



American National Standard/
American Dental Association
Specification No. 48

Visible Light Curing Units

Modified adoption of *ISO 10650-1:2004, Powered polymerization activators — Part 1: Quartz tungsten halogen lamps*

ADA American
Dental
Association®
Council on
Scientific Affairs

2004

**AMERICAN NATIONAL STANDARD/AMERICAN DENTAL ASSOCIATION
SPECIFICATION NO. 48 FOR VISIBLE LIGHT CURING UNITS**

The Council on Scientific Affairs of the American Dental Association has approved revised American Dental Association Specification No. 48 for Visible Light Curing Units. This and other specifications for dental materials, instruments and equipment are being formulated by working groups of the ADA Standards Committee on Dental Products (formerly Accredited Standards Committee MD156 for Dental Materials, Instruments and Equipment). The Committee has representation from all interests in the United States in the standardization of materials, instruments and equipment in dentistry. The Council has adopted the specifications, showing professional recognition of their usefulness in dentistry, and has forwarded them to the American National Standards Institute with a recommendation that the specifications be approved as American National Standards. The American National Standards Institute granted approval of ADA Specification No. 48 as an American National Standard on August 25, 2004.

The Council thanks the working group members and the organizations with which they were affiliated at the time the specification was developed:

P. L. Fan (chair), American Dental Association, Chicago, IL; Joseph B. Dennison, University of Michigan School of Dentistry, Ann Arbor, MI; William J. Dunn, United States Air Force, San Antonio, TX; Scott Erickson, 3M ESPE, St. Paul, MN; Paul D. Hammesfahr, L.D. Caulk, Milford, DE; Frank Lentine, Lentine Enterprises, Taylor, MI; Daniel L. Leonard, Asheville NC; Keith B. Moore, Indiana University School of Dentistry, Indianapolis, IN; Howard Roberts, United States Air Force, Great Lakes, IL; Frederick A. Rugeberg, Medical College of Georgia School of Dentistry, Augusta, GA; and Jeff Zawada, A-Dec, Newberg, OR.

**AMERICAN NATIONAL STANDARD/AMERICAN DENTAL ASSOCIATION
SPECIFICATION NO. 48 FOR VISIBLE LIGHT CURING UNITS****FOREWORD**

(This Foreword does not form a part of ANSI/ADA Specification No. 48).

This proposed specification is based on ISO 10650 – 1: 2004, Powered visible light curing units – Part 1: Quartz tungsten halogen lamps, with the exception that a requirement value is defined for radiant exitance for the 400-515 nm (blue light) region.

This specification specifies requirements for the 190 –385 nm wavelength region, the 400-515 nm wavelength region and the wavelength region above 515 nm and test methods for powered visible light curing units. This specification refers to IEC 60601-1:1988, the basic International Standard on safety of medical electrical equipment, wherever relevant, by stating the respective clause numbers of IEC 60601-1:1988. This specification uses wavelength regions based on cut-off filters. Thus the 190 nm to 385 nm region includes not only the ultraviolet region but also the near blue wavelength region of around 380 nm. The 400 nm to 515 nm region is taken as the blue region for blue light curing (powered polymerization activation). The region above 515 nm expands to approximately 1 100 nm, which is the detection limit of the detector specified in this specification. The test methods described in the specification do not give absolute values nor do they reflect energy emitted as black body radiation. Nevertheless, the values obtained using these test methods are used in conjunction with this specification.

Addendum to the Foreword for this Reaffirmation:

In 2012, the ADA Standards Committee on Dental Products approved a change in the terminology used for standards. ADA standards will no longer utilize the term Specification; standards will now be named as ADA Standards.

With this notice, this ADA Specification is now termed an ADA Standard. Where the term "specification" is used, it should be considered as "standard." It will be re-named as an ADA Standard in its next revision.