

NAVILAS®

Navilas® Laser System 577s: The navigated retina laser

Non-contact lasering beyond conventional limits



Navilas® 577s: All-digital laser therapy

A new era in retinal disease management

The proprietary retina navigation technology by OD-OS is a game-changer for retinal laser care. By introducing our image guided treatment technology using eye tracking we advance a manual approach into a modern digital therapy.



Treatment modalities

Clinical Applications with Navilas®

Navilas® treatment functions are optimized for efficiency and effectiveness, providing lasting benefits for physician and patient alike.



Diabetic Macular Edema

Studies on Navilas® treatment of clinically significant macular edema demonstrate a significant increase in accuracy and an overall reduction in re-treatment burden, e.g. reducing the required number of injections while maintaining visual acuity gains achieved by the anti-VEGF treatments.

Kernt et al., 2012-02 & Kozak et al., 2011-06



Proliferative Diabetic Retinopathy

Navilas® delivers an advanced peripheral treatment by optimizing speed and comfort while maintaining medical efficacy. Navilas® offers selective, personalized therapy and rapid pattern delivery with flexible configuration of pulse durations (e.g. 20ms or 100ms).

Chhablani et al., 2014-05

Image courtesy of: Dr. Emad Abu Ishkeidem, Sahlgrenska University Hospital, Sweden



Central Serous Chorioretinopathy

Due to its ability to overlay ICG angiographies and FA images for precise planning in conjunction with the ability to perform subthreshold treatments, Navilas® provides an advanced treatment paradigm for central serous chorioretinopathy.

Amoroso et al., 2021-11



Retinal Tears and Retinal Detachments

Navilas® 577s supports fast and complete treatment of retinal tears, retinal detachments and lattice degeneration in the far periphery through dedicated widefield objectives. For enhanced patient comfort navigated laser can also be used for contact-free treatment in infrared mode.

Somoskeoy & Shah, 2020-06

Navilas® 577s grows flexibly with your application needs.

A modular platform built to evolve

Our system is made to redefine precision and speed. And it is growing with your needs. Navilas® 577s allows you to begin with essential navigated treatments and expand to advanced features – all within a unified hardware platform. This ensures long-term value and clinical versatility. We make sure you have a smooth start into navigated lasering with Navilas®. Every purchase includes extensive onboarding support with onsite training, e-learning to support theoretical training and remote clinical support.

Core Features

High precision and reliability

Greater speed and comfort

Reproducible subthreshold treatments

Enhanced efficiency

Anterior mode



Flexible upgrade packages

- + Non-contact treatment
- + Digital workflow integration
- + Multimodal reporting and database
- + Easy onsite training
- + Teleguidance by experts

Core features of the system

The following core features are available with any Navilas® 577s Pro configuration to benefit your clinical practice. The same hardware can be upgraded with advanced software features to the full capabilities of the Navilas® 577s Prime configuration.



High precision and reliability

Accurate laser delivery with widefield fundus overview, eye tracking and exclusion zones for better protection¹.

Related study: Microaneurysm hit rate of a navigated laser is **28% more precise** than the hit rate of a conventional laser. (Kozak et al., 2011-06)



Greater speed and comfort

Treating patients faster with less pain and interruptions thanks to computer assisted lasering.²

Related studies: Navilas® 577s places **25% more spots in 30% less time** compared to a conventional laser. (Chhablani et al., 2014-05)

The pain score for a treatment with a conventional laser is reported to be a 7, with Navilas® **the pain score is only 2** (scale: 1-10). (Amoroso et al., 2020-05)



Reproducible subthreshold treatments

Reproducible application of subthreshold treatments as invisible effects are tracked and digitally visualized.³



Enhanced efficiency

Treating more patients in less time through rapid laser delivery, enhanced patient collaboration, and efficient utilization of team resources throughout the clinic visit.⁴



Anterior mode

Managing open angle glaucoma patients with non-invasive Microsecond Laser Trabeculoplasty (MLT).

