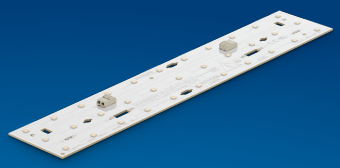
PHILIPS

Fortimo

LED

Fortimo LED Line 1ft HF 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 1ft HF 830 3R HV5	8719514 390683 00	9290 029 27006	60
Fortimo LED Line 1ft HF 840 3R HV5	8719514 390706 00	9290 029 27106	60
Fortimo LED Line 1ft HF 850 3R HV5	8719514 390720 00	9290 029 27206	60
Fortimo LED Line 1ft HF 865 3R HV5	8719514 390744 00	9290 029 27306	60

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Line 1ft HF 8xx 3R HV5	363	720	900	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

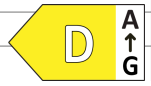
** Value at which life time is specified

*** Maximum value for safe operation, do not operate above this value

Optical characteristics - table per color (CCT)

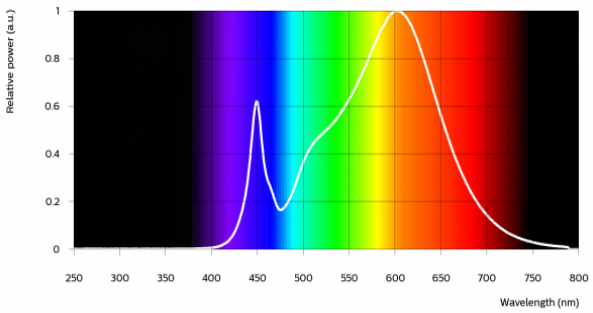
Fortimo LED Line 1ft HF 830 3R HV5

Parameter	Min	Typ	Max	Unit
Luminous flux	1846	1860	2018	lm
Efficacy		164		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.430, 0.400)		-
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 290mA	Tc 25 °C	1532	171
	Tc-nom 45 °C	1504	169
	Tc-max 95 °C	1404	160
I-nom 363mA	Tc 25 °C	1894	166
	Tc-nom 45 °C	1860	164
	Tc-max 95 °C	1735	156
I-max 900mA	Tc 25 °C	4399	141
	Tc-nom 45 °C	4317	140
	Tc-max 95 °C	4017	132

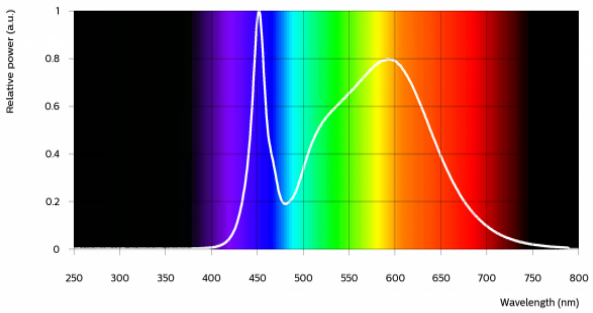


Fortimo LED Line 1ft HF 840 3R HV5

Parameter	Min	Typ	Max	Unit
Luminous flux	1986	2000	2029	lm
Efficacy		177		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.379, 0.375)		-
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 290mA	Tc 25 °C	1649	183
	Tc-nom 45 °C	1618	181
	Tc-max 95 °C	1505	171
I-nom 363mA	Tc 25 °C	2039	179
	Tc-nom 45 °C	2000	177
	Tc-max 95 °C	1860	167
I-max 900mA	Tc 25 °C	4734	151
	Tc-nom 45 °C	4640	149
	Tc-max 95 °C	4301	140

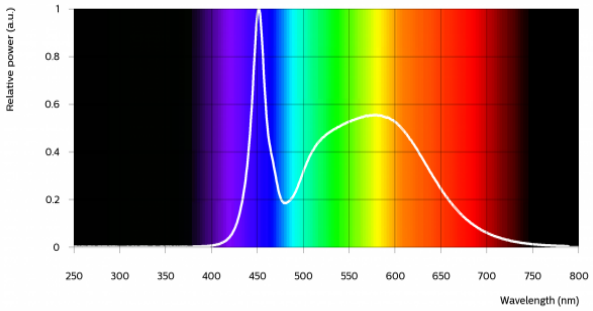


Fortimo LED Line 1ft HF 850 3R HV5

Parameter	Min	Typ	Max	Unit
Luminous flux	1986	2000	2029	lm
Efficacy		177		lm/W
Correlated color temperature (CCT)		5000		K
Color coordinates (CIEx, CIEy)		(0.343, 0.355)		-
Color consistency			3	SDCM
CRI	80			
R9	0			
Photometric code		850/369		
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	850	lm	lm/W
80% I-nom 290mA	Tc 25 °C	1649	183
	Tc-nom 45 °C	1618	181
	Tc-max 95 °C	1505	171
I-nom 363mA	Tc 25 °C	2039	179
	Tc-nom 45 °C	2000	177
	Tc-max 95 °C	1860	167
I-max 900mA	Tc 25 °C	4734	151
	Tc-nom 45 °C	4640	149
	Tc-max 95 °C	4301	140

