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OPERATIONS MANUAL

FUSION™ S7 Curing Light

1. DESCRIPTION AND INDICATIONS FOR USE

FUSION™ S7 is a miniature portable LED dental curing light for polymerization of light-curing dental materials activated within the wavelength range of 420 – 490 nm. These materials include restoratives, bonding/adhesives, bases, liners, fissure sealants, temporary materials, as well as adhesives for brackets and dental-lab materials, e.g. ceramic inlays. These operating instructions provide recommendations and guidelines for the intended use of the light. Please read them carefully.

2. OPERATION

The FUSION S7 Curing Light is illustrated on the graph below. The unit consists of a Handpiece Body containing light head with unique collimated beam delivery lenses, main control unit with on-off button and LED indicator, and a replaceable rechargeable battery unit that can be taken out by rotating the battery assembly counter clockwise. The cordless handpiece can be charged on the Charging Base by dropping and pushing the handpiece all the way to the bottom of the Charging Base. Make sure that the green LED charge indicator is on while placing in the Charging Base. Alternatively, it can be charged at the distal end of the handpiece via the Power Adapter Connector as illustrated in the graph of corded operation.



CE

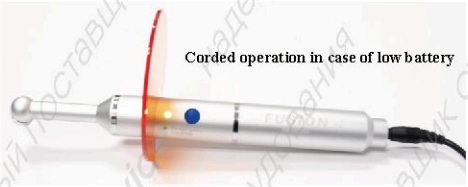
For dental use only!

⚠ U.S. Federal Law restricts this device to sale by or on the order of a licensed dentist

Made in USA

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An eyeshield slides in the handpiece to protect the operator's eye from high power curing light. An optional Charging Base Stick Pad can be used on the back of the Charging Base to secure the base on a flat surface such as table top to avoid movement of the base and ease handpiece pick up. Basic operation is accomplished by the on-off button.

Activation Summary:

- Single click to start 10 seconds cure cycle.
- Light beeps at start, 5 second mark and ends with a long beep.
- To end cycle click once on the On/Off button, or simply wait for timed cycle to end.

3. SAFTEY PRECAUTIONS

⚠ Do not touch and open any electronics parts and circuit boards. **Warranty void if seal broken.**

⚠ The light must be used with barrier sleeves to avoid patient contact. **Replace the barrier sleeve after each patient use.** Handle and dispose of used sleeves in accordance with accepted medical practice and applicable laws and regulations

⚠ Do not immerse handpiece in waters or solutions. **Warranty void in case of liquid damage.**

⚠ The very high light intensity of FUSION results in a certain development of heat. Prolonged exposure of the pulp and soft tissues may result in irreversible or reversible damage. This high-performance polymerization light must only be used by specially trained dental personnel:

- Do not place light directly on the same tooth segment for more than 10 seconds.
- Do not place light in direct contact with unprotected gingival, oral mucous membrane or skin. Prevent heat accumulation with air circulation from suction cup, syringes or a rubber dam in place.
- Adjust the curing techniques in accordance with the increase in curing energy. Some examples are: decrease curing time, increase composite thickness, and increase distance between light tip end and light cured materials.

⚠ Do not look directly at the light emitted from this curing unit. Do not use this device without suitable

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protective eyewear for the operator and assistant. Suitable protective eyewear blocks energy below 550nm.

⚠ If time intervals between exposures are too short, the LED tip may overheat and potentially cause soft tissue injury. It is recommended to wait for at least 30 seconds after continuous exposure of three minutes or when the overheat alarm indicator has turned on.

⚠ Charge batteries while not in use to extend the lifetime of the rechargeable battery.

- Do not short circuit battery.
- Do not store above 60 °C (140 °F).
- **Do not interchange FUSION S7 and FUSION 2007 Battery Assembly (not compatible).**
- Dispose of unserviceable batteries and curing lights according to the national rules and regulations. Batteries must not be incinerated.
- Replace the battery assembly after the lifetime of the battery usage by ordering replacement battery assembly from the manufacturer.

4. CONTRAINDICATIONS

- Materials, the polymerization of which is activated outside the wavelength range of 420-490 nm. If you are not sure about certain products, please ask the manufacturer of the corresponding material.
- The unit should not be used near a flammable anaesthetic mixture with air, oxygen or nitrous oxide.

