

PHILIPS

LED Modules

Fortimo LED Strip Value Offer

22in 2100lm LV2



Philips Fortimo LED strip value offer (LED strip VO) is designed to meet all the basic needs of recessed ambient lighting applications, with excellent price per lumen value and high design flexibility. The LED strip VO offers 50,000 hrs life¹ of CRI80 light quality, at efficacies of up to 175 lm/W, and 3SDCM color consistency. The LED strip VO also offers a five-year limited system warranty².

Commercial Product Name	12NC	Box Quantity
Fortimo LED Strip VO 22in 2100lm 830 LV2	9290 017 50713	200
Fortimo LED Strip VO 22in 2100lm 835 LV2	9290 017 50813	200
Fortimo LED Strip VO 22in 2100lm 840 LV2	9290 017 50913	200
Fortimo LED Strip VO 22in 2100lm 850 LV2	9290 017 51013	200

Footnotes on last page.

Fortimo LED strip value offer 22in 2100lm LV2

Features

- Energy efficacy up to 175 lm/W (Tc 45°C). Lumen per foot varies per module type.
- 3 SDCM color consistency
- CRI80 color rendering
- 50,000 hrs' lifetime
- Push-in connectors
- Mechanical footprint compatible with LED strip product family and Zhaga

Benefits

- Flexible and economical fixture design
- High energy efficacy
- High quality of light
- Long lifetime
- Easy wiring and daisy-chaining
- Low system cost and optimized performance with five-year limited system warranty² when paired with Philips Advance Xitanium LED drivers or Philips CertaDrive gen 2 drivers

Applications

- Office
- Education
- Retail

Drive Currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Strip VO 22in 2100lm 8xx LV2	200	325	350	mA

Module Temperatures

Module temperatures	Nominal*	Life**	Max***	Unit
T _c (case temperature at T _c 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.

* Max difference between T_s and T_c is 5°C

Fortimo LED strip value offer 22in 2100lm LV2

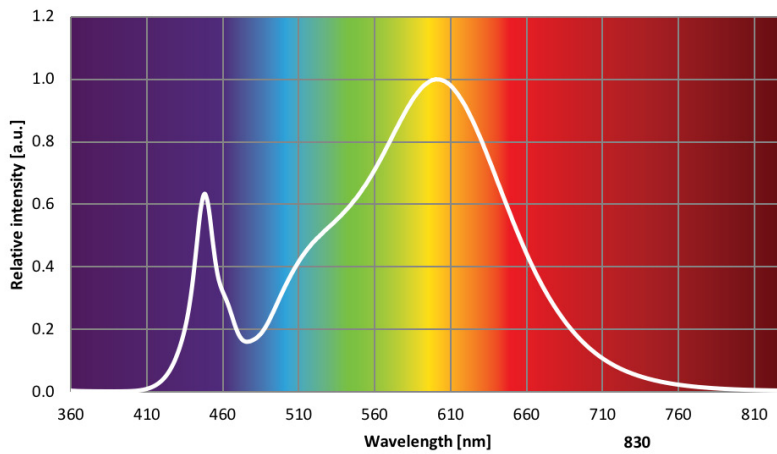
Optical Characteristics – Table per Color (CCT)

Fortimo LED strip VO 22in 2100lm 830 LV2

Parameter	Min	Typ	Max	Unit
Luminous flux	1150	1250	1340	lm
Module efficacy	136	151	166	lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.4327, 0.4012)		–
Color consistency			3	SDCM
CRI	80			

R9=5. 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

Operation point	Tc	lm	lm/W
125 mA	45 °C	810	164
	65 °C	790	161
	85 °C	760	158
325 mA	45 °C	1920	135
	65 °C	1850	132
	85 °C	1790	129
350 mA	45 °C	2040	132
	65 °C	1980	129
	85 °C	1900	126



Fortimo LED strip value offer 22in 2100lm LV2

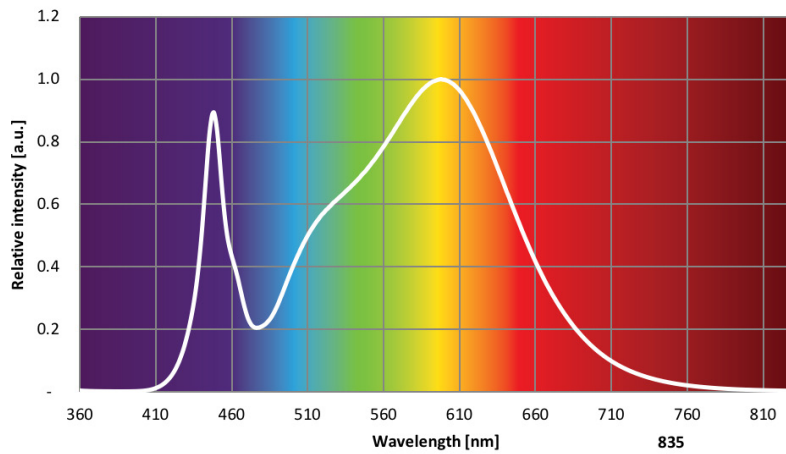
Optical Characteristics – Table per Color (CCT)

