Making the Most of the 23rd Annual Conference and Exhibition:

A Practical Orientation for Attendees

John G. Sulewski

Director of Education and Training
The Institute for Advanced Dental Technologies
Bloomfield Hills, Michigan  48304

Academy of Laser Dentistry
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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

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. Activation Force of Foot Pedal
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 Width
   4. Air
   5. Water
   6. Spot Size
   7. Cutting Speed
   8. 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)
      k. Cooling
   9. Galvanometers
   10. Water Reservoir
      a. Ease of Removal, Refill, Replacement
      b. Capacity
   11. Battery
      a. Function
      b. Life
      c. Ease of Replacement
   12. Built-In Printer for Treatment Record
   13. 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. Interchangeable Connectors
   9. Fiber Strippers
  10. Fiber Cleavers
  11. Fiber Inspection Microscope
  12. 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

The Institute for Advanced Dental Technologies – April 2016
Critically Evaluating the Dental Literature and Health Information on the Internet

Suggested Resources


10. CEBD. Centre for Evidence-Based Dentistry. Available at: [http://www.cebd.org/](http://www.cebd.org/).


The preceding Web sites were accessed on April 10, 2016.
U.S. FDA Marketing Clearances
by Indication for Use
(Appplies 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

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

Apicoectomy Surgery
- Er,Cr:YSGG
- Er:YAG

Coagulation of Extraction Sites
- Diode
- Carbon Dioxide

Osteotomy, Osteotomies, Osseous Crown Lengthening, Osteoplasty
- Er,Cr:YSGG
- Er:YAG

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
- Diode
U.S. FDA Marketing Clearances
by Indication for Use
(Appplies to Certain Models Only)

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
- Er,Cr:YSGG

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

Ablation of Hard Tissue for Caries Removal and Cavity Preparation
- Carbon Dioxide

Root Canal Cleaning and Debridement
- Diode

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
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

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

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
- 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
- Apicectomy Surgery
- Ostectomy, Osteotomy, Osseous Crown Lengthening, Osteoplasty
- Cutting Bone to Prepare a Window Access to the Apex (Apices) of the Root(s)
U.S. FDA Marketing Clearances
by Wavelength
(Appplies to Certain Models Only)

Er:YAG (continued)
- 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

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
- Removal of Subgingival Calculi in Periodontal Pockets

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
- 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
- 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
U.S. FDA Marketing Clearances
by Wavelength
(Appplies to Certain Models Only)

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 17, 2016

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 17, 2016. 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. Substantiated additions and revisions are respectfully solicited.

Interested parties are advised 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
  - 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
  - PathoLase – PinPointe and PinPointe FootLaser
  - PinPointe USA – PinPointe FootLaser
  - NuVolase – PinPointe FootLaser

- Carbon Dioxide
  - NIIC USA – NIIC Laser System
  - Satelec – Lasersat CO2
  - Luxar – Model LX-20 CO2 Laser
  - Ion Laser Technology – ILT CO2 Surgical Laser
  - Jamar Medical Systems – Chrys XX CO2 Surgical Laser System
  - Clinicon Corporation – C4 CO2 Laser, C-LAS, SureLase
  - Medical Laser Technologies – MLT 30 CO2 Laser
  - OpusDent – Opus 20, Spectrum, OpusDuo EC
  - Lumenis – UltraPulse Encore
  - Lumenis – UltraPulse SurgiTouch
  - Cynosure – Smart CO2, Smart US 20 D, UltraSpeed, Smart Clinic, Affirm CO2 and Affirm CO2 HP, Cortex
  - PhotoMedex – LaserPro CO2
  - 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 SmartXide2
  - Alma – ThermoXEL, Pixel CO2
  - Lumenis – AcuPulse 30 and 40, AcuPulse 30/40ST and 40WG, UltraPulse, UltraPulse DUO
  - Advanced Technology Laser – ATL-150, ATL-250, eBeam
  - OmniGuide – OmniGuide BeamPath FELS 25A
  - Lutronic – DENTA III, DENTA III+, Spectra DENTA II
  - Beijing Syntech Laser – Trixel, Trixel II
  - Quanta System – YOULASER
  - Yoshida Dental Mfg. Co. – OPELASER PRO II and OPELASER Lite II
  - Convergent Dental – Solea
Intraoral Soft Tissue Surgery (Ablating, Incising, Excising, Coagulating) (continued)

