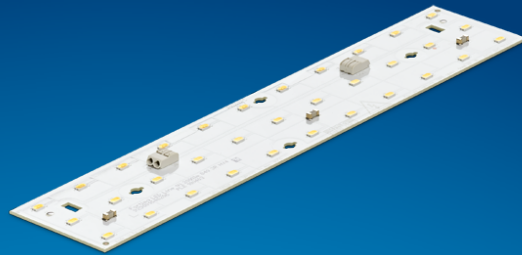


PHILIPS

Fortimo

LED

Fortimo LED Line 1ft
2000lm 8xx 3R HV4



Datasheet

Fortimo LED Line High Flux

Fortimo LED Line High Flux is designed to enable LED lighting at higher application heights where more light is needed, such as trunking, battens and high-bay applications in warehouses, factories or big retail stores.

Key features and benefits

- LED module efficiency of up to 185 lm/W
- Instant full light
- Long life-time: >100,000 hours
- High color rendering: CRI >80
- Excellent color consistency of 3 SDCM
- Variation of color temperatures (3000 K, 4000 K, and 5000K)
- Two module lengths: 1 ft/280 mm or 2 ft/560 mm
- LED module range with 1 or 3 rows of LEDs (1 ft only)
- Lumen package: 2000 lm per foot
- Tunable lumen output, efficacy and lifetime
- Wide case temperature (Tc) range from -40 °C to +95 °C
- Push-in connectors enabling automated wiring
- Five year system warranty

May 2018

 Zhaga

Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo LED Line 1ft 2000lm 830 3R HV4	8718696 829035 00	9290 016 46106	180
Fortimo LED Line 1ft 2000lm 840 3R HV4	8718696 829059 00	9290 016 46206	180
Fortimo LED Line 1ft 2000lm 850 3R HV4	8718696 829073 00	9290 016 46306	180

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Line 1ft 2000lm 8xx 3R HV4	353	600	600	mA

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T _c (case temperature at T _c point)	45	90	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

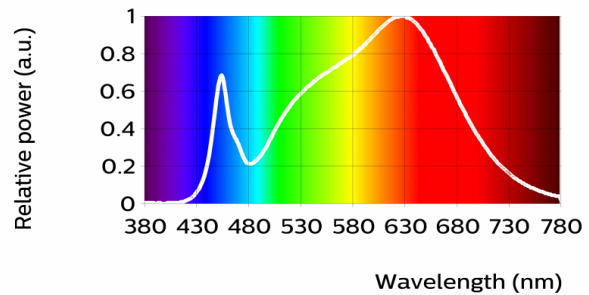
Optical characteristics - table per color (CCT)

Fortimo LED Line 1ft 2000lm 830 3R HV4

Parameter	Min	Typ	Max	Unit
Luminous flux	1758	1900	2042	lm
Module efficacy	155	172		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.429, 0.397)		-
CRI	80			
Photobiological safety			RG1 unlimited	
Energy efficiency label		A++		

R9>0
 Measurement precision for flux +/- 5%. Measurement precision for efficacy +/- 6%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	830	lm	lm/W
80% I-nom 282mA	Tc 25 °C	1571	180
	Tc-nom 45 °C	1539	177
	Tc-max 95 °C	1438	168
I-nom 353mA	Tc 25 °C	1941	175
	Tc-nom 45 °C	1900	172
	Tc-max 95 °C	1772	163
I-life 600mA	Tc 25 °C	3179	159
	Tc-nom 45 °C	3108	156
	Tc-max 95 °C	2889	147

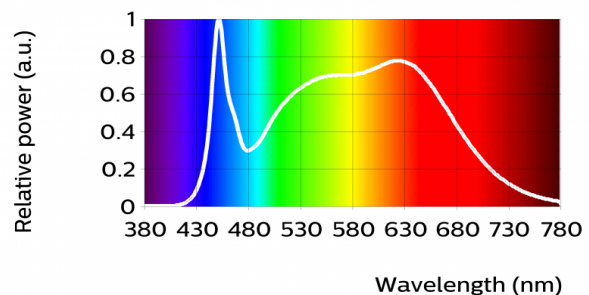


Fortimo LED Line 1ft 2000lm 840 3R HV4

Parameter	Min	Typ	Max	Unit
Luminous flux	1850	2000	2150	lm
Module efficacy	163	181		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.376, 0.372)		-
CRI	80			
Photobiological safety			RG1 unlimited	
Energy efficiency label		A++		