Fortimo LED strip VO 22in 2100lm 835 LV2

Parameter	Min	Typ	Max	Unit
Luminous flux	1220	1320	1420	lm
Module efficacy	144	160	176	lm/W
Correlated color temperature (CCT)		3500		K
Color coordinates (CIEx, CIEy)		(0.4062, 0.3896)		–
Color consistency			3	SDCM
CRI	80			

R9=5, 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

Operation point	Tc	lm	lm/W
125 mA	45 °C	850	173
	65 °C	830	170
	85 °C	800	166
325 mA	45 °C	2020	142
	65 °C	1950	139
	85 °C	1890	136
350 mA	45 °C	2150	139
	65 °C	2080	136
	85 °C	2010	133



Fortimo LED strip value offer 22in 2100lm LV2

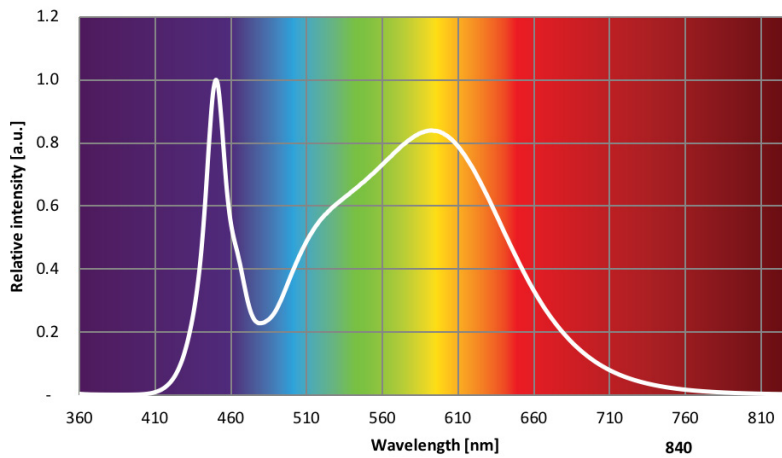
Optical Characteristics – Table per Color (CCT)

Fortimo LED strip VO 22in 2100lm 840 LV2

Parameter	Min	Typ	Max	Unit
Luminous flux	1240	1340	1440	lm
Module efficacy	146	162	178	lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.3807, 0.3776)		–
Color consistency			3	SDCM
CRI	80			

R9=5, 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

Operation point	Tc	lm	lm/W
125 mA	45 °C	870	176
	65 °C	840	172
	85 °C	820	169
325 mA	45 °C	2050	145
	65 °C	1990	141
	85 °C	1920	138
350 mA	45 °C	2190	142
	65 °C	2120	138
	85 °C	2040	135



Fortimo LED strip value offer 22in2100lm LV2

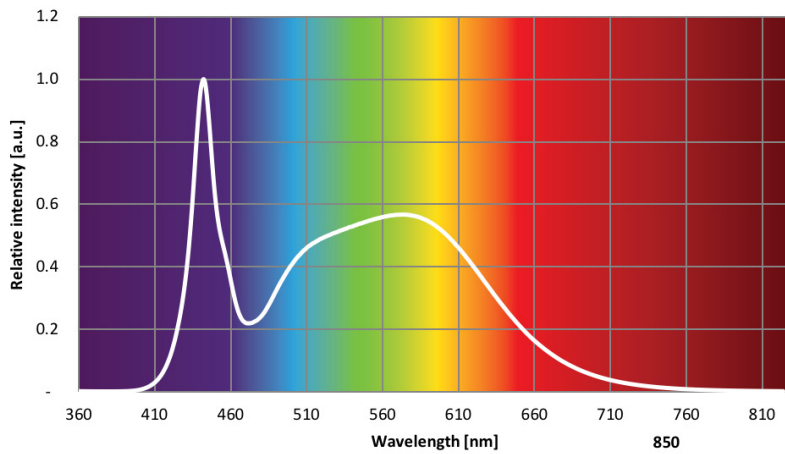
Optical Characteristics – Table per Color (CCT)