- Carbon Dioxide (continued)
  - Whitecap Technologies – CYMA
  - Syneron Medical - CO2RE Laser System
- 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
  - 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(MF) – 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
- J. Morita Mfg. Corp. – AdvErL EVO MEY-1-A
- Sheaumann Laser – NeoLas Er:YAG
- Nd:YAP
  - Lokki – Lokki DT
- Er,Gr:YSGG
- Diode
  - Premier Laser Systems – Aurora Surgical Diode Laser, Aurora HL Diode Laser System
  - American Dental Technologies – PulseMaster 1000 ST DioLase ST
  - CeramOptec – Cerelas Diode Model D15, Cerelas Diode Model D10
  - Dentek-Lasersystems – Dentek LD-15 Dental Laser
  - BioLase Technology – Twilight Dental Diode Laser
  - OpusDent – Opus 10
  - Continuum Electro-Optics – DioDent Dental Laser System
  - American Dental Technologies – DioLase 980 D
  - BioLase Technology – LaserSmile, EZLase, ezlase 10W, iLase, EPIC 10, Diolase 105, Epic 10S
Intraoral Soft Tissue Surgery (Ablating, Incising, Excising, Coagulating) (continued)

- Diode (continued)
  - MSq(M2) – 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
  - Vision Lasertechnik – MDL-10/15
  - Asclepión 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
  - Flexion – Claros Dental Laser System, Claros Nano
  - 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
  - Valam – Fox 940
  - Light Instruments – LiteDuo
  - OroScience – Curative 980
  - Fotona – XD Diode Laser
  - 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
  - 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 SmartXide2 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
  - Sheaumann Laser – NeoLas 810 nm
  - Wuhan Gigaa Optronics Technology – VELASII-30A/30B
Intraoral Soft Tissue Surgery (Ablating, Incising, Excising, Coagulating) (continued)
- Frequency-Doubled Nd:YAG
  - Fisma – Corium 200, Corium 400
  - Lumenis – Novus Spectra
  - Cynosure – SmartLite D
  - Quanta System – MDK Multi-Applications
- 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 – Accu Cure 3000, Accu Cure 1000, Pulstar
  - Premier Laser Systems – Argo Curing Laser, Argo II
  - Fisma – Dental 200, Dental 300, Dental 400

Tooth Whitening
- Carbon Dioxide
  - ILT Systems – ILT Genesis 2000
  - Sharplan Lasers – Model 15F CO2 Laser
  - LightScalpel – LightScalpel LS-1005
- Argon
  - ILT Systems – ACL-5500
  - Fisma – Dental 200, Dental 300, Dental 400
  - LaserMed – Accu Cure 3000, Accu Cure 1000, Pulstar
  - Premier Laser Systems – Argo II
  - ICS of North America – Cyber-Lase 2000
- Diode
  - CeramOptec – Model D15 Cerelas
  - BioLase Technology – Twilight Dental Diode Laser
  - OpusDent – Opus 10
  - Continuum Electro-Optics – DioDent
  - American Dental Technologies – DioLase 980 D
  - BioLase Technology – LaserSmile
  - MSq(MF) – 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
  - 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
Tooth Whitening (continued)

- Diode (continued)
  - BioLase Technology – ezlase, EPIC 10
  - Fotona – XD Diode Laser
  - 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
  - CAO Group – Precise SHP Diode Laser, Pioneer Elite Diode Laser, Pilot Elite, Pilot Ultra
  - Azena Medical – ELUMI 810 + 980

