

Aladdin

Optical Biometry & Topography System



Select the Right IOL for Your Patients

The Aladdin is an easy-to-use, combination optical biometer and full corneal topographer. 9-in-1 features include optical coherence biometry, Placido topography, wavefront analysis of the cornea, IOL calculation suite, pupillometry, DICOM connectivity and the NEW RX/AL Trends Module.



Overview



**Keratometry,
Topography**



**Posterior & Anterior
Interferometry**



**Aberrometry
Analysis (Zernike)**



**White to White
Measurement**



**Comprehensive
Reports**



Pupillometry



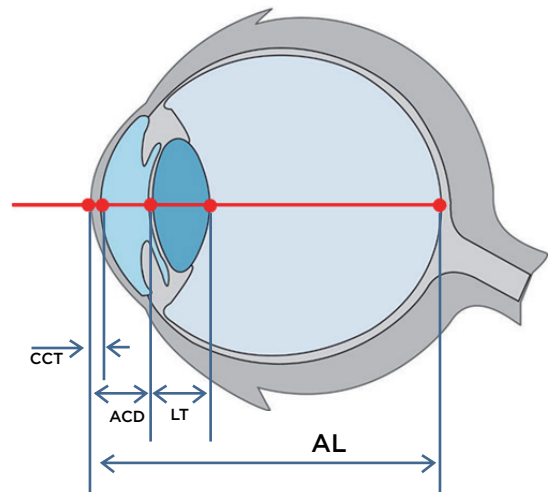
**IOL & Toric IOL
Calculation**



**RX/AL Trends
Module**

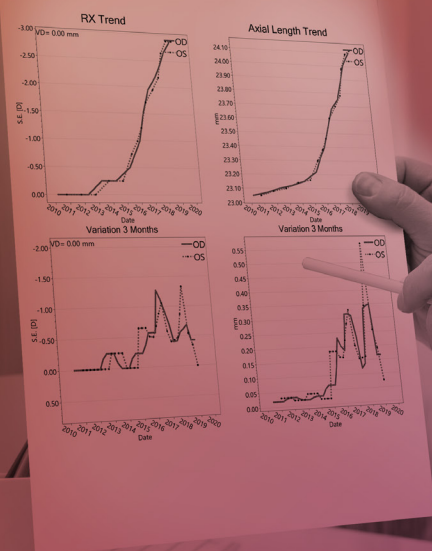
Posterior & Anterior interferometry

Biometry results are complemented with anterior topography, Zernike analysis and pupillometry in one fast, accurate and easy acquisition. The Interferometer of ALADDIN also provides anterior measurements such as the Central Corneal Thickness (CCT), Anterior Chamber Depth (ACD) and Lens Thickness. You get the complete picture for all cataract surgeries. Whether you are performing standard cataract surgery or premium IOL implantation, you will be screening for corneal aberrations and previous corneal refractive surgery procedures all at once. The ALADDIN only requires just one Acquisition.



Are you focusing on refractive changes?

Experience the Aladdin RX/AL Trends Module:
The precise tool to monitor longitudinal
changes in the eye.



RX/AL Trends Module

RX/AL Trends Module

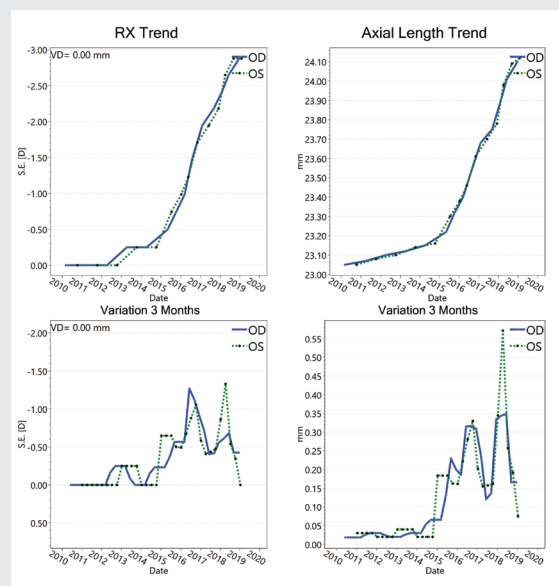
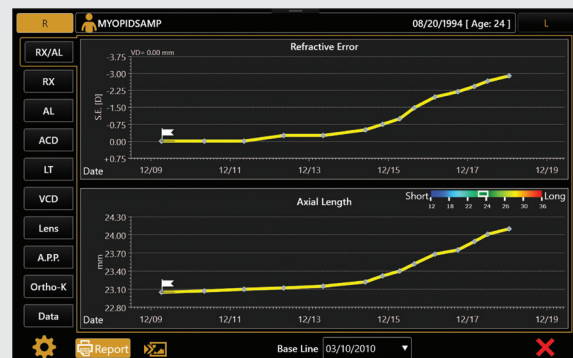
- Measures and displays trends in AL changes
- Allows you to monitor change progression
- Charts and tracks refractive variations
- Provides comprehensive printouts