5. ASSEMBLY

Box Contains:

Qty	Description
1	FUSION S7 Handpiece
1	Charging Base
1	Power Adapter
1	Operations Manual and Warranty
1	Charging Base Stick Pad
1	Eye shield
100	Barrier Sleeves

6. CURE TIMES

The average curing time of shade A2 at 2mm thick composites is 10 seconds. Darker shades or thicker composite may require additional times. It is recommended a timed curing test outside the mouth be performed. Using a 3mm hardness disk, cure from the top for the recommended time, and reverse the disk. Using a sharp instrument, compare the hardness of the disk to the hardness of the composite - it should feel exactly the same if well cured.

7. CLEANING/DISINFECTING

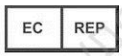
The use of the sleeve is an additional precautionary measure against contamination and does not substitute disinfections of the device. After use, remove and replace sleeve,

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10. TECHNICAL DETAILS

Power Adapter	Universal 100-240 V (50-60 Hz) auto switch;
Voltage to Handpiece	Regulated 5 V DC
Protection from Ingress of Liquids	None
Lamp	High power LEDs.
Peak Wavelength Range	420 - 490 nm
Spectral Half Width	30 nm
Curing Optical Intensity	1100 mW/cm^2 (±20%)
Operation	Continuous operation with intermittent loading. Stop automatically at low battery with alarm and LED red indicator. Stop automatically when overheating with alarm and LED red indicator (need reload battery to restart)
Curing Time	Depend on composite shade and thickness. 10 seconds for A2 with 2 millimeter thickness.
Battery	Recharging time is approximately 90 minutes. LED indicator is constant green during charging and turns off when fully charged. Handpiece will shut off when battery is low blinking red on the LED indicator. Battery lifetime 500 full charge-discharge cycle
Exposure Autonomy	~ 270 cycles; Optional corded operation at low battery by directly plug in power adapter connector to the handpiece
Fuse	Internal to hand piece for electronics and battery overheat and overcurrent protection
Shutoff	After 10 seconds of operation by clicking button once or clicking button anytime after the second beep when light is on.
Operating Temperature	0 - 30 °C
Storage Temperature	-10 - 40 °C
Weight	110 grams
Dimension	22 mm diameter, 195 mm full length
Standards	Complies to test standards CE 89/336/EEC, EN60601-1-2, EN61000-3-2, EN61000-3-3, IEC60601-1-2

Symbol	Explanation
	Manufacturer
	European Authorized Representative
SN	Serial Number
REF	Catalogue Number
	Date of Manufacture
	Caution, Consult Accompanying Documents

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a) Disinfect by thoroughly wiping down handpiece and Charging Base with a cleaning solution including Cavicide, Lysol, Isopropyl or Ethyl alcohol and equivalent. Do not spray. Do not autoclave or ultrasonic. Disinfecting agents must not enter openings on unit.
b) Clean curing lens at the curing tip using Q-tips slightly tipped with the cleaning solution.
c) Always safeguard handpiece opening area, LED tip and Charging Base against moisture as this may cause electrical short-circuit or dangerous malfunction.

8. REORDER AND OPTIONAL ITEM CODES

REF	Description
7500080-S7S	FUSION S7 Curing Light Kit
7500081	FUSION Curing Caps 9mm (50 Pack)
7500082	FUSION Barrier Sleeves (100 pack)
7500083	FUSION Charging Base
7500084-08	FUSION Battery Assembly
7500085	FUSION Power Adapter - US
7500085-EU	FUSION Power Adapter - EU
7500088	FUSION Protective Glasses
7500089	FUSION Replacement On/Off Button
7500092	FUSION Eye Shield
7500050S	FUSION S7 Control Module
7500060S	FUSION S7 Light Module
7500094S	FUSION S7 Lens Module

9. LIMITED ONE-YEAR WARRANTY

Register your purchase of **FUSION** at www.dentlight.com. Your **FUSION** is warranted to be free from defect in material and workmanship for a period of one year under normal use after its original purchase date. This warranty extends only to the original retail purchaser and only when purchased from an Authorized DentLight dealer. This warranty does not cover products damaged by the following:

- Improper operation, accident or neglect, misuse or abuse, such as physical damage (cracks, scratches, etc.);
- Liquid, water, rain, extreme humidity;
- Improper repairs or modifications that have not been carried out by a certified Service Center.
- Use of other spare parts and accessories than from the manufacturer;
- Other acts which are not the fault of DentLight.

DENTLIGHT SHALL UNDER NO CIRCUMSTANCES BE LIABLE FOR INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR DAMAGE FROM MISUSE ACCORDING TO THE MANUAL.

In case of a claim under warranty, the complete apparatus (handpiece, charging base, and power adpater) must be returned, carriage paid, to the dealer or directly to DentLight, together with a receipt of purchase.

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