

Optimizing Customized Ablation

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Purpose: To describe the factors necessary to optimize customized ablation.

Methods: The factors required both diagnostically and therapeutically to optimized ablation are elucidated and the methods to implement and/or correct for these factors with the CustomVis solid-state ablative laser are described.

Results: Factors required for optimal customized ablation include fast eye tracking, scanning and laser pulse rate as well as small spot, proper registration of wavefront, topography and laser beam. Gaze tracking and correction for cyclorotation or cyclotorsion is also important. Minimizing laser heat generation and hydration dependence will also help. These issues are addressed with a 0.6mm spot, 300+Hz, 213nm wavelength solid state diode-pumped quintupled neodymium laser coupled to an ultra-fast eye tracker/scanning system with > 1000Hz closed loop response. Three separate limbal tracking systems handle registration, cyclorotation and gaze tracking.

Conclusion: A possible solution for optimizing customized ablation as presented.