



**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 strip module is the ideal choice 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 ST 11in 2000lm 927 LV5 | 929001785713 |
| FO Strip ST 11in 2000lm 930 LV5 | 929001785813 |
| FO Strip ST 11in 2000lm 935 LV5 | 929001785913 |
| FO Strip ST 11in 2000lm 940 LV5 | 929001786013 |

#### Features

- High flux density of up to 4000 lm per foot
- Narrow width of only 20mm
- 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, 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 Statement LV5 11in 2000lm

## Drive Currents

| Parameter at $I_{life}$         | Nominal* | Life** | Max*** | Unit |
|---------------------------------|----------|--------|--------|------|
| FO Strip ST 11in 2000lm 9xx LV5 | 280      | 650    | 700    | mA   |

## Module Temperatures

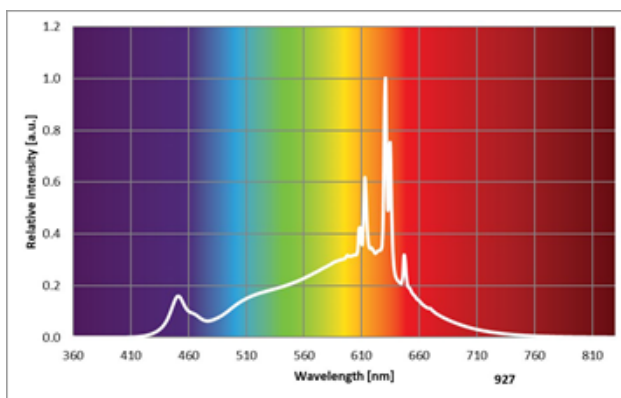
| Parameter at $I_{life}$                 | Nominal* | Life** | Max*** | Unit |
|-----------------------------------------|----------|--------|--------|------|
| $T_c$ (case temperature at $T_c$ point) | 45       | 85     | 95     | °C   |

- \* 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 ST 11in 2000lm 927 LV5           |                     |                     |                     |      |
|-------------------------------------------|---------------------|---------------------|---------------------|------|
| Parameter                                 | Min. (@ $I_{nom}$ ) | Typ. (@ $I_{nom}$ ) | Max. (@ $I_{nom}$ ) | Unit |
| Luminous Flux                             | 1660                | 1790                | 1920                | Lm   |
| Module Efficiency                         | 145                 | 161                 | 177                 | 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 | $T_c$ | lm   | lm/W |
|-----------------|-------|------|------|
| 225 mA          | 25 °C | 1450 | 169  |
|                 | 45 °C | 1415 | 166  |
|                 | 85 °C | 1325 | 157  |
| 280 mA          | 25 °C | 1820 | 164  |
|                 | 45 °C | 1790 | 161  |
|                 | 85 °C | 1660 | 153  |
| 650 mA          | 25 °C | 3945 | 142  |
|                 | 45 °C | 3850 | 139  |
|                 | 85 °C | 3600 | 132  |



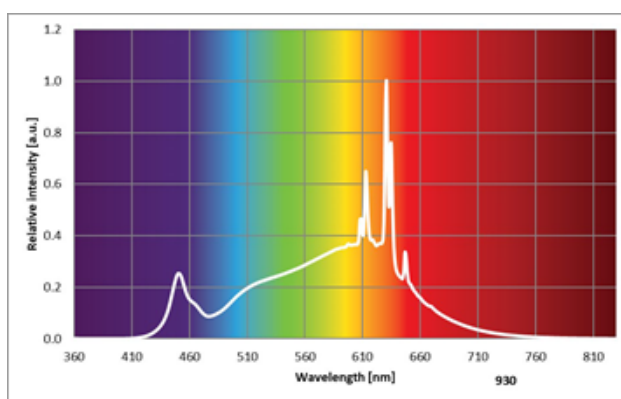
R9>0, Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$ .