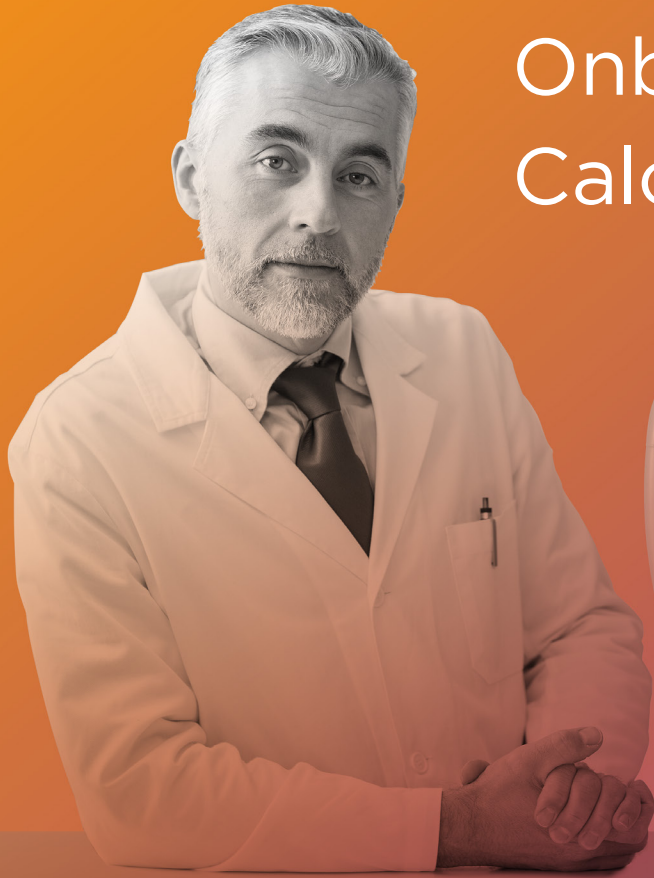
Trend Monitoring

By combining manually entered refractive information with biometric data obtained by low-coherence interferometry, the Aladdin provides a quantitative report of the progression of changes in the eye's refractive power.

After the refraction values are entered, the Aladdin performs 7 critical measurements and provides a numerical analysis of the trends of the eye parameters related to changes in the axial length, corneal curvature, anterior corneal wave front analysis and other dimensional variations. Changes can be followed in periods of 3, 6 and 12 months providing a trend that can be used to track the progression of certain eye conditions.

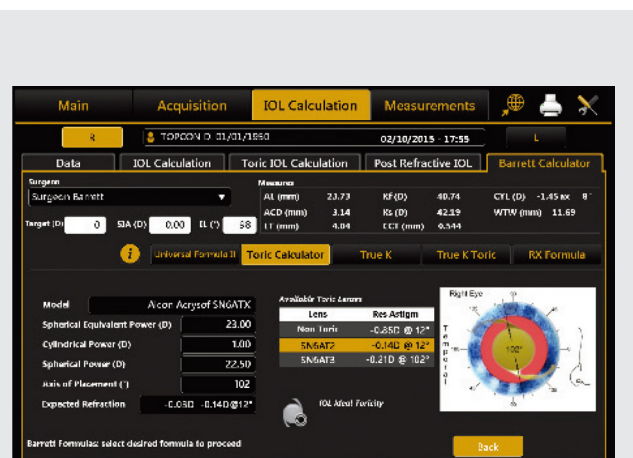


Onboard Barrett IOL Calculation Suite



Onboard Barrett IOL Calculation Suite

Dr. Graham D. Barrett developed the Barrett formula in 2013 and takes into account the posterior cornea considering the lens position for each individual patient instead of calculating IOL power by estimating lens thickness based on patient's age. The Barrett formula uses the Universal II, which is a method of predicting IOL power to work out where the lens is and utilizes that information to calculate the effect of the cylinder power at the cornea. The Universal II formula was also developed by Dr. Barrett. Dr. Barrett's formula considers the thickness and shape of the lens as well, which provides a more sophisticated way of predicting and translating the cylinder power. The formula is able to predict posterior corneal curvature without actually measuring it.

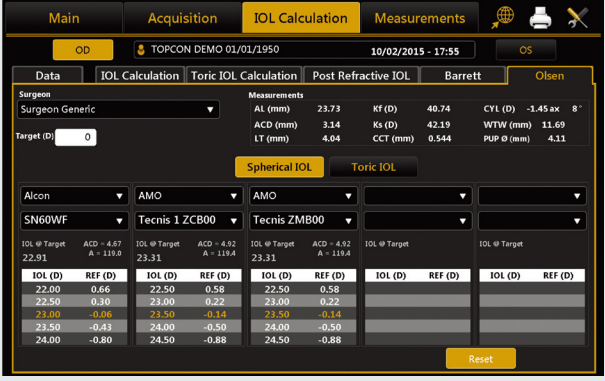


The Aladdin's Barrett IOL Calculation Suite includes the Barrett Rx, the Barrett Toric Calculator Formula, the Barrett True K and the Barrett Universal II formulae.

