

lediko PRO

CLEVEO 2 LED Luminaire

Instruction manual v2.0



CLV-2

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Instruction manual

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"LEDIKO Walendowski i Wilanowski" Sp. J.

address: 125 Klecińska str,
Wrocław, Poland PL-54413
tel: +48 717 985 785
fax: +48 717 237 357
e-mail: info@ledikoPRO.pl

Utilization of used lamps:



LED lamps must be disposed of in accordance with current regulations concerning environmental protection. Used lamps should be returned to the applicable collection point, where they will be accepted free of charge. Proper utilization of equipment enables preserving valuable environmental resources and avoiding adverse impacts on health and the environment, which may be threatened by inappropriate waste handling.

Legal notice:

Although we do our best to calculate CLEVEO lamp operating parameters properly, „LEDIKO Walendowski i Wilanowski” Sp.j takes no responsibility for CLEVEO lamp operating parameters accuracy. „LEDIKO Walendowski i Wilanowski” Sp.j. stipulates that the CLEVEO lamp operating parameters is no subject to claims. If irregularities are detected, please contact us.

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1. Introduction

CLEVEO is an intelligent and economical in operation LED street lamp with a versatility of applications and very good technical parameters. By combining a unique system for making photometric distribution with digital control, we achieved an innovative product with high performance and unique functionality. CLEVEO lamps are environmentally friendly. They are characterized by low demand for electrical energy and made of safe materials.

Advantages of CLEVEO luminaires:

- energy saving light source
- high-performance optical system
- a very uniform distribution of light on the ground
- uses the highest quality CREE XLamp power LED's
- adjustable brightness
- embedded intelligent driver
- High Color Rendering Index (CRI): Ra 75-80

Applications:

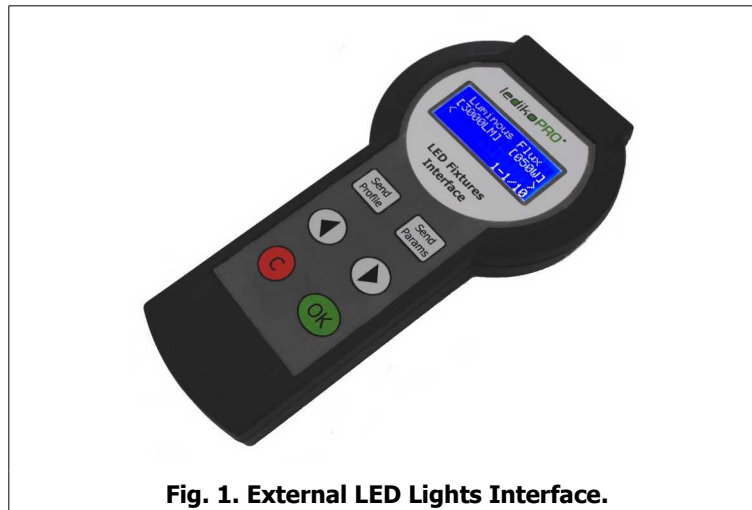
- street and road illumination
- illumination of parking lots, squares, parks
- illumination of pedestrian areas
- illumination of industrial and residential zones

2. Available accessories

Accessories are the optional equipment of CLEVEO LED luminaire.

2.1. External LED Lights Interface

External LED Lights Interface (offered as an option) allows you to control the CLEVEO's parameters.



The LED Lights Interface is available as an external unit connected to the CLEVEO LED luminaire. To connect the user interface to the CLEVEO LED luminaire a signal cable (optional) is required. Use of the LED Lights Interface is described in detail in a separate leaflet instructions of the interface.

2.2. Cables for CLEVEO LED Luminaire

CLEVEO street lamp can be supplied with a power cable of a length specified by the recipient.

Signal cable allows connection between Interface and CLEVEO luminaire. Cable also allows connecting control line for External Dim Mode.

See point 4.3.1 for details.

3. Configuration and control of CLEVEO's operation

CLEVEO LED luminaire is equipped with an intelligent microprocessor driver. Thus it is possible to precisely control the parameters of the lamp.

CLEVEO LED luminaire operating parameters can be configured in two ways:

- Factory Setup - LED luminaire operating parameters are pre-set based on a survey completed by the contractor of the LED lamp.
- Configuration using an optional LED Lights Interface.

When properly set, CLEVEO luminaire becomes an autonomous unit, not requiring any further maintenance.

You can control the lamp power during its work with an external control signal (0-10V).

3.1. Lamp parameters configured by the user

3.1.1. Luminous Flux

This option allows you to set the lumen output and the power of the LED lamp. Embedded intelligent controller will control the lamp's operation so that, irrespective of external conditions it will maintain the desired light output. The maximum possible setting of the light output is dependent on the type of lamp.