R9>0
 Measurement precision for flux +/- 5%. Measurement precision for efficacy +/- 6%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	840	lm	lm/W
80% I-nom 282mA	Tc 25 °C	1654	189
	Tc-nom 45 °C	1620	187
	Tc-max 95 °C	1513	177
I-nom 353mA	Tc 25 °C	2044	184
	Tc-nom 45 °C	2000	181
	Tc-max 95 °C	1866	171
I-life 600mA	Tc 25 °C	3346	167
	Tc-nom 45 °C	3272	164
	Tc-max 95 °C	3041	155

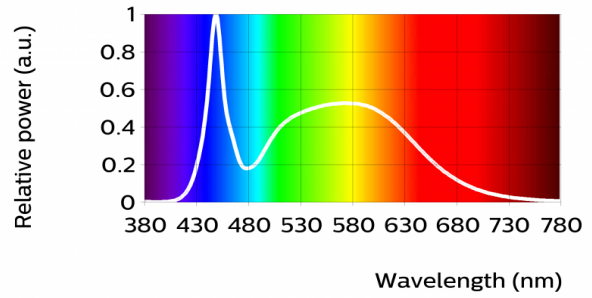


Fortimo LED Line 1ft 2000lm 850 3R HV4

Parameter	Min	Typ	Max	Unit
Luminous flux	1850	2000	2150	lm
Module efficacy	163	181		lm/W
Correlated color temperature (CCT)		5000		K
Color coordinates (CIEx, CIEy)		(0.339, 0.349)		-
CRI	80			
Photobiological safety			RG1 unlimited	
Energy efficiency label		A++		

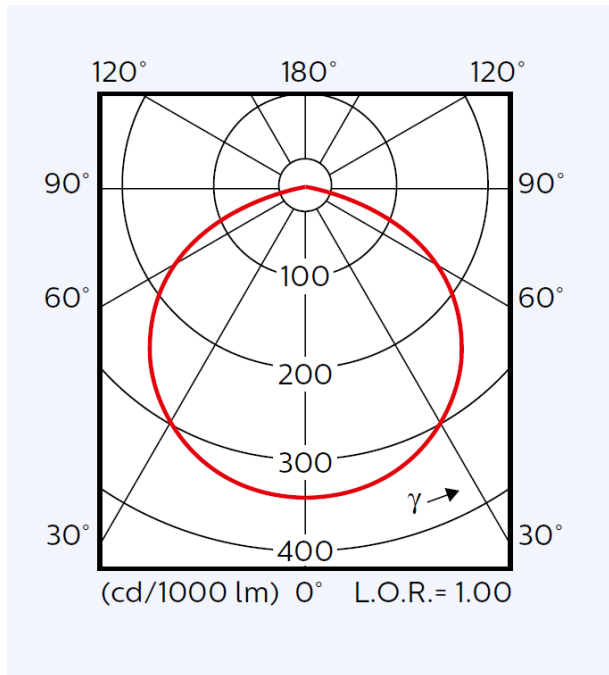
R9>0
 Measurement precision for flux +/- 5%. Measurement precision for efficacy +/- 6%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	850	lm	lm/W
80% I-nom 282mA	Tc 25 °C	1654	189
	Tc-nom 45 °C	1620	187
	Tc-max 95 °C	1513	177
I-nom 353mA	Tc 25 °C	2044	184
	Tc-nom 45 °C	2000	181
	Tc-max 95 °C	1866	171
I-life 600mA	Tc 25 °C	3346	167
	Tc-nom 45 °C	3272	164
	Tc-max 95 °C	3041	155



Beam shape

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



Electrical characteristics

[Fortimo LED Line 1ft 2000lm 830 3R HV4](#)
[Fortimo LED Line 1ft 2000lm 840 3R HV4](#)
[Fortimo LED Line 1ft 2000lm 850 3R HV4](#)

