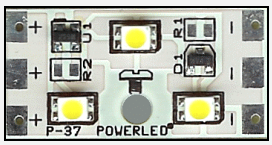
POWERLED® L3 is a module in the shape of rectangle having 30 x 15 x 4 mm in size, where 3 diodes LED of high lighting efficiency are installed. It can be used for spatial advertisement lighting (inside and outside), artistic and decorative lighting, evacuation or emergency lighting etc. Regardless of the light colour a module is supplied by standard voltage 12V DC.

POWERLED® L3 MODULE



TECHNICAL PARAMETERS	
Physical dimensions length/width/height	30 mm x 15 mm x 4 mm (screw hole: 3,5mm)
Module weight	ca. 3 g
LED diodes quantity	3 pcs.
Way of fixing	silicon glue, sticky tape, mounting screw (hole diameter 3,5 mm)

OPTICAL PARAMETERS [1]

[1] based on diode LED producer catalogue data

Available colours		Symbol	Flux of light and angle of light	
white cold (ok. 5400K)		L3-WH-12-PS	typ. 14 lm	$2\theta_{½}=120^{o}$ (for a single diode LED)
white warm (ok. 3200K)		L3-WW-12-PŻ	typ. 14 lm	
blue		L3-BL-12-IS	typ. 6 lm	
green		L3-GR-12-MS	typ. 14 lm	
yellow		L3-YL-12-OS	typ. 8 lm	
yellow	NEW !	L3-YL-12-OH	typ. 14 lm	
orange		L3-OR-12-OS	typ. 8 lm	
orange	NEW !	L3-OR-12-OH	typ. 24 lm	
amber	NEW !	L3-AM-12-OH	typ. 14 lm	
red		L3-RD -12-SS	min. 6 lm	

ELECTRICAL PARAMETERS

Module type	Current input I_Z [mA]	Supply voltage U_Z [V]	Power input P [W]	Electrical efficiency factor[2]: η [%]	Current change I_Z vs. voltage change U_Z factor[3]: I_U [%/%]	Current change I_Z vs. temperature change T factor[4]: I_T [%/K]	PWM modulation possibility
L3-WH-12-PS	ca. 23 mA	**12 VDC** -5% +20%	ca. 0,3W	min. 80 %	max. 1	typ. -0,3 $\frac{\%}{K}$	yes $f_{clock} \leq 4$ kHz
L3-WW-12-PŻ	ca. 23 mA		ca. 0,3W				
L3-BL-12-IS	ca. 23 mA		ca. 0,3W				
L3-GR-12-MS	ca. 25 mA		ca. 0,3W				
L3-YL-12-OS	ca. 40 mA	**12 VDC** -25% +5% (!!!)	ca. 0,5W	min. 50 %			
L3-YL-12-OH	ca. 40 mA		ca. 0,5W				
L3-OR-12-OS	ca. 40 mA		ca. 0,5W				
L3-OR-12-OH	ca. 40 mA		ca. 0,5W				
L3-AM-12-OH	ca. 40 mA		ca. 0,5W				
L3-RD -12-SS	ca. 27 mA		ca. 0,35W				

J.Chęciński

Explanatory note:

[2] The electrical efficiency factor (η) is assigned as, expressed in percentage, the proportion of power provided for diodes LED to total power consumed by a module (the higher rate of this factor the better, max. value is 100%).

[3] Current change I_Z vs. voltage change U_Z factor (I_U) represents the relation of module LED current relative change as a result of supply voltage relative value change (the lower value the better, in good solutions the value of this factor does not exceed 1).

[4] Current change Iz vs. temperature change T factor (I_T) represents module LED current relative change (given in percentage) at the increase of temperature of 1 degree (the value of this factor should be very low, negative value proves the use of the current negative thermal compensation extending diodes LED life time).

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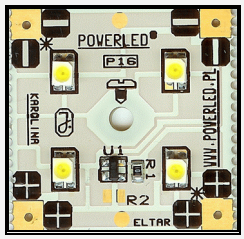
POWERLED® L4 is a module 30 x 30 x 4 mm in dimensions, containing four highly efficient diodes LED. It can be used for spatial advertisement lighting (inside and outside). It can also be used for artistic and decorative lighting (also traffic lights, evacuation or emergency lighting etc.).



