

DTS Radiance

DTS Radiance is a pre-sintered Zirconia CAD/CAM blank for CNC machining of copings, crowns, bridges and dental frameworks.

It comes in two forms:

DTS Radiance SPEED – for the fastest possible CNC milling, used typically for general copings, bridges, large constructions and implant bridges. Where quality, strength and speed of manufacture are the most important factors!

DTS Radiance T – where T stands for Translucent! This highly aesthetic product is probably the most translucent Zirconia on the market and may be used to manufacture fully anatomic crowns and any anterior restoration where high translucency is needed.

DTS Radiance is Made in Germany by DOCERAM Medical Ceramics GmbH. The material has been developed over more than 15 years, with more than six million dental restorations already made from their material.

The Material:

DTS Radiance uses best Japanese quality, Yttrium stabilised zirconiumdioxide. Advanced cleaning and refining processes create a pure and an extremely fine powder (<50 nm) that enhances bending strength and hydro-thermal aging properties. Blanks are pressed isostatically at more than 3,000 bar resulting in a perfect microstructure and isolinear shrinkage, ensuring completely predictable shrinkage during sintering and hence perfect fit.

For Open CAD/CAM systems, **DTS Radiance** is supplied as standard in 98.3mm diameter discs, with 2mm steps, in thicknesses ranging from 10 – 25mm. Other shapes, sizes and thicknesses are available on request. **Radiance** has been tested on one of the latest 5 axis CNC dental milling machines and can be supplied with machining templates to optimise machining conditions. Machining times of 8 minutes per unit (simple coping) can be achieved with **Radiance SPEED** and 10 minutes with Translucent **Radiance**.

Certification:

The quality management systems of the manufacturer are certified according to ISO 13485-2003, to 93/94 EWG in Europe, to FDA 510(k) in the USA and to CMDCAS in Canada.



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Technical Specifications

| Property | Units | Radiance Speed | Radiance T |
|-----------------------|----------------------------------|---|---|
| Material | | ZrO ₂ TZP | ZrO ₂ TZP |
| Shade Range | | White | White Translucent |
| Density | g/cm ³ | >6.04 | >6.04 |
| Flexural Strength | Mpa | 1100 | 1100 |
| Compressive Strength | Mpa | 3000 | 3000 |
| Modulus of Elasticity | Gpa | 205 | 205 |
| Impact Resistance | MPa m ^{1/2} | 8 | 8 |
| Vickers Hardness | HV 0.5 | 1300 | 1300 |
| Thermal Expansion | 10 ⁻⁶ K ⁻¹ | 10 | 10 |
| Thermal Conductivity | W/mK | 2 | 2 |
| Mean Linear Intercept | µm | <0.4 | <0.4 |
| Radioactivity | Bq/g | <0.02 | <0.02 |
| Solubility | µg/cm ³ | <10 | <50 |
| Composition | | ZrO ₂ +HfO ₂ +Y ₂ O ₃ >99% Y ₂ O ₃ 4.5% - 6% | ZrO ₂ +HfO ₂ +Y ₂ O ₃ >99% Y ₂ O ₃ 4.5% - 6% |



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