ADVANCE
by signify

LED Modules

Fortimo LED Strip Performance LV5

47.5in 4400lm

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 PR 47.5in 4400lm 927 LV5	929001788113
FO Strip PR 47.5in 4400lm 930 LV5	929001788213
FO Strip PR 47.5in 4400lm 935 LV5	929001788313
FO Strip PR 47.5in 4400lm 940 LV5	929001788413

Features

- High flux density of up to 2000 lm per foot
- Narrow width of only 20mm
- Can be split into two modules[4]
- 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 lifetime[1] 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 drivers[2]
- Specifications enable DLC Premium category[3]

Applications

- Retail
- Hospitality
- Office

1. Average rated life is based one 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.
4. Only two LED Modules can be produced from one full-length variable length module as wire trap connectors are only located on the last module section on each end of the full-length module. The method for separation of the variable length LED modules can be found in the Advance Fortimo LED Linear Module Design-In guide located here: https://www.na.mytechnology.portal.signify.com/dam/jcr:e4de1316-8ca1-4f08-ad38-ef2cdd5e52bb/Advance%20Fortimo%20LED%20Linear%20Modules%20Design-in%20Guide%20(PLt-1590DG).pdf

Fortimo LED Strip Performance LV5 47.5in 4400lm

Drive Currents

Paramter at I_{life}	Nominal*	Life**	Max***	Unit
FO Strip PR 47.5in 4400lm 9xx LV5	**616**	1300	1400	mA

Module Temperatures

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

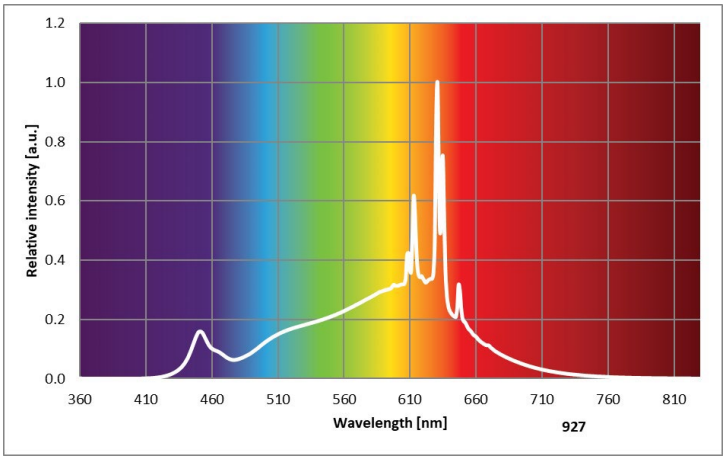
* Nominal value at which typical performance is specified.
** Value at which life time is specified.
*** Maximum value for safe operation, do not operate above this value.

Optical Characteristics – Table per CCT

FO Strip PR 47.5in 4400lm 927 LV5

Parameter	Min. (@ Inom)	Typ. (@ Inom)	Max. (@ Inom)	Unit
Luminous Flux	3620	3920	4220	Lm
Module Efficiency	142	158	174	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	Tc	lm	lm/W
490 mA	25 °C	3230	165
	45 °C	3160	163
	85 °C	2960	155
616 mA	25 °C	4010	161
	45 °C	3920	158
	85 °C	3670	150
1300 mA	25 °C	7910	140
	45 °C	7730	138
	85 °C	7220	130



R9>0, Measurement precision ± 5% for the flux data, ± 1.5% for the Vf data, ± 1.5% for the power data, and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

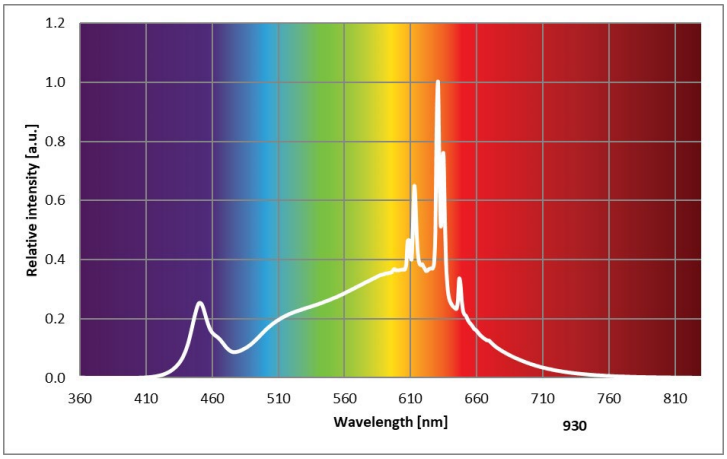
Fortimo LED Strip Performance LV5 47.5in 4400lm