POWERLED® L4 MODULE

TECHNICAL PARAMETERS

Physical dimensions length/width/height	30 mm x 30 mm x 4 mm (screw hole: 3,5mm)
Module weight	ca. 3,5 g
LED diodes quantity	4 pcs.
Way of fixing	silicon glue, sticky tape, mounting screw (hole diameter 3,5 mm)

OPTICAL PARAMETERS [1]

[1] based on diode LED producer catalogue data

Available colours		Symbol	Flux of light and angle of light	
white cold (ca. 5400K)		L4-WH-18-PS	typ. 20 lm	$2\theta_{½}=120^{o}$ (for a single diode LED)
white warm (ca. 3200K)		L4-WW-18-PŻ	typ. 20 lm	
blue		L4-BL-18-IS	typ. 8 lm	
green		L4-GR-18-MS	typ. 20 lm	
yellow		L4-YL-10-OS	typ. 12 lm	
yellow	NEW !	L4-YL-10-OH	typ. 20 lm	
orange		L4-OR-10-OS	typ. 12 lm	
orange	NEW !	L4-OR-10-OH	typ. 35 lm	
amber	NEW !	L4-AM-10-OH	typ. 20 lm	
red		L4-RD -10-SS	typ. 8 lm	

ELECTRICAL PARAMETERS

Module type	Current input I_Z [mA] +/- 5%	Supply voltage U_Z [V]	Power input P [W]	Electrical efficiency factor[2]: η [%]	Current change I_Z vs. voltage change U_Z factor[3]: I_U [%/%]	Current change I_Z vs. temperature change T factor[4]: I_T [%/K]	PWM modulation possibility
L4-WH-18-PS	ca. 23 mA	**18 VDC** -10% +5%	ca. 0,5W	min. 70 %	max. 1	typ. -0,3 $\frac{\%}{K}$	yes $f_{clock} \leq 4$ kHz
L4-WW-18-PŻ	ca. 23 mA		ca. 0,5W				
L4-BL-18-IS	ca. 23 mA		ca. 0,5W				
L4-GR-18-MS	ca. 25 mA		ca. 0,5W				
L4-YL-10-OS	ca. 50 mA	**10 VDC** -5% +10%	ca. 0,5W	min. 80 %			
L4-YL-10-OH	ca. 50 mA		ca. 0,5W				
L4-OR-10-OS	ca. 50 mA		ca. 0,5W				
L4-OR-10-OH	ca. 50 mA		ca. 0,5W				
L4-AM-10-OH	ca. 50 mA		ca. 0,5W				
L4-RD -10-SS	ca. 27 mA		ca. 0,3W				

J.Chojeński

Explanatory note:

[2] The electrical efficiency factor (η) is assigned as, expressed in percentage, the proportion of power provided for diodes LED to total power consumed by a module (the higher rate of this factor the better, max. value is 100%).

[3] Current change I_Z vs. voltage change U_Z factor (I_U) represents the relation of module LED current relative change as a result of supply voltage relative value change (the lower value the better, in good solutions the value of this factor does not exceed 1).

[4] Current change Iz vs. temperature change T factor (I_T) represents module LED current relative change (given in percentage) at the increase of temperature of 1 degree (the value of this factor should be very low, negative value proves the use of the current negative thermal compensation extending diodes LED life time).

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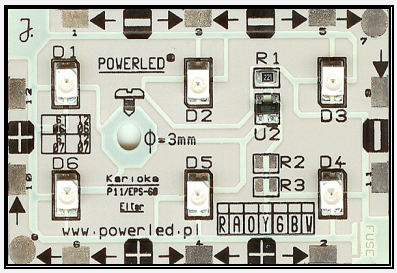
POWERLED® L6 is a module 50 x 30 x 4 mm in dimensions, containing six highly efficient diodes LED. Easy and diverse way of fixing makes it useful for large light advertisements. It can also be used for artistic and decorative lighting (also traffic lights, evacuation or emergency lighting etc.).