# Fortimo LED Strip Statement LV5 11in 2000lm

## Optical Characteristics – Table per CCT

| FO Strip ST 11in 2000lm 930 LV5           |               |                |               |      |
|-------------------------------------------|---------------|----------------|---------------|------|
| Parameter                                 | Min. (@ Inom) | Typ. (@ Inom)  | Max. (@ Inom) | Unit |
| Luminous Flux                             | 1680          | 1820           | 1960          | 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 |
|-----------------|-------|------|------|
| 225 mA          | 25 °C | 1485 | 172  |
|                 | 45 °C | 1445 | 169  |
|                 | 85 °C | 1355 | 160  |
| 280 mA          | 25 °C | 1860 | 167  |
|                 | 45 °C | 1820 | 164  |
|                 | 85 °C | 1695 | 155  |
| 650 mA          | 25 °C | 4035 | 144  |
|                 | 45 °C | 3935 | 142  |
|                 | 85 °C | 3680 | 134  |



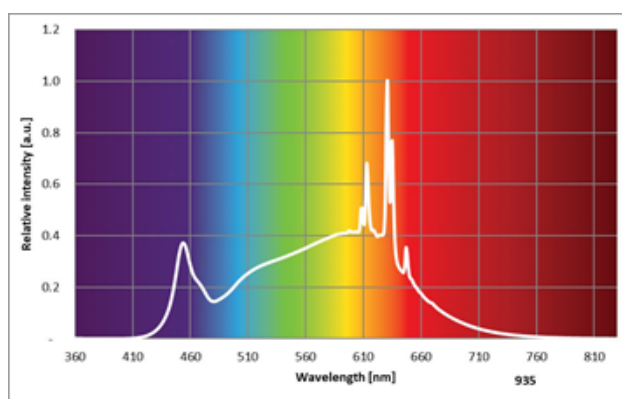
R9>0, Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ .  
Measurement precision for CRI  $\pm 1.5$ .

# Fortimo LED Strip Statement LV5 11in 2000lm

## Optical Characteristics – Table per CCT

| FO Strip ST 11in 2000lm 935 LV5           |               |                |               |      |
|-------------------------------------------|---------------|----------------|---------------|------|
| Parameter                                 | Min. (@ Inom) | Typ. (@ Inom)  | Max. (@ Inom) | Unit |
| Luminous Flux                             | 1740          | 1880           | 2020          | 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 |
|-----------------|-------|------|------|
| 225 mA          | 25 °C | 1535 | 177  |
|                 | 45 °C | 1500 | 174  |
|                 | 85 °C | 1405 | 165  |
| 280 mA          | 25 °C | 1925 | 172  |
|                 | 45 °C | 1880 | 169  |
|                 | 85 °C | 1760 | 160  |
| 650 mA          | 25 °C | 4180 | 149  |
|                 | 45 °C | 4080 | 146  |
|                 | 85 °C | 3815 | 139  |



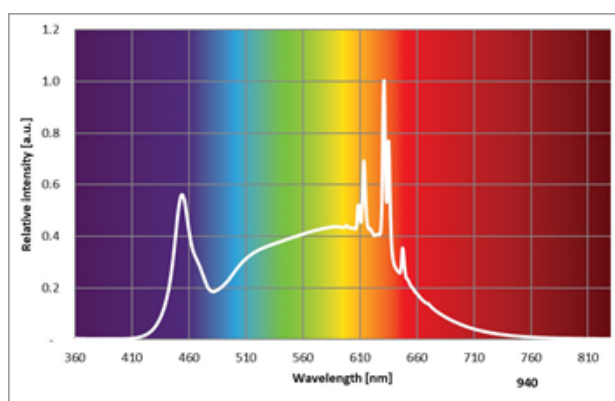
R9>0, Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$ .

# Fortimo LED Strip Statement LV5 11in 2000lm

## Optical Characteristics – Table per CCT

| FO Strip ST 11in 2000lm 940 LV5           |               |                |               |      |
|-------------------------------------------|---------------|----------------|---------------|------|
| Parameter                                 | Min. (@ Inom) | Typ. (@ Inom)  | Max. (@ Inom) | Unit |
| Luminous Flux                             | 1780          | 1920           | 2060          | Lm   |
| Module Efficiency                         | 156           | 173            | 190           | Lm/W |
| Correlated Color Temperature (CCT) Target |               | 4000           |               | K    |
| Color coordinates (CIEx, CIEy)            |               | (0.381, 0.376) |               | -    |
| Color consistency                         |               |                | 3             | SDCM |
| CRI                                       | 90            |                |               | -    |

