

PHILIPS

Fortimo

LED

Fortimo LED Strip 1ft MF
840 UHE FC HV6



Datasheet

The Ultra High Efficiency (UHE) range of modules in our popular Fortimo LED Strip product family offers the highest efficiency available. This performance is validated on module level in real application conditions and allows for luminaires to achieve the highest energy savings. Offered in Mid Flux (1100 lumen/ft), this product is positioned for a broad range of applications from office to retail.

Key features and benefits

- Energy label 'A'
- State of the art LED module with average efficacy of up to 234 lm/W
- Typical efficacy of 229 lm/W @1100 lm/Ft
- Compliant with Zhaga standards
- Long life-time: > 100,000 hours
- Good color rendering (CRI80) and color consistency (3 SDCM)
- Based on the popular Fortimo LED Strip form factor (20 mm wide), with lengths of 1ft and 2ft
- Available in 4000K
- Wide temperature (Tc) range from -40°C up to +85°C
- Five year system warranty

April 2024



Ordering data

Commercial product name	12NC	Box quantity
Fortimo LED Strip 1ft MF 840 UHE FC HV6	9290 029 64606	168

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Strip 1ft MF 840 UHE FC HV6	122	400	400	mA

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T _c (case temperature at T _c point)	35	65	85	°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

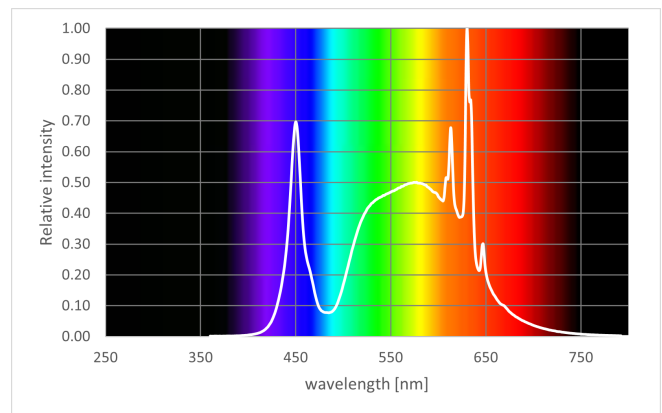
Optical characteristics - table per color (CCT)

Fortimo LED Strip 1ft MF 840 UHE FC HV6

Parameter	Typical @ Tc = 25 °C	Typical @ Tc = 35 °C	Average @ Tc = 35 °C	Unit
Luminous flux	1112	1100	1107	lm
Efficacy	233	229	234	lm/W
Correlated color temperature (CCT)	4000	4000	4000	K
Color coordinates (CIEx, CIEy)	(0.382, 0.382)	(0.384, 0.381)	(0.384, 0.381)	-
Color consistency	3	3	3	SDCM
CRI	80	80	80	
R9	0	0	0	
Radiation angle	120	120	120	deg
Photobiological safety	RG1 unlimited	RG1 unlimited	RG1 unlimited	
Energy label				

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 window	840	
	lm	lm/W
Min	Typ @Tc = 25 °C	230
	Typ @Tc = 35 °C	227
	Avg @Tc = 35 °C	227
Nominal	Typ @Tc = 25 °C	233
	Typ @Tc = 35 °C	229
	Avg @Tc = 35 °C	234
Max	Typ @Tc = 25 °C	247
	Typ @Tc = 35 °C	244
	Avg @Tc = 35 °C	244



Electrical characteristics

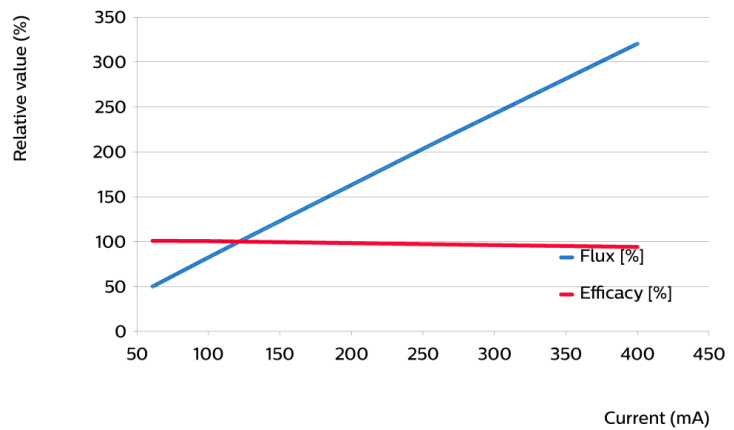
Parameter	Min	Typ	Max	Unit
Forward voltage	38.1	39.2	39.5	V
Power consumption	4.6	4.8	4.8	W = kWh/1000h
Number of modules in series per chain			6	
Number of modules in parallel			5	

Measurement precision for Vf +/- 3%. Measurement precision for power +/- 3.3%

Tuning information

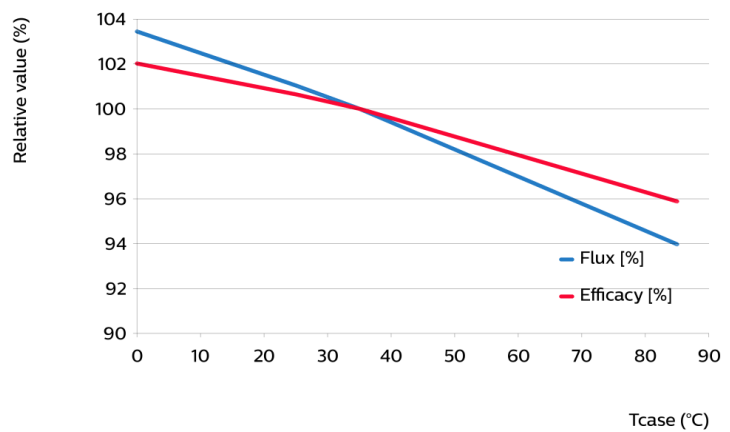
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
400	320	94
261	212	97
122	100	100
97	80	100
61	50	101



