

PHILIPS

Fortimo

LED

Fortimo LED Line 2ft MF
8xx 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 830 3R HV5	8719514 391475 00	9290 029 25906	60
Fortimo LED Line 2ft MF 835 3R HV5	8719514 391499 00	9290 029 26006	60
Fortimo LED Line 2ft MF 840 3R HV5	8719514 391512 00	9290 029 26106	60
Fortimo LED Line 2ft MF 850 3R HV5	8719514 391536 00	9290 029 26206	60
Fortimo LED Line 2ft MF 865 3R HV5	8719514 391550 00	9290 029 26306	60

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Line 2ft MF 8xx 3R HV5	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)

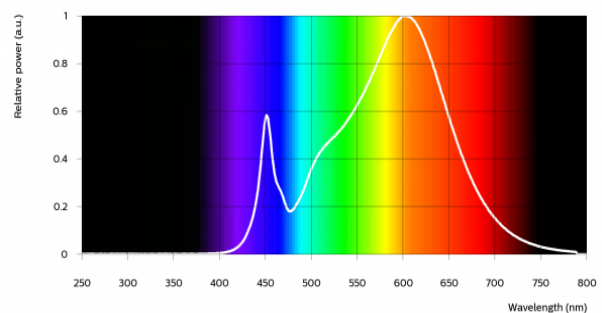
Fortimo LED Line 2ft MF 830 3R HV5

Parameter	Min	Typ	Max	Unit
Luminous flux	2086	2110	2204	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	1722	188
	Tc-nom 40 °C	1695	186
	Tc-max 80 °C	1608	179
I-nom 193mA	Tc 25 °C	2144	185
	Tc-nom 40 °C	2110	183
	Tc-max 80 °C	2001	177
I-max 600mA	Tc 25 °C	6310	162
	Tc-nom 40 °C	6208	161
	Tc-max 80 °C	5879	154



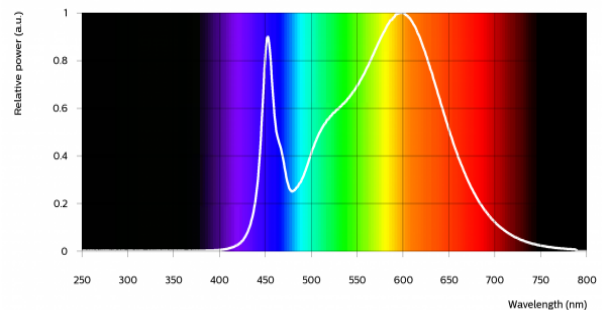
Fortimo LED Line 2ft MF 835 3R HV5

Parameter	Min	Typ	Max	Unit
Luminous flux	2116	2140	2234	lm
Efficacy		186		lm/W
Correlated color temperature (CCT)		3500		K
Color coordinates (CIEx, CIEy)		(0.404, 0.390)		-
Color consistency			3	SDCM
CRI	80			
R9	0			
Photometric code		835/369		
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	835	lm	lm/W
80% I-nom 154mA	Tc 25 °C	1747	191
	Tc-nom 40 °C	1719	189
	Tc-max 80 °C	1629	182
I-nom 193mA	Tc 25 °C	2175	188
	Tc-nom 40 °C	2140	186
	Tc-max 80 °C	2028	179
I-max 600mA	Tc 25 °C	6415	165
	Tc-nom 40 °C	6309	163
	Tc-max 80 °C	5971	157

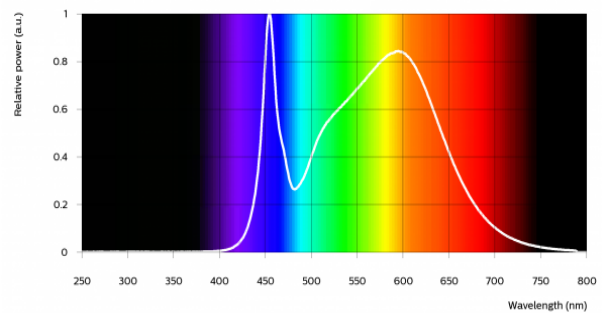


Fortimo LED Line 2ft MF 840 3R HV5

Parameter	Min	Typ	Max	Unit
Luminous flux	2176	2200	2294	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	1797	196
	Tc-nom 40 °C	1767	194
	Tc-max 80 °C	1674	187
I-nom 193mA	Tc 25 °C	2237	193
	Tc-nom 40 °C	2200	191
	Tc-max 80 °C	2083	184
I-max 600mA	Tc 25 °C	6611	170
	Tc-nom 40 °C	6499	168
	Tc-max 80 °C	6147	161

