



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 927 LV5	929001786113
FO Strip ST 22in 4000lm 930 LV5	929001786213
FO Strip ST 22in 4000lm 935 LV5	929001786313
FO Strip ST 22in 4000lm 940 LV5	929001786413

Features

- High flux density of up to 4000 lm per foot
- Narrow width of only 20mm
- 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, 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.

Fortimo LED Strip Statement LV5 22in 4000lm

Drive Currents

Parameter at I_{life}	Nominal'	Life''	Max'''	Unit
FO Strip ST 22in 4000lm 9xx LV5	560	1300	1400	mA

Module Temperatures

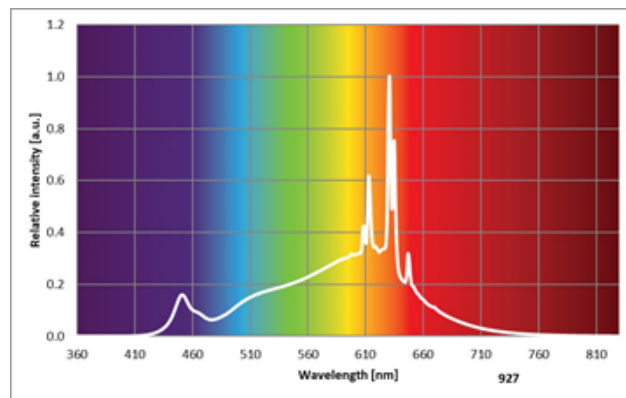
Parameter at I_{life}	Nominal'	Life''	Max'''	Unit
T_c (case temperature at T_c point)	45	85	95	°C

- * 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 927 LV5				
Parameter	Min. (@ Inom)	Typ. (@ Inom)	Max. (@ Inom)	Unit
Luminous Flux	3290	3560	3830	Lm
Module Efficiency	145	161	177	Lm/W
Correlated Color Temperature (CCT) Target		2700		K
Color coordinates (CIEx, CIEy)		(0.457, 0.406)		-
Color consistency			3	SDCM
CRI	90			-

Operation point	T_c	lm	lm/W
450 mA	25 °C	2900	169
	45 °C	2830	166
	85 °C	2650	157
560 mA	25 °C	3635	164
	45 °C	3560	161
	85 °C	3320	153
1300 mA	25 °C	7860	141
	45 °C	7675	139
	85 °C	7170	132



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.

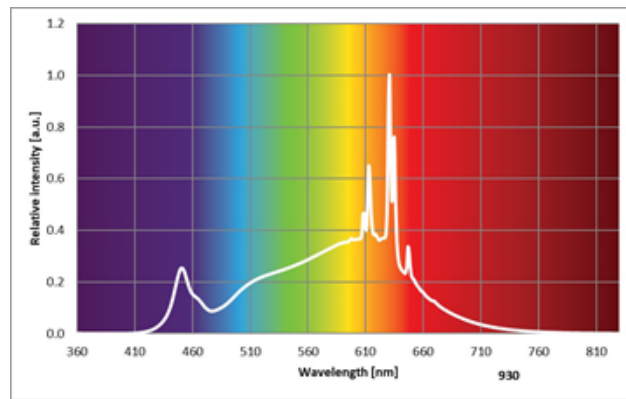
Fortimo LED Strip Statement LV5 22in 4000lm

Optical Characteristics – Table per CCT

FO Strip ST 22in 4000lm 930 LV5

Parameter	Min. (@ Inom)	Typ. (@ Inom)	Max. (@ Inom)	Unit
Luminous Flux	3380	3650	3920	Lm
Module Efficiency	148	164	180	Lm/W
Correlated Color Temperature (CCT) Target		3000		K
Color coordinates (CIEx, CIEy)		(0.433, 0.399)		-
Color consistency			3	SDCM
CRI	90			-

Operation point	Tc	lm	lm/W
450 mA	25 °C	2965	172
	45 °C	2895	169
	85 °C	2705	160
560 mA	25 °C	3715	167
	45 °C	3650	164
	85 °C	3390	155
1300 mA	25 °C	8030	144
	45 °C	7840	142
	85 °C	7325	134



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 .

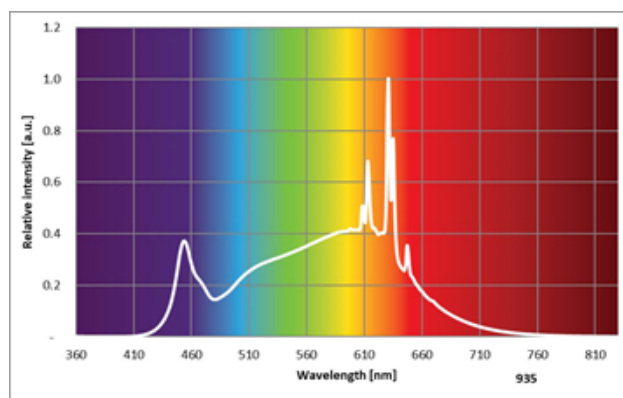
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Optical Characteristics – Table per CCT

