

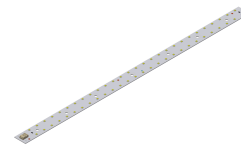
# ADVANCE

by  Signify

## LED Modules

### Fortimo LED Strip VO LV3

19in 2400lm



# Fortimo LED Strip VO

## 19in 2400lm 8xx LV3

- Education
- Office
- Healthcare
- Retail
- Hospitality

### Key features and benefits

- Energy efficacy up to 181 lm/W (Tc 45°C)
- 19 in module perfect for retrofit kits
- 3 SDCM color consistency
- CRI80 color rendering
- 50,000 hrs lifetime
- Push-in connectors
- Center mount mechanical footprint allows for easy assembly
- 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 19in 2400lm 835 LV3	9290 027 26113	156
Fortimo LED Strip VO 19in 2400lm 840 LV3	9290 027 26213	156

November 2020

## Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Strip VO LV3 19in 2400lm	350	650	700	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*	700	700	700	700	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.

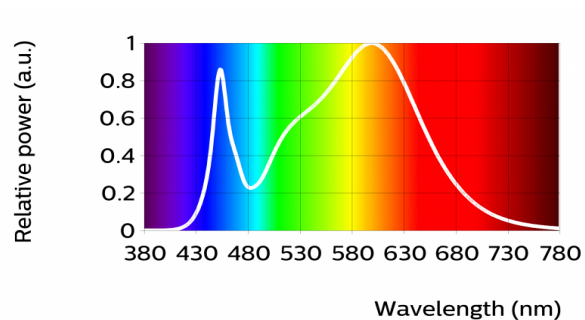
## Optical characteristics - table per color (CCT)

### Fortimo LED Strip VO 19in 2400lm 835 LV3

Parameter	Min	Typ	Max	Unit
Luminous flux	2175	2350	2530	lm
Module efficacy	159	177		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 280mA	Tc 25 °C	1970	187
	Tc-nom 45 °C	1910	184
	Tc-life 80 °C	1810	178
I-nom 350mA	Tc 25 °C	2420	180
	Tc-nom 45 °C	2350	177
	Tc-life 80 °C	2220	171
I-life 650mA	Tc 25 °C	4190	156
	Tc-nom 45 °C	4060	153
	Tc-life 80 °C	3820	147

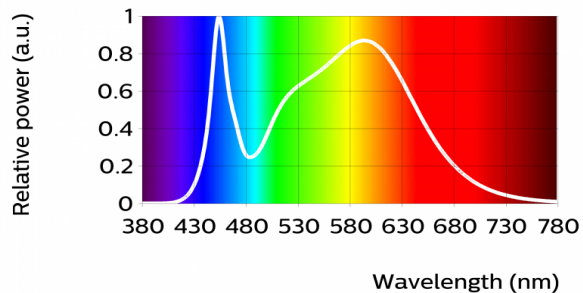


## Fortimo LED Strip VO 19in 2400lm 840 LV3

Parameter	Min	Typ	Max	Unit
Luminous flux	2220	2400	2580	lm
Module efficacy	162	180		lm/W
Correlated color temperature (CCT)		4000		K
Color consistency			3	SDCM
CRI	80			
R9	0			

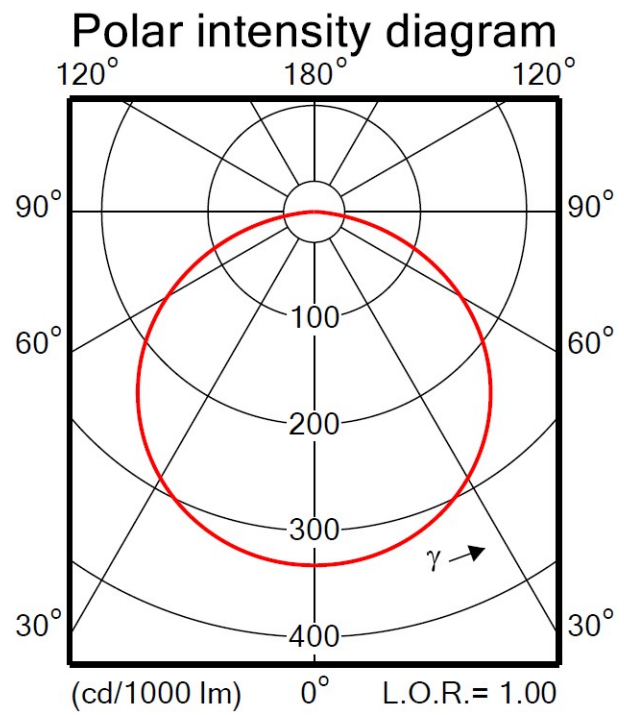
Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$  and R9  $\pm 3$

Operation point	840	lm	lm/W
80% I-nom 280mA	Tc 25 °C	2010	191
	Tc-nom 45 °C	1960	188
	Tc-life 80 °C	1850	182
I-nom 350mA	Tc 25 °C	2470	184
	Tc-nom 45 °C	2400	181
	Tc-life 80 °C	2270	174
I-life 650mA	Tc 25 °C	4280	159
	Tc-nom 45 °C	4150	156
	Tc-life 80 °C	3900	150



## Beam shape

The LED-module has a Lambertian light distribution.