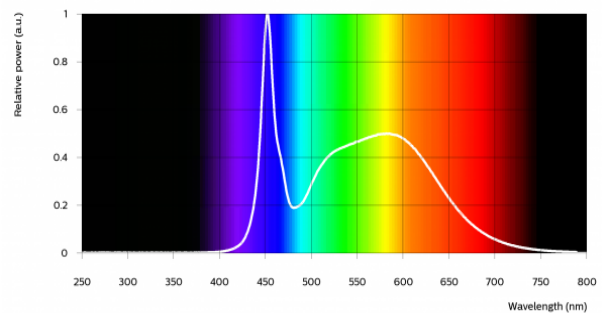


Fortimo LED Line 2ft MF 850 3R HV5

Parameter	Min	Typ	Max	Unit
Luminous flux	2176	2200	2294	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	1797	196
	Tc-nom 40 °C	1767	194
	Tc-max 80 °C	1674	187
I-nom 193mA	Tc 25 °C	2237	193
	Tc-nom 40 °C	2200	191
	Tc-max 80 °C	2083	184
I-max 600mA	Tc 25 °C	6611	170
	Tc-nom 40 °C	6499	168
	Tc-max 80 °C	6147	161

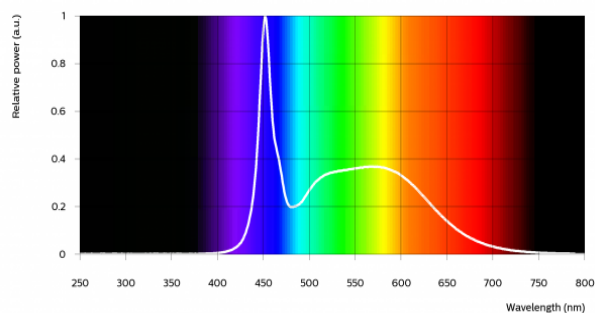


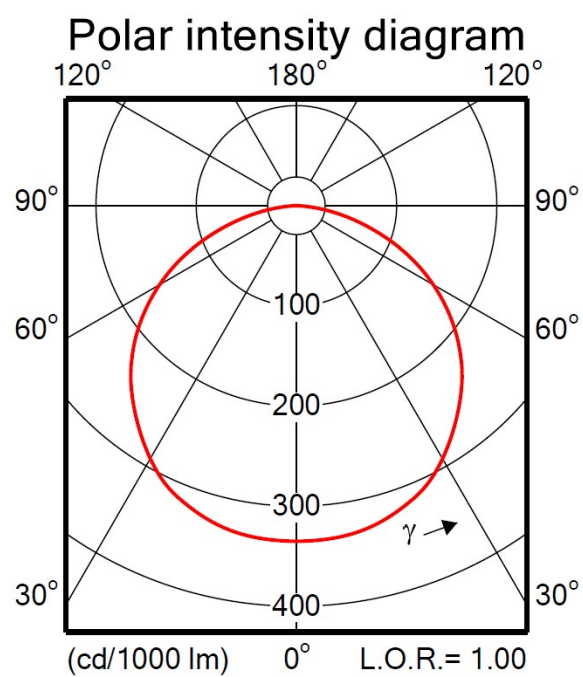
Fortimo LED Line 2ft MF 865 3R HV5

Parameter	Min	Typ	Max	Unit
Luminous flux	2116	2130	2234	lm
Efficacy		185		lm/W
Correlated color temperature (CCT)		6500		K
Color coordinates (CIEx, CIEy)		(0.308, 0.320)		-
Color consistency			3	SDCM
CRI	80			
R9	0			
Photometric code		865/369		
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	865	lm	lm/W
80% I-nom 154mA	Tc 25 °C	1743	190
	Tc-nom 40 °C	1712	188
	Tc-max 80 °C	1614	180
I-nom 193mA	Tc 25 °C	2169	188
	Tc-nom 40 °C	2130	185
	Tc-max 80 °C	2008	177
I-max 600mA	Tc 25 °C	6394	165
	Tc-nom 40 °C	6277	163
	Tc-max 80 °C	5908	155





