



**Fortimo LED strip performance LV5 modules** comes with a multitude of performance and product advancements that include higher efficacy, higher lumen output, increased lumen maintenance, additional mechanical designs and additional CCT and CRI options when compared to the previous generation (LV4).

With these advancements, the Fortimo LED for high-performance high-quality luminaires for direct and indirect lighting in offices, banks, schools, public buildings, supermarkets and other applications to replace high energy efficiency T5 fluorescent lighting.

| Commercial Product Name         | 12NC         |
|---------------------------------|--------------|
| FO Strip PR 5.5in 550lm 927 LV5 | 929001760013 |
| FO Strip PR 5.5in 550lm 930 LV5 | 929001760113 |
| FO Strip PR 5.5in 550lm 935 LV5 | 929001760213 |
| FO Strip PR 5.5in 550lm 940 LV5 | 929001760313 |

### Features

- High flux density of up to 2000 lm per foot
- Narrow width of only 20mm
- High energy efficacy of up to 180lm/W at nominal conditions
- High lumen maintenance (TM21) of L90 36,000 hours
- 3 SDCM color consistency
- Tight Vf binning enables longer daisy chaining

### Benefits

- High energy efficacy and long lifetime<sup>1</sup> provide optimized total cost of ownership
- Slim width provides excellent design-in options and assembly
- High quality and warm color temperatures of light enables new application areas like hospitality
- 5-year limited system warranty with Advance Xitanium LED drivers<sup>2</sup>
- Specifications enable DLC Premium category<sup>3</sup>

### Applications

- Retail
- Hospitality
- Office

1. Average rated life is based on engineering data testing and probability analysis. The hours are at the B50, L70 point – 50,000 hours life with 70% lumen maintenance at Tc point.  
 2. View limited warranty at [www.signify.com/warranties](http://www.signify.com/warranties) for details and restrictions.  
 3. Fortimo LED strip LV5 is not a DesignLights Consortium™ (DLC) qualified product. It is an OEM component that meets certain performance specifications that are geared toward meeting DLC Standard Tier (v4.0) in a fully assembled fixture. The customer is liable for proper design, manufacturing, testing and qualification according to DLC requirements.

# Fortimo LED Strip Performance LV5 5.5in550lm

## Drive Currents

| Parameter at I <sub>life</sub>  | Nominal* | Life** | Max*** | Unit |
|---------------------------------|----------|--------|--------|------|
| FO Strip PR 5.5in 550lm 9xx LV5 | 77       | 163    | 175    | mA   |

## Module Temperatures

| Parameter at I <sub>life</sub>                            | Nominal* | Life** | Max*** | Unit |
|-----------------------------------------------------------|----------|--------|--------|------|
| T <sub>c</sub> (case temperature at T <sub>c</sub> point) | 45       | 85     | 95     | °C   |

\* Nominal value at which typical performance is specified.

\*\* Value at which life time is specified.

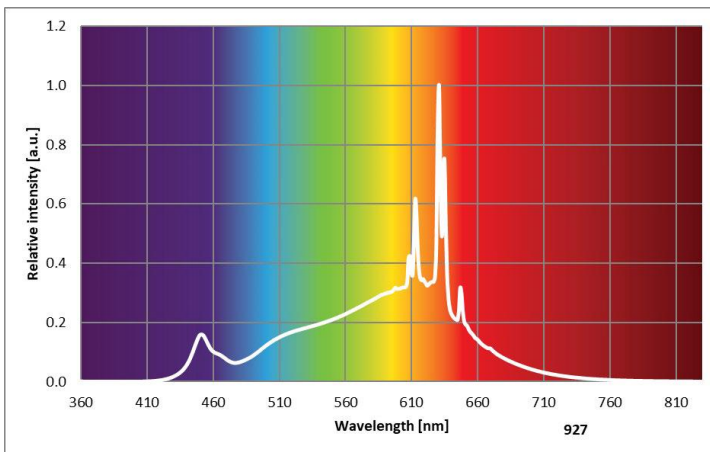
\*\*\* Maximum value for safe operation, do not operate above this value.

