

Fortimo LED strip performance LV5 modules comes with a multitude of performance and product advancements that include higher efficacy, higher lumen output, increased lumen maintenance, additional mechanical designs and additional CCT and CRI options when compared to the previous generation (LV4).

With these advancements, the Fortimo LED strip module is the ideal choice for high-performance high-quality luminaires for direct and indirect lighting in offices, banks, schools, public buildings, supermarkets and other applications to replace high energy efficiency T5 fluorescent lighting.

Commercial Product Name	12NC
FO Strip ST 22in 4000lm 830 LV5	929001763613
FO Strip ST 22in 4000lm 835 LV5	929001763713
FO Strip ST 22in 4000lm 840 LV5	929001763813
FO Strip ST 22in 4000lm 850 LV5	929001763913

Features

- High flux density of up to 4000 lm per foot
- Narrow width of only 20mm
- High energy efficacy of up to 180lm/W at nominal conditions
- High lumen maintenance (TM21) of L90 36,000 hours
- 3 SDCM color consistency
- Tight Vf binning enables longer daisy chaining

Benefits

- High energy efficacy and long lifetime¹ provide optimized total cost of ownership
- Slim width and 4ft length provide excellent design-in options and assembly
- High quality and warm color temperatures of light enables new application areas like hospitality
- 5-year limited system warranty with Advance Xitanium LED drivers²
- Specifications enable DLC Premium category³

Applications

- Retail
- Hospitality
- Office

1. Average rated life is based on engineering data testing and probability analysis. The hours are at the B50, L70 point – 50,000 hours life with 70% lumen maintenance at Tc point.
 2. View limited warranty at www.signify.com/warranties for details and restrictions.
 3. Fortimo LED strip LV5 is not a DesignLights Consortium™ (DLC) qualified product. It is an OEM component that meets certain performance specifications that are geared toward meeting DLC Standard Tier (v4.0) in a fully assembled fixture. The customer is liable for proper design, manufacturing, testing and qualification according to DLC requirements.

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Drive Currents

Parameter at I _{life}	Nominal'	Life''	Max'''	Unit
FO Strip ST 22in 4000lm 8xx LV5	560	1300	1400	mA

Module Temperatures

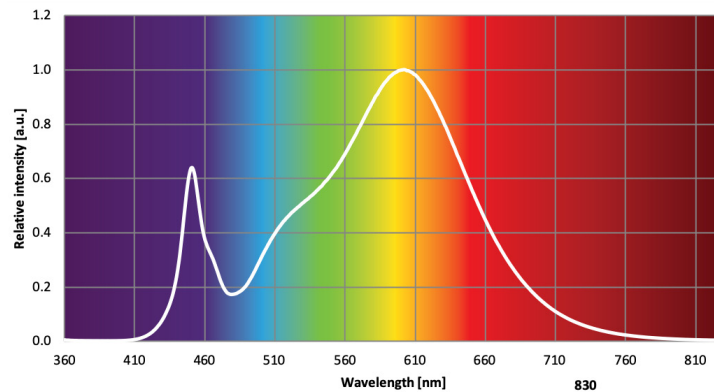
Parameter at I _{life}	Nominal'	Life''	Max'''	Unit
T _c (case temperature at T _c point)	45	85	95	°C

- * 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.

Optical Characteristics – Table per CCT

FO Strip ST 22in 4000lm 830 LV5				
Parameter	Min. (@ Inom)	Typ. (@ Inom)	Max. (@ Inom)	Unit
Luminous Flux	3520	3800	4090	Lm
Module Efficiency	155	172	189	Lm/W
Correlated Color Temperature (CCT) Target		3000		K
Color coordinates (CIEx, CIEy)		(0.433, 0.401)		-
Color consistency			3	SDCM
CRI	80			-

Operation point	Tc	lm	lm/W
300 mA	45 °C	2050	182
	70 °C	1970	176
	95 °C	1870	169
1300 mA	45 °C	8160	149
	70 °C	7810	144
	95 °C	7400	137
1400 mA	45 °C	8710	146
	70 °C	8340	141
	95 °C	7900	135



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.

