

# ADVANCE

by  Signify

## LED Modules

### Fortimo LED Strip VO LV3

44in 5400lm



# Fortimo LED Strip VO

## 44in 5400lm 8xx LV3

- Education
- Office
- Healthcare
- Retail
- Hospitality

### Key features and benefits

- Energy efficacy up to 183 lm/W (Tc 45°C)
- 3 SDCM color consistency
- CRI80 color rendering
- 50,000 hrs lifetime
- Push-in connectors
- Mechanical footprint compatible with LED strip product family and Zhaga
- Variable length with separation features every 11 in. and connectors on both ends allowing for separation into two modules
- Low system cost and optimized performance with five-year limited system warranty when paired with Advance Xitanium LED drivers or Advance CertaDrive X drivers

### Ordering data

Commercial product name	12NC	Box quantity
Fortimo LED Strip VO 44in 5400lm 830 LV3	9290 027 23113	120
Fortimo LED Strip VO 44in 5400lm 835 LV3	9290 027 23213	120
Fortimo LED Strip VO 44in 5400lm 840 LV3	9290 027 23313	120
Fortimo LED Strip VO 44in 5400lm 850 LV3	9290 027 23413	120

November 2020

## Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Strip VO LV3 44in 5400lm	800	1350	1400	mA

## Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T <sub>c</sub> (case temperature at T <sub>c</sub> point)	45	80	85	°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

## Suggested maximum current at elevated ambient

Setting	1	2	3	4	Unit
Luminaire maximum ambient	25	30	35	40	°C
Suggested maximum current*	1350	1350	1350	1350	mA

\* Drive current that may be possible at the reference external ambient temperature. The maximum suggested current given is for a typical non-lensed luminaire design with good thermal transfer capability. Use of a lensed luminaire or luminaires with non-optimal thermal characteristics will require a further current reduction to meet the same maximum ambient temperature. The current suggestion is based on the module T<sub>c</sub>-life and thermal testing must be used to verify T<sub>c</sub>-life is never exceeded for your specific luminaire. It may be necessary to adjust the final current value in order to meet the T<sub>c</sub>-life rating of the module.

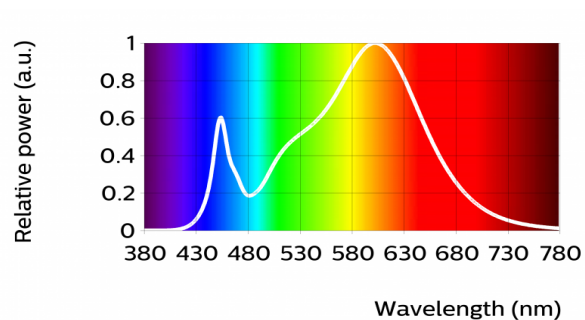
## Optical characteristics - table per color (CCT)

### Fortimo LED Strip VO 44in 5400lm 830 LV3

Parameter	Min	Typ	Max	Unit
Luminous flux	4700	5080	5460	lm
Module efficacy	148	165		lm/W
Correlated color temperature (CCT)		3000		K
Color consistency			3	SDCM
CRI	80			
R9	0			

Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$  and R9  $\pm 3$

Operation point	830	lm	lm/W
80% I-nom 640mA	Tc 25 °C	4270	175
	Tc-nom 45 °C	4150	172
	Tc-life 80 °C	3920	166
I-nom 800mA	Tc 25 °C	5230	168
	Tc-nom 45 °C	5080	165
	Tc-life 80 °C	4790	159
I-life 1350mA	Tc 25 °C	8290	148
	Tc-nom 45 °C	8040	145
	Tc-life 80 °C	7570	139

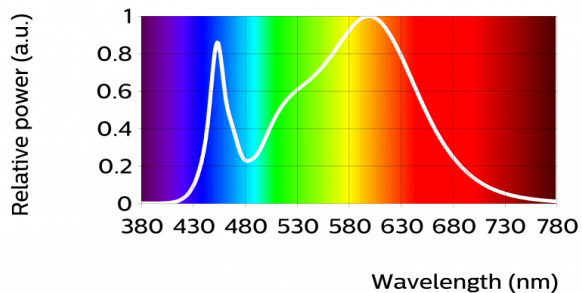


## Fortimo LED Strip VO 44in 5400lm 835 LV3

Parameter	Min	Typ	Max	Unit
Luminous flux	4910	5300	5710	lm
Module efficacy	155	172		lm/W
Correlated color temperature (CCT)		3500		K
Color consistency			3	SDCM
CRI	80			
R9	0			

Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$  and R9  $\pm 3$

Operation point	835	lm	lm/W
80% I-nom 640mA	Tc 25 °C	4450	183
	Tc-nom 45 °C	4330	180
	Tc-life 80 °C	4090	174
I-nom 800mA	Tc 25 °C	5460	175
	Tc-nom 45 °C	5300	172
	Tc-life 80 °C	5000	166
I-life 1350mA	Tc 25 °C	8650	154
	Tc-nom 45 °C	8390	151
	Tc-life 80 °C	7890	145

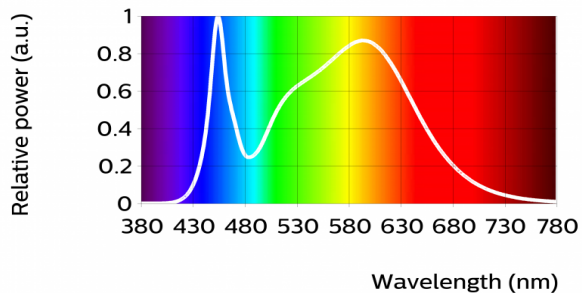


## Fortimo LED Strip VO 44in 5400lm 840 LV3

Parameter	Min	Typ	Max	Unit
Luminous flux	4990	5400	5800	lm
Module efficacy	157	175		lm/W
Correlated color temperature (CCT)		4000		K
Color consistency			3	SDCM
CRI	80			
R9	0			

Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$  and R9  $\pm 3$

Operation point	840	lm	lm/W
80% I-nom 640mA	Tc 25 °C	4540	186
	Tc-nom 45 °C	4410	183
	Tc-life 80 °C	4170	177
I-nom 800mA	Tc 25 °C	5560	178
	Tc-nom 45 °C	5400	175
	Tc-life 80 °C	5100	169
I-life 1350mA	Tc 25 °C	8810	157
	Tc-nom 45 °C	8550	154
	Tc-life 80 °C	8040	148

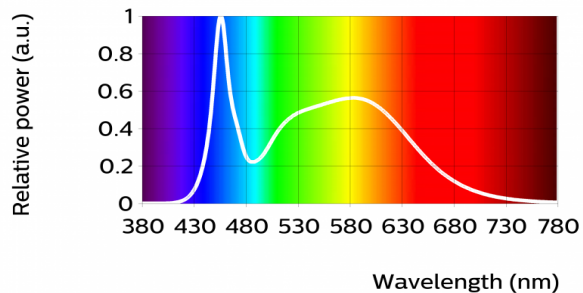


## Fortimo LED Strip VO 44in 5400lm 850 LV3

Parameter	Min	Typ	Max	Unit
Luminous flux	4990	5400	5800	lm
Module efficacy	157	175		lm/W
Correlated color temperature (CCT)		5000		K
Color consistency			3	SDCM
CRI	80			
R9	0			

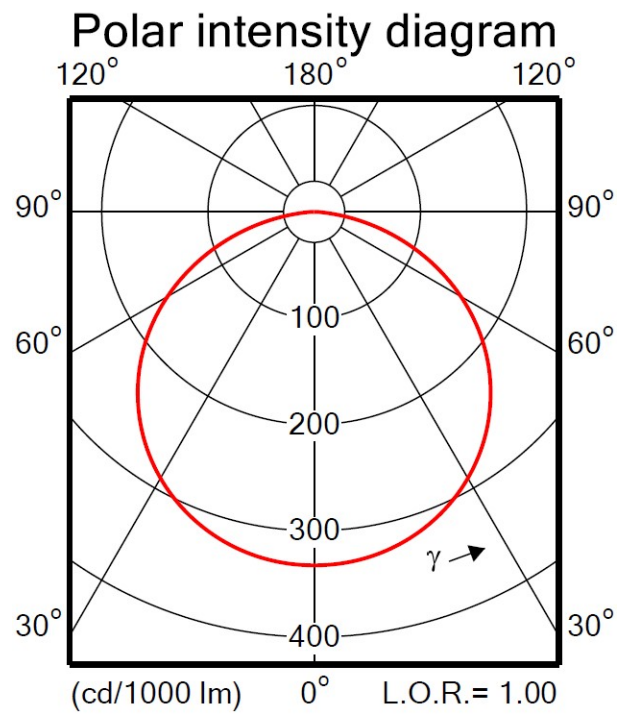
Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$  and R9  $\pm 3$

