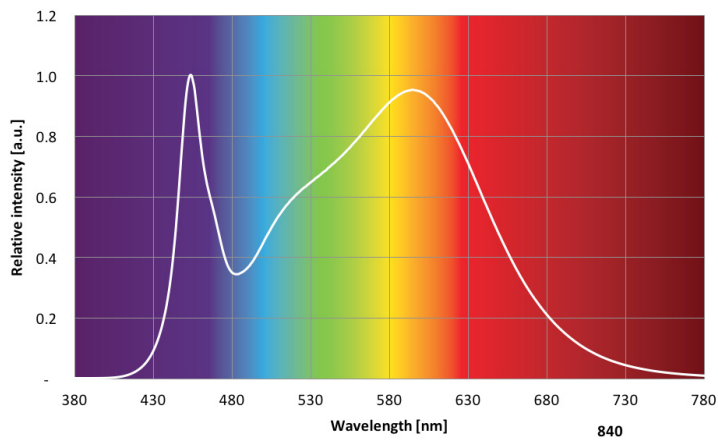
**Fortimo LED Strip VO 2ft 1400lm 840 LV1**

Parameter at Typical Conditions <sup>3</sup>	Min	Typ	Unit
Luminous Flux		1400	Lm
Lumen Efficiency		150	Lm/W
Forward Current		224	mA
Correlated Color Temperature (CCT) Target		4000	K
CRI	80		-
Radiation Angle		120	deg

Parameter at Lifetime Conditions	Typ	Unit
Luminous Flux	2201	Lm
Lumen Efficiency	131	Lm/W
Forward Current	375	mA

Color consistency of 3 SDCM, averaged over the module.

Nominal temperature for performance specification: T<sub>c</sub> = 45°C.



3. Tolerance for flux data is ±7.5%. Tolerance for efficacy data is ±10%. Measurements tolerance +/- 5% for flux and efficacy, 0.005 on x,y, +/-1.5 on CRI.

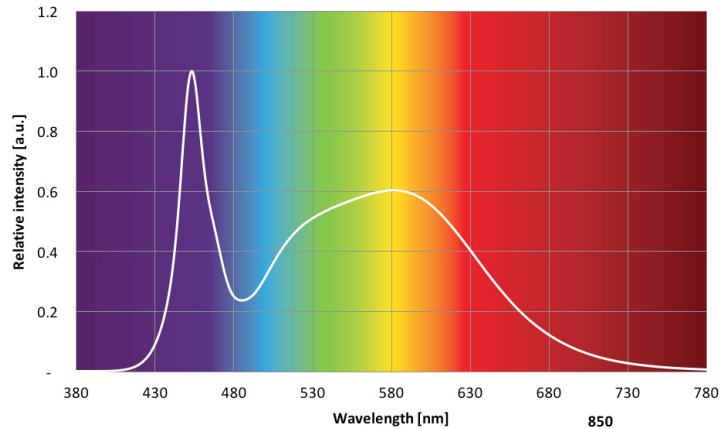
# Fortimo LED Strip Value Offer 2ft 1400lm LV1

## Optical Characteristics – Table per CCT

Fortimo LED Strip VO 2ft 1400lm 850 LV1			
Parameter at Typical Conditions <sup>3</sup>	Min	Typ	Unit
Luminous Flux		1400	Lm
Lumen Efficiency		150	Lm/W
Forward Current		224	mA
Correlated Color Temperature (CCT) Target		5000	K
CRI	80		-
Radiation Angle		120	deg

Parameter at Lifetime Conditions	Typ	Unit
Luminous Flux	2201	Lm
Lumen Efficiency	131	Lm/W
Forward Current	375	mA

Color consistency of 3 SDCM, averaged over the module.  
Nominal temperature for performance specification: T<sub>c</sub> = 45°C.

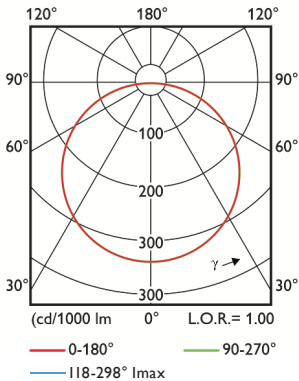


3. Tolerance for flux data is ±7.5%. Tolerance for efficacy data is ±10%. Measurements tolerance +/- 5% for flux and efficacy, 0.005 on x,y, +/-1.5 on CRI.

