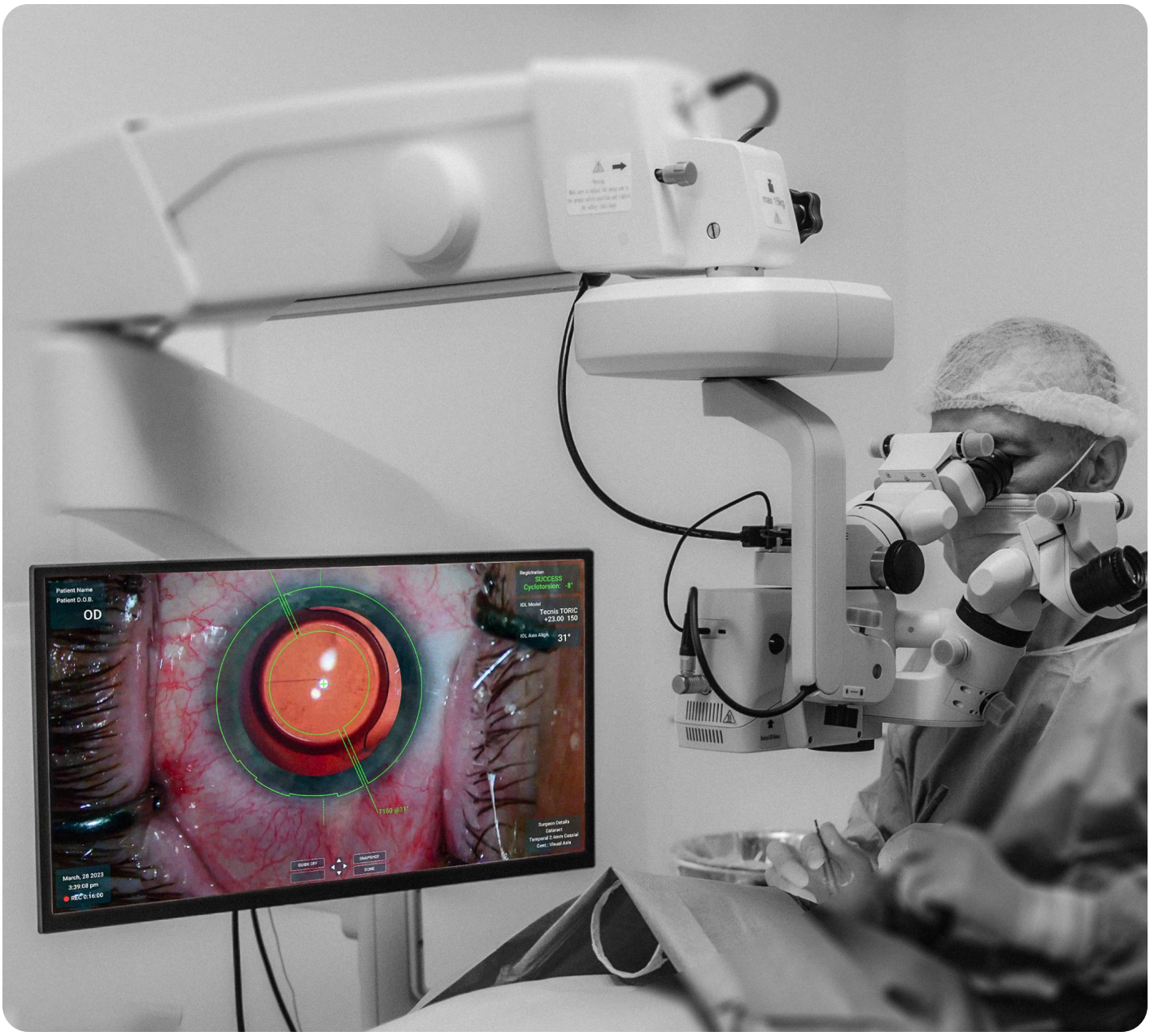
cassini
The world in vision



Cassini Guidance System

Intraoperative Surgical Guidance with Live Digital Tracking

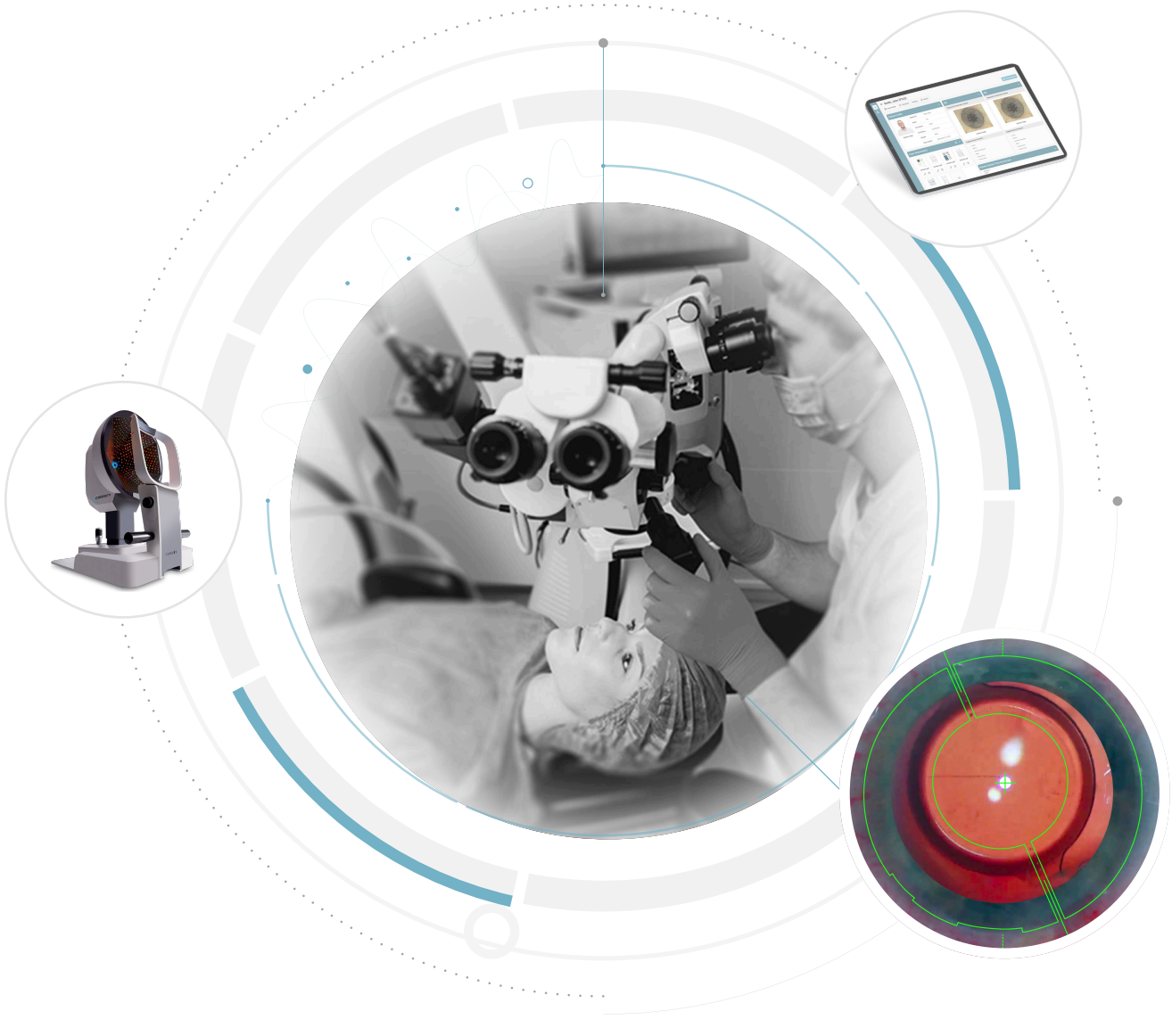
Streamlined Guided Visualization

Microscope-Agnostic Design

Designed to integrate with existing surgical environments, the Cassini Guidance System allows surgeons to incorporate digital guidance across a range of equipment without changing established workflows.

