

**PHILIPS**

Fortimo

LED system

Strip Gen3 1 ft  
1100 lm 1R LV3



## Datasheet

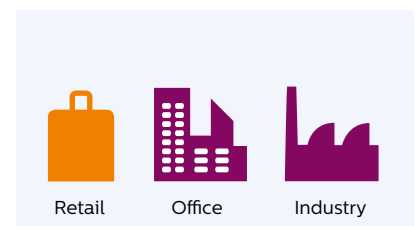
# Fortimo LED Strip Gen3

Fortimo LED Strip systems are ideal for use in designer or miniaturized, slim linear luminaires for architectural applications, which were not previously possible with fluorescent lighting or Fortimo LED Line.

### Key features and benefits

- State-of-the-art LED module efficiency of up to 165 lm/W
- Long life-time: >50,000 hours
- High color rendering (CRI >80 and >90)
- Excellent color consistency of 3 SDCM
- Variety of color temperatures (3000 K, 4000 K and 5000 K)
- Two lumen packages: 650 lm and 1100 lm per foot
- Tunable lumen output, efficacy and lifetime
- Wide case temperature (T<sub>c</sub>) range from -40 °C to +80 °C
- Push-in connectors enabling automated wiring
- Five year system warranty

### Suitable for:



## Ordering data

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Commercial product name	EOC	12NC
Fortimo LED Strip 1ft 1100lm 830 1R LV3	8718696 413630 00	92900 0922 706
Fortimo LED Strip 1ft 1100lm 840 1R LV3	8718696 413678 00	92900 0922 906
Fortimo LED Strip 1ft 1100lm 850 1R LV3	8718696 413692 00	92900 0923 006
Fortimo LED Strip 1ft 1100lm 940 1R LV3	8718696 413739 00	92900 0923 206

## Generic currents and case temperature

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Parameter	Nominal *	Life**	Max***	Unit
Tc (case temperature at Tc point)	45	65	80	°C
I (current through the LED module)	200	260	300	mA

\* Nominal value at which typical performance is specified.

\*\* Value at which lifetime is specified.

\*\*\* Maximum value for safe operations; do not operate above this value.

## Optical characteristics - table per CCT

### Fortimo LED Strip 1 ft 1100 lm 830 1R LV3

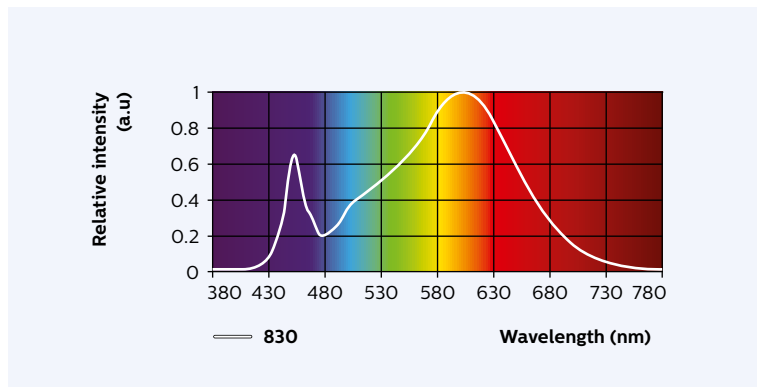
Parameter	Min	Typ	Max	Unit
Correlated color temperature (CCT) target		3000		K
Correlated color temperature (CCT) measured		3060		K
Color coordinates (CIEx, CIEy)		(0.4318, 0.4010)		-
CRI	80			-
Radiation angle		120		deg

Color consistency of 3 SDCM, averaged over the module.

Operation point	830	lm	lm/W
80% I-nom 160 mA	Tc 25 °C	892	164
	Tc-nom 45 °C	870	161
	Tc-life 65 °C	846	158
I-nom 200 mA	Tc 25 °C	1087	157
	Tc-nom 45 °C	<b>1060</b>	<b>155</b>
	Tc-life 65 °C	1031	152
I-life 260 mA	Tc 25 °C	1363	149
	Tc-nom 45 °C	1329	147
	Tc-life 65 °C	1293	144

Tolerance for flux data is ±7.5%.

Tolerance for efficacy data is ±10%.



