

ADVANCE

by  Signify

LED Modules

Fortimo edge VO LV2

21.5in 4800lm



Fortimo edge VO 21.5in 4800lm LV2

- High-bay industrial lighting
- High-bay big box retail lighting
- Vapor tight high temperature applications

Key features and benefits

- High energy efficiency
- High lumen maintenance
- Robust 2835 LED platform
- Compact design enables innovative luminaire design
- High thermal limit: I-Life 90°C Tc
- Perfect match with Xitanium industrial driver portfolio
- Low total cost of ownership/Fast return on investment
- High lifetime and reliability data ensure low maintenance luminaires
- 8kV ESD rating
- Thermal Cycles designed for industrial applications
- Mounting pattern aligns with Fortimo edge LV1 for seamless upgrade

Ordering data

Commercial product name	12NC	Box quantity
Fortimo edge VO 21.5in 4800lm 835 LV2	9290 027 24713	156
Fortimo edge VO 21.5in 4800lm 840 LV2	9290 027 24813	156
Fortimo edge VO 21.5in 4800lm 850 LV2	9290 027 24913	156

September 2020

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo edge VO 21.5in 4800lm LV2	600	1050	1100	mA

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T _c (case temperature at T _c point)	65	90	95	°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

Luminaire maximum ambient	45°C	55°C	65°C
Suggested maximum current*	1050mA	800mA	550mA

* 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_c-life and thermal testing must be used to verify T_c-life is never exceeded for your specific luminaire. It may be necessary to adjust the final current value in order to meet the T_c-life rating of the module.

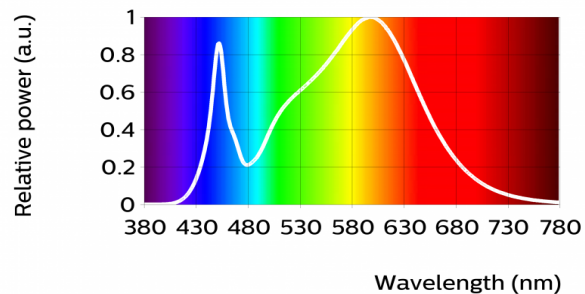
Optical characteristics - table per color (CCT)

Fortimo edge VO 21.5in 4800lm 835 LV2

Parameter	Min	Typ	Max	Unit
Luminous flux	4310	4660	5010	lm
Module efficacy	156	174	191	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 ± 0.005 . Measurement precision for CRI ± 1.5 and R9 ± 3

Operation point	835	lm	lm/W
80% I-nom 480mA	Tc 25 °C	3930	184
	Tc-nom 65 °C	3770	178
	Tc-life 90 °C	3650	174
I-nom 600mA	Tc 25 °C	4860	179
	Tc-nom 65 °C	4660	174
	Tc-life 90 °C	4510	169
I-life 1050mA	Tc 25 °C	8200	165
	Tc-nom 65 °C	7850	160
	Tc-life 90 °C	7580	155

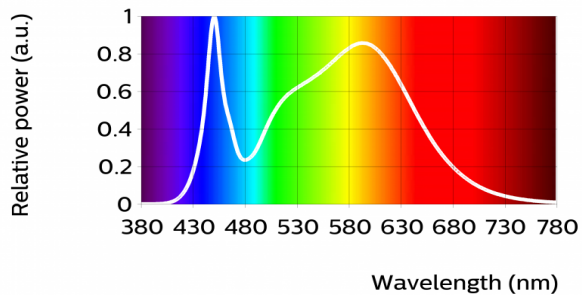


Fortimo edge VO 21.5in 4800lm 840 LV2

Parameter	Min	Typ	Max	Unit
Luminous flux	4440	4800	5160	lm
Module efficacy	160	179	197	lm/W
Correlated color temperature (CCT)		4000		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	840	lm	lm/W
80% I-nom 480mA	Tc 25 °C	4050	189
	Tc-nom 65 °C	3890	184
	Tc-life 90 °C	3760	179
I-nom 600mA	Tc 25 °C	5010	185
	Tc-nom 65 °C	4800	179
	Tc-life 90 °C	4640	174
I-life 1050mA	Tc 25 °C	8440	170
	Tc-nom 65 °C	8080	164
	Tc-life 90 °C	7810	160

