

# PHILIPS

## Fortimo

### LED

Fortimo LED Strip  
1150mm MF 8xx LV6



## Datasheet

The Fortimo LED Strip is a uniquely wide portfolio which can be used in all kind of linear indoor luminaire types. Its form factor makes it easy to design-in and handle in production as it complies to Zhaga standards. Due to the availability from 0.25ft up to 5ft lengths only one product family is needed to cover a wide range of needs.

### Key features and benefits

- Typical module efficiency of 186 lm/W (at 4000K CRI80)
- CRI90 High Efficiency typical performance of 174 lm/W (at 4000K CRI90)
- Long life-time: >72,000 hours
- Excellent color consistency of 3 SDCM
- Two lumen packages per length available: LF (650 lm/ft) and MF (1100 lm/ft)
- Wide range of CCTs available: 2700K, 3000K, 3500K, 4000K, 5000K and 6500K
- Available in High Voltage (HV) and Low Voltage (LV)
- Options in front connector (FC) or back connector (BC)
- Small LED module width of only 20mm
- Available lengths: 0.25ft / 0.5ft / 1ft / 2ft / 4ft (1120mm) / 4ft extended (1150mm) / 5ft (1400mm) / 5ft extended 1450mm)
- Wide temperature (Tc) range -40°C to +80°C
- Five year system warranty

March 2023



## Ordering data

| Commercial product name                | EOC               | 12NC           | EPREL registration # | Box quantity |
|----------------------------------------|-------------------|----------------|----------------------|--------------|
| Fortimo LED Strip 1150mm MF 830 FC LV6 | 8719514 489783 00 | 9290 029 48306 | 1413469              | 110          |
| Fortimo LED Strip 1150mm MF 840 FC LV6 | 8719514 489806 00 | 9290 029 48406 | 1413470              | 110          |
| Fortimo LED Strip 1150mm MF 850 FC LV6 | 8719514 489882 00 | 9290 029 48506 | 1413471              | 110          |
| Fortimo LED Strip 1150mm MF 865 FC LV6 | 8719514 489905 00 | 9290 029 48606 | 1413472              | 110          |

## Drive currents

| Parameter                           | Nominal* | Life** | Max*** | Unit |
|-------------------------------------|----------|--------|--------|------|
| Fortimo LED Strip 1150mm MF 8xx LV6 | 713      | 1920   | 1920   | mA   |

## Module temperatures

| Parameter                                                 | Nominal* | Life** | Max*** | Unit |
|-----------------------------------------------------------|----------|--------|--------|------|
| T <sub>c</sub> (case temperature at T <sub>c</sub> point) | 45       | 75     | 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)

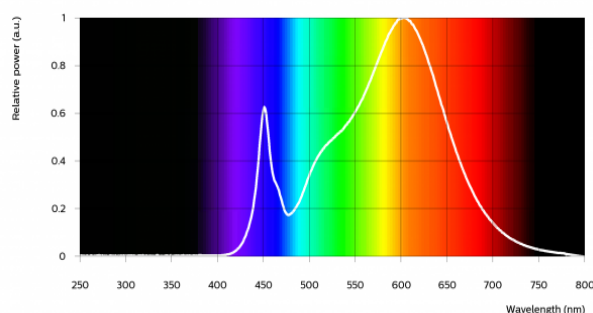
### Fortimo LED Strip 1150mm MF 830 FC LV6

| Parameter                          | Min  | Typ            | Max           | Unit |
|------------------------------------|------|----------------|---------------|------|
| Luminous flux                      | 4020 | 4149           | 4420          | lm   |
| Efficacy                           | 167  | 175            | 198           | lm/W |
| Correlated color temperature (CCT) |      | 3000           |               | K    |
| Color coordinates (CIEx, CIEy)     |      | (0.433, 0.400) |               | -    |
| Color consistency                  |      |                | 3             | SDCM |
| CRI                                | 80   |                |               |      |
| R9                                 | 0    |                |               |      |
| Photometric code                   |      | 830/339        |               |      |
| Photobiological safety             |      |                | RG1 unlimited |      |



Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$ .

| Operation point | 830          | lm    | lm/W |
|-----------------|--------------|-------|------|
| 80% I-nom 570mA | Tc 25 °C     | 3448  | 182  |
|                 | Tc-nom 45 °C | 3363  | 179  |
|                 | Tc-max 85 °C | 3159  | 171  |
| I-nom 713mA     | Tc 25 °C     | 4254  | 178  |
|                 | Tc-nom 45 °C | 4149  | 175  |
|                 | Tc-max 85 °C | 3897  | 167  |
| I-max 1920mA    | Tc 25 °C     | 10547 | 154  |
|                 | Tc-nom 45 °C | 10280 | 151  |
|                 | Tc-max 85 °C | 9642  | 144  |



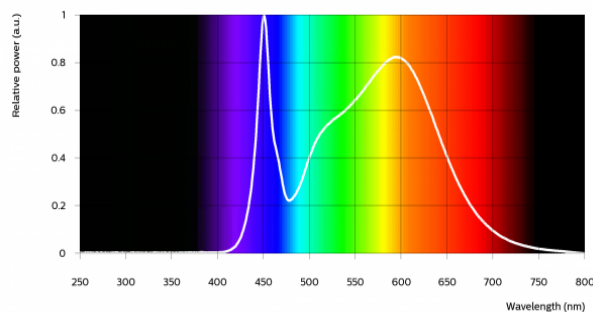
### Fortimo LED Strip 1150mm MF 840 FC LV6

| Parameter                          | Min  | Typ            | Max           | Unit |
|------------------------------------|------|----------------|---------------|------|
| Luminous flux                      | 4270 | 4400           | 4840          | lm   |
| Efficacy                           | 177  | 186            | 216           | lm/W |
| Correlated color temperature (CCT) |      | 4000           |               | K    |
| Color coordinates (CIEx, CIEy)     |      | (0.381, 0.377) |               | -    |
| Color consistency                  |      |                | 3             | SDCM |
| CRI                                | 80   |                |               |      |
| R9                                 | 0    |                |               |      |
| Photometric code                   |      | 840/339        |               |      |
| Photobiological safety             |      |                | RG1 unlimited |      |



Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$ .

| Operation point | 840          | lm    | lm/W |
|-----------------|--------------|-------|------|
| 80% I-nom 570mA | Tc 25 °C     | 3658  | 194  |
|                 | Tc-nom 45 °C | 3563  | 190  |
|                 | Tc-max 85 °C | 3344  | 181  |
| I-nom 713mA     | Tc 25 °C     | 4517  | 189  |
|                 | Tc-nom 45 °C | 4400  | 186  |
|                 | Tc-max 85 °C | 4129  | 177  |
| I-max 1920mA    | Tc 25 °C     | 11250 | 164  |
|                 | Tc-nom 45 °C | 10952 | 161  |
|                 | Tc-max 85 °C | 10265 | 153  |

