

# PHILIPS

## Fortimo

### LED

Fortimo LED Line 1ft MF  
8xx 1R LV5



## Datasheet

Upgraded with the latest LED technology, the Fortimo LED Line 1R provides high quality white light on a well-known footprint. From a single line (1R) of LEDs, the modules provide a high energy efficiency whilst enabling two lumen ranges: 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 / 4000K / 5000K / 6500K
- Two module lengths: 1ft/280mm or 2ft/560mm
- Two lumen packages: MF (1100lm/ft) or HF (2000lm/ft)
- High voltage (HV) or Low voltage (LV) designs
- Five year system warranty

May 2023



## Ordering data

| Commercial product name            | EOC               | 12NC           | Box quantity |
|------------------------------------|-------------------|----------------|--------------|
| Fortimo LED Line 1ft MF 830 1R LV5 | 8719514 411203 00 | 9290 029 30806 | 80           |
| Fortimo LED Line 1ft MF 840 1R LV5 | 8719514 411227 00 | 9290 029 30906 | 80           |

## Drive currents

| Parameter                          | Nominal* | Life** | Max*** | Unit |
|------------------------------------|----------|--------|--------|------|
| Fortimo LED Line 1ft MF 8xx 1R LV5 | 197      | 400    | 400    | mA   |

## Module temperatures

| Parameter                                                 | Nominal* | Life** | Max*** | Unit |
|-----------------------------------------------------------|----------|--------|--------|------|
| T <sub>c</sub> (case temperature at T <sub>c</sub> point) | 45       | 80     | 80     | °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

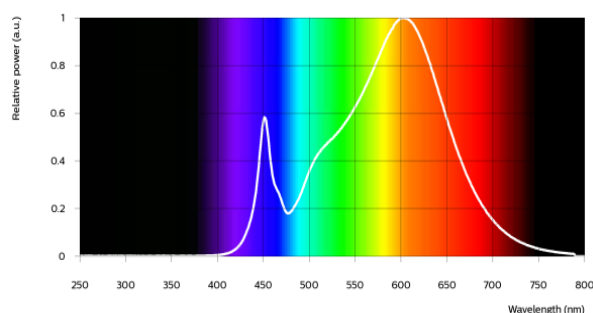
## Optical characteristics - table per color (CCT)

### Fortimo LED Line 1ft MF 830 1R LV5

| Parameter                          | Min                                                                               | Typ            | Max           | Unit |
|------------------------------------|-----------------------------------------------------------------------------------|----------------|---------------|------|
| Luminous flux                      | 1043                                                                              | 1055           | 1102          | lm   |
| Efficacy                           |                                                                                   | 176            |               | lm/W |
| Correlated color temperature (CCT) |                                                                                   | 3000           |               | K    |
| Color coordinates (CIEx, CIEy)     |                                                                                   | (0.431, 0.402) |               | -    |
| Color consistency                  |                                                                                   |                | 3             | SDCM |
| CRI                                | 80                                                                                |                |               |      |
| R9                                 |                                                                                   |                |               |      |
| Photometric code                   |  | 830/369        |               |      |
| 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 158mA | Tc 25 °C     | 870  | 182  |
|                 | Tc-nom 45 °C | 851  | 180  |
|                 | Tc-max 80 °C | 812  | 174  |
| I-nom 197mA     | Tc 25 °C     | 1078 | 179  |
|                 | Tc-nom 45 °C | 1055 | 176  |
|                 | Tc-max 80 °C | 1006 | 170  |
| I-max 400mA     | Tc 25 °C     | 2102 | 162  |
|                 | Tc-nom 45 °C | 2056 | 160  |
|                 | Tc-max 80 °C | 1958 | 154  |