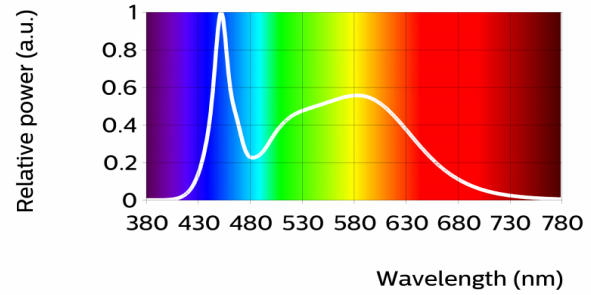


Fortimo edge VO 21.5in 4800lm 850 LV2

Parameter	Min	Typ	Max	Unit
Luminous flux	4440	4800	5160	lm
Module efficacy	160	179	197	lm/W
Correlated color temperature (CCT)		5000		K
Color consistency			3	SDCM
CRI	80			
R9	0			

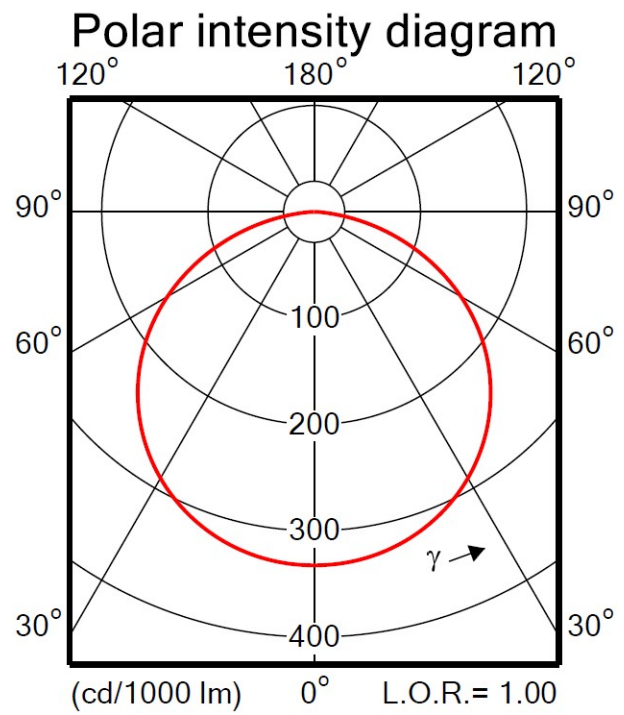
Measurement precision $\pm 5\%$ for the flux data and $\pm 6\%$ for the efficacy data. Measurement precision for color coordinates ± 0.005 . Measurement precision for CRI ± 1.5 and R9 ± 3

Operation point	850	lm	lm/W
80% I-nom 480mA	Tc 25 °C	4050	189
	Tc-nom 65 °C	3890	184
	Tc-life 90 °C	3760	179
I-nom 600mA	Tc 25 °C	5010	185
	Tc-nom 65 °C	4800	179
	Tc-life 90 °C	4640	174
I-life 1050mA	Tc 25 °C	8440	170
	Tc-nom 65 °C	8080	164
	Tc-life 90 °C	7810	160



Beam shape

The LED-module has a Lambertian light distribution.



Electrical characteristics

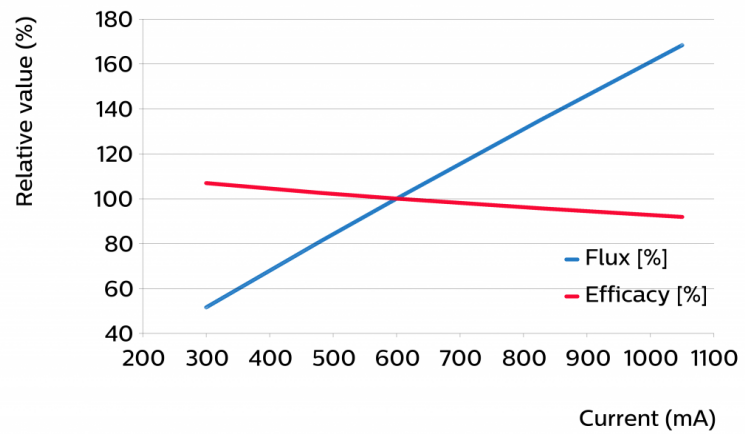
Parameter	Min	Typ	Max	Unit
Forward voltage	43.7	44.7	45.6	V
Power consumption	26.2	26.8	27.4	W = kWh/1000h
Number of modules in series per chain			1	
Number of modules in parallel per chain				