# Fortimo LED Strip Value Offer 2ft 1400lm LV1

## Beam Shape

The Philips Fortimo LED strip 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
Nominal Current		224	400	mA
Forward Voltage	40.3	41.8	43.2	V
Power Consumption		9.4		W

## Lifetime

Parameter	Nominal *	Life**	Max***
Tc [°C]	45	80	85
Current [mA]	224	375	400

\* Nominal value at which performance is specified

\*\* Value at which lifetime is specified (max current for warranty)

\*\*\* Maximum value for safety

Parameter	Min	Typ	Max
$\Delta u'v'$ at 6000 Hours			0.007

Note: Specifications stated while Tc < 80°C and I < 188 mA.

## Abs Max Ratings

Parameter	Min	Typ	Max	Unit
Current Imax			400	mA
Case Temperature Tc Max			85	°C
ESD (Direct Contact)			8	kV
ESD (Air)			15	kV
Isolation Breakdown Voltage	500			Vdc
Ambient Temperature	-20 <sup>4</sup>			°C
Number of Modules per Chain			2	

4. There cannot be any ice/fog/mist on any part of the L2 surface during the application at -20°C.

# Fortimo LED Strip Value Offer 2ft 1400lm LV1

## Wiring

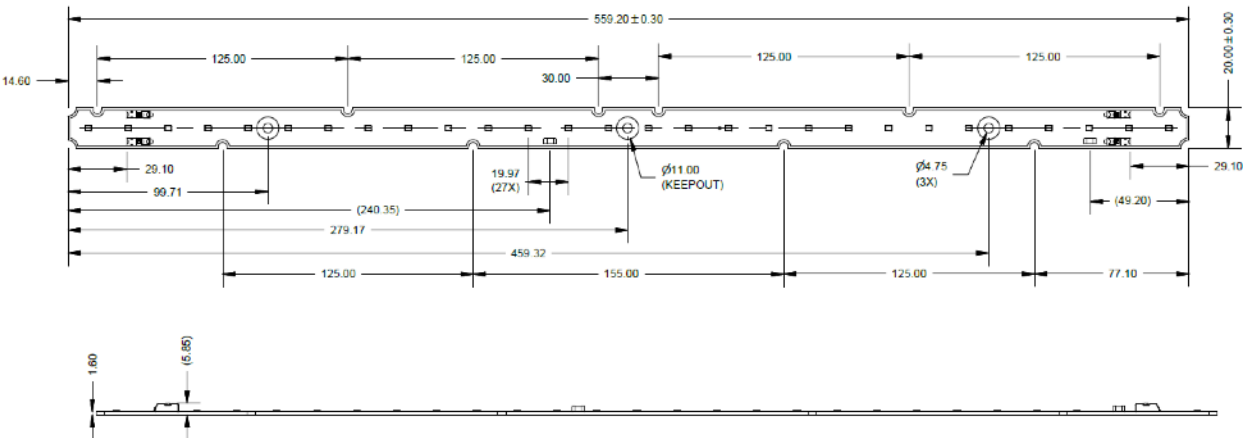
Specification Item	Value	Unit	Condition
Input Wire Cross-Section	0.2...0.8	mm <sup>2</sup>	Solid
	18...24	AWG	
	0.45...0.7	mm <sup>2</sup>	Stranded
	20...22	AWG	
Input Wire Strip Length	7.5...8.5	mm	

Note: Connector suited for robot wiring.

## Mechanical Characteristics

Parameter	Min	Typ	Max	Unit
Length	558.9	559.2	559.5	mm
Width	19.7	20.0	20.3	mm
Height Excl. Connector	1.45	1.6	1.75	mm
Height Incl. Connector	3.85	4.2	4.55	mm
Warpage (IPC-TM-650)			4.2	mm

Note: Bow & twist of the PCB after production tested and released according IPC-TM-650 2.4.22.



# Fortimo LED Strip Value Offer 2ft 1400lm LV1

## Application Information

### Compliance and Approval

UL & cUL according to UL8750 (UL recognized)

### Environmental

RoHS / REACH

### Application Information

IP Rating	No IP rating
Overheating Protection	No protection
Luminaire Class	UL Class 2

### Warranted Number of Full Thermal Product Cycles @ 25°C Ambient Temperature

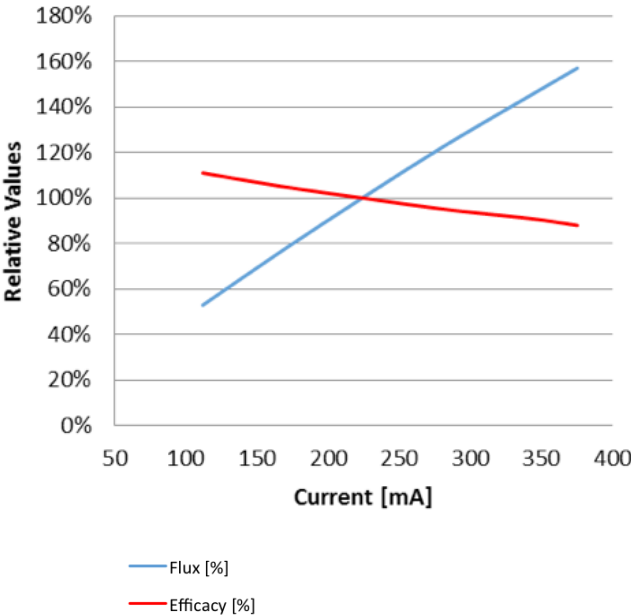
Case Temperature Tc [°C]	Amount of Cycles
35	40,000
40	
45	
50	
55	
60	
65	40,000
70	25,000
75	16,667
80	15,000



