A digital platform to your wishes —
flexible, productive
and simply precise
The Lava™ System – a network without limits

Lava™ Scan ST Design System

Impression

Partnering

CAD-Design

Full-Contour CAD/CAM-Restoration

Veneering

Sintering process

CAM-Manufacturing

Partnering
In 3M™ ESPE™, you have a partner that has been developing successful solutions for the dental industry—whether in practice or in the lab—for decades. And as the world’s most innovative company in this field, we always strive to open up new possibilities, enabling dentists and technicians to work more comfortably, more precisely and likewise more efficiently. With the new Lava™ Design System, consisting of Lava™ Scan ST and the new Lava™ Design Software 7 Platform, you can make large strides in digital dentistry.

1 The Anaheim Group

Three criteria are essential for indirect restorations: fit, esthetics and long-term stability. With Lava™ Precision Solutions, you satisfy them all at once for your crown and bridge, monolithic and/or implant restorations. And the Lava™ Portfolio is constantly growing, so you have more and more options for an individually adjusted therapy.
The **NEW Lava™ System** – the digital platform that gets right to the point

Gain the freedom and flexibility you need for any mode of operation plus a highly profitable investment.

The **NEW Lava™ Scan ST** is much more than a design aid – it is a gateway to high precision digital dentistry. Starting with the fastest high-quality scanner, the Lava™ Scan ST Design System now allows you to take any of several routes to your destination. You can choose from many materials and workflows. You can create a broad range of indications, crowns, bridges, build-ups for two-piece abutments or Full-Contour monolithic restorations. And you can selectively communicate with other systems, as needed, along the way. Any route you take leads you to more productivity.

Along with that, the **NEW Lava™ Design Software 7** provides a user-friendly and flexible software platform that is perfectly integrated into the Lava™ System. It combines four different solutions to redesign the CAD part of the Lava™ System fundamentally and support you effectively – with advanced features and functions as well as flexibility and freedom of design for your needs.

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**Lava™ Scan ST Design System**

- Fastest scanner in the dental market.
- Delivers high-quality and unprecedented precision data in a very short time.
- Reliable and seamlessly connected with the Lava™ Design Module.

**Lava™ Design Software 7**

- Opens up more possibilities than any previous version of Lava™ Design.
- Wide variety of new design features and functions.
- Enables advanced functionality and more design flexibility.
Lava™ Network
• Integrated file transferring system.
• Fast, convenient and reliable exchange of data.
• Connects Lava™ Design and Milling Centers using Lava™ Design Software 7 with certified partners in the Lava™ Network for other materials.

Lava™ CAM Module
• Increased productivity and robustness.
• Supports all existing and new materials.
• Better utilizes the technical capabilities of the Lava™ CNC 500.
• Fully supports the Lava™ Form and Lava™ CNC 240.
Lava™ Scan ST – dental scanning has never been so versatile

The NEW Lava™ Scan ST by 3M ESPE is not only the fastest scanner in the dental market, but also offers unprecedented precision. So why make any compromise and opt for the second best? As the very core of the Lava™ System, the Lava™ Scan ST is the real deal. Being fully integrated into the Lava™ Design Software 7, it delivers high-precision data in a very short time. Best reasons to make it the center of your lab.

The stunning features of the Lava™ Scan ST.

Better marginal fit versus competitive systems.

Marginal gap of 3-unit bridges scanned and milled with different systems. The Lava™ Scan ST device shows a good marginal fit in comparison to competitor systems. F. Beuer et al., University of Munich.¹

More data density, better accuracy – still in record time.

Microphotography reveals another accuracy advantage of the Lava™ Scan ST: data density. We are able to achieve this level of quality without sacrificing scan time.¹

Simply faster.

The Lava™ Scan ST is the fastest scanner on the dental market. Not only for single stumps on the Lava™ Scan ST Multi-Die Plate but also for full arch scans. The automatic design feature and initial proposals for Full-Contour restorations will help to make the workflow even more productive.

**Scanning of abutment links.**
Scan abutment links directly without using costly scan locators to design and manufacture the Lava™ Build-up for two-piece abutment.

