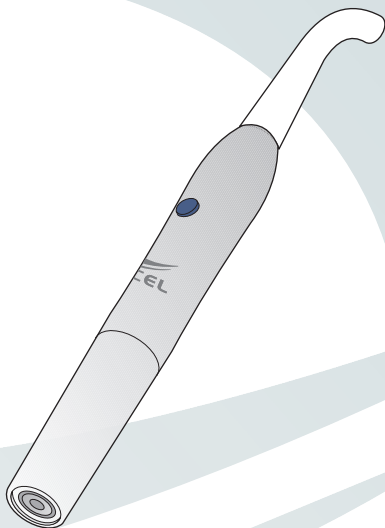


Owner's Manual

CURING LIGHT EC 500



Curing Light

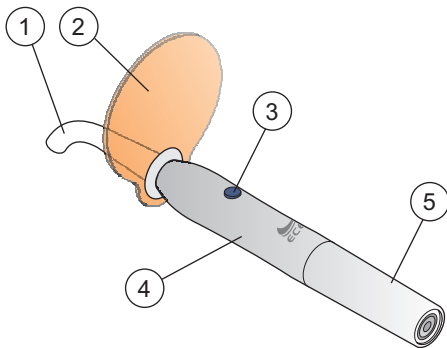


Fig. A

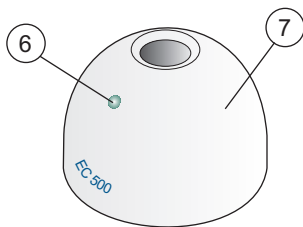


Fig. B

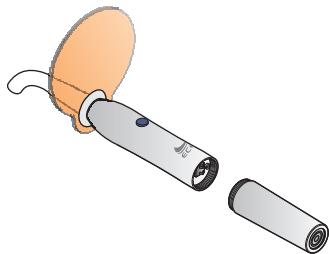
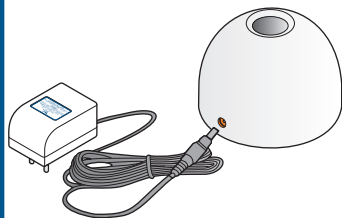
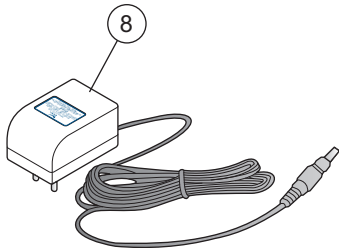


Fig. D



CONGRATULATIONS!

You have just purchased an equipment which uses the latest technology available in the market, designed to provide maximum result, quality and safety.

▲ For greater safety, read and understand all the instructions contained in this manual before installing or operating this equipment.

All the information, illustrations and specifications included in this manual are based on data available at the time of its publication. We reserve the right to make any modifications, both on the equipment and in this manual without previous notice.

EQUIPMENT

Technical Name: Resin Curing Light

Trade Name: Curing Light

Commercial Model: EC 500

Manufacturer:

Ecel Indústria e Comércio LTDA

CNPJ: 03.090.848/0001-47

Mogiana Avenue, 1854 Jd. Independência Ribeirão Preto/SP CEP: 14075-260 Phone:
(16) 3878-1700

Technical responsibility by: Walter Bagatta Junior CREA-SP: 0601359652

ANVISA(National Health Surveillance Agency) registration number: Declared as exempt from registration by the Brazilian Health Department.

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Product Presentation

Packaging (single): Box (dimensions: 235mm x 190mm x 90mm)

List of items contained in the box: 01 Handpiece, 01 Charger Base, 01 Acrylic curing light tip, 01 Eye protector, 01 Battery, 01 Charger and 01 Owner's manual.

Curing Light EC 500

Accompanying parts and accessories:

- 1 - Light Guide Tip
- 2 - Eye Protector
- 3 - Activation button
- 4 - Handpiece
- 5 - Battery
- 6 - Led indicator of battery charge
- 7 - Charger Base
- 8 - Charger

Consumption material: (not sold with the equipment)

- 1 - Photopolymerization resin.

