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[\[PDF \(574K\)\]](#) [\[References\]](#)**Temperature rise induced by various light curing units through human dentin**

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Abstract:

This study investigated temperature rises caused by different light curing units (LCUs) in dentin of different thicknesses. The different LCUs tested in this study were namely: quartz-tungsten-halogen (QTH) (Heliolux DLX) LCU, plasma arc (PAC) (Apollo 95E Elite) LCU, and light emitting diode (LED) (Mini LED) in standard curing mode as well as pulse and soft-start modes. One hundred and forty dentin disks of 0.5, 1, 1.5, and 2 mm thickness were prepared from mandibular molars ($n=7$). Temperatures were recorded using a L-type thermocouple in direct contact with the light guide tip. For all curing units/modes, dentin thickness was inversely proportional to temperature rise and that QTH light gave significantly higher values compared to PAC and LED in all the test conditions. The highest temperature rise was observed under 0.5-mm-thick dentin disk with QTH, whereas the lowest temperature rise was registered with LED light in pulse mode under 2-mm-thick dentin.

Key words:[Light curing units](#), [Temperature rise](#), [Dentin](#)[\[PDF \(574K\)\]](#) [\[References\]](#)

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