



Contents

Section 1: Preliminary Considerations and Various IOL Power Calculation Formulas and Basics

1. Schematic Eye	3
<i>Athiya Agarwal, Amar Agarwal, Ashok Garg (India)</i>	
2. A-scan Biometry	5
<i>Sunita Agarwal, Amar Agarwal, Ashok Garg (India)</i>	
3. Corneal Topography	10
<i>Athiya Agarwal, Sunita Agarwal, Amar Agarwal, Nilesh Kanjani (India)</i>	
4. Optical Corneal Tomography	21
<i>Sandra Franco, Jose B Almeida (Portugal), Manuel Parafita (Spain)</i>	
5. Optical Biometry with IOL Master (Partial Coherence Interferometry)	24
<i>Ashok Garg (India)</i>	
6. Anterior Chamber Depth in IOL Power Estimation	26
<i>Aravind R Reddy (UK)</i>	
7. How to Calculate the Constant A	28
<i>Sonja Hairer, Tom Conze, Jerome Bovet (Switzerland)</i>	
8. Axial Length Dependence of IOL Constants	31
<i>Wolfgang Haigis (Germany)</i>	
9. IOL Calculations: When, How and Which?	36
<i>Kumar J Doctor, Nita Shanbhag, Sumita Karandikar, Pooja Deshmukkh (India)</i>	
10. How to Measure a Correct Central Keratometric Reading for IOL Power Calculation after LASIK Surgery?	46
<i>Lung-Kun Yeh, I-Jong Wang (Taiwan)</i>	
11. An Update on IOL Power Calculation Formulas	51
<i>JT Lin (Taiwan), Ashok Garg (India)</i>	
12. The New IOL Formulas based on Gaussian Optics	62
<i>JT Lin (Taiwan)</i>	
13. Classical vs Modern Formulas for Estimated Lens Position (ELP)	70
<i>JT Lin (Taiwan)</i>	
14. IOL Power Calculations	75
<i>Kenneth J Hoffer (Santa Monica, CA, USA)</i>	

15. The Theoretical Summary of IOL Formulas	92
<i>JT Lin (Taiwan)</i>	
16. Error Analysis of IOL Power Calculations	101
<i>JT Lin (Taiwan)</i>	
17. The Basics of Accommodating IOLs	106
<i>JT Lin (Taiwan)</i>	
18. IOL Calculation in Long and Short Eyes	114
<i>Wolfgang Haigis (Germany)</i>	
19. Customization of IOL Formulas	121
<i>B Vineeth Kumar (UK)</i>	

Section 2: IOL Power Calculations in Cataract Surgery

20. Intraocular Lens Power Selection for Children	127
<i>Rupal H Trivedi (USA), M Edward Wilson Jr (USA)</i>	
21. Age Dependent IOL Power Calculations for Pediatric Patients	136
<i>JT Lin (Taiwan)</i>	
22. History & Method of Intraocular Lens Power Calculation for Cataract Extraction Surgery after Corneal Refractive Surgery	142
<i>Alberto Artola Roig, Jorge L Alio Y Sanz (Spain)</i>	
23. Intraocular Lens Power Calculations in Phaco and Microphaco	146
<i>Ashok Garg (India), Arif Adenwala (UAE)</i>	
24. Intraocular Lens Power Calculations for High Myopia	153
<i>Renyuan Chu, Jinhui Dai (China)</i>	
25. Accuracy of Intraocular Lens Power Calculation in Bimanual Microphacoemulsification	159
<i>Gian Maria Cavallini, Luca Campi, Giovanni Neri (Italy)</i>	
26. Clinical Outcomes of Cataract Surgery after Previous Refractive Surgery	164
<i>Frank J Goes (Belgium)</i>	

Section 3: IOL Power Calculations in Refractive Surgery (Corneal and Lenticular Refractive Surgery)

27. IOL Power Calculations: A Topographic Method	175
<i>Frederic Hehn (France)</i>	
28. IOL Power Calculation in Post-hyperopic PresbyLASIK Cataract: Preliminary Results	180
<i>Roberto Pinelli (Italy)</i>	
29. Comparison of Methods for IOL Power Calculation after Incisional and Photoablative Refractive Surgery	184
<i>Antonio Calossi, Massimo Camellin (Italy)</i>	
30. IOL Power Calculations after Corneal Refractive Surgery	205
<i>Srinivas K Rao (India), Arthur Cheng, Dennis SC Lam (China)</i>	