### Fortimo LED Strip 1 ft 1100 lm 840 1R LV3

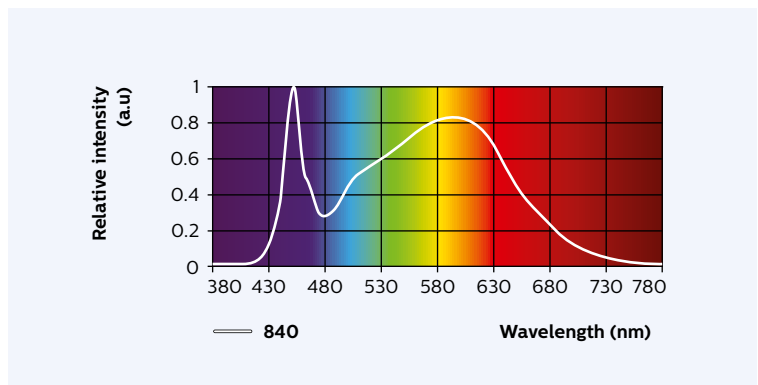
Parameter	Min	Typ	Max	Unit
Correlated color temperature (CCT) target		4000		K
Correlated color temperature (CCT) measured		4005		K
Color coordinates (CIEx, CIEy)		(0.3804, 0.3773)		-
CRI	80			-
Radiation angle		120		deg

Color consistency of 3 SDCM, averaged over the module.

Operation point	840	lm	lm/W
80% I-nom 160 mA	Tc 25 °C	925	169
	Tc-nom 45 °C	903	166
	Tc-life 65 °C	878	164
I-nom 200 mA	Tc 25 °C	1128	162
	Tc-nom 45 °C	<b>1100</b>	<b>160</b>
	Tc-life 65 °C	1070	157
I-life 260 mA	Tc 25 °C	1414	153
	Tc-nom 45 °C	1379	151
	Tc-life 65 °C	1342	149

Tolerance for flux data is ±7.5%.

Tolerance for efficacy data is ±10%.



## Fortimo LED Strip 1 ft 1100 lm 850 1R LV3

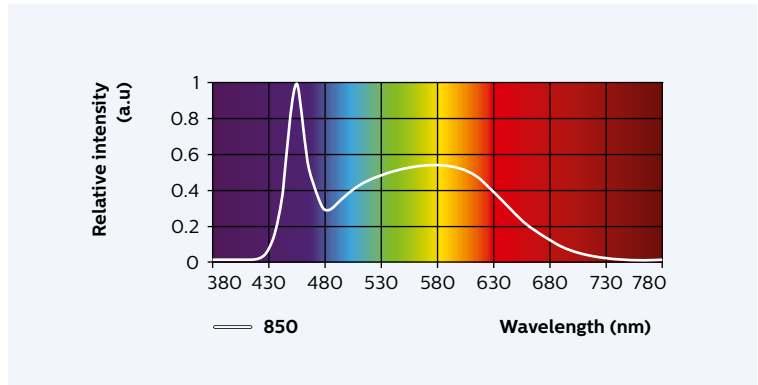
Parameter	Min	Typ	Max	Unit
Correlated color temperature (CCT) target		5000		K
Correlated color temperature (CCT) measured		5100		K
Color coordinates (CIEx, CIEy)		(0.3425, 0.3518)		-
CRI	80			-
Radiation angle		120		deg

Color consistency of 3 SDCM, averaged over the module.

Operation point	850	lm	lm/W
80% I-nom 160 mA	Tc 25 °C	942	172
	Tc-nom 45 °C	919	170
	Tc-life 65 °C	894	167
I-nom 200 mA	Tc 25 °C	1148	165
	Tc-nom 45 °C	<b>1120</b>	<b>163</b>
	Tc-life 65 °C	1090	160
I-life 260 mA	Tc 25 °C	1440	156
	Tc-nom 45 °C	1404	154
	Tc-life 65 °C	1367	152

Tolerance for flux data is ±7.5%.

Tolerance for efficacy data is ±10%.



