



**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 23.7in 2200lm 927 LV5	929001762413
FO Strip PR 23.7in 2200lm 930 LV5	929001762513
FO Strip PR 23.7in 2200lm 935 LV5	929001762613
FO Strip PR 23.7in 2200lm 940 LV5	929001762713

#### Features

- High flux density of up to 2000 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 lifetime<sup>1</sup> 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 drivers<sup>2</sup>
- Specifications enable DLC Premium category<sup>3</sup>

#### 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](http://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 Performance LV5 23.7in 2200lm

## Drive Currents

Parameter at $I_{life}$	Nominal*	Life**	Max***	Unit
FO Strip PR 23.7in 2200lm 9xx LV5	308	650	700	mA

## Module Temperatures

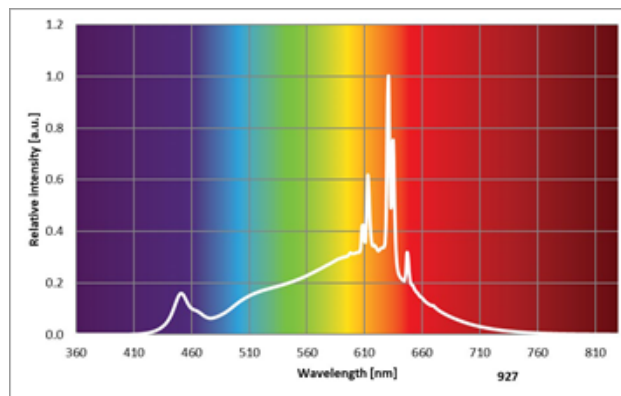
Parameter at $I_{life}$	Nominal*	Life**	Max***	Unit
$T_c$ (case temperature at $T_c$ point)	45	85	95	°C

- \* 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 PR 23.7in 2200lm 927 LV5				
Parameter	Min. (@ Inom)	Typ. (@ Inom)	Max. (@ Inom)	Unit
Luminous Flux	1810	1960	2110	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	$T_c$	lm	lm/W
245 mA	25 °C	1615	165
	45 °C	1580	163
	85 °C	1480	155
308 mA	25 °C	2005	161
	45 °C	1960	158
	85 °C	1835	150
650 mA	25 °C	3955	140
	45 °C	3865	138
	85 °C	3610	130



R9>0, Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$ .

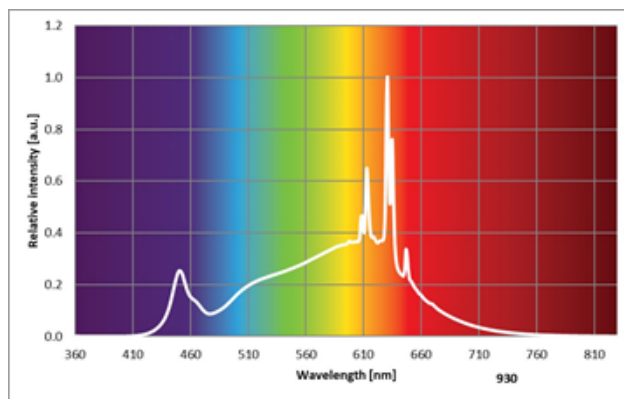
# Fortimo LED Strip Performance LV5 23.7in 2200lm

## Optical Characteristics – Table per CCT

### FO Strip PR 23.7in 2200lm 930 LV5

Parameter	Min. (@ Inom)	Typ. (@ Inom)	Max. (@ Inom)	Unit
Luminous Flux	1880	2030	2180	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
245 mA	25 °C	1675	171
	45 °C	1635	169
	85 °C	1535	161
308 mA	25 °C	2075	167
	45 °C	2030	164
	85 °C	1900	156
650 mA	25 °C	4095	145
	45 °C	4000	143
	85 °C	3735	135



R9>0, Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$ .

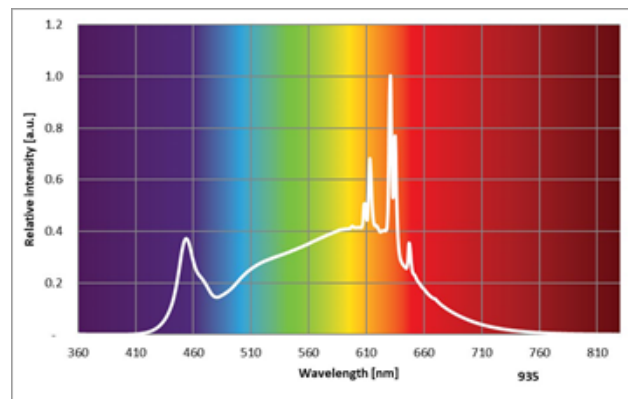
# Fortimo LED Strip Performance LV5 23.7in 2200lm

## Optical Characteristics – Table per CCT

### FO Strip PR 23.7in 2200lm 935 LV5

Parameter	Min. (@ Inom)	Typ. (@ Inom)	Max. (@ Inom)	Unit
Luminous Flux	1930	2090	2250	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	lm	lm/W
245 mA	25 °C	1715	177
	45 °C	1675	173
	85 °C	1565	164
308 mA	25 °C	2130	172
	45 °C	2090	169
	85 °C	1945	160
650 mA	25 °C	4250	152
	45 °C	4140	149
	85 °C	3860	141



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.

