

The American Society of Cataract and
Refractive Surgery Symposium, 2004
May 1-5, San Diego, CA

Early Clinical Trials with the Solid State 213 nm Laser on Standard and Non-Standard Cases

Peter Stewart, MD.

Ian Anderson M.D.

Donald Sanders, MD, PhD.

Paul van Saarloos, PhD.

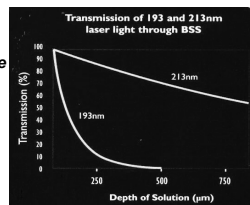
Mukesh Jain, PhD.

William J. Ardrey, PhD.

Solid State 213 nm Laser System for Customized Refractive Surgery

Solid State (213nm) Characteristics

*213nm is much less sensitive
to corneal hydration than
193nm. This should lead to
greater predictability.*

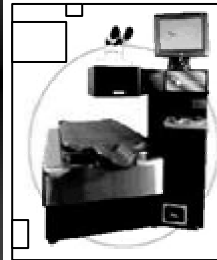


For further information on 213nm Characteristics, see poster: "Laser Wavelengths in Ophthalmology: Critical Review"; Ian Anderson, MD

Ben, Q., G. Simon, et al. (1993). "Ultraviolet Solid state Laser (213nm) Photorefractive Keratectomy In Vivo Study." *Ophthalmology* 101: 883-889.
Gair, G.T., Ashman, R.A., Eikelboom, R.H., Reinholz, F., van Saarloos, P.P. (2001) Absorption of 193 and 213 nm laser wavelengths in sodium chloride solutions and balanced salt solution. *Archives of Ophthalmology*, 119; 532-537.

CustomVis™ Solid State (213nm) Laser

- Pre-op Registration of Eye Tracker, Wavefront and Topography



- Cyclotorsion/Rotation Compensation
- Third Tracker: Gaze Direction
- Limbal Tracking
 - No Dilation Required
- Active Tracker is 10X faster than other commercially available unit

CustomVis Laser

**First complex patients treated with
the CustomVis solid state laser
reveal very exciting and promising
results**

Anderson, I., Sanders, D. R., van Saarloos, P.P., & Ardrey, W. J.
Treatment of Irregular Astigmatism with a 213nm Solid State Diode
Pumped Nd:YAG Ablative Laser. *Journal of Cataract and Refractive
Surgery*. (In press)

CustomVis™ Solid State Laser System

**Irregular Astigmatism Case
Treated 15th September, 2002**

PATIENT SK HISTORY: PRK, LRIs

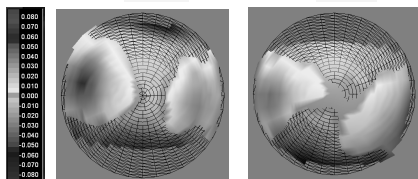
PRE-OP 12 MO. POST-OP

BSCVA 20/30 20/20 +

UCVA 20/80 20/20

REFRACTION -0.5 +3.25 X 90 -0.25 + 1.0 X 85

K CYL 6.7D 3.2D



CustomVis™ Solid State Laser System

First Normal Myopia Case

Treated 8th March, 2003

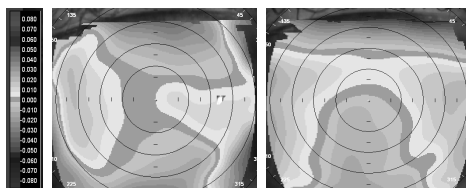
PATIENT LH

PRE-OP 12 MO. POST-OP

BSCVA 20/12.5 20/12.5

UCVA 20/200 20/12.5

REF -3.75 +0.25 X 100 -0.25 + 0.25 X 90



Irregular Cases for Custom Treatment

Histories, Pre-Op and 1 week postop data of complex refractive cases (LASEK).

Recently treated (04/17/04) with the CustomVis™ Solid State Laser System.

Investigator: Dr Ian Anderson, MD

Western Australia

Patient A

HISTORY: ICL, LRI's

Tx LASEK

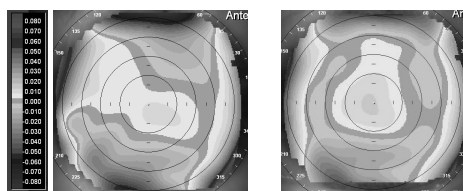
Pre-op

1 Week Post-op

UCVA 20/50 20/20 -1

BSCVA 20/12.5 20/20 -1

REF -1.25 +1.75 X 55 -0.25 +0.25 x 75



Patient B

HIST: PK for Keratoconus, AK, PRK x 2, PTK

Tx LASEK

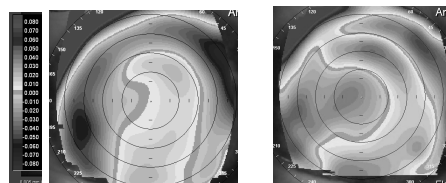
Pre-op

1 Week Post-op

UCVA 20/125 20/20 -2

BSCVA 20/20 20/20 -2

REF -2.75 +1.00 X 160 +0.5 /+1.25 x 170



Patient C

HISTORY: PRK, AK

Tx LASEK

Pre-op

1 Week Post-op

UCVA

20/50

20/20 -3

BSCVA

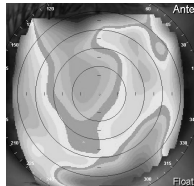
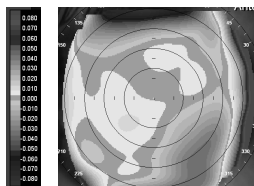
20/20

20/20 -2

REF

-3.50 +2.25 X 160

+0.5 /+0.25 x 90



Patient D

**HISTORY:
Cataract/IOL, AK**

Tx LASEK

Pre-op

1 Week Post-op

UCVA

20/40 -3

20/25

BSCVA

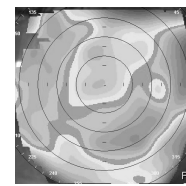
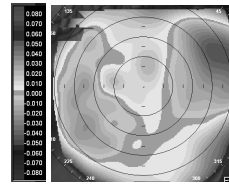
20/25+

20/25+

REF

0 +2.75 X 20

+1.0 /+0.75 x 160



Summary

- These difficult cases showcase the array of refractive disorders that can be treated with the CustomVis Laser.
- Promising results are shown for 1 week post-op
- Further post-operative results will be presented at ESCRS, Paris in September

CustomVis Solid State Laser

- Next Generation Technology
- Preliminary Results
- Installed and in process at international sites:
 - Australia (Perth),
 - Germany (Munich)
 - Spain (Barcelona).