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

Aphthous Ulcer Treatment

- Er,Cr:YSGG

- Carbon Dioxide
  - ILT Systems – ILT Genesis 2000
  - Lumenis – UltraPulse Encore
  - Lumenis – UltraPulse SurgiTouch
  - PhotoMedex – LaserPro CO2
  - Lumenis – OpusDent Family
  - MAX Engineering – Spectra-SP
  - Cynosure – Smart US 20 D, UltraSpeed, Smart Clinic
  - Alma – ThermoXEL, Pixel CO2
  - Lumenis – AcuPulse 30 and 40, AcuPulse 30/40ST and 40WG
  - Advanced Technology Laser – ATL-150, ATL-250, eBeam
  - Lutronic – DENDA III, DENDA III+, Spectra DENDA II
  - Lasering – SLIM Evolution II
  - LightScalpel – LightScalpel LS-1005, LightScalpel LS-2010
  - Syneron Medical – CO2RE Laser System

- 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
  - PathoLase – PinPointe and PinPointe FootLaser
  - PinPointe USA – PinPointe FootLaser
  - Nuvolase – PinPointe FootLaser
Aphthous Ulcer Treatment (continued)

- **Diode**
  - American Dental Technologies – PulseMaster 1000 ST DioLase ST
  - Dentek Lasersystems – Dentek LD-15
  - CeramOptec – Ceralas Diode Model D15, Ceralas Diode Model D10
  - BioLase Technology – Twilight, EZLase, ezlase 10W, iLase, EPIC 10
  - OpusDent Ltd. – Opus 10
  - Continuum Electro-Optics – DioDent Dental Laser System
  - American Dental Technologies – DioLase 980 D
  - BioLase Technology – LaserSmile
  - MSq(MF) – 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
  - Vision Lasertechnik – MDL-10/15
  - ProSurg – LaserTx
  - CAO Group – DenLaser 800 Plus, Precise SHP Diode Laser
  - Spectrum International – Prometry
  - 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
  - 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
  - Sheumann Laser – NeoLas 810 nm
- **Frequency-Doubled Nd:YAG**
  - Fisma – Corium 200, Corium 400
  - Lumenis – Novus Spectra
  - Cynosure – SmartLite D
Aphthous Ulcer Treatment (continued)

- Er:YAG
  - KaVo America – KEY Laser 1242, KEY Laser 1242, 1243+
  - HOYA ConBio – VersaWave
  - J. Morita Mfg. Corp. – AdvErL EVO MEY-1-A

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

- 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
  - Continuum Electro-Optics – DioDent Dental Laser System
  - American Dental Technologies – DioLase 980 D
  - BioLase Technology – LaserSmile, EZLase, ezlase 10W, iLase, EPIC 10
  - MSq(MP) – 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
  - ProSurg – LaserTx
  - Xintec – Vectra
  - Spectrum International – Promety
  - Exelion – Claros Dental Laser System, Claros Nano
  - 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
  - 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
Sulcular Debridement (continued)

- Diode (continued)
  - China Daheng Group – PenLase
  - Asclepion Laser Technologies – Orion
  - CAO Group – Precise SHP Diode Laser, Pioneer Elite Diode Laser, Pilot Elite, Pilot Ultra
  - Mira Lasers – Zeno 2, Zeno 4
  - Zolar Technology – Photon/Photon Plus
  - Den-Mat – SOL Portable Diode Laser
  - Azena Medical - ELUMI 810 + 980

- Er, Cr:YSGG

- Er:YAG
  - KaVo America – KEY Laser 1242, KEY Laser 1242, 1243+
  - Fotona – Fidelis, Fidelis III, LightWalker
  - 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

- 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

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
  - 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

- Er, Cr:YSGG

Illumination for Caries Detection

- Argon
  - Premier Laser Systems – Arago II
  - Fisma – Dental 200, Dental 300, Dental 400
Selected U.S. FDA Marketing Clearances
Lasers for Intraoral Use
by Company and Device (continued)
May 1990 – March 17, 2016