FO Strip ST 22in 4000lm 935 LV5

Parameter	Min. (@ Inom)	Typ. (@ Inom)	Max. (@ Inom)	Unit
Luminous Flux	3480	3760	4040	Lm
Module Efficiency	152	169	186	Lm/W
Correlated Color Temperature (CCT) Target		3500		K
Color coordinates (CIEx, CIEy)		(0.407, 0.388)		-
Color consistency			3	SDCM
CRI	90			-

Operation point	Tc	lm	lm/W
450 mA	25 °C	3075	177
	45 °C	3000	174
	85 °C	2805	165
560 mA	25 °C	3850	172
	45 °C	3760	169
	85 °C	3515	160
1300 mA	25 °C	8405	150
	45 °C	8190	147
	85 °C	7635	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 .

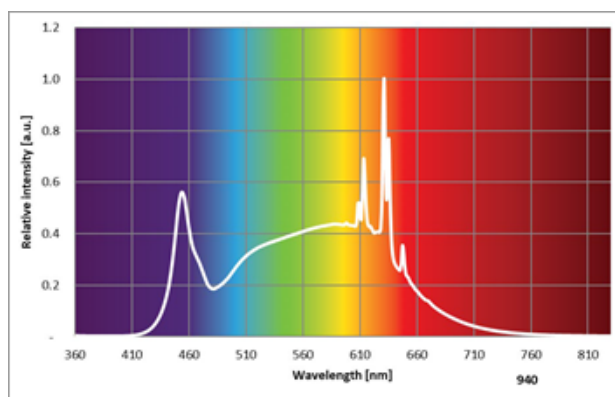
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Optical Characteristics – Table per CCT

FO Strip ST 22in 4000lm 940 LV5

Parameter	Min. (@ Inom)	Typ. (@ Inom)	Max. (@ Inom)	Unit
Luminous Flux	3550	3840	4130	Lm
Module Efficiency	156	173	190	Lm/W
Correlated Color Temperature (CCT) Target		4000		K
Color coordinates (CIEx, CIEy)		(0.381, 0.376)		-
Color consistency			3	SDCM
CRI	90			-

Operation point	Tc	lm	lm/W
450 mA	25 °C	3140	181
	45 °C	3065	178
	85 °C	2865	169
560 mA	25 °C	3930	176
	45 °C	3840	173
	85 °C	3590	164
1300 mA	25 °C	8575	154
	45 °C	8360	151
	85 °C	7790	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

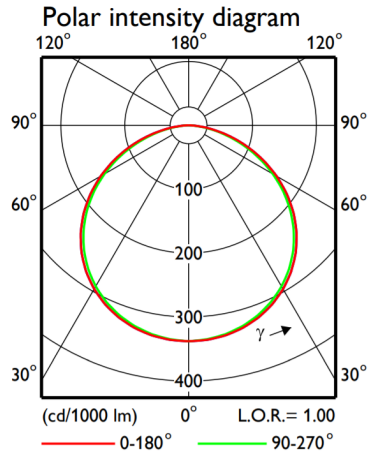
Estimated Number of Full Thermal Product Cycles @ 25°C Ambient Temperature

Case Temperature Tc [°C]	Amount of Cycles
45	>100K
55	>100K
65	88K
75	36K
85	16K

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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 = 560mA, Tc = 45°C	39.1	39.6	40.1	V
Thermal power; If = 560mA, Tc = 45°C		11.1		W

