

**Making the Most of the  
Academy of Laser Dentistry's  
30th Annual Conference and Exhibition:  
A Practical Orientation for Attendees**

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# Checklist for Evaluating Lasers

- A. Determine Your Specific Clinical Needs
  - 1. Experience
  - 2. Preferences
- B. Clinical Applications of Specific Device
  - 1. Regulatory Marketing Clearances
  - 2. Range of Applications
  - 3. Speed of Performance
  - 4. Precision and Controllability
- C. Design
  - 1. Specifically Designed for Intraoral Use?
  - 2. Operational Noise Level
- D. Limitations
  - 1. Electrical Power Requirements
  - 2. External Cooling System Requirements
  - 3. Inadvertent Interaction with Infrared-Controlled Office Devices
- E. Safety
  - 1. Built-In Features
  - 2. Adjunct Measures Necessary for Safe Performance
  - 3. Concerns, including:
    - a. Is it possible to defeat the safety interlock?
    - b. Is it possible to activate the laser at zero power setting?
    - c. Is the laser adequately protected from spills?
- F. Cleaning, Sterilization, and Disinfection
  - 1. Instrument
  - 2. Delivery System
- G. Device-Specific Supporting Research
  - 1. Scientifically Rigorous?
  - 2. Peer-Reviewed?
- H. Device-Specific Training
  - 1. Adequacy
  - 2. Convenience
  - 3. Frequency
  - 4. Cost
  - 5. Credentials and Disclosures
  - 6. Ongoing Support
- I. Documentation - Organization, Illustrations, Comprehensiveness, Ease of Use, Troubleshooting
  - 1. Operator Manual
  - 2. Clinical Applications Manual
  - 3. Service Manual
- J. Ergonomics
  - 1. Ease of Set-Up
  - 2. Ease of Use
  - 3. Control Panel
  - 4. Visibility and Usefulness of Displays
  - 5. Ease of Display Navigation
  - 6. User-Controllable Presets
  - 7. Activation Force of Foot Pedal or Hand Switch

## Checklist for Evaluating Lasers

- K. Portability
  - 1. Size
  - 2. Weight
  - 3. Maneuverability
  - 4. Storage of Accessories
- L. Controllability
  - 1. Power
  - 2. Pulse Frequency
  - 3. Pulse Duration
  - 4. Pulse Interval
  - 5. Air
  - 6. Water
  - 7. Spot Size
  - 8. Cutting Speed
  - 9. Timer for Duration of Exposure
- M. Features
  - 1. Appropriateness for Dentistry
  - 2. Output Power
  - 3. Aiming Beam
    - a. Available?
    - b. Attenuated by Safety Glasses?
    - c. Type?
    - d. Controllable?
  - 4. Plume-Clearing Gas for Delivery System Optics and Waveguides
  - 5. Evacuation
  - 6. Emission Indicators
    - a. Visual
    - b. Audible
  - 7. Delivery System
    - a. Flexibility
    - b. Reach
    - c. Efficiency in Energy Transmission
    - d. Maintenance and Accessibility for Cleaning
    - e. Damageability
    - f. Storage and Fit Through Doorways
    - g. Counterbalance
    - h. Ease of Adjustment
    - i. Ease of Mirror Alignment (If Articulating Arm)
    - j. Calibration of Output Power to Compensate for Energy Loss Through Delivery System
    - k. Cooling
  - 8. Galvanometers
  - 9. Water Reservoir
    - a. Ease of Removal, Refill, Replacement
    - b. Capacity
  - 10. Battery
    - a. Function
    - b. Life
    - c. Ease of Replacement
  - 11. Built-In Printer for Treatment Record
  - 12. Video Compatibility

# Checklist for Evaluating Lasers

- N. Accessories
  - 1. Safety Eyewear
  - 2. Optic Fibers
  - 3. Waveguides
  - 4. Handpieces
  - 5. Micromanipulators
  - 6. Focusing Lenses
  - 7. Disposable Tips
  - 8. Tip Shape Configurations
  - 9. Diffusing Handpieces
  - 10. Scanning Handpieces
  - 11. Interchangeable Connectors
  - 12. Fiber Strippers
  - 13. Fiber Cleavers
  - 14. Fiber Inspection Microscope
  - 15. Laser Safety Signs
- O. Delivery System Components
  - 1. Longevity
  - 2. Autoclaveable
  - 3. Ease of Use
  - 4. Ease of Change
  - 5. Disposable
  - 6. Cost
- P. Quality of Construction
  - 1. Ruggedness
  - 2. Beam Alignment
  - 3. Calibration
- Q. Reliability
- R. Service
  - 1. Factory
  - 2. On-site
  - 3. Packaging
    - a. Durability
    - b. Reusability
    - c. Cost
    - d. Ease of Repacking
- S. Cost
  - 1. Initial
  - 2. Maintenance
  - 3. Replacement Parts
- T. Upgradeability
  - 1. Hardware
  - 2. Software
- U. Warranty
  - 1. Duration
  - 2. Parts
  - 3. Labor
  - 4. Shipping

# Checklist for Evaluating Lasers

- V. Track Record
  - 1. Number of Installations
  - 2. Availability for Follow-Up
  - 3. Performance
  - 4. Safety
    - a. Incident Report History and Policy
  - 5. Service
    - a. Response Time
    - b. Hours of Operation
    - c. Reliability of Repair
    - d. Loaner Policy
  - 6. Parts and Accessories
    - a. Available When Needed
    - b. Delivery
    - c. Ease of Ordering (Telephone, Fax, Online)
    - d. Warranty
  - 7. Customer Satisfaction
  - 8. Repeat Customers

# Critically Evaluating the Dental Literature and Health Information on the Internet

## Suggested Resources

1. Gordon Guyatt, Drummond Rennie, Maureen O. Meade, Deborah J. Cook. *Users' Guides to the Medical Literature: Essentials of Evidence-Based Clinical Practice*. (Third edition.) New York: McGraw-Hill Professional Publishing, 2015. ISBN 978-0-07-179071-0
2. Carrasco-Labra A, Brignardello-Petersen R, Glick M, Azarpazhooh A, Guyatt G. *How to Use Evidence-Based Dental Practices to Improve Your Clinical Decision-Making*. Chicago: American Dental Association, 2020. ISBN 978-1-68447-061-7.
3. Trisha Greenhalgh. *How to Read a Paper: The Basics of Evidence Based Medicine and Healthcare*. (Sixth edition.) Hoboken, N.J.: John Wiley & Sons, 2019. ISBN 978-1-119-48474-5
4. Julie Frantsve-Hawley, editor. *Evidence-Based Dentistry for the Dental Hygienist*. Chicago: Quintessence Publishing, 2014. ISBN 978-0-86715-646-1
5. Dan Mayer. *Essential Evidence-Based Medicine*. (Second edition.) Cambridge, UK: Cambridge University Press, 2009. ISBN 978-0-521-71241-5
6. Koch GG, Paquette DW. Design principles and statistical considerations in periodontal clinical trials. *Ann Periodontol* 1997;2(1):42-63. doi: 10.1902/annals.1997.2.1.42.
7. Springer Nature Publishing AG. *EBD. Evidence-Based Dentistry*. 2023. Available at: <http://www.nature.com/ebd/>.
8. Elsevier. *The Journal of Evidence-Based Dental Practice*. 2023. Available at: <https://www.sciencedirect.com/journal/journal-of-evidence-based-dental-practice>
9. JAMA evidence<sup>®</sup>. Using Evidence to Improve Care. 2023. Available at: <http://www.jamaevidence.mhmedical.com>.
10. Cochrane Oral Health. 2023. Available at: <http://www.oralhealth.cochrane.org/>.
11. CEBD. Centre for Evidence-Based Dentistry. 2023. Available at: <http://www.cebd.org/>.
12. U.S. Department of Health & Human Services. Agency for Healthcare Research and Quality. Assessing the Quality of Internet Health Information. June 1999. Available at: <https://archive.ahrq.gov/research/data/infoqual.html>.
13. Dalhousie University Libraries. Evaluation of Health Information on the Web. March 24, 2023. Available at: <https://dal.ca.libguides.com/c.php?g=257155>.
14. U.S. Department of Health and Human Services. National Institutes of Health. National Library of Medicine. MedlinePlus. Evaluating Health Information. April 1, 2022. Available at: <https://medlineplus.gov/evaluatinghealthinformation.html>.

## Critically Evaluating the Dental Literature and Health Information on the Internet

15. ADA<sup>®</sup>. American Dental Association. Clinical Practice Guidelines and Dental Evidence. 2023. Available at: <https://www.ada.org/resources/research/science-and-research-institute/evidence-based-dental-research>.
16. Brignardello-Petersen R, Carrasco-Labra A, Glick M, Guyatt GH, Azarpazhooh A. A practical approach to evidence-based dentistry: Understanding and applying the principles of EBD. *J Am Dent Assoc*. 2014 Nov;145(11):1105-1107. doi: 10.14219/jada.2014.102.
17. Brignardello-Petersen R, Carrasco-Labra A, Booth HA, Glick M, Guyatt GH, Azarpazhooh A, Agoritsas T. A practical approach to evidence-based dentistry: How to search for evidence to inform clinical decisions. *J Am Dent Assoc*. 2014 Dec;145(12):1262-1267. doi: 10.14219/jada.2014.113.
18. Brignardello-Petersen R, Carrasco-Labra A, Glick M, Guyatt GH, Azarpazhooh A. A practical approach to evidence-based dentistry: III: How to appraise and use an article about therapy. *J Am Dent Assoc*. 2015 Jan;146(1):42-49.e1. doi: 10.1016/j.adaj.2014.11.010.
19. Brignardello-Petersen R, Carrasco-Labra A, Glick M, Guyatt GH, Azarpazhooh A. A practical approach to evidence-based dentistry: IV: How to use an article about harm. *J Am Dent Assoc*. 2015 Feb;146(2):94-101.e1. doi: 10.1016/j.adaj.2014.12.002.
20. Brignardello-Petersen R, Carrasco-Labra A, Glick M, Guyatt GH, Azarpazhooh A. A practical approach to evidence-based dentistry: V: How to appraise and use an article about diagnosis. *J Am Dent Assoc*. 2015 Mar;146(3):184-191.e1. doi: 10.1016/j.adaj.2015.01.011.
21. Carrasco-Labra A, Brignardello-Petersen R, Glick M, Guyatt GH, Azarpazhooh A. A practical approach to evidence-based dentistry: VI: How to use a systematic review. *J Am Dent Assoc*. 2015 Apr;146(4):255-265.e1. doi: 10.1016/j.adaj.2015.01.025.
22. Carrasco-Labra A, Brignardello-Petersen R, Glick M, Guyatt GH, Neumann I, Azarpazhooh A. A practical approach to evidence-based dentistry: VII: How to use patient management recommendations from clinical practice guidelines. *J Am Dent Assoc*. 2015 May;146(5):327-336.e1. doi: 10.1016/j.adaj.2015.03.015.
23. Sale JEM, Amin M, Carrasco-Labra A, Brignardello-Petersen R, Glick M, Guyatt GH, Azarpazhooh A. A practical approach to evidence-based dentistry: VIII: How to appraise an article based on a qualitative study. *J Am Dent Assoc*. 2015 Aug;146(8):623-630. doi: 10.1016/j.adaj.2015.06.010.
24. Abrahamyan L, Pechlivanoglou P, Krahn M, Carrasco-Labra A, Brignardello-Petersen R, Glick M, Guyatt GH, Azarpazhooh A. A practical approach to evidence-based dentistry: IX: How to appraise and use an article about economic analysis. *J Am Dent Assoc*. 2015 Sep;146(9):679-689.e1. doi: 10.1016/j.adaj.2015.06.021.