**Rescan options.**
Rescan individual dies as needed, close scanning holes without rescanning the whole model or add occlusal points towards adjacent teeth. Alternatively, data holes can be closed in the software automatically.

**Multi-die scan.**
Benefit from advanced nested scanning ability for up to 10 single stumps on the Lava™ Multi-Die Plate. The scan time for a fully filled plate is less than 2 minutes and 20 seconds. This results in a single stump scan time **less than 14 seconds.**

**Full arch scanning ability.**
Scan full arches for orientation or simply for better long-span restorations. A 60 mm × 70 mm jaw is possible in a scan window of 80 × 100 × 42 mm³.

**Opposing arch scan.**
Scan the full opposing arch separately and in occlusion with the lower jaw model. This will allow the dental lab to display the bite situation in occlusion and design the restorations accordingly. It will also provide the necessary data for the virtual articulation.

**Full wax-up scanning.**
Scan wax-ups as a design aid or to copy-mill, customize or reduce automatically to the final restoration of your choice. A scan of the stump data will be combined with the wax-up scan to achieve all possible indications.

**Lava™ Design margin detection process.**
The benchmark automatic margin detection process as known from the earlier Lava™ Design Software versions.

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1 Feature available for the latest version of the Lava™ Scan ST only (purchased after Oct. 2010). Upgrade kits available for earlier models — for details please contact your local sales representative.
Lava™ Design Software 7 –
exciting new features and skills

The NEW Lava™ Design Software 7 Platform offers the full range of indications and interfaces plus new, advanced features and workflows such as parallel design and Full-Contour design.

Here is a selection of important key features of Lava™ Design Software 7.

Advanced Full-Contour design.

Experience the freedom of design with numerous new features and functions related to Full-Contour design. More ways to customize easily, an open library for Full-Contour designs and an advanced automatic reduction process make every design more attractive and flexible.

Advanced flexibility in general design.

Gain maximum control over parameters and coping design. Add collars or customize the cement and expansion gaps as necessary while you design your genuine Lava™ Restoration. Set and save defaults for various indications, customers and dentists and adjust specific parameters for your everyday lab work.

Parallel design for all indications.

Design multiple restorations in one, or even opposing arches without interruption or limitation, copings, bridges and abutment cases.

Advanced order management.

The lab can easily manage the different steps and various cases within the Lava™ Digital Workflow and maintain full control over cases and restorations. Dedicated workstations for scanning, designing, nesting and milling preparation are possible, enabling a more productive and faster workflow.
Custom design for Lava™ Build-up for two-piece abutments.

Gain access to the whole implant market with no limitations on specific abutment link manufacturers and eliminate costly scan locators.

Engage in a convenient, easy and robust design process offering all the flexibility a dental lab needs by offering the same accuracy as scan-locator-based designs and wax-up abutments.

Full Windows 7 – 64-bit operating system.

Use the speed and flexibility of a real 64-bit operating system, giving you the necessary computing power for a fast and productive design workflow.

SERVICE

3M ESPE offers a comprehensive service package for the whole 3M ESPE Lava™ Hardware and Software Portfolio – training, application support and service as well as updates. For a tailor-made service package please contact your local sales representative.
Lava™ Network – more flexible, more productive, more open

Use your Lava™ Scan ST Design System to produce multiple materials.

The Lava™ Scan ST Design System now does more than create Lava™ Zirconia restorations. You can also design metal restorations and wax/resin patterns digitally. The metal and wax/resin restorations are produced using qualified equipment and additive technologies such as metal laser sintering and 3-D printing, both of which are located at 3M ESPE Authorized Dental Labs or rapid manufacturing centers.

Real world reliability. Digital opportunity.

You simply send your design work to an authorized Lava™ Network Partner via our secure Lava™ Network. Because 3M ESPE has already tested the equipment and qualified the labs or Lava™ Network Partner, it’s easy to expand your digital world.²

1 Offered by authorized 3M ESPE partner labs. The metal coping shown in photograph was designed and manufactured with the EOSINT M 270 (EOS). The wax/resin pattern shown in photograph was manufactured with Invisilon DF 3-D printer (3D systems). The implant bar was designed and manufactured by Createch.

