ADVANCE by signify

LED Modules

Fortimo LED Line High Flux PR

2ft 2500lm 1R NA



Fortimo LED Line high flux performance (PR) is designed to provide top performance for high lumen and high temperature applications such as high-bay linear systems.

Together with the wide range of available Advance Xitanium LED drivers, it offers piece of mind for both OEM and end-user, backed up by a five-year limited system warranty[1].

Commercial Product Name	12NC
Fortimo Line 2ft PR 2500lm 830 1R NA LV3	929001721913
Fortimo Line 2ft PR 2500lm 835 1R NA LV3	929001722013
Fortimo Line 2ft PR 2500lm 840 1R NA LV3	929001722113
Fortimo Line 2ft PR 2500lm 850 1R NA LV3	929001722213

Fortimo LED Line High Flux PR 2ft 2500lm 1R NA

Features

- Tc Life of 90°C
- High energy efficiency of up to 185 lm/W
- Variation of color temperatures : 3000K, 3500K, 4000K and 5000K
- High color rendering of CRI>80
- High quality of light with 3 SDCM color consistency
- Lumen levels up to 1435lm/ft
- Zhaga compatible

Benefits

- Enables LED fixture designs in thermally challenging applications of -40°C - +55°C ambient temperatures
- High energy efficacy and optimal total cost of ownership
- Flexible system design due to pairing with Advance Xitanium window drivers with SimpleSet technology
- 5-year limited system warranty with Advance Xitanium LED drivers[2]

Applications

- High-bay industrial lighting
- High-bay big box retail lighting
- Vapor tight high temperature applications

Optical Characteristics – at Tc of 55°C

Commercial Product Name	CCT (K)	CRI[3] (Ra)	R9	Color Consistency (SDCM)[4]	Radiation Angle
Fortimo Line 2ft PR 2500lm 830 1R NA LV3	3000	>80	>0	3	120°
Fortimo Line 2ft PR 2500lm 835 1R NA LV3	3500				
Fortimo Line 2ft PR 2500lm 840 1R NA LV3	4000				
Fortimo Line 2ft PR 2500lm 850 1R NA LV3	5000				

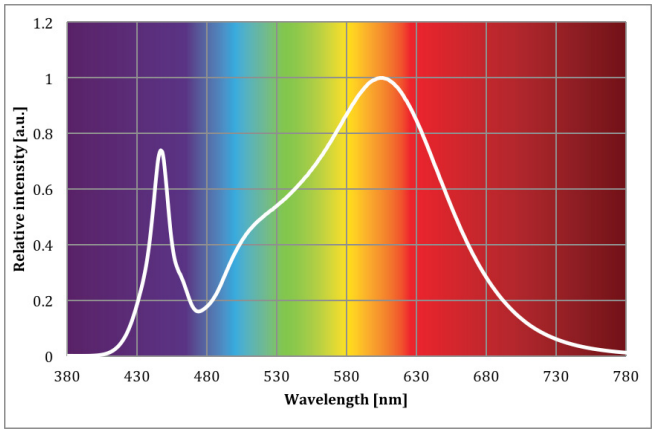
Commercial Product Name	Typical Current (mA)	Flux[5] (lm)			Efficacy[6] (lm/W)		
		Min.	Typ.	Max.	Min.	Typ.	Max.
Fortimo Line 2ft PR 2500lm 830 1R NA LV3	450	2230	2410	2590	153	170	188
Fortimo Line 2ft PR 2500lm 835 1R NA LV3		2280	2460	2650	156	174	192
Fortimo Line 2ft PR 2500lm 840 1R NA LV3		2320	2500	2700	159	177	196
Fortimo Line 2ft PR 2500lm 850 1R NA LV3		2370	2560	2760	163	181	200
Fortimo Line 2ft PR 2500lm 830 1R NA LV3	680	3280	3540	3810	143	159	175
Fortimo Line 2ft PR 2500lm 835 1R NA LV3		3350	3620	3900	146	163	179
Fortimo Line 2ft PR 2500lm 840 1R NA LV3		3410	3680	3960	148	165	182
Fortimo Line 2ft PR 2500lm 850 1R NA LV3		3490	3770	4050	152	169	187
Fortimo Line 2ft PR 2500lm 830 1R NA LV3	225	1150	1240	1340	165	184	203
Fortimo Line 2ft PR 2500lm 835 1R NA LV3		1180	1270	1370	169	189	208
Fortimo Line 2ft PR 2500lm 840 1R NA LV3		1200	1290	1390	172	192	211
Fortimo Line 2ft PR 2500lm 850 1R NA LV3		1220	1320	1420	176	196	216