System components

- ✓ Touchscreen for pre-planning and live view of laser treatments
- ✓ Optical head with camera for integrated fundus imaging
- ✓ Base with joystick and adjustable controls
- ✓ Table with adjustable height
- ✓ Head and chin rest
- ✓ Electronic housing with laser module
- ✓ Foot switch

Basic specifications

- ✓ **Wavelength:** 577nm (yellow)
- ✓ **Treatment modes:** Continuous wave, Microsecond, Anterior mode
- ✓ **Footprint:** 110 cm x 70 cm x 127-160 cm / 44" x 28" x 50"-63" adjustable height

"With the pre-planning feature of Navilas® we experienced a reduced time of the treatment and also a significantly reduced pain experience as compared to a conventional laser."

Dr. F. Amoroso, CHI de Créteil, France

¹ Kernt et al., 2012-02 & Kozak et al., 2011-06

² Amoroso et al., 2020-05 & Chhablani et al., 2014-05

³ Amoroso et al., 2021-11 & Chhablani et al., 2021-10

⁴ Video Interview Dr. Lars Freisberg: https://www.youtube.com/watch?v=tfhTv_2Oink

Navigated microsecond pulsing therapy

Transparent tissue-friendly treatment

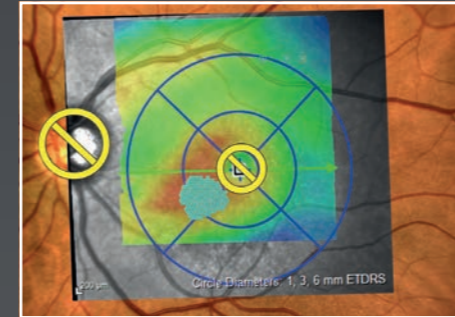
Navigated microsecond pulsing treatment allows photothermal stimulation of diseased retinal areas, while preserving function and avoiding scarring.

How it works

Laser energy is applied in a series of brief pulses generally in the range of 100–300 μ s. In contrast to conventional laser coagulation, retinal tissue is repeatedly heated and stimulated without reaching the coagulation threshold.

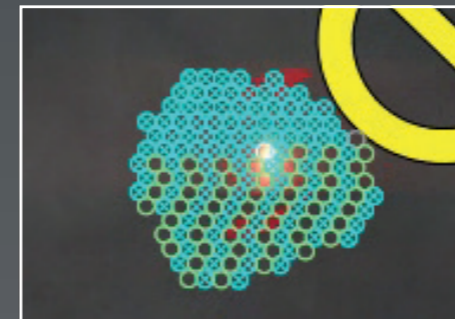


The unique, all-digital approach enables reproducible subthreshold treatment.



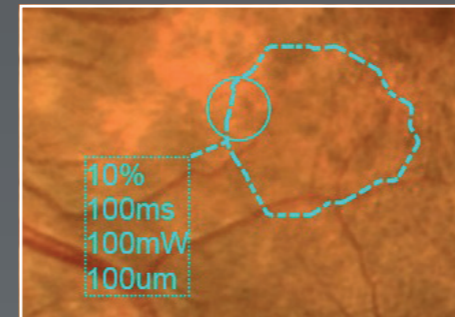
Exact planning on Navilas® fundus image – optionally on external image overlay

Standardizable treatment planning using (confluent) free-form grids – optionally on overlaid diagnostic images



Reproducible application with target-assisted laser

Laser spots can be applied quickly and precisely in an alternating pattern.



Digital tracking in real-time

For the first time, invisible effects are digitally visualized and treatment progress becomes transparent.

"We have been using the Navilas for treatment of a broad range of indications. The accuracy, planning and documentation provides unique tools to research the effectivity of laser treatment - especially in subthreshold modes. The safety of the navigation makes it a great device to establish new treatment paradigms."

