PHILIPS

LED Modules

Fortimo LED Strip

1ft 1100lm 1R LV3

Fortimo LED Strip systems are ideal for use in narrow width luminaire designs for architectural applications that were not possible with fluorescent lighting before. This Fortimo LED Strip product offers best-in-class module efficiency of up to 163 lm/W and flux packages.

The Fortimo LED Strip systems are ideal for use in luminaires for direct lighting in offices, banks, schools, public buildings, supermarkets and any other applications to replace high energy efficiency T5 fluorescent lighting.

Commercial Product Name	12NC
Fortimo LED Strip 1ft 1100lm 830 1R LV3	929000922706
Fortimo LED Strip 1ft 1100lm 835 1R LV3	929000922806
Fortimo LED Strip 1ft 1100lm 840 1R LV3	929000922906
Fortimo LED Strip 1ft 1100lm 850 1R LV3	929000923006
Fortimo LED Strip 1ft 1100lm 930 1R LV3	929000744713
Fortimo LED Strip 1ft 1100lm 935 1R LV3	929000937906
Fortimo LED Strip 1ft 1100lm 940 1R LV3	929000923206

Fortimo LED Strip 1ft 1100lm 1R LV3

Features

- High LED module efficiency of up to 163 lm/W
- Narrow width (20mm)
- Light output range per module up to 1400 lm
- High CRI options (CRI90) and 3 SDCM color consistency
- Variation of color temperatures (3000K, 3500K, 4000K and 5000K)
- Push-in connectors enabling easy wiring
- Zhaga compliant

Benefits

- High energy efficiency and long lifetime allows state-of-the-art luminaire design
- Slim width enables optimized luminaire design and new form factors
- High color rendering and excellent color consistency brings linear LED lighting to the next level for quality of light
- 5-year limited system warranty with Philips Advance Xitanium LED Drivers[1]

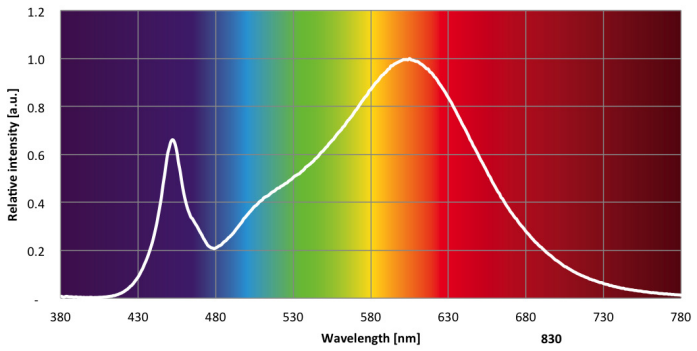
Applications

- Office
- Industry
- Retail

Optical Characteristics – Table per CCT

Fortimo LED Strip 1ft 1100lm 830 1R LV3				
Parameter	**Min**	**Typ**	**Max**	**Unit**
Luminous Flux		1060	1336	Lm
Lumen Efficiency		155	146	Lm/W
Forward Current		200	265	mA
Correlated Color Temperature (CCT) Target		3000		K
CRI	80			-
Radiation Angle		120		deg

Nominal temperature for performance specification: Tc = 45°C.
Max performance values at Ilife.
Color consistency of 3 SDCM, averaged over the module.
Tolerance for flux data is ±7.5%.
Tolerance for efficacy data is ±10%.
Measurements tolerance +/- 2.5% on flux, +/- 5% on efficacy, 0.005 on x,y, +/-2 on CRI.



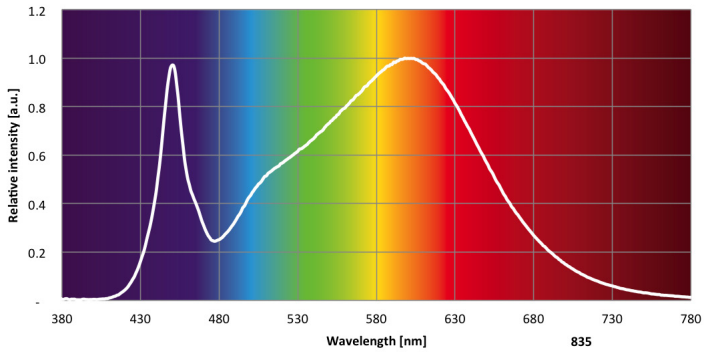
1. View limited warranty at http://www.usa.lighting.philips.com/connect/tools_literature/warranties.wpd for details and restrictions.

