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rainbow™ Block

• rainbow™ Shade Block
• rainbow™ Trans Block
• rainbow™ CAD/CAM Block
**rainbow™ Shade Block**

- No dipping process is required due to shaded block
- Maintains uniform color after occlusal adjustment
- Entire shade level of group A can be achieved by using rainbow™ on simplified shade block A0.5 and A2

*Shade color after sintering*

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**Clinical Cases of rainbow™ Shade Block**

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**Products**

<table>
<thead>
<tr>
<th>Form</th>
<th>Diameter</th>
<th>Height</th>
<th>Color</th>
<th>Product</th>
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<tbody>
<tr>
<td>Disk Type</td>
<td>Ø98mm</td>
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</tbody>
</table>
rainbow™ Trans Block

- Highly translucent: Excellent shade expression even with minimization of porcelain build-up
- Optimized marginal fit: Uniform shrinkage (x, y, z axis)
- Increased durability: Less porcelain chipping and great fracture toughness
- Economical price compared to gold crown or other translucent blocks

Clinical Cases of rainbow™ Trans Block

Products

<table>
<thead>
<tr>
<th>Form</th>
<th>Diameter</th>
<th>Height</th>
<th>Package</th>
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rainbow™ CAD/CAM Block

- Excellent marginal fitness owing to the uniform shrinkage rate (20%-x,y,z)
- Zirconia block with natural translucency
- High flexural strength
- Excellent fracture toughness

Advantages of rainbow™ CAD/CAM Block

1. High flexural strength and fracture toughness

![Graph showing flexural strength and fracture toughness](image)

*Source : Data on file
**Source : Guazzato et al., Dental materials (2004) 20, 449-456
***Source : Company L catalog

2. Microstructure

- Soft for milling, hard after final sintering

**Surface of product(before sintering)**

Structure has about 50% porosity, which makes it easy to mill

**After final sintering**

Dense structure without pore
Each grain has a diameter of about 0.4 μm

3. Products

<table>
<thead>
<tr>
<th>Form</th>
<th>Diameter</th>
<th>Height</th>
<th>Package</th>
<th>Product</th>
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rainbow™
CAD/CAM Scanner

- The white light scanning technology
- The precise & speedy scan with less than 10 micron
- The outstanding data compatibility (Open STL format)

<table>
<thead>
<tr>
<th>rainbow™ CAD/CAM Scanner</th>
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<tr>
<td><strong>Scan Type</strong></td>
</tr>
<tr>
<td><strong>Scan time</strong></td>
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<tr>
<td><strong>Scan area (WxOxH)</strong></td>
</tr>
<tr>
<td><strong>Accuracy</strong></td>
</tr>
<tr>
<td><strong>Camera resolution</strong></td>
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<tr>
<td><strong>Dimension (WxDxH)</strong></td>
</tr>
<tr>
<td><strong>Supply Voltage</strong></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
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<tr>
<td><strong>Warranty</strong></td>
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</table>
The white light scanning technology

The white light scanning technology, as the high-tech technology, generates sharper data than laser method scanner. The function realizes the noiseless 3D data.

The speedy & precise scan technology with less than 10 micron

On the basis of implant clinical know-how, the precise data can be obtained through receiving of images at the optimal position of tooth respectively.

3D scanning to the depth

rainbow™ Scanner applies the optimal camera inclination to receive the accurate data to the depth as well as undercut.

Visual Properties

Point cloud

Wireframe
Sharper marginal line

rainbow™ Scanner displays the optimal performance for the measurement of medial part with a loaded camera of high resolution, and especially realizes the sharper margin line through the optimal combination between rotary stage and 3D scanning module.

Speedy scanning speed

- It shows the three-dimensional data as more speedy & stable result with the perfect synchronization & data processing technology between camera and projection pattern equipment.
- Single Case: 50/sec, 3-Bridge Case: 3/min

Open System

rainbow™ Scanner has a excellent compatibility with Open STL format.

The extensive application scope

- rainbow™ Scanner realizes every extensive clinical case to the perfect 3D from Single to Full arch.
- It can be scanned by loading of every kind of tooth model with the utilization of self- scan jig.
- The optimal scanning region of object can be freely chosen in the case of inlay, onlay or even the small models like implant.

Various scanning jig

Occluder scanning jig

rainbow™ Scanner provides scanning jig to help for speedy & easy inspection of occlusion.

