COOLLED™

Data Sheet
COOLLED 2600 UV LED LIGHT CURING PEN

The COOLLED 2600 UV LED Light Curing Pen produces bursts of high intensity UV Visible light capable of curing many light curing products within seconds.

This low cost, light weight and safe to use product opens up endless possibilities for UV curing

- Adhesive bonding of small components
- Wire tacking
- Component support
- Glass, metals and plastic bonding

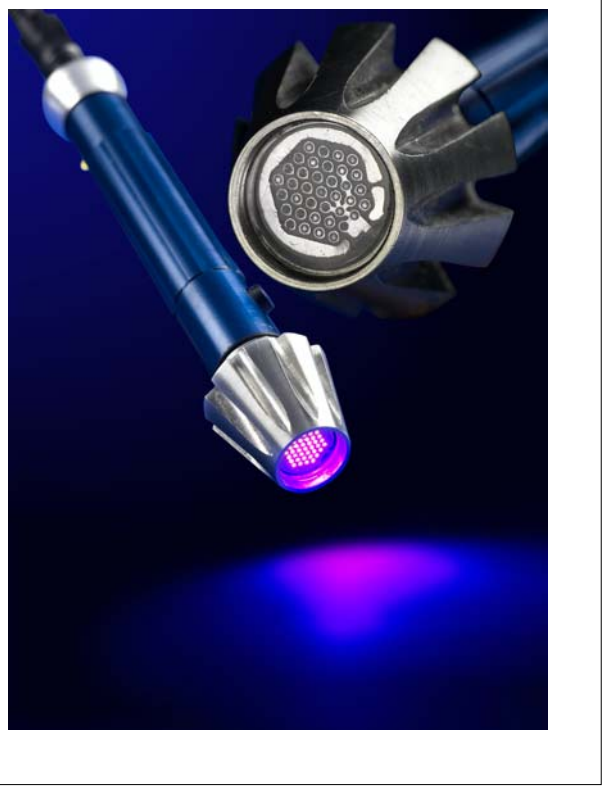
Apply the adhesive, line up the components and when you are happy, use the COOLLED 2600 UV LED Light Curing Pen to cure in seconds.

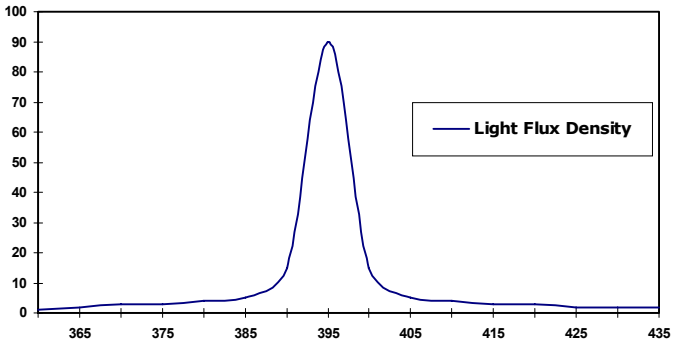
The light source is an array of light emitting diodes (LEDs) mounted in a unique (patent pending) method to create a high, yet linearly spread intensity of irradiation.

Other conventional methods of creating UV light require particular care and attention to be paid to the potentially hazardous multiple peaks of UV radiation. However with LEDs, only a single peak of energy centred on 395nm is generated and its intensity is controlled to minimise the risk to eyes and skin (see Safety section).

LEDs can be switched on and off instantly - hence no warm up required

No mercury, no I.R., no ozone.





Technical Data

- Dimensions	length	128mm (5.04")
	max diameter (head)	23.0mm (0.94")
	min diameter (body)	14.8mm (0.53")
- Weight		57g (0.12lb)

- Light Source Array of 37 LEDs mounted on COOLLED (patent pending) technology structure

- Spectral Output	385-400nm
- Primary Peak	395nm
- Power requirements	110-240Vac, 50-60Hz
- Typical output at source	0.8W/cm^2

Operation

The pen can be operated in three modes, controlled by an internal microprocessor

1. Fast 5 second burst of full power (followed by 15 seconds lock out)

2. Low stress curing by gradual power increase
   i.e. 1 sec 25% power, 1 sec 40% power, 4.25 sec 100% power (followed by 15 seconds lock out)

3. Longer 10 second burst of full power (followed by 30 seconds lock out)

The pen is initiated by a single push of a start button. Each burst is followed by a lock out period with the start button inhibited. This restricts the temperature rise of the LEDs ensuring that they have a long life (>10,000 hours). The finned head design of the pen improves the cooling.

The lock out period also enables the pen to operate within a Class 1M safety classification, ensuring that the user is only exposed to safe levels of UV light. (see Safety section)

A green/red LED indicates the status of the pen and which of the two modes it is set to operate in. Switching between modes is accomplished by a series of button pushes (see mode setting).

The pen is powered from a mains plug style power supply connected via a cable.

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Mode Setting

The pen can be programmed by the user to operate in one of three modes.

Normal operation is **Mode 1**, the 5 secs on and 15 secs off.

Fast curing of adhesives can introduce stresses which with delicate substrates might cause unwanted distortions. The pen can be switched into a Low Stress setting, **Mode 2**, by the following sequence.

a. Press button to active UV irradiance and wait until the 15 second lock out period indicated by the green LED turning red.
b. While the red LED is on, press the button 3 times in quick succession. The LED will flash twice in orange to indicate the acceptance of the 3 pushes. Press the button a further 2 times to change to mode 2. Acceptance is acknowledged by a double flash in orange followed by a return to red.
c. While in mode 2, the led will flash off every 2 seconds
d. To return to mode 1, repeat the above but after the 3 pushes have been acknowledged in b., press the button a single time to revert to mode 1.
e. While on mode 1, the led will not flash

For applications which require a longer period of irradiation, **Mode 3** gives 10 secs on and 30 secs off. To set into Mode 3, the sequence is similar

a. When pen is in lock out (i.e. the LED is red), press the button 3 times in quick succession. The LED will flash twice in orange to indicate the acceptance of the 3 pushes. Press the button a further 3 times to change to mode 3. Acceptance is acknowledged by a double flash in orange followed by a return to red.
b. While in mode 3, the led will give a double flash off every 2 seconds
c. To return to either mode 2 or 1, repeat the above but after 3 pushes have been acknowledged in a., press the button a single time for mode 1 or twice for mode 2.

Optional Battery Pack

The pen is normally powered from a main plug style power supply connected via a cable. To create the levels of light required for fast curing, high peak currents are required. While batteries are capable of delivering these currents, their size would make the pen cumbersome and difficult to use.

For applications in remote locations, an optional rechargeable battery pack is available, fitted with a belt clip for ease of use. Charging of this battery pack uses the same mains plug style power supply that is used for mains operation of the pen.

Within the battery pack is a battery status monitor and charger circuit with a bi colour LED indicating when recharging is required.

Battery life (between charging)	8 hours
Recharging time	4 hours

Safety

This product has been tested by an independent test house and meets the requirements for a Class 1M LED product to IEC/EN60825-1 (2001) under normal operating conditions. A Class 1M product can be summarised as being no risk to the naked eyes or skin but potentially hazardous when viewed close up with magnifying lenses (eye loupes) or if optics are used to collimate the beam.
Caution - use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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Issue 4 Oct 2005