

## Linear LED modules 2000lm per 1ft 4C

### Product description

- Long life-time
- Built-in, constant current LED module
- Re-workable push-in terminals enabling easy connection
- Compliance and approval: CE, ENEC
- 4C - four connectors for parallel system, also recognized as a low voltage system - SELV
- Available CCT from 2700K to 6500K and CRI 80, 90



### LinLED CRI 80 Optimum G4

| Product name                             | Ordering code  | Colour temperature [K] | Current nominal If nom [mA] | Luminous flux <sup>1</sup> φ [lm] | Useful luminous flux <sup>2</sup> [lm] | Voltage <sup>1</sup> Vf [V] | Power <sup>1</sup> P [W] | Efficacy <sup>1</sup> [lm/W] | Current minimum If min <sup>3</sup> [mA] | Current maximum If max [mA] | Energy Efficiency Class |
|--|----------------|------------------------|-----------------------------|-----------------------------------|--|-----------------------------|--------------------------|------------------------------|--|-----------------------------|-------------------------|
| LinLED 70x24mm 500lm 830 4C 42V Opt G4   | 1010 137 12846 | 3000                   | 70                          | 501                               | 514                                    | 38                          | 2.6                      | 191                          | 10                                       | 200                         | C                       |
| LinLED 140x24mm 1000lm 830 4C 42V Opt G4 | 1010 137 12946 |                        | 140                         | 1002                              | 1027                                   | 38                          | 5.3                      | 191                          | 20                                       | 400                         | C                       |
| LinLED 280x24mm 2000lm 830 4C 42V Opt G4 | 1010 137 13046 |                        | 280                         | 2004                              | 2055                                   | 38                          | 11                       | 191                          | 40                                       | 800                         | C                       |
| LinLED 560x24mm 4000lm 830 4C 42V Opt G4 | 1010 137 13146 |                        | 560                         | 4008                              | 4110                                   | 38                          | 21                       | 191                          | 80                                       | 1600                        | C                       |
| LinLED 70x24mm 500lm 840 4C 42V Opt G4   | 1010 137 13246 |                        | 70                          | 521                               | 534                                    | 38                          | 2.6                      | 198                          | 10                                       | 200                         | B                       |
| LinLED 140x24mm 1000lm 840 4C 42V Opt G4 | 1010 137 13346 | 4000                   | 140                         | 1042                              | 1069                                   | 38                          | 5.3                      | 198                          | 20                                       | 400                         | B                       |
| LinLED 280x24mm 2000lm 840 4C 42V Opt G4 | 1010 137 13446 |                        | 280                         | 2084                              | 2137                                   | 38                          | 11                       | 198                          | 40                                       | 800                         | B                       |
| LinLED 560x24mm 4000lm 840 4C 42V Opt G4 | 1010 137 13546 |                        | 560                         | 4168                              | 4274                                   | 38                          | 21                       | 198                          | 80                                       | 1600                        | B                       |

### LinLED CRI 80 Optimum G3.1

| Product name                               | Ordering code  | Colour temperature [K] | Current nominal If nom [mA] | Luminous flux <sup>1</sup> φ [lm] | Useful luminous flux <sup>2</sup> [lm] | Voltage <sup>1</sup> Vf [V] | Power <sup>1</sup> P [W] | Efficacy <sup>1</sup> [lm/W] | Current minimum If min <sup>3</sup> [mA] | Current maximum If max [mA] | Energy Efficiency Class |
|--|----------------|------------------------|-----------------------------|-----------------------------------|--|-----------------------------|--------------------------|------------------------------|--|-----------------------------|-------------------------|
| LinLED 70x24mm 500lm 840 4C 42V Opt G3.1   | 1010 127 78046 | 4000                   | 75                          | 553                               | 573                                    | 39                          | 2.9                      | 190                          | 10                                       | 150                         | C                       |
| LinLED 140x24mm 1000lm 840 4C 42V Opt G3.1 | 1010 127 78146 |                        | 150                         | 1106                              | 1146                                   | 39                          | 5.8                      | 190                          | 20                                       | 300                         | C                       |
| LinLED 280x24mm 2000lm 840 4C 42V Opt G3.1 | 1010 127 78246 |                        | 300                         | 2212                              | 2292                                   | 39                          | 12                       | 190                          | 40                                       | 600                         | C                       |
| LinLED 560x24mm 4000lm 840 4C 42V Opt G3.1 | 1010 127 78346 |                        | 600                         | 4424                              | 4584                                   | 39                          | 23                       | 190                          | 80                                       | 1200                        | C                       |

