



**Fortimo LED strip performance FlexTune LV5 modules** are the preferred light source for the Advance FlexTune system; which provides new level of design flexibility, control precision, and simplicity in tunable white lighting systems for commercial office, healthcare, hospitality, and education applications.

Fortimo LED strip performance FlexTune 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 CRI options when compared to the the previous generation (LV4). The modules also feature connectors at both ends to enable daisy chaining, and a high (>8kV) ESD rating for easy handling.

| Commercial Product Name                | 12NC         |
|--|--------------|
| FO Strip PR FT 5.5in 550lm 927-965 LV5 | 929001764813 |

#### Features

- Pairs with Advance Xitanium SR FlexTune LED driver to provide: digital wireless control designed to provide precise CCT tuning and dimming control from 2700–6500K
- 3 SDCM color consistency
- (TM21) of L90 36,000 hours
- Connectors at both ends and tight Vf binning
- High Flux density of up to 2000lm/ft
- Narrow width of 20mm

#### Benefits

- Enables digital tuning of color temperature for tuneable white applications
- High energy efficacy and long lifetime<sup>1</sup>
- Low total cost of ownership
- Slim width and varied lengths provide excellent design flexibility
- 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
- Education

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 FlexTune LV5 5.5in 550lm

## Drive Currents

| Parameter at $I_{life}$            | Nominal' | Life'' | Max''' | Unit |
|------------------------------------|----------|--------|--------|------|
| FO Strip PR FT 5.5in 550lm 9xx LV5 | 77       | 163    | 175    | mA   |

## Module Temperatures

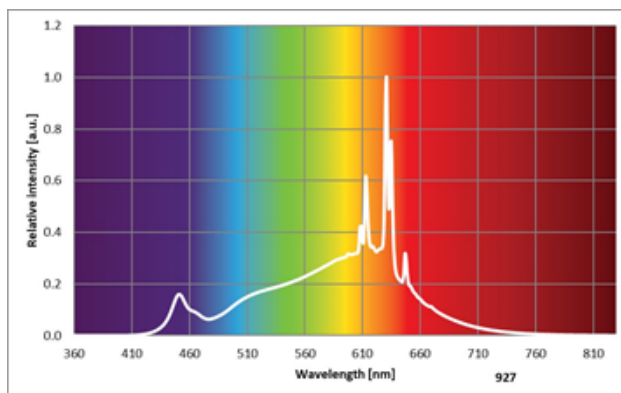
| Parameter at $I_{life}$                 | Nominal' | Life'' | Max''' | Unit |
|---|----------|--------|--------|------|
| $T_c$ (case temperature at $T_c$ point) | 45       | 85     | 95     | °C   |

- \* 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 PR FT 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 | $T_c$ | 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  $\pm 5\%$  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 Performance FlexTune LV5

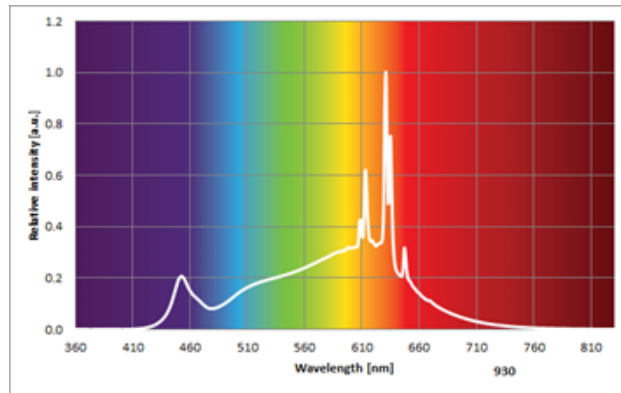
## 5.5in 550lm

### Optical Characteristics – Table per CCT

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

| Parameter                                 | Min. (@ Inom) | Typ. (@ Inom) | Max. (@ Inom) | Unit |
|---|---------------|---------------|---------------|------|
| Luminous Flux                             | 450           | 490           | 530           | Lm   |
| Module Efficiency                         | 146           | 162           | 178           | Lm/W |
| Correlated Color Temperature (CCT) Target |               | 3000          |               | K    |

| Operation point | Tc    | lm  | lm/W |
|-----------------|-------|-----|------|
| 60 mA           | 25 °C | 395 | 169  |
|                 | 45 °C | 385 | 167  |
|                 | 85 °C | 365 | 158  |
| 77 mA           | 25 °C | 500 | 165  |
|                 | 45 °C | 490 | 162  |
|                 | 85 °C | 460 | 154  |
| 163 mA          | 25 °C | 990 | 144  |
|                 | 45 °C | 970 | 142  |
|                 | 85 °C | 905 | 134  |