The convenient usage

- The convenience for user has been more improved with the free load/unload of scan jig from any direction, left/right, by removing of overall doors.
- The scanning of wax up restoration can be performed preferentially.
- The intermediate scanning is feasible with the feasible restoration of data, in spite of various mistakes while scanning.
The following types of dental restorations can be constructed with our software:

- Anatomic crown
- Coping
- Cut-back core
- Bridge framework
- Inlays
- Onlays
- Wax-up copy (double scan)
- Mirror tooth
- Primary telescope
- Bar
- Custom abutments
- Screw retained bridges
- Virtual articulation
- SCRP
Dentium Implant Library

SuperLine & SimpleLine II allow screw / dual abutment restoration
Using the rainbow™ CAD’s Implant Module, custom abutments and screw-retained bridges can be designed easier.

Customized Abutment Design

Adjust emergence profile and abutment design
Occlusal check / designed

Inlay / Onlay Design

Margin management
Cement gap
Merged
Mirror Design

Model mirroring  Mirror model placement  Adapt tooth model

Tooth Library

Available to choose the anatomic design from the tooth library

Cut-back Design

Designed to not shrink selected parts. Selected parts are marked on the teeth. (Blue colored portion in the drawing below)
**Virtual Articulator**

*Virtual articulator* is an add-on for the rainbow™ CAD, which allows users to visualize the dynamics of the occlusion when designing crowns and bridges.

Available for Protrusion / Retrusion / Laterotrusion right / Laterotrusion left movement

**Articulator Movement 3D Simulation**

CO bite check

Lateral movement check

The articulator module requires a high-accuracy 3D scanner capable of measuring the position of the models relative to the specific articulator type used.

- Cut intersections
- Shape-preserving adaptation

**Available articulator settings (Adjust the values like that of a real articulator)**
- Bennett angle
- Condylar angle
- Immediate side shift
Multi Design
Available for offset coping and wax-up by double scan design

Wax-up Design (Double Scan)

CT-DICOM Viewer
Visualization of voxel data from CT devices during the design process
rainbow™
CAD/CAM Mill

- Simultaneous 5-axis processing system
- Tool failure detection system
- Processing time indication
- Convenient operation & user affinity interface through 10.1” touchscreen
- Open system for data compatibility

### rainbow™ CAD/CAM Mill

<table>
<thead>
<tr>
<th>Material</th>
<th>Zirconia, Resin, Wax</th>
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<tbody>
<tr>
<td>Control Axis</td>
<td>Simultaneous 5-axis</td>
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<tr>
<td>Milling Time</td>
<td>12min (Single)</td>
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<tr>
<td>Spindle</td>
<td>60,000 rpm, 250W</td>
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<tr>
<td>Motion Drives</td>
<td>All servo motors</td>
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<tr>
<td>Tool Posts</td>
<td>7 posts (Automatic changes)</td>
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<td>Milling Type</td>
<td>Dry processing</td>
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<td>Dimension (WxDxH)</td>
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<td>Supply Voltage</td>
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<tr>
<td>Weight</td>
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<tr>
<td>Options</td>
<td>CAM Table, Dust collector</td>
</tr>
<tr>
<td>Warranty</td>
<td>1 year</td>
</tr>
</tbody>
</table>
Simultaneous 5-axis processing system

Much more precise prosthetic appliances can be processed for the various shapes and the reproduction of inner side undercut (±25°), which cannot be processed with four-axis system.

The high-precision spindle

- A guarantee of the perfect degree of precision by the utilization of high-precision spindle (Concentricity < 1μm)
- 250W/60000 RPM, the checkable hours of use

Automatic tool change and error detection system

- 7 tool pockets for effective operation
- The detection of tool fracture & abnormal movement through high-precision sensor

User affinity interface

- The convenient operation of 10.1” touchscreen
- The usercentric button structure & error notification window

A low-noised integral dust collector

- The minimized mechanical problem by dust through the integral design of processor and dust collection system
- Extra dust collection equipment & hoses are unnecessary with the connection of dust collector inside of equipment, so space efficiency is excellent
Sharp Margin Milling

| Ø 2.0mm | Ø 1.0mm | Ø 0.5mm |

Standard and type of CAD/CAM block

<table>
<thead>
<tr>
<th>Variety</th>
<th>Type</th>
<th>Specifications</th>
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<tr>
<td>Disk Block</td>
<td>Zirconia</td>
<td>98 x 10, 12, 14, 16, 18, 20, 22, 24</td>
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<td>Step Block</td>
<td>PMMA</td>
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<tr>
<td></td>
<td>Wax</td>
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</table>

