VISULAS 532s
Compact laser workstation for state-of-the-art retinal therapy
When darkness led to enlightenment,
when spontaneous retinal damage led to
an effective therapy.

Sparked by the solar eclipse in 1945
and driven by visionary partners

Carl Zeiss has been committed to precision, innovation and passion for more than half a century in retinal photocoagulation. Ever since the first photocoagulation with sunlight was tested from the rooftop of a Hamburg eye clinic in 1949, dedicated Zeiss employees have sought intense dialogue with visionary ophthalmologists of their time. Dialogue that led, in 1957, to the first commercially available photocoagulator in the world. Simultaneously this marked the birth of contactless surgery on the human eye.

Carl Zeiss has been a strong driving force behind the focused optical therapy of retinal diseases. Committed to this tradition, the VISULAS 532s ranks seamlessly into a chain of innovative solutions with one sole objective: precise, effective and gentle therapy to preserve the eyesight and quality of life of patients.
Effective and reproducible treatment

The VISULAS 532s is setting performance benchmarks. The efficient solid-state laser reveals its sustainable strength even in high-demand practices. The VISULAS 532s has sufficient power reserves for any treatment strategy – whether it is with short laser pulses in the millisecond range for a gentle grid treatment, or long pulses for an effective retinopexy or even angioma sclerotherapy. Its built-in thermoelectric cooling system ensures maximum temporal stability of the laser power and thus meets the basic prerequisite for reproducible clinical results.

A laser workstation par excellence

In combination with the ZEISS Laser Slit Lamp LSL 532s, the VISULAS 532s becomes a perfectly integrated laser workstation.

The electronic micromanipulator allows for sensitive, synchronous laser beam positioning and slit lamp illumination. The ParFocus zoom system delivers a homogeneous, sharply-defined and reproducible laser spot on the retina, which minimizes heat-related side effects on the patient’s cornea. The active ClearView physician safety filter offers not only a unique and true-to-color slit lamp image, but also reliably protects the physician, automatically swinging into position when the therapy beam is activated.

Navigate efficiently and confidently

The VISULAS 532s has a language-independent color touch screen for convenient and easy operation. The removable control panel can easily adjust to the viewing angle of the user. The PowerPress control enables direct selection of the power setting, without losing sight of the patient’s fundus.
In addition to the conventional single-spot mode, the VISULAS® 532s VITE can also operate in multi-spot mode. A linear sequence of up to 12 laser pulses can be triggered at the touch of a button on the slit lamp joystick of the VISULAS 532s VITE.

**Significantly reduce treatment times**
The automated micromanipulator reliably controls the fast progression of an entire sequence of laser spots. Extremely precise, and long-term stable linear motors move the laser beam in just a few milliseconds to the next pre-calculated target position reducing conventional treatment time by 30% to 60%\(^1\).

**Customize treatment strategies**
The active control on the trigger button of the slit lamp allows the physician to maintain control over treatment progress at all times, with “fingertip precision”. A slight rotation or movement of the joystick is all that is needed to adjust the position of the aiming beam as treatment proceeds. Flexible and precise. A multi-spot cascade allows the treatment strategy to be customized to the irregular contours of the retina.

**Intelligently streamline treatment workflows**
The clear layout of the graphic elements on the control panel follows a logical sequence and efficiently supports clinical workflows. Multi-spot treatment parameters, such as spot spacing, number of laser spots per sequence, and angle of orientation of a sequence, are homogeneously embedded in the VISULAS 532s user interface and can be adjusted during treatment. The illuminated SPOTview display allows the physician to continuously monitor the laser spot diameter, even in darkened environments.

**Handle treatment interruptions with no stress**
The physician may interrupt treatment at any time in an instant: with spot precision within the current sequence and in a controlled manner. This ensures the physician maximum precision and the patient optimum protection.

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\(^1\) Roeckl A, Blum M: Multispot laser photocoagulation with the VISULAS 532s VITE: A comparative study of 101 patients, Publication no. 000000-1839-880, LAS.2979, 06/2010.

The VISULAS® 532s VITE offers a clinically effective and gentle retinal laser therapy for conventional treatment strategies, such as pan-retinal photocoagulation, central grid coagulation and central focal coagulation.

The must-have feature: conventional therapy with single pulses
The VISULAS 532s provides effective single-spot treatment using laser parameters that have established themselves as the evidence-based gold standard in accordance with the results of major clinical studies for the treatment of diabetic retinopathy and diabetic maculopathy (DRS, ETDRS, mETDRS, DRCR.net).

The exclusive add-on: conventional therapy with spot sequences
The particular advantage of the VISULAS 532s VITE: it is the only coagulation laser that conforms to study-recommended laser settings, not only in the single-spot mode but also in the multi-spot mode (e.g. 50 ms pulse duration or 50 μm laser beam diameter). Initial clinical results prove that a significant reduction in treatment time can be achieved – without compromising the gold standard.

The compelling highlight: gentle therapy with short pulses
With the VISULAS 532s, it is also possible in short-pulse mode to set laser lesions efficiently and in a controlled fashion, with typical laser pulse durations between 10 and 40 ms – thanks to guaranteed laser output of 1.5 watt. Although a higher laser output is necessary to compensate for the lower pulse duration, in order to achieve a lesion of the same intensity, short-pulse photocoagulation is a gentle alternative to conventional laser therapy. This is due to a significantly lower energy load per unit per area².