## Fortimo LED Strip 1 ft 1100 lm 940 1R LV3

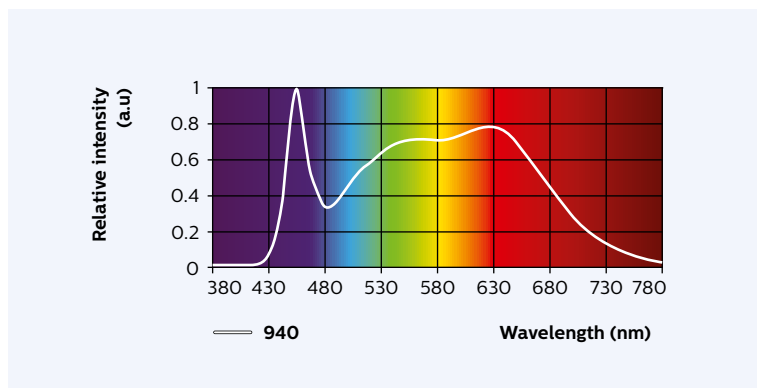
Parameter	Min	Typ	Max	Unit
Correlated color temperature (CCT) target		4000		K
Correlated color temperature (CCT) measured		3965		K
Color coordinates (CIEx, CIEy)		(0.3819, 0.3774)		-
CRI	90			-
Radiation angle		120		deg

Color consistency of 3 SDCM, averaged over the module.

Operation point	940	lm	lm/W
80% I-nom 160 mA	Tc 25 °C	765	140
	Tc-nom 45 °C	747	138
	Tc-life 65 °C	726	136
I-nom 200 mA	Tc 25 °C	933	135
	Tc-nom 45 °C	<b>910</b>	<b>133</b>
	Tc-life 65 °C	885	131
I-life 260 mA	Tc 25 °C	1170	128
	Tc-nom 45 °C	1141	126
	Tc-life 65 °C	1110	124

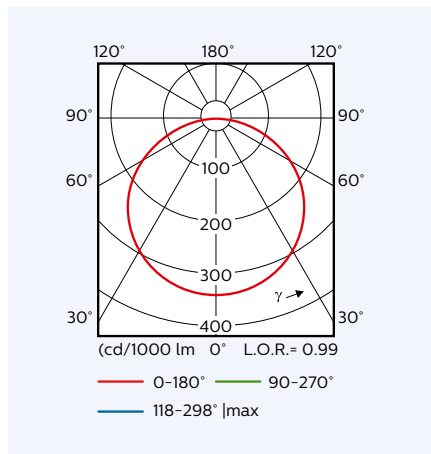
Tolerance for flux data is ±7.5%.

Tolerance for efficacy data is ±10%.



## Beam shape

The Philips Fortimo LED module generates a Lambertian beam shape, which is a pragmatic starting point for OEMs wishing to design secondary optics.



## Electrical characteristics

Parameter	Min	Typ	Max	Unit
Nominal current		200		mA
Forward voltage	32.6	34.2	35.3	V
Power consumption	6.5	6.8	7.1	W
Energy efficiency label		A++		
Minimum dimming for performance	10			%
Number of parallel modules per chain			5	

Note: Specifications stated at  $T_c \text{ nom} = 45^\circ\text{C}$  and  $I \text{ nom} = 200 \text{ mA}$ .

## Lifetime

Operation point	Lifetime x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% I-nom 160 mA	Tc 25 °C	>50	-	>50	>50	-	-	-	-	-
	Tc-nom 45 °C	>50	-	>50	>50	-	-	-	-	-
	Tc-life 65 °C	>50	-	>50	>50	-	-	-	-	-
I-nom 200 mA	Tc 25 °C	>50	-	>50	>50	-	-	-	-	-
	Tc-nom 45 °C	>50	-	>50	>50	-	-	-	-	-
	Tc-life 65 °C	>50	-	>50	>50	-	-	-	-	-
I-life 260 mA	Tc 25 °C	>50	-	>50	>50	-	-	-	-	-
	Tc-nom 45 °C	>50	-	>50	>50	-	-	28	-	-
	Tc-life 65 °C	>50	-	>50	40	-	34	19	-	16

Additional data will be added once the required measurement time has elapsed

Parameter	Min	Typ	Max	Unit
$\Delta u'v'$ at 6000 hours			0.007	-

Note: Specifications stated while  $T_c < 65^\circ\text{C}$  and  $I < 260 \text{ mA}$ .

