

# PHILIPS

## LED Modules

### Fortimo LED Line High Flux VO

2ft 7500lm 8xx 2R NA



Fortimo LED Line high flux VO is designed to enable cost breakthrough in high lumen and high temperature applications such as high-bay linear systems.

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

Commercial Product Name	12NC
Fortimo Line VO 2ft 7500lm 830 2R NA LV1	929001722313
Fortimo Line VO 2ft 7500lm 835 2R NA LV1	929001722413
Fortimo Line VO 2ft 7500lm 840 2R NA LV1	929001722513
Fortimo Line VO 2ft 7500lm 850 2R NA LV1	929001722613

# Fortimo LED Line VO 2ft 7500lm 8xx 2R NA

## Features

- Tc Life of 90°C
- High energy efficiency of up to 156 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 3750lm/ft
- Zhaga compatible

## Benefits

- Enables LED fixture designs in thermally challenging applications of -40°C - +55°C ambient temperatures
- Flexible system design due to pairing with Philips Advance Xitanium window drivers with SimpleSet technology
- 5-year limited system warranty with Philips Advance Xitanium LED drivers<sup>2</sup>

## 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 <sup>3</sup> (Ra)	R9	Color Consistency (SDCM) <sup>4</sup>	Radiation Angle
Fortimo Line VO 2ft 7500lm 830 2R NA LV1	3000	>80	>0	3	120°
Fortimo Line VO 2ft 7500lm 835 2R NA LV1	3500				
Fortimo Line VO 2ft 7500lm 840 2R NA LV1	4000				
Fortimo Line VO 2ft 7500lm 850 2R NA LV1	5000				

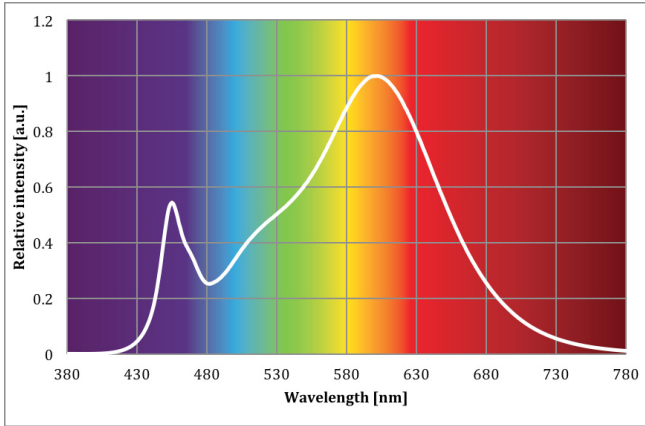
Commercial Product Name	Typical Current (mA)	Flux <sup>5</sup> (lm)			Efficacy <sup>6</sup> (lm/W)		
		Min.	Typ.	Max.	Min.	Typ.	Max.
Fortimo Line VO 2ft 7500lm 830 2R NA LV1	1350	6450	6970	7490	130	145	160
Fortimo Line VO 2ft 7500lm 835 2R NA LV1		6720	7260	7810	136	151	167
Fortimo Line VO 2ft 7500lm 840 2R NA LV1		6940	7500	8060	140	156	172
Fortimo Line VO 2ft 7500lm 850 2R NA LV1		6940	7500	8060	140	156	172
Fortimo Line VO 2ft 7500lm 830 2R NA LV1	1400	6660	7200	7740	129	144	159
Fortimo Line VO 2ft 7500lm 835 2R NA LV1		6940	7500	8060	134	150	165
Fortimo Line VO 2ft 7500lm 840 2R NA LV1		7170	7740	8330	139	155	171
Fortimo Line VO 2ft 7500lm 850 2R NA LV1		7170	7740	8330	139	155	171
Fortimo Line VO 2ft 7500lm 830 2R NA LV1	675	3400	3670	3950	145	162	179
Fortimo Line VO 2ft 7500lm 835 2R NA LV1		3540	3830	4120	151	169	186
Fortimo Line VO 2ft 7500lm 840 2R NA LV1		3660	3950	4250	156	174	192
Fortimo Line VO 2ft 7500lm 850 2R NA LV1		3660	3950	4250	156	174	192

Footnotes on the last page.