Fortimo LED Strip 1ft 1100lm 1R LV3

Optical Characteristics – Table per CCT

Fortimo LED Strip 1ft 1100lm 835 1R LV3				
Parameter	**Min**	**Typ**	**Max**	**Unit**
Luminous Flux		1060	1336	Lm
Lumen Efficiency		155	146	Lm/W
Forward Current		200	265	mA
Correlated Color Temperature (CCT) Target		3500		K
CRI	80			-
Radiation Angle		120		deg

Nominal temperature for performance specification: Tc = 45°C.
Max performance values at lLife.
Color consistency of 3 SDCM, averaged over the module.
Tolerance for flux data is ±7.5%.
Tolerance for efficacy data is ±10%.
Measurements tolerance +/- 2.5% on flux, +/- 5% on efficacy, 0.005 on x,y, +/-2 on CRI.

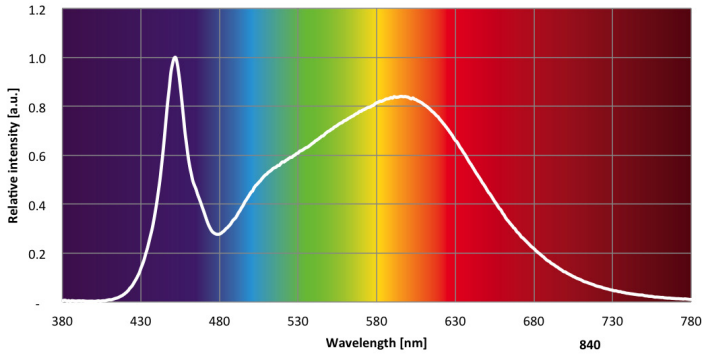


Fortimo LED Strip 1ft 1100lm 1R LV3

Optical Characteristics – Table per CCT

Fortimo LED Strip 1ft 1100lm 840 1R LV3				
Parameter	**Min**	**Typ**	**Max**	**Unit**
Luminous Flux		1100	1336	Lm
Lumen Efficiency		160	146	Lm/W
Forward Current		200	265	mA
Correlated Color Temperature (CCT) Target		4000		K
CRI	80			-
Radiation Angle		120		deg

Nominal temperature for performance specification: Tc = 45°C.
Max performance values at lIife.
Color consistency of 3 SDCM, averaged over the module.
Tolerance for flux data is ±7.5%.
Tolerance for efficacy data is ±10%.
Measurements tolerance +/- 2.5% on flux, +/- 5% on efficacy, 0.005 on x,y, +/-2 on CRI.

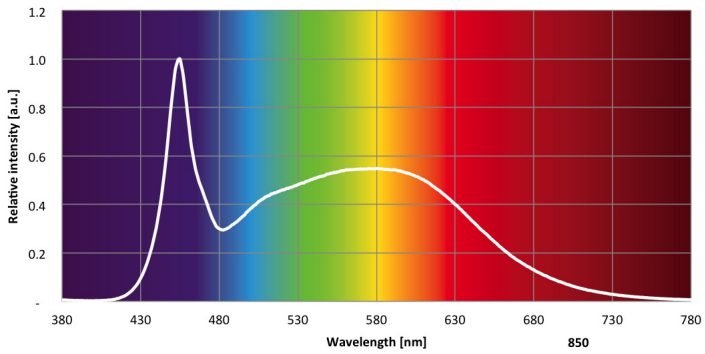


Fortimo LED Strip 1ft 1100lm 1R LV3

Optical Characteristics – Table per CCT

Fortimo LED Strip 1ft 1100lm 850 1R LV3				
Parameter	**Min**	**Typ**	**Max**	**Unit**
Luminous Flux		1120	1411	Lm
Lumen Efficiency		163	154	Lm/W
Forward Current		200	265	mA
Correlated Color Temperature (CCT) Target		5000		K
CRI	80			-
Radiation Angle		120		deg

Nominal temperature for performance specification: Tc = 45°C.
Max performance values at llife.
Color consistency of 3 SDCM, averaged over the module.
Tolerance for flux data is ±7.5%.
Tolerance for efficacy data is ±10%.
Measurements tolerance +/- 2.5% on flux, +/- 5% on efficacy, 0.005 on x,y, +/-2 on CRI.