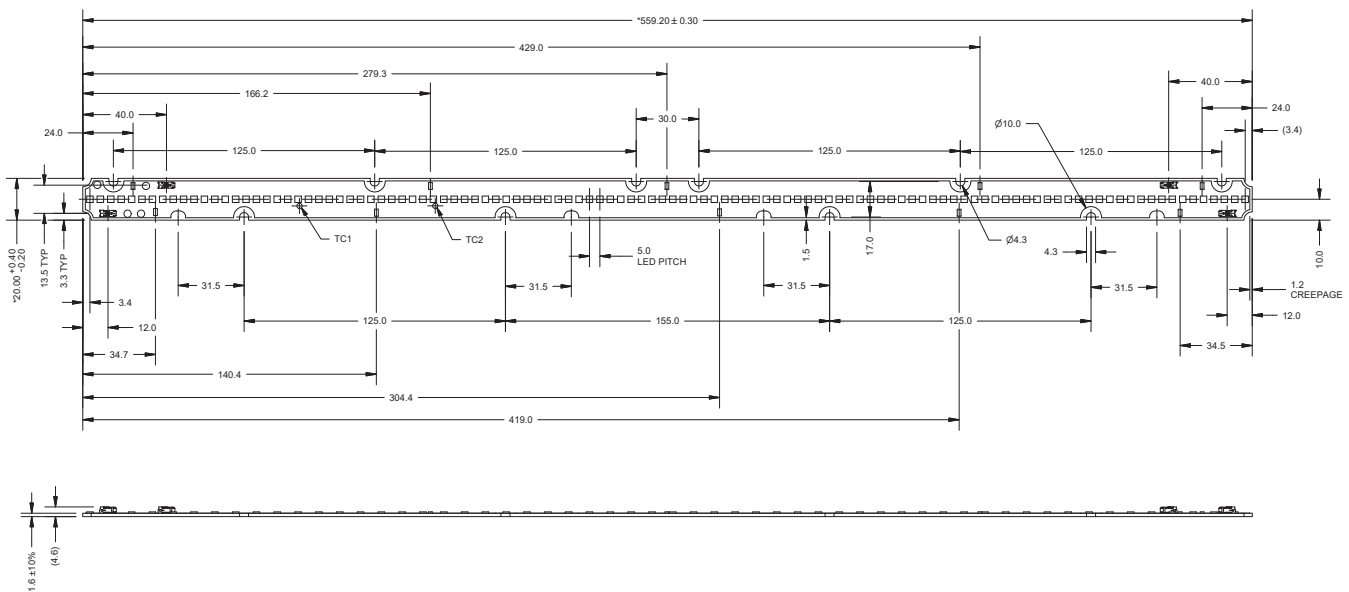
Wiring

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		4.6		mm
Warpage			0.75	%

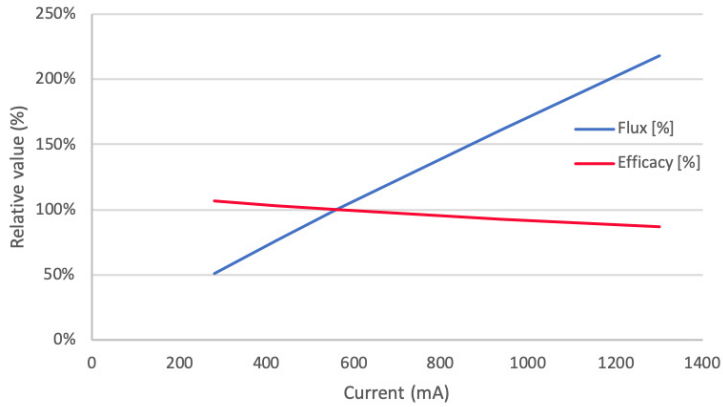
FO Strip ST 22in 4000lm xxx LV5



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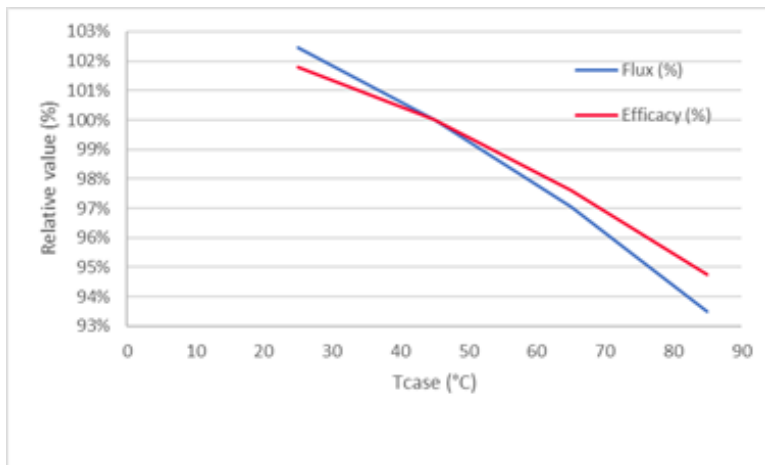
Tuning Information

Flux and Efficacy Vs. Current (at Nominal Temperature)



I [mA]	Flux [%]	Efficacy [%]
280	51%	106%
420	76%	103%
560	100%	100%
930	161%	93%
1300	218%	87%

Flux and Efficacy Vs. Tc



Tc [°C]	Flux [%]	Efficacy [%]
85	94%	95%
65	97%	98%
45	100%	100%
25	102%	102%

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Lumen Maintenance Based on Theoretical TM21 Calculations

Operation point	Tc	L70	L80	L90
80% I-nom 450 mA	Tc-nom 25 °C	>36K	>36K	>36K
	Tc 45 °C	>36K	>36K	>36K
	Tc-life 85 °C	>36K	>36K	>34K
I-nom 560 mA	Tc-nom 25 °C	>36K	>36K	>36K
	Tc 45 °C	>36K	>36K	>36K
	Tc-life 85 °C	>36K	>36K	>34K
I-life 1300 mA	Tc-nom 25 °C	>36K	>36K	>36K
	Tc 45 °C	>36K	>36K	>36K
	Tc-life 85 °C	>36K	>36K	>34K

Application limited to indoor applications (office/hospitality/educational).

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