## Electrical characteristics

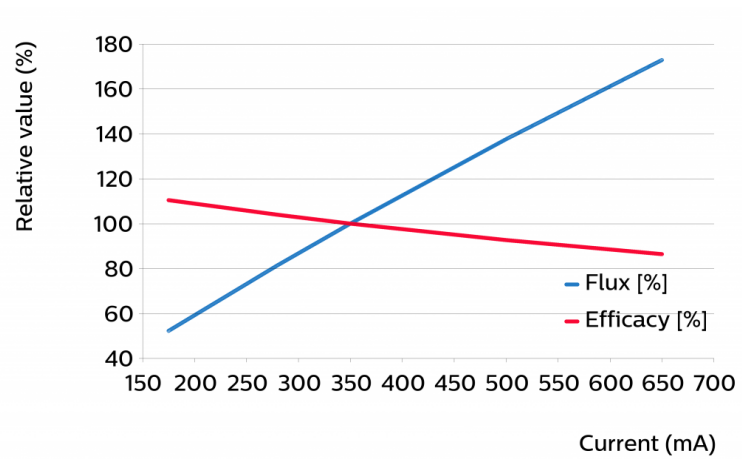
Parameter	Min	Typ	Max	Unit
Forward voltage	35.8	38.0	40.0	V
Power consumption	12.5	13.3	14.0	W = kWh/1000h
Number of modules in series per chain			1	

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

## Tuning information

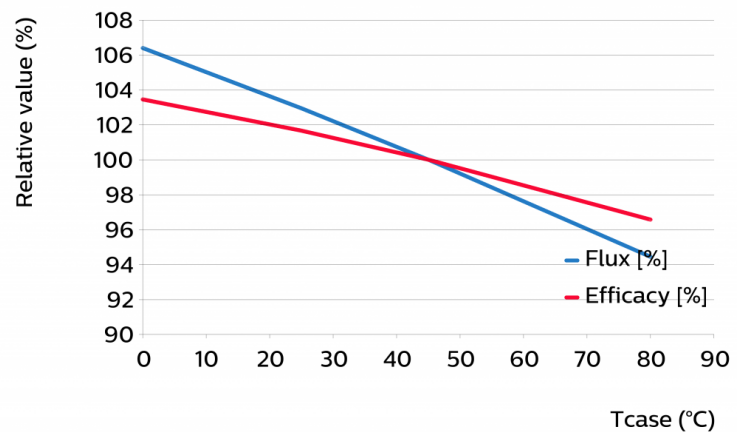
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
650	173	86
500	138	93
350	100	100
280	81	104
175	52	110



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

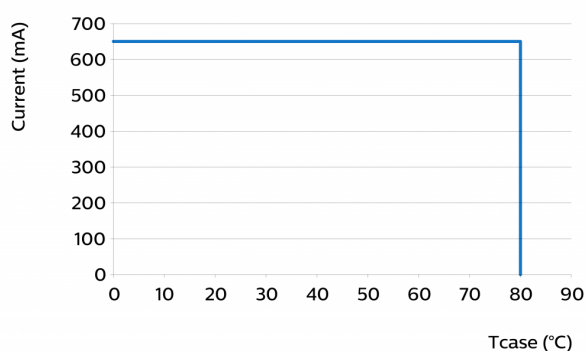
Tc [°C]	Flux [%]	Efficacy [%]
80	94	97
45	100	100
25	103	102
0	106	103



## Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70	L80	L90
		B50	B50	B50
80% I-nom 280 mA	Tc nom 45°C	>50	>50	46
	Tc 75°C	>50	>50	37
	Tc-life 80°C	>50	>50	36
I-nom 350 mA	Tc nom 45°C	>50	>50	46
	Tc 75°C	>50	>50	37
	Tc-life 80°C	>50	>50	36
I-life 650 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

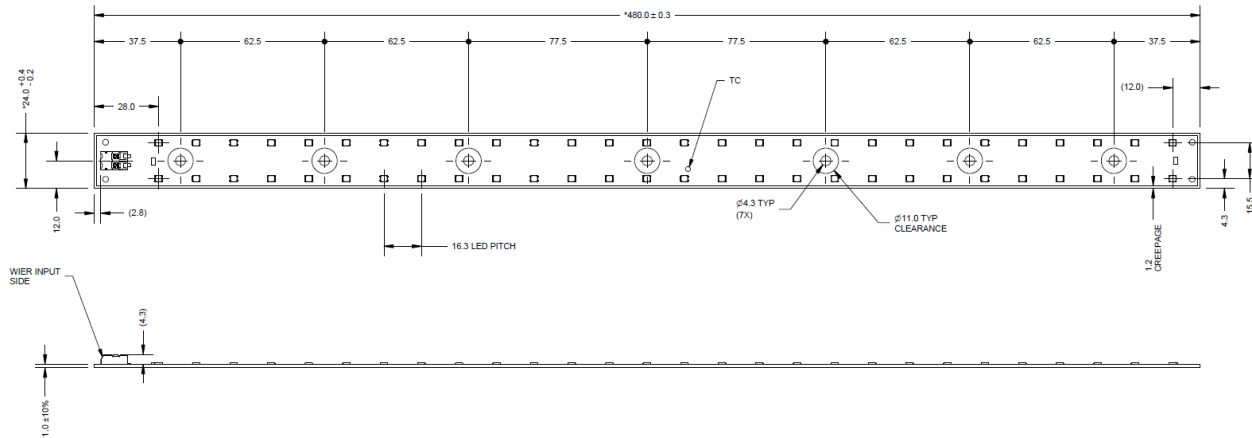
Case Temperature - Tc [°C]	Amount of Cycles
45 (or less)	>100000
55	>100000
65	98000
75	44000
85	22000

## 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	479.7	480	480.3	mm
Width	23.8	24	24.4	mm
Height PCB	0.9	1	1.1	mm
Height total		5		mm
Warpage (IPC-TM-650)			5	%



## Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		700	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 Certadriver 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

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### 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

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