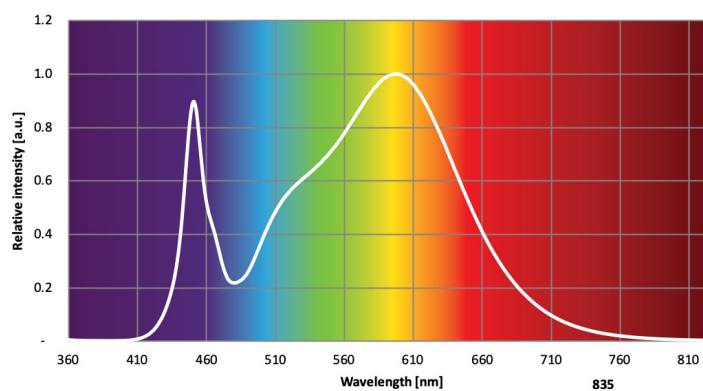
Fortimo LED Strip Statement LV5 22in 4000lm

Optical Characteristics – Table per CCT

FO Strip ST 22in 4000lm 835 LV5

Parameter	Min. (@ Inom)	Typ. (@ Inom)	Max. (@ Inom)	Unit
Luminous Flux	3630	3920	4210	Lm
Module Efficiency	159	177	195	Lm/W
Correlated Color Temperature (CCT) Target		3500		K
Color coordinates (CIEx, CIEy)		(0.406, 0.390)		-
Color consistency			3	SDCM
CRI	80			-

Operation point	Tc	lm	lm/W
300 mA	45 °C	2120	188
	70 °C	2030	182
	95 °C	1930	174
1300 mA	45 °C	8430	154
	70 °C	8070	148
	95 °C	7640	142
1400 mA	45 °C	9000	151
	70 °C	8620	146
	95 °C	8160	139



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 .

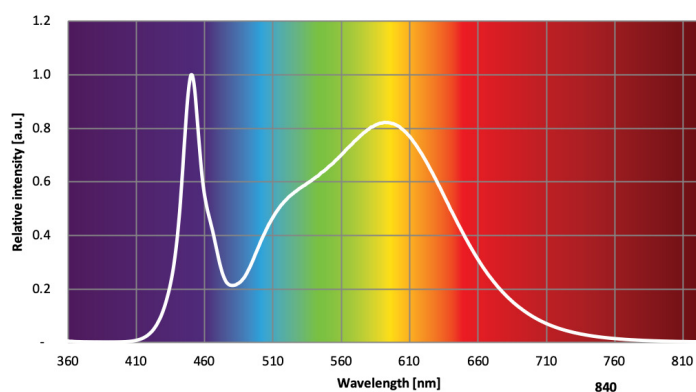
Fortimo LED Strip Statement LV5 22in 4000lm

Optical Characteristics – Table per CCT

FO Strip ST 22in 4000lm 840 LV5

Parameter	Min. (@ Inom)	Typ. (@ Inom)	Max. (@ Inom)	Unit
Luminous Flux	3700	4000	4300	Lm
Module Efficiency	162	180	198	Lm/W
Correlated Color Temperature (CCT) Target		4000		K
Color coordinates (CIEx, CIEy)		(0.381, 0.378)		-
Color consistency			3	SDCM
CRI	80			-

Operation point	Tc	lm	lm/W
300 mA	45 °C	2200	192
	70 °C	2090	185
	95 °C	1980	178
1300 mA	45 °C	8590	157
	70 °C	8220	151
	95 °C	7790	144
1400 mA	45 °C	9190	154
	70 °C	8790	149
	95 °C	8320	142



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 .

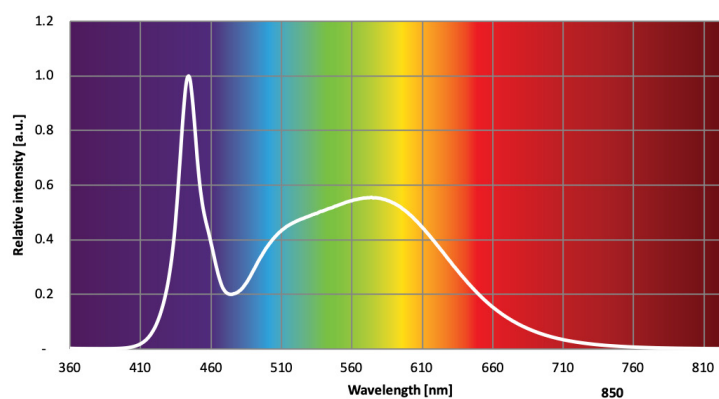
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Optical Characteristics – Table per CCT

FO Strip ST 22in 4000lm 850 LV5

Parameter	Min. (@ Inom)	Typ. (@ Inom)	Max. (@ Inom)	Unit
Luminous Flux	3700	4000	4300	Lm
Module Efficiency	162	180	198	Lm/W
Correlated Color Temperature (CCT) Target		5000		K
Color coordinates (CIEx, CIEy)		(0.343, 0.353)		-
Color consistency			3	SDCM
CRI	80			-

Operation point	Tc	lm	lm/W
300 mA	45 °C	2200	192
	70 °C	2090	185
	95 °C	1980	178
1300 mA	45 °C	8590	157
	70 °C	8220	151
	95 °C	7790	144
1400 mA	45 °C	9250	154
	70 °C	8850	149
	95 °C	8370	142



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 .