In addition, shorter laser pulses cause less damage to surrounding tissue, since thermal conduction is not able to progress as far during the shorter pulse durations, thus protecting the inner layers of the retina (see image). This significantly enhances patient comfort³. Short pulses create sharply outlined lesions with highly controlled heat propagation. Clinical research is currently underway on the potential positive effects of the combination of short pulse durations and small beam diameters.

OCT B scans (Cirrus™ HD-OCT by Carl Zeiss Meditec, Inc.) prove: A 20 ms laser pulse shows a less extensive lesion than a 200 ms pulse³ (the beam diameter was 100 μm in both cases).

³ Dr. Fang Lu, West China Hospital, Sichuan University, Chengdu, China
VISULAS 532s

The VISULAS® 532s is designed for universal use. Due to its adaptable concept, the VISULAS 532s is ready to use in a blink of an eye – for the outpatient retina clinic or operating room. A wide range of applicators and high-quality accessories complement the high-performance, multifaceted VISULAS 532s.

VISULINK 532/U – compatible with many diagnostic slit lamps
The VISULINK® 532/U – consisting of optical laser link and mechanical adapter – offers spot sizes of 50 μm to 1000 μm, and is equipped with a true-to-color physician safety filter. It converts diagnostic slit lamps made by Carl Zeiss, or e.g. Haag-Streit into fully-fledged laser workstations in an instant. The easy to use mechanism allows fast switching between different diagnostic slit lamps. To use the slit lamp diagnostically, the VISULINK 532/U can be swiveled out of the way.

LIO 532s/Trion – high contrast and reliable
The Heine indirect ophthalmoscope specifically is modified for the application requirements of Carl Zeiss: the LIO 532s/Trion is suitable for both the VISULAS 532s and the multi-wavelength laser VISULAS Trion. It is light and stable and stands out in particular due to its high aiming beam contrast compared to the retinal background.

VISULAS 532s – strong performance in the operating room
With the coagulation laser VISULAS 532s and the surgical microscope OPMI LUMERA® 700 Carl Zeiss provides surgeons with a perfect duo which interact in harmony, guaranteeing successful surgical interventions in the posterior eye segment. The variable view, font size and color contrast of VISULAS 532s display are predestined for application in the operating room: all parameters are always clear and distinctly legible – even from a distance and in a darkened environment.

The precise centration of the aiming and therapeutic beam, combined with the integrated slit illumination of the OPMI LUMERA 700, create an optimally illuminated treatment field and thus guarantees confident operation, whether in the periphery or in the vicinity of the macula. The fixed ClearView physician safety filter only minimally increases the height of the view for the operator. The active physician safety filter always provides effective protection when the laser is triggered. It gives the operator unfiltered vision when the laser is not in use.
VISULAS 532s
A credible team player in operative use.

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VISULAS 532s – compatible with many diagnostic slit lamps
The VISULAS® 532s – consisting of optical laser link and mechanical adapter – offers quick sets of 54 μm to 1080 μm, and is equipped with a true-to-color physician safety filter. It conforms diagnostic slit lamp made by Carl Zeiss, or e.g. Haag-Streit into fully-fl edged laser workstations in an instant. The easy to use mechanism allows fast switching between different diagnostic slit lamps. To use the slit lamp diagnostically, the VISULING 532s/U can be swiveled out of the way.

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LIS 532s/U – made by Carl Zeiss
Making the slit lamp the centerpiece of the diagnostic and therapeutic laser treatment.

Technical data VISULAS 532s

Table | Specification | Description |
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Laser type | Frequency doubled solid state laser | | |
Wavelength | 532 nm | | |
Aiming beam | Diode, 620 to 650 nm, adjustable brightness | max. 1 mW at the cornea |
Rated voltage and frequency | 100 V to 240 V, 50/60 Hz | | |
Pulse duration (single pulse) | 10 to 2500 ms, cw | | |
Pulse duration (VITE option) | 20 to 50 ms | | |
Pulse interval (single pulse) | 100 to 6000 ms | | |
Max. power | 1.5 watts at the cornea | | |
Cooling system | Thermoelectric | | |
Laser console dimensions | H 150 mm x W 300 mm x D 400 mm | (H 59 x W 118 x D 157) inches |
Weight | 14 kg (30.8 lbs) | | |
Accessories | LIO 532s/Trion indirect ophthalmoscope, Instrument table, laser safety goggles, contact lenses, laser warning light |

VISULINK 532/U – compatible with many diagnostic slit lamps
The VISULINK® 532/U – consisting of optical laser link and mechanical adapter – offers spot sizes of 50 μm to 1000 μm, and is equipped with a true-to-color physician safety filter. It conforms diagnostic slit lamp made by Carl Zeiss, or e.g. Haag-Streit into fully-fl edged laser workstations in an instant. The VISULINK 532/U can be swiveled out of the way.

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LIS 532s/U – made by Carl Zeiss
Making the slit lamp the centerpiece of the diagnostic and therapeutic laser treatment.

Table | Specification | Description |
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Laser beam delivery | VISULAS 532s, VISULAS 532s VITE, VISULAS Trion | for any slit lamp |
Laser treatment spot size | VISULAS 532s, VISULAS 532s VITE | VISULAS 532s, VISULAS 532s VITE |
Physician safety filter | True-to-color, ClearView | | |
Weight | 11 kg (24.2 lbs) | | |
Accessories | Tonometer, co-observation tube, video documentation equipment from the range of accessories for the slit lamps SL120 and SL130 |

VISULINK 532/U – compatible with many diagnostic slit lamps
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