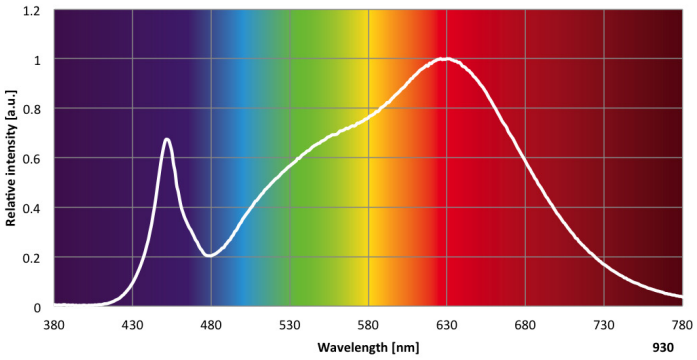


Fortimo LED Strip 1ft 1100lm 1R LV3

Optical Characteristics – Table per CCT

Fortimo LED Strip 1ft 1100lm 930 1R LV3				
Parameter	**Min**	**Typ**	**Max**	**Unit**
Luminous Flux		860	1100	Lm
Lumen Efficiency		128	121	Lm/W
Forward Current		200	265	mA
Correlated Color Temperature (CCT) Target		3000		K
CRI	90			-
Radiation Angle		120		deg

Nominal temperature for performance specification: Tc = 45°C.
Max performance values at llife.
Color consistency of 3 SDCM, averaged over the module.
Tolerance for flux data is ±7.5%.
Tolerance for efficacy data is ±10%.
Measurements tolerance +/- 2.5% on flux, +/- 5% on efficacy, 0.005 on x,y, +/-2 on CRI.

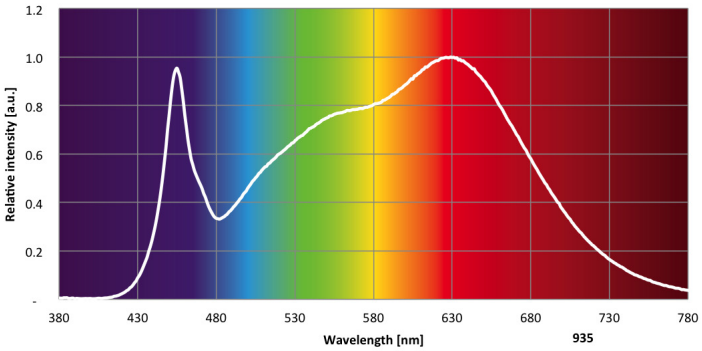


Fortimo LED Strip 1ft 1100lm 1R LV3

Optical Characteristics – Table per CCT

Fortimo LED Strip 1ft 1100lm 935 1R LV3				
Parameter	**Min**	**Typ**	**Max**	**Unit**
Luminous Flux		920	1121	Lm
Lumen Efficiency		135	123	Lm/W
Forward Current		200	265	mA
Correlated Color Temperature (CCT) Target		3500		K
CRI	90			-
Radiation Angle		120		deg

Nominal temperature for performance specification: Tc = 45°C.
Max performance values at lIife.
Color consistency of 3 SDCM, averaged over the module.
Tolerance for flux data is ±7.5%.
Tolerance for efficacy data is ±10%.
Measurements tolerance +/- 2.5% on flux, +/- 5% on efficacy, 0.005 on x,y, +/-2 on CRI.

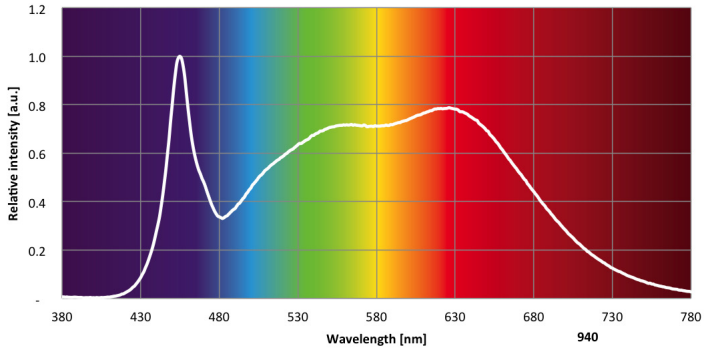


Fortimo LED Strip 1ft 1100lm 1R LV3

Optical Characteristics – Table per CCT

Fortimo LED Strip 1ft 1100lm 940 1R LV3				
Parameter	**Min**	**Typ**	**Max**	**Unit**
Luminous Flux		950	1147	Lm
Lumen Efficiency		139	126	Lm/W
Forward Current		200	265	mA
Correlated Color Temperature (CCT) Target		4000		K
CRI	90			-
Radiation Angle		120		deg