² Please contact your 3M ESPE sales representative or visit our website www.3MESPE.com to get a list of authorized labs or Lava™ Network Partner or to find contact details to become an authorized partner yourself.
The **NEW Lava™ CAM Module** stands for increased productivity and robustness – achieved by means of reduced milling and calculation time, improved millability and process stability plus more flexibility in nesting. It will support all existing and new materials, better utilize the technical capabilities of the Lava™ CNC 500 and fully support the Lava™ Form and Lava™ CNC 240.

The Lava™ CAM Module will be able to process files imported from earlier versions of Lava™ Design Software, but only in association with a version of Lava™ Design Software 7.

**Finer burrs.**

For detailed occlusal designs and better surface details in general, the new Lava™ CAM Module supports finer burrs with a dimension of 0.5 mm. Particularly for monolithic restorations, the new burr – in combination with the advanced milling path calculation – will show a remarkable difference in fissures and cusps on the occlusal surface of the restoration. The smaller burr will be available for all Lava™ Materials.

**Advanced milling capability.**

The new Lava™ CAM Module provides advanced milling for all Lava™ Milling Machines, with full support for the new Lava™ Materials and indications such as monolithic designs. That means: full 5 × milling capability for the Lava™ CNC 500. As well, the new Lava™ CAM Module will save you real money by significantly reducing the burr wearing factor.

**Flexibility & Control.**

Flexible and free nesting of cases in the Lava™ Frames and a host of new functions related to milling preparation and milling, such as automatic setting of sprues, will make Milling Centers much more productive in the future.
Lava™ All-Zirconia – an outstanding solution

Deliver unique added value to your dentists.

The Lava™ System not only provides state-of-the-art design technology but, of course, also compelling materials to work with. One of them particularly benefits from the Lava™ Design Software 7: Lava™ All-Zirconia, the new and affordable alternative to PFM. That is because the software now allows e.g. finer burrs than ever with this groundbreaking material.

Lava™ Zirconia is also available as All-Zirconia Monolithic Restoration. This means, that no porcelain overlay is needed and therefore chipping is no longer possible, because the entire crown is made from a monolithic block. Lava All-Zirconia is the metal-free and biocompatible alternative to full cast metal restorations and non-precious PFM in the posterior region, which fulfills esthetic customer needs.

The most important benefits of Lava™ All-Zirconia vs. non-precious PFM:

- Higher productivity
- Higher strength, no chipping
- Natural tooth-colors
- 15-year limited warranty¹
- Tooth preserving preparation possible (only 0.5 mm occlusal reduction)
- Metal-free
- Perfect for patients with little inter-occlusal space occlusal space
- Ideal for bruxism patients or patients who grind their teeth

The key advantages of Lava™ All-Zirconia:

- More productive than non-precious PFM
- Increases your profit through higher volume
- Higher value restoration in less time
- Virtually unbreakable – no more issues with chipping

Lava™ All-Zirconia Monolithic Restoration: flexibility worth getting passionate about.

Lava™ All-Zirconia is embedded in the Lava™ System, which provides clinically proven components, saving time and money plus offering supreme reliability. The choice is yours: You can either opt for a chip-free All-Zirconia Monolithic Restoration – this will work especially well as a cost-effective replacement of metal restorations, for cases with limited interocclusal space and even for patients with bruxism. Or you can choose the more sophisticated variant with a Lava™ Zirconia Frame and subsequent veneering.

3M ESPE’s Lava™ All-Zirconia Crowns and Bridges have a 15-year limited warranty¹.

¹ If fabricated by an Authorized Lava™ Milling Center on Lava™ Equipment in strict compliance with approved indications and instructions for use with Lava™ All-Zirconia Crowns and Bridges. Only approved indications for Lava™ All-Zirconia are covered and the warranty does not cover any breakage resulting from accidents or misuse. Additional costs such as the cost of preparation and veneering are also not covered.
The Lava™ System – the winning strategy for your lab

Custom-made options for business expansion.

The Lava™ System together with the Lava™ Network offers many entry and development scenarios for a lab that wants to go digital. The broad range of Lava™ Equipment, materials and indications allows tailor-made solutions and workflows and the opportunity to develop with the Lava™ Business model and to grow fast and sustainable.