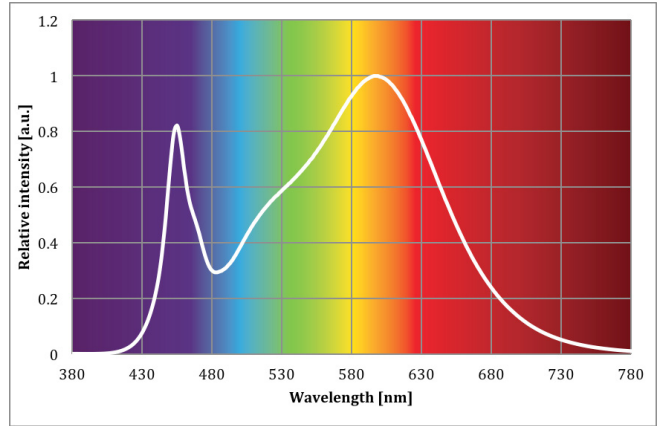
# Fortimo LED Line VO 2ft 7500lm 8xx 2R NA

Optical Characteristics – at Tc of 55°C

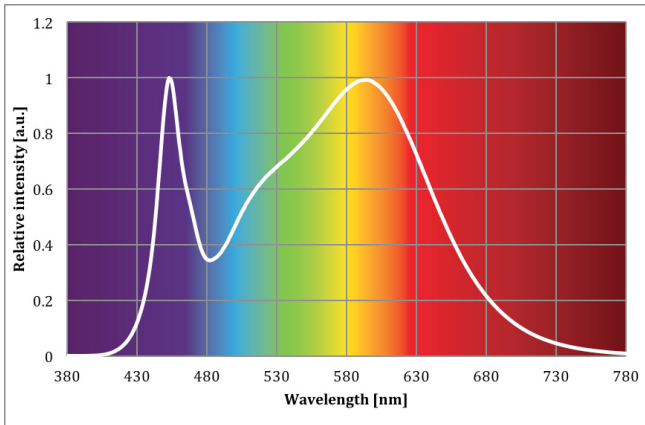
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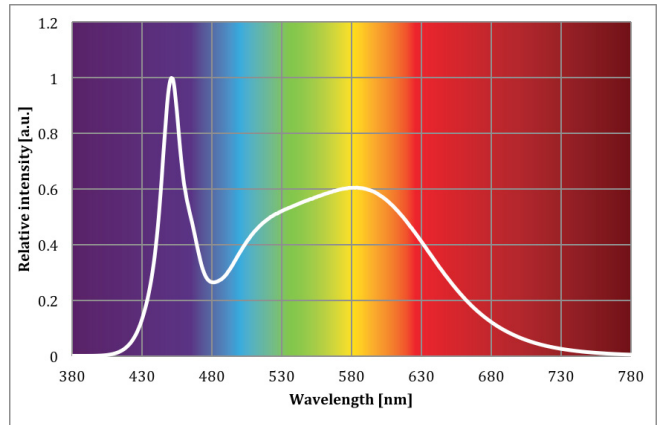
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840



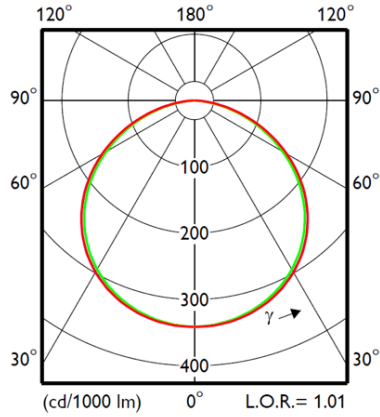
850



# Fortimo LED Line VO 2ft 7500lm 8xx 2R NA

## Beam Shape

The Philips 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 VO 2ft 7500lm 830 2R NA LV1	1350	34.7	35.6	36.5	46.8	48.1	49.2
Fortimo Line VO 2ft 7500lm 835 2R NA LV1							
Fortimo Line VO 2ft 7500lm 840 2R NA LV1							
Fortimo Line VO 2ft 7500lm 850 2R NA LV1							
Fortimo Line VO 2ft 7500lm 830 2R NA LV1	1400	34.8	35.7	36.6	48.7	49.9	51.2
Fortimo Line VO 2ft 7500lm 835 2R NA LV1							
Fortimo Line VO 2ft 7500lm 840 2R NA LV1							
Fortimo Line VO 2ft 7500lm 850 2R NA LV1							

System configuration : 11s4p

## Lifetime

Parameter	Nominal <sup>7</sup>	Life <sup>8</sup>	Max. <sup>9</sup>
Tc (°C)	55	90	90
Current (mA)	1350	1400	1400
Δu'v' at 6000 Hours <sup>10</sup>			0.007

# Fortimo LED Line VO 2ft 7500lm 8xx 2R NA

## 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  $\geq 90\%$ , at 25°C ambient temperature.

Case Temperature Tc [°C]	Amount of Cycles
25	>100,000
35	>100,000
45	>100,000
55	67,000
65	26,000
75	12,000
85	6,000
90	3,000

## Abs Max Ratings

Parameter	Min.	Max.	Unit
Current through the LED Module (I-max)		1400	mA
Case Temperature (Tc Max)		90	°C
ESD (Direct Contact)		2	kV
ESD (Air)		2	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

