

# PHILIPS

## LED Modules

### Fortimo LED Strip NA LV4

#### 2ft 4000lm



Philips Fortimo LED strip module comes in a new high flux version that rounds off the portfolio with a high LED count per foot. It is the next step in efficacy and economic fixture design in high-output and high-temperature applications like indoor high-bay. Fortimo LED strip 2ft 4000lm can also enable economical fixture designs for indoor recessed applications like 2' x 2' troffers utilizing only one LED strip module.

Commercial Product Name	12NC
Fortimo LED Strip 2ft 4000lm 830 NA LV4	929000779413
Fortimo LED Strip 2ft 4000lm 835 NA LV4	929000779513
Fortimo LED Strip 2ft 4000lm 840 NA LV4	929000779613
Fortimo LED Strip 2ft 4000lm 850 NA LV4	929000779713

# Fortimo LED strip 2ft 4000lm NA LV4

## Features

- High flux density of up to 2250 lm per foot
- Narrow width of only 20mm
- High energy efficacy of up to 173 lm/W
- High lumen maintenance (TM21) of L90 36,000 hours

## Benefits

- High energy efficacy and long lifetime<sup>1</sup> provide optimized total cost of ownership
- Slim width and 4ft length provide excellent design-in options and assembly
- 5-year limited system warranty with Philips Advance Xitanium LED drivers<sup>2</sup>
- Specifications enable DLC Premium category<sup>3</sup>

## Applications

- Industry
- Retail
- Office

## Optical Characteristics – Table per CCT

### Fortimo LED Strip 2ft 4000lm 830 NA LV4

Parameter	Min	Typ	Unit
Luminous Flux		3780	Lm
Lumen Efficiency		163	Lm/W
Forward Current		680	mA
Correlated Color Temperature (CCT) Target		3000	K
CRI	80		-
Radiation Angle		120	deg

Parameter at $I_{life}$	Typ	Unit
Luminous Flux	4232	Lm
Lumen Efficiency	149	Lm/W
Forward Current	810	mA

Nominal temperature for performance specification:  $T_c = 55^\circ\text{C}$ .

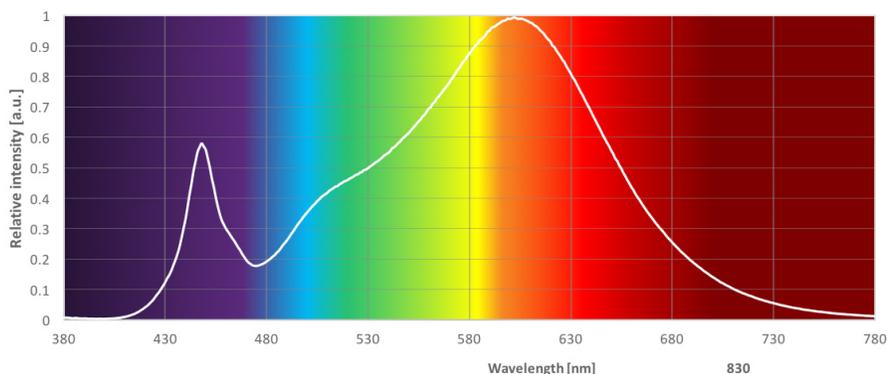
Max performance values at  $I_{life}$ .

Color consistency of 3 SDCM, averaged over the module.

Tolerance for flux data is  $\pm 7.5\%$ .

Tolerance for efficacy data is  $\pm 10\%$ .

Philips maintains a tester tolerance of  $\pm 5\%$  on flux,  $\pm 0.005$  on color,  $\pm 1.5$  on CRI,  $\pm 3\%$  on Vf,  $\pm 3.3\%$  on power,  $\pm 6\%$  on efficiency.



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  $T_c$  point.
2. View limited warranty at <http://www.usa.lighting.philips.com/support/support/warranty> for details and restrictions.
3. Fortimo LED strip NA LV4 is not a DesignLights Consortium™ (DLC) qualified product. It is an OEM component that meets certain performance specifications that are geared toward meeting DLC Standard Tier (v4.0) in a fully assembled fixture. The customer is liable for proper design, manufacturing, testing and qualification according to DLC requirements.

# Fortimo LED strip 2ft 4000lm NA LV4

## Optical Characteristics – Table per CCT

**Fortimo LED Strip 2ft 4000lm 835 NA LV4**

Parameter	Min	Typ	Unit
Luminous Flux		3900	Lm
Lumen Efficiency		168	Lm/W
Forward Current		680	mA
Correlated Color Temperature (CCT) Target		3500	K
CRI	80		-
Radiation Angle		120	deg

Parameter at $I_{life}$	Typ	Unit
Luminous Flux	4366	Lm
Lumen Efficiency	154	Lm/W
Forward Current	810	mA

Nominal temperature for performance specification:  $T_c = 55^\circ\text{C}$ .