POWERLED® L6 MODULE

TECHNICAL PARAMETERS	
Physical dimensions length/width/height	50 mm x 30 mm x 4 mm (screw hole: 3,5mm)
Module weight	ca. 5,5 g
LED diodes quantity	6 pcs.
Way of fixing	silicon glue, sticky tape, mounting screw (hole diameter: 3,5 mm)

OPTICAL PARAMETERS [1]

[1] based on diode LED producer catalogue data

Available colours		Symbol	Flux of light and angle of light	
white cold (ok. 5400K)		L6-WH-24-PS	typ. 30 lm	$2\theta_{1/2}=120^{o}$ (for a single diode LED)
white warm (ok. 3200K)		L6-WW-24-PŻ	typ. 30 lm	
blue		L6-BL-24-IS	typ. 12 lm	
green		L6-GR-24-MS	typ. 30 lm	
yellow		L6-YL-15-OS	typ. 18 lm	
yellow	NEW !	L6-YL-15-OH	typ. 30 lm	
orange		L6-OR-15-OS	typ. 18 lm	
orange	NEW !	L6-OR-15-OH	typ. 52 lm	
amber	NEW !	L6-AM-15-OH	typ. 30 lm	
red		L6-RD -15-SS	typ. 12 lm	

ELECTRICAL PARAMETERS

Module type	Current input I_Z [mA] +/- 5%	Supply voltage U_Z [V]	Power input P [W]	Electrical efficiency factor[2]: η [%]	Current change I_Z vs. voltage change U_Z factor[3]: I_U [%/%]	Current change I_Z vs. temperature change T factor[4]: I_T [%/K]	PWM modulation possibility
L6-WH-24-PS	ca. 23 mA	**24 VDC** -10% +5%	ca. 0,6 W	min. 80 %	max. 1	typ. -0,3 $\frac{\%}{K}$	yes $f_{clock} \leq 4$ kHz
L6-WW-24-PŻ	ca. 23 mA		ca. 0,6 W				
L6-BL-24-IS	ca. 23 mA		ca. 0,6 W				
L6-GR-24-MS	ca. 25 mA		ca. 0,6 W				
L6-YL-15-OS	ca. 50 mA	**15 VDC** -5% +5%	ca. 0,8 W				
L6-YL-15-OH	ca. 50 mA		ca. 0,8 W				
L6-OR-15-OS	ca. 50 mA		ca. 0,8 W				
L6-OR-15-OH	ca. 50 mA		ca. 0,8 W				
L6-AM-15-OH	ca. 50 mA		ca. 0,8 W				
L6-RD -15-SS	ca. 27 mA		ca. 0,45W				

J.Chęciński

Explanatory note:

[2] The electrical efficiency factor (η) is assigned as, expressed in percentage, the proportion of power provided for diodes LED to total power consumed by a module (the higher rate of this factor the better, max. value is 100%).

[3] Current change I_Z vs. voltage change U_Z factor (I_U) represents the relation of module LED current relative change as a result of supply voltage relative value change (the lower value the better, in good solutions the value of this factor does not exceed 1).

[4] Current change Iz vs. temperature change T factor (I_T) represents module LED current relative change (given in percentage) at the increase of temperature of 1 degree (the value of this factor should be very low, negative value proves the use of the current negative thermal compensation extending diodes LED life time).

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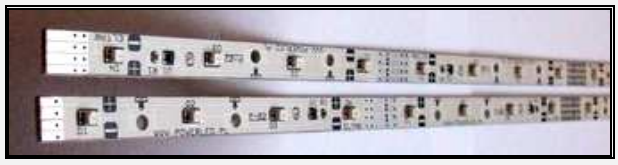
POWERLED® LC STRIP is a module in the shape of strip 375x10x4 mm in dimensions, containing twelve highly efficient diodes LED. There is a possibility of dividing a module into three equal pieces of 125mm each (there are two mounting holes in each part ϕ=3,5 mm). It is used in outline and linear lighting (e.g. "contour" of petrol stations). It can also be used for artistic and decorative lighting.