## **Critically Evaluating the Dental Literature and Health Information on the Internet**

25. Carrasco-Labra A, Brignardello-Petersen R, Azarpazhooh A, Glick M, Guyatt GH. A practical approach to evidence-based dentistry: X: How to avoid being misled by clinical studies' results in dentistry. *J Am Dent Assoc.* 2015 Dec;146(12):919-924. doi: 10.1016/j.adaj.2015.08.008.

The preceding Web sites were accessed on April 16, 2023.



# **U.S. FDA Marketing Clearances by Indication for Use (Applies to Certain Models Only)**

## **Intraoral Soft Tissue Surgery (Ablating, Incising, Excising, Coagulating)**

- Carbon Dioxide
- Nd:YAG
- Argon
- Ho:YAG
- Er:YAG
- Nd:YAP
- Er:YSGG
- Diode
- Frequency-Doubled Nd:YAG
- Diode-Pumped 2.01-micron

## **Curing of Composite Materials**

- Argon

## **Aphthous Ulcer Treatment**

- Er,Cr:YSGG
- Carbon Dioxide
- Nd:YAG
- Diode
- Er:YAG
- Frequency-Doubled Nd:YAG

## **Tooth Whitening**

- Carbon Dioxide
- Argon
- Diode
- Frequency-Doubled Nd:YAG

## **Sulcular Debridement**

- Nd:YAG
- Diode
- Er:YAG
- Er:YSGG
- Carbon Dioxide

## **Caries Removal, Cavity Preparation, Enamel Roughening**

- Er:YAG
- Er:YSGG

## **Illumination for Caries Detection**

- Argon

## **Illumination for Endodontic Orifice Location**

- Argon

## **Soften Gutta Percha**

- Argon
- Frequency-Doubled Nd:YAG

## **Removal of Coronal Pulp, Adjunct to Root Canal Procedures**

- Nd:YAG
- Diode

# **U.S. FDA Marketing Clearances by Indication for Use (Applies to Certain Models Only)**

## **Pulpotomy as Adjunct to Root Canal Procedures**

- Diode
- Nd:YAP
- Nd:YAG
- Er,Cr:YSGG
- Er:YAG

## **Selective Removal of Enamel (First Degree) Caries**

- Nd:YAG

## **Removal of Filling Materials as Adjunctive Treatment during Root Canal Retreatment**

- Nd:YAP
- Nd:YAG
- Diode

## **Aid in Diagnosis of Dental Caries**

- Diode

## **Treatment of Herpetic Lesions**

- Er,Cr:YSGG
- Nd:YAG
- Frequency-Doubled Nd:YAG
- Diode
- Er:YAG

## **Blood Flow Measurements**

- Diode

## **Tooth Preparation to Obtain Access to Root Canal, Pulp Extirpation, Root Canal Debridement and Cleaning, Root Canal Preparation including Enlargement**

- Er,Cr:YSGG
- Er:YAG

## **Enameloplasty, Excavation of Pits and Fissures for Placement of Sealants**

- Er,Cr:YSGG
- Er:YAG

## **Cutting, Shaving, Contouring and Resection of Oral Osseous Tissues (Bone)**

- Er,Cr:YSGG
- Er:YAG
- Carbon Dioxide

## **Apicoectomy Surgery**

- Er,Cr:YSGG
- Er:YAG

## **Coagulation of Extraction Sites**

- Diode
- Carbon Dioxide

## **Ostectomy, Osteotomy, Osseous Crown Lengthening, Osteoplasty**

- Er,Cr:YSGG
- Er:YAG

# **U.S. FDA Marketing Clearances by Indication for Use (Applies to Certain Models Only)**

## **Laser-Assisted New Attachment Procedure (cementum-mediated periodontal ligament new-attachment to the root surface in the absence of long junctional epithelium)**

- Nd:YAG
- Carbon Dioxide
- Er,Cr:YSGG
- Diode

## **Cutting Bone to Prepare a Window Access to the Apex (Apices) of the Root(s)**

- Er:YAG
- Er,Cr:YSGG

## **Root End Preparation for Retrofill Amalgam or Composite**

- Er:YAG
- Er,Cr:YSGG

## **Reduction of Bacterial Level (Decontamination) and Inflammation**

- Diode

## **Aid in Detection and Localization of Subgingival Dental Calculus**

- Diode

## **Root Canal Disinfection after Endodontic Instrumentation / Treatment**

- Er,Cr:YSGG
- Er:YAG

## **Removal of Subgingival Calculi in Periodontal Pockets**

- Er:YAG
- Er,Cr:YSGG

## **Removal of Highly Inflamed Edematous Tissue Affected by Bacterial Penetration of the Pocket Lining and Junctional Epithelium**

- Diode
- Er,Cr:YSGG

## **Removal of Pathological Tissues (i.e., Cysts, Neoplasm or Abscess) and Hyperplastic Tissues (i.e., Granulation Tissue) from around the Apex**

- Er,Cr:YSGG
- Er:YAG

## **Ablation of Hard Tissue for Caries Removal and Cavity Preparation**

- Carbon Dioxide

## **Diagnostic Aid for Detection of Open or Incipient Caries Lesions Above the Gingiva and for Monitoring the Progress of Such Lesions, includes Detection of Cracks**

- Diode

## **Root Canal Cleaning and Debridement**

- Diode
- Er,Cr:YSGG

## **Periodontal Regeneration – True Regeneration of the Attachment Apparatus (New Cementum, New Periodontal Ligament, and New Alveolar Bone) on a Previously Diseased Root Surface When Used Specifically in the LANAP® Protocol**

- Nd:YAG

# **U.S. FDA Marketing Clearances by Indication for Use (Applies to Certain Models Only)**

## **Photoinitiation of Gingival Barriers and Dams**

- Diode

## **Facilitation of Subgingival Calculus Removal**

- Nd:YAG

## **Modification of the Dentin Surface, Including Increasing the Mineral and Decreasing the Organic Composition of the Dentin Surface, Reducing Bacteria on the Dentin Surface, Improving the Shear Bond Strength of Composite Resin, Reducing the Adhesive Failure of Composite Resin, and Removing Demineralized Dentin Surface**

- Nd:YAG

## **Removal of Porcelain and Ceramic Crowns and Veneers**

- Er,Cr:YSGG
- Er:YAG

## **Curing Photoactivated Dental Restorative Materials and Adhesives**

- Diode

## **Diagnostic Aid for Viewing the Interproximal Areas of Dental Anatomy to Detect and Monitor the Progression of Proximal Carious Lesions Above the Gingiva D4D**

- Diode

## **Aiding in the Reduction of Mineral Loss in Dental Enamel**

- Carbon Dioxide

# **U.S. FDA Marketing Clearances by Wavelength (Applies to Certain Models Only)**

## **Carbon Dioxide**

- Intraoral Soft Tissue Surgery (Ablating, Incising, Excising, Coagulating)
- Aphthous Ulcer Treatment
- Tooth Whitening
- Sulcular Debridement
- Coagulation of Extraction Sites
- Laser-Assisted New Attachment Procedure (cementum-mediated periodontal ligament new-attachment to the root surface in the absence of long junctional epithelium)
- Ablation of Hard Tissue for Caries Removal and Cavity Preparation
- Cutting, Shaving, Contouring and Resection of Oral Osseous Tissue (Bone)
- Aiding in the Reduction of Mineral Loss in Dental Enamel

## **Nd:YAG**

- Intraoral Soft Tissue Surgery (Ablating, Incising, Excising, Coagulating)
- Aphthous Ulcer Treatment
- Sulcular Debridement
- Removal of Coronal Pulp, Adjunct to Root Canal Procedures
- Selective Removal of Enamel (First Degree) Caries
- Pulpotomy as Adjunct to Root Canal Retreatment
- Removal of Filling Materials as Adjunctive Treatment During Root Canal Retreatment
- Treatment of Herpetic Lesions
- Laser-Assisted New Attachment Procedure (cementum-mediated periodontal ligament new-attachment to the root surface in the absence of long junctional epithelium)
- Periodontal Regeneration - True Regeneration of the Attachment Apparatus (New Cementum, New Periodontal Ligament, and New Alveolar Bone) on a Previously Diseased Root Surface When Used Specifically in the LANAP® Protocol
- Facilitation of Subgingival Calculus Removal
- Modification of the Dentin Surface, Including Increasing the Mineral and Decreasing the Organic Composition of the Dentin Surface, Reducing Bacteria on the Dentin Surface, Improving the Shear Bond Strength of Composite Resin, Reducing the Adhesive Failure of Composite Resin, and Removing Demineralized Dentin Surfaces

