

PHILIPS

Fortimo

LED

Fortimo LED Line 2ft MF
9xx 3R HV5



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 2ft MF 930 3R HV5	8719514 391574 00	9290 029 26406	60
Fortimo LED Line 2ft MF 940 3R HV5	8719514 391598 00	9290 029 26506	60

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Line 2ft MF 9xx 3R HV5	209	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

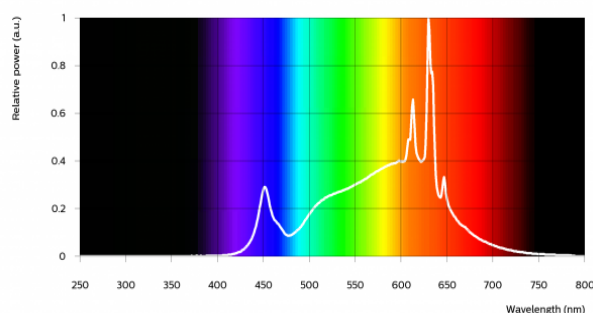
Optical characteristics - table per color (CCT)

Fortimo LED Line 2ft MF 930 3R HV5

Parameter	Min	Typ	Max	Unit
Luminous flux	2025	2060	2197	lm
Efficacy		162		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.434, 0.403)		-
Color consistency			3	SDCM
CRI	90			
R9	50			
Photometric code		930/369		
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	930	lm	lm/W
80% I-nom 167mA	Tc 25 °C	1689	167
	Tc-nom 40 °C	1660	165
	Tc-max 80 °C	1565	157
I-nom 209mA	Tc 25 °C	2096	164
	Tc-nom 40 °C	2060	162
	Tc-max 80 °C	1942	155
I-max 600mA	Tc 25 °C	5660	144
	Tc-nom 40 °C	5559	142
	Tc-max 80 °C	5232	135

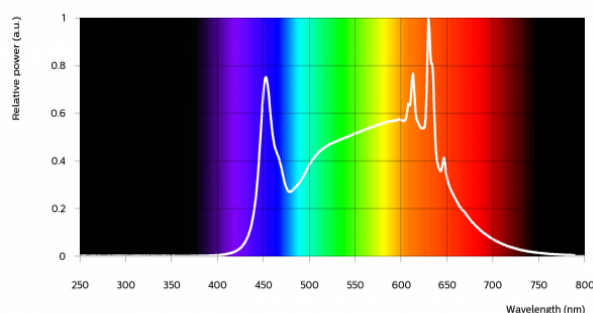


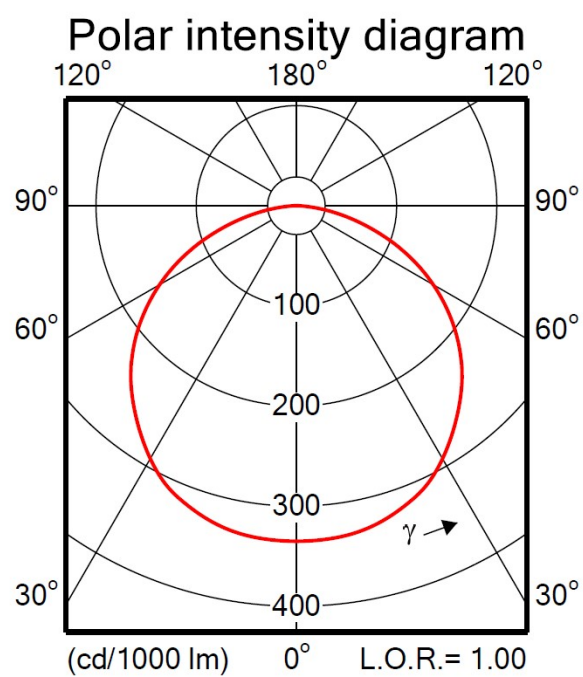
Fortimo LED Line 2ft MF 940 3R HV5

Parameter	Min	Typ	Max	Unit
Luminous flux	2165	2200	2338	lm
Efficacy		173		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.380, 0.380)		-
Color consistency			3	SDCM
CRI	90			
R9	50			
Photometric code		940/369		
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	940	lm	lm/W
80% I-nom 167mA	Tc 25 °C	1804	178
	Tc-nom 40 °C	1772	176
	Tc-max 80 °C	1671	168
I-nom 209mA	Tc 25 °C	2238	175
	Tc-nom 40 °C	2200	173
	Tc-max 80 °C	2074	165
I-max 600mA	Tc 25 °C	6046	154
	Tc-nom 40 °C	5938	152
	Tc-max 80 °C	5589	145





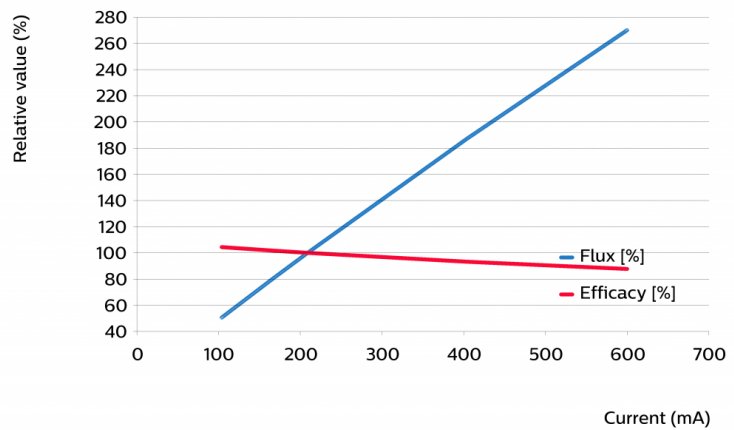
Electrical characteristics

Parameter	Min	Typ	Max	Unit
Forward voltage	58.7	60.9	62.1	V
Power consumption	12.3	12.7	13.0	W = kWh/1000h
Number of modules in series per chain			6	
Number of modules in parallel			1	

