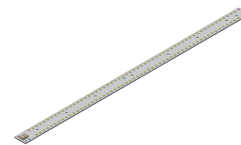


**ADVANCE**by  Signify

LED Modules

Fortimo LED Strip VO LV3

19in 3600lm



# Fortimo LED Strip VO

## 19in 3600lm 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 3600lm 830 LV3	9290 027 26313	156
Fortimo LED Strip VO 19in 3600lm 835 LV3	9290 027 26413	156
Fortimo LED Strip VO 19in 3600lm 840 LV3	9290 027 26513	156
Fortimo LED Strip VO 19in 3600lm 850 LV3	9290 027 26613	156

November 2020

## Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Strip VO LV3 19in 3600lm	515	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.

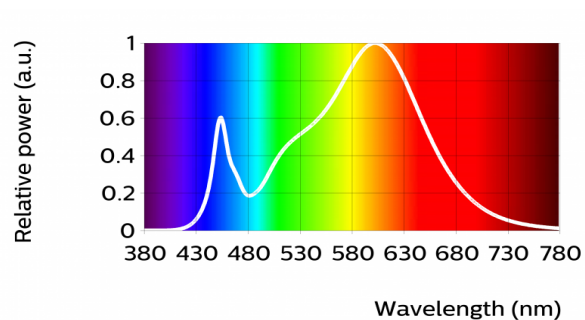
## Optical characteristics - table per color (CCT)

### Fortimo LED Strip VO 19in 3600lm 830 LV3

Parameter	Min	Typ	Max	Unit
Luminous flux	3140	3390	3650	lm
Module efficacy	160	178		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 412mA	Tc 25 °C	2820	179
	Tc-nom 45 °C	2750	176
	Tc-life 80 °C	2600	171
I-nom 515mA	Tc 25 °C	3490	174
	Tc-nom 45 °C	3390	171
	Tc-life 80 °C	3210	165
I-life 650mA	Tc 25 °C	4330	168
	Tc-nom 45 °C	4200	165
	Tc-life 80 °C	3970	159

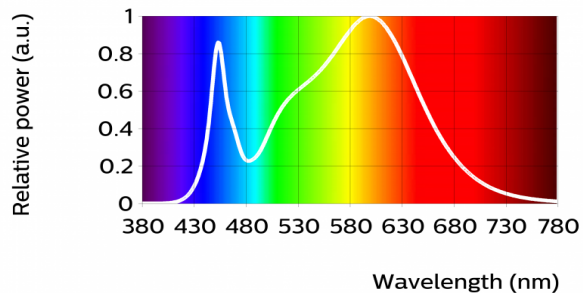


Fortimo LED Strip VO 19in 3600lm 835 LV3

Parameter	Min	Typ	Max	Unit
Luminous flux	3280	3545	3810	lm
Module efficacy	167	187		lm/W
Correlated color temperature (CCT)		3500		K
Color consistency			3	SDCM
CRI	80			
R9	0			

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

Operation point	835	lm	lm/W
80% I-nom 412mA	Tc 25 °C	2950	187
	Tc-nom 45 °C	2870	184
	Tc-life 80 °C	2720	178
I-nom 515mA	Tc 25 °C	3650	182
	Tc-nom 45 °C	3540	179
	Tc-life 80 °C	3350	173
I-life 650mA	Tc 25 °C	4520	175
	Tc-nom 45 °C	4400	172
	Tc-life 80 °C	4150	166

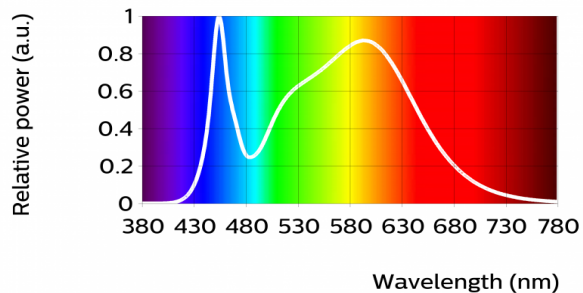


## Fortimo LED Strip VO 19in 3600lm 840 LV3

Parameter	Min	Typ	Max	Unit
Luminous flux	3330	3600	3870	lm
Module efficacy	170	189		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 412mA	Tc 25 °C	3000	190
	Tc-nom 45 °C	2920	187
	Tc-life 80 °C	2770	181
I-nom 515mA	Tc 25 °C	3700	184
	Tc-nom 45 °C	3600	182
	Tc-life 80 °C	3410	176
I-life 650mA	Tc 25 °C	4590	178
	Tc-nom 45 °C	4460	175
	Tc-life 80 °C	4220	169