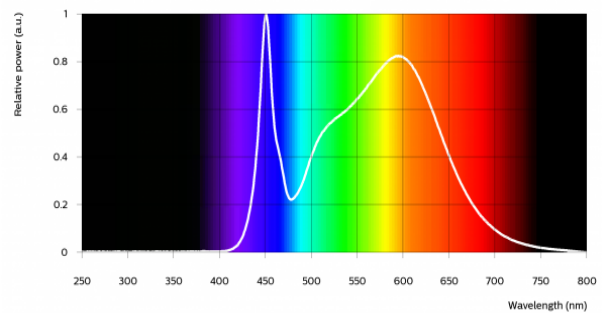


## Fortimo LED Strip 1150mm MF 850 FC LV6

| Parameter                          | Min                                                                               | Typ            | Max           | Unit |
|------------------------------------|-----------------------------------------------------------------------------------|----------------|---------------|------|
| Luminous flux                      | 4270                                                                              | 4399           | 4840          | lm   |
| Efficacy                           | 177                                                                               | 186            | 216           | lm/W |
| Correlated color temperature (CCT) |                                                                                   | 5000           |               | K    |
| Color coordinates (CIEx, CIEy)     |                                                                                   | (0.342, 0.350) |               | -    |
| Color consistency                  |                                                                                   |                | 3             | SDCM |
| CRI                                | 80                                                                                |                |               |      |
| R9                                 | 0                                                                                 |                |               |      |
| Photometric code                   |  | 850/339        |               |      |
| Photobiological safety             |                                                                                   |                | RG1 unlimited |      |

Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$ .

| Operation point | 850          | lm    | lm/W |
|-----------------|--------------|-------|------|
| 80% I-nom 570mA | Tc 25 °C     | 3657  | 194  |
|                 | Tc-nom 45 °C | 3562  | 190  |
|                 | Tc-max 85 °C | 3344  | 181  |
| I-nom 713mA     | Tc 25 °C     | 4516  | 189  |
|                 | Tc-nom 45 °C | 4399  | 186  |
|                 | Tc-max 85 °C | 4128  | 177  |
| I-max 1920mA    | Tc 25 °C     | 11247 | 164  |
|                 | Tc-nom 45 °C | 10949 | 161  |
|                 | Tc-max 85 °C | 10263 | 153  |

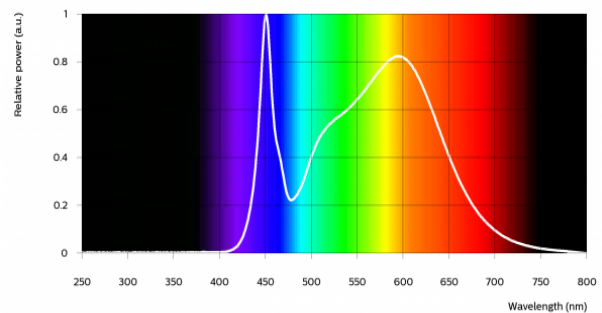


## Fortimo LED Strip 1150mm MF 865 FC LV6

| Parameter                          | Min                                                                                 | Typ            | Max           | Unit |
|------------------------------------|-------------------------------------------------------------------------------------|----------------|---------------|------|
| Luminous flux                      | 4200                                                                                | 4337           | 4710          | lm   |
| Efficacy                           | 174                                                                                 | 183            | 211           | lm/W |
| Correlated color temperature (CCT) |                                                                                     | 6500           |               | K    |
| Color coordinates (CIEx, CIEy)     |                                                                                     | (0.310, 0.324) |               | -    |
| Color consistency                  |                                                                                     |                | 3             | SDCM |
| CRI                                | 80                                                                                  |                |               |      |
| R9                                 | 0                                                                                   |                |               |      |
| Photometric code                   |  | 865/339        |               |      |
| Photobiological safety             |                                                                                     |                | RG1 unlimited |      |

Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$ .

| Operation point | 865          | lm    | lm/W |
|-----------------|--------------|-------|------|
| 80% I-nom 570mA | Tc 25 °C     | 3594  | 190  |
|                 | Tc-nom 45 °C | 3508  | 187  |
|                 | Tc-max 85 °C | 3294  | 178  |
| I-nom 713mA     | Tc 25 °C     | 4443  | 186  |
|                 | Tc-nom 45 °C | 4337  | 183  |
|                 | Tc-max 85 °C | 4071  | 175  |
| I-max 1920mA    | Tc 25 °C     | 11144 | 163  |
|                 | Tc-nom 45 °C | 10872 | 160  |
|                 | Tc-max 85 °C | 10187 | 152  |