| Operation point | Tc    | lm   | lm/W |
|-----------------|-------|------|------|
| 225 mA          | 25 °C | 1570 | 181  |
|                 | 45 °C | 1530 | 178  |
|                 | 85 °C | 1430 | 169  |
| 280 mA          | 25 °C | 1965 | 176  |
|                 | 45 °C | 1920 | 173  |
|                 | 85 °C | 1793 | 164  |
| 650 mA          | 25 °C | 4265 | 152  |
|                 | 45 °C | 4165 | 150  |
|                 | 85 °C | 3895 | 142  |



R9>0, 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  $\pm 1.5$ .

# Fortimo LED Strip Statement LV5 11in 2000lm

## Absolute Ratings

| Parameter                              | Min.             | Typ. | Max. | Unit            |
|----------------------------------------|------------------|------|------|-----------------|
| Current through the LED module (I-max) |                  |      | 700  | 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                | 1.8                     |
| 72                | 1.2                     |
| 96                | 0.88                    |

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    |

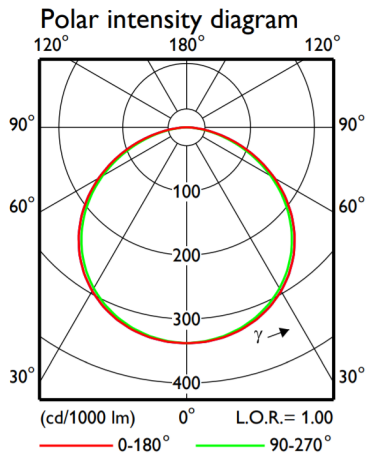
## Estimated Number of Full Thermal Product Cycles @ 25°C Ambient Temperature

| Case Temperature Tc [°C] | Amount of Cycles |
|--------------------------|------------------|
| 45                       | >100K            |
| 55                       | >100K            |
| 65                       | 88K              |
| 75                       | 36K              |
| 85                       | 16K              |

# Fortimo LED Strip Statement LV5 11in 2000lm

## 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 = 280mA, Tc = 45°C | 39.1 | 39.6 | 40.1 | V    |
| Thermal power; If = 280mA, Tc = 45°C   |      | 5.5  |      | W    |

