Additive digital dentistry: SolFlex 3-D printers in three sizes for laboratories and practices

An ever-growing number of dental practices and laboratories are digitalizing their workflows. The SolFlex 3-D printer from VOCO paves the way for additive production technologies. The combination of scans with subsequent design and 3-D printout allows users to create, for example, models and splints for orthodontic dentistry both quickly and precisely. The SolFlex printer comes in three sizes for use in both laboratories and practices.

The SolFlex 3-D printer uses the tried-and-tested digital light processing (DLP) units. Together with the innovative high-performance UV LEDs used, it is capable of printing layer after layer with an exceptional degree of precision. Furthermore, it is based on a solid-state UV LED light source with a low level of energy consumption and a long service life. The outstanding performance stability of the light source leads to a highly reproducible printing process. The use of a patented flexible vat (Flex-Vat) results in only minimal pull-off forces. As such, it is possible to generate thinner and finer components, thus requiring only minimal support material. Thanks to the revolutionary Pixel Stitch Technology, the printer boasts impressive performance in terms of resolution and construction volume.

The SolFlex 3-D printers are available either with or without sensor technology (sensor-monitored production). On the one hand, the special sensor ensures consistent illumination intensity, which, in turn, guarantees a consistently high-quality component production (SolFlex 170/350/650). On the other hand, a further laser sensor system monitors the construction process while also enabling optimization of the construction speed. Weighing between 15 and 20 kg, all the SolFlex printers are very light. In the laboratory, the printer takes up roughly the same amount of space as a conventional PC printer. The large vat volume also allows the devices to run without supervision, for example overnight.

V-Print splint, V-Print model beige and V-Print SG 3-D printing material

Those suffering from bruxism can often be helped with an occlusal splint, which should be worn as frequently as possible and therefore needs to be of a certain durability, which is best achieved by a high grade of elasticity. VOCO's 3-D printing material V-Print splint offers exactly that.

V-Print splint is a light-cured resin designed for generative production using a 385 nm LED DLP printer. This printing material is suitable for:
- splints used in treatments;
- bleaching trays; and
- auxiliary and functional parts for dental diagnostics.

V-Print splint can be used for printing in layers of 25, 50, 75 or 100 μm thick. Just like V-Print SG and V-Print model beige, V-Print splint has been carefully matched to the SolFlex printer, thus producing optimal printing results.

The V-Print model beige printing material is a light-cured methacrylate-based resin suitable for the additive production of precision components, for all dental models. The material allows optimal visibility of the preparation margins and prevents showing through when applying shades to restorations—especially in the case of cores.

V-Print model beige impresses with its smooth and scratch-resistant surface. The material is suitable for DLP printers with a UV LED spectrum of 385 nm.

The V-Print SG 3-D printing material is a Class IIa medical device developed for the additive production of drilling templates. The high precision makes it easier to plan the implantation and produces more accurate results. For optimal clinical use, V-Print SG can be steam sterilized at 134 °C for a maximum of 5 minutes without any detrimental effect on the accuracy of fit.

V-Print SG is biocompatible and flavorless, and impresses in use with its high flexural strength. The high-quality methacrylate-based resin is ideal for DLP printers with a UV LED spectrum of 385 nm.

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