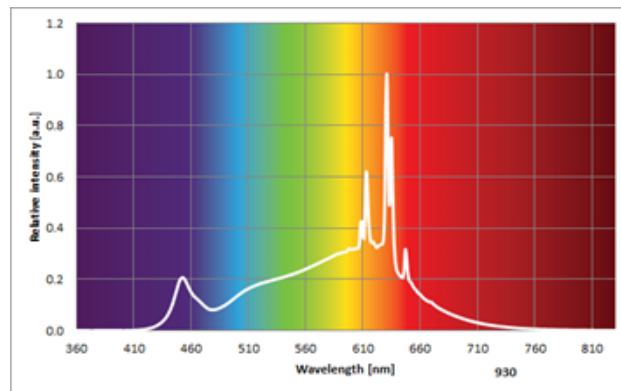


Using the Advance Xitanium SR FlexTune LED driver, set to constant light output. R9>0. Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$ .

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

| Parameter                                 | Min. (@ Inom) | Typ. (@ Inom) | Max. (@ Inom) | Unit |
|---|---------------|---------------|---------------|------|
| Luminous Flux                             | 450           | 490           | 530           | Lm   |
| Module Efficiency                         | 147           | 164           | 180           | Lm/W |
| Correlated Color Temperature (CCT) Target |               | 3500          |               | K    |

| Operation point | Tc    | lm  | lm/W |
|-----------------|-------|-----|------|
| 60 mA           | 25 °C | 395 | 172  |
|                 | 45 °C | 385 | 170  |
|                 | 85 °C | 365 | 161  |
| 77 mA           | 25 °C | 500 | 168  |
|                 | 45 °C | 490 | 164  |
|                 | 85 °C | 460 | 157  |
| 163 mA          | 25 °C | 990 | 147  |
|                 | 45 °C | 970 | 144  |
|                 | 85 °C | 905 | 137  |



Using the Advance Xitanium SR FlexTune LED driver, set to constant light output. 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 Performance FlexTune LV5

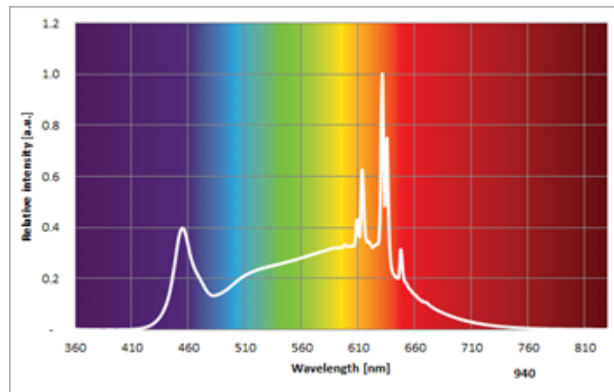
## 5.5in 550lm

### Optical Characteristics – Table per CCT

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

| Parameter                                 | Min. (@ Inom) | Typ. (@ Inom) | Max. (@ Inom) | Unit |
|---|---------------|---------------|---------------|------|
| Luminous Flux                             | 450           | 490           | 530           | Lm   |
| Module Efficiency                         | 149           | 166           | 183           | Lm/W |
| Correlated Color Temperature (CCT) Target |               | 4000          |               | K    |

| Operation point | Tc    | lm  | lm/W |
|-----------------|-------|-----|------|
| 60 mA           | 25 °C | 395 | 175  |
|                 | 45 °C | 385 | 172  |
|                 | 85 °C | 365 | 163  |
| 77 mA           | 25 °C | 500 | 170  |
|                 | 45 °C | 490 | 166  |
|                 | 85 °C | 460 | 159  |
| 163 mA          | 25 °C | 990 | 149  |
|                 | 45 °C | 970 | 147  |
|                 | 85 °C | 905 | 139  |