## **Argon**

- Intraoral Soft Tissue Surgery (Ablating, Incising, Excising, Coagulating)
- Curing of Composite Materials
- Tooth Whitening
- Illumination for Caries Detection
- Illumination for Endodontic Orifice Location
- Soften Gutta Percha

## **Ho:YAG**

- Intraoral Soft Tissue Surgery (Ablating, Incising, Excising, Coagulating)

## **Er:YAG**

- Intraoral Soft Tissue Surgery (Ablating, Incising, Excising, Coagulating)
- Caries Removal, Cavity Preparation, Enamel Roughening
- Aphthous Ulcer Treatment
- Sulcular Debridement
- Pulpotomy as Adjunct to Root Canal Retreatment

# **U.S. FDA Marketing Clearances by Wavelength (Applies to Certain Models Only)**

## **Er:YAG (continued)**

- Tooth Preparation to Obtain Access to Root Canal, Pulp Extirpation, Root Canal Debridement and Cleaning, Root Canal Preparation including Enlargement
- Enameloplasty, Excavation of Pits and Fissures for Placement of Sealants
- Cutting, Shaving, Contouring and Resection of Oral Osseous Tissue (Bone)
- Treatment of Herpetic Lesions
- Apicoectomy Surgery
- Ostectomy, Osteotomy, Osseous Crown Lengthening, Osteoplasty
- Cutting Bone to Prepare a Window Access to the Apex (Apices) of the Root(s)
- Root End Preparation for Retrofill Amalgam or Composite
- Removal of Subgingival Calculi in Periodontal Pockets
- Removal of Pathological Tissues (i.e., Cysts, Neoplasm or Abscess) and Hyperplastic Tissues (i.e., Granulation Tissue) from around the Apex
- Removal of Porcelain and Ceramic Crowns and Veneers
- Root Canal Disinfection after Endodontic Treatment

## **Er,Cr:YSGG**

- Intraoral Soft Tissue Surgery (Ablating, Incising, Excising, Coagulating)
- Aphthous Ulcer Treatment
- Cavity Preparation, Caries Removal, Tooth Etching
- Sulcular Debridement
- Treatment of Herpetic Lesions
- Pulpotomy as Adjunct to Root Canal Retreatment
- Tooth Preparation to Obtain Access to Root Canal, Pulp Extirpation, Root Canal Debridement and Cleaning, Root Canal Preparation including Enlargement
- Enameloplasty, Excavation of Pits and Fissures for Placement of Sealants
- Cutting, Shaping, Contouring and Resection of Oral Osseous Tissues (Bone)
- Apicoectomy Surgery
- Ostectomy, Osteotomy, Osseous Crown Lengthening, Osteoplasty
- Cutting Bone to Prepare a Window Access to the Apex (Apices) of the Root(s)
- Root End Preparation for Retrofill Amalgam or Composite
- Root Canal Disinfection after Endodontic Instrumentation
- Removal of Highly Inflamed Edematous Tissue Affected by Bacteria Penetration of the Pocket Lining and Junctional Epithelium
- Removal of Pathological Tissues (i.e., Cysts, Neoplasm or Abscess) and Hyperplastic Tissues (i.e., Granulation Tissue) from around the Apex
- Laser- Assisted New Attachment Procedure (Cementum-Mediated Periodontal Ligament New-Attachment to the Root Surface in the Absence of Long Junctional Epithelium)
- Removal of Subgingival Calculi in Periodontal Pockets
- Removal of Porcelain and Ceramic Crowns and Veneers

## **Diode**

- Intraoral Soft Tissue Surgery (Ablating, Incising, Excising, Coagulating)
- Aphthous Ulcer Treatment
- Sulcular Debridement
- Removal of Coronal Pulp, Adjunct to Root Canal Procedures
- Pulpotomy as Adjunct to Root Canal Retreatment
- Tooth Whitening
- Aid in Diagnosis of Dental Caries
- Blood Flow Measurements

# **U.S. FDA Marketing Clearances by Wavelength (Applies to Certain Models Only)**

## **Diode (continued)**

- Treatment of Herpetic Lesions
- Coagulation of Extraction Sites
- Reduction of Bacterial Level (Decontamination) and Inflammation
- Aid in Detection and Localization of Subgingival Dental Calculus
- Removal of Highly Inflamed Edematous Tissue Affected by Bacteria Penetration of the Pocket Lining and Junctional Epithelium
- Laser- Assisted New Attachment Procedure (Cementum-Mediated Periodontal Ligament New-Attachment to the Root Surface in the Absence of Long Junctional Epithelium)
- Diagnostic Aid for Detection of Open or Incipient Caries Lesions Above the Gingiva and for Monitoring the Progress of Such Lesions, includes Detection of Cracks
- Root Canal Cleaning and Debridement
- Photoinitiation of Gingival Barriers and Dams
- Curing Photoactivated Dental Restorative Materials and Adhesives
- Diagnostic Aid for Viewing the Interproximal Areas of Dental Anatomy to Detect and Monitor the Progression of Proximal Carious Lesions Above the Gingiva

## **Nd:YAP**

- Intraoral Soft Tissue Surgery (Ablating, Incising, Excising, Coagulating)
- Pulpotomy as Adjunct to Root Canal Retreatment
- Removal of Filling Materials as Adjunctive Treatment During Root Canal Retreatment

## **Frequency-Doubled Nd:YAG**

- Intraoral Soft Tissue Surgery (Ablating, Incising, Excising, Coagulating)
- Tooth Whitening
- Aphthous Ulcer Treatment
- Treatment of Herpetic Lesions
- Soften Gutta Percha

## **Diode-Pumped 2.01-micron**

- Intraoral Soft Tissue Surgery (Ablating, Incising, Excising, Coagulating)

# Selected U.S. FDA Marketing Clearances Lasers for Intraoral Use by Company and Device May 1990 – March 31, 2023

This list generally designates laser instruments cleared by the U.S. FDA for intraoral use and generally available in the United States between May 1990 and March 31, 2023. It therefore is not intended to be comprehensive. Some devices are no longer marketed. Some are designed specifically for dentistry, while others are medical lasers with some intraoral applications. Information is accurate at date of compilation based upon available resources including [www.fda.gov](http://www.fda.gov). Substantiated additions and revisions are respectfully solicited. Interested parties are advised to consider the clinical, risk, legal/regulatory, and ethical issues related to off-label use of medical devices.

## **Intraoral Soft Tissue Surgery (Ablating, Incising, Excising, Coagulating)**

- Nd:YAG
  - Sunrise Technologies – dLase 300, 8 Watt Pulsed Dental Laser, Upgraded Package for dLase 300
  - Pfizer Laser Systems – Pegasus
  - Laser Endo Technic – Laser 35, Laser 6, Laser 12
  - Excel Technologies – Excel DuoPulse
  - Incisive Technologies – PulseMasters, dLase 300 Upgrade
  - Sciton – Contour Profile, mJOULE
  - Incisive LLC – InPulse, PinPointe FootLaser
  - Millennium Dental Technologies – PerioLase
  - Lares Research – SunLase 800 P (PocketPro)
  - Fotona – Fidelis Plus, Fidelis III, Fotona XP, LightWalker, Dynamis, Dynamis Pro
  - Cynosure – Smart File Laser
  - Quanta System – Ultrawave III EX 1320, MDK Multi-Applications, Chrome
  - PathoLase – PinPointe and PinPointe FootLaser
  - PinPointe USA – PinPointe FootLaser
  - Nuvolase – PinPointe FootLaser
  - El.En. Electronic Engineering – DEKA SmartPerio
- Carbon Dioxide
  - NIIC USA – NIIC Laser System
  - Satelec – Lasersat CO<sub>2</sub>
  - Luxar – Model LX-20 CO<sub>2</sub> Laser
  - Ion Laser Technology – ILT CO<sub>2</sub> Surgical Laser
  - Jamar Medical Systems – Chrys XX CO<sub>2</sub> Surgical Laser System
  - Clinicon Corporation – C4 CO<sub>2</sub> Laser, C-LAS, SureLase
  - Medical Laser Technologies – MLT 30 CO<sub>2</sub> Laser
  - OpusDent – Opus 20, Spectrum, OpusDuo EC
  - Lumenis – UltraPulse Encore
  - Lumenis – UltraPulse SurgiTouch, UltraPulse, UltraPulse DUO
  - Cynosure – Smart CO<sub>2</sub>, Smart US 20 D, UltraSpeed, Smart Clinic, Affirm CO<sub>2</sub> and Affirm CO<sub>2</sub> HP, Cortex
  - PhotoMedex – LaserPro CO<sub>2</sub>
  - Diamond Age Systems – Azuryt Model CTL 1401
  - Lumenis – OpusDent Family
  - MAX Engineering – Spectra-SP
  - Asclepion Laser Technologies – MultiStar
  - Lasering – SLIM Evolution Family, SLIM Evolution II
  - El.En. Electronic Engineering – SmartXide, Smart US20D, Smartxide 50 HS/MS, DEKA SmartXide<sup>2</sup>, DEKA Smartxide Ultraspeed, DEKA Smartxide Touch, DEKA Smartxide Punto, DEKA SmartXide<sup>2</sup> Trio CO<sub>2</sub>
  - Alma – ThermoXEL, Pixel CO<sub>2</sub>
  - Lumenis – AcuPulse 30 and 40, AcuPulse 30/40ST and 40WG, UltraPulse, UltraPulse DUO, AcuPulse, AcuPulse DUO
  - Advanced Technology Laser – ATL-150, ATL-250, eBeam
  - OmniGuide – OmniGuide BeamPath FELS 25A, Beacon
  - Lutronic – DENTA III, DENTA III+, Spectra DENTA II
  - Beijing Syntech Laser – Trixel, Trixel II
  - Quanta System – YOULASER
  - LightScalpel – LightScalpel LS-10, LightScalpel LS-1005, LightScalpel LS-2010, LightScalpel LS-2010 SX, LS-2010 DX, LightScalpel LS-4020



**Selected U.S. FDA Marketing Clearances  
Lasers for Intraoral Use  
by Company and Device (continued)  
May 1990 – March 31, 2023**