## Electrical characteristics

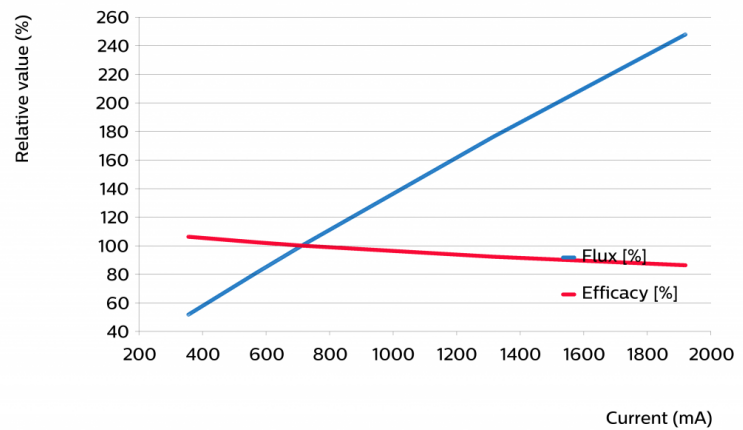
| Parameter                   | Min  | Typ  | Max  | Unit          |
|-----------------------------|------|------|------|---------------|
| Forward voltage             | 31.4 | 33.2 | 33.8 | V             |
| Power consumption           | 22.4 | 23.7 | 24.1 | W = kWh/1000h |
| Number of modules per chain |      |      | 1    |               |

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

## Tuning information

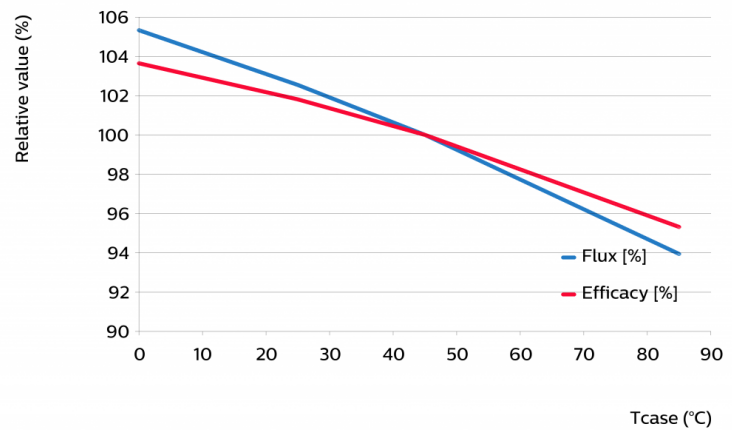
Flux and efficacy versus current (at Tc nominal)

| I [mA] | Flux [%] | Efficacy [%] |
|--------|----------|--------------|
| 1920   | 248      | 86           |
| 1316   | 176      | 92           |
| 713    | 100      | 100          |
| 570    | 81       | 102          |
| 356    | 52       | 106          |



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

| Tc [°C] | Flux [%] | Efficacy [%] |
|---------|----------|--------------|
| 85      | 94       | 95           |
| 45      | 100      | 100          |
| 25      | 103      | 102          |
| 0       | 105      | 104          |