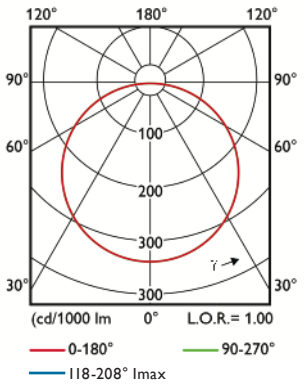
Nominal temperature for performance specification: Tc = 45°C.
Max performance values at lIife.
Color consistency of 3 SDCM, averaged over the module.
Tolerance for flux data is ±7.5%.
Tolerance for efficacy data is ±10%.
Measurements tolerance +/- 2.5% on flux, +/- 5% on efficacy, 0.005 on x,y, +/-2 on CRI.



Fortimo LED Strip 1ft 1100lm 1R LV3

Beam Shape

The Philips 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
Nominal Current		200		mA
Forward Voltage	32.6	34.2	35.3	V
Power Consumption	6.5	6.8	7.1	W

Note: Specifications stated at Tc nom = 45°C and I nom = 200 mA

Lifetime

Parameter	Nominal *	Life**	Max***
Tc [°C]	45	70	80
Current [mA]	200	265	300

* Nominal value at which performance is specified
** Value at which lifetime is specified (max current for warranty)
*** Maximum value for safety

Parameter	Min	Typ	Max	Units
Δu'v' at 6000 Hours			0.007	–

Note: Specifications stated while Tc< 70°C and I<260 mA

Abs Max Ratings

Parameter	Min	Typ	Max	Unit
Current Imax			300	mA
Case Temperature Tc Max			80	°C
ESD (Direct Contact)			8	kV
ESD (Air)			15	kV
Isolation Breakdown Voltage	500			Vdc
Ambient Temperature	-40			°C
Number of Modules per Chain			5	

Fortimo LED Strip 1ft 1100lm 1R LV3

Wiring

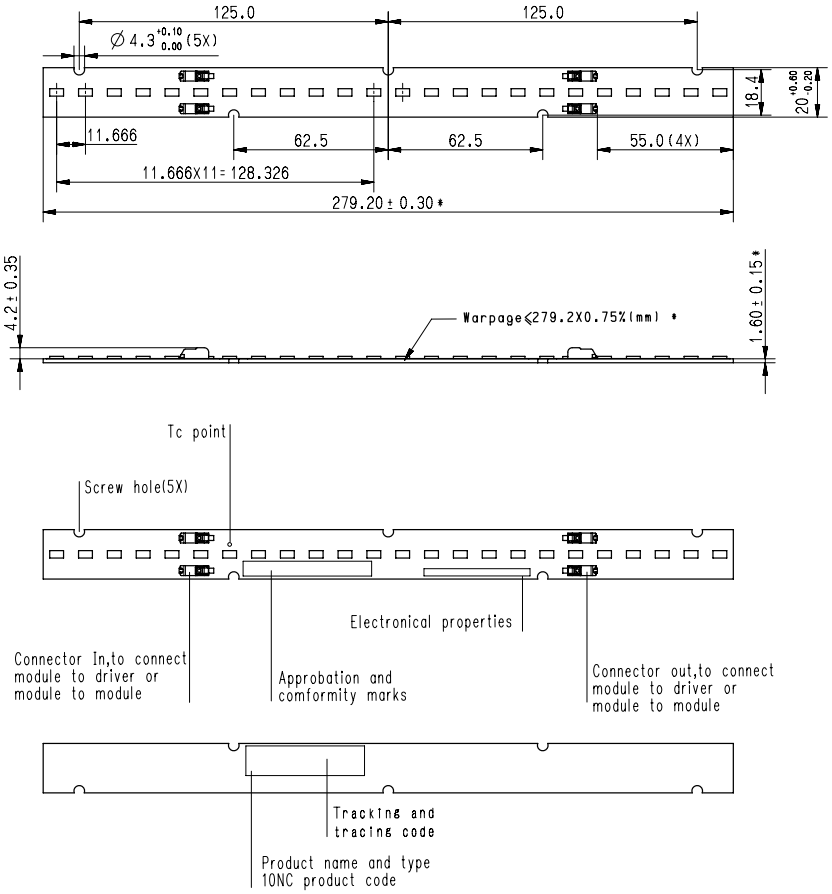
Specification item	Value	Unit	Condition
Input Wire Cross-Section	0.2…0.8	mm^2	Solid
	18…24	AWG	
	0.45…0.7	mm^2	Stranded
	20…22	AWG	
Input Wire Strip Length	7.5…8.5	mm	

