

# Cassini Ambient

## Technical Specifications

### Measurement Technology

Category	Specification
Measurement Method	Reflection-based LED topography using multi-color visible LEDs and infrared illumination
Anterior Surface	679 LEDs (7 blue, 224 red, 224 yellow, 224 green)
Posterior Surface	Infrared LED-based posterior corneal assessment (model-dependent)
Points Measured	>700 reflection points analyzed per scan
Corneal Coverage	10.0 mm diameter measurable zone
Acquisition	Instantaneous capture designed to minimize motion artifacts
Performance (per IFU)	Anterior power and astigmatism <0.10 D; TCA <0.15 D; TCA axis <6°; Anterior axis <3°
Higher-Order Aberrations	Zernike polynomials up to 8th order, Adjustable preferred zone (1-10mm)
TCA Calculation	Ray-tracing combination of anterior and posterior surfaces

### Diagnostic Outputs Overview

Category	Outputs
Curvature Maps	Axial curvature, Tangential curvature, Elevation, Refractive power
Curvature Astigmatism and Refractive Parameter	Anterior K, Posterior K, Total Corneal Astigmatism (TCA), Steep/flat axis orientation, SimK (anterior, posterior, total)
Aberrations	Zernike HOA coefficients
Ocular Surface	Ocular surface dynamics, Ocular surface visualization
Imaging	External ocular photography (EOP), Color image registration
Quality Factors	Focus, Centration, Corneal coverage, Stability

### Software and Connectivity

Category	Specification
Planner Integration	Surgical Planner (Ambient Module)
OR Integration	Cassini Guidance System, FLACS Connectivity (select systems)
Iris Registration	EOP or IR imaging (connection dependent)
Data Export	DICOM, CSV, PDF
Standard Reports	Diagnostic, Cataract, SMART (Mesopic/Photopic, Aberrations, K-readings, indices), Combined (OU)
Optional Reports	FLACS alignment, EOP, Astigmatism planning

### Instrument Specifications

Category	Specification
Dimensions	44 × 32 × 55 cm
Weight	15 kg
Chinrest	55 mm travel
Power	100–240 VAC, 50/60 Hz, 60 W
Cameras	Color (visible); monochrome (IR)
Operating Conditions	10–35°C; 30–90% RH
Computer Requirements	Windows 11 Pro; 16 GB RAM; 512 GB SSD; ≥2 USB 3.0 ports