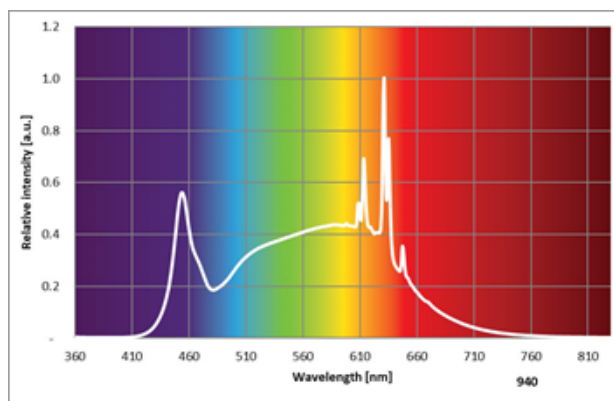
# Fortimo LED Strip Performance LV5 23.7in 2200lm

## Optical Characteristics – Table per CCT

### FO Strip PR 23.7in 2200lm 940 LV5

Parameter	Min. (@ Inom)	Typ. (@ Inom)	Max. (@ Inom)	Unit
Luminous Flux	1950	2110	2270	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
245 mA	25 °C	1740	181
	45 °C	1700	178
	85 °C	1590	168
308 mA	25 °C	2165	176
	45 °C	2110	173
	85 °C	1970	164
650 mA	25 °C	4310	154
	45 °C	4200	153
	85 °C	3915	144



R9>0, Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$ .

# Fortimo LED Strip Performance LV5 23.7in 2200lm

## Absolute Ratings

Parameter	Min.	Typ.	Max.	Unit
Current through the LED module (I-max)			700	mA
Working voltage			44	V <sub>dc</sub>
Isolation breakdown voltage	700			V <sub>dc</sub>
Ambient Temperature	-20 <sup>4</sup>			°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	1.2
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

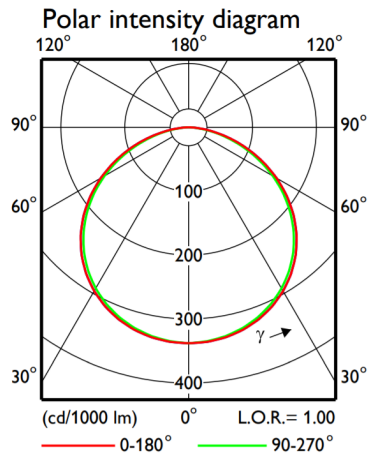
## Estimated Number of Full Thermal Product Cycles @ 25°C Ambient Temperature

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

# Fortimo LED Strip Performance LV5 23.7in 2200lm

## 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 = 308mA, Tc = 45°C	39.15	39.65	40.15	V
Thermal power; If = 308mA, Tc = 45°C		6.2		W