## Optical Characteristics – Table per CCT

### FO Strip PR 5.5in 550lm 927 LV5

| Parameter                                 | Min. (@ Inom) | Typ. (@ Inom)  | Max. (@ Inom) | Unit |
|-------------------------------------------|---------------|----------------|---------------|------|
| Luminous Flux                             | 450           | 490            | 530           | Lm   |
| Module Efficiency                         | 142           | 158            | 174           | Lm/W |
| Correlated Color Temperature (CCT) Target |               | 2700           |               | K    |
| Color coordinates (CIEx, CIEy)            |               | (0.457, 0.406) |               | -    |
| Color consistency                         |               |                | 3             | SDCM |
| CRI                                       | 90            |                |               | -    |

| Operation point | Tc    | lm  | lm/W |
|-----------------|-------|-----|------|
| 60 mA           | 25 °C | 395 | 166  |
|                 | 45 °C | 385 | 163  |
|                 | 85 °C | 365 | 155  |
| 77 mA           | 25 °C | 500 | 161  |
|                 | 45 °C | 490 | 158  |
|                 | 85 °C | 460 | 150  |
| 163 mA          | 25 °C | 990 | 140  |
|                 | 45 °C | 970 | 138  |
|                 | 85 °C | 905 | 130  |



R9>0, Measurement precision ± 5% for the flux data, ± 1.5% for the Vf data, ± 1.5% for the power data, and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

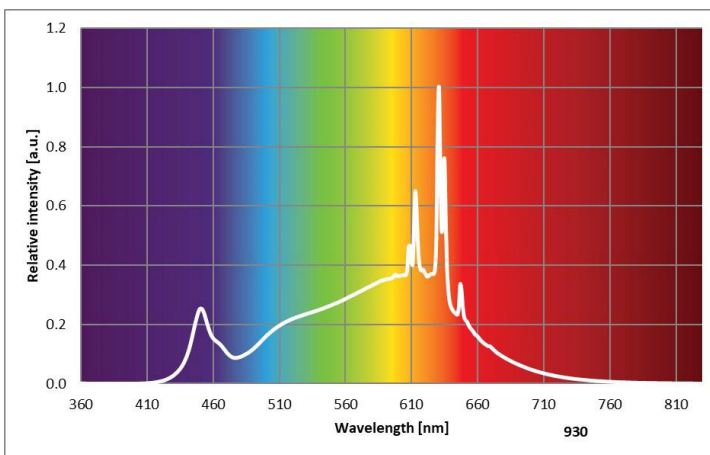
# Fortimo LED Strip Performance LV5 5.5in550lm

## Optical Characteristics – Table per CCT

### FO Strip PR 5.5in 550lm 930 LV5

| Parameter                                 | Min. (@ Inom) | Typ. (@ Inom)  | Max. (@ Inom) | Unit |
|-------------------------------------------|---------------|----------------|---------------|------|
| Luminous Flux                             | 470           | 510            | 550           | Lm   |
| Module Efficiency                         | 148           | 164            | 180           | Lm/W |
| Correlated Color Temperature (CCT) Target |               | 3000           |               | K    |
| Color coordinates (CIEx, CIEy)            |               | (0.433, 0.399) |               | -    |
| Color consistency                         |               |                | 3             | SDCM |
| CRI                                       | 90            |                |               | -    |

| Operation point | Tc    | lm   | lm/W |
|-----------------|-------|------|------|
| 60 mA           | 25 °C | 410  | 172  |
|                 | 45 °C | 400  | 169  |
|                 | 85 °C | 375  | 161  |
| 77 mA           | 25 °C | 520  | 167  |
|                 | 45 °C | 510  | 164  |
|                 | 85 °C | 475  | 156  |
| 163 mA          | 25 °C | 1025 | 145  |
|                 | 45 °C | 1000 | 143  |
|                 | 85 °C | 935  | 135  |



R9>0, Measurement precision  $\pm 5\%$  for the flux data,  $\pm 1.5\%$  for the Vf data,  $\pm 1.5\%$  for the power data, and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$ .

