

INSTRUCTIONS FOR USE

Single Tooth Bleaching LED attachment
Orthodontic (ortho) LED attachment
Standard LED attachment
Diagnostic LED attachment

Thank you for purchasing this LED attachment for the Radii Plus cordless curing light. For operation and safety for the actual Radii Plus LED curing light, please refer to the instruction manual contained in the kit. This instruction sheet only details safe operation in relation to the LED attachment purchased.

• **Placement of the LED attachment**

To place the LED attachment, insert carefully by placing fingers as shown below. Some twisting may be required for smooth insertion.



• **Rotating the LED attachment**

The LED attachment can be rotated 360° to ensure easy access to any area of the mouth.



WARNING: Do not rotate the LED attachment at the LED end, instead turn at the end closer to the control section as shown above.

SINGLE TOOTH BLEACHING LED ATTACHMENT

The Single Tooth Bleaching LED attachment is designed for acceleration of in-office tooth whitening materials such as 35% hydrogen peroxide based gels. This LED attachment is suitable to accelerate the bleaching effect of whitening solutions on one tooth at a time.

Audible beeping cycle:

When using the Single Tooth Bleaching LED attachment, the Radii Plus will beep once every 30 seconds for 30 minutes. After the last 30 second time period, one long beep will be heard and the unit is automatically switched off.

NOTE: At a distance of 3mm from the tooth, the temperature emitted from the LED attachment reaches 40°C in approximately 30 to 50 seconds, and will reach 45°C at 120 seconds.

CAUTION: Over heating a tooth can cause pulp damage. Refrain from light curing a single tooth for more than 30 seconds at one time. Please refer to tooth whitening material manufacturer's instructions for use regarding safe use of material.

ORTHODONTIC (ORTHO) LED ATTACHMENT

The Orthodontic (ortho) LED attachment is designed for use by orthodontists to better suit their clinical needs in applications such as the efficient bonding of brackets. As the RAMP mode is not required for this clinical application it is not included. Full cure begins from the first push of the 'on/off' button of the Radii Plus.

Audible beeping cycle:

When using the Orthodontic (ortho) LED attachment, the Radii Plus will beep once every 10 seconds for 5 minutes. After the last 10 second time period, one long beep will be heard and the unit is automatically switched off.

STANDARD LED ATTACHMENT

The Standard LED attachment (also included in the Radii Plus kit) has two curing modes, NO RAMP and RAMP mode. NO RAMP mode will output 100% intensity immediately after pressing the on/off button whereas RAMP mode will output a reduced intensity for the first 5 seconds before irradiating at 100% intensity.

• **Switching between the NO RAMP mode and RAMP mode.**

To switch between the NO RAMP mode and RAMP mode, when the Radii Plus is off, hold down the on/off button for 3 seconds. Two audible beeps will be heard. The unit will now be programmed for RAMP mode. To switch back to the NO RAMP mode, hold down the on/off button for 3 seconds, a single audible beep will be heard indicating the unit has switched back to NO RAMP mode. **NOTE:** In RAMP mode the visible light starts slightly dimmer and progressively gets stronger, as opposed to in NO RAMP mode, where the visible light is constant from the start.

• **Audible beeps for NO RAMP and RAMP modes:**

Depending on the mode set (NO RAMP or RAMP), the beeping cycle will differ. Below is a table explaining the audible beeps for each mode.

Audible beeps	Time between beeps (seconds)		Total elapsed time (seconds)	
	NO RAMP	RAMP	NO RAMP	RAMP
1 short beep	10 sec	15 sec	10 sec	15 sec
2 short beeps	10 sec	10 sec	20 sec	25 sec
3 short beeps	10 sec	10 sec	30 sec	35 sec
4 short beeps	10 sec	10 sec	40 sec	45 sec
5 short beeps	10 sec	10 sec	50 sec	55 sec
1 long beep	10 sec	10 sec	60 sec	65 sec

At the end of 60 seconds (or 65 seconds in case of "RAMP" mode) one long beep will be heard before the blue LED is automatically switched off.

DIAGNOSTIC LED ATTACHMENT

NOTE: The Diagnostic LED attachment will only work in Radii Plus units with serial numbers 3-21745 and above. These units are easily identifiable as they have the RAMP mode indicator light on the control section of the handpiece. For units with serial numbers prior to this, a new control section is necessary; please contact your regional representative.

The Radii Plus Diagnostic LED attachment provides transillumination to assist clinical diagnosis. Transillumination is a very effective, inexpensive and quick way of detecting some dental problems, such as fractures, caries, interproximal caries, subgingival calculus, root canal openings, leaking restoratives and non-vital teeth.

Light cycle:

When using the Diagnostic LED attachment, the light will illuminate for 5 minutes. The light can be terminated prior to this time by pressing the on/off button again.

