Navigated Laser Therapy
A New Era in Retinal Disease Management
Bringing Navigation to Retina Treatment

Navilas® Laser System

To unleash the full potential of Retina Navigation, the Navilas® Laser System (Navilas®) contains three essential systems:

A powerful fundus camera –
including fluorescein angiography, infrared & true-color imaging in real-time for enhanced visibility, even during treatment.

The only navigated rapid PRP system –
fast yet evenly distributed panretinal photocoagulation with target assist.

The premier focal treatment solution –
with advanced planning, navigation, target assist and documentation features.
The Navilas® Laser System was designed to address the imprecision of existing technology and to optimize the stability of retinal disease treatment:

**Better technology**
making the leap from analog to digital to enter a new era in retinal disease management.

**Better accuracy supported**
based on navigation and target assist engineered to help physicians achieve their pre-defined treatment goals.

**Faster treatment phase**
through pre-planning and navigated, target-assisted single spots and patterns.

**Digital documentation**
of both threshold and subthreshold burns to direct the current treatment and provide transparent records for standardization of therapy.

“The Navilas® system allows highly accurate localization and treatment of the aneurysm, thus improving patient outcomes and safety.

Based on current data we collect from combining Anti-VEGF treatments with Navilas® in diabetic macular edema we see a reduced need for re-injections. This type of combination therapy may very well be the preferred solution for most DME patients in the future.”

William R. Freeman, M.D., Jacobs Retina Center, UCSD, La Jolla, CA, USA
Pioneering Retina Navigation, Navilas® integrates the steps: Image > Plan > Treat > Document and allows a pre-planned, target-assisted and digitally documented treatment to be performed by the retina specialist.

1. Real-time high definition imaging of posterior pole and periphery.

2. Digital planning with image integration and analysis.

3. Plan overlay and target assist for reproducible treatment accuracy.

To spare precious retinal tissue and provide the best-possible outcome, focal laser photoagulation requires experience, careful planning and accuracy. Retina Navigation revolutionizes this process by providing you with live fundus imaging, digital planning features, live overlay of the plan and target assist during treatment.

Find out more about Retina Navigation in the focal area and the workflow: Image > Plan > Treat > Document on the following pages.

In extensive panretinal laser photocoagulation (PRP), treatment speed becomes a key factor for physician and patient comfort. Navilas® revolutionizes PRP with unique Retina Navigation features: adjustable patterns placed at the touch of a finger on a high definition, wide-field image, target-assisted aiming beam, and patterns rapidly applied with pulses down to 10 ms.

Read about the benefits of Navilas® PRP on pages 10 and 11.
Focal Laser Treatment

Retina Navigation gives the retina specialist ultimate control. Transform retinal disease management by visualizing the treatment from beginning to end. Use the transparent workflow for discussion with colleagues and effective teaching.

1. Image

Real-time fundus imaging in four essential modes: (true-color mydriatic and non-mydriatic, fluorescein angiography, infrared, and red-free) provides a solid foundation for subsequent laser planning.

4. Document

All relevant steps, progress, parameters and locations are automatically recorded for reference during and after treatment. Customizable reports and analysis functions assist in follow-up, decision making, patient information, and teaching.
2. Plan

While the patient sits back, graphically define and mark areas for subsequent treatment. Use single spots for leaking microaneurisms, place customizable grids and highlight the optical disc and fovea as caution zones. For advanced planning options refer to the next page.

3. Treat

The pre-defined treatment plan is automatically overlaid onto the real-time infrared or color image. Navilas® places the aiming beam sequentially at treatment locations while compensating for inadvertent eye movements with target assist. When using the patient-friendly infrared illumination, color snap images for effect evaluation and live color imaging are just a button click away.
Perfectly pinpoint microaneurysms on Navilas® fluorescein angiography (FA). Alternatively, use Navilas® color fundus as a base image. Overlay external OCT and target areas of high retinal thickness.

Plan the treatment directly on Navilas® color fundus and fluorescein angiography (FA) images or use Navilas® unique digital planning options to integrate external images, such as FA, ICG angiography and OCT thickness maps.

Example OCT on FA

Perfectly pinpoint microaneurysms on Navilas® fluorescein angiography (FA). Alternatively, use Navilas® color fundus as a base image. Overlay external OCT and target areas of high retinal thickness.

Example FA on color

Overlay external FA on Navilas® color fundus image and plan on both images simultaneously.

Example ICGA on color

Use external ICG angiography to target feeder vessels of subfoveal CNV secondary to AMD.

Plan directly from your office

Navilas® software can be run on a separate PC enabling you to plan from your office or any location within your network. Navilas® plan and image files can easily be shared with colleagues or a reading center.
Assisted Treatment

The Navilas® Laser System offers unique integrated functions developed to promote rapid yet complete execution of the pre-planned, target-assisted treatment. The retinal surgeon may now fully visualize and design the optimal treatment, and then execute to precision the first time.

**Full field-of-view**

Unlike the slit lamp based photocoagulator, Navilas® focal optics give you a 50° view of the retina at all times.

**Live infrared imaging**

Treat with no glare from bright light and evaluate burn intensity with color snapshots. Toggle to live color imaging at your convenience.

**Plan overlay**

Throughout the treatment session the plan spots are visualized on top of the live image, with the option to overlay the original plan image at any time.

**Navigation & target assist**

Navigation helps you accelerate the aiming beam movement between your pre-defined spots. Navilas® target assist has been designed to detect inadvertent eye movements to adjust image overlay, plan spots and aiming beam.
Navilas® brings Retina Navigation to panretinal laser photocoagulation. Benefit from unprecedented wide-field visualization, target assist and spot-by-spot documentation for a fast and comfortable PRP session.