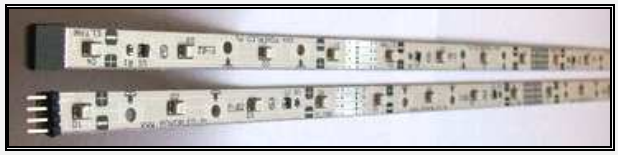
LC STRIP version LZ is fitted out with four-pin connectors soldered at the ends which enables joining strips in long lines. In this way, up to 5-10 meters of LZ STRIPS can be joined together and supplied from one terminal.

POWERLED® LC (L3 & LZ) STRIP

L3



LZ



TECHNICAL PARAMETERS

Physical dimensions length/width/height	375 mm x 10 mm x 4 mm (three parts 125 mm each)
Module weight	ca. 14 g
LED diodes quantity	12 pcs. (raster: 31 mm)
Way of fixing	silicon glue, sticky tape, mounting screw (hole diameter 3,5 mm)

OPTICAL PARAMETERS [1]

[1] based on diode LED producer catalogue data

Available colours		Symbol	Flux of light and angle of light	
white cold (ok. 5400K)		LC-WH-..-18-PS	typ. 60 lm	$2\theta_{1/2}=120^{o}$ (for a single diode LED)
white warm (ok. 3200K)		LC-WW-.-18-PŻ	typ. 60 lm	
blue		LC-BL-..-18-IS	typ. 24 lm	
green		LC-GR-..-18-MS	typ. 60 lm	
yellow		LC-YL-..-10-OS	typ. 36 lm	
yellow	NEW !	LC-YL-..-10-OH	typ. 60 lm	
orange		LC-OR-..-10-OS	typ. 36 lm	
orange	NEW !	LC-OR-..-10-OH	typ. 105 lm	
amber	NEW !	LC-AM-..-10-OH	typ. 60 lm	
red		LC-RD -..-10-SS	typ. 24 lm	

ELECTRICAL PARAMETERS

Module type	Current input I_Z [mA] +/- 5%	Supply voltage U_Z [V]	Power input P [W]	Electrical efficiency factor[2]: η [%]	Current change I_Z vs. voltage change U_Z factor[3]: I_U [%/%]	Current change I_Z vs. temperature change T factor[4]: I_T [%/K]	PWM modulation possibility
LC-WH-..-18-PS	ca. 70 mA	**18 VDC** -10% +5%	ca. 1,4W	min. 70 %	max. 1	typ. -0,3 $\frac{\%}{K}$	yes $f_{clock} \leq 4$ kHz
LC-WW-.-18-PŻ	ca. 70 mA		ca. 1,4W				
LC-BL-..-18-IS	ca. 70 mA		ca. 1,4W				
LC-GR-..-18-MS	ca. 75 mA		ca. 1,5W				
LC-YL-..-10-OS	ca. 150 mA	**10 VDC** -5% +10%	ca. 1,5W	min. 80 %			
LC-YL-..-10-OH	ca. 150 mA		ca. 1,5W				
LC-OR-..-10-OS	ca. 150 mA		ca. 1,5W				
LC-OR-..-10-OH	ca. 150 mA		ca. 1,5W				
LC-AM-..-10-OH	ca. 150 mA		ca. 1,5W				
LC-RD -..-10-SS	ca. 80 mA		ca. 0,8W				

Explanatory note:

[2] The electrical efficiency factor (η) is assigned as, expressed in percentage, the proportion of power provided for diodes LED to total power consumed by a module (the higher rate of this factor the better, max. value is 100%).

[3] Current change I_Z vs. voltage change U_Z factor (I_U) represents the relation of module LED current relative change as a result of supply voltage relative value change (the lower value the better, in good solutions the value of this factor does not exceed 1).

[4] Current change Iz vs. temperature change T factor (I_T) represents module LED current relative change (given in percentage) at the increase of temperature of 1 degree (the value of this factor should be very low, negative value proves the use of the current negative thermal compensation extending diodes LED life time).

