

OPERATIONS GUIDE

LED curing and whitening light cable powered



POWER SUPPLY:					
☐ 100-240VAC	24\	/AC	12VAC		
Mains plug	EU	USA	□ик		

Last revision: 14.09.2012

BrilliantSmile (
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☐ 100-240VAC ☐ 24VAC ☐ 12VAC					
Mains plug	EU	USA	□uĸ		

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Before installation and starting work with the unit, carefully read this guide!

CO	N٦	EN	ITS:

I. UNIT DESCRIPTION AND FUNCTION

II. TECHNICAL DATA
III. ACCESSORIES AND SPARES
IV. SAFETY PRECAUTIONS

V. PREPARATION AND SEQUENCE OF OPERATION

VI. ROUTINE CARE AND MAINTENANCE

VII WARRANTY CONDITIONS

VIII. BRILLIANTSMILE DATA

IX. SYMBOLS
X. SERVICE DATA

I. UNIT DESCRIPTION AND FUNCTION

LED curing light **BRILLIANTSMILE** is a light source for intraoral polymerization of dental materials. The unit uses LED (Light Emitting Diode) module as the light source. The emitted light is in the wavelength range 430-490 nm (the relevant range for camphor

quinone - containing products).

BRILLIANTSMILE consists of Emitting handpiece.

BRILLIANTSMILE is produced in conformity with MDD 93/42/EEC and 2007/47/EC.

II. TECHNICAL DATA

- 1. Operating voltage -on front page: or 24VAC(\pm 10%) or 110-240VAC, 50-60Hz- option 2. Power consumption 0,115-0,055 A for 220VAC, 0.35A for 24VAC
- 3. Dimensions:
- Emitting handpiece

diameter - 29 mm(max),18.9mm(min), 24.2mm-RING length - 193mm

4. Weight of Emitting handpiece

- 120 g for handpiece without silicone hose and lightguides
- 5. Light intensity:
- 2500 mW/sq.cm

6. Emitting time:

- To or 20 min. (WHITENING mode with BLUE or GREEN ring indicating)
 3 or 6 sec. (CURING mode with RED ring indicating)
- 7. Emitted light blue, wavelength 430 490 nm
- 8. Light source LED module
- 9 Soft start:
- 0.3 sec. after unit's activation

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X.	SERVICE DATA	

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IX. SYMBOLS

Manufacturer: BRILLIANTSMILE NORDIC AB Styrgangen 10, 417 64 Gothenburg, Sweden email:info@brilliantsmile.se



Pursuant to Directive 2002/96/EC, this symbol shows that the product must not bedisposed of as urban waste at the end of its operating life.



Pay attention to the instructions accompanied by this symbol.



Fragile!



Product with CE mark



Applied part type B.



The device is equipped with double electric insulation (Class II)

Ω s W

Ohm (electric resistance unit) Second (time unit)

Hz mm

Watt (power unit) Hertz (frequency unit) Milimeter (length unit) Amper (electric current unit) Volt (electric voltage unit)

Pa ° C

ν

Pascal (atmosphere pressure unit) Degrees Centigrade (temperature unit) Gram (weight unit)

g SN

Serial number

LOT

Lot

10. Microfan cooling

11. Audible signal:

- CURING MODE: by START and STOP
-BLEACHING MODE: Double beep -When there is only 3 minutes left of the whitening cycle. Triple beep - FINAL of procedure

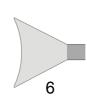
12. Possibility for start and stop of Emitting handpiece at any moment.

13. Working mode:

 (30 min.) do min.) every 30min working, 10min need stop for rest.
 The manufacturer of this unit declares to provide on request all additional necessary technical documentation/information which will help the user's technical staff to service the parts of the unit which the manufacturer has claimed to be a subject for repair.

III. ACCESSORIES AND SPARES

Emitting handpiece - 1 pce. Adapter - 1 pce. Lightguide - 1 pce. Handpiece holder - 1 pce. Protection shield - 1 pce. Whitening lightguide - option Operations guide - 1 pce.





1.Emitting handpiece 2.Start/Stop button 3. Lightguide 4.Protection shield 5.Cable,

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Ω Second (time unit) W Watt (power unit)

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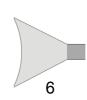
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IV. SAFETY PRECAUTIONS

As with all technical devices, the proper function and safe operation of this unit depend on the user's compliance with the standard safety procedures as well as the specific safety recommendations described in this Operations guide.

