Table*
Commercial Perspective: Company Answers to Important Questions About Their Customized Laser Platform

Companies		Alcon	Bausch & Lomb	Meditec
1. A	What wavefront device are you using?	Outgoing wavefront aberrometry—Hartmann Shack	Outgoing wavefront aberrometry—Hartmann Shack	Outgoing wavefront aberrometry—Hartmann Shack
B.	What is your wavelength?	820 nm	780 nm	830 nm
C.	How many pupil entry locations are analyzed for a 7-mm pupil?	188 to 195	70 to 75	800
2.	What reference axis do you use for reference axis and treatment?	Middle of the natural pupil, line of sight	Middle of the natural pupil, line of sight	Middle of the natural pupil (selected by the physician), line of sight
3.	How do you register and maintain registration of the wavefront ablation shot pattern to the eye?	Software tracks the limbus for the position and limbal marks for cyclorotation	Tracking the center of the pupil	Tracking a metal target covering the rim of the lamellar cap and the hinge
4. A.	How many Zernike coefficients are currently included in the measurement and treatment?	14 terms (fourth order)	20 terms (fifth order)	20 terms (fifth order)
B.	What is your optical zone (OZ) diameter and transition zone (TZ) diameter for a 4-D myope and a 4-D hyperope?	6.5-mm OZ 1.25-mm TZ	6.5 to 8-mm OZ (controlled by surgeon)	5 to 7-mm OZ (controlled by surgeon) with additional 2-mm TZ
5. A.	What is the spot size (fixed or variable)?	Less than 0.8 mm	1- and 2-mm spot sizes used during treatment	1.8 mm at 50% values
B.	Beam shape	Gaussian	Truncated Gaussian	Gaussian
C.	Average fluence	180 to 235 mJ/cm^2	120 mJ/cm^2 in beam center	180 mJ/cm^2
D.	Peak fluence	400 to 600 mJ/cm^2	120 mJ/cm^2	240mJ/cm^2
E.	Repetition rate	Approx 60 Hz	50 Hz	35 Hz
6. A.	What type of eye tracker do you use?	Active, infrared laser radar	Active video	Video-based
B.	Sampling rate	4000 times per second	120 Hz	50 Hz
C.	Mirror adjustment time for a 1-mm distance in the treatment plane	Approximately 1 ms	Less than 8 ms	1.5 ms

**Modified from Eyeworld, April 2001, page 59. Information provided by respective companies; validity has not been substantiated.*

Table continued next page...

Table*...continued
Commercial Perspective: Company Answers to Important Questions About Their Customized Laser Platform

Companies		Nidek	Schwind	VISX	Wavelight
1. A.	What wavefront device are you using?	Scanning slit refractometry (dynamic skiascopy)	Retinal image aberrometry Tscherning	Outgoing wave-front aberrometry Hartmann-Shack	Retinal image aberrometry Tscherning
B.	What is your wavelength?	808 nm	650 nm	785 nm	650 nm
C.	How many pupil entry locations are analyzed for a 7-mm pupil?	1440	96	240	96
2.	What reference axis do you use for reference axis and treatment?	Corneal reflex of first Purkinje image, visual axis	Optical axis of eye	Line of sight	Fixation beam
3.	How do you register and maintain registration of the wavefront ablation shot pattern to the eye?	Captured video image	—	Tracking the natural pupil	Infrared image of the pupil
4. A.	How many Zernike coefficients are currently included in the measurement and treatment?	System not based on Zernike coefficients	Up to 6th order (controlled by surgeon)	Up to 6th order	Up to 6th order
B.	What is your optical zone (OZ) diameter and transition zone (TZ) diameter for a 4-D myope and a 4-D hyperope?	Myopia: 6-mm OZ and 0.5-mm TZ; Hyperopia: 1.5-mm TZ	6-mm OZ 1.5-mm TZ	Myopia: 6-mm OZ and 1-mm TZ; Hyperopia: 5.5-mm OZ and 1.75-mm TZ	6 to 6.5-mm OZ with TZ of up to 1 mm for myopia; 1.5 mm for hyperopia
5. A.	What is the spot size (fixed or variable)?	2- x 10-mm scanning slit and 1-mm spot size	Up to 1 mm	Variable from 0.65 to 6.50 mm	950 µm
B.	Beam shape	Scanning slit and Gaussian spot	Gaussian	Nominally top hat with rounded edges	Gaussian
C.	Average fluence	Approximately 140 mJ/cm^2	Approximately 220 mJ/cm^2	160 mJ/cm^2	200 mJ/cm^2
D.	Peak fluence	250 mJ/cm^2	—	160 mJ/cm^2	400 mJ/cm^2
E.	Repetition rate	Approx 40 Hz	200 Hz	10 to 20 Hz	200 Hz
6. A.	What type of eye tracker do you use?	Video-based†	Infrared video	3-D active infrared video	Active video-based
B.	Sampling rate	60 Hz	300 Hz	60 Hz	200 Hz
C.	Mirror adjustment time for a 1-mm distance in the treatment plane	90 ms	3 ms	30 ms	—

**Modified from Eyeworld, April 2001, page 59; Information provided by respective companies; validity has not been substantiated.*
†Tracker is not currently being sold and is being enhanced for higher performance.