

APM UV9 LED



Instructions for use

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APM UV9 LED

The APM UV9 LED is a first of its kind light source. It is both a UV and Visible light curing system that uses powerful light emitting diodes as its light source. This portable handheld unit is powered by a rechargeable lithium ion battery.

The APM UV9 LED has a UV and Visible energy output up to $1800mW/\ cm^2$ and can emit 365nm / 385nm light , 405nm / 420nm light or a combination of all.

It gives a cure area of $\frac{1}{2}$ " at $\frac{1}{2}$ " distance from your bond area. A micro-processor provides control of timing, audible indicators, temperature sensing, and battery management. An LCD on the device provides a read out of selected time exposures of 1~60 seconds. The LCD also displays the battery discharge level. The unit can be manually turned off at any time by pressing the start button a second time after your initial start. The APM UV9 LED includes the light source, one rechargeable lithium ion battery, cradle with pass / fail radiometer, power supply and filter.

1. SAFETY INSTRUCTION

This device produces high-output curing energy. A significant increase in curing energy is possible compared with equipment previously used. It is important to observe the following precautions and procedures:

- Do not place light directly on or towards unprotected skin.
- Do not look directly at the light emitted from this device. Do not use this device without suitable eye protection for the operator and assistant. Please refer to the 2.2. Installation and Charging section for suitable eye protection.
- Persons having a history of photosensitive reactions or who are using photosensitizing drugs should not be exposed to light from this device.
- Take caution when using this device in the presence of flammable liquids, dust particles, oxidizer such as oxygen or nitrous oxide, or other flammable substances.

2. Product Information

Specifications:

- Energy Output: up to 1800 mW/cm² @ 365 nm 420 nm
- Input Power: Lithium Ion Battery (3.7 V/2500 mAh)
- LED Life: 2,000 hrs
- Dimensions: 38mm x 190mm (with 11mm change to 11mm Light Guide)
- Weight: 180g
- Power Supply: AC100-240 V, 50-60 Hz (Power Supply is CE/UL approved)

2.1. System Components

Included with the Purchase of your APM UV9 LED.



2.2. Installation and Charging



Startup

When receiving the unit check for damage that may have occurred during transportation. If necessary, contact APM Technica.

Start

Remove the protective caps from the device and light guide which should be kept on whenever not in use to prevent damage. Next insert the light guide into the handheld and ensure the light guide is fully inserted.

Filter

Place the Filter on the Light Guide Rod to prevent blue light from shining directly into your eyes.



Anti-glare Shield

We recommend installing the Anti-glare Shield on the front of the Light Guide Rod to prevent the Light Guide Rod from being damaged during use. The Anti-glare Shield will also reduce eye discomfort from reflected glare.



Battery

We recommend you charge the battery fully before the first use. Put the battery into the handheld and rotate clockwise until you hear a "click" sound and feel the battery clicked into place.



The battery supplied is only charged to about 60% prior to shipment. Charge it fully before using it (see page 10).

3. Features

3.1. Device

3.1.1. LED Wavelength Settings

- (1) UV: 365+385 nm
- (2) VIS: 405+420 nm
- (3) ENTIRE: 365+385+405+420 nm

3.1.2. Operation



A. **ON/OFF button**

Press the large red button to start the device.



- Press the same button again to turn on the curing light.
- Pressing the same button during the curing cycle will interrupt and end the cycle.
- If the unit is in sleep mode, pressing this button will wake the unit and it will display with the last mode chosen. Press 2x more to start curing cycle.

B. 2 MODE button

- Controlled by small red button on left.
- When pressed will adjust LED light source setting (UV/ VIS/ ENTIRE), intensity setting and beep.



Press 2X









/IS Mode



C. 3 TIME button

TIME: Controlled by small red button on the right.
When pressed it will adjust light output time from 1 second to 60 seconds.

- INTENSITY: Press small left button 3 times and then small right button to select intensity setting (LOW/ MEDIUM/ HIGH). Press left button to exit intensity mode.
- BEEP: Press small left button 3 times and then small right button to turn on/off beep setting (MUTE/UNMUTE). Press left button to exit beep mode.

D. 2 + 3 Handheld Information

- To check battery voltage, temperature, usage score, and version.
- Press left and right small red buttons at the same time and hold 5 seconds.



3.1.3. Auto-sleep

The device will automatically turn off if not operated for 3 minutes.

3.1.4. Auto-memory

The default is UV+VIS, 30 sec, unmuted on the first boot up. Afterwards, it will use the last setting used before being turned off.

