

# **KATANA™ Zirconia**

**YML** *Yttria Multi Layered*

Revolutionary All\*-In-One Disc Design  
Excellent Balance Between Strength And Translucency

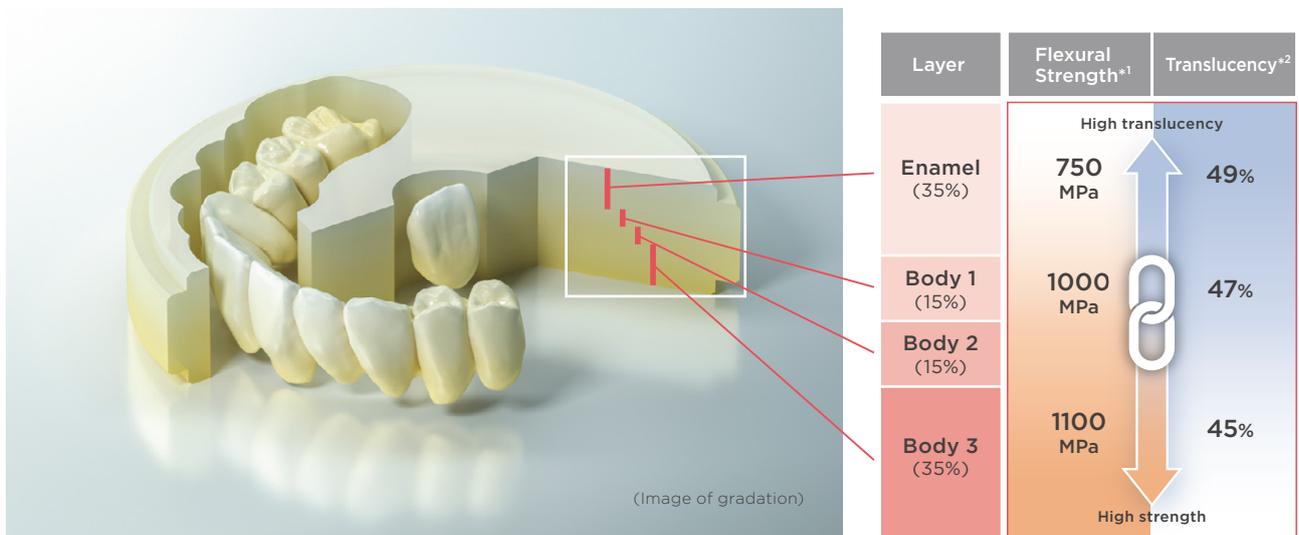
All\*-In-One Disc  
In One Day Completion



BORN  
IN JAPAN

## Explore New Possibilities with “KATANA™ Zirconia”

“KATANA™ Zirconia” YML is a new definition of zirconia in dentistry. This product is characterized by a unique raw material combination of highly translucent zirconia with high strength, which are integrated together by an advanced manufacturing technology.



Measurement condition: Evaluated by base material(white color).

\*1 According to ISO 6872: 2015, Sample size: 3 x 4 x 40mm,

\*2 All light transmittance, illuminant: D65, Thickness of sample: 1.0mm

(%) is the thickness of each in a disc

Data source: Kuraray Noritake Dental Inc. The numerical value varies according to a condition.

“KATANA™ Zirconia” YML is the latest KATANA™ multi-layered disc with a well-balanced combination of color / translucency and flexural strength gradation. Thanks to Kuraray Noritake Dental’s proprietary multi-layered technology, this latest development has been realized by matching three raw materials with different yttria contents. These layers are perfectly harmonized to each other due to the fact that all fundamental production steps, including purification, refining of the zirconia raw material and the addition of essential components such as yttria, are all processed in-house by Kuraray Noritake Dental. Combined with a proprietary zirconia pressing technique as well as our refined pre-sintering process, the new “KATANA™ Zirconia” YML adapts harmoniously to the KATANA™ family. As a “All-IN-ONE Solution” “KATANA™ Zirconia” YML offers exceptional design flexibility from long-span full-arch monolithic bridge restorations up to highly aesthetic anterior monolithic crown restorations.

