AKEMI®

Information and directions for use

AKELUX LED-Powerlight

AKELUX LED-Powerlight - Information and directions for use

1. Safety

1.1 General notes

Please carefully read this user manual before using the device for the first time.
It contains important instructions for safely using your device and its accessories.

1.2 Warning labels in the user manual

The user manual contains the following types of special warning labels next to any dangerous work steps.

Danger!
A hazardous situation that can result in serious injury or death.

Warning!
A hazardous situation that could result in serious injury or property damage.

Caution!
A hazardous situation that could result in moderate injury or property damage.

In addition to the warnings, there is a general note with useful information.

Note!
Note text

1.3 Safety notices

Danger!
LED lighting – light source
Explosion hazard in rooms with highly flammable atmospheric conditions
-> Do not use the device in potentially explosive atmospheres.

Danger!
Electromagnetic interference
Could cause pacemakers or other implanted electronic devices to malfunction.
-> Do not use the device near a pacemaker or other implanted electronic medical device.

Caution!
Water impact on device
Water could damage the device.
- Do not hold the device under running water or immerse it in water.
- Keep the device out of reach of children.
- Only use original manufacturer accessories.
- In case of malfunctions, immediately request assistance from an authorised customer service or **AKEMI**.

Warning!
LED lighting – light source
- Always wear safety glasses when using the device.
- Make sure that the anti-glare cap is correctly fitted.
- Never point the light beam toward anyone's eyes.
- Always point the light beam toward the polymerisation surface.

Warning!
Defective device
Risk of injury from non-functioning parts of the device.
Each time before you use the device, check the following:
- That the device and accessories are in proper working condition
- That the anti-glare cap is correctly fitted
- That the ventilation slots are unobstructed

1.4 Intended use

AKELUX LED-Powerlight can be used to cure light polymerising materials.
Areas of application include repairing stone, artificial stone, ceramics, and surfaces of tiles.

AKELUX LED-Powerlight is ideal for use in craft and industrial applications.

· Only trained personnel are allowed to use **AKELUX LED-Powerlight**
· Always wear safety glasses when using **AKELUX LED-Powerlight**

1.5 Device identification

The following device identification information is located on the device and the charger:

- Model
- Serial number
- Supply voltage
- Power consumption

Please provide this information when you contact an authorised customer service or AKEMI.
This information allows our customer service to quickly and efficiently resolve the problem.

1.6 Standards and classifications

Classification in accordance with IEC 62471:2006 / EN 62471:2008 Risk Group 2 (Medium Risk)

AKELUX LED-Powerlight EMC measurements in accordance with:
Emissions:
CISPR 15 / EN IEC 55015
IEC 61000-6-3
IEC 61000-3-2
IEC 61000-3-3

Immunity:
IEC 61547
IEC 61000-6-1

2. Description of device

2.1 Application areas

AKELUX LED-Powerlight is a portable, mobile blue light curing device with built-in rechargeable battery. It is ideal for targeted curing of light-curable, liquid materials in the 440 nm to 455 nm wave spectrum.
Recommendation: Always use blue:tron® in battery mode without the charger. Do not charge the **AKELUX LED-Powerlight** battery while curing.
Application areas:

- AKELUX Repair System PRO

See the user manuals for
AKELUX Repair System PRO
for detailed application information.

2.2 Device features

Soft edge
Comfortable and practical working

OLED display
Simple, functional menu navigation and easy readability even in bright light

Function keys
Control keys for all device functions and device information

LEDs
3 powerful blue light LEDs for high-speed curing in seconds, overheating protection: when the LED temperature reaches 90°C / 194°F

Battery packs
3 battery packs with 4 rechargeable batteries each for high light output, long portable operation, overheating protection: when the battery temperature reaches 55°C/131°F

USB port
For online diagnostics and function updates

Fan
Automatic cooling. Turns on automatically when the battery temperature reaches 50°C/122°F

Power connection
To recharge the battery or to connect the device to the mains power

Charging cable
To charge the battery

AKELUX Protective Shield Powerlight
Protects against glare, enlarges exposure area, increases stability of device

AKELUX Protective Glasses Powerlight
It is mandatory to wear safety glasses when using **AKELUX LED-Powerlight** in order to protect the eyes from high glare


Charging cable


3 high-performance LEDs


AKELUX Protective
Glasses Powerlight

3. Tasks to be done before using **AKELUX LED-Powerlight** for the first time

- Check if all parts were delivered
  light curing device I charging cable I red AKELUX Protective Shield Powerlight I AKELUX Protective Glasses Powerlight
- Check **AKELUX LED-Powerlight** for any mechanical damage
- Fully charge the battery as follows

Step 1: Insert the output connector of the power adapter into the port on the underside of the device.