**Intraoral Soft Tissue Surgery (Ablating, Incising, Excising, Coagulating) (continued)**

- Carbon Dioxide (continued)
  - Yoshida Dental Mfg. Co. – OPELASER PRO II and OPELASER Lite II
  - Convergent Dental – Solea
  - Whitecap Technologies – CYMA
  - Syneron Medical – CO<sub>2</sub>RE Laser System
  - Shanghai Wonderful Opto-Electrics Tech. Co. – Matrix LS-40 CO<sub>2</sub> Laser System
  - Beijing Adss Development – CO<sub>2</sub> Laser Therapy Machine
  - Jeisys Medical – EdgeOne CO<sub>2</sub> Laser
  - Ilooda – Fraxis CO<sub>2</sub> Laser
  - Bio-Med USA Cellene CO<sub>2</sub> Laser
  - Shangdong Huamei Technology – CO<sub>2</sub> Laser Therapy System
  - Beijing Superlaser Technology – CO<sub>2</sub> Laser System
  - Zhuolu Jontelaser Manufacturing Technology – Dermatological CO<sub>2</sub> Laser Systems
  - Zhengzhou Bestview – BW-203B CO<sub>2</sub> Laser
  - Beijing Globalipl Development – CO<sub>2</sub> Laser Equipment
  - Laser Engineering – Aurora MD-30
- Argon
  - HGM Medical Systems – Argon Ion Lasers
- Ho:YAG
  - Excel Technologies – Excel DuoPulse
- Er:YAG
  - Pfizer Laser Systems – Centauri YAG Laser
  - Continuum Electro-Optics – Multilite
  - Laserscope – Laserscope Erbium Laser
  - Xintec – Protégé, Protégé LP, Protégé II
  - KaVo America – KEY Laser 1242, KEY Laser 1242, 1243+
  - Fotona – Fidelis, Dualis Laser System, Fidelis III, LightWalker, Dynamis, Dynamis Pro, SkyPulse
  - Innotech USA – Friendly Light
  - Sciton – Contour Profile, Profile 3000
  - American Dental Technologies – PulseMaster Erbium
  - Asclepion-Meditec – Dermastar
  - OpusDent – OpusDuo EC
  - Cell Robotics – Ultra-Light Laser System
  - International Biophysics – Laser Peel System
  - Cynosure – Smart 2940D
  - HOYA ConBio – VersaWave
  - Cynosure – MCL 30 Dermablate
  - Lumenis – OpusDent Family
  - MSq(M<sup>2</sup>) – Lovely II and Lovely III
  - WaveLight Laser Technologie – Burane XL, Burane
  - Light Instruments – LiteTouch, LiteDuo
  - Alma Lasers – Harmony XL
  - Global USA Distribution – LaserPeel Soft-MET Modified Erbium Laser
  - Asclepion Laser Technologies – Dermablate Effect, MCL 31 Dermablate
  - LaserOptek – Lotus II, Lotus III
  - J. Morita Mfg. Corp. – AdvErL EVO MEY-1-A
  - Sheumann Laser – NeoLas Er:YAG
  - Bios – Superbium Er:YAG
  - Focus Medical – Lite Touch
  - Lutronic – Action II
  - LightMed Dental Technology – LightMed
  - Sciton – Joule diVa

# Selected U.S. FDA Marketing Clearances Lasers for Intraoral Use by Company and Device (continued) May 1990 – March 31, 2023

## Intraoral Soft Tissue Surgery (Ablating, Incising, Excising, Coagulating) (continued)

- Nd:YAP
  - Lokki – Lokki DT
- Er,Cr:YSGG
  - BioLase Technology – Elmer, WaterLase Millennium, Waterlase 3.0, Waterlase MD, Waterlase C100, Waterlase MD Turbo Plus, Orthopedic iPlus, Waterlase iPlus S, Waterlase Express, Waterlase iPlus
- Diode
  - Premier Laser Systems – Aurora Surgical Diode Laser, Aurora HL Diode Laser System
  - American Dental Technologies – PulseMaster 1000 ST DioLase ST
  - CeramOptec – Ceralas Diode Model D15, Ceralas Diode Model D10
  - Dentek-Lasersystems – Dentek LD-15 Dental Laser
  - BioLase Technology – Twilight Dental Diode Laser
  - OpusDent – Opus 10
  - CAO Group – DenLaser, DenLaser 800 Plus, Pilot Diode Laser, Precise SHP Diode Laser, Pioneer Elite Diode Laser, Pilot Elite, Pilot Ultra, Pilot Pro, Sterling Diode Laser, Sterling Supreme Diode Laser
  - Zap Lasers – SoftLase, SoftLase G2, Styla MicroLaser, StylaOrtho, SoftLase Pro/OrthoLase/HygieneLase
  - Continuum Electro-Optics – DioDent Dental Laser System
  - American Dental Technologies – DioLase 980 D
  - BioLase Technology – LaserSmile, EZLase, ezlase 10W, iLase, EPIC 10, Diolase 10S, Epic 10S, Epic Pro, Epic Pro 940, Epic 980
  - MSq(M<sup>2</sup>) – Dio-Dent 10
  - Biolitec – Ceralas D810, Ceralas D980, Ceralas D100, Ceralas D150, Ceralas D15, Ceralas D25, Ceralas E 980 (E15/980, E30/980), 50W Ceralas D 1950, 180W Ceralas D 980 (D180), Ceralas Multiwavelength 980/1470 nm Diode Laser System, Ceralas D50, Ceralas D120, Ceralas D180, Evolve HPD 980, Evolve 980/1470 nm Multiwavelength Diode Laser (Evolve Dual)
  - HOYA ConBio – LVI Lase, DioDent II
  - PhotoMedex – LaserPro 810, 940 and 980
  - Ivoclar Vivadent – Odyssey 2.4G
  - Diomed – Delta 15, Delta 30
  - Sirona Dental Systems – SIROLaser, SIROLaser Advance, SIROLaser Advance+, SIROLaser Blue
  - Vision Lasertechnik – MDL-10/15
  - Asclepion Laser Technologies – QuadroStar 980, Orion
  - ProSurg – LaserTx
  - Xintec – Vectra
  - INTERmedic Arfran – INTERmedic, INTERmedic Diode Laser 980 nm System
  - Spectrum International – Prometey
  - B&W Tek – BWF-5
  - Lasering – Velure S9/7D, Velure S9/15D
  - Elexxion – Claros Dental Laser System, Claros Nano
  - Hoya ConBio – DioDent Micro 810, DioDent Micro 980
  - Ivoclar Vivadent – Odyssey Navigator
  - Quanta System – Diode Medical Laser Family (808, 940, 980 nm), Polysurge Diode Laser Family (808, 940, 980, 1064)
  - KaVo America – GENTLEray 980
  - A.R.C. Laser – Fox Q-810, Q-980, Q-1064, Wolf 445nm, Fox 810, Fox 980
  - Valam – Fox 940
  - Light Instruments – LiteDuo
  - OroScience – Curative 980
  - Fotona – XD Diode Laser, SkyPulse, XPulse Pro, XPulse 810, XPulse 980, XPulse 1064
  - AMD Lasers – Picasso, Picasso Lite, Picasso Perio, Picasso Plus, Picasso Lite Plus
  - Lambda Scientifica – Doctor Smile A-810, B-980
  - QuickLase – QuickLase DUAL+, 810, 980 Dental Lasers
  - Light Instruments – D-STORM

**Selected U.S. FDA Marketing Clearances  
Lasers for Intraoral Use  
by Company and Device (continued)  
May 1990 – March 31, 2023**

**Intraoral Soft Tissue Surgery (Ablating, Incising, Excising, Coagulating) (continued)**

- Diode (continued)
  - LiteCure – BWF-5 Medical Laser Series (810, 930, 980, 1080, 1320 nm)
  - Eufoton – Lasemar 800, 1000, 1500
  - Focus Medical – Naturalase 980
  - China Daheng Group – DenLase-810/7, DenLase-980/7, PenLase
  - Dental Photonics – stLase
  - Lambda – Doctor Diode (810, 940, 980, 1064 nm)
  - Discus Dental – SL3
  - Den-Mat Holdings – Sapphire ST, Sapphire Plus STM, SOL Portable Diode Laser
  - MedArt, Medart 720
  - Mira Lasers – Zeno 2, Zeno 4
  - El.En. – S DEKA SmartXide<sup>2</sup> 940 and 980, DEKA SmartXide<sup>2</sup> Trio 940 and 980
  - Zolar Technology – Photon/Photon Plus
  - G.N.S. neoLaser – neoV Diode Laser Family (neoV810, neoV980, neoV1064, neoV1470)
  - Azena Medical – ELUMI 810 + 980, Gemini 810 + 980, Gemini 2 810 + 980
  - Sheumann Laser – NeoLas 810 nm
  - Wuhan Gigaa Optronics Technology – VELASII-30A/30B
  - VIAX Dental Lab – Lucerna VDL980-1
  - Bio-med USA – Dental 5 Multi Diode Laser
  - Lazon Medical Laser – SOLASE-808, SOLASE-976
  - Shanghai Apolo Medical Technology – HS-890Z 980 Diode Laser Therapy Device
  - HULASER – K2 Module
  - DentLight – Ultrafast, Ultrafast Plus, Ultrafast Lite
  - Guilin Woodpecker Medical Instrument – D-Laser Blue, D-Laser 16
  - Elesta Spa – Echolaser X4
  - Shenzhen Soga Technology – SOGALaser ILaser I, SOGALaser ILaser II
  - Sciton – Joule diVa
  - Squalus Med – MANTA 810, 980, 1064, 1470, 1940
- Frequency-Doubled Nd:YAG
  - Fisma – Corium 200, Corium 400
  - Lumenis – Novus Spectra
  - Cynosure – SmartLite D
  - Quanta System – MDK Multi-Applications, Chrome
- Diode-Pumped 2.01-micron
  - AllMed Systems – RevoLix, RevoLix Jr.