Fast, reproducible and uniform laser delivery

Navilas® PRP optics were specifically designed for delivering uniform circular spots to all quadrants including the far periphery with no need to constantly re-adjust laser energy. Customizable, precisely spaced patterns reduce a complete PRP session to a few minutes. Digital spot documentation alleviates the need for visible burn markers altogether.
Getting started with navigated PRP

Begin your navigated PRP treatment session immediately after patient and device positioning. Dedicated navigated PRP software functions assist you in delivering a rapid and effective panretinal treatment.

Navigated patterns for speed and accuracy

Place patterns on the live retina using the touchscreen, trackball or mouse. Navilas® target assist, designed to detect inadvertent eye movements prior to laser application, allows you to apply evenly-spaced patterns with pulse durations exceeding 100 ms. Alternatively, for the fastest possible treatment, apply patterns with pulses down to 10 ms.

Improved comfort and confidence

Navilas® is the only PRP laser which provides infrared illumination for improved patient comfort and compliance. Navilas® documents spots and patterns to ensure a complete treatment without overtreating. Pattern placement assists in skipping previously treated areas.

“Using Navilas® we are able to deliver a much faster PRP treatment and our patients report a considerable reduction in overall treatment pain. It clearly helps patients lose their fear of laser treatment.”

PD Dr. Marcus Kernt, LMU Munich, Germany
Navilas® Laser System

- Height-adjustable table
- Foot switch for treatment and power adjustment
Flexible adjustment of touchscreen and device head for patient alignment, comfort and maximum field-of-view (110° dynamic).

Innovative design with patient and doctor in mind

The ergonomics of the Navilas® Laser System greatly contribute to the comfort of Navigated Laser Therapy – for the benefit of doctors and patients alike. The entire therapy session can be planned, viewed and administered on the touch-sensitive screen with the help of the multi-functional joystick and dedicated control elements.

Touchscreen for device operation, placement of plan spots and direction of aiming beam.

Fundus camera control elements and multi-functional joystick.

Full transparency for effective doctor-patient communication.
Revolutionize Retinal Disease Management

The Navilas® treatment spectrum covers the entire range from rapid pattern application in the periphery to multimodal planning and navigated focal laser treatment. Retina Navigation therefore provides a revolutionary platform that can readily be adapted to the physician’s needs.

Navilas® conventional-mode laser

Applications:
- Panretinal laser
- Grid laser
- Adding spots to planned focal laser.

Navilas® target-assisted laser

Applications:
- Focal laser
- Grid laser
The most accurate option for focal treatments.

Navilas® planned navigated laser

Digital planning
Plan overlay
Spot-by-spot navigation
Navilas® Laser System – Technical Specifications

Intended use
- The Navilas® Laser System is a retinal photocoagulator integrated with a digital camera. The Navilas® Laser System is indicated for use in retinal photocoagulation, as well as for capturing, displaying, storing and manipulating images of the retina created using color, fluorescein angiography and infrared imaging.

Controls
- Touchscreen interface 15", wireless mouse and keyboard
- Multi-functional joystick, with top and front buttons, focus wheel and trackball
- PC-based digital processing unit and software for imaging, planning and image-guided treatments including specialized image-overlay algorithms

Imaging technology
- Custom-designed camera for real-time digital fundus imaging
- Multi-color high-power LED illumination
- Scanning technology with patented reflex-suppression method

Imaging modes
- True-color (including non-myd snap)
- Infrared (treatment default)
- Fluorescein angiography (focal imaging)
- Red-free (processed true-color)

Focal optics
- Field-of-view: 50°/30°/10° static, 110° dynamic
- Focal adjustment: +/- 15 Dpt

Panretinal optics
- Proprietary optical design including custom no-tilt contact lens
- Field-of-view: TE-lens equivalent

Laser type
- Photocoagulation laser: 532 nm diode pumped, solid state frequency-doubled Nd:YVO (Class IV, max. 2000 mW), air-cooled
- Aiming beam: 635 nm diode laser (Class II, <1 mW adjustable)

Laser integration
- Computer-guided XY scanning system for automatic pre-positioning
- Coupling via fiber-optic cable and dichroic mirror

Laser parameter range
- 50-500 μm focal spot size / 75-750 μm peripheral spot size
- 50-2000 mW intensity
- 10-5000 ms pulse duration

Navigated treatments
- Pre-planned, individually navigated laser spots and grid patterns

Pattern generation
- Fully navigated patterns with individual spot positioning (adjustable 160-400 ms)
- Navigated fast patterns
- Conventional mode fast patterns

Network access
- RJ45 ethernet connector, sharing of images/data/treatment plans, network printing, remote service

Footprint (LxDxH)
- 1260 mm x 830 mm x 1270-2300 mm (floor to headrest) / 50" x 33" x 50-91"

Electrical requirements
- 100–120 VAC, 50/60 Hz, single-phase, max. 20 A
- 220–240 VAC, 50/60 Hz, single-phase, max. 10 A

Conformity
- CE conformity in accordance with the Medical Device Directive 93/42/EEC and US FDA 510(k)

Manufacturer
- OD-OS GmbH, Teltow, Germany

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Discover Navilas®

The platform of the future for managing retinal disease today.

Join us for a hands-on demonstration of the Navilas® Laser System:
www.od-os.com/events

Visit our website for further information:
www.od-os.com

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