Footnotes on the last page.

Fortimo LED Line High Flux PR 2ft 2500lm 1R NA

Optical Characteristics – at Tc of 55°C

830



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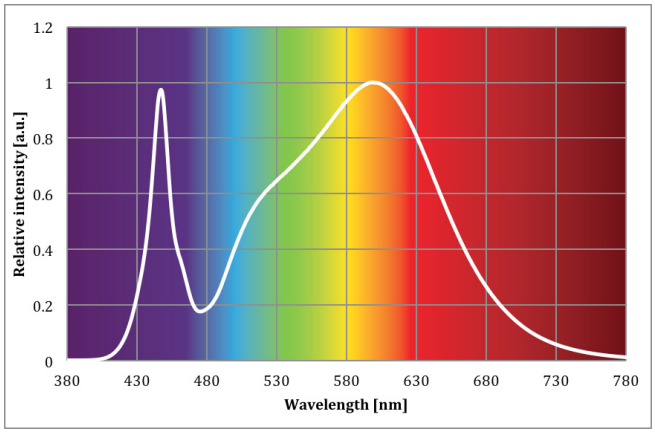

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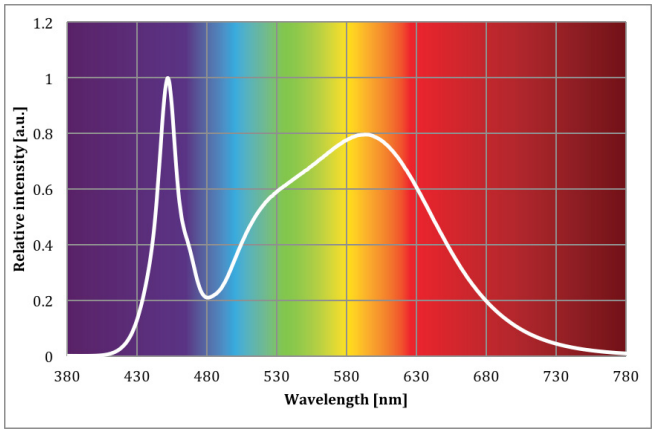

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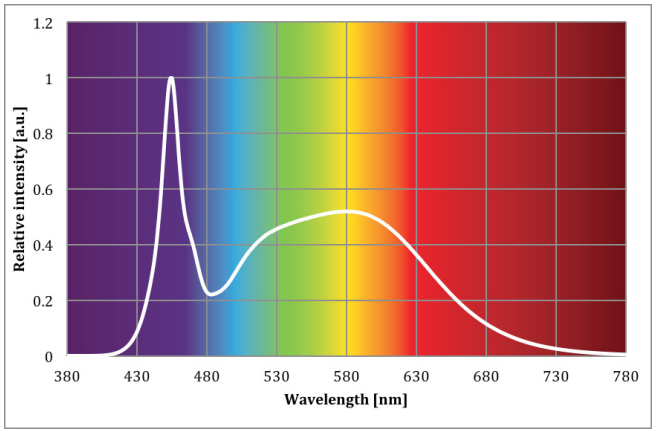

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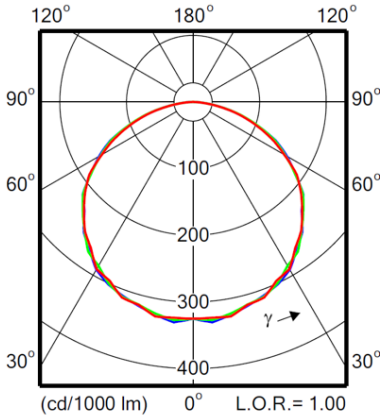
Beam Shape