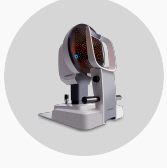
Direct Data Transfer

Direct transfer of reference data to the operating room reduces the need for manual transcription.



Continuity from Diagnostics through Surgery

As the intraoperative output of the Cassini Connect OR platform, the Cassini Guidance System presents diagnostic reference information in the operating room, supporting continuity from diagnostics through surgery within an open, connected workflow.



Diagnostic Foundation

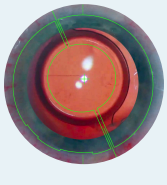
Cassini Ambient

Instantaneous anterior and posterior corneal capture, combined with high resolution iris imaging, provides a continuous diagnostic reference used through planning and intraoperative visualization.

Connected Planning

Surgical Planner (Ambient Module)

Diagnostic reference data is then shared across connected components, preserving continuity throughout the patient journey.



Intraoperative Visualization

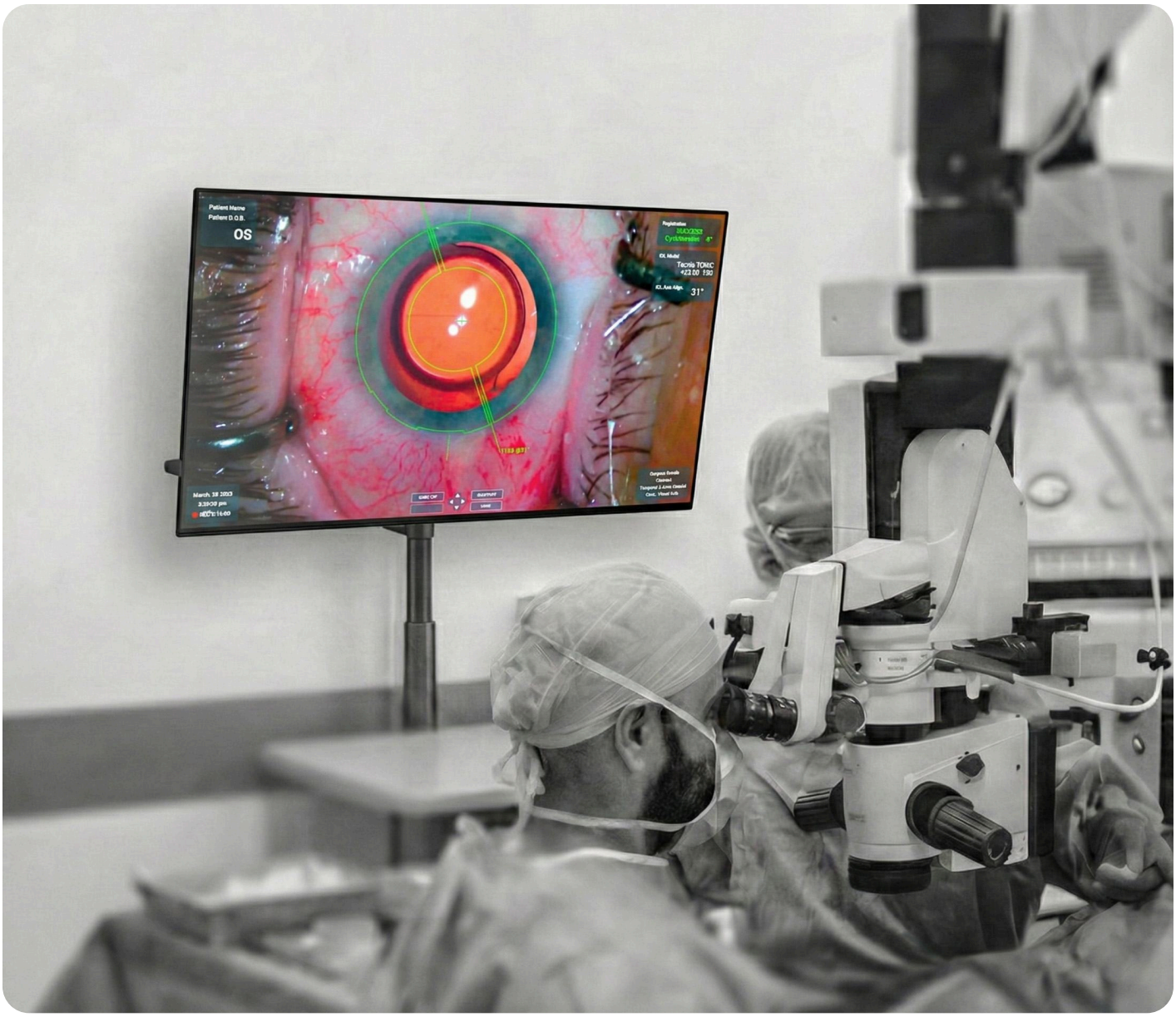
Cassini Guidance System

Once shared, data is then displayed intraoperatively as digital alignment, aligned by live pattern tracking.

Intraoperative Visualization Software

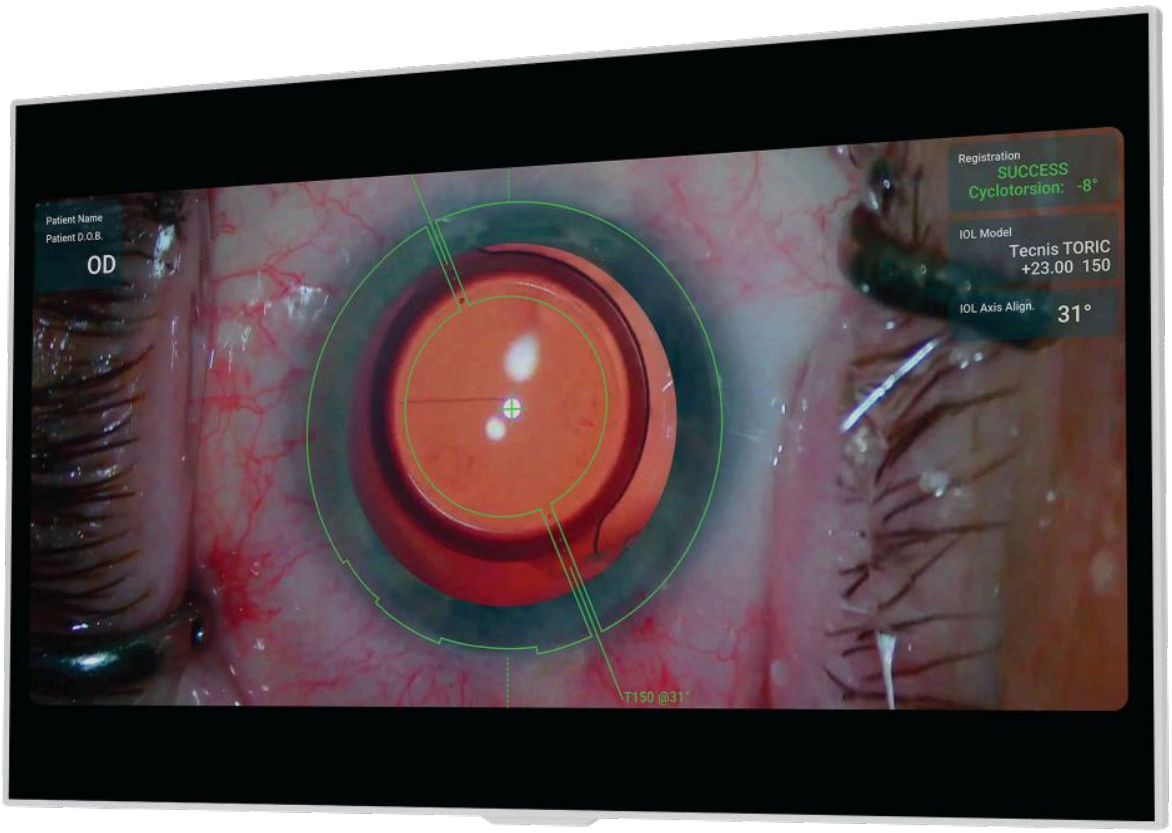
Cassini Guidance System is a Software as a Medical Device (SaMD) designed to display diagnostic reference information intraoperatively.