31. The Latkany Regression Formula for Intraocular Lens Calculations after Myopic Refractive Surgery	213
<i>Evelyn Icasiano, Robert Latkany (USA)</i>	
32. The Latkany Regression Formula for Intraocular Lens Calculations after Hyperopic Refractive Surgery	218
<i>Evelyn Icasiano, Robert Latkany (USA)</i>	
33. Which IOL Formula to Use after Refractive Surgery	221
<i>Sonja Hairer, Tom Conze, Jerome Bovet (Switzerland)</i>	
34. Intraocular Lens Power Calculation after Advanced Surface Ablations (ASA)	225
<i>Tsiklis NS, Kymionis GD, Portaliou DM, Pallikaris IG (Greece)</i>	
35. The Mathematics of LASIK	231
<i>JT Lin (Taiwan)</i>	
36. Preoperative Evaluation of the Anterior Chamber for Phakic IOLs with the AC OCT	238
<i>Georges Baikoff (France)</i>	
37. Biometry for Refractive Lens Surgery	244
<i>Mark Packer, I Howard Fine, Richard S Hoffman (USA)</i>	
38. IOL Power Calculations in Phakic IOLs	252
<i>Dimitrii Dementiev, Kukrenkov Vetchiaslav (Italy)</i>	
38. Raytracing Analysis of Accommodating IOL	254
<i>Yoshiaki Nawa (Japan)</i>	
40. Analysis of Dual-optics Accommodating IOLs	259
<i>JT Lin (Taiwan)</i>	
41. Aspherical IOL Analysis	265
<i>JT Lin (Taiwan)</i>	

Section 4: Miscellaneous (Recent Advances and IOL Power Calculations in Difficult Situations)

42. Determining Corneal Power for Intraocular Lens Calculations in Patients with Corneal Scarring and Irregular Astigmatism	277
<i>Mujtaba A Qazi, Irwin Y Cua, Jay S Pepose (USA)</i>	
43. IOL Calculation in Hyperopes	281
<i>Wolfgang Haigis (Germany), Frank J Goes (Belgium)</i>	
44. Consistent IOL Calculation in Normal and Odd Eyes with the Raytracing Program OKULIX	285
<i>Paul Rolf Preussner (Germany)</i>	
45. A-scan in Difficult Situations	292
<i>Anand A Shroff (India)</i>	
46. Management of Refractive Surprises after Cataract Surgery	305
<i>Armando Capote, Eneida de la C Perez, Marcelino Rio (Cuba)</i>	
47. Intraocular Lens Power Calculation in the High Myopic Eye	314
<i>Fengju Zhang, Yan Wang (China)</i>	
48. Calculation of Intraocular Lens Power in Cataract with Silicone Oil Eyes	318
<i>Fengju Zhang, Yan Wang (China)</i>	

49. Intraoperative IOL Power Calculation	320
<i>Arturo Pérez-Arteaga (Mexico)</i>	
50. ZEMAX Raytracing Method for Accommodative IOL	327
<i>JT Lin (Taiwan), Minshan Jiang (China)</i>	
51. Problems of IOL Power Calculation in Pediatric Cataract Surgery	331
<i>Marek E Prost (Poland)</i>	
52. Intraocular Lens Calculation after Prior Refractive Surgery	337
<i>Kenneth J Hoffer (Santa Monica, CA, USA)</i>	
53. Cataract Surgery: Calculating the IOL Power in Case of Anisometropia	345
<i>Laure Gobin, Jos J Rozema, Marie-José Tassignon (Belgium)</i>	
54. Review of IOL Power Calculation: A Theoretical Analysis of Proposed Formulas	356
<i>Laure Gobin, Jos J Rozema, Marie Jose Tassignon (Belgium)</i>	
55. IOL Power Calculation for Cornea Triple and Penetrating Keratoplasty with IOL Exchange	368
<i>Ashok Sharma (India)</i>	
56. IOL Power Calculations in Eyes with Irregular Corneas	371
<i>Barun K Nayak, Sunil Moreker (India)</i>	
Index	375