Optical Characteristics – Table per CCT

FO Strip PR 47.5in 4400lm 930 LV5

Parameter	Min. (@ Inom)	Typ. (@ Inom)	Max. (@ Inom)	Unit
Luminous Flux	3760	4060	4360	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	Im	lm/W
490 mA	25 °C	3350	171
	45 °C	3270	169
	85 °C	3070	161
616 mA	25 °C	4150	167
	45 °C	4060	164
	85 °C	3800	156
1300 mA	25 °C	8190	145
	45 °C	8000	143
	85 °C	7470	135



R9>0, Measurement precision ± 5% for the flux data, ± 1.5% for the Vf data, ± 1.5% for the power data, and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

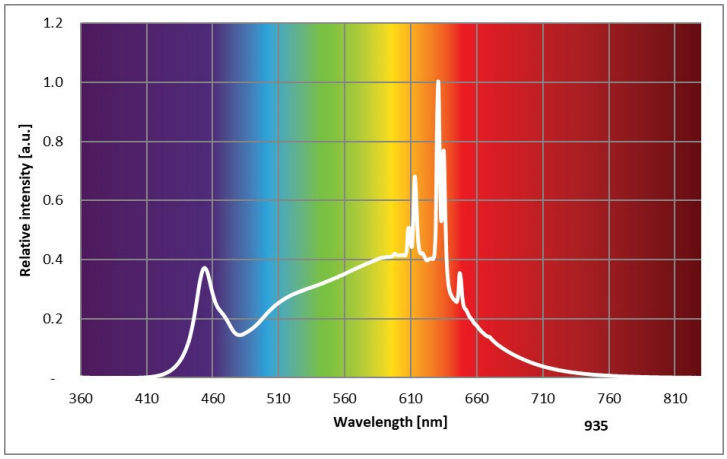
Fortimo LED Strip Performance LV5 47.5in 4400lm

Optical Characteristics – Table per CCT

FO Strip PR 47.5in 4400lm 935 LV5

Parameter	Min. (@ Inom)	Typ. (@ Inom)	Max. (@ Inom)	Unit
Luminous Flux	3860	4180	4500	Lm
Module Efficiency	152	169	186	Lm/W
Correlated Color Temperature (CCT) Target		3500		K
Color coordinates (CIEx, CIEy)		(0.407, 0.389)		-
Color consistency			3	SDCM
CRI	90			-

Operation point	Tc	Im	Im/W
490 mA	25 °C	3430	177
	45 °C	3350	173
	85 °C	3130	164
616 mA	25 °C	4260	172
	45 °C	4180	169
	85 °C	3890	160
1300 mA	25 °C	8500	152
	45 °C	8280	149
	85 °C	7720	141



R9>0, Measurement precision ± 5% for the flux data, ± 1.5% for the Vf data, ± 1.5% for the power data, and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

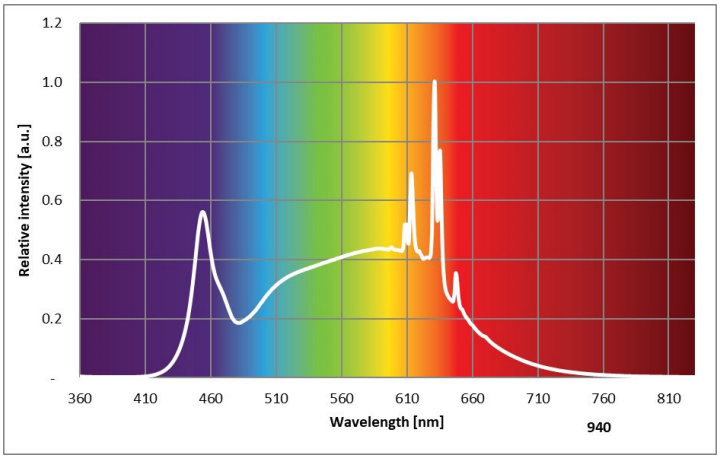
Fortimo LED Strip Performance LV5 47.5in 4400lm