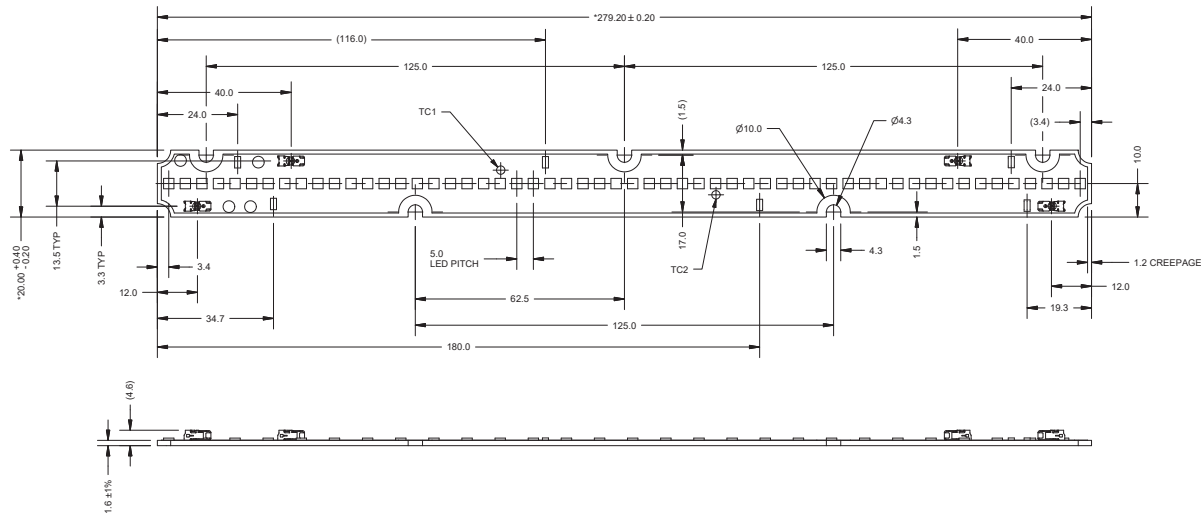
## Wiring

| 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                 | 279  | 279.2 | 279.4 | mm   |
| Width                  | 19.8 | 20.0  | 20.4  | mm   |
| Height Excl. Connector |      | 2.3   |       | mm   |
| Height Incl. Connector |      | 4.6   |       | mm   |
| Warpage                |      |       | 0.75  | %    |

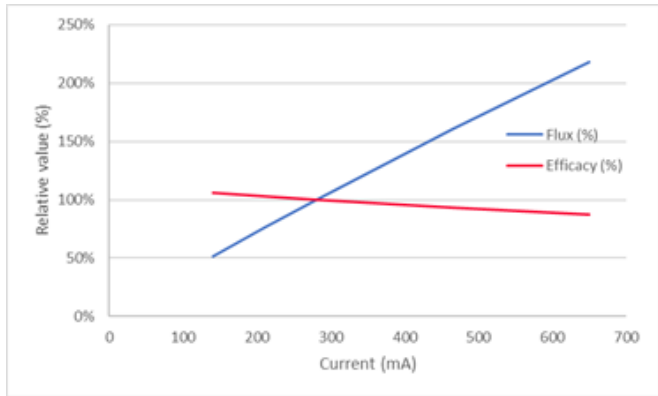
## FO Strip ST 11in 2000lm xxx LV5



# Fortimo LED Strip Statement LV5 11in 2000lm

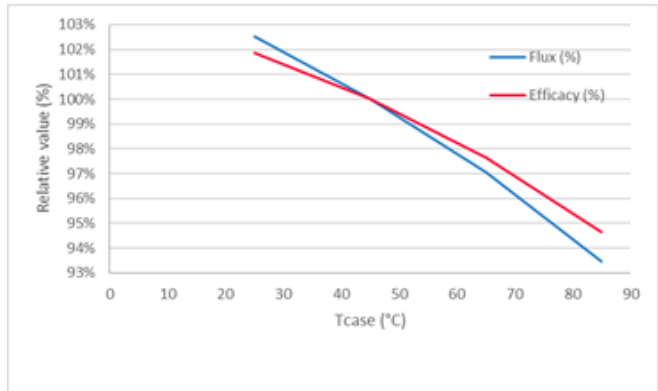
## Tuning Information

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



| I [mA] | Flux [%] | Efficacy [%] |
|--------|----------|--------------|
| 140    | 51%      | 106%         |
| 210    | 76%      | 103%         |
| 280    | 100%     | 100%         |
| 465    | 161%     | 93%          |
| 650    | 218%     | 87%          |

### Flux and Efficacy Vs. Tc



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

# Fortimo LED Strip Statement LV5 11in 2000lm

## Lumen Maintenance Based on Theoretical TM21 Calculations

| Operation point  | Tc            | L70  | L80  | L90  |
|------------------|---------------|------|------|------|
| 80% I-nom 225 mA | Tc-nom 25°C   | >36K | >36K | >36K |
|                  | Tc 45 °C      | >36K | >36K | >36K |
|                  | Tc-life 85 °C | >36K | >36K | >34K |
| I-nom 280 mA     | Tc-nom 25 °C  | >36K | >36K | >36K |
|                  | Tc 45 °C      | >36K | >36K | >34K |
|                  | Tc-life 85 °C | >36K | >36K | >36K |
| I-life 650 mA    | Tc-nom 25 °C  | >36K | >36K | >36K |
|                  | Tc 45 °C      | >36K | >36K | >36K |
|                  | Tc-life 85 °C | >36K | >36K | >34K |

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

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Signify North America Corporation  
200 Franklin Square Drive,  
Somerset, NJ 08873  
Telephone 855-486-2216

Signify Canada Ltd.  
281 Hillmount Road,  
Markham, ON, Canada L6C 2S3  
Telephone 800-668-9008