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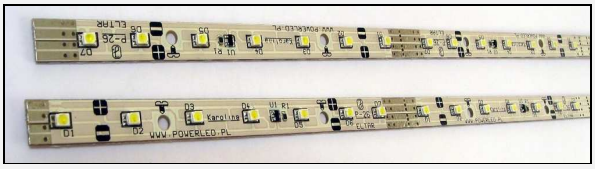
POWERLED® STRIP Lmax is a module in the shape of strip 390 x 10 x 4 mm in dimensions, containing twenty-one bright diodes LED. There is a possibility of dividing a module into three equal pieces of 130 mm each (there are two mounting holes in each part ϕ=3,5 mm). It is used in outline and linear lighting (in special lampholders it replaces neon displays). It can also be used for artistic and decorative lighting.

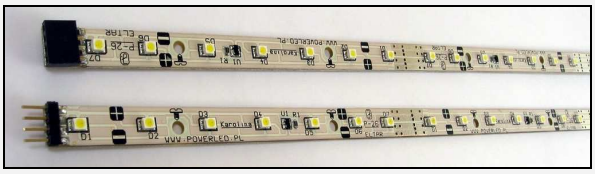
STRIP version Lmax-z is fitted out with four-pin or two-pin connectors soldered at the ends which enables joining strips in long lines. In this way, up to 5-10 meters of Lmax-z... STRIPS can be joined together and supplied from one terminal.

POWERLED® Lmax i Lmax-z MODULE

Lmax



Lmax-z



TECHNICAL PARAMETERS	
Physical dimensions length/width/height	390mm x 10mm x 4mm (three parts 130 mm each)
Module weight	ca. 16 g
LED diodes quantity	21 pcs. (raster: 18,5 mm)
Way of fixing	silicon glue, sticky tape, mounting screw (hole diameter 3,5 mm)

OPTICAL PARAMETERS [1]

[1] based on diode LED producer catalogue data

Available colours		Symbol	Flux of light and angle of light	
white cold (ok. 5400K)		Lmax..-WH-26-PS	typ. 100 lm	$2\theta_{½}=120^{O}$ (for a single diode LED)
white warm (ok. 3200K)		Lmax..-WW-26-PŻ	typ. 100 lm	
blue		Lmax..-BL-26-SS	min. 30 lm	
green		Lmax..-GR-26-MS	typ. 100 lm	
yellow		Lmax..-YL-18-OS	typ. 60 lm	
yellow	NEW !	Lmax..-YL-18-OH	typ. 100 lm	
orange		Lmax..-OR-18-OS	typ. 60 lm	
orange	NEW !	Lmax..-OR-18-OH	typ. 180 lm	
amber	NEW !	Lmax..-AM-18-OH	typ. 100 lm	
red		Lmax..-RD-18-SS	min. 30 lm	

ELECTRICAL PARAMETERS

Module type	Current input I_Z [mA]	Supply voltage U_Z [V]	Power input P [W]	Electrical efficiency factor[2]: η [%]	Current change I_Z vs. voltage change U_Z factor[3]: I_U [%/%]	Current change I_Z vs. temperature change T factor[4]: I_T [%/K]	PWM modulation possibility
Lmax..-WH-26-PS	ca. 70 mA	**26 VDC** -5% +5%	ca. 1,9W	min. 80 %	max. 1	typ. -0,3 $\frac{\%}{K}$	yes $f_{clock} \leq 4kHz$
Lmax..-WW-26-PŻ	ca. 70 mA		ca. 1,9W				
Lmax..-BL-26-SS	ca. 70 mA		ca. 1,9W				
Lmax..-GR-26-MS	ca. 70 mA		ca. 1,9W				
Lmax..-YL-18-OS	ca. 150 mA	**18 VDC** -5% +10%	ca. 2,7W				
Lmax..-YL-18-OH	ca. 150 mA		ca. 2,7W				
Lmax..-OR-18-OS	ca. 150 mA		ca. 2,7W				
Lmax..-OR-18-OH	ca. 150 mA		ca. 2,7W				
Lmax..-AM-18-OH	ca. 150 mA		ca. 2,7W				
Lmax..-RD-18-SS	ca. 80 mA		ca. 1,5W				

J.Chęciński

Explanatory note:

[2] The electrical efficiency factor (η) is assigned as, expressed in percentage, the proportion of power provided for diodes LED to total power consumed by a module (the higher rate of this factor the better, max. value is 100%).