Optical Characteristics – Table per CCT

FO Strip PR 47.5in 4400lm 940 LV5

Parameter	Min. (@ Inom)	Typ. (@ Inom)	Max. (@ Inom)	Unit
Luminous Flux	3900	4220	4540	Lm
Module Efficiency	156	173	190	Lm/W
Correlated Color Temperature (CCT) Target		4000		K
Color coordinates (CIEx, CIEy)		(0.381, 0.377)		-
Color consistency			3	SDCM
CRI	90			-

Operation point	Tc	lm	lm/W
490 mA	25 °C	3480	181
	45 °C	3400	178
	85 °C	3180	168
616 mA	25 °C	4330	176
	45 °C	4220	173
	85 °C	3940	164
1300 mA	25 °C	8620	156
	45 °C	8400	153
	85 °C	7830	144



R9>0, Measurement precision ± 5% for the flux data, ± 1.5% for the Vf data, ± 1.5% for the power data, and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

Fortimo LED Strip Performance LV5 47.5in 4400lm

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

1. 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)
96	0.88
114	0.6
192	0.44

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

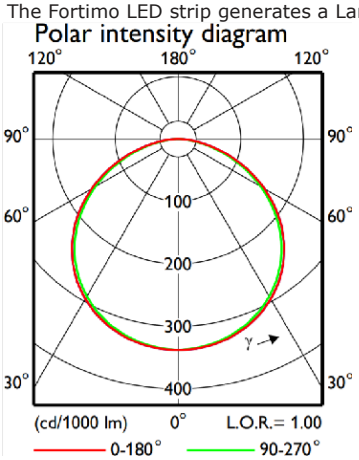
Estimated Number of Full Thermal Product Cycles @ 25°C Ambient Temperature

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

Fortimo LED Strip Performance LV5 47.5in 4400lm

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 = 616mA, Tc = 45°C	39.15	39.65	40.15	V
Thermal power; If = 616mA, Tc = 45°C		12.3		W