**EXCLUSIVELY DEVELOPED AND MANUFACTURED IN HOUSE**

## Revolutionary All-In-One disc design

### GET MUCH CLOSER TO YOUR DESIRE



Based on "KATANA™ Zirconia" YML A3 with "CERABIEN™ ZR" FC Paste Stain  
Courtesy of DT Marco Stoppaccioli - L'Aquila

#### Features

##### FAST PROCESSING

1

##### ALL-IN-ONE SOLUTION

2

##### SIMPLE AESTHETICS

3

##### CONTROLLED FIRING DEFORMATION

4

#### Benefits

High-speed sintering (54 minutes) offers completely new possibilities. Waiting time is reduced to a minimum. For re-make and rush cases, it is now possible to finish the work easily within one day. In addition, the minimized over-night-sintering cycles enable **shorter delivery time** to increase your business efficiency.

Due to the high translucency and high strength combined within one disc, the entire indication spectrum can be covered. This **minimizes your inventory** of different zirconia discs.

A seamless multi-layered technology eliminates visible transition lines, emphasizing natural color and translucency, that ensures a simplified, **time-saving** procedure.

Improving the fitting accuracy of restorations after the final sintering process reduces risk of remanufacturing, which is definitely one added benefit for dental labs. **No waste of time** and materials.

## High-Speed Sintering up to 3-unit Bridge

Outstanding quality paired with velocity is an absolute unique feature of “KATANA™ Zirconia” over all competitive products. The unique pressing and pre-sintering technique is the key to allow our customers to realize restorations of up to 3-unit bridges without any compromise in terms of aesthetics or mechanical properties using the 54-minute high-speed sintering process.

\*The material is removed from the furnace at 800°C. A furnace with a configurable YML firing program is required.

### “KATANA™ Zirconia” YML FOR 90-MINUTE SINTERING



“KATANA™ Zirconia” YML displays superior optical properties after 90-minute sintering when compared to discs of major competitors after 90-minute sintering.\*

\*This sintering program is not recommended by other competitor’s zirconia discs.

### SINTERING PROGRAM

|                   | Temp.1     | Rate of Temp. Increase °C/°F min | Temp.2        | Rate of Temp. Increase °C/°F min | Temp.3        | Rate of Temp. Increase °C/°F min | Temp.4        | Hold Time | Rate of Temp. Decrease °C/°F min | Temp.5       |
|-------------------|------------|----------------------------------|---------------|----------------------------------|---------------|----------------------------------|---------------|-----------|----------------------------------|--------------|
| <b>54- minute</b> | Room Temp. | 120°C/216°F                      | 1450°C/2642°F | 10°C/18°F                        | 1600°C/2912°F | -                                | -             | 20min.    | -120°C/216°F                     | 800°C/1472°F |
| <b>90-minute</b>  | Room Temp. | 50°C/90°F                        | 1400°C/2552°F | 4°C/7°F                          | 1500°C/2732°F | 10°C/18°F                        | 1560°C/2840°F | 16min.    | -50°C/90°F                       | 800°C/1472°F |
| <b>7-hour</b>     | Room Temp. | 10°C/18°F                        | 1550°C/2822°F | -                                | -             | -                                | -             | 2-hour    | -10°C/18°F                       | RT.          |

The above sintering recommendation is only a guideline; some adjustments may be required depending on each individual furnace. In case of 54, 90-minute sintering, if it cannot be set according to the schedule, it cannot be sintered.

## Versatility of application range

Exceptional design flexibility is offered – from veneers up to full-arch restorations. In each case, you may choose a monolithic, cut-back or framework design with the appropriate fabrication procedure depending on individual needs.