3.1.5. BEEP Reminders

Occur during button operation and low battery/overheating. The beep can be set to MUTE/UNMUTE per instructions on page 7.

3.1.6. Battery Power

The Battery ICON is symbolized by a ladder with 0 to 5 levels.



3.1.7. Low-voltage Protection

The handheld will automatically turn off after warning the battery power is lower than 3.4 V.



3.1.8. Overheating Protection

Overheating protection: The display will show an overheating warning and force the system to turn off when the light source is at a temperature over 65 °C. The device can be restarted when the temperature has cooled down below 45 °C.



3.1.9. Temperature Sensor Protection (NTC)

The display will show "NTC Error" and force the system to turn off when the light source is not able to detect NTC.



3.2. Cradle

3.2.1. Power Supply

- Input: AC100~240 V, 50-60 Hz
- Output: DC 5 V, 2 A, Micro USB

3.2.2. Operation

A. Turn On

When the cradle is plugged in, it will turn on and display APM Logo. If there is no action within 30 sec, Cradle will enter the sleep mode (the Logo or charging symbol will flash every 10 sec).



B. Charging

Charge the device by placing it in the cradle so that Pogo Pins are connected with the battery contacts. The display will show charging symbol when charging.



C. Wake-up

Insert/remove handheld or test light intensity to wake up the cradle from sleep mode.

D. Intensity Measurement

Light intensity measurement using radiometer port on right side of cradle:

(1) It will show the test result (PASS/FAILURE) on the display after you apply the light on the sensor for over 1 second.



- (2) PASS: Light intensity reaches 70% to 100% of radiant intensity based on specification (1,260~1,800 mW/cm²).
- (3) FAILURE: If light intensity does not reach 70% of radiant intensity based on specification return unit to APM Technica to replace the LED/heat sink to get maximum output.
- (4) The measurement result will be displayed for 3 sec, if there is no other action, display will return to sleep mode.

4. Product Specifications

Type of Information	Specifications	
Device name	APM UV9 LED	
Model name	UV9	
Power supply	Input: AC100~240 V, 50-60 Hz	
	Output: DC 5 V/2 A	
Battery	Li-ion 3.7V, 2500mAh	
Light source	10 W LED	
LED life time	Up to 2,000 hr	
Wavelength	365~420 nm	
	Peak: 365 nm, 385 nm, 405 nm, 420 nm	
Radiant intensity	up onto 1800 mW/cm ² @HIGH, UV Mode	
Handheld dimension	Ø38 (max.) x L190 mm	
Handheld weight	180 g (with battery & light guide rod)	
Cradle dimension	Ø115 (max.) x H68 mm	
Cradle weight	140 g	
Equipment class (AC Adapter)	Class II	
Safety	IEC / EN 61010-1	
EMC	EN 61326-1	
Protection from ingress of liquids	IPX0	
Overvoltage category	1	
Pollution degree of the	2	
intended environment		
Use cycles per charge	680 times in 10 sec, Entire mode, High intensity	
	Indoor use.	
	Altitude (max.): 2000 m	
Operation environment	Ambient temperature: 10~40 °C / 50~104 °F	
	Relative humidity: 30~75 %	
	Atmospheric pressure: 0.5~1.0 atm / 50~106 kPa	
	Ambient temperature: 10~40 °C / 50~104 °F	
Storage and transport environment	Relative humidity: 10~95 %	
	Atmospheric pressure: 0.5~1.0 atm / 50~106 kPa	

5. Disposal

Comply with your national regulations, guidelines and requirements for the disposal of end-of-life electrical equipment and batteries.

This device is provided with a Li-ion battery.

For environmental reasons, please dispose of the device according to local environmental guidelines or regulations.

Make sure the product or the battery is not mixed with other types of waste when it is disposed of.



6. Troubleshooting

 Problem	Resolution
Cannot turn on the device.	Remove the battery and insert it again. If the error persists, please plug-in the power supply to cradle and charge the battery for at least 10 mins. Reinsert battery and then push the ON/OFF button.
Cannot charge the battery.	Please clean battery contacts. If the error persists, replace battery.
Display shows "overheat".	If the temperature rises up to a really high level, please wait until the unit cools down and then use it again.
Display shows "Error 1".	LED module has gone bad, please contact APM Technica to return the unit for repair.
The intensity is too low.	If the intensity test fails please contact APM Technica to return the unit for replacement of the LED/heat sink.





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