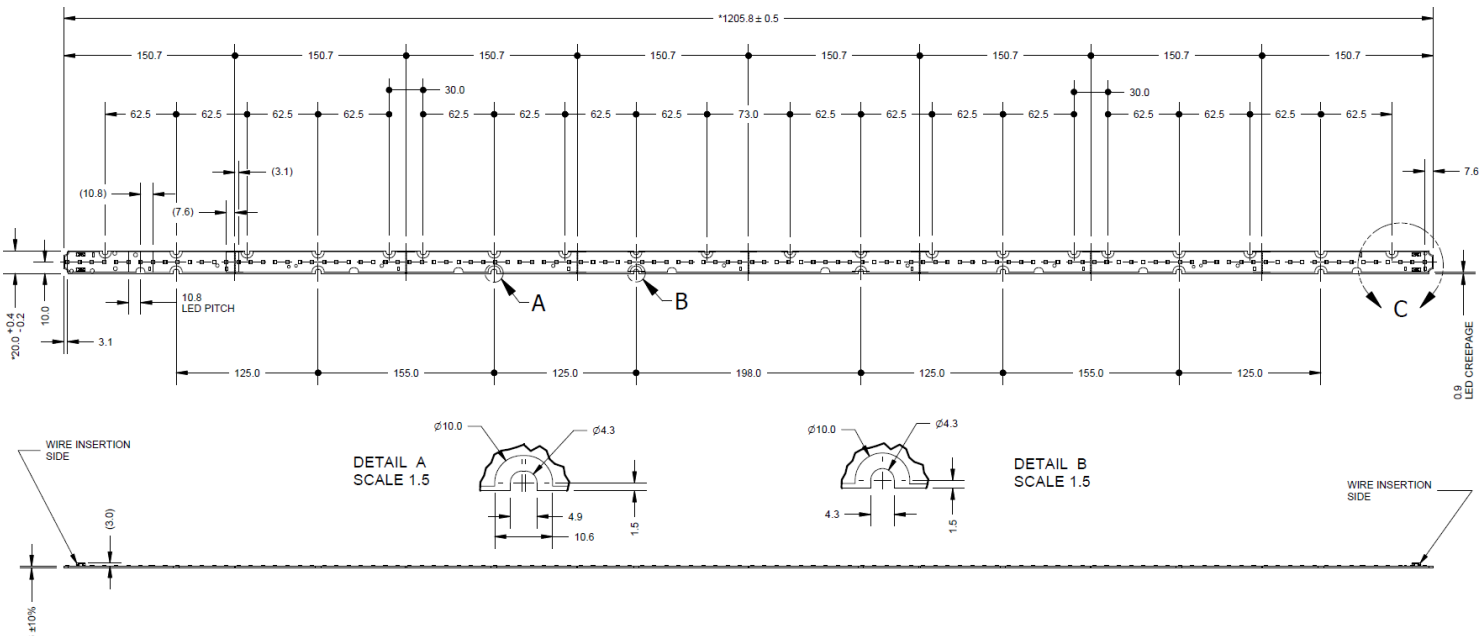
Wiring

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	1205.3	1205.8	1206.3	mm
Width	19.8	20.0	20.4	mm
Height Excl. Connector		2.3		mm
Height Incl. Connector		4.6		mm
Warpage			0.75	%

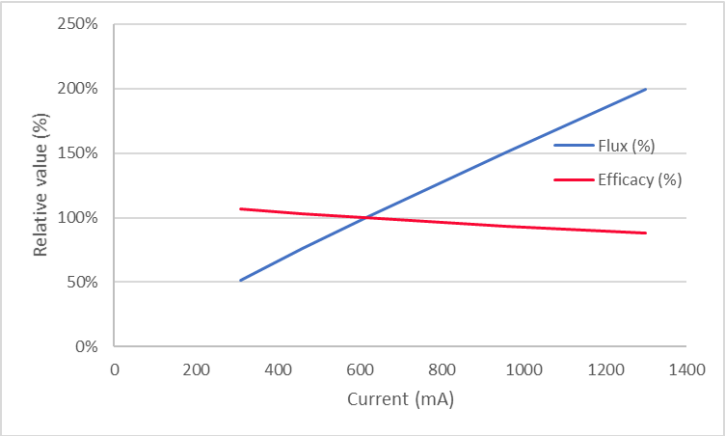
FO Strip PR 47.5in 4400lm xxx LV5



Fortimo LED Strip Performance LV5 47.5in 4400lm

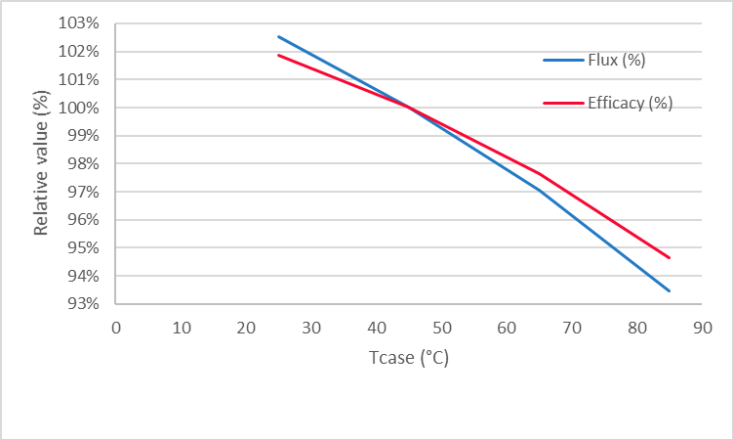
Tuning Information

Flux and Efficacy Vs. Current (at Nominal Temperature)



I [mA]	Flux [%]	Efficacy [%]
308	51%	107%
460	76%	103%
616	100%	100%
960	151%	94%
1300	199%	88%

Flux and Efficacy Vs. Tc



Tc [°C]	Flux [%]	Efficacy [%]
85	93%	95%
65	97%	98%
45	100%	100%
25	103%	102%

Fortimo LED Strip Performance LV5 47.5in 4400lm

Lumen Maintenance Based on Theoretical TM21 Calculations

Operation point	Tc	L70	L80	L90
80% I-nom 490 mA	Tc 25 °C	>36k	>36k	>36k
	Tc-nom 45 °C	>36k	>36k	>36k
	Tc-life 85 °C	>36k	>36k	34k
I-nom 616 mA	Tc 25 °C	>36k	>36k	>36k
	Tc-nom 45 °C	>36k	>36k	>36k
	Tc-life 85 °C	>36k	>36k	34k
I-life 1300 mA	Tc 25 °C	>36k	>36k	>36k
	Tc-nom 45 °C	>36k	>36k	>36k
	Tc-life 85 °C	>36k	>36k	34k

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.

Signify North America Corporation
200 Franklin Square Drive,
Somerset, NJ 08873
Telephone 855-486-2216

Signify Canada Ltd.
281 Hillmount Road,
Markham, ON, Canada L6C 2S3
Telephone 800-668-9008