### LinLED CRI 80 Optimum G2

| Product name                             | Ordering code  | Colour temperature [K] | Current nominal If nom [mA] | Luminous flux <sup>1</sup> φ [lm] | Useful luminous flux <sup>2</sup> [lm] | Voltage <sup>1</sup> Vf [V] | Power <sup>1</sup> P [W] | Efficacy <sup>1</sup> [lm/W] | Current minimum If min <sup>3</sup> [mA] | Current maximum If max [mA] | Energy Efficiency Class |
|--|----------------|------------------------|-----------------------------|-----------------------------------|--|-----------------------------|--------------------------|------------------------------|--|-----------------------------|-------------------------|
| LinLED 280x24mm 2000lm 830 4C 42V Opt G2 | 1010 117 32846 | 3000                   | 280                         | 1846                              | 1909                                   | 40                          | 11                       | 166                          | 40                                       | 600                         | D                       |
| LinLED 560x24mm 4000lm 830 4C 42V Opt G2 | 1010 117 33446 |                        | 560                         | 3691                              | 3819                                   | 40                          | 22                       | 166                          | 80                                       | 1200                        | D                       |
| LinLED 280x24mm 2000lm 840 4C 42V Opt G2 | 1010 117 32946 | 4000                   | 280                         | 1940                              | 2007                                   | 40                          | 11                       | 175                          | 40                                       | 600                         | C                       |
| LinLED 560x24mm 4000lm 840 4C 42V Opt G2 | 1010 117 33546 |                        | 560                         | 3880                              | 4014                                   | 40                          | 22                       | 175                          | 80                                       | 1200                        | C                       |

### LinLED CRI 90 Optimum G2

| Product name                             | Ordering code  | Colour temperature [K] | Current nominal If nom [mA] | Luminous flux <sup>1</sup> φ [lm] | Useful luminous flux <sup>2</sup> [lm] | Voltage <sup>1</sup> Vf [V] | Power <sup>1</sup> P [W] | Efficacy <sup>1</sup> [lm/W] | Current minimum If min <sup>3</sup> [mA] | Current maximum If max [mA] | Energy Efficiency Class |
|--|----------------|------------------------|-----------------------------|-----------------------------------|--|-----------------------------|--------------------------|------------------------------|--|-----------------------------|-------------------------|
| LinLED 280x24mm 2000lm 927 4C 42V Opt G2 | 1010 117 70146 | 2700                   | 330                         | 1745                              | 1808                                   | 41                          | 13                       | 130                          | 40                                       | 600                         | E                       |
| LinLED 560x24mm 4000lm 927 4C 42V Opt G2 | 1010 117 70246 |                        | 660                         | 3490                              | 3617                                   | 41                          | 27                       | 130                          | 80                                       | 1200                        | E                       |
| LinLED 280x24mm 2000lm 930 4C 42V Opt G2 | 1010 117 40346 | 3000                   | 330                         | 1874                              | 1963                                   | 41                          | 13                       | 140                          | 40                                       | 600                         | E                       |
| LinLED 560x24mm 4000lm 930 4C 42V Opt G2 | 1010 117 40946 |                        | 660                         | 3748                              | 3925                                   | 41                          | 27                       | 140                          | 80                                       | 1200                        | E                       |
| LinLED 280x24mm 2000lm 940 4C 42V Opt G2 | 1010 117 40446 | 4000                   | 330                         | 2003                              | 2098                                   | 41                          | 13                       | 149                          | 40                                       | 600                         | D                       |
| LinLED 560x24mm 4000lm 940 4C 42V Opt G2 | 1010 117 41046 |                        | 660                         | 4007                              | 4196                                   | 41                          | 27                       | 149                          | 80                                       | 1200                        | D                       |