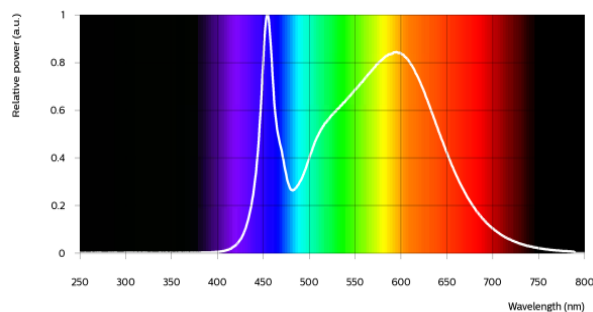


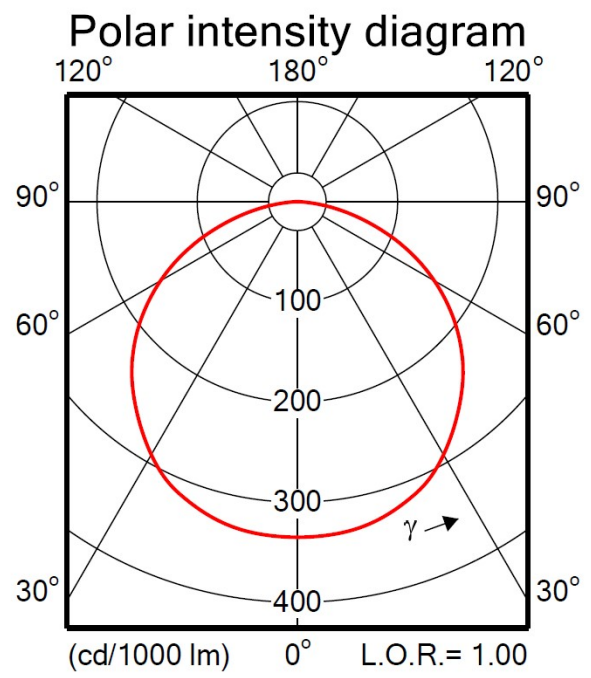
### Fortimo LED Line 1ft MF 840 1R LV5

| Parameter                          | Min                                                                                 | Typ            | Max           | Unit |
|------------------------------------|-------------------------------------------------------------------------------------|----------------|---------------|------|
| Luminous flux                      | 1088                                                                                | 1100           | 1147          | lm   |
| Efficacy                           |                                                                                     | 184            |               | lm/W |
| Correlated color temperature (CCT) |                                                                                     | 4000           |               | K    |
| Color coordinates (CIEx, CIEy)     |                                                                                     | (0.379, 0.378) |               | -    |
| Color consistency                  |                                                                                     |                | 3             | SDCM |
| CRI                                | 80                                                                                  |                |               |      |
| R9                                 |                                                                                     |                |               |      |
| Photometric code                   |  | 840/369        |               |      |
| 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 158mA | Tc 25 °C     | 907  | 190  |
|                 | Tc-nom 45 °C | 887  | 187  |
|                 | Tc-max 80 °C | 845  | 181  |
| I-nom 197mA     | Tc 25 °C     | 1125 | 187  |
|                 | Tc-nom 45 °C | 1100 | 184  |
|                 | Tc-max 80 °C | 1048 | 177  |
| I-max 400mA     | Tc 25 °C     | 2201 | 170  |
|                 | Tc-nom 45 °C | 2150 | 167  |
|                 | Tc-max 80 °C | 2046 | 161  |





## Electrical characteristics

| Parameter                             | Min  | Typ  | Max  | Unit          |
|---------------------------------------|------|------|------|---------------|
| Forward voltage                       | 29.3 | 30.4 | 31.0 | V             |
| Power consumption                     | 5.8  | 6.0  | 6.1  | W = kWh/1000h |
| Number of modules in series per chain |      |      | 1    |               |
| Number of modules per chain           |      |      | 5    |               |