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Absolute Ratings

Parameter	Min.	Typ.	Max.	Unit
Current through the LED module (I-max)			1400	mA
Working voltage			44	V _{dc}
Isolation breakdown voltage	700			V _{dc}
Ambient Temperature	-20 ⁴			°C

4. There cannot be any ice/fog/mist on any part of the module surface during the application at -20°C.

System Chain Limits for Same Length Modules

Total length (in)	Total current limit (A)
48	1.8
72	1.2
96	0.88

Please review the design-in guide or contact the Design-in team for further information.

Application Information

Compliance and Approval

UL & cUL - UL8750

Environmental

RoHS / REACH

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

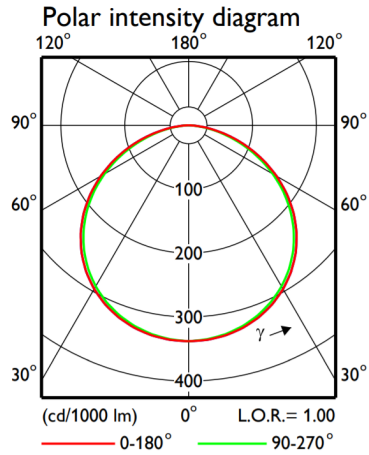
Estimated Number of Full Thermal Product Cycles @ 25°C Ambient Temperature

Case Temperature T _c [°C]	Amount of Cycles
45	100,000
55	100,000
65	100,000
75	65,000
85	25,000

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Beam Shape

The Fortimo LED strip generates a Lambertian beam shape, which is a pragmatic starting point for OEMs wishing to design secondary optics.



Electrical Characteristics

Parameter	Min	Typ	Max	Unit
Forward voltage; If = 280mA, Tc = 45°C	39.2	39.7	40.1	V
Thermal power; If = 280mA, Tc = 45°C		10.4		W

