PHILIPS

LED Modules

Fortimo LED Strip Value Offer

22in 4200lm 830-840 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 life[1] 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 warranty[2].

Commercial Product Name	12NC	Box Quantity
Fortimo LED Strip VO 22in 4200lm 830-840 LV2	929001756313	200

Footnotes on last page.

Fortimo LED strip value offer 22in 4200lm 830-840 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[1] lifetime
- Push-in connectors
- Mechanical footprint compatible with LED strip product family and Zhaga
- One module enabling 3000K, 3500K, 4000K color temperatures, driving SKU reduction

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 warranty[2] 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 4200lm 830-840 LV2	400	650	700	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 Ts and Tc is 5°C

Footnotes on last page.

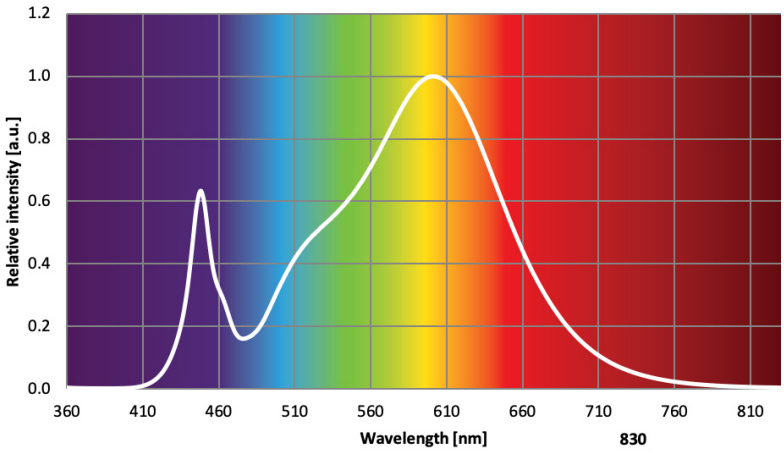
Fortimo LED strip value offer 22in 4200lm 830-840 LV2

Optical Characteristics – Table per Color (CCT)

Fortimo LED strip VO 22in 4200lm 830-840 LV2				
Parameter	**Min**	**Typ**	**Max**	**Unit**
Luminous flux	2310	2500	2690	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 ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5

Operation point	Tc	lm	lm/W
250 mA	45 °C	1620	164
	65 °C	1570	161
	85 °C	1520	158
650 mA	45 °C	3830	135
	65 °C	3710	132
	85 °C	3580	129
700 mA	45 °C	4090	132
	65 °C	3950	129
	85 °C	3810	126



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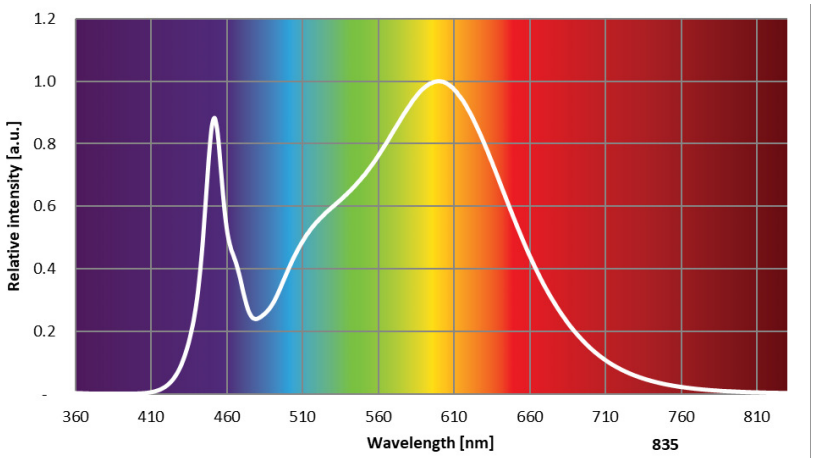
Optical Characteristics – Table per Color (CCT)

Fortimo LED strip VO 22in 4200lm 830-840 LV2				
Parameter	**Min**	**Typ**	**Max**	**Unit**
Luminous flux	2500	2700	2900	lm
Module efficacy	157	174	193	lm/W
Correlated color temperature (CCT)		3500		K
CRI	80			

R9=5, 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

Operation point	Tc	lm	lm/W
250 mA	45 °C	1710	181
	65 °C	1660	179
	85 °C	1600	176
650 mA	45 °C	4250	162
	65 °C	4120	159
	85 °C	3980	156
700 mA	45 °C	4550	160
	65 °C	4400	157
	85 °C	4260	154