## Abs max ratings

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Parameter	Min	Typ	Max	Unit
Current I <sub>max</sub>			300	mA
Case temperature T <sub>c</sub> max			80	°C
ESD (direct contact)			8	kV
ESD (air)			15	kV
Isolation breakdown voltage	500			V <sub>dc</sub>
Ambient temperature	-40			°C

## Wiring

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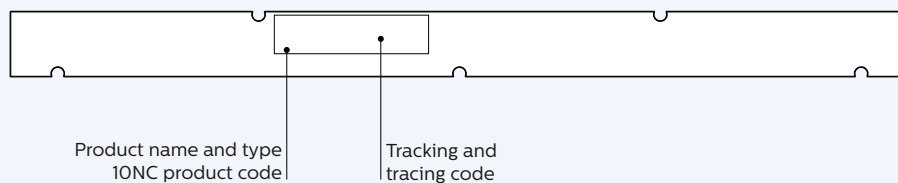
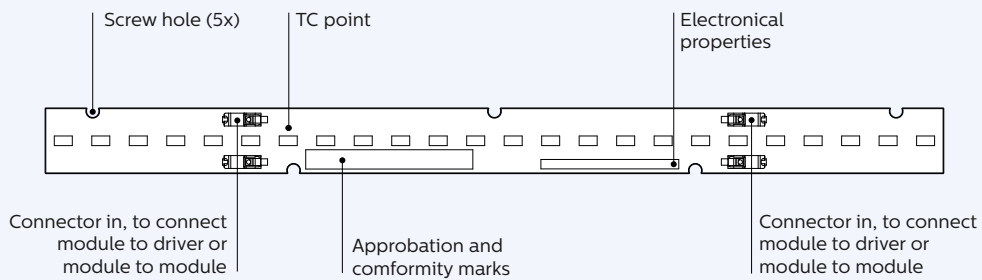
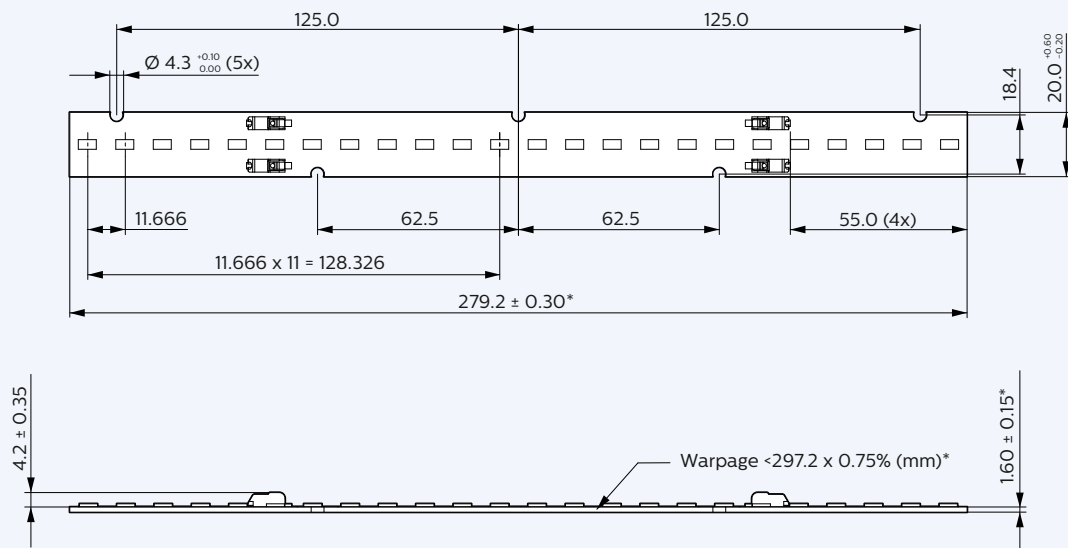
Specification item	Value	Unit	Condition
Input wire cross-section	0.2...0.8	mm <sup>2</sup>	Solid and fine stranded
	18...24	AWG	
Input wire strip length	7.5...8.5	mm	

Note: connector suited for robot wiring.

## Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	278.9	279.2	279.5	mm
Width	19.8	20	20.6	mm
Height excl. connector	1.45	1.60	1.75	mm
Height incl. connector	3.85	4.2	4.55	mm
Warpage (IPC-TM-650)			2.1	mm

Note: Bow & Twist of the PCB after production tested and released according IPC-TM-650 2.4.22.