Light brightness:

The brightness of the light can be adjusted to the desired level. When you press the on/off button, to start the cycle, hold the button down. The light will gradually become brighter. Once the light reaches its brightest illumination a short audible beep will be emitted. If you continue to hold the button down, the light will repeat the cycle by starting at the lowest level of brightness and will gradually become brighter. Once the light has reached your required level of brightness release the button. The diagnostic attachment is now pre-set at this level of brightness each time you turn the unit on. To change the brightness level, repeat the steps above.

• **Cleaning the Radii Plus:**

The ideal way to protect patients from cross-infection is to utilize Radii

Plus barrier sleeves. Barrier sleeves are also essential to keep the Radii Plus clean. When cleaning the Radii Plus handpiece, ensure lens cap, battery pack, control section and LED attachment are connected as one unit.

- **LIQUID CONTACT WITH TERMINALS OF HANDPIECE AND CHARGER WILL CAUSE DAMAGE VOIDING WARRANTY.**
- **LIQUID CONTACT WITH LED WILL CAUSE DAMAGE VOIDING WARRANTY.**
- **LIQUIDS MUST NOT ENTER ANY PART OF THE HANDPIECE OR CHARGER.**
- **DO NOT SPRAY LIQUIDS DIRECTLY ONTO, OR APPLY COPIOUS AMOUNTS OF LIQUIDS TO THE RADII PLUS.**
- **DO NOT AUTOCLAVE THE RADII PLUS.**

General Surface Cleaning

General surface cleaning can be conducted with anti-microbial surface disinfectant such as Glutaraldehyde, Chlorhexidine gluconate, and 70% Isopropyl alcohol. When applying the disinfectant to any component of the device, spray the disinfectant agent onto a piece of cloth and wipe over the **external** areas to be cleaned.

SAFETY AND PRECAUTIONS

The safe operation of this unit depends on strictly following the operating instructions in this manual. The Manufacturer accepts no liability for any damage resulting from the use of this unit for any other purpose than the polymerization of dental composite materials.

Automatic shut off function

Should the LED attachment become too hot due to excessive use, the unit will automatically shut off and be un-usable for about 1 minute until it cools down.

CAUTION! Irradiation of the eyes bears an inherent health risk. Hence, the light must not be directed towards the eyes. Exposure must be restricted to the area of the oral cavity in which clinical treatment is intended. Suitable blue-light filtering safety goggles should be used. The Radii Plus emits a high intensity light and intensive light exposure of soft tissues (gingiva, oral mucosa and skin) should be avoided as this exposure may cause damage or irritation. The emitted light should be placed directly above the material to be cured. If applicable cover soft tissue areas.

Do not use the Radii Plus in patients or by users with:

- heart pacemaker implants who have been advised to be cautious in regards to their exposure to small electrical devices.
- a history of photo biological reactions (including individuals with urticaria solaris or erythropoietic prothyrphoria) or who are currently on photo-sensitizing medication (including 8-methoxypsoralen or dimethylchlorotetracycline).
- a history of cataract surgery. These people may be particularly sensitive to the exposure to light and should be discouraged from Radii Plus treatment unless adequate safety measures, such as the use of protective goggles to remove blue light, are undertaken.
- a history of retinal disease. These people should seek advice from their ophthalmologist prior to operating the unit. In operating the Radii Plus unit, this group of individuals must take extreme care and comply with all safety precautions (including the use of suitable light-filtering safety goggles).

WARRANTY PERIOD

SDI Limited, the Manufacturer, extends a five (5) year warranty against defects in materials or workmanship to the original purchaser of this product. The Manufacturer agrees to correct any defects which develop within the warranty period, either by repair or replacement, at its option. This warranty is valid providing factory inspection indicates that any such defect developed during normal and proper use subject to the conditions below.

WARRANTY CONDITIONS - PLEASE READ CAREFULLY

- Please fill out the warranty card included in kit and send promptly back to SDI with proof of purchase. Failure to do so may void your warranty.
- Alternatively goto <http://www.sdi.com.au/warranty> to register your warranty.

- Claims for damage in shipment should be filed promptly with the transportation company.
- All shipments claimed defective can only be returned to the Manufacturer with the written consent of the Manufacturer. All returned products must be accompanied by a full description of discrepancy or malfunction.
- Only SDI authorized service personnel are allowed to carry out repairs to the Radii Plus. Manufacturer shall be released from all obligations under this warranty if repairs or modifications are made by persons other than Manufacturer's own or authorized service personnel.
- Use only SDI parts exclusively to replace defective components. The product warranty does not cover any damage resulting from the use of third-party replacements parts.
- Manufacturer shall be released from all obligations under this warranty in the event of improper installation; damage due to casualty; or obvious misuse including but not limited to damage from liquids and autoclaving.**
- Manufacturer shall in no event be liable for any consequential damages arising from the misuse of the product.
- Only the above stated warranty shall be applicable, and all other warranties, expressed or implied, are hereby excluded.

All correspondence concerning the product should specify the model and serial number.

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CAUTION
(refer to accompanying instructions)



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