1. Outsourcing

This is one way for you to retain existing customers and win new ones easily – without any additional investment. Simply send your plaster models to the Lava™ Milling Center of your choice. You will then receive highly esthetic and precise Lava™ Restorations.

2. Outsourcing with Lava™ Scan ST

With the Lava™ Scan ST, you can determine the design of your restorations yourself. Only the mechanical component – the milling – is carried out at the Lava™ Milling Center of your choice. You have full control over the design and retain most of the added value within your own laboratory.

3. In lab production with Lava™ CNC 240

Here is another interesting scenario: as your business with Lava™ Precision Solutions grows, it can be rewarding to take control of some portions of milling process. With the Lava™ CNC 240 you have access to all Lava™ Materials and indications (3.5 axis) for your in-house production.

4. Becoming a Lava™ Milling Center

With Lava™ Precision Solutions, you can expand even further by turning your dental lab into a Lava™ Milling Center. With strong equipment and powerful software, you keep control over not just single steps but the whole process. You decide what your Lava™ Restorations look like – from design through milling, shading and sintering to Full-Contour and veneering.
The Lava™ System
Passionate about Precision
# Lava™ Zirconia – your indication overview

<table>
<thead>
<tr>
<th>INDICATION</th>
<th>LAVA™ ZIRCONIA FRAMEWORK</th>
<th>LAVA™ ALL-ZIRCONIA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hand-layered Veneering</td>
<td>Veneering with Lava™ DVS Digital Veneering System</td>
</tr>
<tr>
<td>Crowns (anterior and posterior)</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Splinted crowns*</td>
<td>●</td>
<td>—</td>
</tr>
<tr>
<td>3–4 unit bridges</td>
<td>●</td>
<td>—</td>
</tr>
<tr>
<td>Long-span and curved bridges (up to 48 mm)*</td>
<td>●</td>
<td>—</td>
</tr>
<tr>
<td>Cantilever bridges*</td>
<td>●</td>
<td>—</td>
</tr>
<tr>
<td>3-unit inlay and onlay bridges*</td>
<td>●</td>
<td>—</td>
</tr>
<tr>
<td>Anterior adhesive bridges* (Maryland bridges)</td>
<td>●</td>
<td>—</td>
</tr>
<tr>
<td>Primary crowns*</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Crowns on implants</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>3-unit bridges on 2 implants</td>
<td>●</td>
<td>—</td>
</tr>
<tr>
<td>Zirconia build-up for two-piece abutments*</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

1. Released for patients with bruxism
2. Splinted crowns up to 4 units
3. 5+ unit bridges (up to 48 mm) with a maximum of two adjacent pontics in the posterior area and a maximum of four adjacent pontics in the anterior area. (Only feasible with Lava™ Multi XL; in some regions Lava™ Multi XL is not available.)
4. With a maximum of 1 pontic in the position of a premolar or incisor
5. Tests have proven: Lava™ Zirconia shows a sufficient strength for this indication. However, this type of indication can have a higher failure risk overall due to adhesion failure and secondary caries regardless of manufacturer. Please refer to national and regional dental associations for more information.
6. Coming end of 2011
### Technical Data

<table>
<thead>
<tr>
<th><strong>Scan volume</strong></th>
<th>80 × 100 × 42 mm³ (models up to 60 mm × 70 mm)</th>
</tr>
</thead>
</table>
| **Scan time**   | Average scan time (incl. calculation) single crown >> 1:00 min.  
|                 | Average scan time (incl. calculation) full arch >> 2:00 min.  
|                 | Average scan time (incl. calculation) multi-die plate for 10 crowns >> 1:40 min.  
|                 | Auto computation of 10 crowns  
|                 | (scanning + calculation + automatic generation of coping) 3:00 min. |
| **Scan type**   | Non-contact, optical scanner with fringe projection triangulation for high accuracy |
| **Scan handling** | Ergonomic design and convenient handling with single-hand height adjustment |
| **Scanner size** | Width: 545 mm; Height: 800 mm; Depth: 465 mm; Weight: 45 kg |
| **Electrical data** | Line Voltage: 100 – 240 Volts; Frequency: 50 – 60 Hz; Power: 250 Watt |