Dimensions in mm

## Application information

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### Compliance and approval

IEC / EN 62031, IEC / EN 62471, IEC / TR 62778.

### Environmental

RoHS / REACH.

## Application information

### Zhaga

Designation of the ECG housing (book-1 / annex C)	BL4
Designation of the Book-7 LLE category	L28W2
Luminous Flux category	C011
CCT category	4000 K
CRI	80
A plain-text-file with a format as defined in Book-7, section 4.5	<a href="http://www.philips.com/technology/">www.philips.com/technology/</a>
A greyscale image with a format as defined in Book-7, section 4.5	
The position of the temperature measurement point tp	same as Tc point
The value of tp,max	65
The value of tp,headroom	-

### IP rating

Overheating protection	No IP rating
Luminaire class	UL Class 2/ Class II or Class III

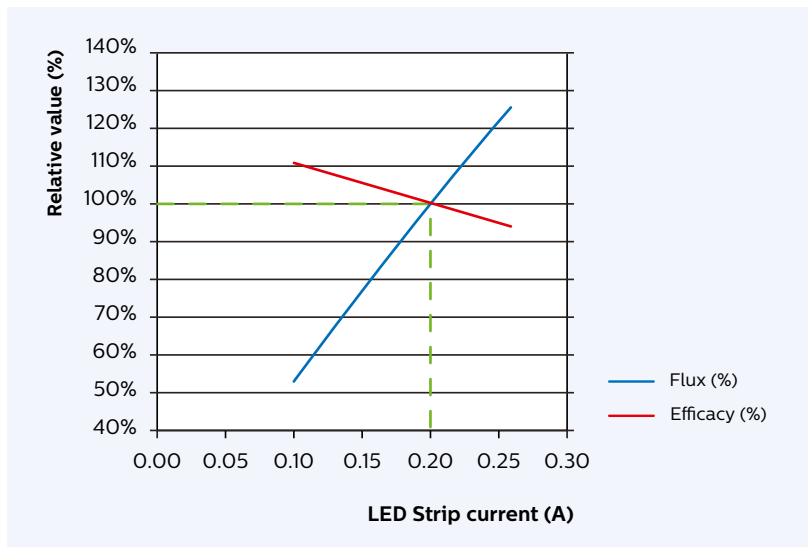
Warranted number of full thermal product cycles @ 25 °C ambient temperature.

Case temperature Tc [°C]	Amount of cycles
35	
40	
45	>30,000
50	
55	25,000
60	
65	12,500
70	
75	<5,000
80	4,166
85	
90	
95	



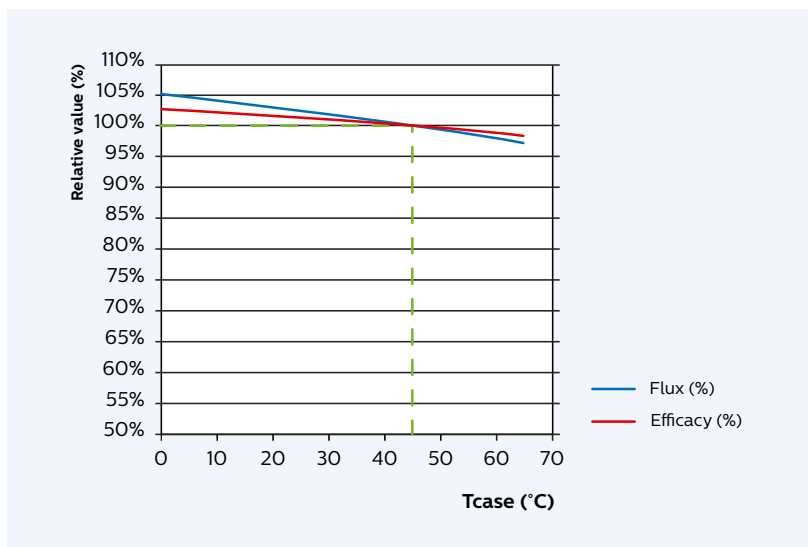
## Tuning information

### Flux and efficacy versus current



I [A]	Flux [%]	Efficacy [%]
0.26	125%	95%
0.24	117%	96%
0.22	109%	98%
0.20	<b>100%</b>	<b>100%</b>
0.18	91%	102%
0.16	82%	104%
0.14	73%	106%
0.12	63%	108%
0.10	53%	111%