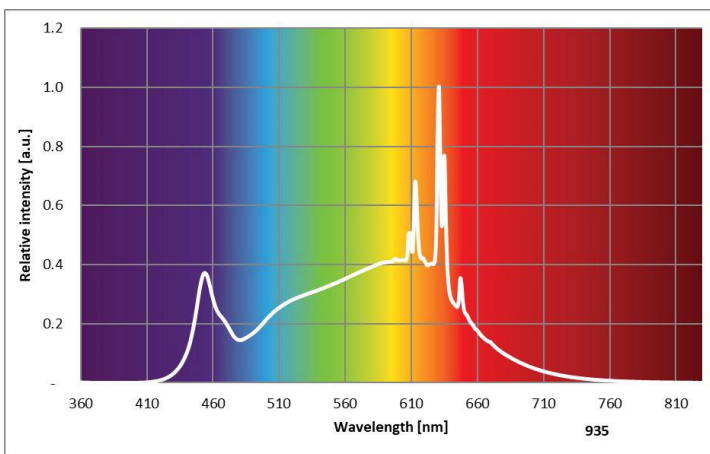
# Fortimo LED Strip Performance LV5 5.5in550lm

## Optical Characteristics – Table per CCT

### FO Strip PR 5.5in 550lm 935 LV5

| Parameter                                 | Min. (@ Inom) | Typ. (@ Inom)  | Max. (@ Inom) | Unit |
|-------------------------------------------|---------------|----------------|---------------|------|
| Luminous Flux                             | 480           | 520            | 560           | Lm   |
| Module Efficiency                         | 152           | 169            | 186           | Lm/W |
| Correlated Color Temperature (CCT) Target |               | 3500           |               | K    |
| Color coordinates (CIEx, CIEy)            |               | (0.407, 0.389) |               | -    |
| Color consistency                         |               |                | 3             | SDCM |
| CRI                                       | 90            |                |               | -    |

| Operation point | Tc    | lm   | lm/W |
|-----------------|-------|------|------|
| 60 mA           | 25 °C | 420  | 177  |
|                 | 45 °C | 410  | 174  |
|                 | 85 °C | 385  | 165  |
| 77 mA           | 25 °C | 535  | 172  |
|                 | 45 °C | 520  | 169  |
|                 | 85 °C | 485  | 160  |
| 163 mA          | 25 °C | 1065 | 152  |
|                 | 45 °C | 1040 | 149  |
|                 | 85 °C | 970  | 140  |



R9>0, Measurement precision  $\pm 5\%$  for the flux data,  $\pm 1.5\%$  for the Vf data,  $\pm 1.5\%$  for the power data, and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$ .

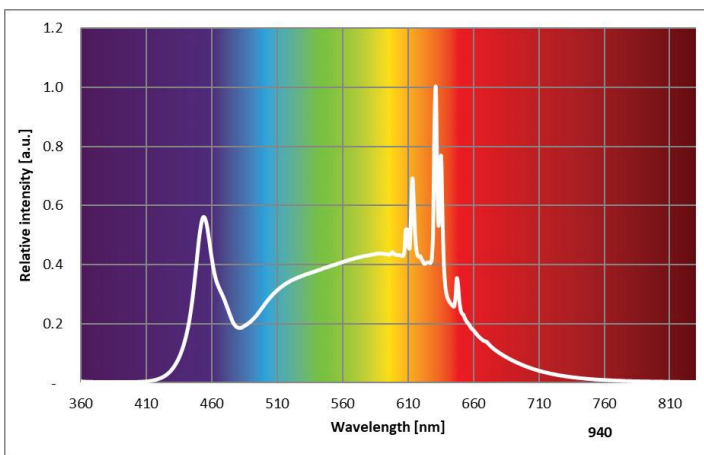
# Fortimo LED Strip Performance LV5 5.5in550lm

## Optical Characteristics – Table per CCT

### FO Strip PR 5.5in 550lm 940 LV5

| Parameter                                 | Min. (@ Inom) | Typ. (@ Inom)  | Max. (@ Inom) | Unit |
|-------------------------------------------|---------------|----------------|---------------|------|
| Luminous Flux                             | 490           | 530            | 570           | Lm   |
| Module Efficiency                         | 156           | 173            | 190           | Lm/W |
| Correlated Color Temperature (CCT) Target |               | 4000           |               | K    |
| Color coordinates (CIEx, CIEy)            |               | (0.381, 0.377) |               | -    |
| Color consistency                         |               |                | 3             | SDCM |
| CRI                                       | 90            |                |               | -    |

| Operation point | Tc    | lm   | lm/W |
|-----------------|-------|------|------|
| 60 mA           | 25 °C | 425  | 181  |
|                 | 45 °C | 415  | 178  |
|                 | 85 °C | 390  | 169  |
| 77 mA           | 25 °C | 540  | 176  |
|                 | 45 °C | 530  | 173  |
|                 | 85 °C | 495  | 164  |
| 163 mA          | 25 °C | 1080 | 156  |
|                 | 45 °C | 1055 | 153  |
|                 | 85 °C | 980  | 144  |



