Lava™
Chairside Oral Scanner C.O.S.

The digital impression
The future begins today

3M ESPE – Competence in impressioning.

3M™ ESPE™ has been your trusted dental solutions provider for more than 40 years, not least because of its trailblazing products and technologies in the field of impressioning. All our new developments focus on optimal clinical results, top-quality patient care, comfortable handling and simplified work processes.

3M ESPE milestones:

- Express™ 2
  VPS Impression Material
- Impregum™
  Polyether Impression Material
- Pentamix™ 3
  Automatic Mixing Unit

The new digital dimension.

With its Lava™ Chairside Oral Scanner C.O.S., 3M ESPE rounds out its portfolio with a digital impressioning solution. Digital imaging replaces physical impressioning with trays and impressioning material. The dataset from the scan is forwarded directly to an authorized laboratory for further processing and production of the restoration. It just can’t get more accurate and reliable!
Making an impression …

… a challenge for dentist and lab alike.

Throughout the world more than 140 million impressions are taken each year. Even the most experienced practitioner, using the best impression materials, can encounter difficulties when making an impression. Common problems include delamination, facial-lingual pulls, tearing at the margin, tray-tooth contact and stone model discrepancies. With the Lava™ Chairside Oral Scanner C.O.S., these problems become past history.
Benefits for dentists and labs.

- Precise digital impressions help ensure precise-fitting restorations
- High reliability – without the typical error sources of traditional impressions
- Detailed feedback in real-time during treatment
- High patient comfort
- Enhanced hygiene compared to the traditional impression process
- Better interaction between dentist and patient
- Increased productivity
- Elimination of time-consuming work steps

Steps eliminated at the dental practice:
- Tray selection
- Material mixing and dispensing
- Material setting
- Disinfection of the impression
- Packing and shipping the impression

Steps eliminated at the lab:
- Plaster pouring
- Base and pin
- Die-cutting the model
- Trimming
- Scanning
A decisive leap forward: “3D-in-Motion” technology.

Featuring unique “3D-in-Motion” technology, the Lava™ C.O.S. – unlike existing point and click procedures – captures continuous 3D video images in a video sequence as the scanner moves, rather than individual pictures. In this way, a practically unbroken data flow is generated and thus a correspondingly precise representation of the oral situation. As a result, inaccuracies due to the piecing together of single pictures are avoided.
It’s all in the revolutionary details
Unprecedented speed.
The “3D-in-Motion” technology enables the wand to capture approximately 20 3D data sets per second.

Maximum manoeuvrability.
The slim camera head in the wand, only 14.7 mm wide, is comfortable to work with and offers easy movement and clearance throughout the mouth.

Instantaneous feedback.
Real-time video images give you direct control. Users can assess preparation and tissue management in ways never before possible.

Immediate interaction.
The intuitive, user-friendly touchscreen provides an opportunity for immediate chairside review with the patient.

High flexibility.
The Lava™ Chairside Oral Scanner C.O.S. is the starting point for both traditional PFM processes and CAD/CAM processes – within the Lava™ System.

Minimized guesswork.
Both dentists and labs have the same advanced tools to check the preparation and margin, including video review, 2D enhancement or 3D stereographic review. Labs can confidently mark the margin knowing they are seeing exactly the same images viewed by the dentist.
The Lava™ Chairside Oral Scanner C.O.S. is a highly complex, innovative optical system: on the basis of patented 3M technology, the device combines ultramodern hardware, high-speed image-processing algorithms and intelligent software for real-time modelling.

Small, light, compact – and extremely productive.

The Lava™ C.O.S. wand is an extraordinary invention in a compact, lightweight design. The distal tip is only 14.7 millimeters wide and contains 192 blue LEDs to illuminate the mouth. Despite housing all this technology, the wand weighs just 390 g.

Blue LEDs work very efficiently; that is, with very little energy input, they produce a lot of light but little heat. Moreover, the short-wave blue light makes very accurate imaging possible, for extremely precise results.

Thanks to its space-saving design, the Lava™ Chairside Oral Scanner C.O.S. will fit in any office and can easily be used in different treatment rooms.

Reduced illustration
Algorithms for ultra-fast image processing.

The Lava™ Chairside Oral Scanner C.O.S. uses a completely new process to generate 3D data: “3D-in-Motion” technology captures the data as a video sequence and immediately transforms them into an accurate image. Every second, approximately 20 3D datasets are generated, or 2,400 datasets for each mandibular arch. That means that, despite the high speed, all surfaces are evenly scanned, without any gaps.

Real-time modelling.

While capturing such massive amounts of data is quite an accomplishment, an even more impressive achievement is the ability to model that data in real time. Unlike other systems, the Lava™ Chairside Oral Scanner C.O.S. simultaneously displays the images that are being captured on the touchscreen monitor. As a result, the dentist can immediately and confidently assess whether enough information has been captured for a completed digital impression.
3M ESPE’s digital workflow

The digital workflow describes a highly efficient indirect restorative process. The goal is optimal patient treatment and a precise-fitting, high-quality restoration. Regardless of whether you opt for a traditional PFM process or a modern CAD/CAM technique taking a digital impression with the Lava™ Chairside Oral Scanner C.O.S. is always the perfect place to start.

Together with Lava™ Precision Solutions, 3M ESPE offers dentists and laboratories the possibility of an integrated, fully digital workflow culminating in a highly aesthetic restoration.

Digital ditching and bite registration
Virtual ditching and bite registration by 3M ESPE.

3M ESPE

Laboratory processing of digital impression
Digital die cutting and margin marking.

Lab

Digital impression
Capturing the digital impression with the Lava™ C.O.S. and transmission of the data to an authorized laboratory.

Dental practice

CAD/CAM process
**SLA model production**
The traditional plaster model is replaced by an advanced stereolithography (SLA) model.

**CAD/CAM manufacturing**
In parallel, the lab receives a virtual model to create the coping.

**Seating of restoration**
The final restoration is seated in the patient's mouth.

**Finishing**
Final finishing and veneering of the restoration at the lab.

**Lab**

**Traditional process**

**Dental practice**
Technical Data

Dimensions of the device 112 × 51 × 71 cm (H × W × D)
Length (wand) 33 cm
Weight (wand) 390 g
Width of the camera head (wand) 14.7 mm
Touchscreen size 17"
Screen resolution 1280 × 1024 pixels

Ordering Information

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<th>Product Information</th>
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<tr>
<td>68901</td>
<td>Lava™ Chairside Oral Scanner C.O.S. contains device, wand, power cords and manuals</td>
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<tr>
<td>68902</td>
<td>Lava™ Wireless Router</td>
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<tr>
<td>68996</td>
<td>Lava™ Display Assembly Cop contains touchscreen, power cord</td>
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<td>69080</td>
<td>Lava™ C.O.S. Consumable Kit contains wireless access point (WAP), 2 3D glasses, 2 router network cables, 1 sprayer kit, 1 box of disposable wand sheaths, 1 tip target</td>
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Accessories

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<td>Lava™ Disposable Wand Sheaths box containing 100 disposable sheaths</td>
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<td>68904</td>
<td>Lava™ Sprayer Kit containing 1 sprayer, 1 battery, 2 brushes, 3 tips, 1 screwdriver</td>
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<td>68912</td>
<td>Lava™ Sprayer Tips pouch containing 3 sprayer tips</td>
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<td>68913</td>
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<td>69108</td>
<td>Lava™ Process Unit</td>
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www.3mespe.com/lava