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Mini L.E.D.™ (Project 07-11) (6/08)



The Mini L.E.D.™ Curing Light is a light emitting diode (LED) based curing light from Satelec. The Mini L.E.D. is said to produce 1,250 mW/cm² without tooth temperature increase and is advertised as being compatible with all currently-marketed resins. Satelec further claims that the efficient spectrum of the Mini L.E.D. will facilitate the cure of up to 3 mm of any resin in six to 12 seconds. The Mini L.E.D. offers constant full power, ramped, and pulsed curing modes and the default curing cycle is 10 seconds with the unit providing an audible signal every five seconds. The Mini L.E.D. is available in different configurations ranging from cordless, lithium-ion battery powered to corded units that can be integrated into different dental units. A monofiber 7.5 mm diameter light guide is standard. Five other light guides of different diameter, angulations, and construction are available as accessories.

Manufacturer:

Satelec

U.S. Distributor:

ACTEON GROUP

124 Gaither Drive, Suite 140

Mount Laurel, NJ 08054

(800) 289-6367

(856) 222-9988

(856) 222-4726 FAX

www.satelec.com

Suggested Retail Price:

\$1175.00 Mini L.E.D.™ curing light (Item #F02611) contains:

- Handpiece
- 7.5 mm, 45 degree angulated monofiber light guide
- Charging base assembly
- Power cord
- Protective light shield
- Users manual

Government Price:

\$705.00 Mini L.E.D.™ curing light
(item numbers and contents as above)

ADVANTAGES:

- + Degree of cure somewhat similar to a typical halogen curing light
- + Small, lightweight, cordless design
- + Competitively priced
- + High irradiance output: approximately 1300 mW/cm²
- + Long LED life compared with halogen bulbs
- + Long battery life with minimal loss of irradiance on a single charge
- + Easy intraoral access
- + Three program settings and battery-level indicator
- + Ergonomically-placed controls
- + Lithium-ion rechargeable battery
- + Protective eye shield included
- + Autoclavable light guide
- + Interchangeable light guides in multiple sizes and configurations

DISADVANTAGES:

- Prominent light emission laterally from the clear light guides
- May not polymerize all photoinitiated dental materials
- Advertised claim of curing 3 mm thick resins in 12 seconds not confirmed
- Built-in radiometer does not display relative irradiance values
- Only moderate collimation of light over distance from provided light guide
- No rationale for "Pulse" mode of cure

SUMMARY AND CONCLUSIONS:

The Mini L.E.D.[™] is a competitively-priced, quiet, lightweight, light-emitting diode (LED) curing light from Satelec that is distributed in the US by the Acteon Group. The curing light was capable of providing continuous 20-second exposures for over four hours with minimal loss of irradiance on a single battery charge. Depth of cure was similar to popular halogen curing lights. However, like most LED curing lights, it may not polymerize all dental materials, in spite of manufacturer claims—especially Lucrin TPO-based photoinitiators due to the limited width of its emission spectrum. Furthermore, the manufacturer advertised claims of the Mini L.E.D.'s ability to photopolymerize 3 mm thicknesses of any restorative resin was not validated during this evaluation. Clinical users appreciated the cordless design and high-irradiance output of the Mini L.E.D. However, the major limitation of this unit is the prominent and distracting lateral light emission noted from the clear light guides. The evaluators were almost unanimous in this finding which was noted during laboratory testing as well. Largely due to this observation, the majority of the clinical evaluators did not recommend the Mini L.E.D. for purchase. Due to the irradiance values and battery life, the **Mini L.E.D.[™]** curing light is rated **Acceptable** for use in US Air Force dental facilities; however potential users should be aware of potential visual distraction with the current Mini L.E.D. light guides.