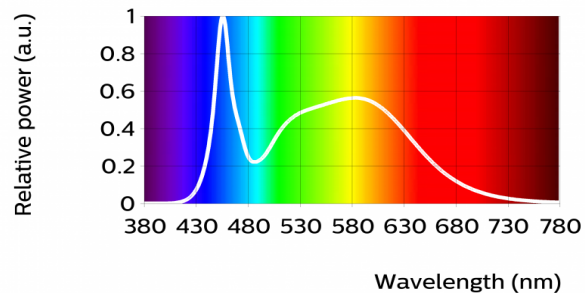


## Fortimo LED Strip VO 19in 3600lm 850 LV3

Parameter	Min	Typ	Max	Unit
Luminous flux	3330	3600	3870	lm
Module efficacy	170	189		lm/W
Correlated color temperature (CCT)		5000		K
Color consistency			3	SDCM
CRI	80			
R9	0			

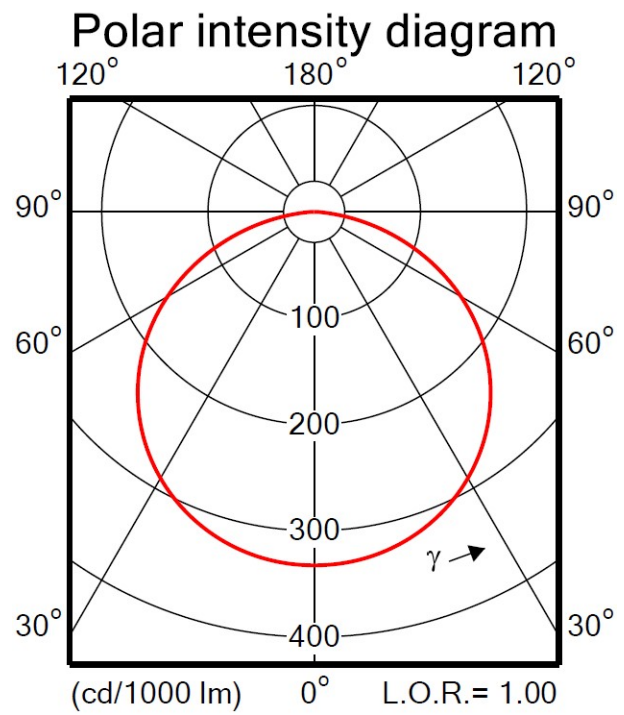
Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$  and R9  $\pm 3$

Operation point	850	lm	lm/W
80% I-nom 412mA	Tc 25 °C	3000	190
	Tc-nom 45 °C	2920	187
	Tc-life 80 °C	2770	181
I-nom 515mA	Tc 25 °C	3700	184
	Tc-nom 45 °C	3600	182
	Tc-life 80 °C	3410	176
I-life 650mA	Tc 25 °C	4590	178
	Tc-nom 45 °C	4460	175
	Tc-life 80 °C	4220	169



## Beam shape

The LED-module has a Lambertian light distribution.



## Electrical characteristics

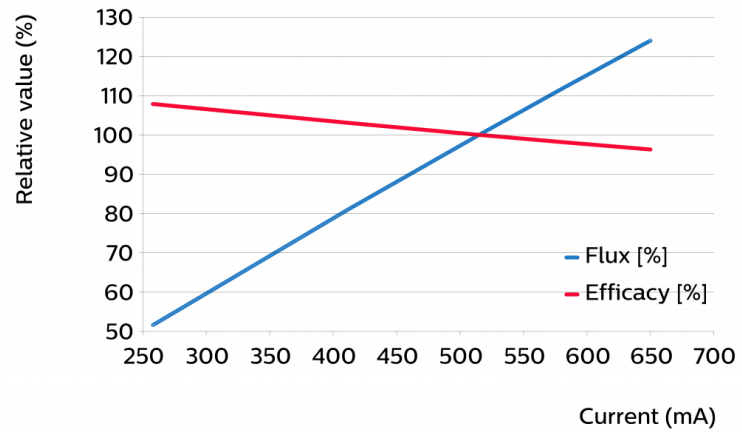
Parameter	Min	Typ	Max	Unit
Forward voltage	34.7	36.9	38.9	V
Power consumption	17.9	19.0	20.0	W = kWh/1000h
Number of modules in series per chain			1	