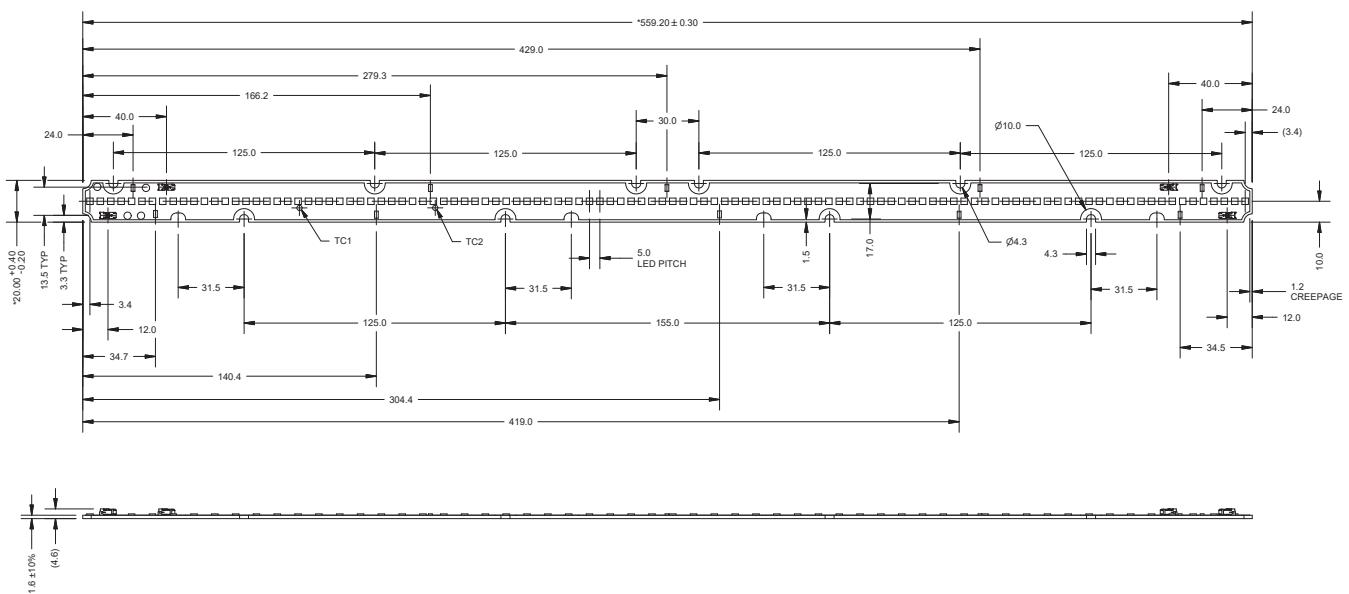
Wiring

Specification Item	Value	Unit	Condition
Input Wire Cross-Section	0.2...0.8	mm ²	Solid
	18...24	AWG	
	0.45...0.7	mm ²	Stranded
	20...22	AWG	
Input Wire Strip Length	4.5...5.5	mm	

Mechanical Characteristics

Specification Item	Min	Typ	Max	Unit
Length	558.8	559.2	559.6	mm
Width	19.8	20.0	20.4	mm
Height Excl. Connector		2.3		mm
Height Incl. Connector		6.3		mm
Warpage			0.75	%

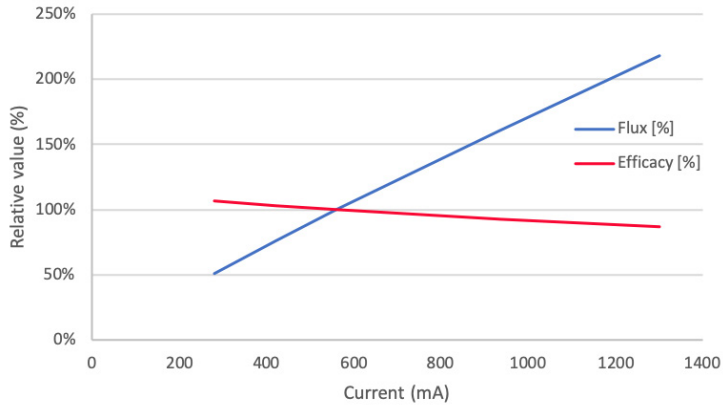
FO Strip ST 22in 4000lm xxx LV5



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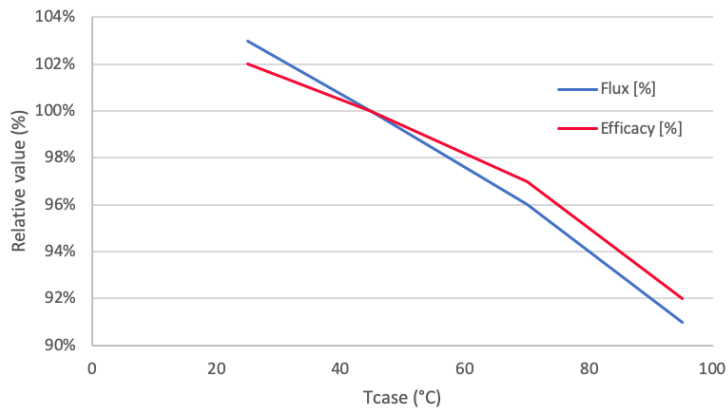
Tuning Information

Flux and Efficacy Vs. Current (at Nominal Temperature)



I [mA]	Flux [%]	Efficacy [%]
280	51%	107%
420	76%	103%
560	100%	100%
930	160%	93%
1300	218%	87%

Flux and Efficacy Vs. Tc



Tc [°C]	Flux [%]	Efficacy [%]
95	91%	92%
70	96%	97%
45	100%	100%
25	103%	102%

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Lumen Maintenance Based on Theoretical TM21 Calculations

Operation point	Tc	L70	L80	L90
80% I-nom 62 mA	Tc-nom 45 °C	>50	>50	50
	Tc 70 °C	>50	>50	47
	Tc-life 95 °C	>50	>50	41
I-nom 77 mA	Tc-nom 45 °C	>50	>50	50
	Tc 70 °C	>50	>50	47
	Tc-life 95 °C	>50	>50	41
I-life 163 mA	Tc-nom 45 °C	>50	>50	50
	Tc 70 °C	>50	>50	47
	Tc-life 95 °C	>50	>50	41

Application limited to indoor applications (office/hospitality/educational), indoor warehouse and light industry.

The information presented in this document is not intended as any commercial offer and does not form part of any quotation or contract.