### ALL-IN-ONE SOLUTION



- Laminate veneer
- Inlay, Onlay
- Anterior / Posterior crown
- Long-span Bridge
- Framework

## Natural Color and Translucency

“KATANA™ Zirconia” YML was developed based on the concept of being “lifelike”, that accurately and naturally expresses the color and translucency of natural teeth.

### SEAMLESS COLOR AND TRANSLUCENCY



#### Enamel Layer

To provide high translucency that harmonizes with the anterior teeth.

#### Body Layer 1

To provide seamless color and translucency towards the Enamel Layer.

#### Body Layer 2, 3

To provide deep and vivid color while reducing whitening.

## Controlled Firing Deformation

“KATANA™ Zirconia” YML, which contains different composition layers, achieves high precision shrinkage and stable CTE values by controlling the whole process from refining to molding. Additionally, an extensive quality control, i.e. optimizing all the process steps combined with the unique in-house developed raw materials deliver our best KATANA™ material of all times.



Kuraray Noritake Dental distinguishes itself by its unique in-house production of zirconia raw materials. Many years of expertise in manufacturing the company's own powder have brought the material quality of KATANA™ to completely new dimensions, not only by controlling the degree of purity and particle sizes, but also by creating an optimal balance of binders, color pigments, stabilizers and other ingredients. In this way Kuraray Noritake Dental guarantees its customers a material they can always rely on.

**“We control every detail.”**

## Making the most of KATANA™ YML's features

Its unique properties of high translucency and high strength give it excellent characteristics.

### Possible to Reduce for Thinner Restoration

#### Comparison with high translucency zirconia



KATANA™ Zirconia  
YML A3

KATANA™ Zirconia  
STML A3

Shade Guide A3

0.4mm  
(44%)

Thickness of  
Body Layer  
(Translucency\*)

0.8mm  
(41%)

“KATANA™ Zirconia” YML and STML are shown here with body layer thickness adjusted to 0.4\*mm for YML, and 0.8\*mm for STML. The body layer of YML can be adjusted thinner than that of high translucency zirconia, increasing its translucency even more.

\* This is the minimum thickness recommended by the manufacturer.

\* Test condition: All light transmittance, Illuminant: D65, Thickness of YML (Body3): 0.4mm, STML (Body3): 0.8mm

### Marginal Stability and Enhanced Fitting Accuracy

“KATANA™ Zirconia” YML shows sharp margins and less chipping, thereby leading to better marginal fit. Thinner restorations show that this good result in sharp margin supports the use of “KATANA™ Zirconia” YML.



Even if the restoration margins have been milled to a very thin profile, they still show smooth margins without any chipping.

# A NEW FORMULA FOR AESTHETIC MONOLITHIC LONG-SPAN RESTORATIONS

By MDT Daniele Rondoni



Stained and glazed restorations and their translucency in transmitted light.



**Front view**

The two bridges on the model after ultra-micro layering with "CERABIEN™ ZR" FC Paste Stain.



Finished 6-unit bridge.



Finished 4-unit bridge.

**Buccal view**



**Post - operative view**

## Shade / Thickness selection

Select the target shade and the correct disc thickness to achieve an appropriate graduation between crown length, enamel and body (dentin).

| Series     | Shade |    |    |      |    |    |    |    | Size (Diameter/Thickness) |
|------------|-------|----|----|------|----|----|----|----|---------------------------|
| <b>YML</b> | A1    | A2 | A3 | A3.5 | A4 | B1 | B2 | B3 | 98.5mm/14, 18, 22mm       |
|            | C1    | C2 | C3 | D2   | D3 | NW |    |    |                           |