R9>0, Measurement precision ± 5% for the flux data, ± 1.5% for the Vf data, ± 1.5% for the power data, and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

# Fortimo LED Strip Performance LV5 5.5in550lm

## Absolute Ratings

| Parameter                              | Min.             | Typ. | Max. | Unit            |
|----------------------------------------|------------------|------|------|-----------------|
| Current through the LED module (I-max) |                  |      | 175  | mA              |
| Working voltage                        |                  |      | 44   | V <sub>dc</sub> |
| Isolation breakdown voltage            | 700              |      |      | V <sub>dc</sub> |
| Ambient Temperature                    | -20 <sup>4</sup> |      |      | °C              |

4. There cannot be any ice/fog/mist on any part of the module surface during the application at -20°C.

## System Chain Limits for Same Length Modules

| Total length (in) | Total current limit (A) |
|-------------------|-------------------------|
| 48                | 1.2                     |
| 72                | 1.2                     |
| 96                | 0.44                    |

Please review the design-in guide or contact the Design-in team for further information.

## Application Information

### Compliance and Approval

UL & cUL - UL8750

### Environmental

RoHS / REACH

|                        |               |
|------------------------|---------------|
| IP Rating              | No IP rating  |
| Overheating Protection | No protection |
| Luminaire Class        | UL Class 2    |

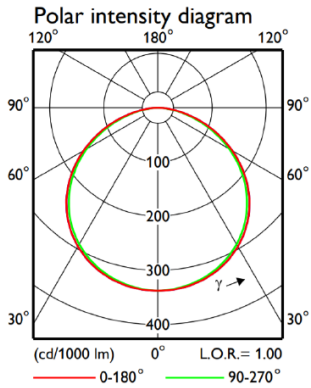
## Estimated Number of Full Thermal Product Cycles @ 25°C Ambient Temperature

| Case Temperature T <sub>c</sub> [°C] | Amount of Cycles |
|--------------------------------------|------------------|
| 45                                   | >100K            |
| 55                                   | >100K            |
| 65                                   | 88K              |
| 75                                   | 36K              |
| 85                                   | 16K              |

# Fortimo LED Strip Performance LV5 5.5in550lm

## Beam Shape

The Fortimo LED strip 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 |
|---------------------------------------|-------|------|-------|------|
| Forward voltage; If = 77mA, Tc = 45°C | 39.15 | 39.6 | 40.15 | V    |
| Thermal power; If = 77mA, Tc = 45°C   |       | 3.0  |       | W    |

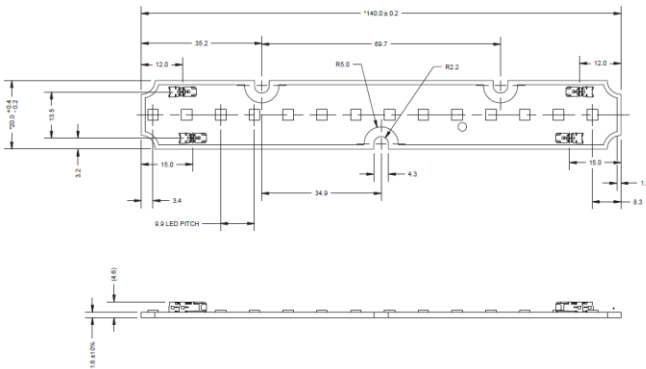
## Wiring

| Specification Item       | Value      | Unit            | Condition |
|--------------------------|------------|-----------------|-----------|
| Input Wire Cross-Section | 0.2...0.8  | mm <sup>2</sup> | Solid     |
|                          | 18...24    | AWG             |           |
|                          | 0.45...0.7 | mm <sup>2</sup> | Stranded  |
|                          | 20...22    | AWG             |           |
| Input Wire Strip Length  | 4.5...5.5  | mm              |           |