**Curing of Composite Materials**

- Argon
  - HGM Medical Laser Systems – HGM Argon Ion Laser
  - ILT Systems – ACL-5500, CL-5500, Argon HP
  - LaserMed – AccuCure 3000, AccuCure 1000, Pulstar
  - Premier Laser Systems – Argon Curing Laser, Arago II
  - ICS Clinics of North America – Cyber-Lase 2000
  - Fisma – Dental 200, Dental 300, Dental 400

**Tooth Whitening**

- Carbon Dioxide
  - ILT Systems – ILT Genesis 2000
  - Sharplan Lasers – Model 15F CO<sub>2</sub> Laser
  - LightScalpel – LightScalpel LS-1005, LightScalpel LS-2010 SX, LS-2010 DX, LightScalpel LS-4020

**Selected U.S. FDA Marketing Clearances  
Lasers for Intraoral Use  
by Company and Device (continued)  
May 1990 – March 31, 2023**

**Tooth Whitening (continued)**

- Argon
  - ILT Systems – ACL-5500
  - Fisma – Dental 200, Dental 300, Dental 400
  - LaserMed – AccuCure 3000, AccuCure 1000, Pulstar
  - Premier Laser Systems – Arago II
  - ICS of North America – Cyber-Lase 2000
- Diode
  - CeramOptec – Model D15 Cerelas
  - BioLase Technology – Twilight Dental Diode Laser
  - OpusDent – Opus 10
  - Zap Lasers – SoftLase G2, Styla MicroLaser, StylaOrtho, SoftLase Pro/OrthoLase/HygieneLase
  - Continuum Electro-Optics – DioDent
  - American Dental Technologies – DioLase 980 D
  - BioLase Technology – LaserSmile
  - MSq(M<sup>2</sup>) – Dio-Dent 10
  - HOYA ConBio – LVI Lase, DioDent II
  - Biolitec – Ceralas D100, Ceralas D150, Ceralas D15, Ceralas D25, Ceralas D980, Ceralas E 980 (E15/980, E30/980), 180W Ceralas D 980 (D180), Ceralas Multiwavelength 980/1470 nm Diode Laser System, Evolve HPD 980, Evolve 980/1470 nm Multiwavelength Diode Laser (Evolve Dual)
  - ProSurg – LaserTx
  - Xintec – Vectra
  - INTERmedic Arfran – INTERmedic, INTERmedic Diode Laser 980 nm System
  - Spectrum International – Prometey
  - Lasering – Velure S9/7D, Velure S9/15D
  - Elexxion – Claros Dental Laser System, Claros Nano
  - Hoya ConBio – DioDent Micro 810, DioDent Micro 980
  - Quanta System – Diode Medical Laser Family (808, 980 nm), Polysurge Diode Laser Family (808, 980)
  - KaVo America – GENTLERay 980
  - Light Instruments – LiteDuo
  - OroScience – Curative 980
  - BioLase Technology – ezlase, EPIC 10, Epic Pro, Epic Pro 940, Epic 980
  - Fotona – XD Diode Laser, SkyPulse, XPulse Pro, XPulse 810, XPulse 980
  - AMD Lasers – Picasso, Picasso Lite, Picasso Perio, Picasso Plus
  - Lambda Scientifica – Doctor Smile A-810, B-980
  - QuickLase – QuickLase DUAL+, 810, 980 Dental Lasers
  - Light Instruments – D-STORM
  - Dental Photonics – stLase
  - Lambda – Doctor Diode (810, 980 nm)
  - Discus Dental – SL3
  - Den-Mat Holdings – Sapphire ST
  - Asclepion Laser Technologies – Orion
  - Mira Lasers – Zeno 2, Zeno 4
  - Zolar Technology – Photon Plus, Photon
  - CAO Group – Precise SHP Diode Laser, Pioneer Elite Diode Laser, Pilot Elite, Pilot Ultra, Sterling Supreme Diode Laser
  - Azena Medical – ELUMI 810 + 980
  - VIAX Dental Lab – Lucerna VDL980-1
  - Bio-med USA – Dental 5 Multi Diode Laser
  - Dentsply Sirona – SIROLaser Advance+, SIROLaser Blue
  - Lazon Medical Laser SOLASE-808, SOLASE-976
  - HULASER – K2 Module
  - Guilin Woodpecker Medical Instrument – D-Laser Blue, D-Laser 16

**Selected U.S. FDA Marketing Clearances  
Lasers for Intraoral Use  
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**Tooth Whitening (continued)**

- Frequency-Doubled Nd:YAG
  - Fisma – Corium 200, Corium 400
  - Lumenis – Novus Spectra
  - Cynosure – SmartLite D

**Aphthous Ulcer Treatment**

- Er,Cr:YSGG
  - BioLase Technology – Elmer, WaterLase Millennium, Waterlase 3.0, Waterlase MD, Waterlase C100, Waterlase MD Turbo Plus, Orthopedic iPlus, Waterlase Express, Waterlase iPlus
- Carbon Dioxide
  - ILT Systems – ILT Genesis 2000
  - Lumenis – UltraPulse Encore
  - Lumenis – UltraPulse SurgiTouch, UltraPulse, UltraPulse DUO
  - PhotoMedex – LaserPro CO2
  - Lumenis – OpusDent Family
  - MAX Engineering – Spectra-SP
  - Cynosure – Smart US 20 D, UltraSpeed, Smart Clinic
  - Alma – ThermoXEL, Pixel CO<sub>2</sub>
  - Lumenis – AcuPulse 30 and 40, AcuPulse 30/40ST and 40WG, AcuPulse, AcuPulse DUO
  - Advanced Technology Laser – ATL-150, ATL-250, eBeam
  - Lutronic – DENTA III, DENTA III+, Spectra DENTA II
  - Lasering – SLIM Evolution II
  - LightScalpel – LightScalpel LS-1005, LightScalpel LS-2010, LightScalpel LS-2010 SX, LS-2010 DX, LightScalpel LS-4020
  - Syneron Medical – CO<sub>2</sub>RE Laser System
  - EL.EN Electronic Engineering – DEKA Smartxide Ultraspeed
  - Bio-Med USA Cellene CO<sub>2</sub> Laser
- Nd:YAG
  - American Dental Technologies – PulseMasters
  - Incisive LLC – InPulse, PinPointe FootLaser
  - Millennium Dental Technologies – PerioLase
  - Lares Research – SunLase 800P (PocketPro)
  - Fotona – Fidelis Plus, Fidelis III, Fotona XP, LightWalker, Dynamis, Dynamis Pro
  - PathoLase – PinPointe and PinPointe FootLaser
  - PinPointe USA – PinPointe FootLaser
  - Nuvolase – PinPointe FootLaser
  - El.En. Electronic Engineering – DEKA SmartPerio
- Diode
  - American Dental Technologies – PulseMaster 1000 ST DioLase ST
  - Dentek Lasersystems – Dentek LD-15
  - CeramOptec – Cerelas Diode Model D15, Cerelas Diode Model D10
  - BioLase Technology – Twilight, EZLase, ezlase 10W, iLase, EPIC 10, Epic Pro, Epic Pro 940, Epic 980
  - OpusDent Ltd. – Opus 10
  - Zap Lasers – SoftLase, SoftLase G2, Styla MicroLaser, StylaOrtho, SoftLase Pro/OrthoLase/HygieneLase
  - Continuum Electro-Optics – DioDent Dental Laser System
  - American Dental Technologies – DioLase 980 D
  - BioLase Technology – LaserSmile
  - MSq(M<sup>2</sup>) – Dio-Dent 10
  - HOYA ConBio – LVI Lase, DioDent II
  - Ivoclar Vivadent – Odyssey 2.4G

**Selected U.S. FDA Marketing Clearances  
Lasers for Intraoral Use  
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**Aphthous Ulcer Treatment (continued)**

- Diode (continued)
  - Biolitec – Ceralas D100, Ceralas D150, Ceralas D15, Ceralas D25, Ceralas D980, Ceralas E 980 (E15/980, E30/980), 180W Ceralas D 980 (D180), Ceralas Multiwavelength 980/1470 nm Diode Laser System, Evolve HPD 980, Evolve 980/1470 nm Multiwavelength Diode Laser (Evolve Dual)
  - Sirona Dental Systems – SIROLaser, SIROLaser Advance, SIROLaser Advance+, SIROLaser Blue
  - Vision Lasertechnik – MDL-10/15
  - ProSurg – LaserTx
  - Xintec – Vectra
  - CAO Group – DenLaser 800 Plus, Precise SHP Diode Laser, Sterling Diode Laser
  - Spectrum International – Prometey
  - Elexxion – Claros Dental Laser System
  - Hoya ConBio – DioDent Micro 810, DioDent Micro 980
  - Ivoclar Vivadent – Odyssey Navigator
  - Quanta System – Diode Medical Laser Family (940, 980 nm), Polysurge Diode Laser Family (940, 980)
  - KaVo America – GENTLERay 980
  - Light Instruments – LiteDuo
  - OroScience – Curative 980
  - Fotona – XD Diode Laser, SkyPulse, XPulse Pro, XPulse 810, XPulse 980, XPulse 1064
  - AMD Lasers – Picasso, Picasso Lite, Picasso Perio, Picasso Plus, Picasso Lite Plus
  - Lambda Scientifica – Doctor Smile A-810, B-980
  - QuickLase – QuickLase DUAL+, 810, 980 Dental Lasers
  - Light Instruments – D-STORM
  - Dental Photonics – stLase
  - Lambda – Doctor Diode (810, 940, 980 nm)
  - Discus Dental – SL3
  - Den-Mat Holdings – Sapphire ST, Sapphire Plus STM
  - China Daheng Group – PenLase
  - Asclepion Laser Technologies – Orion
  - Mira Lasers – Zeno 2, Zeno 4
  - Zolar Technology – Photon/Photon Plus
  - Den-Mat – SOL Portable Diode Laser
  - Azena Medical – ELUMI 810 + 980, Gemini 810 + 980, Gemini 2 810 + 980
  - Sheaumann Laser – NeoLas 810 nm
  - VIAX Dental Lab – Lucerna VDL980-1
  - Bio-med USA – Dental 5 Multi Diode Laser
  - Lazon Medical Laser SOLASE-808, SOLASE-976
  - HULASER – K2 Module
  - DentLight – Ultrafast, Ultrafast Plus, Ultrafast Lite
  - Guilin Woodpecker Medical Instrument – D-Laser Blue, D-Laser 16
  - Shenzhen Soga Technology – SOGALaser ILaser I, SOGALaser ILaser II
- Frequency-Doubled Nd:YAG
  - Fisma – Corium 200, Corium 400
  - Lumenis – Novus Spectra
  - Cynosure – SmartLite D
- Er:YAG
  - KaVo America – KEY Laser 1242, KEY Laser 1242, 1243+
  - HOYA ConBio – VersaWave
  - J. Morita Mfg.Corp. – AdvErL EVO MEY-1-A