Fortimo LED strip VO 22in 2100lm 850 LV2

Parameter	Min	Typ	Max	Unit
Luminous flux	1240	1340	1440	lm
Module efficacy	146	162	178	lm/W
Correlated color temperature (CCT)		5000		K
Color coordinates (CIEx, CIEy)		(0.3411, 0.3504)		–
Color consistency			3	SDCM
CRI	80			

R9=5. 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

Operation point	Tc	lm	lm/W
125 mA	45 °C	870	176
	65 °C	840	172
	85 °C	820	169
325 mA	45 °C	2050	145
	65 °C	1990	141
	85 °C	1920	138
350 mA	45 °C	2190	142
	65 °C	2120	138
	85 °C	2040	135

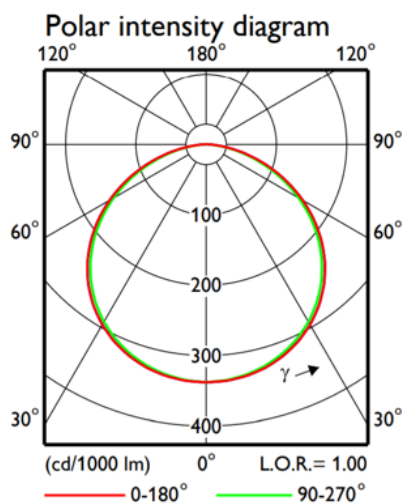


Fortimo LED strip value offer 22in 2100lm LV2

Electrical Characteristics

Fortimo LED strip VO 22in 2100lm 8xx LV2				
Parameter	Min	Typ	Max	Unit
Forward voltage	40.4	41.3	42.2	V
Thermal power		8.26		W

Beam Shape

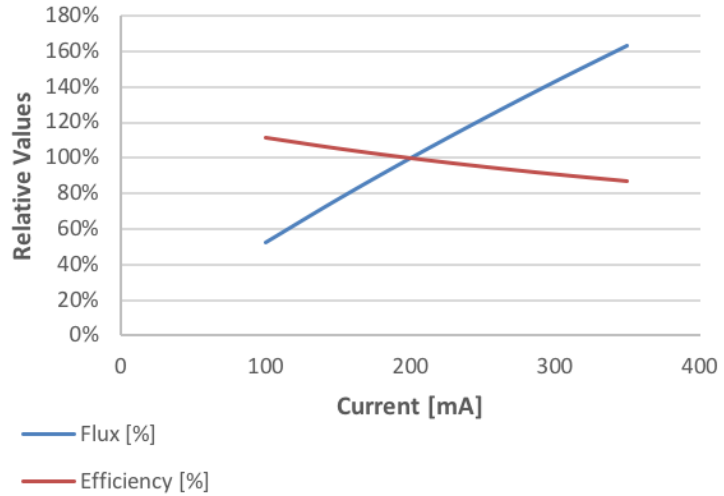


Fortimo LED strip value offer 22in 2100lm LV2

Tuning Information

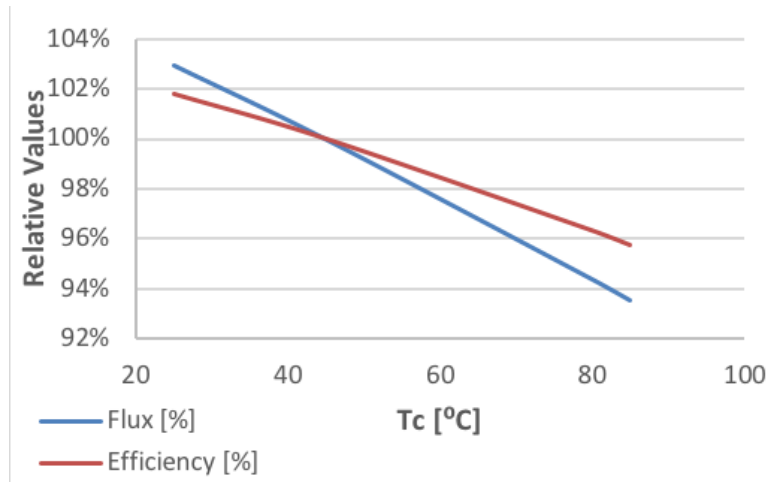
Flux and Efficacy Versus Current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
100	53	111
150	77	105
200	100	100
250	122	95
300	143	91
350	163	87



Flux and Efficacy Versus Temperature at Tc (at I nominal)

Tc [°C]	Flux [%]	Efficacy [%]
85	94	96
80	94	96
45	100	100
25	103	102



Fortimo LED strip value offer 22in 2100lm LV2

Theoretical TM21 Calculations Based on LED LM80

Operation point	Lumen maintenance x 1000 hours	L70	L80	L90
I-life 325 mA	Ts-nom 45 °C	>50	>50	47
	Ts 65 °C	>50	>50	41
	Ts 77 °C	>50	>50	36
	Ts-life 80 °C	>50	>50	35