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



Electrical Characteristics

Commercial Product Name	Typical Current (mA)	Forward Voltage (V)			Power (W)		
		Min.	Typ.	Max.	Min.	Typ.	Max.
Fortimo Line 2ft PR 2500lm 830 1R NA LV3	450	30.5	31.4	32.3	13.7	14.1	14.5
Fortimo Line 2ft PR 2500lm 835 1R NA LV3							
Fortimo Line 2ft PR 2500lm 840 1R NA LV3							
Fortimo Line 2ft PR 2500lm 850 1R NA LV3							
Fortimo Line 2ft PR 2500lm 830 1R NA LV3	680	31.9	32.8	33.7	21.7	22.3	22.9
Fortimo Line 2ft PR 2500lm 835 1R NA LV3							
Fortimo Line 2ft PR 2500lm 840 1R NA LV3							
Fortimo Line 2ft PR 2500lm 850 1R NA LV3							

System configuration : 11s4p

Lifetime

Parameter	Nominal[7]	Life[8]	Max.[9]
Tc (°C)	55	90	100
Current (mA)	450	680	700
Δu'v' at 6000 Hours[10]			0.007

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

Warranted number of full thermal product cycles at which the survival rate of the population ≥90%, at 25°C ambient temperature.

Case Temperature Tc [°C]	Amount of Cycles
25	>100,000
35	>100,000
45	>100,000
55	>100,000
65	72,000
75	31,000
85	8,000
90	6,000

Abs Max Ratings

Parameter	Min.	Max.	Unit
Current through the LED Module (I-max)		700	mA
Case Temperature (Tc Max)		100	°C
ESD (Direct Contact)		8	kV
ESD (Air)		15	kV
Isolation Breakdown Voltage	700		Vdc
Ambient Temperature	-40	55	°C
PCB Reflectivity	70%		
Number of Modules per Chain		2	

Application Information

Compliance and Approval

UL8750 (UL recognized)