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

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
  - Premier Laser Systems – Aurora HL
  - OpusDent – Opus 10
  - Continuum Electro-Optics – DioDent Dental Laser System
  - American Dental Technologies – BioLase 980 D
  - BioLase Technology – LaserSmile
  - MSq(M2) – BioLase 10
  - HOYA ConBio – DioDent 980
  - Biolitec – Ceralas D810, Ceralas D980, Ceralas D100, Ceralas D150, Ceralas E 980 (E15/980, E30/980), 180W Ceralas D 980 (D180), 980/1470 nm Diode Laser System, Evolve HPD 980, Evolve 980/1470 nm Multiwavelength Diode Laser (Evolve Dual)
  - Sirona Dental Systems – SIROlaser, SIROlaser Advance
  - Vision Lasertechnik – MDL-10/15
  - ProSurg – LaserTx
  - Xintec – Vectra
  - INTERmedic Arfran – INTERmedic, INTERmedic Diode Laser 980 nm System
  - Spectrum International – Prometey
  - Elexion – Claros Dental Laser System, Claros Nano
  - 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
  - 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)
Selected U.S. FDA Marketing Clearances
Lasers for Intraoral Use
by Company and Device (continued)
May 1990 – March 17, 2016

Pulpotomy as Adjunct to Root Canal Retreatment (continued)
- Diode (continued)
  - Asclepion Laser Technologies – Orion
  - Zolar Technology - Photon/Photon Plus
  - CAO Group – Precise SHP Diode Laser, Pioneer Elite Diode Laser, Pilot Elite, Pilot Ultra
  - Azena Medical - ELUMI 810 + 980
  - Sheumann Laser – NeoLas 810 nm
- 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
- Er,Cr:YSGG
- 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
  - J. Morita Mfg.Corp. – AdvErL EVO MEY-1-A

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

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
Treatment of Herpetic Lesions

- Er,Cr:YSGG
- 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
  - 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
  - Zolar Technology – Photon/Photon Plus
  - Azena Medical – ELUMI 810 + 980
  - Sheaumann Laser – NeoLas 810 nm
- 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
- 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
Tooth Preparation to Obtain Access to Root Canal, Pulp Extirpation, Root Canal Debridement and Cleaning, Root Canal Preparation including Enlargement (continued)

- Er:YAG (continued)
  - J. Morita Mfg. Corp. – AdvErL EVO MEY-1-A

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

- Er, Cr:YSGG

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

- Er, Cr:YSGG

- Er:YAG
  - HOYA ConBio – DELight Dental Laser System
  - HOYA ConBio – VersaWave
  - Lumenis – OpusDent Family
  - Sciton – Profile
  - Light Instruments – LiteTouch, LiteDuo
  - Fotona – Fidelis III, LightWalker
  - J. Morita Mfg. Corp. – AdvErL EVO MEY-1-A

- Carbon Dioxide
  - Convergent Dental – Solea

Apicoectomy Surgery

- Er, Cr:YSGG

- Er:YAG
  - HOYA ConBio – VersaWave
  - Lumenis – OpusDent Family
  - Sciton – Profile
  - Light Instruments – LiteTouch, LiteDuo
  - Fotona – Fidelis III, LightWalker
  - J. Morita Mfg. Corp. – AdvErL EVO MEY-1-A

Coagulation of Extraction Sites

- Diode
  - MSq(M²) – Dio-Dent 10

- Carbon Dioxide
  - PhotoMedex – LaserPro CO2
  - Lumenis – AcuPulse 30/40ST and 40WG
  - LightScalpel – LightScalpel LS-1005, LightScalpel LS-2010
Selected U.S. FDA Marketing Clearances
Lasers for Intraoral Use
by Company and Device (continued)
May 1990 – March 17, 2016