### Flux and efficacy versus temperature at Tc

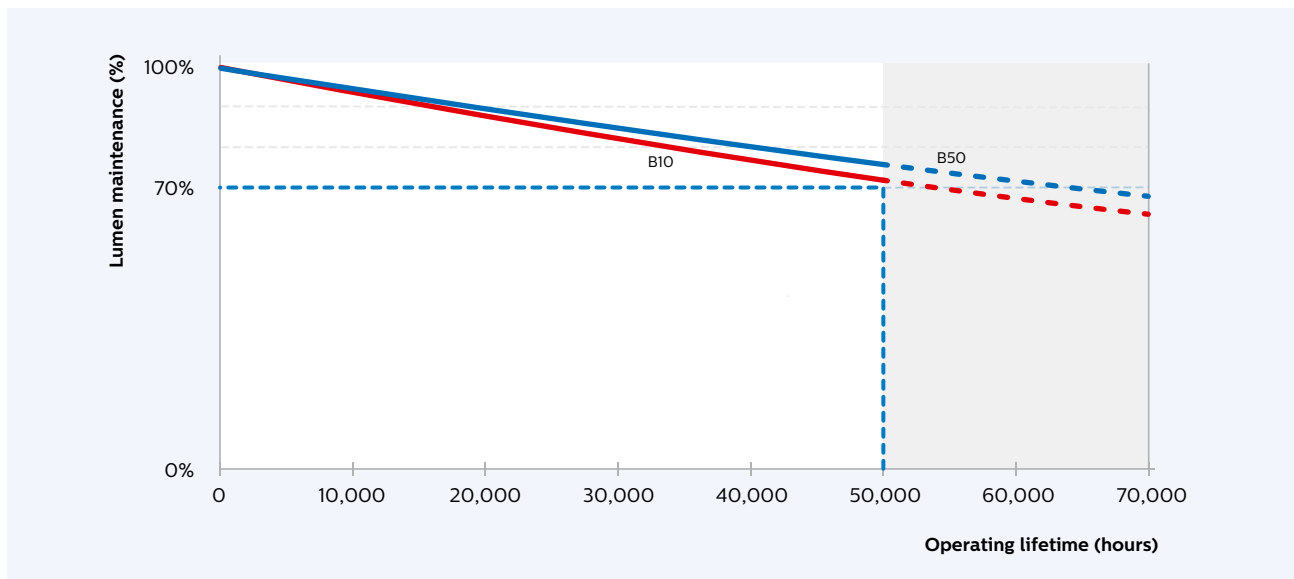


Tc [°C]	Flux [%]	Efficacy [%]
65	97%	98%
60	98%	99%
55	99%	99%
50	99%	100%
45	<b>100%</b>	<b>100%</b>
40	101%	100%
35	101%	101%
30	102%	101%
25	103%	101%
20	103%	102%
15	104%	102%
10	104%	102%
5	105%	103%
0	105%	103%