Operation point	850	lm	lm/W
80% I-nom 640mA	Tc 25 °C	4540	186
	Tc-nom 45 °C	4410	183
	Tc-life 80 °C	4170	177
I-nom 800mA	Tc 25 °C	5560	178
	Tc-nom 45 °C	5400	175
	Tc-life 80 °C	5100	169
I-life 1350mA	Tc 25 °C	8810	157
	Tc-nom 45 °C	8550	154
	Tc-life 80 °C	8040	148



## Beam shape

The LED-module has a Lambertian light distribution.



## Electrical characteristics

Parameter	Min	Typ	Max	Unit
Forward voltage	37.8	38.5	42.0	V
Power consumption	30.2	30.8	33.6	W = kWh/1000h
Number of modules in series per chain			1	

Measurement precision for Vf +/- 3%. Measurement precision for power +/- 3.3%

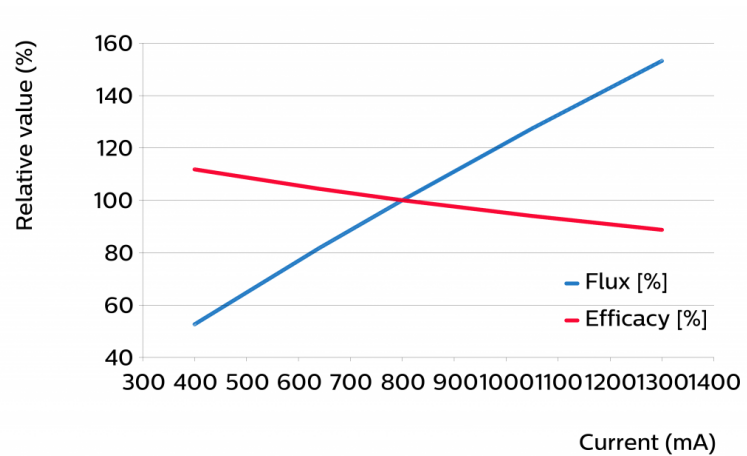
## System chain limits for Same Length modules

Total length (in)	Total current limit (mA)
24	675
48	1350
72	740
96	420

## Tuning information

Flux and efficacy versus current (at Tc nominal)

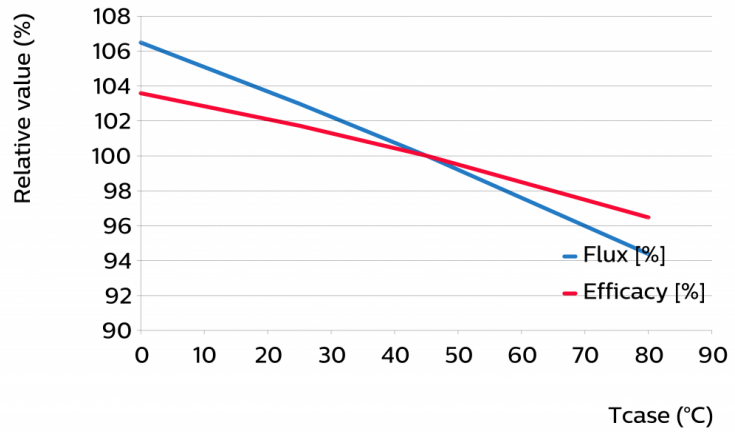
I [mA]	Flux [%]	Efficacy [%]
1300	153	89
1050	127	94
800	100	100
640	82	104
400	53	112





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

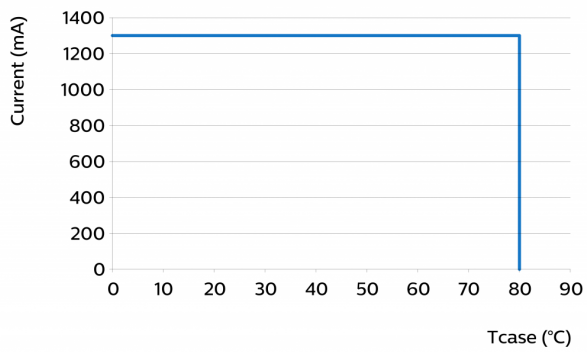
Tc [°C]	Flux [%]	Efficacy [%]
80	94	96
45	100	100
25	103	102
0	106	104



Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70	L80	L90
		B50	B50	B50
80% I-nom 640mA	Tc nom 45°C	>50	>50	46
	Tc 75°C	>50	>50	37
	Tc-life 80°C	>50	>50	36
I-nom 800 mA	Tc nom 45°C	>50	>50	46
	Tc 75°C	>50	>50	37
	Tc-life 80°C	>50	>50	36
I-life 1350 mA	Tc nom 45°C	>50	>50	46
	Tc 75°C	>50	>50	37
	Tc-life 80°C	>50	>50	36

Performance Window



## Thermal switching table

Warranted Number of Full Thermal Product Cycles at 25°C ambient temperature

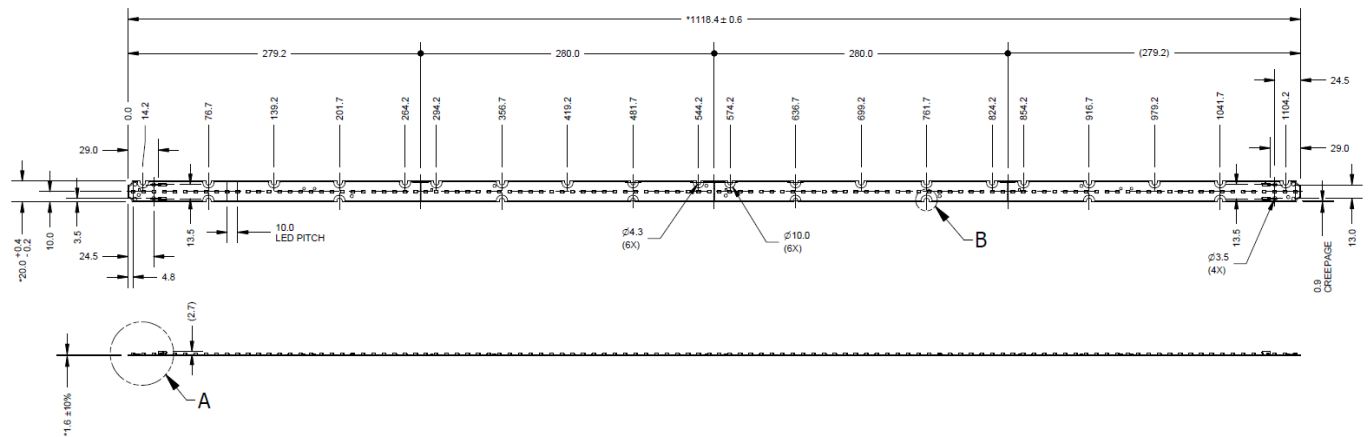
Case Temperature - Tc [°C]	Amount of Cycles
45 (or less)	>100000
55	>100000
65	98000
75	44000
85	22000

## Wiring

Specification item	Value	Unit	Condition
Input wire cross-section	0.45...0.7	mm <sup>2</sup>	stranded wire
	20...22	AWG	stranded wire
Input wire strip length	4.5...5.5	mm	
Input wire cross-section	0.25...0.75	mm <sup>2</sup>	solid wire
	18...24	AWG	solid wire
Input wire strip length	4.5...5.5	mm	

## Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	1117.8	1118.4	1119	mm
Width	19.8	20	20.4	mm
Height PCB	1.4	1.6	1.8	mm
Height total		4.3		mm
Warpage (IPC-TM-650)			5	%



## Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		1400	mA
Case temperature (Tc-max)		85	°C
ESD (direct contact)	1		kV
Working voltage		60	V <sub>dc</sub>

Surge protection of the module must be provided by the driver or other components. Advance Xitanium and Certadrive drivers have built in protection circuitry and will protect the module up to the specified driver surge rating. When using third party drivers testing or confirmation from manufacturer is suggested to ensure adequate module protection.

## Application information

### Certificates and Standards

UL 8750

### Environmental

RoHS/REACH

### Application

IP rating	No IP rating
Overheating protection	No protection
Luminaire class ANSI	Class 2
Dimming	Yes

## Notes

View limited warranty at [www.signify.com/warranties](http://www.signify.com/warranties) for details and restrictions.