<sup>1</sup>At nominal current and T<sub>p</sub>

<sup>2</sup>At nominal current and 25°C

<sup>3</sup>It is recommended not to operate below minimum current in order to avoid un-even brightness

Tolerance range for optical and electrical ±10%

## Linear LED modules 2000lm per 1ft 4C

### Temperature & humidity

| Specification item                         | Unit | Value       |
|--|------|-------------|
| Tp   | [°C] | 45          |
| Tp rated                                   | [°C] | 65          |
| Tc   | [°C] | 85          |
| Relative humidity (non-condensing)         | [%]  | 5 ... 85    |
| Storage ambient temperature                | [°C] | -25 ... +85 |
| Storage relative humidity (non-condensing) | [%]  | 5 ... 85    |

Tp - Temperature related to the performance parameters of the LED modules

Tp rated - Maximum operating temperature to which the rated performance characteristics are declared

Tc - Highest permissible value for safe operation

### Technical data

| Specification item               | Unit   | Value         |
|----------------------------------|--------|---------------|
| Classification acc. to IEC 62031 |        | built-in      |
| Working voltage                  | [Vdc]  | 60            |
| Beam angle                       | [deg]  | 120           |
| Initial color consistency        | [SDCM] | 3             |
| Photobiological safety           |        | RG1 unlimited |

### Color coordinates

According to CIE 1931

| Specification item | CIE <sub>x</sub> | CIE <sub>y</sub> |
|--------------------|------------------|------------------|
| 2700K              | 0.4578           | 0.4101           |
| 3000K              | 0.4338           | 0.4030           |
| 4000K              | 0.3818           | 0.3797           |

### Certificates & standards

| Specification item | Compliant          |
|--------------------|--------------------|
| ENEC               | Yes                |
| CE                 | Yes                |
| RoHS               | Yes                |
| REACH              | Yes                |
| Zhaga              | Comply with Book 7 |
| IP rating          | No IP rating       |

## Linear LED modules 2000lm per 1ft 4C

### Lumen maintenance

### LinLED CRI 80

for LinLED CRI 80 Optimum G4

| Forward current | Tp temp. | L70 [h]  |          | L80 [h]  |          | L90 [h]  |          |
|-----------------|----------|----------|----------|----------|----------|----------|----------|
|                 |          | B50      | B10      | B50      | B10      | B50      | B10      |
| If nom (100mA)  | 45°C     | >102 000 | >102 000 | >102 000 | >102 000 | >102 000 | >102 000 |
|                 | 55°C     | >102 000 | >102 000 | >102 000 | >102 000 | >102 000 | >102 000 |
|                 | 65°C     | >102 000 | >102 000 | >102 000 | >102 000 | 87 000   | 86 000   |
|                 | 75°C     | >102 000 | >102 000 | >102 000 | >102 000 | 74 000   | 73 000   |
| If max (200mA)  | 85°C     | >102 000 | >102 000 | >102 000 | >102 000 | 63 000   | 62 000   |
|                 | 45°C     | >102 000 | >102 000 | >102 000 | >102 000 | >102 000 | >102 000 |
|                 | 55°C     | >102 000 | >102 000 | >102 000 | >102 000 | 97 000   | 96 000   |
|                 | 65°C     | >102 000 | >102 000 | >102 000 | >102 000 | 82 000   | 81 000   |
|                 | 75°C     | >102 000 | >102 000 | >102 000 | >102 000 | 69 000   | 68 000   |
|                 | 85°C     | >102 000 | >102 000 | >102 000 | >102 000 | 59 000   | 58 000   |

