

Cassini Guidance System

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)