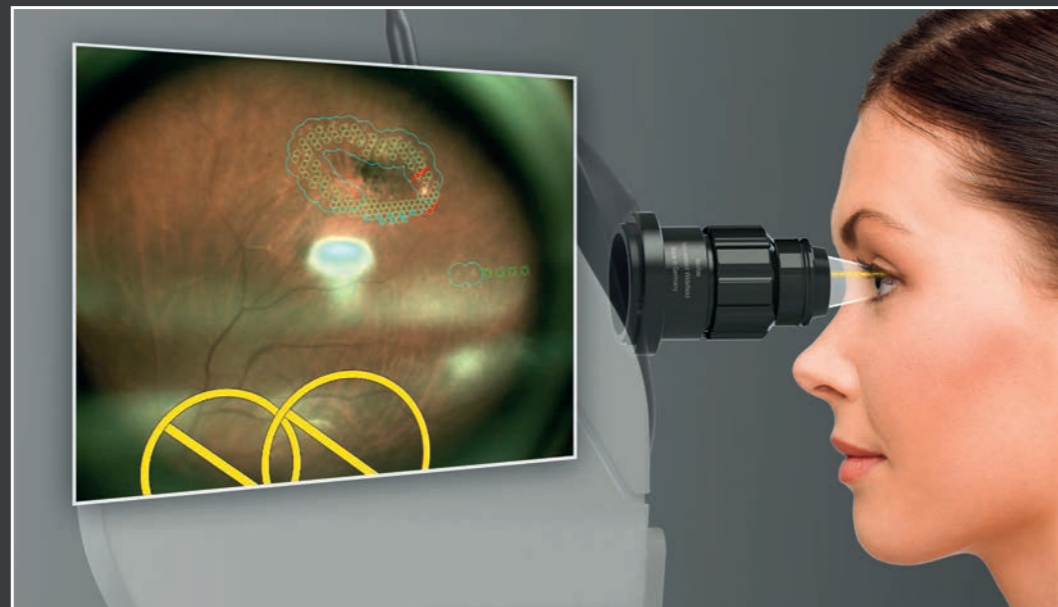
Dr. Jay Chhablani, University of Pittsburg Medical Center, USA



Non-contact treatment

Comfortable treatments up to the ora serrata - with no lens on the eye

With special objectives treat from the macula region up to the ora serrata without a contact lens on the eye and optionally under infrared light which is less bright and painful for patients. This supports treatment of sensitive patients and is perceived as premium care. It also allows for an enhanced working distance between patient and doctor.



Contact-free peripheral treatments

"I really believe that the non-contact widefield objective is an important step towards the future of PRP as an almost completely harmless procedure for the patient."

Dr. Francesca Amoroso, CHI de Créteil, France



Digital workflow integration

Planning of treatments on imported diagnostic images and secure storage through DICOM/PACS connectivity

External images like OCT thickness maps or angiographies can be imported and treatments can be planned on these external images overlaid on the Navilas® fundus image. This facilitates higher accuracy and precision, e.g. by precisely targeting edema areas or leakages. To further streamline workflows and save administrative time Navilas® offers a DICOM interface to easily transfer patient data and diagnostic images from your PACS system.



OCT thickness map overlay

"By overlaying ICGA and other external images I can precisely target the leakage point, while caution zone ensure safe treatment close to the fovea."

Dr. Miho Nozaki, Nagoya City University, Japan

"The DICOM integration for Navilas is intuitive to use and speeds up our laser consultations enormously, e.g. by importing work lists with patient data and diagnostic images."