**Selected U.S. FDA Marketing Clearances  
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May 1990 – March 31, 2023**

**Sulcular Debridement**

- Nd:YAG
  - American Dental Technologies – PulseMasters
  - Lares Research – SunLase 800P (PocketPro)
  - Incisive LLP – InPulse, PinPointe FootLaser
  - Millennium Dental Technologies – PerioLase
  - Fotona – Fidelis Plus, Fidelis III, Fotona XP, LightWalker
  - PathoLase – PinPointe and PinPointe FootLaser
  - PinPointe USA – PinPointe FootLaser
  - Nuvolase – PinPointe FootLaser
  - El.En. Electronic Engineering – DEKA SmartPerio
- Diode
  - American Dental Technologies – PulseMaster 1000 ST DioLase ST
  - Premier Laser Systems – Aurora, Aurora HL
  - CeramOptec – Cerelas Diode Model D15, Cerelas Diode Model D10
  - Dentek Lasersystems – Dentek LD-15
  - BioLase Technology – Twilight
  - OpusDent Ltd. – Opus 10
  - Zap Lasers – SoftLase, SoftLase G2, Styla MicroLaser, StylaOrtho, SoftLase Pro/OrthoLase/HygieneLase
  - Continuum Electro-Optics – DioDent Dental Laser System
  - American Dental Technologies – DioLase 980 D
  - BioLase Technology – LaserSmile, EZLase, ezlase 10W, iLase, EPIC 10, Epic Pro, Epic Pro 940, Epic 980
  - MSq(M<sup>2</sup>) – Dio-Dent 10
  - HOYA ConBio – LVI Lase, DioDent II
  - Ivoclar Vivadent – Odyssey 2.4G
  - Biolitec – Ceralas D100, Ceralas D150, Ceralas D15, Ceralas D25, Ceralas D980, Ceralas E 980 (E15/980, E30/980), 180W Ceralas D 980 (D180), Ceralas Multiwavelength 980/1470 nm Diode Laser System, Evolve HPD 980, Evolve 980/1470 nm Multiwavelength Diode Laser (Evolve Dual)
  - Sirona Dental Systems – SIROLaser, SIROLaser Advance, SIROLaser Advance+, SIROLaser Blue
  - ProSurg – LaserTx
  - Xintec – Vectra
  - Spectrum International – Prometey
  - Elexxion – Claros Dental Laser System, Claros Nano
  - Hoya ConBio – DioDent Micro 810, DioDent Micro 980
  - Ivoclar Vivadent – Odyssey Navigator
  - Quanta System – Diode Medical Laser Family (940, 980 nm), Polysurge Diode Laser Family (940, 980)
  - KaVo America – GENTLEray 980
  - Light Instruments – LiteDuo
  - OroScience – Curative 980
  - Fotona – XD Diode Laser, SkyPulse, XPulse Pro, XPulse 980, XPulse 1064
  - AMD Lasers – Picasso, Picasso Lite, Picasso Perio, Picasso Plus, Picasso Lite Plus
  - Lambda Scientifica – Doctor Smile A-810, B-980
  - QuickLase – QuickLase DUAL+, 810, 980 Dental Lasers
  - Light Instruments – D-STORM
  - Dental Photonics – stLase
  - Lambda – Doctor Diode (810, 940, 980 nm)
  - Discus Dental – SL3
  - Den-Mat Holdings – Sapphire ST, Sapphire Plus STM
  - China Daheng Group – PenLase
  - Asclepion Laser Technologies – Orion
  - CAO Group – Precise SHP Diode Laser, Pioneer Elite Diode Laser, Pilot Elite, Pilot Ultra, Sterling Diode Laser, Sterling Supreme Diode Laser
  - Mira Lasers – Zeno 2, Zeno 4

**Selected U.S. FDA Marketing Clearances  
Lasers for Intraoral Use  
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**Sulcular Debridement (continued)**

- Diode (continued)
  - Zolar Technology – Photon/Photon Plus
  - Den-Mat – SOL Portable Diode Laser
  - Azena Medical – ELUMI 810 + 980, Gemini 810 + 980, Gemini 2 810 + 980
  - VIAX Dental Lab – Lucerna VDL980-1
  - Bio-med USA – Dental 5 Multi Diode Laser
  - Lazon Medical Laser SOLASE-808, SOLASE-976
  - HULASER – K2 Module
  - DentLight – Ultrafast, Ultrafast Plus, Ultrafast Lite
  - Guilin Woodpecker Medical Instrument – D-Laser Blue, D-Laser 16
  - Shenzhen Soga Technology – SOGALaser ILaser I, SOGALaser ILaser II
- Er,Cr:YSGG
  - BioLase Technology – WaterLase Millennium, Waterlase 3.0, Waterlase MD, Waterlase C100, Waterlase MD Turbo Plus, Orthopedic iPlus, Waterlase Express, Waterlase iPlus
- Er:YAG
  - KaVo America – KEY Laser 1242, KEY Laser 1242, 1243+
  - Fotona – Fidelis, Fidelis III, LightWalker, SkyPulse
  - OpusDent – OpusDuo EC
  - HOYA ConBio – VersaWave
  - Lumenis – OpusDent Family
  - Sciton – Profile
  - Light Instruments – LiteTouch, LiteDuo
  - J. Morita Mfg. Corp. – AdvErL EVO MEY-1-A
  - Sheumann Laser – NeoLas Er:YAG
  - LightMed Dental Technology – LightMed
- Carbon Dioxide
  - OpusDent – OpusDuo EC
  - Cynosure – Smart US 20 D, UltraSpeed, Smart Clinic, PerioPulse
  - Lutronic – DENTA III, DENTA III+, Spectra DENTA II
  - LightScalpel – LightScalpel LS-1005, LightScalpel LS-2010, LightScalpel LS-2010 SX, LS-2010 DX, LightScalpel LS-4020
  - EL.EN Electronic Engineering – DEKA Smartxide Ultraspeed

**Caries Removal, Cavity Preparation, Enamel Roughening**

- Er:YAG
  - Premier Laser Systems – Centauri
  - Continuum Biomedical – DeL 2940 Dental Erbium Laser, DeLite Dental Erbium Laser
  - Kavo KEY Laser 1242, KEY Laser 1242, 1243+
  - Fotona – Fidelis, Dualis, Fidelis III, LightWalker, SkyPulse
  - OpusDent Ltd. – Opus 20, Spectrum
  - American Dental Technologies – PulseMaster Erbium
  - Cynosure – Smart 2940D
  - HOYA ConBio – VersaWave
  - Lumenis – OpusDent Family
  - Sciton – Profile
  - Light Instruments – LiteTouch, LiteDuo
  - J. Morita Mfg. Corp. – AdvErL EVO MEY-1-A
  - LightMed Dental Technology – LightMed
- Er,Cr:YSGG
  - BioLase Technology – WaterLase Millennium, Waterlase 3.0, Waterlase MD, Waterlase C100, Waterlase MD Turbo Plus, Orthopedic iPlus, Waterlase Express, Waterlase iPlus



**Selected U.S. FDA Marketing Clearances  
Lasers for Intraoral Use  
by Company and Device (continued)  
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**Illumination for Caries Detection**

- Argon
  - Premier Laser Systems – Arago II
  - Fisma – Dental 200, Dental 300, Dental 400

**Aid in Diagnosis of Dental Caries**

- Diode
  - KaVo America Corporation – DIAGNOdent Laser Fluorescence Caries Detection Device, DIAGNOdent 2095, DIAGNOdent 2190
  - Quantum Dental Technologies – The Canary System
  - Kaltenbach & Voigt – DIAGNOcam 2170
  - D4D Technologies – TIA Tip, Cariosity, Transillumination Accessory Tip

**Illumination for Endodontic Orifice Location**

- Argon
  - Premier Laser Systems – Arago II
  - Fisma – Dental 200, Dental 300, Dental 400

**Removal of Coronal Pulp, Adjunct to Root Canal Procedures**

- Nd:YAG
  - Premier Laser Systems – Pegasus
- Diode
  - Premier Laser Systems – Aurora

**Pulpotomy as Adjunct to Root Canal Retreatment**

- Diode
  - CeramOptec – Cerelas D15, Cerelas Diode Model D10
  - Dentek Lasersystems – Dentek LD-15
  - BioLase Technology – Twilight, EZLase, ezlase 10W, iLase, EPIC 10, Epic Pro, Epic Pro 940, Epic 980
  - Premier Laser Systems – Aurora HL
  - OpusDent – Opus 10
  - Continuum Electro-Optics – DioDent Dental Laser System
  - American Dental Technologies – DioLase 980 D
  - BioLase Technology – LaserSmile
  - MSq(M<sup>2</sup>) – Dio-Dent 10
  - HOYA ConBio – DioDent II
  - Biolitec – Ceralas D810, Ceralas D980, Ceralas D100, Ceralas D150, Ceralas E 980 (E15/980, E30/980), 180W Ceralas D 980 (D180), Ceralas Multiwavelength 980/1470 nm Diode Laser System, Evolve HPD 980, Evolve 980/1470 nm Multiwavelength Diode Laser (Evolve Dual)
  - Sirona Dental Systems – SIROLaser, SIROLaser Advance, SIROLaser Advance+, SIROLaser Blue
  - Vision Lasertechnik – MDL-10/15
  - ProSurg – LaserTx
  - Xintec – Vectra
  - INTERmedic Arfran – INTERmedic, INTERmedic Diode Laser 980 nm System
  - Spectrum International – Prometey
  - Elexxion – Claros Dental Laser System, Claros Nano
  - Hoya ConBio – DioDent Micro 810, DioDent Micro 980
  - Quanta System – Diode Medical Laser Family (808, 940, 980 nm), Polysurge Diode Laser Family (808, 940, 980)
  - KaVo America – GENTLERay 980
  - Light Instruments – LiteDuo
  - OroScience – Curative 980