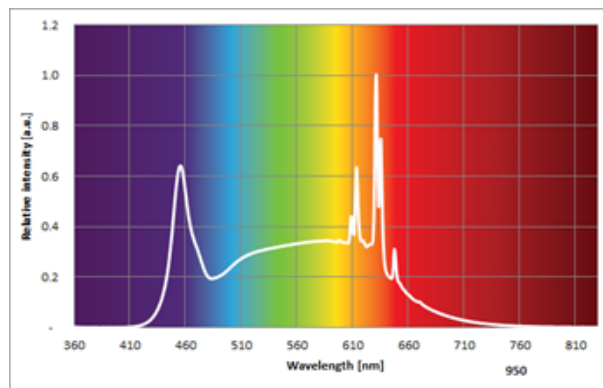


Using the Advance Xitanium SR FlexTune LED driver, set to constant light output. R9>0. Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$ .

#### FO Strip PR FT 5.5in 550lm 950 LV5

| Parameter                                 | Min. (@ Inom) | Typ. (@ Inom) | Max. (@ Inom) | Unit |
|---|---------------|---------------|---------------|------|
| Luminous Flux                             | 450           | 490           | 530           | Lm   |
| Module Efficiency                         | 152           | 169           | 186           | Lm/W |
| Correlated Color Temperature (CCT) Target |               | 5000          |               | K    |

| Operation point | Tc    | lm  | lm/W |
|-----------------|-------|-----|------|
| 60 mA           | 25 °C | 395 | 178  |
|                 | 45 °C | 385 | 175  |
|                 | 85 °C | 365 | 166  |
| 77 mA           | 25 °C | 500 | 173  |
|                 | 45 °C | 490 | 169  |
|                 | 85 °C | 460 | 161  |
| 163 mA          | 25 °C | 990 | 152  |
|                 | 45 °C | 970 | 150  |
|                 | 85 °C | 905 | 142  |



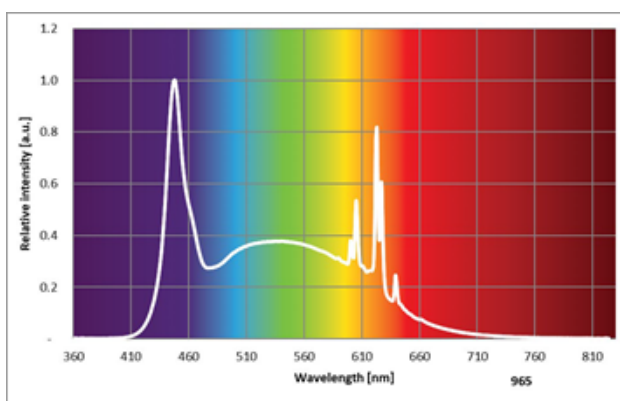
# Fortimo LED Strip Performance FlexTune LV5

## 5.5in 550lm

### Optical Characteristics – Table per CCT

| FO Strip PR FT 5.5in 550lm 965 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 |               | 6500           |               | K    |
| Color coordinates (CIEx, CIEy)            |               | (0.312, 0.325) |               | -    |
| 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  $\pm 5\%$  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 Performance FlexTune LV5 5.5in 550lm

## 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                | 0.9                     |
| 72                | 0.6                     |
| 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    |

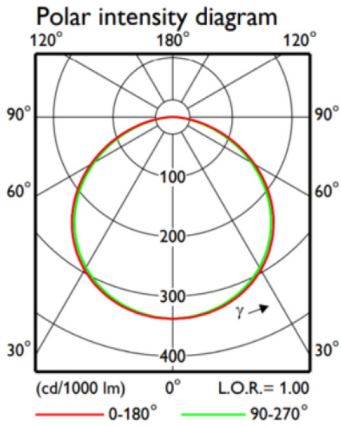
## Estimated Number of Full Thermal Product Cycles @ 25°C Ambient Temperature