[3] Current change I_Z vs. voltage change U_Z factor (I_U) represents the relation of module LED current relative change as a result of supply voltage relative value change (the lower value the better, in good solutions the value of this factor does not exceed 1).

[4] Current change Iz vs. temperature change T factor (I_T) represents module LED current relative change (given in percentage) at the increase of temperature of 1 degree (the value of this factor should be very low, negative value proves the use of the current negative thermal compensation extending diodes LED life time).

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POWERLED® L2/6 MODULE

POWERLED® L2/6 is a lighting module where two broad-angled ($2\theta_{½}=120^{O}$) multichip diodes LED are installed. These diodes are of "long life" type and medium power (10 x 250 mW)*. It was possible to achieve a very high flux of light at extremely low power consumption thanks to a very high electrical efficiency factor (above 80 %) and high light efficiency of diodes used (more than 60 lm/W)*. **This module is one of the most efficient sources of light produced by our company.** The electronic units used in the module, control diodes' LED work conditions and provide optimum power value. This module long life time (comparable to diodes' LED life time declared by their producer) is possible because of used negative thermal power compensation, supplying the diodes.

Usage: line lighting, decorative lighting, advertising lighting (spatial letters lighting), LED lamps, traffic lights, evacuation lighting, architectural lighting etc.

* parameters are given for the module with diodes LED "long life" type emitting white cold light.

TECHNICAL PARAMETERS	
Physical dimensions length/width/height	50mm x 10mm x 3mm (screw hole: 3,5mm)
Module weight	ca. 2 g
Way of fixing	silicon glue, sticky tape, mounting screw (hole diameter 3,5 mm)

OPTICAL PARAMETERS [1]

[1] based on diode LED producer catalogue data

Available colours	Symbol	Flux of light and angle of light	
white cold (ok. 6000K)	L2/6-WH-24-IS	typ. 27 lm new!	$2\theta_{½}=120^{O}$ (for a single diode LED)
white warm (ok. 3400K)	L2/6-WW-24-IS	typ. 18 lm	
blue	L2/6-BL-24-IH	typ. 12 lm new!	
green	L2/6-GR-24-IS	typ. 25 lm	
red	L2/6-RD-15-IH	typ. 15 lm new!	

ELECTRICAL PARAMETERS

Module type	Supply voltage U_Z [V] +/- 5%	Current input I_Z [mA]	Power input P [W]	Electrical efficiency factor[2] η [%]	Current change I_Z vs. voltage change U_Z factor[3] I_U [%/%]	Current change I_Z vs. temperature change T factor[4] I_T [%/K]	PWM modulation possibility
L2/6-WH-24-IS	24 VDC	ca. 20 mA	ca. 0,5W	min. 80 %	max. 1	typ. -0,3 $\frac{\%}{K}$	yes $f_{clock} \leq 4$ kHz
L2/6-WW-24-IS		ca. 20 mA	ca. 0,5W				
L2/6-BL-24-IH		ca. 20 mA	ca. 0,5W				
L2/6-GR-24-IS		ca. 22 mA	ca. 0,55W				
L2/6-RD-15-IH	15 VDC	ca. 24 mA	ca. 0,4W				

J.Chęciński

Explanatory note:

[2] The electrical efficiency factor (n) is assigned as, expressed in percentage, the proportion of power provided for diodes LED to total power consumed by a module (the higher rate of this factor the better, max. value is 100%).

[3] Current change I_Z vs. voltage change U_Z factor (I_U) represents the relation of module LED current relative change as a result of supply voltage relative value change (the lower value the better, in good solutions the value of this factor does not exceed 1).

[4] Current change I_Z vs. temperature change T factor (I_T) represents module LED current relative change (given in percentage) at the increase of temperature of 1 degree (the value of this factor should be very low, negative value proves the use of the power negative thermal compensation extending diodes LED life time).