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

## Tuning information

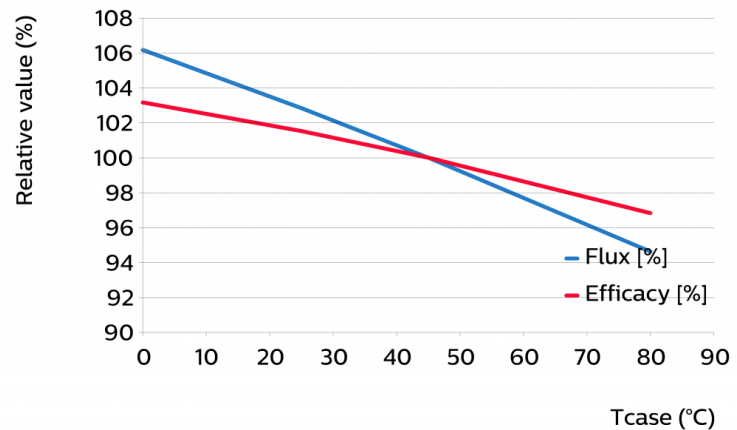
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
650	124	96
582	112	98
515	100	100
412	81	103
258	52	108



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

Tc [°C]	Flux [%]	Efficacy [%]
80	95	97
45	100	100
25	103	102
0	106	103

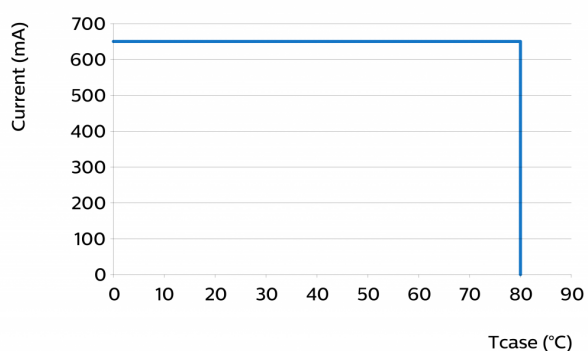




## Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70	L80	L90
		B50	B50	B50
80% I-nom 412 mA	Tc nom 45°C	>50	>50	46
	Tc 75°C	>50	>50	37
	Tc-life 80°C	>50	>50	36
I-nom 515 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

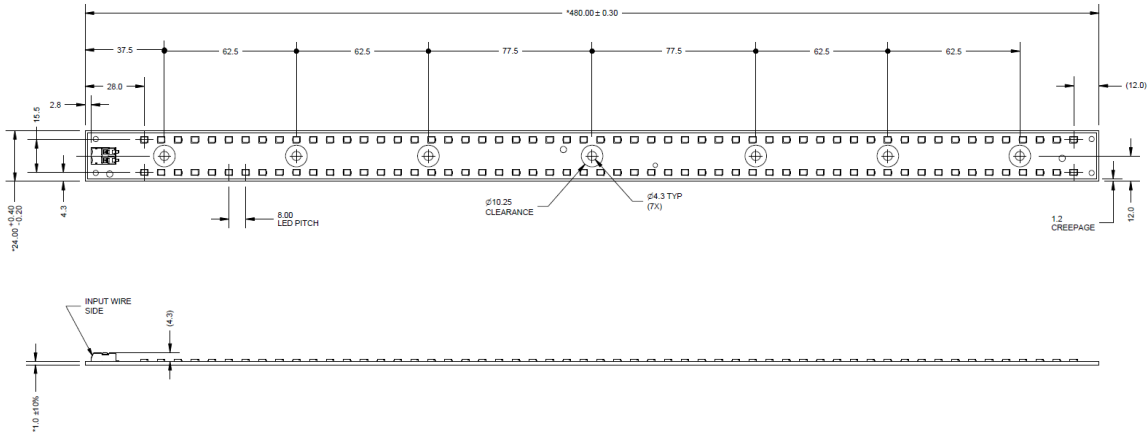
Case Temperature - Tc [°C]	Amount of Cycles
45 (or less)	>100000
55	>100000
65	98000
75	44000
85	22000

## 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.