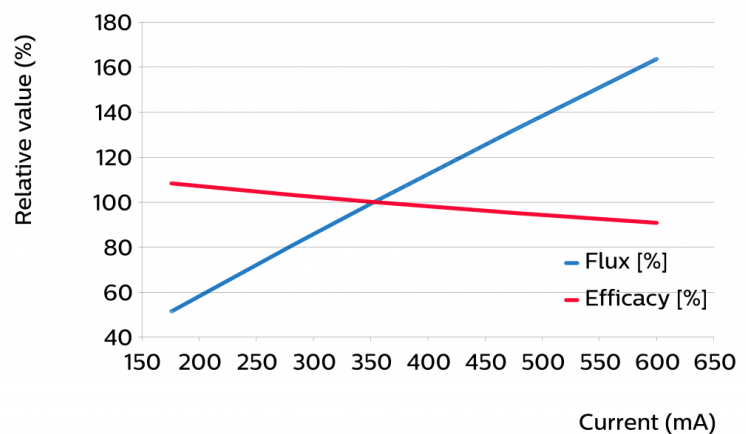
Parameter	Min	Typ	Max	Unit
Forward voltage	30.7	31.3	31.9	V
Power consumption	10.8	11.0	11.2	W
Thermal power		4.3		W
Number of modules in series per chain			10	
Number of modules in parallel per chain			4	

Measurement precision for Vf +/- 3%. Measurement precision for power +/- 3.3%

Tuning information

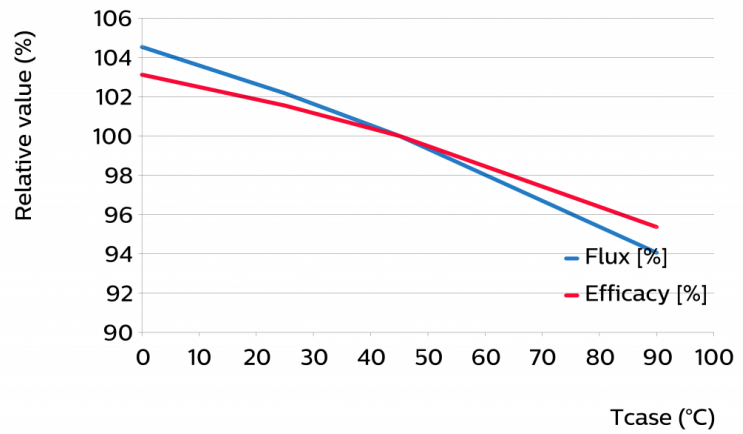
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
600	164	91
476	132	95
353	100	100
282	81	103
176	51	108



Flux and efficacy versus temperature at Tc (at I nominal)

Tcase [°C]	Flux [%]	Efficacy [%]
90	94	95
45	100	100
25	102	102
0	105	103



Lumen maintenance

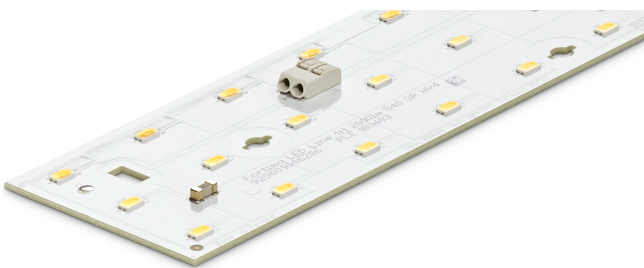
Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% I-nom 282mA	Tc 25°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc-nom 55°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc-life 90°C	>100	>100	>100	94	91	89	45	43	42
I-nom 353mA	Tc 25°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc-nom 55°C	>100	>100	>100	>100	>100	>100	>100	98	96
	Tc-life 90°C	>100	>100	>100	79	76	74	37	36	35
I-life 600mA	Tc 25°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc-nom 55°C	>100	>100	>100	>100	>100	>100	67	64	63
	Tc-life 90°C	83	80	78	52	50	49	24	23	23

Lifetime

Switching cycles in accordance to EU 1194/2012: >15000.