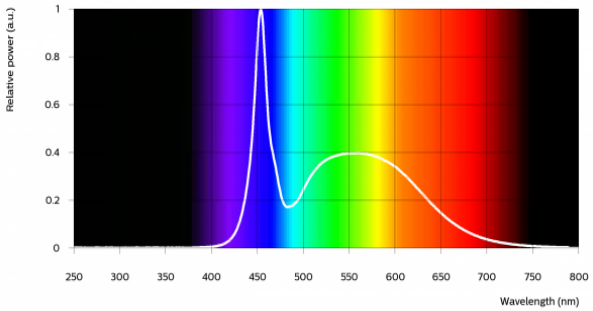


Fortimo LED Line 1ft HF 865 3R HV5

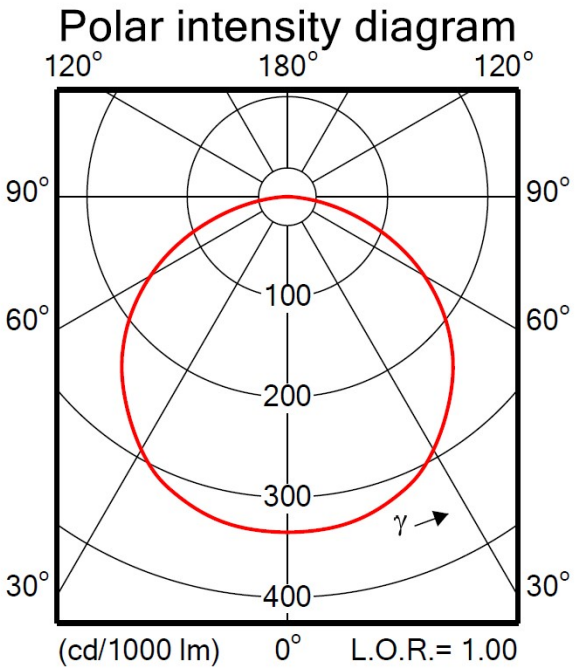
Parameter	Min	Typ	Max	Unit
Luminous flux	1956	1970	2029	lm
Efficacy		174		lm/W
Correlated color temperature (CCT)		6500		K
Color coordinates (CIEx, CIEy)		(0.310, 0.326)		-
Color consistency			3	SDCM
CRI	80			
R9	0			
Photometric code		865/369		
Photobiological safety			RG1 unlimited	

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	865	lm	lm/W
80% I-nom 290mA	Tc 25 °C	1627	181
	Tc-nom 45 °C	1593	179
	Tc-max 95 °C	1473	168
I-nom 363mA	Tc 25 °C	2012	177
	Tc-nom 45 °C	1970	174
	Tc-max 95 °C	1820	164
I-max 900mA	Tc 25 °C	4671	150
	Tc-nom 45 °C	4570	148
	Tc-max 95 °C	4209	138



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

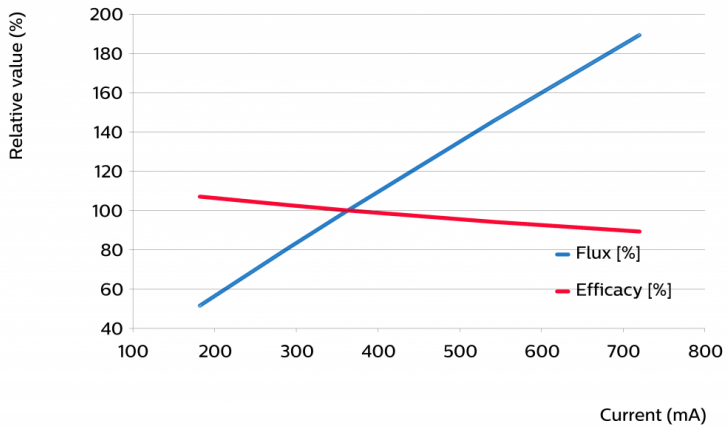
Electrical characteristics

Parameter	Min	Typ	Max	Unit
Forward voltage	30.1	31.2	31.8	V
Power consumption	10.9	11.3	11.6	W = kWh/1000h
Number of modules in series per chain			12	
Number of modules in parallel			1	