Osteotomy, Osteotomy, Osseous Crown Lengthening, Osteoplasty
- Er, Cr:YSGG
- Er:YAG
  - HOYA ConBio – VersaWave
  - Lumenis – OpusDent Family
  - Sciton – Profile

Osteotomy, Osteotomy, Osseous Crown Lengthening, Osteoplasty (Continued)
- Er:YAG (Continued)
  - Light Instruments – LiteTouch, LiteDuo
  - Fotona – Fidelis III, Lightwalker
  - J. Morita Mfg. Corp. – AdvErL EVO MEY-1-A

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 – Fidelis III
- 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
- Er, Cr:YSGG
  - Biolase Technology – Waterlase MD, Waterlase MD Turbo Plus, Orthopedic 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
- Er, Cr:YSGG
  - Biolase Technology – Waterlase, Waterlase MD, Waterlase C100, Waterlase MD Turbo Plus, Orthopedic iPlus

Root End Preparation for Retrofill Amalgam or Composite
- Er:YAG
  - HOYA ConBio – VersaWave
  - J. Morita Mfg. Corp. – AdvErL EVO MEY-1-A
  - Sheaumann Laser – NeoLas Er:YAG
- Er, Cr:YSGG
  - Biolase Technology – Waterlase 3.0, Waterlase MD, Waterlase C100, Waterlase MD Turbo Plus, Orthopedic iPlus
Selected U.S. FDA Marketing Clearances
Lasers for Intraoral Use
by Company and Device (continued)
May 1990 – March 17, 2016

Reduction of Bacterial Level (Decontamination) and Inflammation
- Diode
  - OroScience – Curative 980
  - QuickLase – QuickLase DUAL+, 810, 980 Dental Lasers
  - Azena Medical - ELUMI 810 + 980

Aid in Detection (and Localization) of Subgingival Dental Calculus
- Diode
  - KaVo America Corporation – DIAGNOdent Perio Tip, DIAGNOdent 2190 with Periodontal Probe

Root Canal Disinfection after Endodontic Instrumentation
- Er,Cr:YSGG
  - Biolase Technology – Waterlase, Waterlase MD, Waterlase C100, Waterlase MD Turbo Plus, Orthopedic iPlus

Removal of Subgingival Calculi in Periodontal Pockets
- Er:YAG
  - KaVo – KEY Laser III 1243
  - Fotona - LightWalker
  - J. Morita Mfg.Corp. – AdvErL EVO MEY-1-A
- Er,Cr:YSGG
  - Biolase Technology – Waterlase MD, Waterlase MD Turbo Plus, Orthopedic iPlus

Removal of Highly Inflamed Edematous Tissue Affected by Bacteria Penetration of the Pocket Lining and Junctional Epithelium
- Diode
  - AMD Lasers – Picasso, Picasso Lite, Picasso Perio, Picasso Plus, Picasso Lite Plus
  - QuickLase – QuickLase DUAL+, 810, 980 Dental Lasers
  - Zolar Technology - Photon
  - CAO Group – Precise SHP Diode Laser, Pioneer Elite Diode Laser, Pilot Elite, Pilot Ultra
  - Azena Medical - ELUMI 810 + 980
- Er,Cr:YSGG
  - Biolase Technology – Waterlase C100, Waterlase MD Turbo Plus, Orthopedic iPlus
- Er:YAG
  - J. Morita Mfg.Corp. – AdvErL EVO MEY-1-A
  - Sheaumann Laser – NeoLas Er:YAG

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
- Er:YAG
  - J. Morita Mfg.Corp. – AdvErL EVO MEY-1-A
  - Sheaumann Laser – NeoLas Er:YAG
- Diode
  - Sheaumann Laser – NeoLas 810 nm

Ablation of Hard Tissue for Caries Removal and Cavity Preparation
- Carbon Dioxide
- Convergent Dental – Solea
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
- Diode
  - Sheaumann 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