

## **Comparison of AL-Scan and IOLMaster 500 Partial Coherence Interferometry Optical Biometers.**

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### **Purpose:**

To investigate agreement between the ocular biometry measurements provided by a newer optical biometer, the AL-Scan (Nidek Co, Ltd., Gamagori, Japan) and those provided by the IOLMaster 500 (Carl Zeiss Meditec, Jena Germany), which are both based on partial coherence interferometry.

### **Methods:**

Axial length, corneal power, and anterior chamber depth (corneal epithelium to lens) were measured in 86 eyes of 86 patients scheduled for cataract surgery using both biometers. All values were analyzed using a paired t test, the Pearson product moment correlation coefficient ( $r$ ), and Bland-Altman plots.

### **Results:**

The mean axial length values of both instruments were exactly the same ( $23.46 \pm 0.99$  mm) for both) and showed excellent agreement and correlation. On the contrary, the AL-Scan measured a steeper mean corneal power by 0.08 diopters (D) at the 2.4-mm zone but by only 0.03 D at the 3.3-mm zone, only the former being statistically significant. The AL-Scan measured a deeper anterior chamber depth by 0.13 mm, which was statistically significant ( $P < .001$ ).

### **Conclusions:**

Agreement between the two units was good. However, the small but statistically significant difference in corneal power (at the IOLMaster-comparable 2.4-mm zone) and in the anterior chamber depth measurement make lens constant optimization necessary when calculating the intraocular lens power by means of theoretical formulas.

*J Refract Surg.* 2016;32(10):694–698