Environmental

RoHS / REACH

Application Information

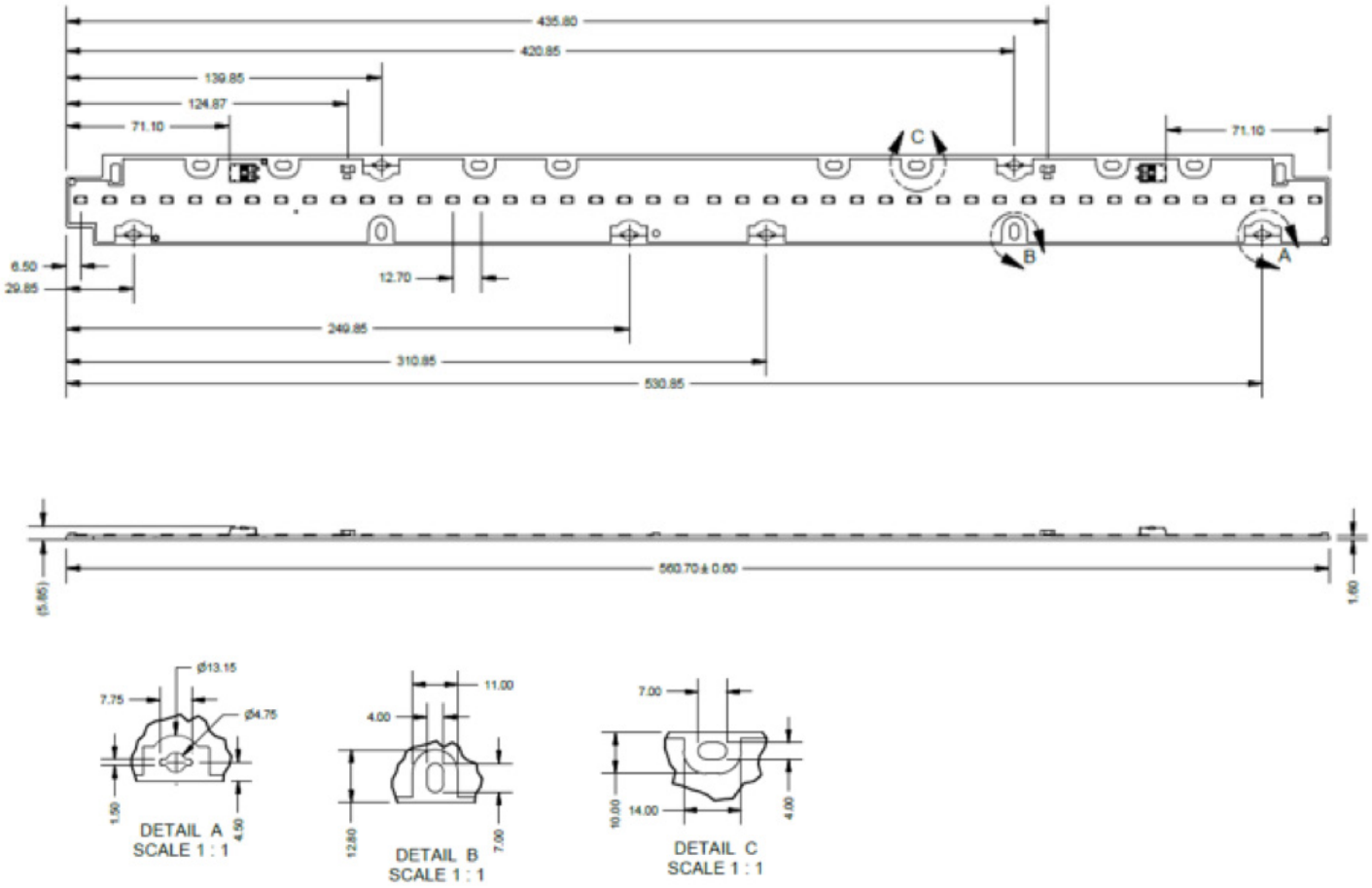
IP Rating	No IP rating
Overheating Protection	No protection
Luminaire Class	UL Class 2

Wiring

Specification Item	Value	Unit	Condition
Input Wire Cross-Section	0.2...0.75	mm^2	solid
	18...24	AWG	
	0.45...0.7	mm^2	stranded
Input Wire Strip Length	7.5...8.5	mm	

Mechanical Characteristics

Parameter	Min.	Typ.	Max.	Unit
Length	560.4	560.7	561.0	mm
Width	39.8	40.0	40.2	mm
Height Excl. Connector	1.45	1.60	1.75	mm
Height Incl. Connector	5.50	5.85	6.20	mm
Warpage (IPC-TM-650)			0.75	mm



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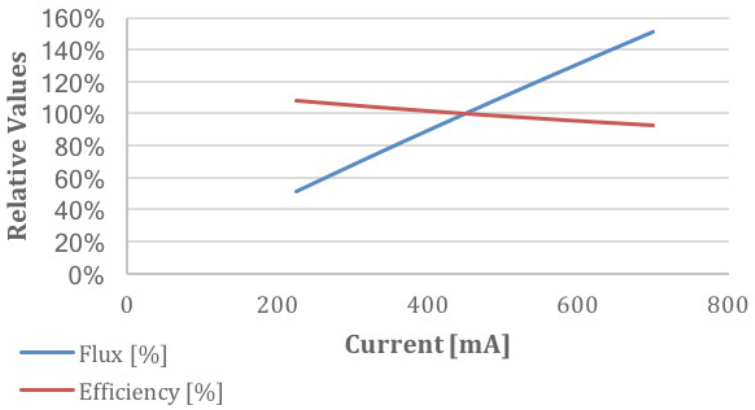
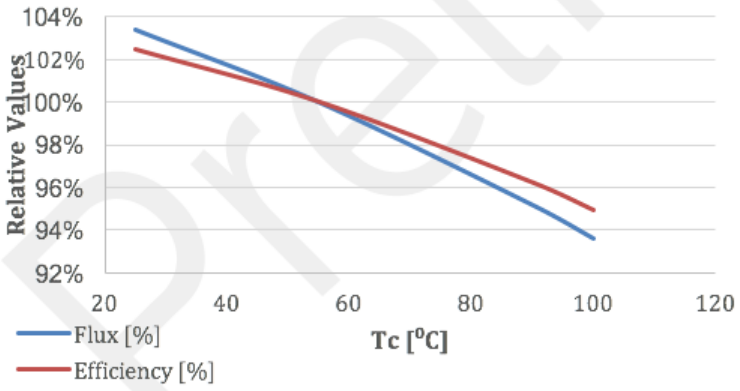
Tuning Information