Warranted number of full thermal product cycles at 25 °C ambient temperature

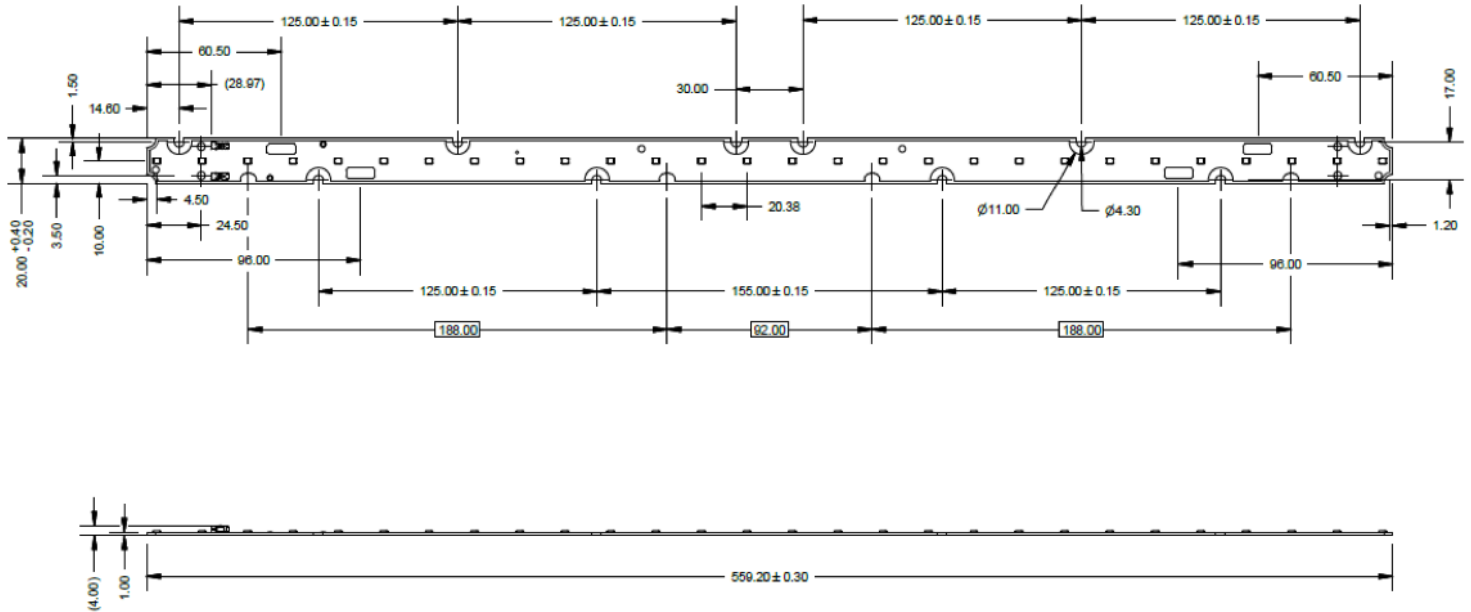
Case Temperature Tc2 [°C]	Amount of Cycles
25	>100,000
35	>100,000
45	>100,000
55	>100,000
65	>100,000
75	>100,000
85	>100,000

Surge protection of the module must be provided by the driver or other components. Philips 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.

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Mechanical Characteristics

Parameter	Min.	Typ.	Max	Unit
Warpage (IPC-TM-650)			5	%



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Absolute Ratings

Parameter	Min.	Typ.	Max.	Unit
Current through the LED module (I-max)			350	mA
Case temperature (Tc-max)			85	°C
ESD (Direct)*			1	kV
Working voltage			48	V _{dc}
Dielectric withstand voltage	700			V _{dc}

* This LED module is an ESD sensitive device with ESD protection up to 1kV, tested according CAN/CSA-IEC 61000-4-2. Proper precautions to protect the product must be in place to maintain product reliability and warranty. These precautions are described in the design-in guide for the product and ANSI/ESD S20.20-2014. Precautions include, but are not limited to: ESD protection areas, equipment grounding, personal ESD protective measures and anti-static clothing, conductive flooring, ionizers, ESD packaging, etc. This product is not field replaceable

Application Information

Compliance and Approval

UL 8750

Environmental

RoHS/REACH

Application Information

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

Footnotes

1. Average rated life is based on engineering data and probability analysis. The hours are at the B50, L70 point – 50,000 hours life with 70% lumen maintenance at Tc point.
2. For more information on Philips' limited warranty please visit www.philips.com/warranties.

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