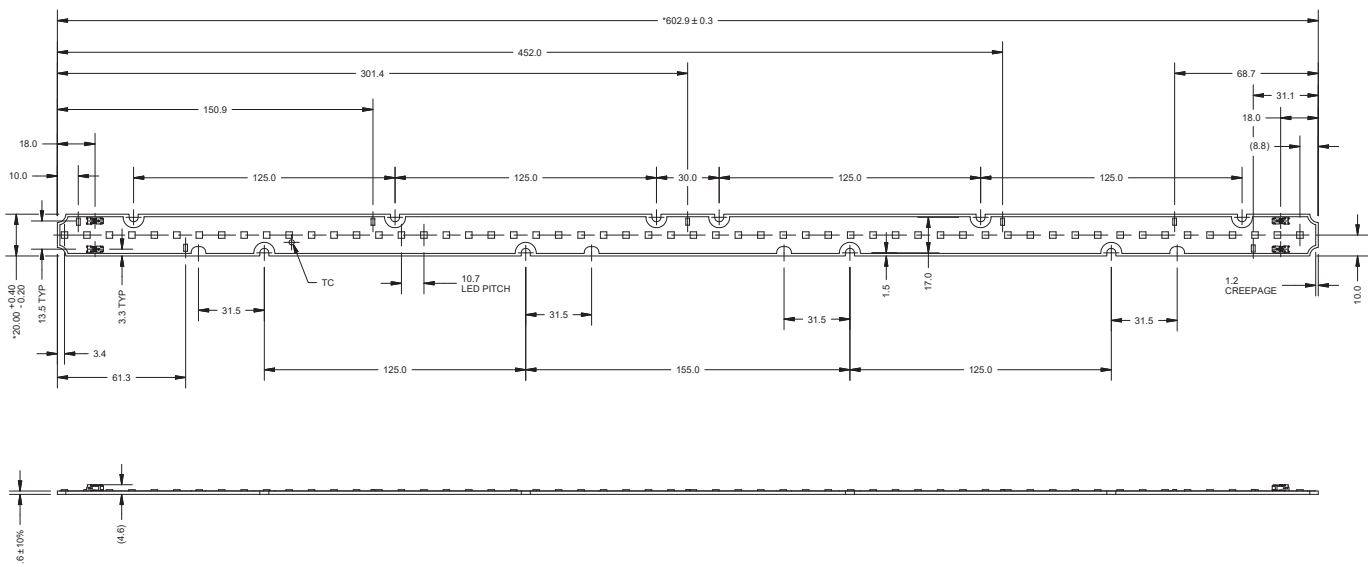
## Wiring

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

## Mechanical Characteristics

Specification Item	Min	Typ	Max	Unit
Length	602.6	602.9	603.2	mm
Width	19.8	20.0	20.4	mm
Height Excl. Connector		2.3		mm
Height Incl. Connector		4.6		mm
Warpage			0.75	%

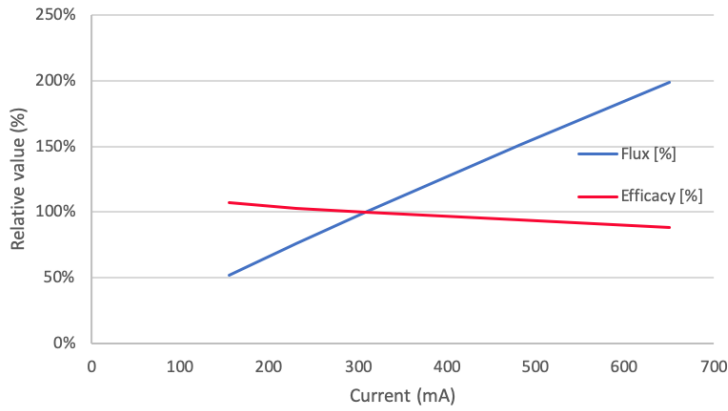
## FO Strip PR 23.7in 2200lm xxx LV5



# Fortimo LED Strip Performance LV5 23.7in 2200lm

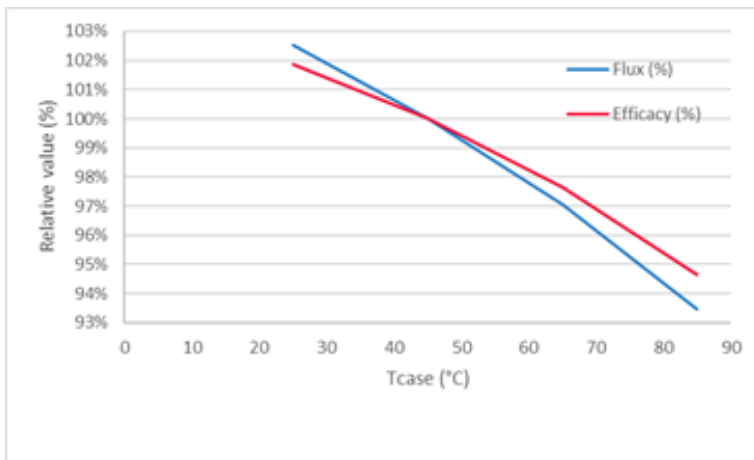
## Tuning Information

### Flux and Efficacy Vs. Current (at Nominal Temperature)



I [mA]	Flux [%]	Efficacy [%]
154	51%	107%
230	76%	103%
308	100%	100%
480	151%	94%
650	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 23.7in 2200lm

## Lumen Maintenance Based on Theoretical TM21 Calculations

Operation point	Tc	L70	L80	L90
80% I-nom 245 mA	Tc-nom 25 °C	>36k	>36k	>36k
	Tc 45 °C	>36k	>36k	>36k
	Tc-life 85 °C	>36k	>36k	>34k
I-nom 308 mA	Tc-nom 25 °C	>36k	>36k	>36k
	Tc 45 °C	>36k	>36k	>36k
	Tc-life 85 °C	>36k	>36k	>34k
I-life 650 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.