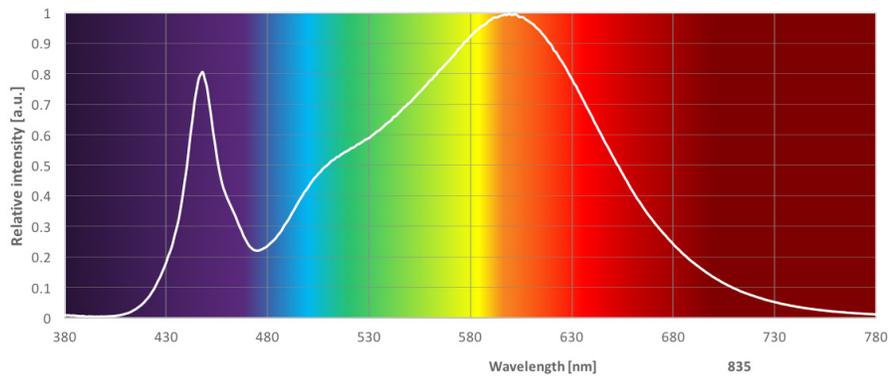
Max performance values at  $I_{life}$ .

Color consistency of 3 SDCM, averaged over the module.

Tolerance for flux data is  $\pm 7.5\%$ .

Tolerance for efficacy data is  $\pm 10\%$ .

Philips maintains a tester tolerance of  $\pm 5\%$  on flux,  $\pm 0.005$  on color,  $\pm 1.5$  on CRI,  $\pm 3\%$  on Vf,  $\pm 3.3\%$  on power,  $\pm 6\%$  on efficiency.



# Fortimo LED strip 2ft 4000lm NA LV4

## Optical Characteristics – Table per CCT

Fortimo LED Strip 2ft 4000lm 840 NA LV4			
Parameter	Min	Typ	Unit
Luminous Flux		3980	Lm
Lumen Efficiency		171	Lm/W
Forward Current		680	mA
Correlated Color Temperature (CCT) Target		4000	K
CRI	80		-
Radiation Angle		120	deg

Parameter at $I_{life}$	Typ	Unit
Luminous Flux	4453	Lm
Lumen Efficiency	157	Lm/W
Forward Current	810	mA

Nominal temperature for performance specification:  $T_c = 55^{\circ}\text{C}$ .

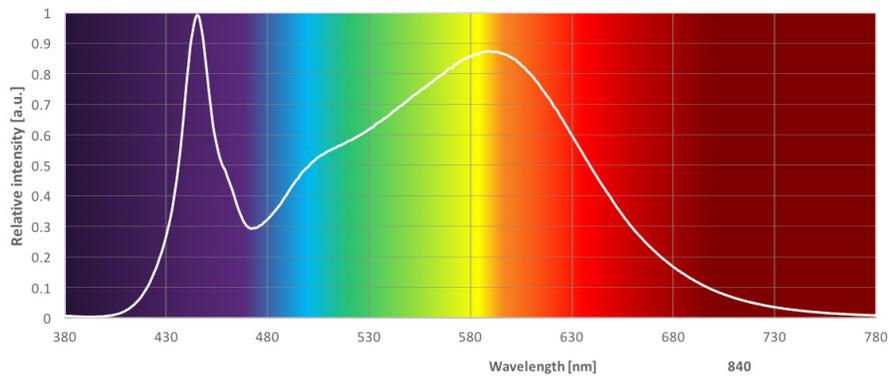
Max performance values at  $I_{life}$ .

Color consistency of 3 SDCM, averaged over the module.

Tolerance for flux data is  $\pm 7.5\%$ .

Tolerance for efficacy data is  $\pm 10\%$ .

Philips maintains a tester tolerance of  $\pm 5\%$  on flux,  $\pm 0.005$  on color,  $\pm 1.5$  on CRI,  $\pm 3\%$  on Vf,  $\pm 3.3\%$  on power,  $\pm 6\%$  on efficiency.



# Fortimo LED strip 2ft 4000lm NA LV4

## Optical Characteristics – Table per CCT

**Fortimo LED Strip 2ft 4000lm 850 NA LV4**

Parameter	Min	Typ	Unit
Luminous Flux		4020	Lm
Lumen Efficiency		173	Lm/W
Forward Current		680	mA
Correlated Color Temperature (CCT) Target		5000	K
CRI	80		-
Radiation Angle		120	deg

Parameter at $I_{life}$	Typ	Unit
Luminous Flux	4500	Lm
Lumen Efficiency	159	Lm/W
Forward Current	810	mA

Nominal temperature for performance specification:  $T_c = 55^\circ\text{C}$ .