Obs: The consumption materials have another ANVISA register and it is not supplied with the equipment, it should be specified by the professional (Dentist).

Installation

Provide an electric outlet.

The power source is multi voltage, therefore it should be used in voltages from 100V to 240V with a frequency of 50/60Hz.

Unpack the equipment carefully.

Verify if all items that compose the equipment are present. (See section Accompanying parts and accessories)

Connect the charger plug to the charger base.

Connect the charger (power plug) to the power supply.

Screw the battery on the inferior side of the handpiece.

Attach the acrylic curing light tip to the front orifice of the handpiece.

Plug the eye protector in the acrylic tip.

Set the handpiece on the charger base. Find a fresh and dry place, far from dust, humidity, chemicals products and cleaning agents.

⚠ Charge the battery during 12 hours before the first use.

After attaching the tip to the equipment, it should be cleaned with some gauze, since oiliness from the user's hands and other stains on the acrylic tip may affect light conduction.

Procedure Before Product Use

Install the equipment as described in the *Installation* section. Even on first use, the equipment must be cleaned and disinfected, following the same procedures described in the *Cleaning and care* section of this manual.

Product Description

The Curing light equipment uses a blue light source for curing (photopolymerization) resin. **Curing Light EC 500** is a wireless equipment, which allows freedom of movement and total control. It is practical, portable, lightweight, and easy to clean and handling.

As an advantage, this equipment uses the latest LED technology, which replaces the

halogen lamp (with estimated useful life of around 50 hours). It offers an estimated useful life of around 10.000 hours, avoiding the frequent replaces of lamp. Another important feature is the cold light, which generates a minimum of heating to the resin and the tooth. It eliminates the use of filters, because the light is emitted in the appropriate spectrum (approximately 470nm). The light is directional, and emitted by a tip attached to the handpiece front.

Operation

Move the handpiece into the patient's mouth and press the button to activate the light. Position the light tip at a maximum distance of 2mm from the material to be photopolymerized.

In case curing needs to be repeated, press the activation button again. In order to interrupt the curing cycle, press the activation button again.

In case of a long period without use, remove the light guide tip and separate the handpiece and the battery, putting them away under adequate conditions.

▲ Keep the equipment out of the charger base until it indicates that need to recharge. In this case, the equipment issue two beeps every 10 seconds.

The equipment will work even with the issue of beeps with light intensity satisfactory, However, you should put the battery in the charger as soon as possible.

Time Settings

Activate and keep pressed the handpiece activation button until a long tone is heard; at this moment, the LED will shut down; keep pressing the button. It will start a sequence of 10 tones with pauses of approximately one second between them. Each tone corresponds to 10 seconds of the time setting. Release the activation button after getting the desired number of tones, which will correspond to the time working.

Charging the Battery

When the equipment is inserted in the charging base, the battery indicator Led will turn on. If the light is red, it means that the battery is being charged, if it is green means that the battery load is complete.

Recharging the Battery

Place the equipment in the base, connect the plug of the charger in the base and connect the source to an electrical outlet.

Time load varies from 3 to 5 hours, depending on the time of life and the general state of conservation of battery.

The indication of status and battery power is seen through the led located at base.

Led lightened in red: indicates the lowest level of battery power.

Led lightened in yellow: indicates the intermediary level of battery power.

Obs.: We recommend that the equipment must not be removed from the base under these conditions.

Led lightened in green: indicates that the recharge process is finished.

If needs to maintain the equipment in the base after the end of the load, disconnect the plug of the source from the base.

We recommend to remove the source from the electrical outlet when it is not been used.

Battery Warning

Charged battery: the equipment emits a tone every 10 seconds of operation of the Led.

Discharged battery: the equipment emits two tones consecutives every 10 seconds of operation of the Led.

Exhausted battery: the equipment emits three tones consecutives and turns the Led off, preventing the operation.