Power consumption may change during the work cycle, because of strong relationship between luminous flux of each LED and temperature. The lower temperature – the better efficiency and lower power consumption with the same level of Luminous Flux. In lower temperature the luminaire does not need so much power in relation to higher temperature, so the power consumption is lower with the same Luminous Flux. Maintenance of constant Luminous Flux is a first priority for the CLEVEO LED driver.

Maximum Luminous Flux depends on quantity, type of LEDs and type of LED supply. Minimum Luminous Flux can be set to about 10% of its maximum value. Datasheets of each type of luminaire are available in CLEVEO Datasheet.

More details about Luminous Flux parameter are available in Functionality Manual on our website.

3.1.2. Internal Dim Mode

Internal Dim:	Disable / Enable
Internal Dim Period:	5 – 100%, in steps of 5%
Internal Dim Rate:	10 – 95%, in steps of 5%
Light Up:	Disable / Enable

Internal Dim feature automatically reduces the lamp's power in the late night hours (no external control signal is required). Reducing the lamp's power lowers the light intensity of the lamp. The lamp persists in Internal Dim mode when it's power is lowered. Minimum level of Luminous Flux is 10% of its maximum value.

The "Internal Dim" parameter enables or disables the Internal Dim function. Morning Light Up can be enabled only when Internal Dim is already enabled.

The "Internal Dim Period" parameter determines at what percentage of the cycle's time the lamp is in saving mode. This parameter depends on Last Night Average, which is an average time of 10 last cycles (nights). For example, setting **Internal Dim Period to 40%=4h**, will cause starting this mode **after 60% (6h) of Last Nights Average**, when Last Time Average from **last 10 nights is equal to 10 hours**.

The "Internal Dim Rate" parameter sets the level of the output luminous flux of the lamp, to which the lamp is to be dimmed with respect to the previous set Luminous Flux parameter.

Light Up Mode allows to return to the standard Luminous Flux from Internal Dim mode, for example in early morning hours. Time, after **Light Up Mode** starts, **is set to 90% of Last Time Average.**

More details about Internal Dim and Light Up modes are available in Functionality Manual on our website.

3.1.3. External Dim Mode

External Dim: Disable / Switched / Linear
External Dim Rate: 10 – 95%, in steps of 5%

The External Dim function reduces the input power of the luminaire to a desired level using an external 0-10V electric control signal. Reducing the lamp's power lowers the light intensity of the lamp. The lamp persists in the External Dim mode when it's power is lowered. The lamp must be equipped with an external signal cable for this feature to function correctly. The signal cable is available as an option. You can enable the saving mode using an external control signal. In most applications the signal is generated by a driver with a 1-10V or 0-10V standard. Control signal should be applied to the signal cable through an appropriate adapter for the luminaire supplied by LEDIKO.

The "External Dim" parameter allows you to select the operating mode:

- Disable - disables the External Dim
- Switched - The External Dim feature has only two possible settings. When the control line voltage is 5 .. 10V the lamp operates at 100% power. At the voltage of 0 .. 5V the lamp's output is reduced to the level set by the "External Dim Rate" parameter. Easiest way is to use simple switch – when it is off (control line is open) it is like 10V signal, and when it is on (control line is short-circuited) it is like 0V signal.
- Linear - allows for a smooth adjustment of the lamp's power from 100% of the set value (at the voltage of 10V on the control line) to the the luminaires minimal setting.

The "External Dim" parameter defines the percentage of the luminous flux output by the lamp when in the External Dim Switched mode.

When there is no control signal (control line is open), the power of the lamp is 100% of the set value.

More details about External Dim mode are available in Functionality Manual on our website.

Minimum level of Luminous Flux is 10% of its maximum value.

3.1.4. Aging Compensation

Aging compensation: Disable / Enable

When this option is set to "on", the driver maintains constant output Luminous Flux regardless of the light source's wear. This option causes minor increase in the power consumption along with the aging of the light source. This option also vastly increases lamp lifetime, and decreases overall power consumption in proportion to standard street lamps. Compensation will effect better if default value of the Luminous Flux is not set to the maximum value of luminaire potential.

More details about Aging Compensation are available in Functionality Manual on our website.

4. CLEVEO LED assembly

4.1. Safety regulations

1. Installation of the lamps may only be carried out by qualified personnel, with permits appropriate to one's country.
2. During the installation of lamp every precaution should be kept adequately to location and method of assembly.
3. During the installation of the lamps mains power should be disconnected. Installation of lamps when power is on poses a risk of electric shock or damage of the lamp.
4. LED lamp must be connected to a power source with all the guidelines targeting the interests of safety.
5. Before connecting, you should always check the electrical connections and their compliance with relevant standards and make sure that the power source is of appropriate electrical parameters.