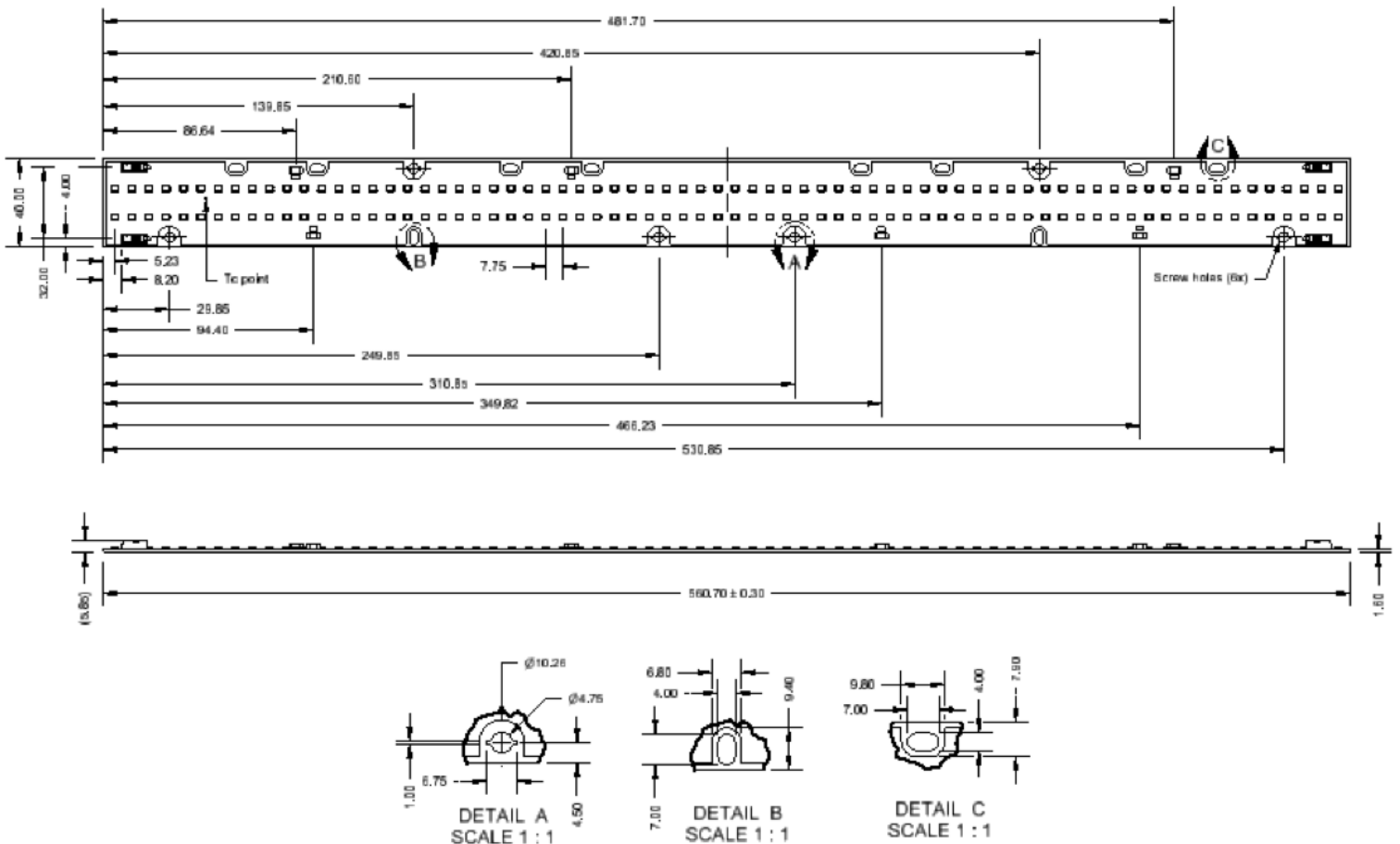
# Fortimo LED Line VO 2ft 7500lm 8xx 2R NA

## Wiring

Specification Item	Value	Unit	Condition
Input Wire Cross-Section	0.2...0.75	mm <sup>2</sup>	solid
	18...24	AWG	
	0.45...0.7	mm <sup>2</sup>	stranded
	20...22	AWG	
Input Wire Strip Length	7.5...8.5	mm	