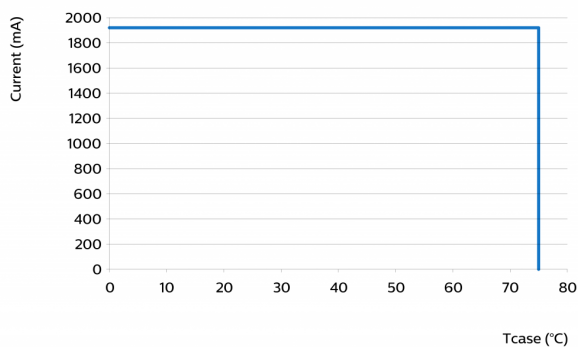
## Lumen maintenance

| Operation point | Lumen maintenance<br>x 1000 hours | L70 |     |     | L80 |     |     | L90 |     |     |
|-----------------|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                 |                                   | B50 | B20 | B10 | B50 | B20 | B10 | B50 | B20 | B10 |
| 80% Inom=540mA  | Tc=25°C                           | >72 | >72 | >72 | >72 | >72 | >72 | >68 | >68 | >68 |
|                 | Tc_nom=45°C                       | >72 | >72 | >72 | >72 | >72 | >72 | >68 | 66  | 65  |
|                 | Tc_life=75°C                      | >72 | >72 | >72 | >72 | >72 | >72 | 47  | 45  | 45  |
| Inom=713mA      | Tc=25°C                           | >72 | >72 | >72 | >72 | >72 | >72 | >68 | >68 | >68 |
|                 | Tc_nom=45°C                       | >72 | >72 | >72 | >72 | >72 | >72 | >68 | 66  | 65  |
|                 | Tc_life=75°C                      | >72 | >72 | >72 | >72 | >72 | >72 | 47  | 45  | 45  |
| Ilife=1920mA    | Tc=25°C                           | >72 | >72 | >72 | >72 | >72 | >72 | >41 | >41 | >41 |
|                 | Tc_nom=45°C                       | >72 | >72 | >72 | >72 | >72 | >72 | >41 | >41 | >41 |
|                 | Tc_life=75°C                      | >72 | >72 | >72 | >72 | >72 | >72 | 41  | 39  | 39  |

## Lifetime

| Parameter      | Value  | Unit  |
|----------------|--------|-------|
| M70F50 nominal | >72000 | hours |
| M70F50 life    | >72000 | hours |

## Performance Window

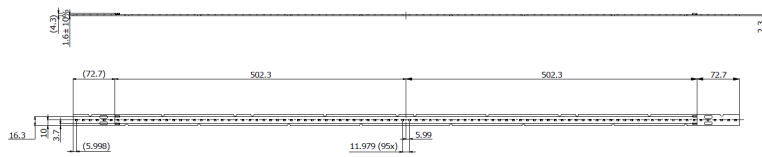


## Wiring

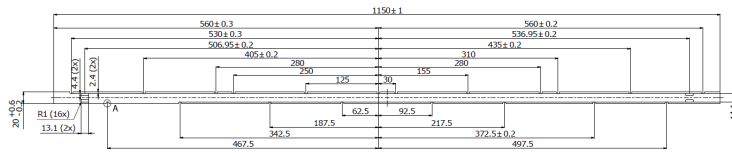
| Specification item       | Value       | Unit            | Condition     |
|--------------------------|-------------|-----------------|---------------|
| Input wire cross-section | 0.25...0.75 | mm <sup>2</sup> | solid wire    |
|                          | 18...24     | AWG             | solid wire    |
| Input wire strip length  | 7.5...8.5   | mm              |               |
| Input wire cross-section | 0.33...0.5  | mm <sup>2</sup> | stranded wire |
|                          | 20...22     | AWG             | stranded wire |
| Input wire strip length  | 7.5...8.5   | mm              |               |

## Mechanical characteristics

| Parameter    | Min  | Typ  | Max  | Unit |
|--------------|------|------|------|------|
| Length       | 1149 | 1150 | 1151 | mm   |
| Width        | 19.8 | 20   | 20.6 | mm   |
| Height PCB   | 1.45 | 1.6  | 1.75 | mm   |
| Height Total |      | 4.3  |      | mm   |
| Product mass |      | 75.7 |      | gram |



BOARD VIEW ( 1 : 2 )



### Absolute ratings

| Parameter                              | Min | Max  | Unit            |
|----------------------------------------|-----|------|-----------------|
| Current through the LED module (I-max) |     | 1920 | mA              |
| Case temperature (Tc-max)              |     | 85   | °C              |
| ESD (direct contact)                   | 8   |      | kV              |
| Working voltage                        |     | 350  | V <sub>dc</sub> |

Application information

Certificates and Standards

CE  
ENEC  
ENEC+  
cULus

Environmental

RoHS/REACH

Application

|         |     |
|---------|-----|
| Dimming | Yes |
|---------|-----|



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