Note: Connector suited for robot wiring

Mechanical Characteristics

Parameter	Min	Typ	Max	Unit
Length	278.9	279.2	279.5	mm
Width	19.8	20	20.6	mm
Height Excl. Connector	1.45	1.60	1.75	mm
Height Incl. Connector	3.85	4.2	4.55	mm
Warpage (IPC-TM-650)			2.1	mm

Note: Bow & Twist of the PCB after production tested and released according IPC-TM-650 2.4.22



Un-indicated tolerance see ISO-2768-m
Not specified inner R Angle unity is 0.5mm

Fortimo LED Strip 1ft 1100lm 1R LV3

Application Information

Compliance and Approval

IEC / EN 62031, IEC / EN 62471, IEC / TR 62778, UL8750 (UL recognized)

Environmental

RoHS / REACH

Application Information

Zhaga*	
Designation of the ECG Housing (Book-1 / Annex C)	BL4
Designation of the Book-7 LLE Category	L28W2
Luminous Flux Category	C011
CCT Category	4000K
CRI	80
A Plain-Text-File with a Format as Defined in Book-7, Section 4.5	www.philips.com/technology/
A Greyscale Image with a Format as Defined in Book-7, Section 4.5	
The Position of the Temperature Measurement Point Tp	Same as Tc point
The Value of Tp, Max [°C]	65
The Value of Tp, Headroom [°C]	–

IP Rating	No IP rating
Overheating Protection	No protection
Luminaire Class	UL Class 2 / Class II or Class III

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

Case Temperature Tc [°C]	**Amount of Cycles**
35	
40	
45	>30,000
50	
55	>30,000
60	
65	30,000
70	27,000
75	20,000
80	15,000
85	
90	
95	

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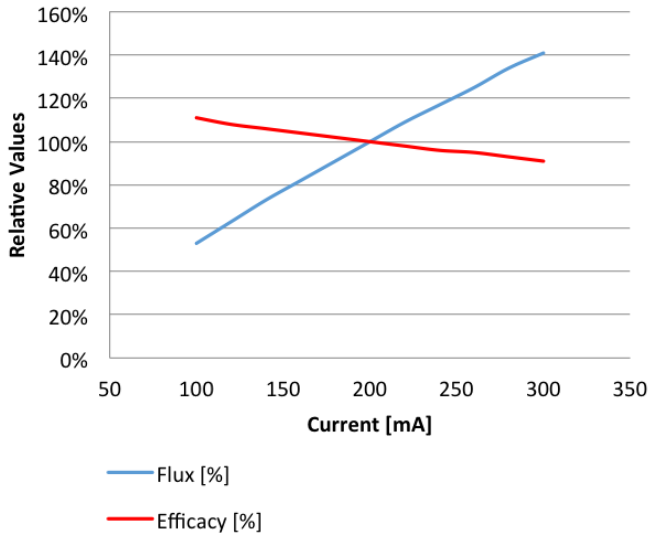
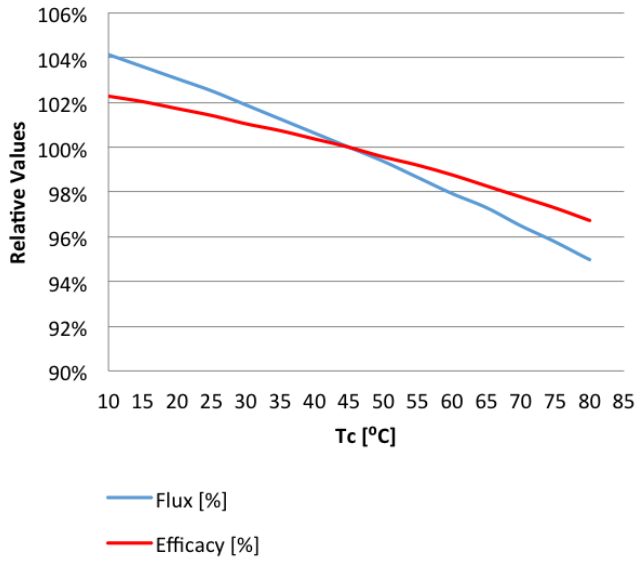
Tuning Information

