

PHILIPS

Fortimo

LED

Fortimo LED Line 1ft MF
8xx 3R HV5B



Datasheet

Upgraded with the latest LED technology, the Fortimo LED Line 3R provides high quality white light on a well-known footprint. From three rows (3R) of LEDs, the modules provide a high energy efficiency whilst enabling three lumen ranges: LF (650lm/ft), MF (1100lm/ft) and HF (2000lm/ft). Combined with the wide range of CCT's and CRI's available, the product range is suitable in many indoor luminaire applications like retail, industry and office lighting.

Key features and benefits

- Latest LED technology providing an improved module efficiency
- Long life time: >50,000 hours
- High quality white light: CRI80 or CRI90
- Excellent color consistency of 3 SDCM
- Available color temperatures: 3000K / 3500K / 4000K / 5000K / 6500K
- Two module lengths: 1ft/280mm or 2ft/560mm
- Three lumen packages: LF (650lm/ft), MF (1100lm/ft) or HF (2000lm/ft)
- High overdrive possibilities
- High voltage (HV) or Low voltage (LV) designs: LF and MF versions are hybrid and can be used in both HV or LV
- Five year system warranty

March 2022



Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo LED Line 1ft MF 830 3R HV5B	8719514 390492 00	9290 029 24906	60
Fortimo LED Line 1ft MF 840 3R HV5B	8719514 390515 00	9290 029 25006	60
Fortimo LED Line 1ft MF 850 3R HV5B	8719514 390539 00	9290 029 25106	60

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Line 1ft MF 8xx 3R HV5B	193	600	600	mA

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T _c (case temperature at T _c point)	40	80	80	°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)

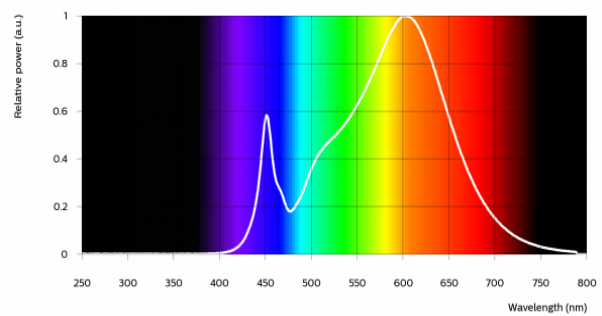
Fortimo LED Line 1ft MF 830 3R HV5B

Parameter	Min	Typ	Max	Unit
Luminous flux	1043	1055	1102	lm
Efficacy		183		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.431, 0.402)		-
Color consistency			3	SDCM
CRI	80			
R9	0			
Photometric code		830/369		
Photobiological safety			RG1 unlimited	



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

Operation point	830	lm	lm/W
80% I-nom 154mA	Tc 25 °C	861	188
	Tc-nom 40 °C	848	186
	Tc-max 80 °C	804	179
I-nom 193mA	Tc 25 °C	1072	185
	Tc-nom 40 °C	1055	183
	Tc-max 80 °C	1000	177
I-max 600mA	Tc 25 °C	3155	162
	Tc-nom 40 °C	3104	161
	Tc-max 80 °C	2940	154



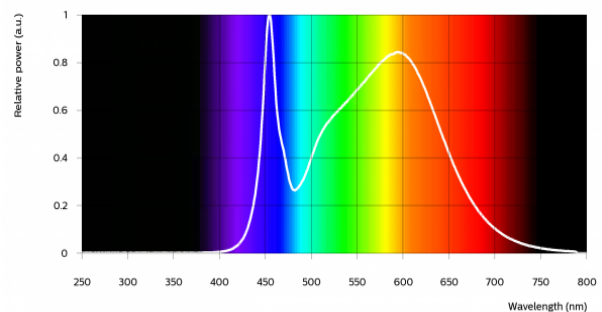
Fortimo LED Line 1ft MF 840 3R HV5B

Parameter	Min	Typ	Max	Unit
Luminous flux	1088	1100	1147	lm
Efficacy		191		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.379, 0.378)		-
Color consistency			3	SDCM
CRI	80			
R9	0			
Photometric code		840/369		
Photobiological safety			RG1 unlimited	



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

Operation point	840	lm	lm/W
80% I-nom 154mA	Tc 25 °C	898	196
	Tc-nom 40 °C	884	194
	Tc-max 80 °C	837	187
I-nom 193mA	Tc 25 °C	1118	193
	Tc-nom 40 °C	1100	191
	Tc-max 80 °C	1042	184
I-max 600mA	Tc 25 °C	3305	170
	Tc-nom 40 °C	3250	168
	Tc-max 80 °C	3074	161