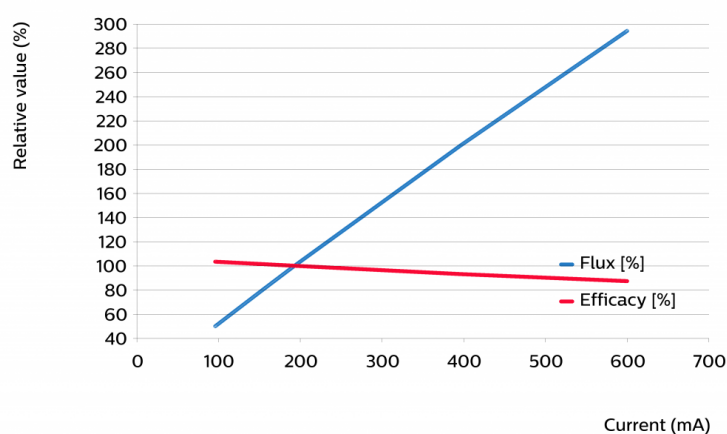
Electrical characteristics

Parameter	Min	Typ	Max	Unit
Forward voltage	57.5	59.6	60.8	V
Power consumption	11.1	11.5	11.7	W = kWh/1000h
Number of modules in series per chain			6	
Number of modules in parallel			1	

Tuning information

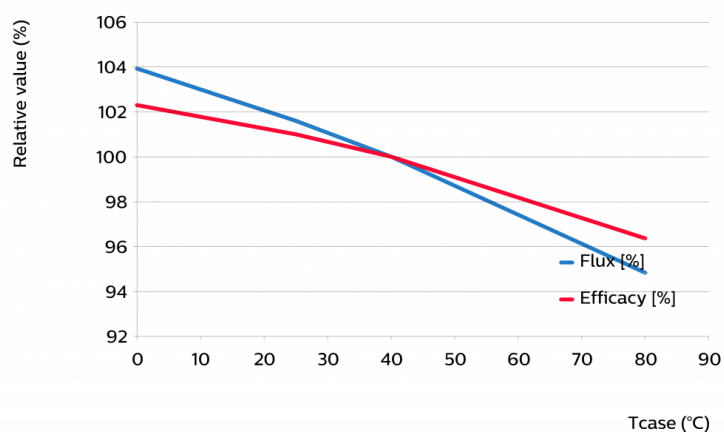
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
600	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



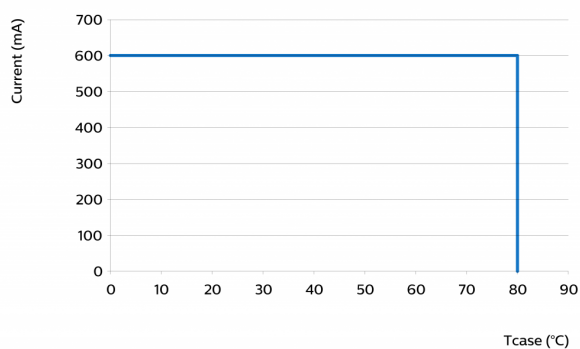
Lumen maintenance

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

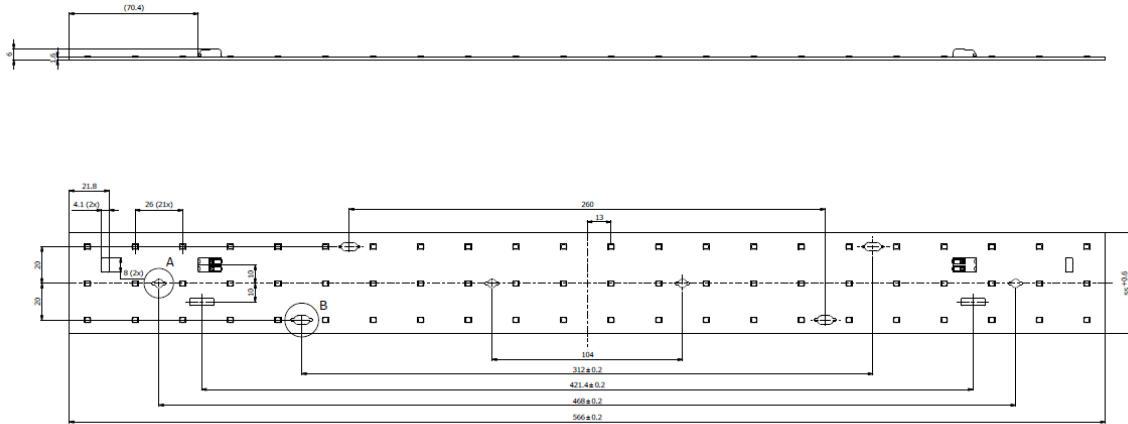


Wiring

Specification item	Value	Unit	Condition
Input wire cross-section	0.2...0.75	mm ²	solid wire, 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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