Reported data based on LM80 LED data 12000h

### LinLED CRI 80

for LinLED CRI 80 Optimum G2 & G3.1

| Forward current | Tp temp. | L70 [h]  |          | L80 [h]  |          | L90 [h] |        |
|-----------------|----------|----------|----------|----------|----------|---------|--------|
|                 |          | B50      | B10      | B50      | B10      | B50     | B10    |
| If nom          | 45°C     | >100 000 | >100 000 | >100 000 | >100 000 | 70 000  | 59 000 |
|                 | 55°C     | >100 000 | >100 000 | >100 000 | >100 000 | 70 000  | 59 000 |
|                 | 65°C     | >100 000 | >100 000 | >100 000 | >100 000 | 68 000  | 58 000 |
|                 | 75°C     | >100 000 | >100 000 | >100 000 | >100 000 | 66 000  | 57 000 |
| If max          | 85°C     | >100 000 | >100 000 | >100 000 | >100 000 | 65 000  | 57 000 |
|                 | 45°C     | >100 000 | >100 000 | >100 000 | >100 000 | 51 000  | 39 000 |
|                 | 55°C     | >100 000 | >100 000 | >100 000 | >100 000 | 51 000  | 39 000 |
|                 | 65°C     | >100 000 | >100 000 | >100 000 | >100 000 | 48 000  | 37 000 |
|                 | 75°C     | >100 000 | >100 000 | >100 000 | >100 000 | 45 000  | 35 000 |
|                 | 85°C     | >100 000 | >100 000 | >100 000 | >100 000 | 43 000  | 34 000 |

calculated data based on LM80 LED data (@65mA 17000h / @160mA & 200mA 12000h)

### LinLED CRI 90

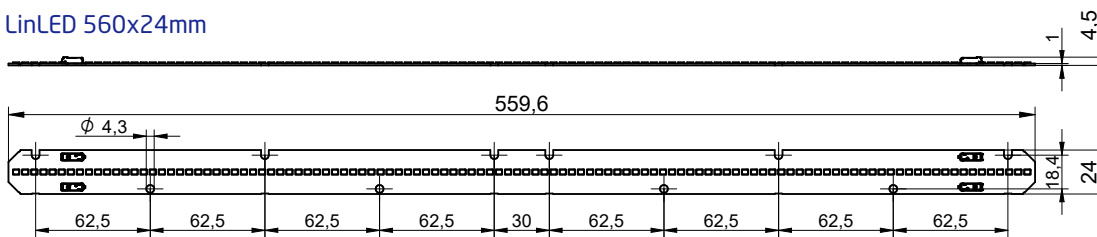
for LinLED CRI 90 Optimum G2

| Forward current | Tp temp. | L70 [h]  |          | L80 [h]  |          | L90 [h] |        |
|-----------------|----------|----------|----------|----------|----------|---------|--------|
|                 |          | B50      | B10      | B50      | B10      | B50     | B10    |
| If nom          | 45°C     | >100 000 | >100 000 | >100 000 | >100 000 | 60 000  | 57 000 |
|                 | 55°C     | >100 000 | >100 000 | 99 000   | 91 000   | 48 000  | 47 000 |
|                 | 65°C     | >100 000 | >100 000 | 78 000   | 73 000   | 38 000  | 34 000 |
| If max          | 45°C     | 82 000   | 69 000   | 52 000   | 49 000   | 29 000  | 28 000 |
|                 | 55°C     | 73 000   | 63 000   | 47 000   | 44 000   | 25 000  | 24 000 |
|                 | 65°C     | 64 000   | 58 000   | 41 000   | 38 000   | 22 000  | 19 000 |

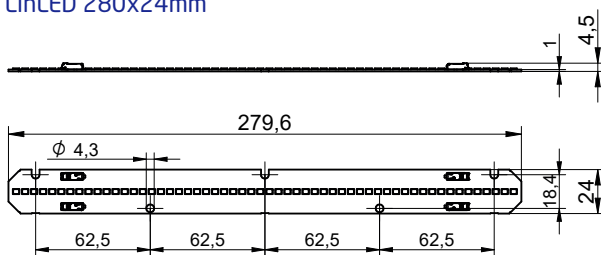
calculated data based on LM80 LED data 10 000h