- 1. The unit must be used in strict accordance with the Operations guide. The manufacturer accepts no liability for any damage resulting from the use of this unit for any other purposes.
- 2. Before start-up of the unit make sure that the operating voltage indicated on the unit label corresponds to the mains voltage. Operation of the unit at a different voltage may damage the unit.

Electrical safety is ensured by Protection class II against electrical current damages according to EN 60601-1. Use of "Shuko" plug or unit's grounding is not necessary.

BRILLIANTSMILE should be operated in indoor premises, in the following conditions:

- temperature +10° 4 +40° C;
- relative air humidity 30 ч 75%
- atm. pressure 700 ч 1060 hPa;
- absence of chemically active or flammable substances.
- 3. Irradiation of the eyes bears certain risk for their damage. Therefore the light must not be directed toward the eyes! Exposure must be restricted to the working area. Use of protection glasses and/or protection shield that blocks effectively the blue spectral range is highly recommended!



ATTENTION! The emitted light is in the wavelength range 430-490 nanometers. During work use protection goggles and/or protection shield!

- 4. The unit can be used only doctor's advice by or in persons with heart pacemakers implant; persons with photobiological reactions; persons currently taking photosensitive medication; persons with cataract surgery; persons with retinal diseases, etc.
- Solvents, flammable liquids and powerful heat sources must not be kept near the unit as exposure to one of these factors may damage the plastic parts of the unit.
- Cleaning agents should not enter the unit as this may short-circuit the unit or cause potentially dangerous malfunction.
- 7. Only factory-authorized technicians are authorized to open and repair the unit.
- 8. Only original **BRILLIANTSMILE** spare parts should be used to replace defective parts. The unit warranty does not cover any damage resulting from the use on non-original replacement parts. The unit or any of its parts should not be disassembled while it is connected to the mains!
- 9. Before each patient the lightguide should be cleaned by disinfecting agent (for example desident CaviCide or other approved by Health authorities) and sterilized by autoclave at 134° C for 5 min.

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Manufacturer:

BRILLIANTSMILE NORDIC AB
Styrgangen 10, 417 64 Gothenburg,
Sweden
email:info@brilliantsmile.se

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SN:		
LOT:	02	

DATE OF PRODUCTION:

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DATE OF PURCHASE:

DEALER:		
DEALER:		

09/2012



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SN:					
LOT:	02				
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VII. WARRANTY CONDITIONS

- 1. Warranty period of the **BRILLIANTSMILE** curing light is 24 (twenty four) months from the date of purchase. If date of purchase is not written, warranty starts at date of production.
- 2. During the warranty period the replacement of the defective parts (except for lightguide; LED module 6 months warranty) is done free of charge by manufacturer's service.
- 3. If during the guarantee period the unit is damaged, due to incorrect operation (mechanical, chemical, thermal or electrical damages), damage caused by improper use, storage or any other reasons in user's fault, the repair is paid by the user. If any damage is noticed on electric cables, the device must be brought immediately to manufacturer's service. The device must not be used if cables are damaged. If liquids, such as water and solvents, aggressive or flammable substances and their vaprous, also pouring or wiping the device with the same, insects or rodents have entered the device, it must be brought immediately to manufacturer's service. In such cases warranty is lost. Damages and claims are not accepted due to electric shocks, thunder storms, non-following of measures for electric safety or insufficient protection of patients, personnel or outer persons toward light irradation.

The manufacturer does not owe compensation for lost benefits in cases of defects or imperfect f unctioning of the device regardless of the cause.

No claims and damages are accepted due to incorrect security and attention for protection during transportation, unpacking, moving, work and preservation of device. Warranty becomes null and void if any of the above mentioned happens.

- 4. This warranty becomes null and void if any repair to or servicing of the product is performed by any unauthorized party or if other than original BRILLIANTSMILE spare parts are used therefore.
- 5. The manufacturer recommends that the users check once a year (or if there is an incident immediately) in the manufacturer's service if the parameters: output light intensity and heat radiation of their units are in the admissible range. This check-up is done free of charge in the manufacturer's service.
- 6. The warranty servicing is performed at the manufacturer's service at the following address:

10. FRAGILE! Be extremely careful during transportation, storage and handling of the unit!

11. The Pursuant to Directive 2002/96/EC, this symbol shows that the product must not be disposed of as urban waste at the end of its operating life. The product must be taken to centers specialized in separate collection of electric and electronic equipment. Correct disposal of the equipment, which is no longer used, prevents negative consequences for the environment and human health!