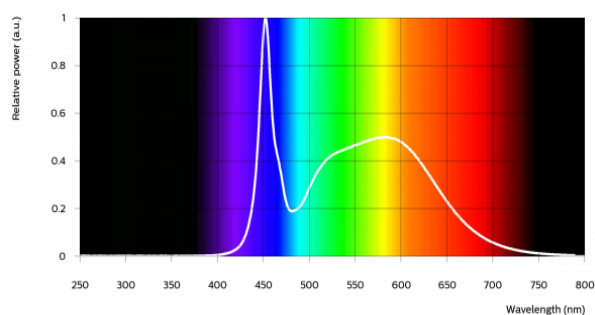


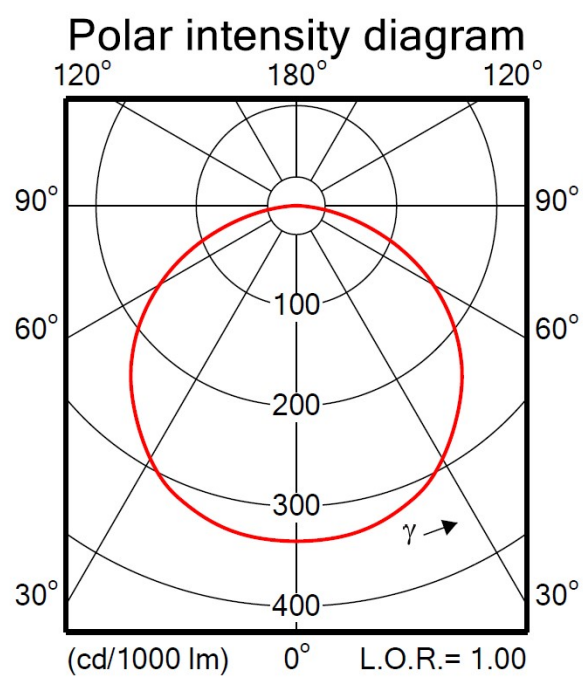
Fortimo LED Line 1ft MF 850 3R HV5B

Parameter	Min	Typ	Max	Unit
Luminous flux	1088	1100	1147	lm
Efficacy		191		lm/W
Correlated color temperature (CCT)		5000		K
Color coordinates (CIEx, CIEy)		(0.341, 0.349)		-
Color consistency			3	SDCM
CRI	80			
R9	0			
Photometric code		850/369		
Photobiological safety			RG1 unlimited	

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

Operation point	850	lm	lm/W
80% I-nom 154mA	Tc 25 °C	898	196
	Tc-nom 40 °C	884	194
	Tc-max 80 °C	837	187
I-nom 193mA	Tc 25 °C	1118	193
	Tc-nom 40 °C	1100	191
	Tc-max 80 °C	1042	184
I-max 600mA	Tc 25 °C	3305	170
	Tc-nom 40 °C	3250	168
	Tc-max 80 °C	3074	161





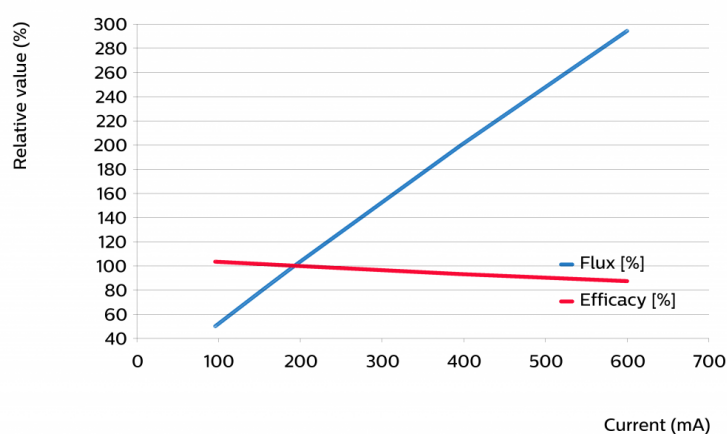
Electrical characteristics

Parameter	Min	Typ	Max	Unit
Forward voltage	28.7	29.8	30.4	V
Power consumption	5.54	5.75	5.87	W = kWh/1000h
Number of modules in series per chain			13	
Number of modules in parallel			1	

