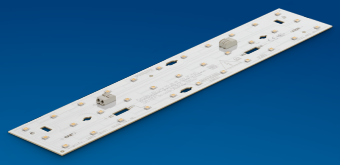
PHILIPS

Fortimo

LED

Fortimo LED Line VO 1ft
MF 8xx 3R HV5



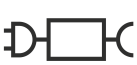
Datasheet

Upgraded with the latest LED technology, the Fortimo LED Line 3R VO provides high quality white light on a well-known footprint. From three rows (3R) of LEDs, the modules provide a high energy efficiency. Available in two lengths and CCT's, this product provides good specifications for a competitive price.

Key features and benefits

- Latest LED technology providing an improved module efficiency
- Long life time: >50,000 hours
- High quality white light: CRI80
- Excellent color consistency of 3 SDCM
- Available color temperatures: 3000K / 4000K
- Two module lengths: 1ft/280mm or 2ft/560mm
- One lumen package: MF (1100lm/ft)
- High voltage (HV)
- Five year system warranty

March 2022



Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo LED Line VO 1ft MF 830 3R HV5	8719514 390553 00	9290 029 26606	60
Fortimo LED Line VO 1ft MF 840 3R HV5	8719514 390577 00	9290 029 26706	60

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Line VO 1ft MF 8xx 3R HV5	203	600	600	mA

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T_c (case temperature at T_c point)	45	85	90	°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

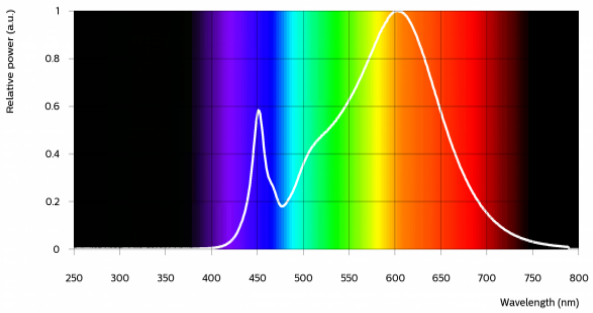
Optical characteristics - table per color (CCT)

Fortimo LED Line VO 1ft MF 830 3R HV5

Parameter	Min	Typ	Max	Unit
Luminous flux	1041	1050	1115	lm
Efficacy		163		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.433, 0.403)		-
Color consistency			3	SDCM
CRI	80			
R9	0			
Photometric code		830/369		
Photobiological safety			RG1 unlimited	

Measurement precision ± 5% for the flux data and ± 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 162mA	Tc 25 °C	869	169
	Tc-nom 45 °C	850	167
	Tc-max 90 °C	795	159
I-nom 203mA	Tc 25 °C	1073	165
	Tc-nom 45 °C	1050	163
	Tc-max 90 °C	982	155
I-max 600mA	Tc 25 °C	2874	135
	Tc-nom 45 °C	2810	132
	Tc-max 90 °C	2619	125