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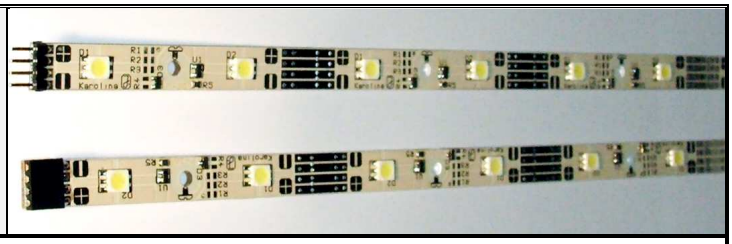
POWERLED® L10/30 STRIP



POWERLED® L10/30 is the module in the shape of strip where ten broad-angled multichip diodes LED are installed. These diodes are of "long life" type and medium power (10 x 250 mW)*. It was possible to achieve a very high flux of light at extremely low power consumption thanks to very high electrical efficiency factor (above 80 %) and high light efficiency of diodes used (more than 60 lm/W)*. **This module is one of the most efficient sources of light produced by our company.** The electronic units used in the module, control diodes' LED work conditions and provide optimum power value. This module long life time (comparable to diodes' LED life time declared by their producer) is possible because of used negative thermal power compensation, supplying the diodes. Light emitted by the strip can be easily adjusted (PWM modulation, range from 0 to 100 %) with the processor controllers (e.g. one-channel controller "MINI_PCB").

The strip is ended with a four-pin socket and a plug which allows joining modules in long lines (even up to 30 strips could be joined together powered from one terminal). The strip can also be easily divided into five independent pieces having two diodes LED each, long for 78 mm (power supply is not changed).

Usage: line lighting, decorative lighting, advertising lighting (spatial letters lighting), LED lamps, traffic lights, evacuation lighting, architectural lighting etc.

* parameters are given for the module with diodes LED "long life" type emitting white cold light.

TECHNICAL PARAMETERS

Physical dimensions length/width/height	390mm x 10mm x 3mm (screw hole: 3,5mm every 78mm)
Diodes quantity	10 (raster: 39 mm)
Module weight	ca. 12 g
Way of fixing	silicon glue, sticky tape, mounting screw (5 holes with diameter of 3,5 mm)

OPTICAL PARAMETERS [1]

[1] based on diode LED producer catalogue data

Available colours	Symbol	Flux of light and angle of light	
white cold (ca. 6000K)	L10/30-WH-24-IS	typ. 135 lm new!	$2\theta_{½}=120^{O}$ (for a single diode LED)
white warm (ca. 3400K)	L10/30-WW-24-IS	typ. 90 lm	
blue	L10/30-BL-24-IH	typ. 60 lm new!	
green	L10/30-GR-24-IS	typ. 125 lm	
red	L10/30-RD-15-IH	typ. 70 lm new!	

ELECTRICAL PARAMETERS

Module type	Supply voltage U_Z [V] +/- 5%	Current input I_Z [mA]	Power input P [W]	Electrical efficiency factor[2]: η [%]	Current change I_Z vs. voltage change U_Z factor[3]: I_U [%/%]	Current change I_Z vs. temperature change T factor[4]: I_T [%/K]	PWM modulation possibility
L10/30-WH-24-IS	24 VDC	ca.100 mA	ca. 2,5 W	min. 80 %	max. 1	typ. -0,3 $\frac{\%}{K}$	yes $f_{clock} \leq 4$ kHz
L10/30-WW-24-IS		ca.100 mA	ca. 2,5 W				
L10/30-BL-24-IH		ca.100 mA	ca. 2,5 W				
L10/30-GR-24-IS		ca.110 mA	ca. 2,7 W				
L10/30-RD-15-IH	15 VDC	ca.120 mA	ca. 2 W				

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Explanatory note:

[2] The electrical efficiency factor (η) is assigned as, expressed in percentage, the proportion of power provided for diodes LED to total power consumed by a module (the higher rate of this factor the better, max. value is 100%).

[3] Current change I_Z vs. voltage change U_Z factor (I_U) represents the relation of module LED current relative change as a result of supply voltage relative value change (the lower value the better, in good solutions the value of this factor does not exceed 1).

[4] Current change Iz vs. temperature change T factor (I_T) represents module LED current relative change (given in percentage) at the increase of temperature of 1 degree (the value of this factor should be very low, negative value proves the use of the current negative thermal compensation extending diodes LED life time).

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