Tuning information

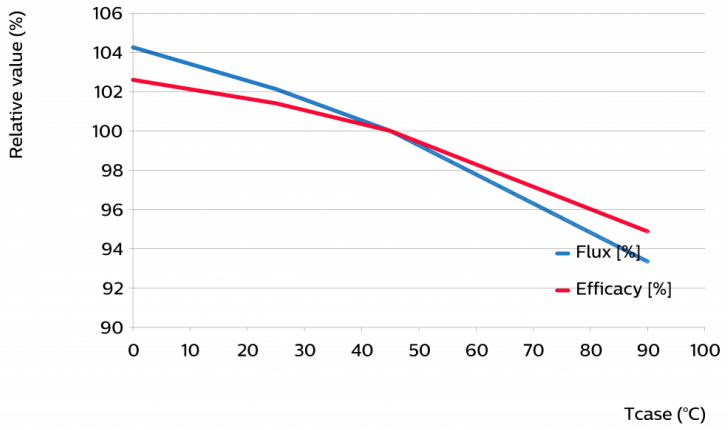
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
720	189	89
542	146	94
363	100	100
290	81	103
182	52	107



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

Tc [°C]	Flux [%]	Efficacy [%]
90	93	95
45	100	100
25	102	101
0	104	103



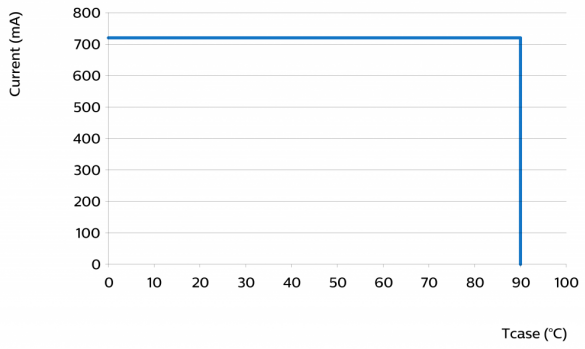
Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% Inom=290.4mA	Tc=25°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc_nom=45°C	>100	>100	>100	>100	>100	>100	75	73	72
	Tc_life=90°C	>100	80	61	99	80	61	48	46	45
Inom=363mA	Tc=25°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc_nom=45°C	>100	>100	>100	>100	>100	>100	75	73	72
	Tc_life=90°C	>100	80	61	99	80	61	48	46	45
Ilife=600mA	Tc=25°C	>100	>100	>100	>100	>100	>100	86	83	82
	Tc_nom=45°C	>100	>100	>100	>100	>100	>100	68	66	65
	Tc_life=90°C	>100	80	61	90	80	61	43	42	41

Lifetime

Parameter	Value	Unit
M70F50 nominal	>100000	hours
M70F50 life	>100000	hours

Performance Window

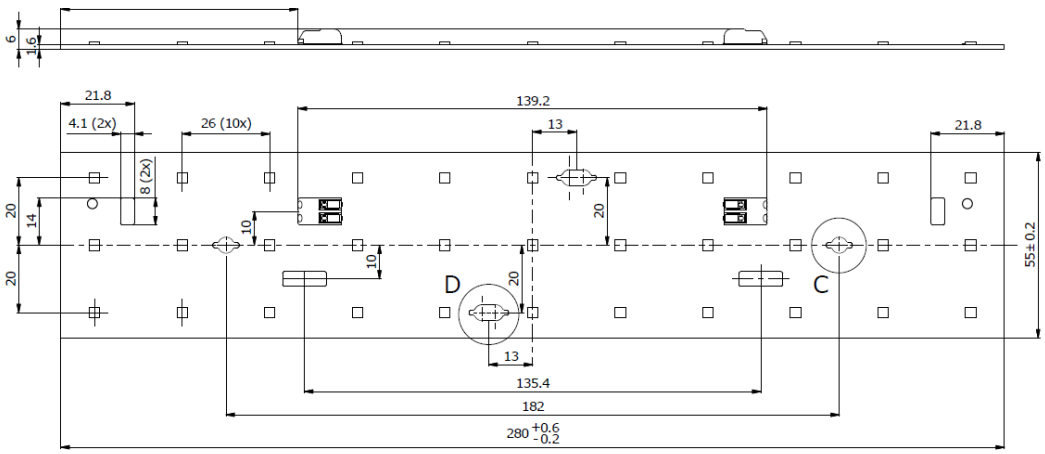


Wiring

Specification item	Value	Unit	Condition
Input wire cross-section	0.2…0.75	mm²	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		1.6		mm
Height total		6		mm
Product mass		53		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		900	mA
Case temperature (Tc-max)		95	°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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