Perform the procedure to recharge the battery if the equipment indicates Discharged battery or Exhausted battery.

Cleaning and Care

Clean the equipment surface with a clean soft cloth moistened with neutral detergent. The light guide tip must be cleaned with gauze or soft cloth.

⚠ Never involve the acrylic tip with any other kind of material.

Do not use a solution containing alcohol, solvents, ammonia or abrasives.

Do not use any instrument or abrasives on the sides of the top of the handpiece, because it can damage it, causing loss of light emission.

The equipment must be disconnected from the electric outlet before cleaning.

Maintenance

In case the equipment presents any faults that are not listed in the “Troubleshooting” section of this manual, contact the Authorized Technical Assistance. Do not open the product and/or try to repair it. This action may aggravate the problem or even generate further malfunctions.

Preventive maintenance: In order to assure the electrical security of the equipment during its useful life, we recommend that it should be verified by Authorized Technical Assistance at least one time each two years. (After warranty).

Nature of Preventive maintenance: Should be checked the following items: light intensity, cracks and dryness in the power cable, tension in the charger, the tension of the battery charger, time settings and general state of the light guide tip.

Circuit diagrams, list of parts, components, and others: The supply of circuit diagrams, list of parts, components or other necessary information for Technical Assistance, can be requested from the manufacturer and will be supplied by agreement.

Recommendations, Precautions and Warnings

This equipment must be used only by properly trained personnel under supervision of qualified dental staff.

It is advisable that the professional informs his patients or any other individuals who have access to the equipment about the cautions to be taken during its handling.

This equipment is not appropriate for use in areas at risk of explosion.

Before the first use and/or after long work interruptions, such as vacation periods, clean and disinfect the equipment.

Do not expose it directly to sunlight, because it may cause early wear.

Before connecting the charger to the power supply, make sure that the main voltage is in accordance with the charger’s voltage range.

Do not look at the light without the eye protector or the goggle, because it may be harmful.

Before using the equipment, wait until the unit reaches the room temperature, especially when it is taken from cold conditions into warmer ones.

Do not use another battery except the original of **Curing Light EC 500**. Otherwise, your equipment may be denied.

Do not place the unit near flammable materials, and do not touch the flammable solutions with the light.

Do not touch the battery contacts with metal parts, as this may damage it permanently.

In order to prevent electric shock, do not insert any object into the equipment. It will not be allowed to modify the product, under any condition. Any disassembly or modification causes the invalidity of the product guarantee.
Do not use the equipment on patients with cardiac pacemakers.

Battery Disposal

Dispose the battery at an appropriate site (according to local regulations), avoiding environmental contamination and its inadequate use.

Sensitivity to Environmental Conditions

Curing Light EC 500 was designed to do not be sensitive to interferences as electromagnetic fields, electric external influences, electrostatic discharge or pressure and variations of pressure, as long as the equipment be installed, cleaned, maintained, transported, and used according to the instructions in this manual.

Precautions in Case of Disposal

When it is put out of use, it must be disposed of at an appropriate site (according to local regulations), avoiding environmental contamination and its inadequate use.



Customer		
CNPJ/CPF	Phone	
Address		
ZIP code	City	State
Dealer		
Customer's Signature		

After Installation

Keep the product protected from direct sunlight and rain.

ENVIRONMENTAL OPERATION CONDITIONS	
Environmental temperature functioning range	+ 10°C to + 35°C
Environmental temperature range recommended by ECEL	+ 21°C to + 26°C
Functioning relative humidity range	30% to 75% (non-condensing)
Atmospheric pressure range	700hPa to 1060hPa (525mmHg to 795mmHg)

ENVIRONMENTAL ACCOMMODATION OPERATION CONDITIONS (BETWEEN OPERATIONS)	
Environmental temperature accommodation range	+ 5°C to + 45°C
Environmental temperature range recommended by ECEL	+ 15°C to + 30°C
Accommodation relative humidity range	30% to 75% (non-condensing)
Atmospheric pressure range	700hPa to 1060hPa (525mmHg to 795mmHg)



Transportation and Storage Conditions

The product must be transported and stored:

- Carefully in order to prevent vibrations and impacts.
- By keeping the side indicated by the arrow facing upwards.
- By observing maximum piling limits indicated on the packaging.
- Protected against humidity, rain and direct sun.