**Selected U.S. FDA Marketing Clearances  
Lasers for Intraoral Use  
by Company and Device (continued)  
May 1990 – March 31, 2023**

**Pulpotomy as Adjunct to Root Canal Retreatment (continued)**

- Diode (continued)
  - AMD Lasers – Picasso, Picasso Lite, Picasso Perio, Picasso Plus, Picasso Lite Plus
  - Lambda Scientifica – Doctor Smile A-810, B-980
  - QuickLase – QuickLase DUAL+, 810, 980 Dental Lasers
  - Light Instruments – D-STORM
  - Dental Photonics – stLase
  - Lambda – Doctor Diode (810, 940, 980 nm)
  - Asclepion Laser Technologies – Orion
  - Zolar Technology – Photon/Photon Plus
  - CAO Group – Precise SHP Diode Laser, Pioneer Elite Diode Laser, Pilot Elite, Pilot Ultra, Sterling Supreme Diode Laser
  - Azena Medical – ELUMI 810 + 980, Gemini 810 + 980, Gemini 2 810 + 980
  - Sheumann Laser – NeoLas 810 nm
  - Bio-med USA – Dental 5 Multi Diode Laser
  - Lazon Medical Laser SOLASE-808, SOLASE-976
  - Fotona – SkyPulse, XPulse Pro, XPulse 980, XPulse 1064
  - HULASER – K2 Module
  - DentLight – Ultrafast, Ultrafast Plus, Ultrafast Lite
  - Guilin Woodpecker Medical Instrument – D-Laser Blue, D-Laser 16
  - Shenzhen Soga Technology – SOGALaser ILaser I, SOGALaser ILaser II
- Nd:YAP
  - Lokki – Lokki DT
- Nd:YAG
  - Incisive LLC – InPulse, PinPointe FootLaser
  - Lares Research – SunLase 800P (PocketPro)
  - Millennium Dental Technologies – PerioLase
  - Fotona – Fidelis Plus, Fidelis III, Fotona XP, LightWalker
  - PathoLase – PinPointe and PinPointe FootLaser
  - PinPointe USA – PinPointe FootLaser
  - Nuvolase – PinPointe FootLaser
  - El.En. Electronic Engineering – DEKA SmartPerio
- Er,Cr:YSGG
  - BioLase Technology – WaterLase Millennium, Waterlase 3.0, Waterlase MD, Waterlase C100, Waterlase MD Turbo Plus, Orthopedic iPlus, Waterlase Express, Waterlase iPlus
- Er:YAG
  - Continuum Electro-Optics – DELight Dental Laser System
  - OpusDent – OpusDuo EC
  - HOYA ConBio – VersaWave
  - Lumenis – OpusDent Family
  - KaVo, KEY Laser 1242, 1243+
  - Sciton – Profile 2940
  - Light Instruments – LiteTouch, LiteDuo
  - Fotona – Fidelis III, LightWalker, SkyPulse
  - J. Morita Mfg. Corp. – AdvErL EVO MEY-1-A
  - LightMed Dental Technology – LightMed

# Selected U.S. FDA Marketing Clearances Lasers for Intraoral Use by Company and Device (continued) May 1990 – March 31, 2023

## **Selective Removal of Enamel (First Degree) Caries**

- Nd:YAG
  - American Dental Technologies – PulseMasters
  - Incisive LLC – InPulse, PinPointe FootLaser
  - Lares Research – SunLase 800P (PocketPro)
  - Millennium Dental Technologies – PerioLase
  - PathoLase – PinPointe and PinPointe FootLaser
  - PinPointe USA – PinPointe FootLaser
  - Nuvolase – PinPointe FootLaser
  - El.En. Electronic Engineering – DEKA SmartPerio

## **Removal of Filling Materials as Adjunctive Treatment During Root Canal Retreatment**

- Nd:YAP
  - Lokki – Lokki DT
- Nd:YAG
  - Incisive LLC – InPulse, PinPointe FootLaser
  - Lares Research – SunLase 800P (PocketPro)
  - Millennium Dental Technologies – PerioLase
  - Fotona – Fidelis Plus, Fidelis III, Fotona XP, LightWalker
  - PathoLase – PinPointe and PinPointe FootLaser
  - PinPointe USA – PinPointe FootLaser
  - Nuvolase – PinPointe FootLaser
  - El.En. Electronic Engineering – DEKA SmartPerio
- Diode
  - Fotona – SkyPulse, XPulse 1064

## **Treatment of Herpetic Lesions**

- Er,Cr:YSGG
  - BioLase Technology – WaterLase Millennium, Waterlase 3.0, Waterlase MD, Waterlase C100, Waterlase MD Turbo Plus, Orthopedic iPlus, Waterlase Express, Waterlase iPlus
- Nd:YAG
  - Lares Research – SunLase 800P (PocketPro)
  - Fotona – Fidelis Plus, Fidelis III, Fotona XP, LightWalker, Dynamis Pro
- Frequency-Doubled Nd:YAG
  - Fisma – Corium 200, Corium 400
  - Lumenis – Novus Spectra
  - Cynosure – SmartLite D
- Diode
  - BioLase Technology – LaserSmile, EZLase, ezlase 10W, iLase, EPIC 10, Diolase 10S, Epic 10S, Epic 980
  - Vision Lasertechnik – MDL-10/15
  - Spectrum International – Prometey
  - Elexxion – Claros Dental Laser System, Claros Nano
  - Quanta System – Diode Medical Laser Family (940 nm), Polysurge Diode Laser Family (940)
  - OroScience – Curative 980
  - AMD Lasers – Picasso, Picasso Lite, Picasso Perio, Picasso Plus, Picasso Lite Plus
  - Lambda Scientifica – Doctor Smile A-810
  - QuickLase – QuickLase DUAL+, 810, 980 Dental Lasers
  - Lambda – Doctor Diode (810, 940 nm)
  - Sirona Dental Systems – SIROLaser Advance, SIROLaser Advance+, SIROLaser Blue
  - Zolar Technology – Photon/Photon Plus
  - Azena Medical – ELUMI 810 + 980, Gemini 810 + 980, Gemini 2 810 + 980
  - Sheumann Laser – NeoLas 810 nm

**Selected U.S. FDA Marketing Clearances  
Lasers for Intraoral Use  
by Company and Device (continued)  
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**Treatment of Herpetic Lesions (continued)**

- Diode (continued)
  - Fotona – SkyPulse, XPulse Pro, XPulse 810, XPulse 1064
  - HULASER – K2 Module
  - DentLight – Ultrafast, Ultrafast Plus, Ultrafast Lite
  - Guilin Woodpecker Medical Instrument – D-Laser Blue, D-Laser 16
  - Shenzhen Soga Technology – SOGALaser ILaser I, SOGALaser ILaser II
- Er:YAG
  - KaVo America – KEY Laser 1242, KEY Laser 1242, 1243+
  - HOYA ConBio – VersaWave
  - J. Morita Mfg.Corp. – AdvErL EVO MEY-1-A
- Frequency-Doubled Nd:YAG
  - Fisma – Corium 200, Corium 400

**Blood Flow Measurements**

- Diode
  - Moor Instruments – DRT4 Laser Doppler Perfusion and Temperature Monitor, moorVMS-LDF1 and VMS-LDF2 Laser Doppler Perfusion and Temperature Monitor, moorLDLS-BI Laser Doppler Burns Imager

**Tooth Preparation to Obtain Access to Root Canal, Pulp Extirpation, Root Canal Debridement and Cleaning, Root Canal Preparation including Enlargement**

- Er,Cr:YSGG
  - BioLase Technology – WaterLase Millennium, Waterlase 3.0, Waterlase MD, Waterlase C100, Waterlase MD Turbo Plus, Orthopedic iPlus, Waterlase Express, EdgePro (Root Canal Preparation including Enlargement), Waterlase iPlus
- Er:YAG
  - Continuum Electro-Optics – DELight Dental Laser System
  - OpusDent – OpusDuo EC
  - HOYA ConBio – VersaWave
  - Lumenis – OpusDent Family
  - KaVo, KEY Laser 1242, 1243+
  - Sciton – Profile 2940
  - Light Instruments – LiteTouch, LiteDuo
  - Fotona – Fidelis III, LightWalker, SkyPulse
  - J. Morita Mfg.Corp. – AdvErL EVO MEY-1-A
  - LightMed Dental Technology – LightMed

**Enameloplasty, Excavation of Pits and Fissures for Placement of Sealants**

- Er:YAG
  - HOYA ConBio – VersaWave
  - Lumenis – OpusDent Family
  - Sciton – Profile
  - Light Instruments – LiteTouch, LiteDuo
  - J. Morita Mfg.Corp. – AdvErL EVO MEY-1-A
  - LightMed Dental Technology – LightMed
- Er,Cr:YSGG
  - BioLase Technology – WaterLase Millennium, Waterlase 3.0, Waterlase MD, Waterlase C100, Waterlase MD Turbo Plus, Orthopedic iPlus, Waterlase Express, Waterlase iPlus

**Selected U.S. FDA Marketing Clearances  
Lasers for Intraoral Use  
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**Cutting, Shaving, Contouring and Resection of Oral Osseous Tissues (Bone)**

- Er,Cr:YSGG
  - BioLase Technology – WaterLase Millennium, Waterlase 3.0, Waterlase MD, Waterlase C100, Waterlase MD Turbo Plus, Orthopedic iPlus, Waterlase Express, Waterlase iPlus
- Er:YAG
  - HOYA ConBio – DELight Dental Laser System
  - HOYA ConBio – VersaWave
  - Lumenis – OpusDent Family
  - Sciton – Profile
  - Light Instruments – LiteTouch, LiteDuo
  - Fotona – Fidelis III, LightWalker, SkyPulse
  - J. Morita Mfg. Corp. – AdvErL EVO MEY-1-A
  - LightMed Dental Technology – LightMed
- Carbon Dioxide
  - Convergent Dental – Solea

