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Technology in Dentistry
Electric Handpieces

Extraction Forceps

Electronic Apex Locators

Piezoelectric Surgery
Electric Handpieces

Extraction Forceps

Electronic Apex Locators

Piezoelectric Surgery
Lasers
There are several different types of laser used in dentistry

Clinical

- Diagnodent
- Diode
- Periolase
- Waterlase MD
What is DIAGNOdent and how does it work?

- DIAGNOdent uses laser technology as an aid to detect and quantify hidden or sub-surface caries by measuring laser fluorescence within the tooth structure.
- The device operates at a wavelength of **655 nm**. At this specific wavelength, clean healthy tooth structure exhibits little or no fluorescence, resulting in very low scale readings on the display.
- Altered tooth substances and bacteria, including caries, will fluoresce. The DIAGNOdent will react with elevated scale readings on the display.
- An audio tone allows the operator to hear changes in the scale values. This enables the user to focus on the patient — not solely on the device.
- The DIAGNOdent is an extremely accurate, reliable and non-invasive method to aid in caries detection. The device is successfully used by more than 20,000 dental professionals in the United States and is integrated into the curriculum of a growing number of dental schools.
ODYSSEY NAVIGATOR LASER TECHNICAL DATA

Weight:
2.5 pound

Dimensions:
Unit in Cradle: 9.5” x 4” x 6”
Unit only: 7” x 4” x 3”

Power Range:
100 mW to 3.0 Watts in 100 mW increments
Aiming Beam (0.3 Watts)

Laser Classification:
Laser Diode: Class 4 Laser Device

Wavelength:
Laser: 810 nm ± 20 nm (800 – 980 nm is the range for diode lasers)
Aiming Beam: 630 nm – 660 nm ± 15 nm
Beam Divergence: 9 degrees ± 1 degree

Settings:
Manual
Capability for 8 customized settings
5 levels of aiming beam intensity

Modes:
Continuous or Pulse Mode
Hertz Rate in Pulse Mode – Fixed: 10 Hz
Pulse Duration: fixed: .05 seconds
Duty Cycle (Pulse Mode): 50%
Periolase: Nd:YAG (Neodymium:Yttrium Garnet)
The PerioLase® MVP-7 from Millennium Dental Technologies is the only laser designed especially for the LANAP™ Procedure. A powerful 6 watt FR (Free Running) Nd:YAG (Neodymium: Yttrium Aluminum Garnet) laser with the unique features necessary to perform the LANAP™ Procedure and all other soft tissue procedures. The PerioLase® is the "Swiss Army Knife" of lasers -- easy to use, with the versatility to help you advance your dentistry -- and your practice -- with a full complement of new soft tissue laser treatment options. The founding clinicians of Millennium Dental Technologies, Robert H. Gregg, II, D.D.S. and Delwin K. McCarthy, D.D.S., combined their talents and expertise to perfect a powerful laser with the unique features and capabilities needed to quickly and effectively perform the LANAP™ Procedure as well as all other soft tissue laser procedures.

Designed to optimize the performance of the LANAP™ Procedure, the PerioLase® has the power and versatility to perform a wide range of soft and hard tissue laser procedures, allowing you to provide a full complement of new soft and hard tissue laser treatment options for your patients.

This is proven technology, and it's manufactured by a company you can rely on. The PerioLase® is the latest generation of dentistry's first pulsed Nd:YAG laser and the world's most widely used dental laser platform. It's the first laser in dentistry to incorporate DIGITAL technology for enhanced performance and reliability.
Waterlase MD – hard/soft tissue laser
The Waterlase incorporates a stream of water from the handpiece. This is to cool the tissue which allows increased power settings and faster cutting.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength</td>
<td>Er,Cr3+:YSGG, 2780 nm</td>
</tr>
<tr>
<td>Power</td>
<td>0.1 to 8.0 W</td>
</tr>
<tr>
<td>Repetition Rate</td>
<td>10 to 50 Hz</td>
</tr>
<tr>
<td>Pulse Energy</td>
<td>300 mJ</td>
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<tr>
<td>Laser Classification</td>
<td>IV</td>
</tr>
<tr>
<td>Operating Voltage</td>
<td>115 VAC~± 10%</td>
</tr>
<tr>
<td>Dimensions</td>
<td>12.5 x. 26 x 32 in</td>
</tr>
<tr>
<td>Weight</td>
<td>75lbs</td>
</tr>
</tbody>
</table>

Related Patents: 6,567,582; 6,561,803; 6,389,193; 6,350,123; 6,288,499; 6,231,567; 6,086,367; 5,885,082; 5,785,521; 5,761,501; 5,741,247; 5,194,005; 5,020,995; 4,818,230; 4,940,411; 5,055,048; 5,122,060; 5,123,845; 5,232,367; 5,257,935; 5,342,198 Additional patents pending
No anesthesia is required for this procedure
Laboratory
Pindex: aiming laser – like a pointer
3D Printing
For labs that prefer to outsource:

1. Outsource design
2. Outsource design to a SensAble Authorized Production Center

For labs that prefer to scan and design in-house:

1. Scan/Design System

Complete SensAble Dental Lab Solution: Scan, design, and fabricate

Scan/Design System:
- 3D Scanner & Design Station

Production System:
- Production Management Console + 3D Printer

Fabricated dental models
Laser Sintering
Laser Sintering
3D Printing

3D mandible print.rmm
Intraoral Cameras
CEREC
CEREC: Ceramic REConstruction
CEREC Porcelain Crown finished in 1 appointment

cerecpromovideo.wmv
Case

Tooth requiring restoration
Digital Radiographs
80-90% less radiation with digital radiography compared to conventional film

Instant image – increases efficiency

Ability to manipulate the image
  Magnification
  Contrast
  Inverse image
  Communication / Sharing images

Integration with other software
CBCT: Cone Beam Computed Tomography
CBCT: 29uSv – 68uSv per scan
Medical CT: 2100 uSv
FMX: 150uSv
Digital Panorex: 10-30uSv
Medical CT: 10 minutes
CBCT: 8-14 seconds
Advances coming:

- Facial Imaging on the CBCT
- Plasma Jets to replace the Drill
- Increased chairside fabrication of implant components
Thank You!
Pine Ridge Dental... we want to make you smile!