### Dimensions

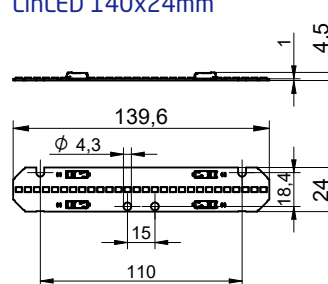
#### LinLED 560x24mm



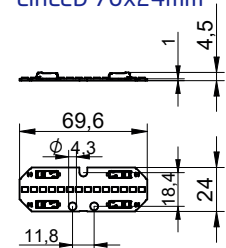
#### LinLED 280x24mm



#### LinLED 140x24mm



#### LinLED 70x24mm



### Mounting

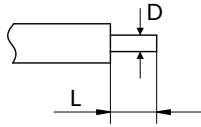
LED Modules cannot be exposed to tensile or compressive stresses. For this purpose it is necessary that the modules are assembled to a flat surface by only rounded head screws. Additionally plastic flat washer should be used to ensure creepage distance between screw's head and surface of the pcb. Max. torque for fixing: 0,5Nm.

LED modules are sensitive to electrostatic discharge (ESD). Follow safety regulations according to IEC 61340-5-1.

## Linear LED modules 2000lm per 1ft 4C

### Wiring

Wire cross section and strip length:



| D - wire cross section<br>(solid and flexible wires) | Min                | Max                 |
|--|--------------------|---------------------|
|  | 0.2mm <sup>2</sup> | 0.75mm <sup>2</sup> |
|  | AWG 24             | AWG 18              |

| L - strip length | Min | Max |
|------------------|-----|-----|
|                  | 8mm | 9mm |

Opening for the release of wires from the top with release pin Electroterminal art. 881 167 884:

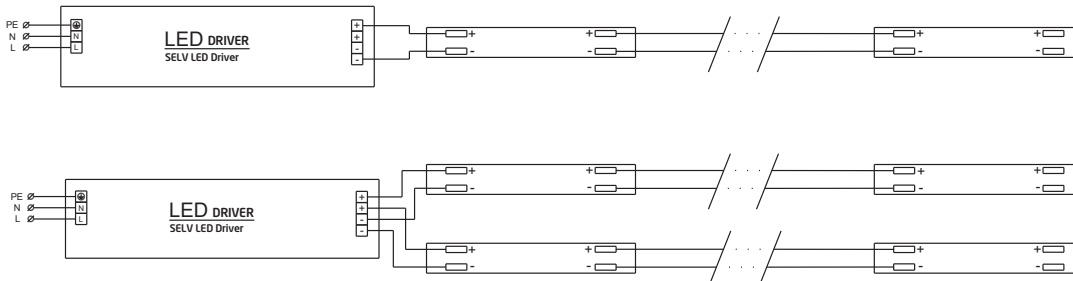


### Connections

| Max number of modules | Unit  | Series | Parallel |
|-----------------------|-------|--------|----------|
| LinLED 70x24mm        | [pcs] | -      | 32       |
| LinLED 140x24mm       | [pcs] | -      | 16       |
| LinLED 280x24mm       | [pcs] | -      | 8        |
| LinLED 560x24mm       | [pcs] | -      | 4        |

You can combine different lengths of LED modules so that the maximum length does not exceed 2240mm

#### Wiring for parallel connection system (4C)



To prevent irregular luminous intensity in parallel connection use only LED modules from the same V-code group.

V-code (e.g. "A", "B", "AB") is printed on the LED module and box label. Naming is not adequate to efficacy or luminous flux.

### Mounting

LED Modules cannot be exposed to tensile or compressive stresses. For this purpose it is necessary that the modules are assembled to a flat surface by only rounded head screws. Additionally plastic flat washer should be used to ensure creepage distance between screw's head and surface of the pcb. Max. torque for fixing: 0,5Nm.