# Fortimo LED Strip Value Offer 2ft 1400lm LV1

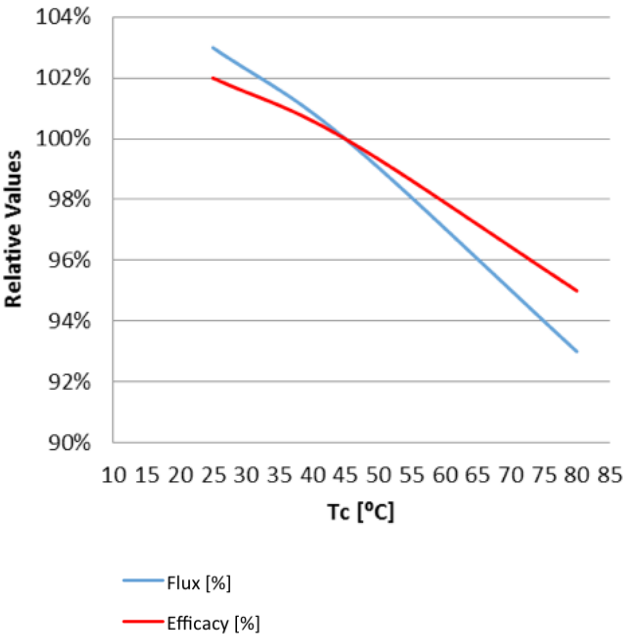
## Tuning Information

### Flux and Efficacy Vs. Current (at Nominal Temperature)



I [mA]	Flux [%]	Efficacy [%]
112	53%	111%
168	77%	105%
224	100%	100%
282	123%	95%
342	145%	91%
375	157%	88%
400	165%	86%

### Flux and Efficacy Vs. Tc



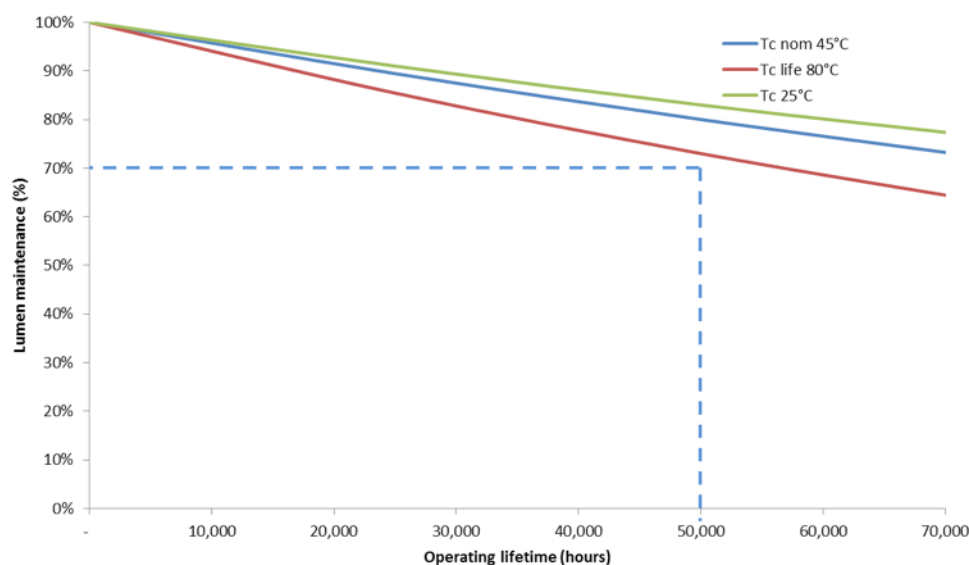
Tc [°C]	Flux [%]	Efficacy [%]
80	93%	95%
45	100%	100%
25	103%	102%

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## Lumen Maintenance

### Lumen Maintenance: at I Life and Tc Life Conditions

Fortimo LED Strip VO 2ft 1400lm LV1



Lumen depreciation as a function of operating hours for I-life and Tc.  
50,000 hours proven by certified laboratory.

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