## Mechanical Characteristics

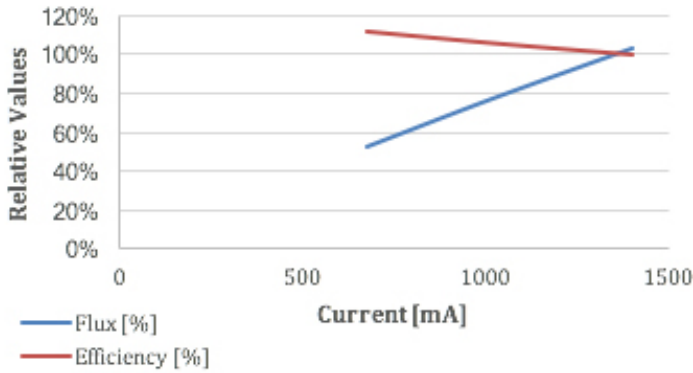
Parameter	Min.	Typ.	Max.	Unit
Length	560.4	560.7	561.0	mm
Width	39.8	40.0	40.2	mm
Height Excl. Connector	1.45	1.60	1.75	mm
Height Incl. Connector	5.50	5.85	6.20	mm
Warpage (IPC-TM-650)			0.75	mm



# Fortimo LED Line VO 2ft 7500lm 8xx 2R NA

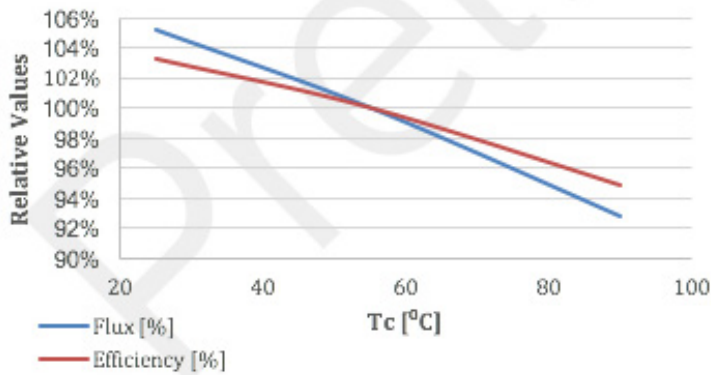
## Tuning Information

### Flux and Efficacy Vs. Current



I [A]	Flux [%]	Efficacy [%]
300	XX	XX
675	53	112
1013	77	105
1350	100	100
1367	101	100
1383	102	99
1400	103	99

### Flux and Efficacy Vs. Temperature at Tc



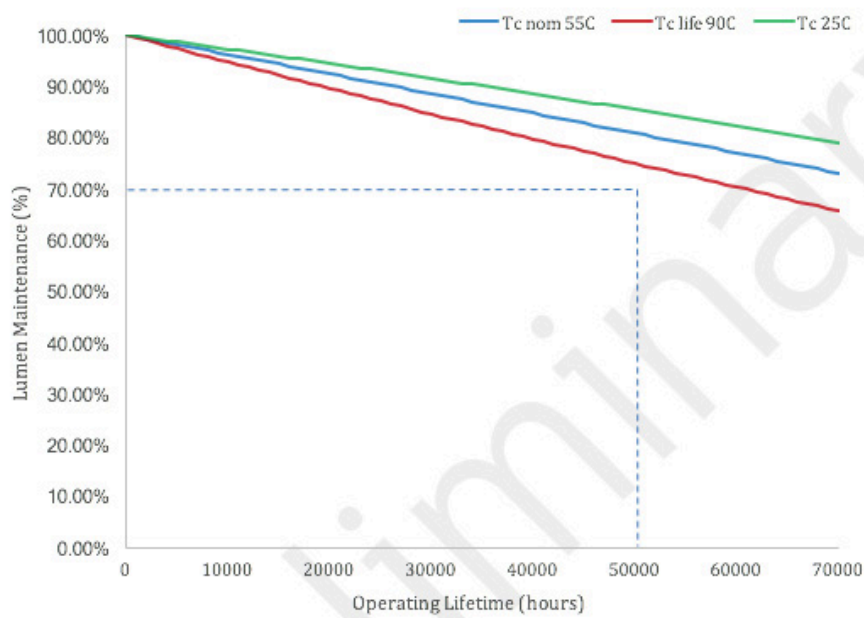
Tc [°C]	Flux [%]	Efficacy [%]
100	XX	XX
90	93	95
55	100	100
25	105	103

# Fortimo LED Line VO 2ft 7500lm 8xx 2R NA

## Lumen Maintenance

### Lumen Maintenance: at I Life and Tc Life Conditions

Fortimo LED LineVO 2ft 7500lm 8xx 1R NA LV1



## Precautions in Handling and Use

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



# Fortimo LED Line VO 2ft 7500lm 8xx 2R NA

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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](http://www.usa.lighting.philips.com/connect/tools_literature/warranties.wpd) for details and restrictions.
3. Measurement tolerance is  $\pm 1.5$  for CRI
4. Measurement tolerance is  $\pm 0.003$  for the color coordinates data
5. Measurement tolerance is  $\pm 5\%$  for the flux
6. Measurement tolerance is  $\pm 5\%$  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  $T_c < 90^\circ\text{C}$  and  $I < 1120\text{mA}$



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