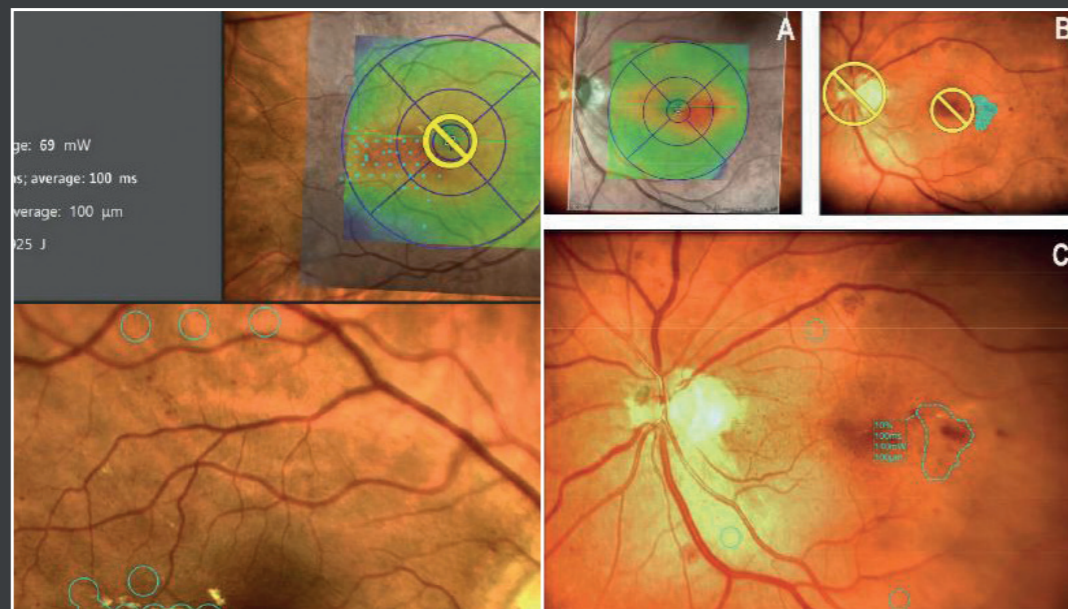
Dr. Simo Murovski, Augenzentrum Erzgebirge, Germany



Multimodal reporting and database

Transparent visual reports for internal documentation, patients, and referrers

Navilas® 577s generates multimodal digital treatment reports for quality control. Pictures and plans are permanently stored in the database and can be used for re-treatments. Reports document treatments for referring doctors, patients and billing departments.



CW treatment report

Subthreshold laser report

"A challenge when using subthreshold laser is that you don't have visual feedback. With Navilas® documentation it's really transparent where you applied the laser."

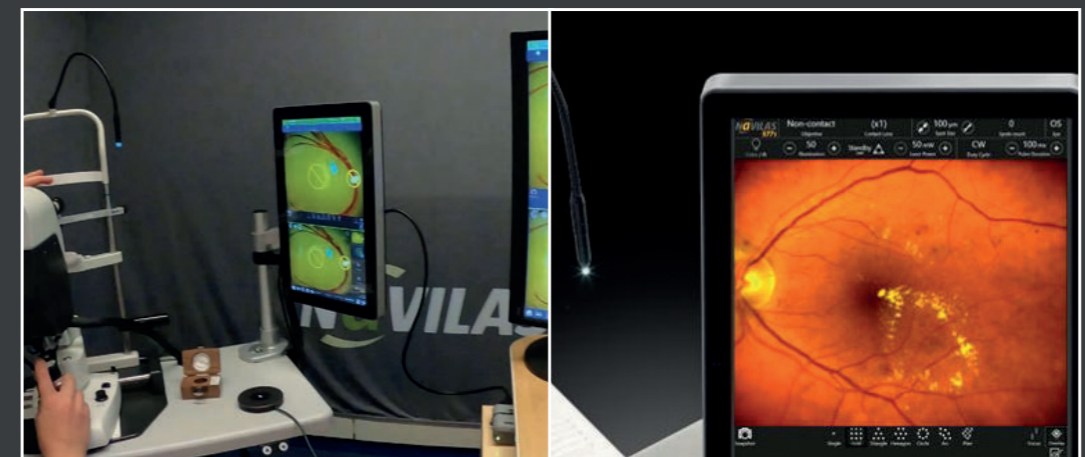
Dr. Pradeep Prasad, Retina Vision Consultants, USA



Easy onsite training

Sharing of expertise through simulation mode and live observation on the large treatment screen

Navilas® has an integrated treatment simulation mode (deactivation of laser beam), which allows for safe training of less experienced users. Treatment plans can be reviewed before execution and live treatment can be observed on a big screen. For educational purposes, users can actively practice the best treatment approach in a simulated environment using Navigate App.



Training mode (laser off)

Live observation

"Doctors from all over Ukraine passed our courses with usage of simulation mode of Navilas® and Navigate App and now perform laser on conventional laser machines in other clinics."