# PRODUCT CHARACTERISTICS

## “KATANA™ Zirconia” multi-layered

| Material Class*3               | Class3                                                                                                                                                                                          | Class4                                                                                                                                                                  | Class5                                                                                                                                                                                                         | Class5                                                                                                                                                                  |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Multi-layered          | <b>UTML</b>                                                                                                                                                                                     | <b>STML</b>                                                                                                                                                             | <b>HTML PLUS</b>                                                                                                                                                                                               | <b>YML</b>                                                                                                                                                              |
| Translucency*1                 | <b>51%</b><br>Ultra Translucency                                                                                                                                                                | <b>49%</b><br>Super Translucency                                                                                                                                        | <b>45%</b><br>High Translucency                                                                                                                                                                                | Enamel: <b>49%</b><br>Body1: <b>47%</b><br>Body2, 3: <b>45%</b><br>Integrated Translucency Gradient                                                                     |
| Flexural Strength*2            | <b>557 MPa</b><br>All layers                                                                                                                                                                    | <b>748 MPa</b><br>All layers                                                                                                                                            | <b>1150 MPa</b><br>All layers                                                                                                                                                                                  | Enamel: <b>750MPa</b><br>Body1: <b>1000MPa</b><br>Body2, 3: <b>1100MPa</b><br>Integrated Strength Gradient                                                              |
| Minimum wall thickness (Crown) | Anterior: 0.8mm<br>Posterior: 1.0mm                                                                                                                                                             | Anterior: 0.8mm<br>Posterior: 1.0mm                                                                                                                                     | Anterior: 0.4mm<br>Posterior: 0.5mm                                                                                                                                                                            | Anterior Enamel : 0.8mm<br>Body : 0.4mm<br>Posterior Enamel : 1.0mm<br>Body : 0.5mm                                                                                     |
| Application range              | <ul style="list-style-type: none"> <li>✓ Monolithic Crowns (Anterior)</li> <li>✓ Monolithic Bridges (Anterior, up to 3-unit)</li> <li>✓ Cut-back frameworks (Anterior, up to 3-unit)</li> </ul> | <ul style="list-style-type: none"> <li>✓ Monolithic Crowns</li> <li>✓ Monolithic Bridges (up to 3-unit)</li> <li>✓ Cut-back frameworks (up to 3-unit)</li> </ul>        | <ul style="list-style-type: none"> <li>✓ Monolithic Crowns</li> <li>✓ Monolithic Bridges</li> <li>✓ Cut-back frameworks</li> <li>✓ Frameworks</li> </ul>                                                       | <ul style="list-style-type: none"> <li>✓ Monolithic Crowns</li> <li>✓ Monolithic Bridges</li> <li>✓ Cut-back frameworks</li> </ul>                                      |
| Technique                      | <ul style="list-style-type: none"> <li>✓ Monolithic design + Glazing(Staining)</li> <li>✓ Monolithic design + Polishing</li> <li>✓ Cut-back + Micro layering</li> </ul>                         | <ul style="list-style-type: none"> <li>✓ Monolithic design + Glazing(Staining)</li> <li>✓ Monolithic design + Polishing</li> <li>✓ Cut-back + Micro layering</li> </ul> | <ul style="list-style-type: none"> <li>✓ Monolithic design + Glazing(Staining)</li> <li>✓ Monolithic design + Polishing</li> <li>✓ Cut-back + Micro layering</li> <li>✓ Framework design + Layering</li> </ul> | <ul style="list-style-type: none"> <li>✓ Monolithic design + Glazing(Staining)</li> <li>✓ Monolithic design + Polishing</li> <li>✓ Cut-back + Micro layering</li> </ul> |
| Sintering Schedule             | The fastest program of 54 minutes can be used for all products of Multi-Layered series.<br>7-hour and 90-minute sintering programs are also available for all discs.                            |                                                                                                                                                                         |                                                                                                                                                                                                                |                                                                                                                                                                         |

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 \*2 According to ISO 6872: 2015, Sample size: 3 x 4 x 40mm, \*3 ISO 6872:2015  
 Data source: Kuraray Noritake Dental Inc.  
 The numerical value varies according to a condition.

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- Before using this product, be sure to read the Instructions for Use supplied with the product.
- The specifications and appearance of the product are subject to change without notice.
- Printed color can be slightly different from actual color.
- Read the IFU (Instructions For Use) before the procedure.

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