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

Tc [°C]	Flux [%]	Efficacy [%]
85	94	96
35	100	100
25	101	101
0	103	102



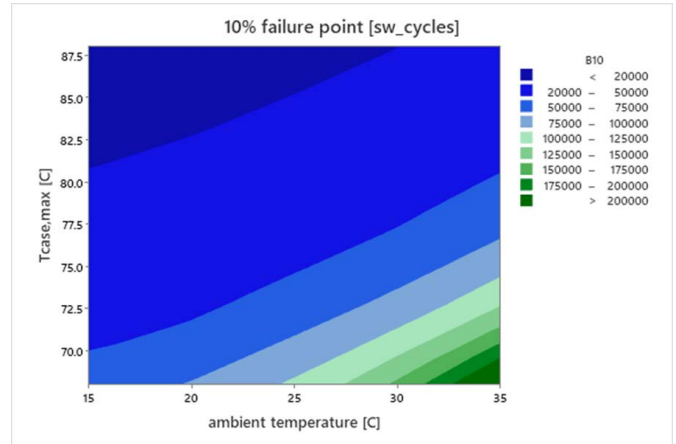
Product Quality

Lifetime

Parameter	Value	Unit
M80F50 @ nominal	>100000	hours
M80F50 @Tc life	>75000	hours

*Calculated based on Ta=15°C

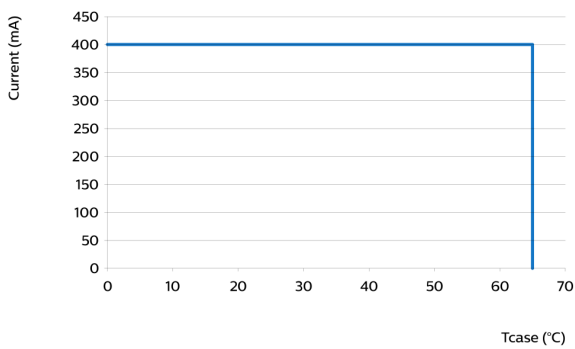
*Reference to the white paper from R&D/Research



Expected lumen maintenance

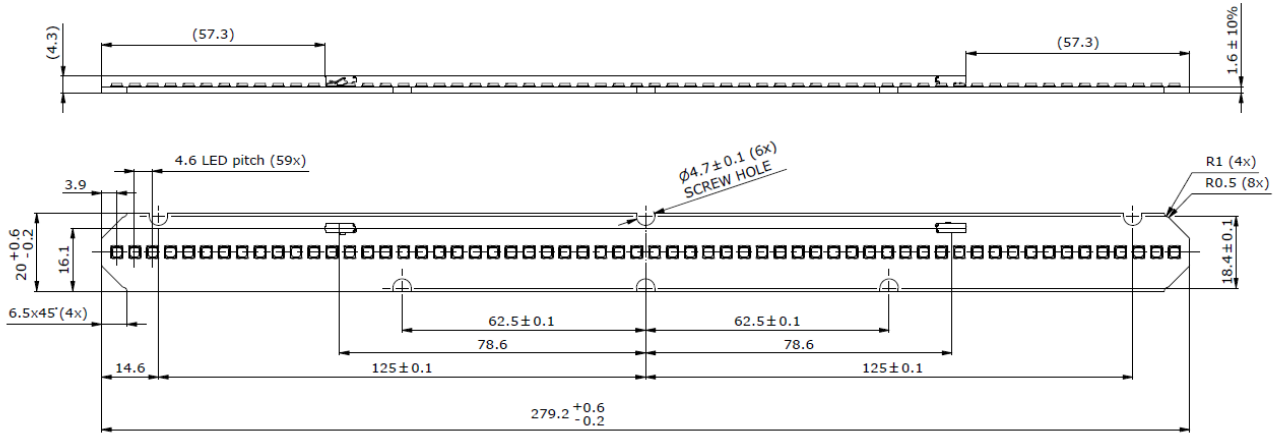
Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% Inom=96.8mA	Tc=25°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc_nom=35°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc_life=65°C	>100	>100	>100	>100	>100	>100	75	73	72
Inom=121mA	Tc=25°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc_nom=35°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc_life=65°C	>100	>100	>100	>100	>100	>100	75	73	72
Ilife=400mA	Tc=25°C	>100	>100	>100	>100	>100	>100	>100	>100	>100
	Tc_nom=35°C	>100	>100	>100	>100	>100	>100	94	92	91
	Tc_life=65°C	>100	>100	>100	>100	>100	>100	67	66	65

Performance Window



Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	279	279.2	279.8	mm
Width	18.8	20	20.2	mm
Height total		4.3		mm
Height PCB	1.44	1.6	1.76	mm
Product mass		19		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		400	mA
Case temperature (Tc-max)		85	°C
ESD (direct contact)	8		kV
Working voltage		350	V _{dc}
Ambient temperature	15	35	°C

Application information

Certificates and Standards

CE
ENEC
ENEC+

Environmental

RoHS/REACH

Application

Dimming

Yes



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