Step 2: Plug the power adapter into a power outlet.

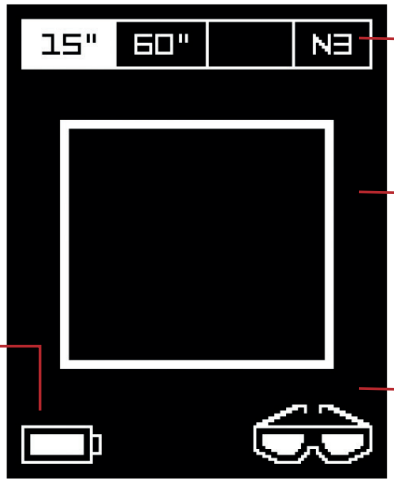
Step 3: Fully charge the battery pack for about 3 to 5 hours or until the charging bar indicates a full charge and stops flashing.

Note!
The battery charge level is shown on the device display.

4. AKELUX LED-Powerlight display

4.1 Display Overview

OLED display with 2 integrated function keys



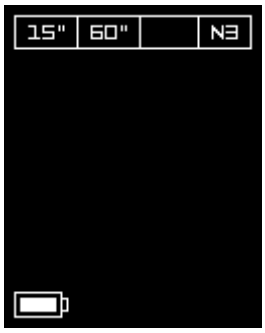
Status bar
Provides information about the exposure mode
15 seconds I 60 seconds I N3 = 3 seconds

Display
Provides information about exposure, device, and safety functions.

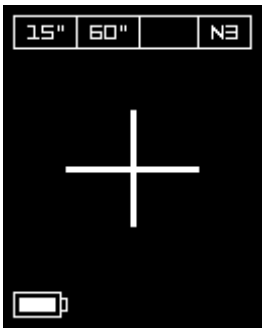
Battery charge level
Shows the battery charge level (100%-0%).

Protective Glasses
Always wear safety glasses when using **AKELUX LED-Powerlight**.

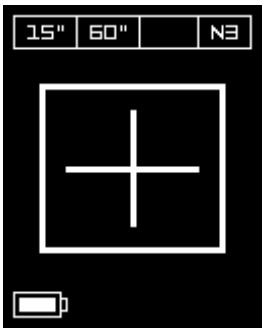
4.2 Display Distance protection



Sensor deactivated

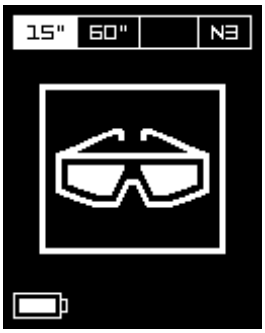


Device on

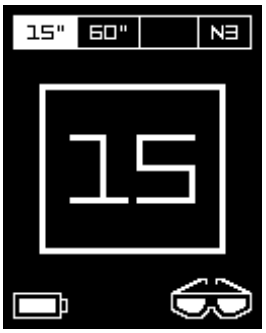


Distance detection/sensor

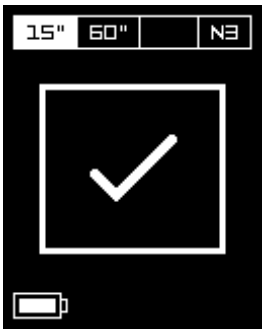
4.3 Display 15 second exposure



Start process



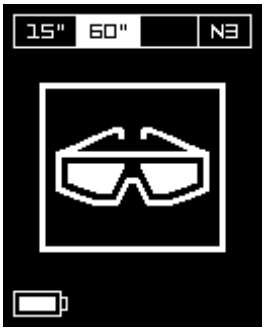
15 sec countdown



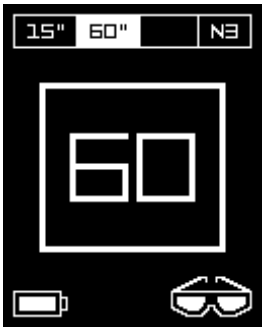
Process finished

Curing: The tick indicates that curing is complete (15 sec).

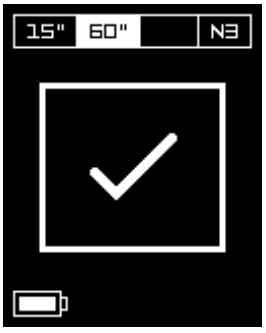
4.4 Display 60 second exposure



Start process



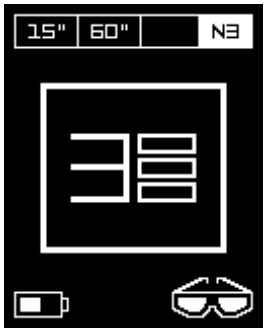
60 sec countdown



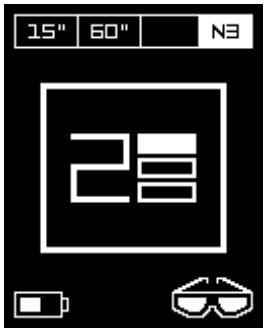
Process finished

Curing: The tick indicates that curing is complete (60 sec).