**Apicoectomy Surgery**

- Er,Cr:YSGG
  - BioLase Technology – WaterLase, Waterlase 3.0, Waterlase MD, Waterlase C100, Waterlase MD Turbo Plus, Orthopedic iPlus, Waterlase Express, Waterlase iPlus
- Er:YAG
  - HOYA ConBio – VersaWave
  - Lumenis – OpusDent Family
  - Sciton – Profile
  - Light Instruments – LiteTouch, LiteDuo
  - Fotona – Fidelis III, LightWalker, SkyPulse
  - J. Morita Mfg. Corp. – AdvErL EVO MEY-1-A
  - LightMed Dental Technology – LightMed

**Coagulation of Extraction Sites**

- Diode
  - MSq(M<sup>2</sup>) – Dio-Dent 10
- Carbon Dioxide
  - PhotoMedex – LaserPro CO<sub>2</sub>
  - Lumenis – AcuPulse 30/40ST and 40WG, AcuPulse, AcuPulse DUO
  - LightScalpel – LightScalpel LS-1005, LightScalpel LS-2010, LightScalpel LS-2010 SX, LS-2010 DX, LightScalpel LS-4020
  - Bio-Med USA Cellene CO<sub>2</sub> Laser

**Ostectomy, Osteotomy, Osseous Crown Lengthening, Osteoplasty**

- Er,Cr:YSGG
  - BioLase Technology – WaterLase Millennium, Waterlase 3.0, Waterlase MD, Waterlase C100, Waterlase MD Turbo Plus, Orthopedic iPlus, Waterlase Express, Waterlase iPlus
- Er:YAG
  - HOYA ConBio – VersaWave
  - Lumenis – OpusDent Family
  - Sciton – Profile
  - Light Instruments – LiteTouch, LiteDuo
  - Fotona – Fidelis III, Lightwalker, SkyPulse
  - J. Morita Mfg. Corp. – AdvErL EVO MEY-1-A

**Selected U.S. FDA Marketing Clearances  
Lasers for Intraoral Use  
by Company and Device (continued)  
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**Laser-Assisted New Attachment Procedure (cementum-mediated periodontal ligament new-attachment to the root surface in the absence of long junctional epithelium)**

- Nd:YAG
  - Millennium Dental Technologies – PerioLase
  - Fotona – Lightwalker
  - EL.En. Electronic Engineering – DEKA SmartPerio
- Carbon Dioxide
  - Cynosure – Smart US 20 D, UltraSpeed, Smart Clinic, PerioPulse
  - Lutronic – DENTA III, DENTA III+, Spectra DENTA II
  - LightScalpel – LightScalpel LS-1005, LightScalpel LS-2010, LightScalpel LS-2010 SX, LS-2010 DX, LightScalpel LS-4020
  - EL.EN Electronic Engineering – DEKA Smartxide Ultraspeed
- Er,Cr:YSGG
  - Biolase Technology – Waterlase MD, Waterlase MD Turbo Plus, Orthopedic iPlus, Waterlase Express, Waterlase iPlus
- Diode
  - AMD Lasers – Picasso, Picasso Lite, Picasso Perio, Picasso Plus, Picasso Lite Plus

**Cutting Bone to Prepare a Window Access to the Apex (Apices) of the Root(s)**

- Er:YAG
  - HOYA ConBio – VersaWave
  - Lumenis – OpusDent Family
  - Sciton – Profile
  - Light Instruments – LiteTouch, LiteDuo
  - J. Morita Mfg. Corp. – AdvErL EVO MEY-1-A
  - Fotona – LightWalker, SkyPulse
- Er,Cr:YSGG
  - Biolase Technology – Waterlase, Waterlase MD, Waterlase C100, Waterlase MD Turbo Plus, Orthopedic iPlus, Waterlase Express, Waterlase iPlus

**Root End Preparation for Retrofill Amalgam or Composite**

- Er:YAG
  - HOYA ConBio – VersaWave
  - J. Morita Mfg. Corp. – AdvErL EVO MEY-1-A
  - Sheumann Laser – NeoLas Er:YAG
  - Fotona – LightWalker, SkyPulse
- Er,Cr:YSGG
  - Biolase Technology – Waterlase 3.0, Waterlase MD, Waterlase C100, Waterlase MD Turbo Plus, Orthopedic iPlus, Waterlase Express, Waterlase iPlus

**Reduction of Bacterial Level (Decontamination) and Inflammation**

- Diode
  - BioLase Technology – Twilight, Epic 980
  - HOYA ConBio – DioDent II, DioDent Micro 810, DioDent Micro 980
  - OroScience – Curative 980
  - QuickLase – QuickLase DUAL+, 810, 980 Dental Lasers
  - Azena Medical – ELUMI 810 + 980, Gemini 810 + 980, Gemini 2 810 + 980

**Aid in Detection (and Localization) of Subgingival Dental Calculus**

- Diode
  - KaVo America Corporation – DIAGNOdent Perio Tip, DIAGNOdent 2190 with Periodontal Probe

**Selected U.S. FDA Marketing Clearances  
Lasers for Intraoral Use  
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**Root Canal Disinfection after Endodontic Instrumentation / Treatment**

- Er,Cr:YSGG
  - Biolase Technology – Waterlase, Waterlase MD, Waterlase C100, Waterlase MD Turbo Plus, Orthopedic iPlus, Waterlase Express, EdgePro, Waterlase iPlus
- Er:YAG
  - Fotona – LightWalker, SkyPulse

**Removal of Subgingival Calculi in Periodontal Pockets**

- Er:YAG
  - KaVo – KEY Laser III 1243
  - Fotona – LightWalker, SkyPulse
  - J. Morita Mfg. Corp. – AdvErL EVO MEY-1-A
- Er,Cr:YSGG
  - Biolase Technology – Waterlase MD, Waterlase MD Turbo Plus, Orthopedic iPlus, Waterlase Express, Waterlase iPlus

**Removal of Highly Inflamed Edematous Tissue Affected by Bacteria Penetration of the Pocket Lining and Junctional Epithelium**

- Diode
  - BioLase – Lasersmile, Epic 980
  - AMD Lasers – Picasso, Picasso Lite, Picasso Perio, Picasso Plus, Picasso Lite Plus
  - QuickLase – QuickLase DUAL+, 810, 980 Dental Lasers
  - Zolar Technology – Photon, Photon Plus
  - CAO Group – Precise SHP Diode Laser, Pioneer Elite Diode Laser, Pilot Elite, Pilot Ultra, Sterling Diode Laser, Sterling Supreme Diode Laser
  - Azena Medical – ELUMI 810 + 980, Gemini 810 + 980, Gemini 2 810 + 980
- Er,Cr:YSGG
  - Biolase Technology – Waterlase, Waterlase C100, Waterlase MD Turbo Plus, Orthopedic iPlus, Waterlase Express, Waterlase iPlus
- Er:YAG
  - J. Morita Mfg. Corp. – AdvErL EVO MEY-1-A
  - Sheumann Laser – NeoLas Er:YAG
  - Fotona – LightWalker, SkyPulse

**Removal of Pathological Tissues (i.e., Cysts, Neoplasm or Abscess) and Hyperplastic Tissues (i.e., Granulation Tissue) from around the Apex**

- Er,Cr:YSGG
  - Biolase Technology – Waterlase C100, Waterlase MD Turbo Plus, Orthopedic iPlus, Waterlase Express, Waterlase iPlus
- Er:YAG
  - J. Morita Mfg. Corp. – AdvErL EVO MEY-1-A
  - Sheumann Laser – NeoLas Er:YAG
- Diode
  - Sheumann Laser – NeoLas 810 nm

**Ablation of Hard Tissue for Caries Removal and Cavity Preparation**

- Carbon Dioxide
  - Convergent Dental – Solea

**Selected U.S. FDA Marketing Clearances  
Lasers for Intraoral Use  
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**Diagnostic Aid for Detection of Open or Incipient Caries Lesions Above the Gingiva and for Monitoring the Progress of Such Lesions, includes Detection of Cracks**

- Diode
  - Kaltenbach & Voigt – DIAGNOcam 2170

**Root Canal Debridement and Cleaning**

- Er,Cr:YAGG
  - Biolase – Waterlase C100, Waterlase MD Turbo Plus, Orthopedic iPlus, Waterlase Express, EdgePro, Waterlase iPlus
- Diode
  - Sheumann Laser – NeoLas 810 nm

**Periodontal Regeneration – True Regeneration of the Attachment Apparatus (New Cementum, New Periodontal Ligament, and New Alveolar Bone) on a Previously Diseased Root Surface When Used Specifically in the LANAP® Protocol**

- Nd:YAG
  - Millennium Dental Technologies – PerioLase

**Photoinitiation of Gingival Barriers and Dams**

- Diode
  - VIAX Dental Lab – Lucerna VDL980-1

**Periodontal Regeneration – True Regeneration of the Attachment Apparatus (New Cementum, New Periodontal Ligament, and New Alveolar Bone) on a Previously Diseased Root Surface**

- Nd:YAG
  - Fotona – Lightwalker

**Facilitation of Subgingival Calculus Removal**

- Nd:YAG
  - Millennium Dental Technologies – PerioLase

**Modification of the Dentin Surface, Including Increasing the Mineral and Decreasing the Organic Composition of the Dentin Surface, Reducing Bacteria on the Dentin Surface, Improving the Shear Bond Strength of Composite Resin, Reducing the Adhesive Failure of Composite Resin, and Removing Demineralized Dentin Surfaces**

- Nd:YAG
  - Millennium Dental Technologies – PerioLase

**Removal of Porcelain and Ceramic Crowns and Veneers**

- Er,Cr:YSGG
  - Biolase – Waterlase, Waterlase iPlus
- Er:YAG
  - Fotona – LightWalker, SkyPulse

**Curing Photoactivated Dental Restorative Materials and Adhesives**

- Diode
  - CAO Group – Monet Curing Laser



**Selected U.S. FDA Marketing Clearances  
Lasers for Intraoral Use  
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**Diagnostic Aid for Viewing the Interproximal Areas of Dental Anatomy to Detect and Monitor the Progression of Proximal Carious Lesions Above the Gingiva**

- Diode
  - D4D Technologies - TIA Tip, Cariosity, Transillumination Accessory Tip

**Aiding in the Reduction of Mineral Loss in Dental Enamel**

- Carbon Dioxide
  - Convergent Dental - Solea