Preoperative diagnostic data is presented as visual overlays within a surgeon-controlled workflow, supporting orientation during surgery without altering established operative technique.



Live Intraoperative Alignment and Tracking

Maintains diagnostic orientation throughout surgery.



Iris Pattern Recognition

Preoperatively acquired diagnostic reference data is displayed intraoperatively as digital guidance, aligned via iris pattern recognition and live tracking. As eye position changes during surgery, the reference remains oriented within the surgical view, preserving continuity from preoperative assessment through intraoperative execution.

> "Registration is super-fast which ensures seamless workflow with no disruptions. The transition from planner to the operating room is unbelievably simple and time-saving!"
>
> **Dee Stephenson, MD**
>
> Stephenson Eye Associates, FL, USA

Designed for the Way You Operate

Cassini Guidance System integrates directly into the operating room by connecting with existing camera and display infrastructure.

Visualization is delivered on a dedicated surgical monitor or compatible existing displays, allowing surgeons to access digital guidance without changing microscope setup, room layout, or established surgical routines.

Guidance is available when and where it is needed, remaining present without being prescriptive. Designed to complement the surgical environment rather than redefine it, Cassini Guidance System fits naturally into daily practice.

Technical Specifications

Product and Device Setup

Category	Specification
Product Type	Software as a Medical Device (SaMD)
Intended Purpose Summary	The Cassini Guidance System assists surgeons by providing visual guides for incisions and lens placement during ophthalmic procedures using pre-operative data.
Device Setup / Configuration	OR workstation connected to microscope video and surgical display(s)

Validated Reference Configuration

Category	Specification
Reference Platform	OnLogic Helix 524, with PCIe expansion support
Reference Capture Card	DeckLink 8K Pro G2 (DeckLink-compatible)
Operating System (Validated)	Windows 11 IoT Enterprise 2024 LTSC

Minimum Workstation Requirements

Category	Requirement
CPU	Modern 64-bit CPU, performance equivalent to Intel Core 5 (Meteor Lake) class or better
Memory	16 GB RAM dual-channel (2× modules; e.g., 2×8 GB)
Storage	≥ 250 GB free disk (app, logs, case data; more if future video recording enabled)
Graphics / Display	Integrated GPU acceptable; must drive intended display
Control UI	Touch input strongly recommended; mouse/keyboard supported
USB	≥ 2× USB 2.0 and ≥ 2× USB 3.0 (or better) for peripherals and data transfer
Operating System (Supported)	Windows 11 Pro / Enterprise 64-bit (latest)

Video Input and Output

Category	Specification
Video Input	SDI (validated) / HDMI (supported; capture-hardware dependent)
Supported Formats	1080i59.94/60; 1080p59.94/60; 2160p29.97/30; 2160p59.94/60 (subject to capture-card format support)
Video Output	Workstation display output to control monitor or surgical output display
DeckLink I/O Behavior	Single active input (SDI or HDMI); SDI+HDMI output mirrors active input (card-dependent)
Overlay Mode (Validated)	Live video passthrough with computed overlay; overlay is applied in near real time (target <100 ms)

Interfaces, Data, and Deployment

Category	Specification
Capture / I/O Requirement	DeckLink-compatible capture I/O with real-time playback; internal keying required for passthrough overlay mode
Data Interface	DICOM-based import (see DICOM Conformance Statement on website)
Installation	Installed on a workstation used in the operating room (fixed installation or mobile cart-based system)

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