## Lumen maintenance

### Lumen maintenance at I life and Tc life conditions

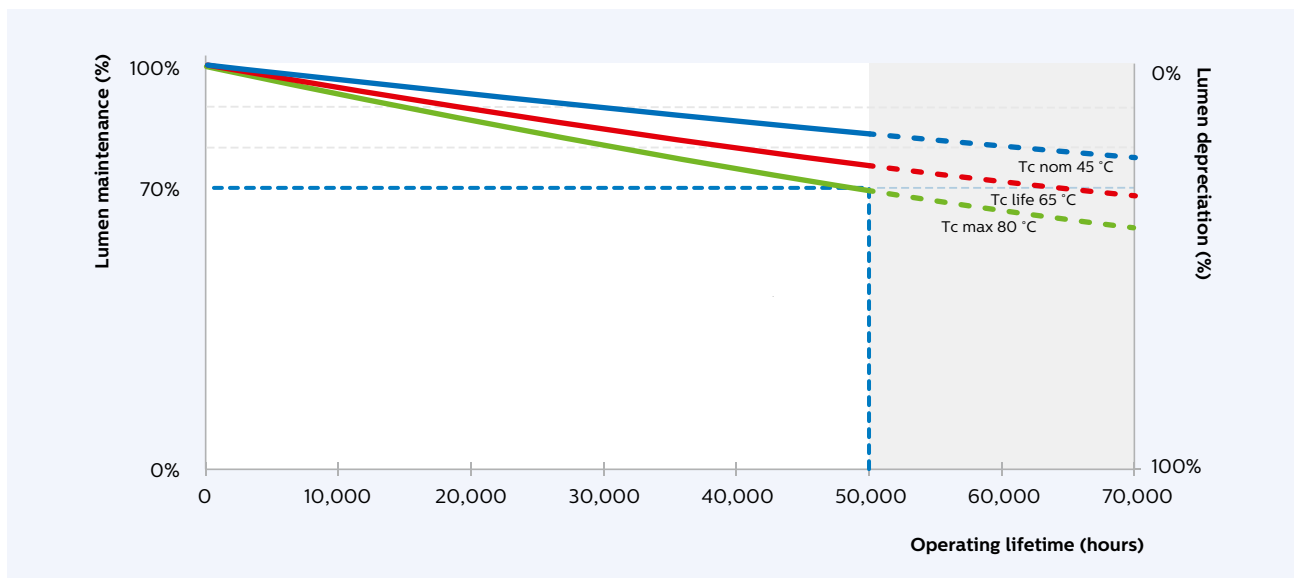
Fortimo LED Strip 1 ft 1100 lm 1R LV3



Lumen depreciation as a function of operating hours for I-life and Tc-life. 36,000 hours proven by certified laboratory.

### Lumen maintenance (B50) at current I life

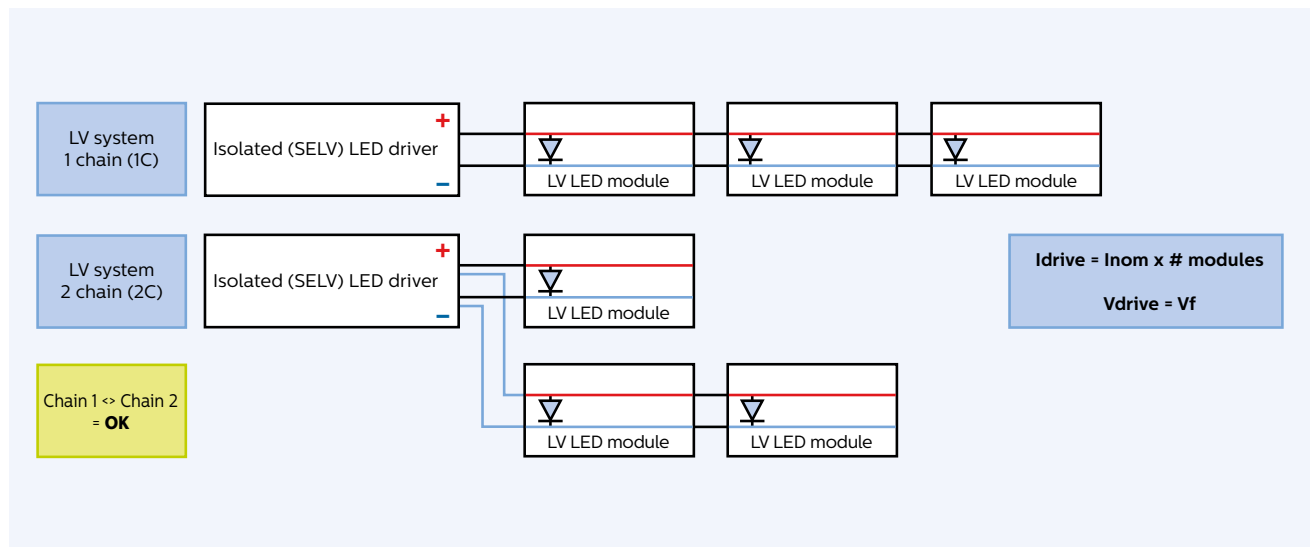
Fortimo LED Strip 1 ft 1100 lm 1R LV3



Lumen depreciation as a function of operating hours at different Tc values and I-life. 36,000 hours proven by certified laboratory.

## Wiring schematic

### Examples





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