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

# Fortimo LED Strip Performance FlexTune LV5 5.5in 550lm

## 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 | 39.65 | 40.15 | V    |
| Thermal power; If = 77mA, Tc = 45°C   |       | 1.5   |       | W    |

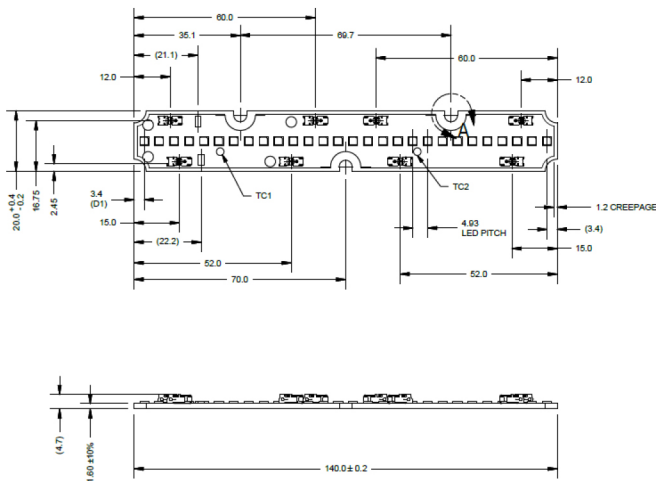
## Wiring

| 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                 | 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  | %    |

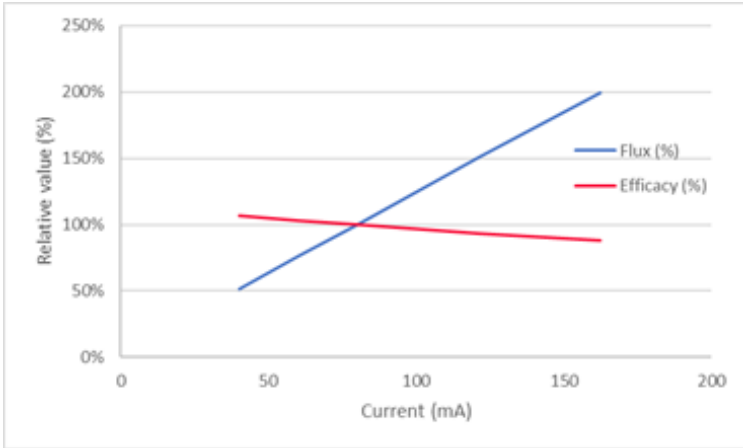
## FO Strip PR FT 5.5in 550lm xxx LV5



# Fortimo LED Strip Performance FlexTune LV5 5.5in 550lm

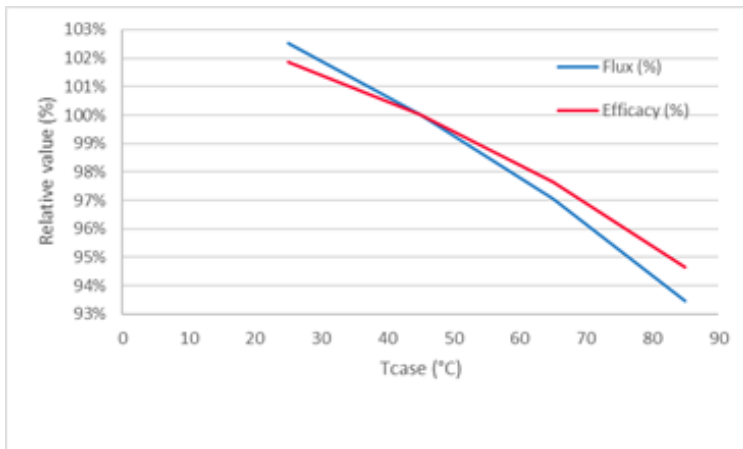
## Tuning Information

### 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 FlexTune LV5 5.5in 550lm

## Lumen Maintenance Based on Theoretical TM21 Calculations

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

The information presented in this document is not intended as any commercial offer and does not form part of any quotation or contract.