## Lumen maintenance

| Operation point  | Lumen maintenance<br>x 1000 hours | L70 |     |     | L80 |     |     | L90 |     |     |
|------------------|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                  |                                   | B50 | B20 | B10 | B50 | B20 | B10 | B50 | B20 | B10 |
| 80% Inom=157.6mA | Tc=25°C                           | >60 | >60 | >60 | >60 | >60 | >60 | >60 | >60 | >60 |
|                  | Tc_nom=45°C                       | >60 | >60 | >60 | >60 | >60 | >60 | 51  | 49  | 48  |
|                  | Tc_life=80°C                      | >60 | >60 | >60 | 55  | 53  | 52  | 26  | 25  | 24  |
| Inom=197mA       | Tc=25°C                           | >60 | >60 | >60 | >60 | >60 | >60 | >60 | >60 | >60 |
|                  | Tc_nom=45°C                       | >60 | >60 | >60 | >60 | >60 | >60 | 49  | 47  | 46  |
|                  | Tc_life=80°C                      | >60 | >60 | >60 | 52  | 51  | 50  | 25  | 24  | 23  |
| Ilife=400mA      | Tc=25°C                           | >60 | >60 | >60 | >60 | >60 | >60 | >60 | >60 | >60 |
|                  | Tc_nom=45°C                       | >60 | >60 | >60 | >60 | >60 | >60 | 42  | 41  | 40  |
|                  | Tc_life=80°C                      | >60 | >60 | >60 | 46  | 44  | 43  | 21  | 21  | 20  |

## Lifetime

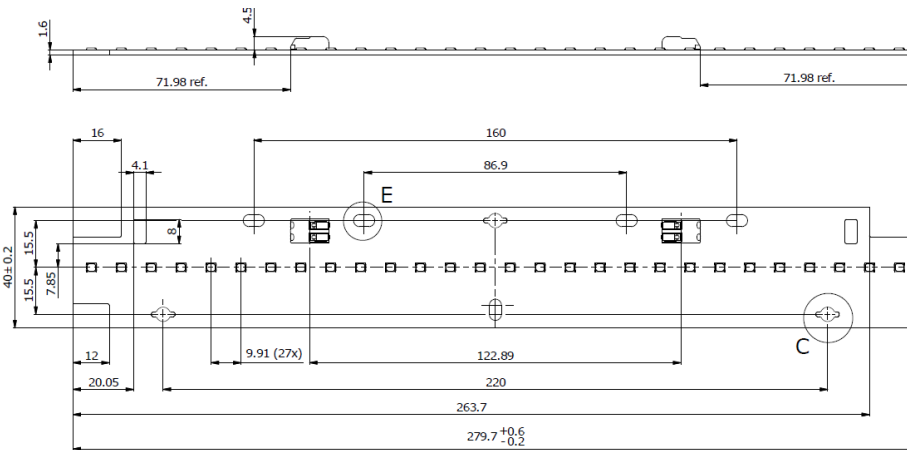
| Parameter      | Value  | Unit  |
|----------------|--------|-------|
| M70F50 nominal | >60000 | hours |
| M70F50 life    | >60000 | hours |

## Wiring

| Specification item       | Value      | Unit            | Condition                 |
|--------------------------|------------|-----------------|---------------------------|
| Input wire cross-section | 0.2...0.75 | mm <sup>2</sup> | 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       | 279.5 | 279.7 | 280.3 | mm   |
| Width        | 39.8  | 40    | 40.2  | mm   |
| Height PCB   |       | 1.6   |       | mm   |
| Height total |       | 6.1   |       | mm   |
| Product mass |       | 35    |       | gram |



## Absolute ratings

| Parameter                              | Min | Max | Unit            |
|----------------------------------------|-----|-----|-----------------|
| Current through the LED module (I-max) |     | 400 | mA              |
| Case temperature (Tc-max)              |     | 80  | °C              |
| ESD (direct contact)                   | 8   |     | kV              |
| Working voltage                        |     | 120 | V <sub>dc</sub> |

Application information

Certificates and Standards

CE  
ENEC  
ENEC+  
UL

Environmental

RoHS/REACH

Application

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



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