Tuning information

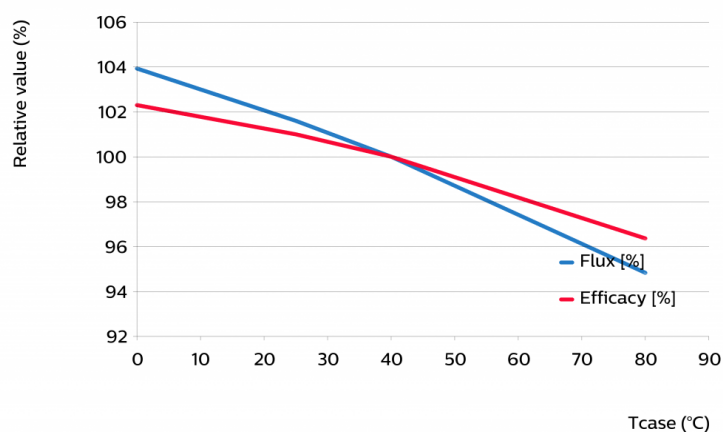
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
600	294	87
396	199	93
193	100	100
154	80	101
96	50	103



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

Tc [°C]	Flux [%]	Efficacy [%]
80	95	96
40	100	100
25	102	101
0	104	102



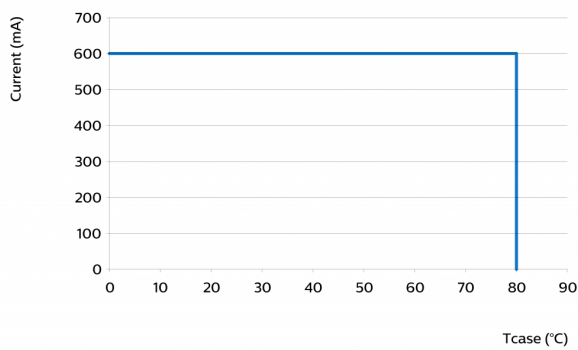
Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% Inom=154.4mA	Tc=25°C	>60	>60	>60	>60	>60	>60	>60	>60	>60
	Tc_nom=40°C	>60	>60	>60	>60	>60	>60	60	58	57
	Tc_life=80°C	>60	>60	>60	58	56	55	27	27	26
Inom=193mA	Tc=25°C	>60	>60	>60	>60	>60	>60	>60	>60	>60
	Tc_nom=40°C	>60	>60	>60	>60	>60	>60	59	57	56
	Tc_life=80°C	>60	>60	>60	57	55	55	27	26	26
Ilife=600mA	Tc=25°C	>60	>60	>60	>60	>60	>60	>60	>60	>60
	Tc_nom=40°C	>60	>60	>60	>60	>60	>60	47	46	45
	Tc_life=80°C	>60	>60	>60	46	44	44	21	21	21

Lifetime

Parameter	Value	Unit
M70F50 nominal	>60000	hours
M70F50 life	>60000	hours

Performance Window

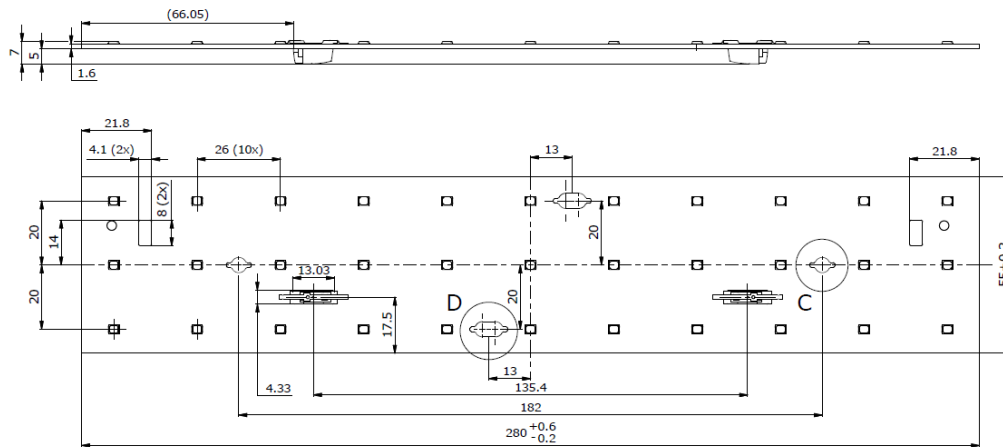


Wiring

Specification item	Value	Unit	Condition
Input wire cross-section	0.2...0.75	mm ²	solid wire
	18...24	AWG	solid wire
Input wire strip length	7...9	mm	
Input wire cross-section	0.2...0.5	mm ²	stranded wire
	20...24	AWG	stranded wire
Input wire strip length	7...9	mm	

Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	279.8	280	280.6	mm
Width	54.8	55	55.6	mm
Height PCB		1.6		mm
Height total		7		mm
Product mass		50		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		600	mA
Case temperature (Tc-max)		80	°C
ESD (direct contact)	8		kV
Working voltage		420	V _{dc}

Application information

Certificates and Standards

CE
ENEC
ENEC+

Environmental

RoHS/REACH

Application

Dimming	Yes
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