4.2. Proceedings with the CLEVEO LED luminaire




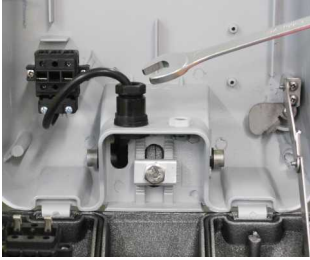


CLEVEO street lamp is constructed in a manner which ensures high durability and resistance to external conditions. CLEVEO street lamp has an IP 66, level of protection against external conditions. This means that the sealed lamp can work in almost any weather conditions and with a large dust rate. To ensure long and reliable operation of the lamps, one should follow instructions on the lamp assembly and service of LED lamps described later in this manual.

Handling with the LED lamp

1. During the assembly, transportation or any other operations related to the LED lamp, avoid strong shocks, impacts and any other mechanical strokes.
2. Do not immerse LED lights in water as well as other liquids.
3. Avoid contact of the LED lights with liquids, solvents, penetrating substances or any other substances which could permanently damage or pollute the casing of the lamp or penetrate the inside of the lamp.
4. You should avoid opening the LED lamps. LED lamp can be opened only during the installation (if it is necessary to connect the cables) and during the service work. Opening of LED lights and all the work in its interior can be exercised only by properly trained persons.
5. It is recommended that the opening of the lamp takes place indoors. If you work outside the opening of the lamp is possible only on days on which there is no rainfall. Water that gets into the lamps may have an impact on shortening the life of LEDs or their damage. It is recommended to perform installation of LED lights on sunny days, with low air humidity.
6. Installation and set up the lamp on a high level of humidity (above 60%) days are not recommended. This may lead to shortening the life of LEDs, and in extreme cases, damaging the LEDs or the electronic circuits inside the lamp.
7. Connecting the LED lamps to the electricity grid can be made only with power switched off.
8. CLEVEO street lamp has a protection switching off power supply in case of the opening of the enclosure. However, it is recommended that the work inside the frame took place when the power is off.