TRANSPORTATION/STORAGE ENVIRONMENTAL CONDITIONS

Transportation and storage environmental temperature range	0°C to 55°C
Transportation and storage relative humidity range	0% to 90% (non-condensing)
Atmospheric pressure range	500hPa to 1060hPa (375 mmHg to 795 mmHg)

Authorized Service Network

Maintenance service for ECEL equipments must be provided by an Authorized Technical Assistance, otherwise warranty will be compromised. To ask for Authorized Technical Assistance, access <http://www.ecel.ind.br>.

Procedures in Case of Product Function is Altered

In case the equipment presents abnormal heating or any other abnormality, firstly check if the problem is related to one of the listed items on "Troubleshooting" section. If the problem cannot be solved, call for Authorized Technical Assistance.

Symbols

Use the icons below to identify the product symbology:

	"Fragile" : Located on the packaging side. It determines that equipment must be carefully transported in order to prevent falls or shocks.
	"Protect against humidity" : Located on the packaging side. It determines that the equipment must be protected against any type of humidity during transportation and storage.
	"This side up" : Located on the packaging side. It determines that the packaging must be handled by keeping the side shown by the arrow facing upwards.
	"Maximum piling" : Located on the packaging side. It determines the maximum number of boxes that can be piled up during transportation and storage.
	"Temperature limit" : Located on the packaging side. It determines the temperature limits at which the equipment must be stored or transported.

Final Recommendations

In order to ensure greater durability for your equipment, use only original replacement parts, which are in accordance with the technical standards and specifications required by the manufacturer. In addition, use only the services provided by the Authorized Technical Assistance Network as it counts on trained assistants and specific tools for the appropriate maintenance of your equipment.

Preparation Before Delivery

This equipment has been revised and approved according to the ECEL Quality Inspection and Control Program for better performance.

Warranty

This equipment's warranty covers manufacturing faults for a period of 12 months starting on the date of its sales receipt issued in the name of its first owner.

Reasons for warranty voidance: Installation and/or operation in disagreement with the instructions in this manual and falls.

Items that are not covered by the warranty: Technician's travel expenses and equipment transportation expenses for technical assistance. External finishing and/or accessories damages not caused by the manufacturer.

Important: Present the sales receipt to the Technical Assistance during the warranty.

Technical Features

Specifications	Curing Light EC 500
Voltage	Automatic commutation from 100 to 240 VCA
Consumption	10VA
Frequency	50/60 Hz
Lithium Battery	3,7V - 2000mAh
Charging time for Battery	5 hours
Output Power	$\geq 500 \text{ mW/cm}^2$
Dimensions of the handpiece	$\varnothing 25 \text{ mm} \times 250 \text{ mm}$
Dimensions of the charger	70 mm x 47 mm x 39mm
Weight	200 g
Time of operation	Programmable from 10 a 100 seconds via button

Troubleshooting

Fault	Equipment does not start
Cause	Battery Low
Solution	Charge the battery
Cause	Inadequate contact with the battery
Solution	Clean the circuit board, the battery connector and the handpiece. Connect the handpiece to the battery again.
Fault	Equipment does not charge
Cause	Charger is disconnected or is not well connected
Solution	Verify if the charger is disconnected
Cause	There is no power supply
Solution	Await for power supply normalization or call for technical assistance
Fault	Equipment does not cure
Cause	Obstruction of the light guide tip
Solution	Replace or clean it
Cause	LED is burned out
Solution	Call for technical assistance



Ecel Indústria e Comércio Ltda.

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