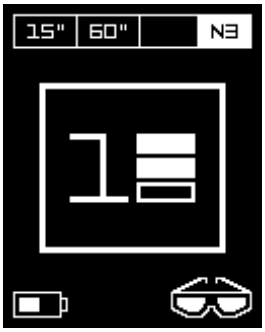
4.5 Display N3 exposure



N3 countdown “3”



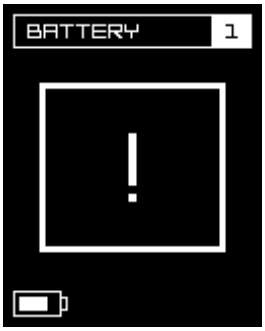
N3 countdown “2”



N3 countdown “1”

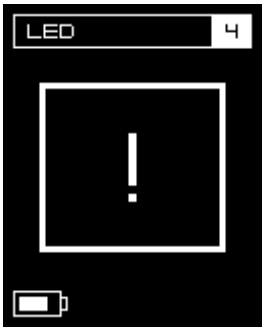
This short exposure is not suitable for curing AKELUX Repair System PRO repair materials.

4.6 Display Error messages



“Battery defective” error message

Battery: This symbol appears when one or more battery packs is defective.
Action: Have AKEMI or an authorised service company replace the battery pack.

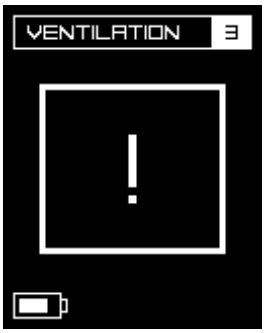


“LED defective” error message

LED: This symbol appears when one or more LEDs is defective.
Action: Have AKEMI or an authorised service company replace the LED.

“Overheating” error message

Overheating: This symbol appears when the temperature of the LEDs exceeds 90°C/194°F or the temperature of the batteries exceeds 55°C/131°F.
The device automatically turns off to prevent overheating.
Let the device cool down for at least 30 minutes and make sure it is disconnected from the charger.



“Ventilation defective” error message

Ventilation: This symbol appears when the fan at the front end of the light curing device is not working.
Danger of overheating.
Action: Have AKEMI or an authorised service company replace the fan.

5. Function keys

The integrated function keys on the display make it easy to control all information and exposure activities.

Left key: Activation key
Turns on exposure

Right key: Selection key
To select device functions

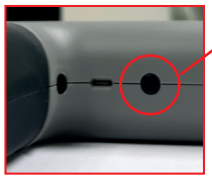
5.1 Function key actions

Left key: Activation key
Device on: press for 1.5 seconds – turns on exposure

Right key: Selection key
The following functions can be selected with the right function key:

Press for 1 second – select 15 second or 60 second exposure time
Press for 3 seconds – special exposure function N2 with 3 second exposure time

5.2 On/off button



Can be used to manually turn the **AKELUX LED-Powerlight** device on or off.

Device off: Press the button briefly – the light curing device turns on.
Device on: Press the button for 0.5 seconds – the light curing device turns off.

Note!
The **AKELUX LED-Powerlight** automatically turns off after 20 minutes of non-use.

6. Exposure

Caution: Put on **AKELUX Protective Glasses Powerlight** before starting the exposure process.

6.1 Contact exposure: 15 seconds

Exposure area approx. 6 cm²

Step 1: Cover the repair area with plastic film.
Step 2: Place the **AKELUX LED-Powerlight** light head directly on the plastic film.
Step 3: Tap the on/off key to turn on the light curing device.
Step 4: Press the right function button for 1 second and select the 15 second exposure mode.
Step 5: Press the left function key for 1.5 seconds to start the exposure.

6.2 Distance exposure: 60 seconds

Exposure area approx. 32 cm²

Step 1: Attach the red **AKELUX Protective Shield Powerlight** to the **AKELUX LED-Powerlight** light head.
Step 2: Place the **AKELUX LED-Powerlight** light head with attached red anti-glare cap directly over the repair location.
Step 3: Tap the on/off key to turn on the light curing device.
Step 4: Press the right function key for 1 second and select the 60 second exposure mode.
Step 5: Press the left function key for 1.5 seconds to start the exposure.