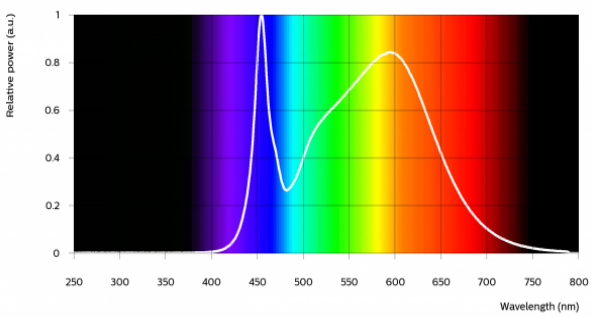


Fortimo LED Line VO 1ft MF 840 3R HV5

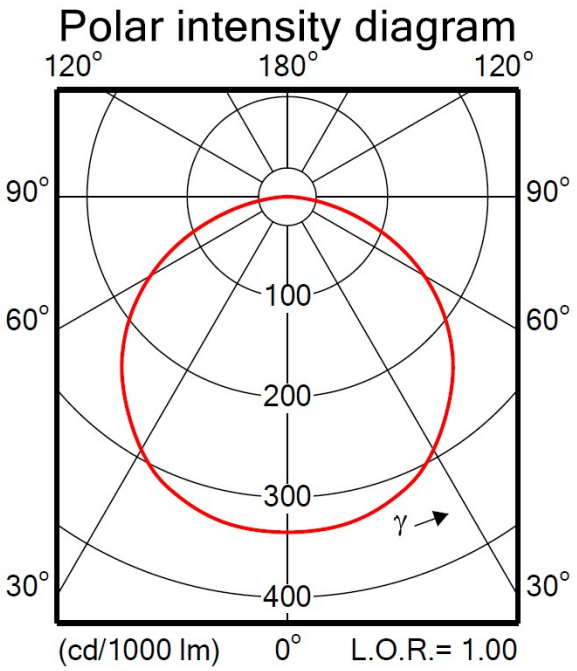
Parameter	Min	Typ	Max	Unit
Luminous flux	1091	1100	1164	lm
Efficacy		171		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.380, 0.380)		-
Color consistency			3	SDCM
CRI	80			
R9	0			
Photometric code		840/369		
Photobiological safety			RG1 unlimited	

Measurement precision ± 5% for the flux data and ± 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 162mA	Tc 25 °C	911	178
	Tc-nom 45 °C	890	175
	Tc-max 90 °C	830	167
I-nom 203mA	Tc 25 °C	1126	174
	Tc-nom 45 °C	1100	171
	Tc-max 90 °C	1026	163
I-max 600mA	Tc 25 °C	3047	142
	Tc-nom 45 °C	2974	140
	Tc-max 90 °C	2764	132



Beam shape


Polar intensity diagram
120°
180°
120°
90°
90°
60°
60°
30°
30°
100
200
300
400
γ
(cd/1000 lm)
0°
L.O.R.= 1.00

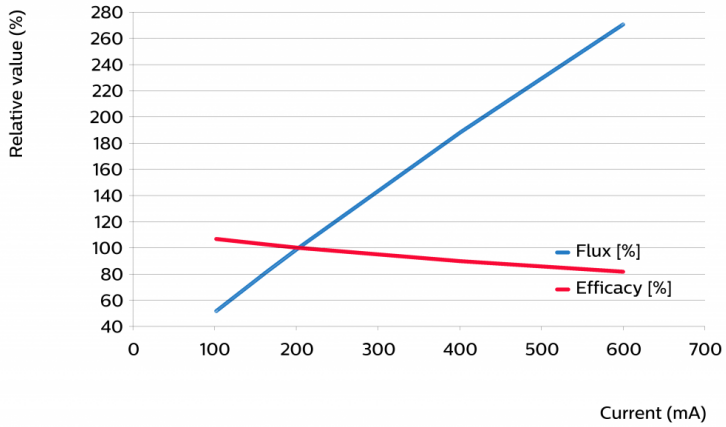
Electrical characteristics

Parameter	Min	Typ	Max	Unit
Forward voltage	30.6	31.7	32.3	V
Power consumption	6.20	6.44	6.56	W = kWh/1000h
Number of modules in series per chain			10	
Number of modules in parallel			1	

Tuning information

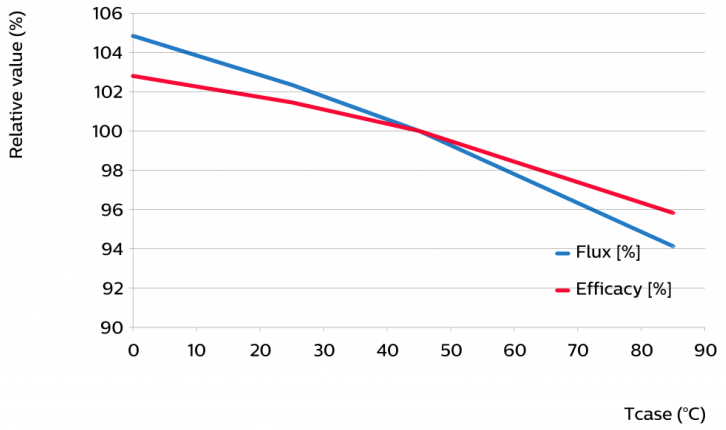
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
600	270	82
401	188	90
203	100	100
162	81	103
102	52	107