## Mechanical Characteristics

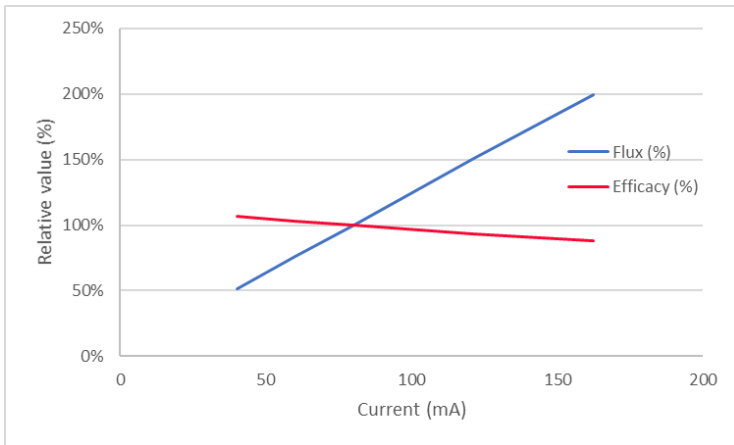
| Specification Item     | Min   | Typ   | Max   | Unit |
|------------------------|-------|-------|-------|------|
| Length                 | 139.8 | 140.0 | 140.2 | mm   |
| Width                  | 19.8  | 20.0  | 20.4  | mm   |
| Height Excl. Connector |       | 2.3   |       | mm   |
| Height Incl. Connector |       | 4.6   |       | mm   |
| Warpage                |       |       | 0.75  | %    |

FO Strip PR 5.5in 550lm xxx LV5



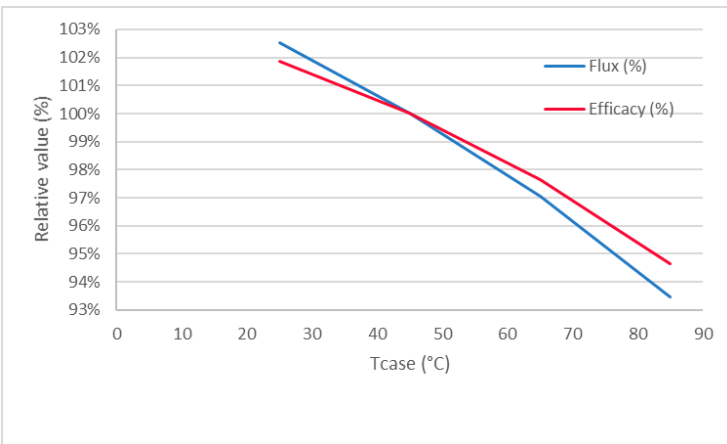
## Tuning Information

### Flux and Efficacy Vs. Current (at Nominal Temperature)



| I [mA] | Flux [%] | Efficacy [%] |
|--------|----------|--------------|
| 39     | 51%      | 107%         |
| 58     | 76%      | 103%         |
| 77     | 100%     | 100%         |
| 120    | 151%     | 94%          |
| 163    | 199%     | 88%          |

### Flux and Efficacy Vs. Tc



| Tc [°C] | Flux [%] | Efficacy [%] |
|---------|----------|--------------|
| 85      | 93%      | 95%          |
| 65      | 97%      | 98%          |
| 45      | 100%     | 100%         |
| 25      | 103%     | 102%         |



# Fortimo LED Strip Performance LV5 5.5in550lm

## Lumen Maintenance Based on Theoretical TM21 Calculations

| Operation point | Tc            | L70  | L80  | L90  |
|-----------------|---------------|------|------|------|
| 80% I-nom 60 mA | Tc 25 °C      | >36k | >36k | >36k |
|                 | Tc-nom 45 °C  | >36k | >36k | >36k |
|                 | Tc-life 85 °C | >36k | >36k | 34k  |
| I-nom 77 mA     | Tc 25 °C      | >36k | >36k | >36k |
|                 | Tc-nom 45 °C  | >36k | >36k | >36k |
|                 | Tc-life 85 °C | >36k | >36k | 34k  |
| I-life 163 mA   | Tc 25 °C      | >36k | >36k | >36k |
|                 | Tc-nom 45 °C  | >36k | >36k | >36k |
|                 | Tc-life 85 °C | >36k | >36k | 34k  |

Application limited to indoor applications (office/hospitality/educational)

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