Flux and Efficacy Vs. Current



I [A]	Flux [%]	Efficacy [%]
225	52	108
338	76	104
450	100	100
533	117	97
617	134	95
700	151	93

Flux and Efficacy Vs. Temperature at Tc



Tc [°C]	Flux [%]	Efficacy [%]
100	94	95
90	95	96
55	100	100
25	103	102

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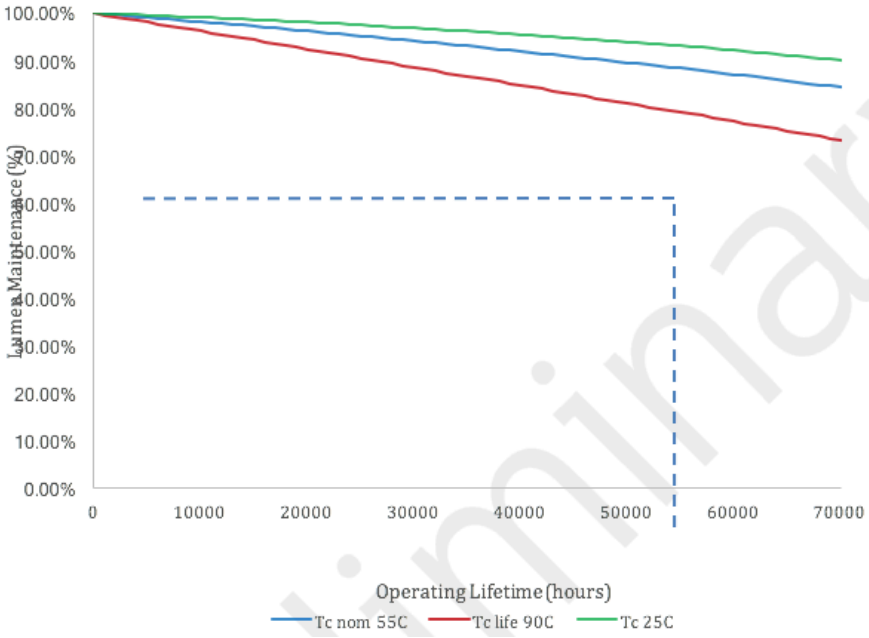
Lumen Maintenance

Lumen Maintenance: at I Life and Tc Life Conditions

Fortimo LED Line PR 2ft 2500lm 8xx 1R NA LV3



Preliminary

Precautions in Handling and Use

See design-in guide on the My Technology Portal. https://www.na.mytechnologyportal.lighting.philips.com.

1. Average rated life is based on engineering data 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 http://www.usa.lighting.philips.com/connect/tools_literature/warranties.wpd for details and restrictions.
3. Measurement tolerance is ±1.5 for CRI
4. Measurement tolerance is ±0.003 for the color coordinates data
5. Measurement tolerance is ± 5% for the flux
6. Measurement tolerance is ± 5% for efficacy
7. Nominal value at which performance is specified
8. Value at which lifetime is specified (maximum conditions for warranty)
9. Maximum value for safety
10. Specifications stated while Tc<90°C and I<1120mA

Zhaga

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