4.3. Assembly procedures

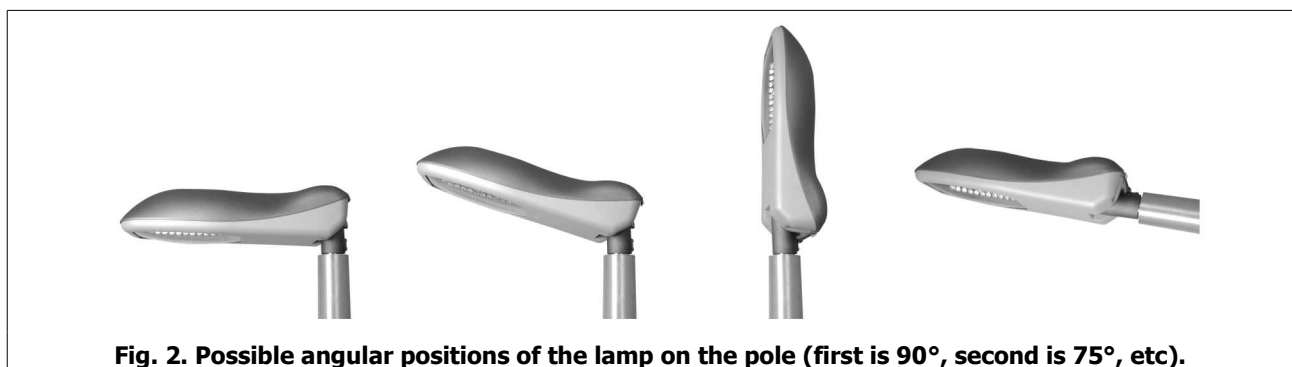
4.3.1. Installing the power cord

<ul style="list-style-type: none">• Prepare LED lamp and an insulated star screwdriver with PH1 ending and 22mm wrench.• Prepare a section of power cable with appropriate length and parameters:<ul style="list-style-type: none">◦ Round cable: $3 \times 1.5 \sim 2.5 \text{ mm}^2$ (3 x AWG 13~16),◦ External cable diameter 10~14 mm,	 An image showing the LED lamp with its top cover removed, and the tools required for installation: a red-handled insulated star screwdriver, a silver 22mm wrench, and a black power cable with three colored wires (red, blue, green).
<ul style="list-style-type: none">• Place the lamp on the table or other flat and stable surface.• Open the lamp unlocking the latch.	 An image of the LED lamp with its top cover open, showing the internal LED array and the internal wiring terminals.
<ul style="list-style-type: none">• Put the cable through the bushing and fixing sleeve leaving inside the lamp approx. 10 cm of cable.• The power cord terminals remaining inside the lamp should be fixed to the screw terminal: live, PE, neutral.	 An image showing the power cable being inserted into the bushing of the LED lamp. The internal terminals are visible.
<ul style="list-style-type: none">• Screw the cable bushing using a 22mm wrench. The bushing should be screwed strongly enough so that the cable is not loose.• Check the correctness of the connection.	 An image showing the 22mm wrench being used to tighten the cable bushing on the LED lamp.
<ul style="list-style-type: none">• Close the housing tightly. Locking the latch should require some force and should be ended with a loud click. If closing of the housing requires excessive force, check the positioning of the seal placed along the edge connecting both halves and check if the cable is not squeezed.• Visually check the correctness of closing. Both halves should be aligned evenly on the whole circumference of the lamp.	 An image of the LED lamp with its top cover closed and latched.
<ul style="list-style-type: none">• Connect the lamp to power supply in order to check if it works correctly.	 An image of the LED lamp with its power cord attached to the bottom.

4.3.2. Setting the lamp inclination angle



CLEVEO lamp is equipped with a fixing element with adjustable angle. Thus the lamp can be installed on posts ended vertically and horizontally. CLEVEO lamp in standard enables adjustment of angle in two ranges: -5° to 20° and 70° to 95° in 2.5° steps. Other adjustment ranges are available on request.

<ul style="list-style-type: none">• Prepare the lamp and a 17 mm wrench.	
<ul style="list-style-type: none">• Place the lamp on a table or any other flat and stable surface.• Open the lamp unlocking the latch.	
<ul style="list-style-type: none">• Using 17mm wrench, loosen the locking screw. For large changes in the angle of the lamp you will need to completely unscrew the screws.• Set the mounting sleeve in a given position. On the body casing, next to the screw there is pitch to facilitate the setting specified angle.• Screw the locking screw until it stops, so that the blocking pad located underneath comes equally between the pitch teeth.	
<ul style="list-style-type: none">• Close the housing tightly. Locking the latch should require some force and should be ended with a loud click. If closing of the housing requires excessive force, check the positioning of the seal placed along the edge connecting both halves and check if the cable is not squeezed.• Optically check the correctness of closing. Both halves should be aligned evenly on the whole circumference of the lamp.	




4.3.3. Installation of the lamp on post

Lamp is suited for mounting on pole or arm, which end has a diameter of 60 mm and length at least 120 mm.

<ul style="list-style-type: none"> • Prepare an LED lamp and Allen wrench 5 mm. • Make sure LED lamp is equipped with cable and set the angle of the lamps in accordance with the instructions contained in sections 5.3.1. and 5.3.2. 	
<ul style="list-style-type: none"> • Lead the power cable inside the post. 	
<ul style="list-style-type: none"> • Slightly remove the lock screws. • Mount LED lamp on the end of a column or a boom. 	
<ul style="list-style-type: none"> • Tighten both lock screws. 	
<ul style="list-style-type: none"> • Connect the power supply. • Check the correctness on the parameters of power and accuracy of connections. • Turn on the power and verify the operation of the lamp. 	

4.3.4. Assembly of EcoMate connector and signal cable

<ul style="list-style-type: none"> • Unscrew the EcoMate connector – following the given instruction. • Connect signal cable to inner connector pins: <ul style="list-style-type: none"> ◦ brown or black (6) = minus (GND) ◦ orange or red (2) = plus (0 ~ +10V) • Screw the EcoMate connector – following the given instruction. • Turn on the power and test the External Dim functionality. 	
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5. Service

All LedikoPRO lamps are designed and manufactured according to the highest quality standards. We make every effort to ensure that the lamp does not require maintenance throughout its lifetime. At the same time the lamp is constructed in such a way as to allow the replacement of operational elements such as power supply, controller and cooling system.

In case of the lamp's failure, please report the fact to the distributor of LedikoPRO lamps or directly to LEDIKO company (address and contact details are at page 2 of this guide). Report should contain the following information:

- Name of the reporting unit,
- Name of the distributor from whom the lamp was purchased,
- Location in which the lamp is used,
- Full name of the lamp with its serial number,
- Description of the lamp operation and the circumstances of irregularities.

All servicing can be performed only by suitably trained, certified servicemen of LedikoPRO brand.



Rys. 3. CLEVEO LED Luminaires

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www.lediko.com

www.ledikoPRO.com

e-mail: info@lediko.com