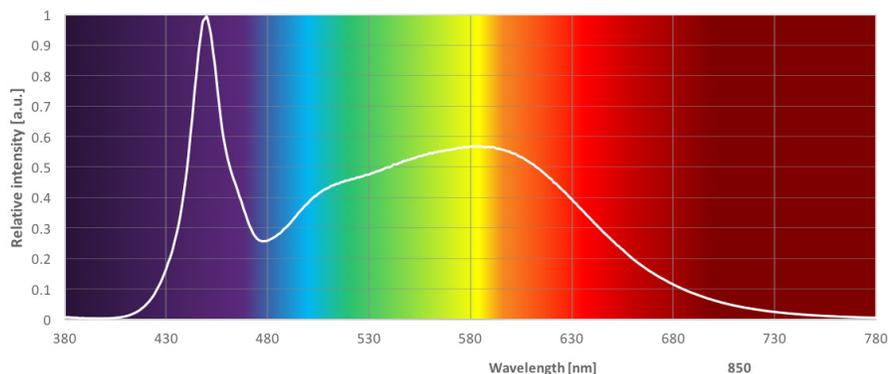
Max performance values at  $I_{life}$ .

Color consistency of 3 SDCM, averaged over the module.

Tolerance for flux data is  $\pm 7.5\%$ .

Tolerance for efficacy data is  $\pm 10\%$ .

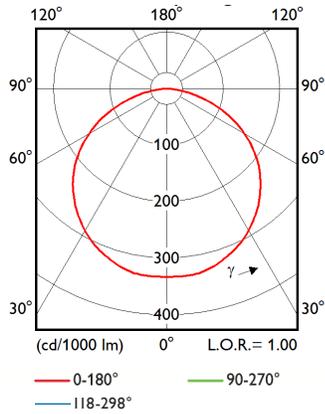
Philips maintains a tester tolerance of  $\pm 5\%$  on flux,  $\pm 0.005$  on color,  $\pm 1.5$  on CRI,  $\pm 3\%$  on Vf,  $\pm 3.3\%$  on power,  $\pm 6\%$  on efficiency.



# Fortimo LED strip 2ft 4000lm NA LV4

## 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		680	840	mA
Forward Voltage	32.6	34.2	35.1	V
Power Consumption		23.2		W

## Forward Voltage Range

@ $I_{nom}$ and 55°C	Min.	Max.
Bin A [V]	32.6	33.9
Bin B [V]	33.8	35.1

## Lifetime

Parameter	Nominal *	Life**	Max***
Tc [°C]	55	85	95
Current [mA]	680	810	840

\* 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 < 85°C and I < 810 mA.

## Abs Max Ratings

Parameter	Min	Typ	Max	Unit
Current Imax			840	mA
Case Temperature Tc Max			95	°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 2ft 4000lm NA LV4

---

## Application Information

### Compliance and Approval

UL & cUL - UL8750

### Environmental

RoHS / REACH

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

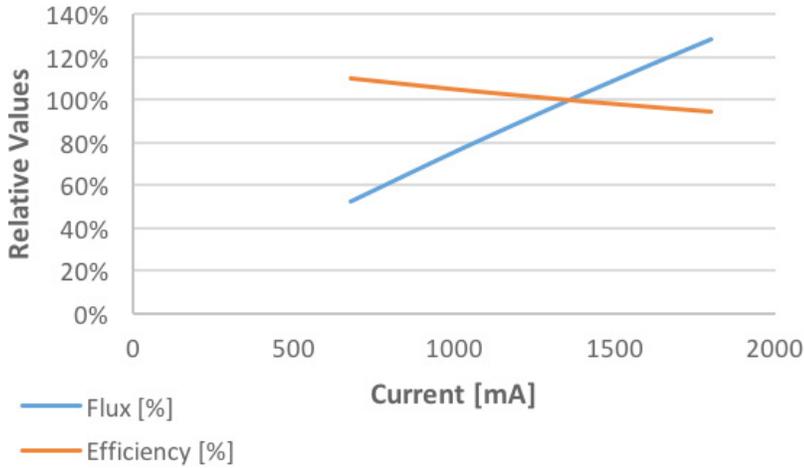
### Warranted Number of Full Thermal Product Cycles @ 25°C Ambient Temperature

Case Temperature Tc [°C]	Amount of Cycles
35	
40	
45	100,000
50	
55	100,000
60	
65	58,100
70	
75	27,600
80	14,200
85	
90	
95	