Wiring

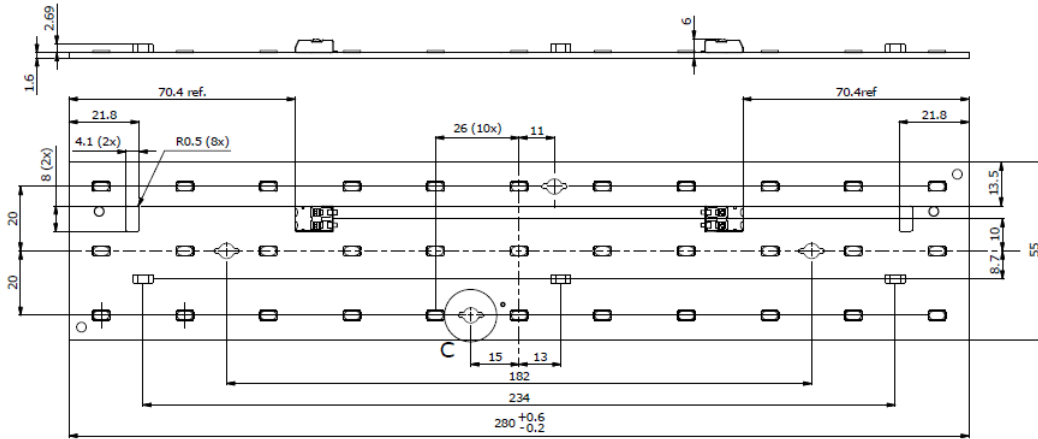
Specification item	Value	Unit	Condition
Input wire cross-section	0.2...0.75	mm ²	solid wire, stranded wire
	18...24	AWG	solid wire, stranded wire
Input wire strip length	7...9	mm	



Mechanical characteristics

Fortimo LED Line 1ft 2000lm 830 3R HV4
 Fortimo LED Line 1ft 2000lm 840 3R HV4
 Fortimo LED Line 1ft 2000lm 850 3R HV4

Parameter	Min	Typ	Max	Unit
Length	279.8	280	280.6	mm
Width	54.7	55	55.3	mm
Height PCB	1.4	1.6	1.8	mm
Height with connector	5.65	5.85	6.05	mm



Absolute ratings

Parameter	Min	Typ	Max	Unit
Current through the LED module (I-max)			600	mA
Case temperature (Tc-max)			95	°C
Power at rated Vf-max and I-max			20.8	W
ESD (direct contact)			8	kV
ESD (air)			15	kV
Working voltage			420	V _{dc}
Voltage strength	1840			V _{ac}
Ambient temperature	-30			°C

Application information

Certificates and Standards

IEC 62384

IEC 62031:2008 (First Edition) + A1:2012 + A2:2014

EN 62031:2008 (First Edition) + A1:2013 + A2:2015

Relevant clauses of EN 62471:2008 (With IEC/TR 62471-2: 2009 and IEC/TR 62778: 2014)

CE

ENEC (Ensures products are tested for safety and operation before factory exit AND products are IEC approved by an accredited testhouse)

ENEC+

Environmental

RoHS/REACH

Zhaga

Compliant*

*Book7, L28W6

Application

IP rating

No IP-rating

Overheating protection

No protection

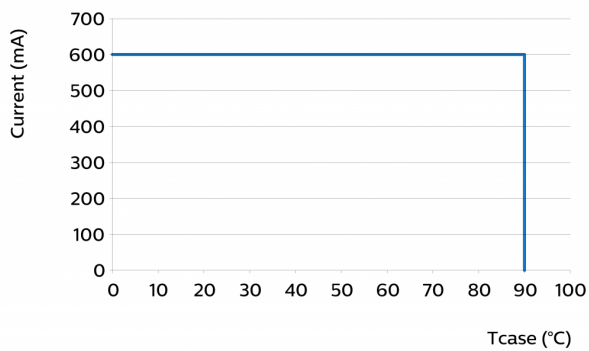
Luminaire class

IEC Class I and IEC Class II

Dimming

Yes

Performance Window





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05/2018