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

Tc [°C]	Flux [%]	Efficacy [%]
85	94	96
45	100	100
25	102	101
0	105	103



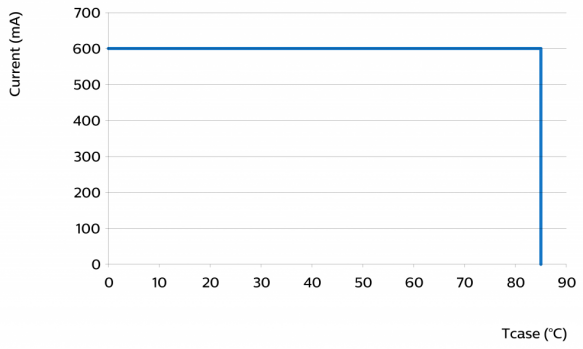
Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% Inom=162.4mA	Tc=25°C	>63	>63	>63	>63	>63	>63	>63	>63	>63
	Tc_nom=45°C	>63	>63	>63	>63	>63	>63	>63	>63	>63
	Tc_life=85°C	>63	>63	>63	>63	>63	>63	50	49	48
Inom=203mA	Tc=25°C	>63	>63	>63	>63	>63	>63	>63	>63	>63
	Tc_nom=45°C	>63	>63	>63	>63	>63	>63	>63	>63	>63
	Tc_life=85°C	>63	>63	>63	>63	>63	>63	49	47	47
Ilife=600mA	Tc=25°C	>63	>63	>63	>63	>63	>63	>63	>63	>63
	Tc_nom=45°C	>63	>63	>63	>63	>63	>63	59	57	57
	Tc_life=85°C	>63	>63	>63	>63	>63	>63	39	38	37

Lifetime

Parameter	Value	Unit
M70F50 nominal	>63000	hours
M70F50 life	>63000	hours

Performance Window

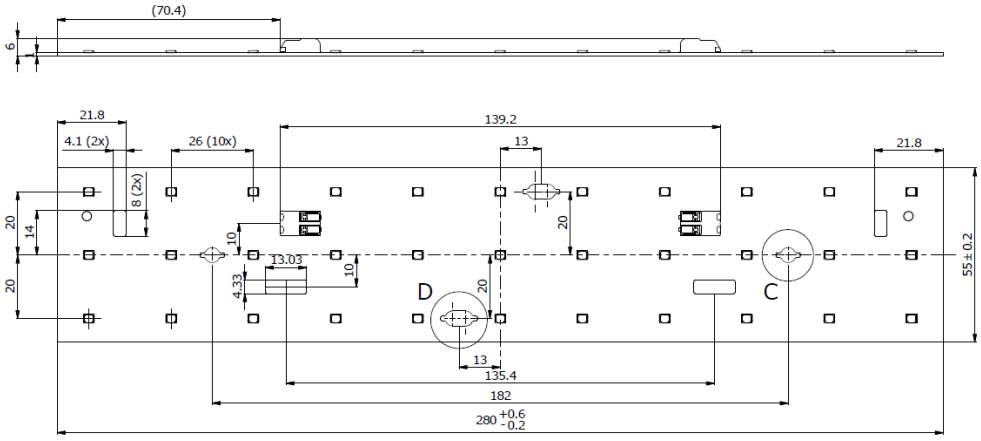


Wiring

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	279.8	280	280.6	mm
Width	54.8	55	55.2	mm
Height PCB		1		mm
Height total		6		mm
Product mass		33		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		600	mA
Case temperature (Tc-max)		90	°C
ESD (direct contact)	8		kV
Working voltage		350	V_{dc}

Application information

Certificates and Standards
CE
ENEC
ENEC+

Environmental
RoHS/REACH

Application	
Dimming	Yes

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