6.3 Short exposure N3: 3 seconds

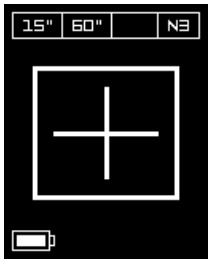
Caution: This function is not suitable for curing **AKELUX Repair System PRO** repair materials.

6.4 Distance protection with a distance sensor

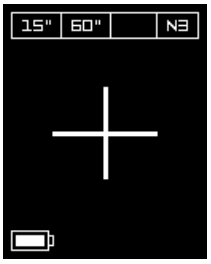
AKELUX Repair System PRO comes with a distance protection. This protects the eyes from unintentional glare and damage. The device automatically turns exposure off when the light head moves more than 3 to 8 cm away from the exposure object. The exact distance depends on the colour and material of the surface. The distance is lowest for black surfaces and highest for white surfaces.

Caution: The sensor detects reflections from surfaces in its field of view. Under special conditions and lighting conditions, a reflection can allow the sensor to detect a surface further away than the specified distance. This can cause the sensor to allow the light to shine even outside the specified distance.

This process is shown on the display as follows:



Crosshairs with square border
The crosshairs with a square border indicate that the device is within the permitted distance of the distance sensor and that curing can start.



Crosshairs without border
The exposure surface is sighted, but the light head is some 5–10 cm outside the maximum exposure distance.

Exposure does not start or automatically turns off when the light head moves outside the permitted range.

Note!
Exposure automatically turns on/off based on the distance between the curing surface and the light head.

Caution: The glass surface must be free of residues such as dust, dirt, or paste since this will prevent the distance sensor from working properly.

7. Storage

Optimum storage conditions: Ambient temperature: +10°C–+40°C / Relative humidity: 20%–50%
Cleaning: Turn off the device before cleaning it (and especially the glass surface) to prevent unintentional exposure.

8. Online service/Diagnostics

Via the integrated USB interface, certified service centres can install software updates and diagnose key specifications of the **AKELUX LED-Powerlight** device. Or contact AKEMI.

9. Specifications

LED
Colour: Royal Blue
Wavelength: 448 nm (440 nm to 455 nm)
Voltage: 3.11 V
Current: 1.5 A

Total radiant power:
Direct contact: over 2000 mW/cm²
With glare protection: approx. 50 mW/cm²

Battery packs
3 battery packs with 4 NiMH (nickel metal hydride) each:
4.8 V/2000 mAh
Total running time with full battery: approx. 50-60 minutes

Fan
12 V/0.11 A
Turns on when battery temperature reaches 50°C I 122°F

Adapter
GST36E12-P1J
36W/12V/3A
USB connector: USB-C (USB type C)

Display

Size:	1.92” I 4.88 cm
Dimensions:	34.5 × 48.8 × 1.41 mm
Resolution:	164 × 128 dots
Pixel size:	0.206 × 0.226 mm
Colour:	white

Casing	Polyamide 6 (PA6)
Anti-glare cap	Polycarbonate
Weight	600 g

EU Declaration of Conformity

We, AKEMI GmbH, hereby confirm that the products listed below conform with the following directives:

CE

2014/30/EU, OJ L 96/79, 29.03.2014
(EMC Directive; Electromagnetic Compatibility Directive)

2011/65/EU, OJ L 174/88, 29.03.2014
(RoHS Directive; Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment)

Product: AKELUX LED-Powerlight

Standards: Harmonised and international/national standards and specifications:

CISPR 15:2018 / EN IEC 55015:2019
Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment

IEC 61000-6-3:2020 / EN 61000-6-3:2007+A1:2011 & EN IEC 61000-6-3:2021
Emission standard for residential, commercial, and light-industrial environments

IEC 61000-3-2:2018+A1:2020 / EN 61000-3-2:2019
Limits for harmonic current emissions

IEC 61000-3-3:2013+A1:2017 / EN 61000-3-3:2013+A1:2019
Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems

IEC 61547:2020 / EN 61547:2009
Equipment for general lighting purposes – EMC immunity requirements

IEC 61000-6-1:2016 / EN IEC 61000-6-1:2019
Immunity standard for residential, commercial and light-industrial environments

IEC 62471:2006 / EN 62471:2008
Photobiological safety of lamps and lamp systems: Risk Group 2 (Medium Risk); label is required

Nürnberg, 19. Oktober 2023

Dirk Hamann

Dr. Dirk Hamann, Geschäftsführer

AKEMI chemisch technische Spezialfabrik GmbH
Lechstraße 28
D-90451 Nürnberg

Tel.: +49 (0) 911/64 29 60
Fax: +49 (0) 911/64 44 56

info@akemi.de
www.akemi.de