LED modules are sensitive to electrostatic discharge (ESD). Follow safety regulations according to IEC 61340-5-1.

## Linear LED modules 2000lm per 1ft 4C

### Ordering codes

| Product name                               | Ordering code  | Pieces per box | Pieces per pallet | Box dimensions [mm] |
|--|----------------|----------------|-------------------|---------------------|
| LinLED 70x24mm 500lm 830 4C 42V Opt G4     | 1010 137 12846 | 320            | 76800             | 150 x 266 x 83      |
| LinLED 140x24mm 1000lm 830 4C 42V Opt G4   | 1010 137 12946 | 108            | 24624             | 248 x 175 x 66      |
| LinLED 280x24mm 2000lm 830 4C 42V Opt G4   | 1010 137 13046 | 150            | 18000             | 300 x 266x 83       |
| LinLED 560x24mm 4000lm 830 4C 42V Opt G4   | 1010 137 13146 | 160            | 9600              | 603 x 266 x 83      |
| LinLED 70x24mm 500lm 840 4C 42V Opt G4     | 1010 137 13246 | 320            | 76800             | 150 x 266 x 83      |
| LinLED 140x24mm 1000lm 840 4C 42V Opt G4   | 1010 137 13346 | 108            | 24624             | 248 x 175 x 66      |
| LinLED 280x24mm 2000lm 840 4C 42V Opt G4   | 1010 137 13446 | 150            | 18000             | 300 x 266x 83       |
| LinLED 560x24mm 4000lm 840 4C 42V Opt G4   | 1010 137 13546 | 150            | 18000             | 300 x 266x 83       |
| LinLED 70x24mm 500lm 840 4C 42V Opt G3.1   | 1010 127 78046 | 320            | 76800             | 150 x 266 x 83      |
| LinLED 140x24mm 1000lm 840 4C 42V Opt G3.1 | 1010 127 78146 | 108            | 24624             | 248 x 175 x 66      |
| LinLED 280x24mm 2000lm 840 4C 42V Opt G3.1 | 1010 127 78246 | 150            | 18000             | 300 x 266x 83       |
| LinLED 560x24mm 4000lm 840 4C 42V Opt G3.1 | 1010 127 78346 | 160            | 9600              | 603 x 266 x 83      |
| LinLED 280x24mm 2000lm 830 4C 42V Opt G2   | 1010 117 32846 | 150            | 18000             | 300 x 266x 83       |
| LinLED 560x24mm 4000lm 830 4C 42V Opt G2   | 1010 117 33446 | 160            | 9600              | 603 x 266 x 83      |
| LinLED 280x24mm 2000lm 840 4C 42V Opt G2   | 1010 117 32946 | 150            | 18000             | 300 x 266x 83       |
| LinLED 560x24mm 4000lm 840 4C 42V Opt G2   | 1010 117 33546 | 160            | 9600              | 603 x 266 x 83      |
| LinLED 280x24mm 2000lm 927 4C 42V Opt G2   | 1010 117 70146 | 150            | 18000             | 300 x 266x 83       |
| LinLED 560x24mm 4000lm 927 4C 42V Opt G2   | 1010 117 70246 | 160            | 9600              | 603 x 266 x 83      |
| LinLED 280x24mm 2000lm 930 4C 42V Opt G2   | 1010 117 40346 | 150            | 18000             | 300 x 266x 83       |
| LinLED 560x24mm 4000lm 930 4C 42V Opt G2   | 1010 117 40946 | 160            | 9600              | 603 x 266 x 83      |
| LinLED 280x24mm 2000lm 940 4C 42V Opt G2   | 1010 117 40446 | 150            | 18000             | 300 x 266x 83       |
| LinLED 560x24mm 4000lm 940 4C 42V Opt G2   | 1010 117 41046 | 160            | 9600              | 603 x 266 x 83      |