# Fortimo LED strip 2ft 4000lm NA LV4

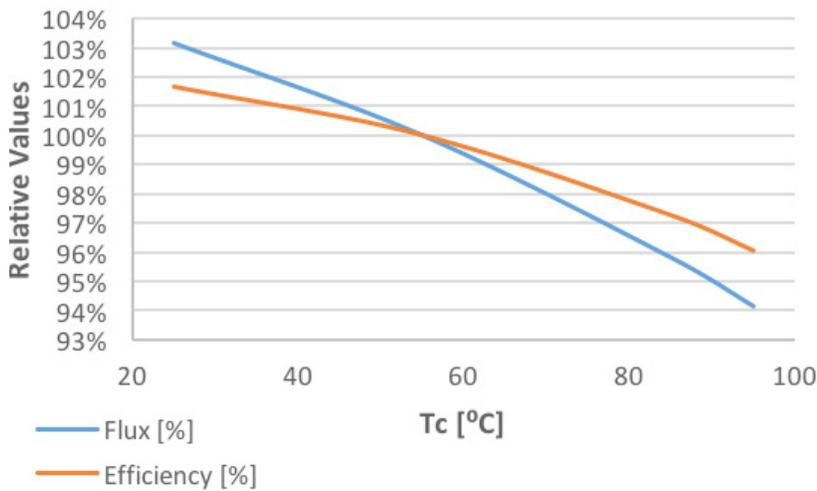
## Tuning Information

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



I [mA]	Flux [%]	Efficacy [%]
340	53%	110%
510	77%	105%
<b>680</b>	<b>100%</b>	<b>100%</b>
753	110%	98%
827	119%	96%
900	128%	95%

### Flux and Efficacy Vs. Tc



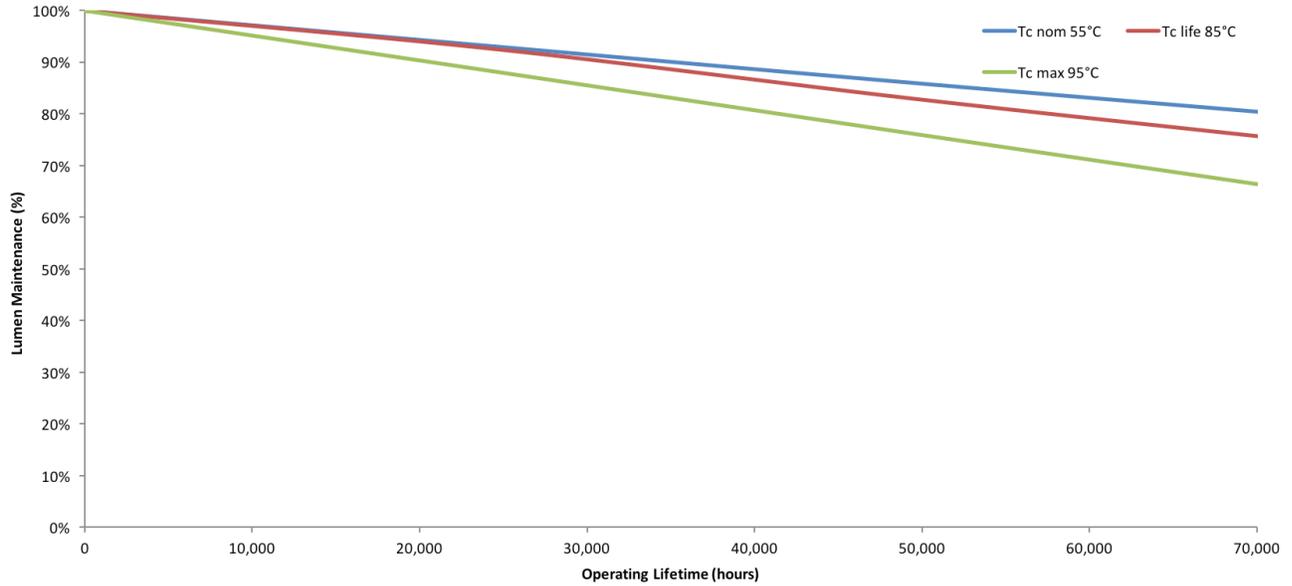
Tc [°C]	Flux [%]	Efficacy [%]
95	94%	96%
85	96%	97%
<b>55</b>	<b>100%</b>	<b>100%</b>
25	103%	102%

# Fortimo LED strip 2ft 4000lm NA LV4

## Lumen Maintenance

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

Fortimo LED strip NA LV4 high flux high temperature 2ft



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

© 2017 Philips Lighting Holding B.V. All rights reserved.  
Philips reserves the right to make changes in specifications and/or to discontinue any product at any time without notice or obligation and will not be liable for any consequences resulting from the use of this publication.  
[philips.com/ledmodulesna](http://philips.com/ledmodulesna)



Philips Lighting North America Corporation  
10275 W. Higgins Road, Rosemont IL 60018  
Tel: 800-322-2086 Fax: 888-423-1882  
Customer/Technical Service: 800-372-3331  
OEM Support: 866-915-5886

Philips Lighting Canada Ltd.  
281 Hillmount Rd,  
Markham, ON, Canada L6C 2S3  
Tel. 800-668-9008