V. PREPARATION AND SEQUENCE OF OPERATION

BRILLIANTSMILE is designed for use as a wall-mounted unit (after fixing the handpiece holder on a vertical surface).

Take the curing light BRILLIANTSMILE out from the packing. Fix the handpiece holder on a vertical surface - wall, dental chair arm, etc.

Attention! The unit should be placed at least 1 meter away from any heat source.

- 2. Autoclave the lightguide prior to first use, fix the protective filter to it and mount the assembly into the front part of the handpiece.
- 3. Connect the power adapter to the mains outlet or connect to 24V.

The device has soft start (gradual increase in LED module intensity - 0.3sec) in all modes, which helps prolong LED module's life and at the same time avoid stress and shrinking in photocompposite.

4. The unit is activated by pressing the Start/Stop button of the handpiece.

Timer selection: If button hold over 2sec color ring change its color.

- CURING MODE RED RING
- press once (1x) for 3 sec;
- press twice (2x) for 6 sec;
- WHITENING MODE 10min BLUE RING
- press once (1x) for 10 min;
- WHITENING MODE 20min GREEN RING
- press once (2x) for 20 min;

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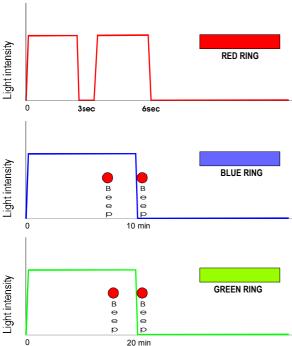
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- WHITENING MODE 20min GREEN RING
- press once (2x) for 20 min;

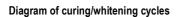
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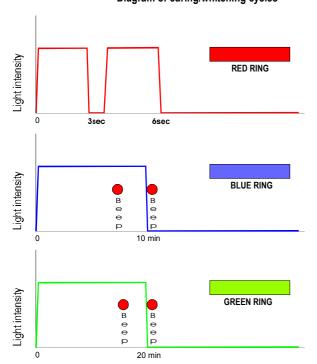
Diagram of curing/whitening cycles



Due to the built-in micro fan **BRILLIANTSMILE** has also <u>LONG mode</u> to ensure long-time work - without overheating. LONG mode is activated by pressing the Start/Stop in BLUE or GREEN ring There is audible signal every 1 min.

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- 6. Direct the emitting light of handpiece to the curing spot at the closest distance (4-7 mm) and make sure the lightguide does not touch the photocomposite during the first several seconds and after that, when surface layer is hardened enough, the lightguide can touch the photocomposite.
- 7. After second pressing of the Start/Stop button the unit is deactivated.
- 8. Switching off of curing light in the end of the day shall be done by unplugging of adapter from the wall socket.

9. Beeper- ON/OFF function

This function allow to switch on and switch off the beeper.

If button is hold for 5-6sec when power supply is connected to mains voltage

If beeper is ON after hold MODE button for 5-6sec will display OFF and beeper will be switch off. If beeper is OFF after hold MODE button for 5-6sec will display ON and beeper will be switch on.

Overheating protection

The unit is equipped with overheating protection,

When overheating protection is activated the unit flashes 4 times with audible signal, then is deactivated until

(BRILLIANTSMILE has built-in micro fan cooling and overheating protection should be activated only in emergency situations - if the fan stops working, if the vents of the fan become obstructed, etc.)

VI. ROUTINE CARE AND MAINTENANCE

1. Examining of lightquide

Every day the lightguide tip should be examined for:

- stuck restorative material (it should be removed very carefully with blunt non-metal object);
- mechanical damages on the lightguide.

The above actions should be done to prevent decrease of light intensity. If none of the above improves light intensity, the unit should be checked in the manufacturer's service.

2. Cleaning of the unit

For disinfection of the unit, spray the disinfection agent onto a piece of soft cloth / cotton and clean the handpiece and power adapter. Do not use abrasives or solvents as these may damage the plastic parts of the unit!

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