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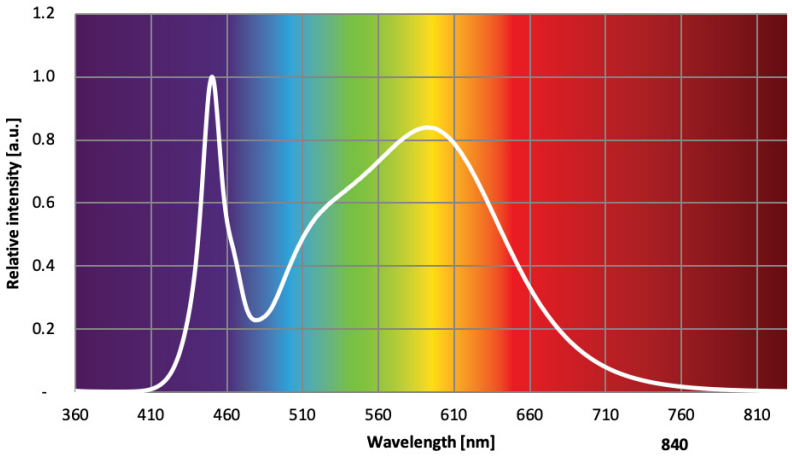
Optical Characteristics – Table per Color (CCT)

Fortimo LED strip VO 22in 4200lm 830-840 LV2				
Parameter	**Min**	**Typ**	**Max**	**Unit**
Luminous flux	2480	2680	2880	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 ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5

Operation point	Tc	lm	lm/W
250 mA	45 °C	1740	176
	65 °C	1690	172
	85 °C	1630	169
650 mA	45 °C	4110	145
	65 °C	3970	141
	85 °C	3830	138
700 mA	45 °C	4380	142
	65 °C	4230	138
	85 °C	4080	135



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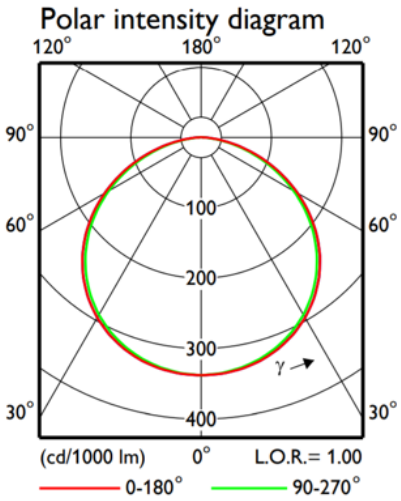
Electrical Characteristics

Fortimo LED strip VO 22in 4200lm 830-840 LV2				
Parameter	**Min**	**Typ**	**Max**	**Unit**
Forward voltage	40.4	41.3	42.2	V
Thermal power		16.52		W

Beam Shape



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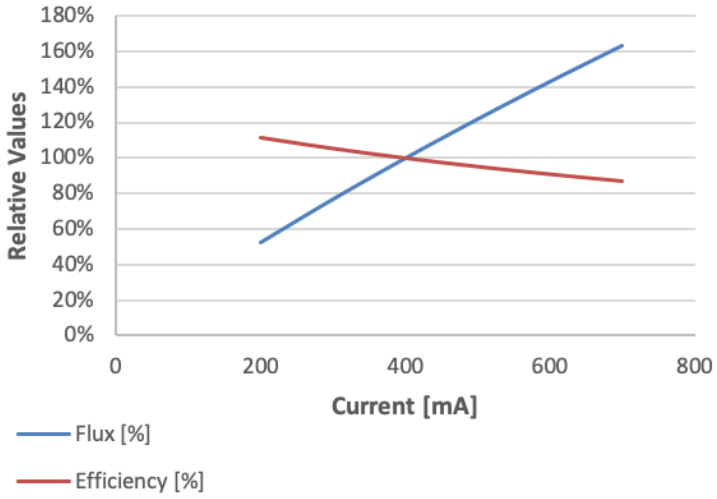
Tuning Information

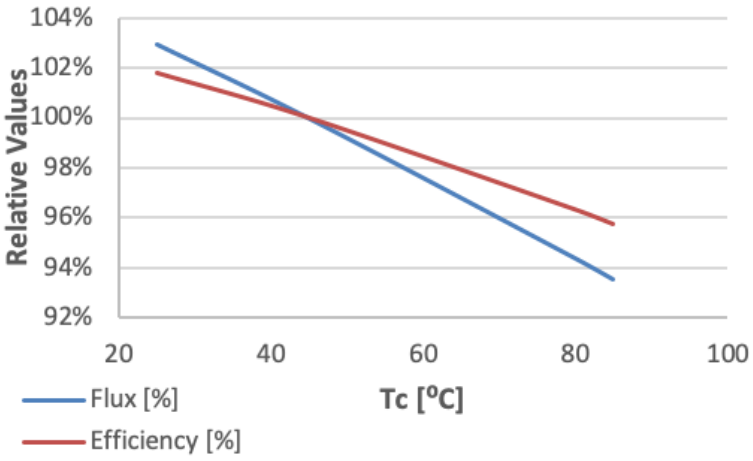
Flux and Efficacy Versus Current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
200	53	111
300	77	105
400	100	100
500	122	95
600	143	91
700	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