General processing tool

- Diamond Coating Bur [2DML Ø2.0mm]
- Diamond Coating Bur [1DML Ø1.0mm]
- Diamond Coating Bur [0.5DML Ø0.5mm]

Abutments processing tool

- Flat Bur [2CFML Ø2.0mm]
- Flat Bur [1CFML Ø1.0mm]
Screw Hand Reamer

- The outstanding effectiveness to screw loose stopper by increasing of friction area of screw joint part
- The preventive effect of micro-crack of Crown(zirconia)

* In case of completion of full Crown at CAD/CAM Milling Machine, it could have the round shaped one(Fig-left). If fastening screw at this kind of shape, then screw torque will be weaker, but if increasing torque, then screw will be downed according to hole and it results the breakage of the Crown.
Miscellaneous

- rainbow™ Porcelain
- rainbow™ Brushing Liquid
- rainbow™ Coloring Liquid
- rainbow™ Porcelain Furnace
rainbow™ Porcelain

- **Crack-Free**: Complete balance between the coefficient of thermal expansion of Zirconia and Porcelain contributes to no-crack.
- **Esthetic and Natural Shade**: Highly esthetic and natural shade is expressed with Opal Effect and Fluor Effect powder.
- **Simple Build-up**: Simple build-up is available for the fabrication of natural dental prosthesis.
- **Excellent Workability**: Our specially treated porcelain powder is convenient for beginners to easily build-up using distilled water.

### Opal Effect

The dental enamel reflects the short wavelength blue portion of light, transmits warm, long wavelength orange-colored light, and glows in the transmitted light almost like amber. This phenomenon is caused by tiny water inclusions and impurities. Opal porcelain of rainbow™ Porcelain shows excellent opalescence effect by nano-crystal precipitated in porcelain.

### Fluor Effect

The natural fluorescence emanate from deep inside of the tooth. Ultraviolet light, as electromagnetic radiation from the non-visible spectrum of daylight, stimulates this particular form of luminescence. The ceramic compound that is built up in the inside of the crown is also doused with additional fluorescing material. By adding special fluor-pigment, rainbow™ Porcelain provides an excellent fluorescence effect and in order to achieve strong fluorescence effect, special porcelains such as Fluor-W and Fluor-T are available.

### Excellent Workability

Thanks to special treatment of rainbow™ Porcelain powder using our own technique; it is easy and convenient for build-up fabrication.
rainbow™ Trans Block
Brushing Liquid

- Delicate section appearance is possible by means of Brushing Technique method unlike the existing dipping method.
- Consists of 6 colors (Brown, Orange, White, Grey, Pink, and Violet) to improve esthetic effect of dental prosthesis and lighter to adjusting color concentration.
- Incorporated food coloring dyes to clearly identify the brushing section.
- Available in dropping bottle to easily control the amount released.

<table>
<thead>
<tr>
<th>Art. No.</th>
<th>Volume</th>
<th>Package</th>
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<tr>
<td>Brown</td>
<td>20ml / 100ml</td>
<td>1ea</td>
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<tr>
<td>Orange</td>
<td>20ml / 100ml</td>
<td>1ea</td>
</tr>
<tr>
<td>White</td>
<td>20ml / 100ml</td>
<td>1ea</td>
</tr>
<tr>
<td>Grey</td>
<td>20ml / 100ml</td>
<td>1ea</td>
</tr>
<tr>
<td>Pink</td>
<td>20ml / 100ml</td>
<td>1ea</td>
</tr>
<tr>
<td>Violet</td>
<td>20ml / 100ml</td>
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</tbody>
</table>

Pre-sintered crown after dipping in coloring liquid and then applying Brushing Liquid on rainbow™ Trans Block

Sintered crown after dipping and brushing

rainbow™
Coloring Liquid

- Coloring liquid for Zirconia.
- Consists of the most practical 5 dipping colors.
- Natural appearance is possible due to the liquid deep penetration into the Zirconia
- Optimized with rainbow Trans Block.

<table>
<thead>
<tr>
<th>Art. No.</th>
<th>Volume</th>
<th>Package</th>
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<td>DP1</td>
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<td>DP2</td>
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Specifications are subject to change without notice. Some products that are to be launched in the market after necessary approvals are also listed in this catalog.