Tuning information

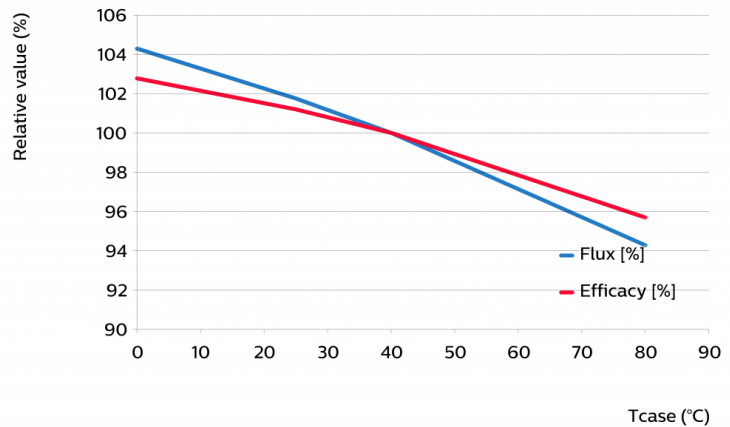
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
600	270	88
404	187	93
209	100	100
167	80	102
104	51	104



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

Tc [°C]	Flux [%]	Efficacy [%]
80	94	96
40	100	100
25	102	101
0	104	103



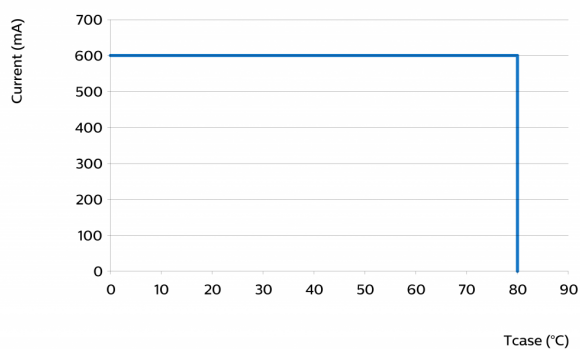
Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% Inom=167.2mA	Tc=25°C	>60	>60	>60	>60	>60	>60	>60	>60	>60
	Tc_nom=40°C	>60	>60	>60	>60	>60	>60	58	57	56
	Tc_life=80°C	>60	>60	>60	>60	>60	>60	38	37	37
Inom=209mA	Tc=25°C	>60	>60	>60	>60	>60	>60	>60	>60	>60
	Tc_nom=40°C	>60	>60	>60	>60	>60	>60	56	55	54
	Tc_life=80°C	>60	>60	>60	>60	>60	>60	37	36	35
Ilife=600mA	Tc=25°C	>60	>60	>60	>60	>60	>60	54	53	52
	Tc_nom=40°C	>60	>60	>60	>60	>60	>60	46	44	44
	Tc_life=80°C	>60	>60	>60	>60	>60	>60	30	29	29

Lifetime

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

Performance Window

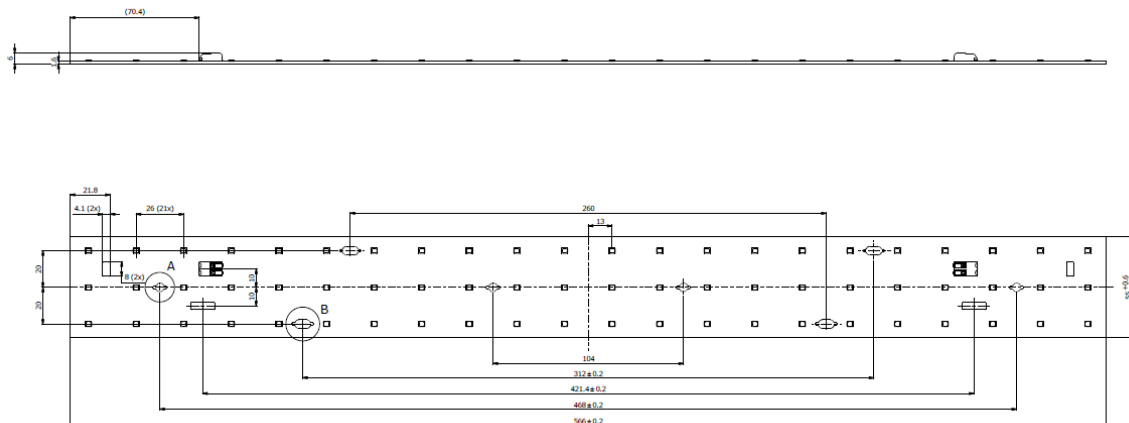


Wiring

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

Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	565.8	566	566.2	mm
Width	54.8	55	55.6	mm
Height PCB		1.6		mm
Height total		6		mm
Product mass		100		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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