Oleg Parkhomenko MD, PhD, Ophthalmological clinic, "New Vision", Kyiv, Ukraine

Navigate App



It is easy to teach the best approach to retinal laser treatments in perfect synergy with Navigate App - a free, interactive tool for residents' and team education - on-site and online. Navigate App is not a cleared medical device and is not part of the Navilas® Laser System 577s



Access to
Navigate App
www.od-os.com/navigate



Teleguidance

Remote access to treatment screen for live guidance and distant learning

Navilas® makes expert knowledge available through remote access to the treatment screen ("Teleguidance").

This supports distant learning from live treatments and expert guidance through remote access.



"Navigation continues to transform surgical interventions into safer, more standardized and more predictable procedures with finally better outcomes for patients. Adding teleguidance to navigated laser broadens the possibilities for teaching and remote expert collaboration and this way addresses common challenges in retinal laser care."

Dr. Igor Kozak, University of Arizona – Tucson, USA

Unique functionalities

Unmatched in the market

Features	Navilas® 577s	Slit lamp pattern laser
Basic treatment		
Yellow laser source 577nm	√	√
Retina (focal and peripheral) + anterior treatment mode (e.g. for MLT)	√	√
Contact lens treatment for PRP/Anterior/Focal	√	√
Single spot application + high speed ad-hoc pattern application without planning	√	√
Advanced treatment		
Pattern PRP with equidistant spots + flexible configuration of pulse duration (e.g. to 100ms)	√	-
Microsecond pulse laser mode	√	**
Every second spot, confluent delivery for subthreshold treatments	√	-
Confocal fundus imaging included in laser system	√	-
Digital treatment planning based on fundus image incl. exclusion zones, e.g. for optical nerve head	√	-
Tracking and mapping of retina on live image for navigated treatment with plan overlay and target assistance	√	-
Advanced patient comfort		
IR illumination mode	optional	-
Non-contact focal and widefield objectives for navigated contact-free treatments	optional	-
Advanced connectivity		
Import of external diagnostic images (OCT, OCT-A, FA, ICGA etc.) and registration to Navilas® fundus image	optional	-
Extended treatment planning on mapped external images	optional	-
Navigated execution of extended treatment plan (incl. tracking and mapping on live retina image)	optional	-
DICOM interface for transfer of patient data and PACS integration (incl. advanced network security)	optional	**
Advanced reporting and database		
Detailed report with treatment parameters	√	**
Advanced multimodal report: planned/performed laser spot locations marked on fundus images	optional	-
Extended patient database (saves treatment plans/reports with recall of plans for follow-up treatments)	optional	**
Export of images, treatment plans and extended treatment reports via shared network folder and USB	optional	-
Advanced teaching		
Teaching mode to simulate treatments on artificial eye or test person's eye	optional	-
Remote access ("Teleguidance")		
Distant learning and guidance by remote view of the Navilas® software interface	optional	-

** Available on some competitor systems

NAVILAS® 577s

Make every spot count

Navilas® Laser System 577s

Technical Specifications

Laser wavelength	577 nm (yellow) wavelength
Laser type	Optically Pumped Semiconductor Laser (OPSL), Class IV
	Aiming beam: diode laser, 635 nm (red), < 1 mW, Class II
Laser power	50-2000 mW (depending on spot size)
Pulse duration	10–4000 ms
Treatment modes	Continuous Wave Microsecond Pulsing: 50-500 µs; 5, 10, 15 %, variable duty cycle Anterior applications: Iridotomy, MLT/PLT
Digital fundus imaging	True-color and infrared
Optics and field of view	Non-contact objective (focal/peripheral): app. 50°/120° diagonal static (+ dynamic extension)
	Contact objective (focal/peripheral): up to 165°/180° dynamic, analogous to contact lens used
Spot size on retina	Non-contact objective (focal): 50-500 µm, Non-contact objective (peripheral): 110-1100 µm
	Contact objective (focal/peripheral): 50-1000 µm (w/magnification)
Network access	RJ45 ethernet connector, sharing of images/data/treatment plans, network printing, remote service, DICOM interface
Footprint (LxDxH)	110 cm x 70 cm x 127-160 cm / 44" x 28" x 50"-63"
Power supply	115-230 VAC, 50-60 Hz
Conformity	USA FDA 510(k) clearance and CE conformity in accordance with Medical Devices Regulation (EU) 2017/745 (EU MDR)

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