Flux and Efficacy Vs. Current (at Nominal Temperature)



I [A]	Rel flux	Rel efficacy
100	53%	111%
120	63%	108%
140	73%	106%
160	82%	104%
180	91%	102%
200	**100%**	**100%**
220	109%	98%
240	117%	96%
260	125%	95%
280	134%	93%
300	141%	91%

Flux and Efficacy Vs. Tc



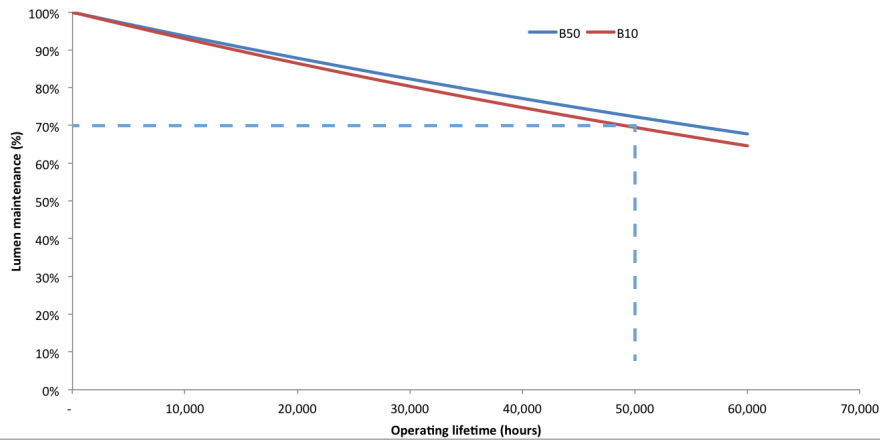
Tc [°C]	Rel flux	Rel efficacy
80	95%	97%
75	96%	97%
70	**96%**	**98%**
65	97%	98%
60	98%	99%
55	99%	99%
50	99%	100%
45	**100%**	**100%**
40	101%	100%
35	101%	101%
30	102%	101%
25	103%	101%
20	103%	102%
15	104%	102%
10	104%	102%
5	105%	103%
0	105%	103%

Fortimo LED Strip 1ft 1100lm 1R LV3

Lumen Maintenance

Lumen Maintenance: at I Life and Tc Life Conditions

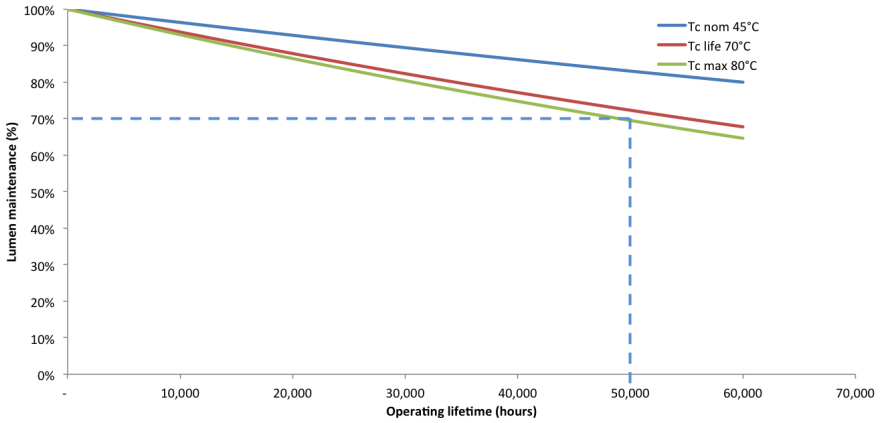
Fortimo LED Strip 1ft 1100lm 1R LV3



Lumen depreciation as a function of operating hours for I-life and Tc-life.
36,000 hours proven by certified laboratory.

Lumen Maintenace (B50): at Current I Life

Fortimo LED Strip 1ft 1100lm 1R LV3



Lumen depreciation as a function of operating hours at different Tc values and I-life.
36,000 hours proven by certified laboratory.

Zhaga

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Customer/Technical Service: 800-372-3331
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