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Theoretical TM21 Calculations Based on LED LM80

Operation point	Lumen maintenance x 1000 hours	L70	L80	L90
I-life 650 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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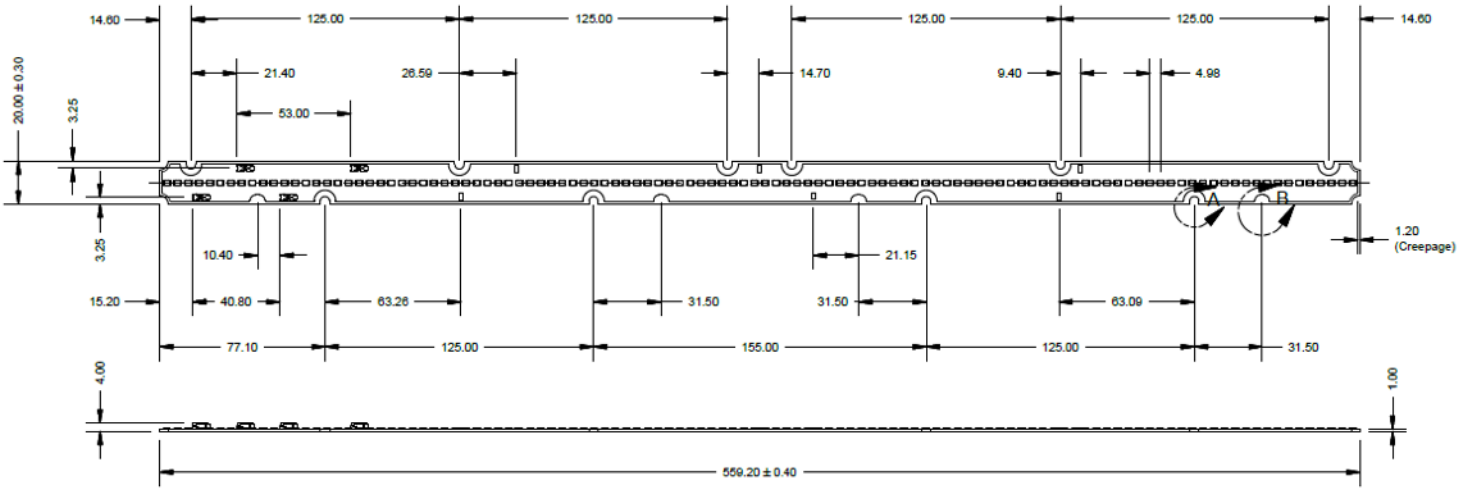
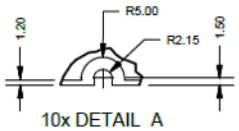
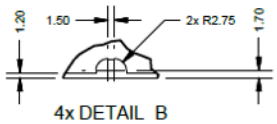
Mechanical Characteristics

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





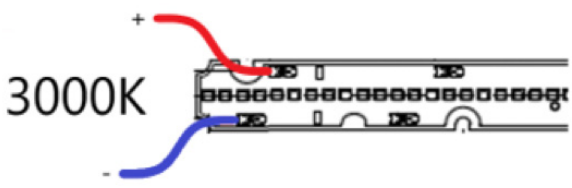
10x DETAIL A
SCALE 1 : 1

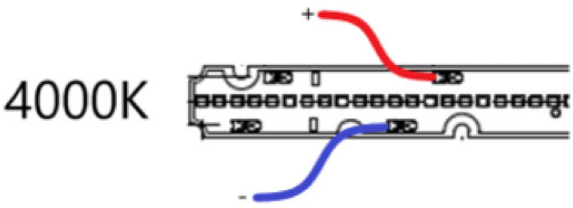


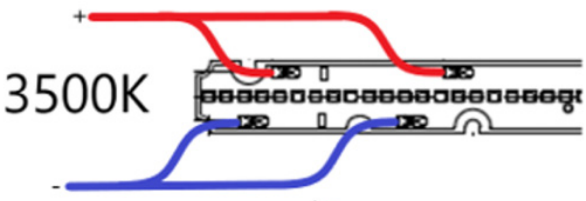
4x DETAIL B
SCALE 1 : 1
(Clearance for lance)

Wiring Diagram

See below diagrams for wiring the selections for the three possible CCT colors. Wire colors are only representative – other colors for wires can be used. For more information concerning the wiring of the selectable color LED modules please refer to the Philips Fortimo LED linear modules design-in guide located in the linear modules section of the Download Center on the My Technology Portal NA website: https://www.na.mytechnologyportal.lighting.philips.com/dashboard/download-center.html?folderUUID=016dc487-124a-43cd-8e24-99597bf0ff74.







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Absolute Ratings

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