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

Tuning information

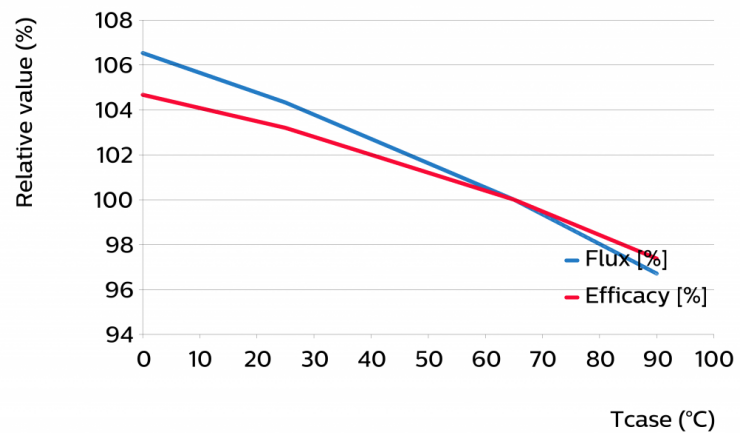
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
1050	168	92
825	135	96
600	100	100
480	81	103
300	52	107



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

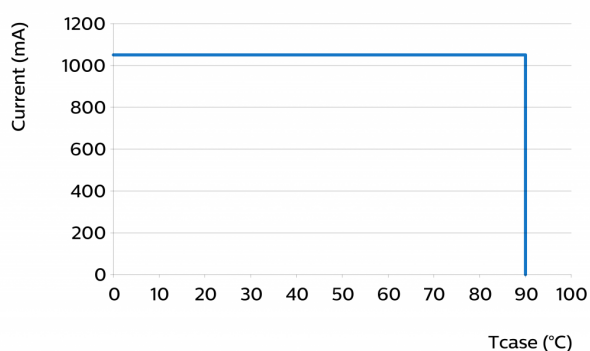
Tc [°C]	Flux [%]	Efficacy [%]
90	97	97
65	100	100
25	104	103
0	107	105



Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70	L80	L90
		B50	B50	B50
80% I-nom 480 mA	Ts nom 65°C	>50	>50	>50
	Ts 75°C	>50	>50	>50
	Ts-life 90°C	>50	>50	>50
I-nom 600 mA	Ts nom 65°C	>50	>50	>50
	Ts 75°C	>50	>50	>50
	Ts-life 90°C	>50	>50	>50
I-life 1050 mA	Ts nom 65°C	>50	>50	>50
	Ts 75°C	>50	>50	>50
	Ts-life 90°C	>50	>50	>50

Performance Window



Thermal switching table

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

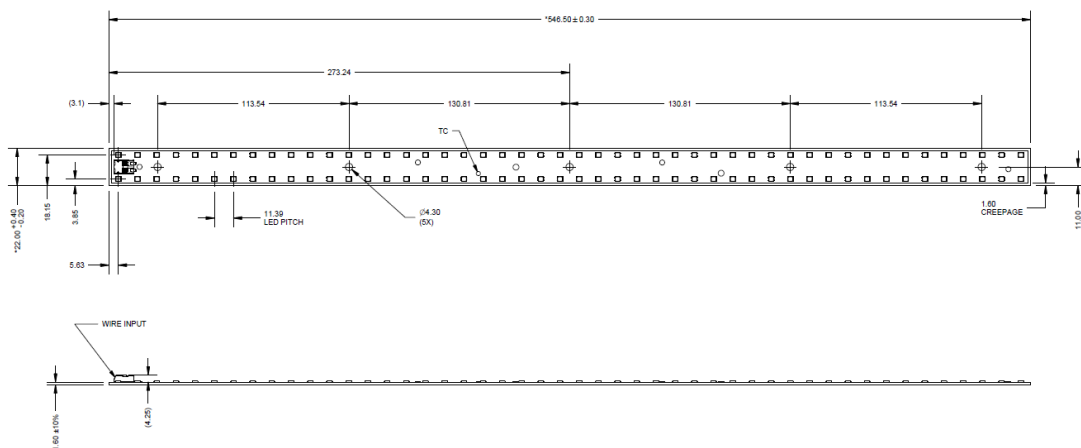
Case Temperature - Tc [°C]	Amount of Cycles
45 (or less)	>100,000
55	>100,000
65	>100,000
75	50,000
85	24,000
90	18,000

Wiring

Specification item	Value	Unit	Condition
Input wire cross-section	0.45...0.7	mm ²	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 ²	solid wire
	18...24	AWG	solid wire
Input wire strip length	4.5...5.5	mm	

Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	546.2	546.5	546.8	mm
Width	21.8	22	22.4	mm
Height PCB	1.44	1.6	1.76	mm
Height total		5.85		mm
Warpage (IPC-TM-650)			5	%



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		1100	mA
Case temperature (Tc-max)		95	°C
ESD (direct contact)	8		kV
Working voltage		60	V _{dc}

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

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.