The Aladdin HW3.0

Onboard Olsen Formula

The Aladdin HW3.0 provides precise measurements of the internal structures of the eye including Central Corneal Thickness and Crystalline Lens Thickness. Those measurements used in combination with the on-board Olsen IOL calculation formula provides accurate IOL power calculations in virtually all types of eyes regardless of size. The Olsen formula utilizes a newly developed concept by Dr. Olsen called the C-constant which predicts the Effective Lens Position (ELP) when performing in-the-bag IOL implants. This model also predicts the lens position of anterior chamber IOLs. The C-constant approach performs independently of other conventional measurements such as axial length, keratometry, white-to-white length, IOL power, etc. It will provide accurate IOL calculations in any type of eye.



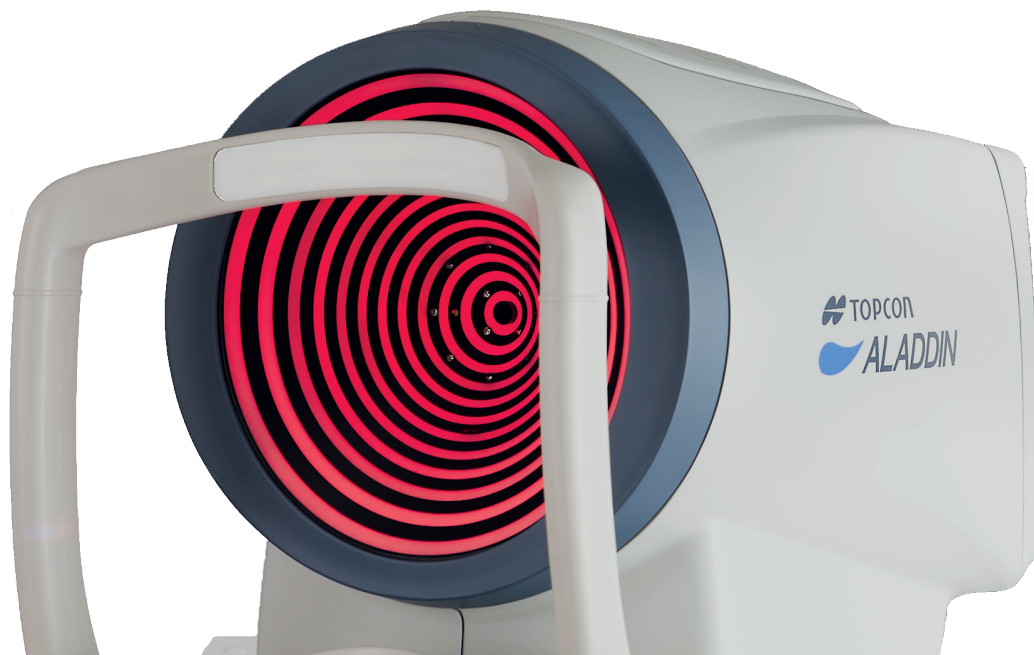
The screenshot shows the 'IOL Calculation' screen of the Aladdin HW3.0 software. It features a top navigation bar with 'Main', 'Acquisition', 'IOL Calculation', and 'Measurements'. Below this, there are tabs for 'Data', 'IOL Calculation', 'Toric IOL Calculation', 'Post Refractive IOL', 'Barrett', and 'Olsen'. The 'Olsen' tab is active, showing a 'Surgeon' dropdown set to 'Generic', a 'Target (D)' input set to '0', and a 'Measurements' section with values for AI (mm), Kf (D), CYL (D), ACD (mm), Ks (D), WTW (mm), LT (mm), CCT (mm), and PUP Ø (mm). Below the measurements, there are dropdown menus for 'Spherical IOL' and 'Toric IOL'. The 'Spherical IOL' section shows a table of IOL (D) and REF (D) values for different lens models (Alcon, AMO, Tecnis 1 ZCB00, Tecnis ZMB00). The 'Toric IOL' section is currently empty.

IOL (D)	REF (D)	IOL (D)	REF (D)	IOL (D)	REF (D)	IOL (D)	REF (D)	IOL (D)	REF (D)
22.00	0.66	22.50	0.58	22.50	0.58				
22.50	0.50	23.00	0.22	23.00	0.22				
23.00	-0.06	23.50	-0.14	23.50	-0.14				
23.50	-0.43	24.00	-0.50	24.00	-0.50				
24.00	-0.80	24.50	-0.88	24.50	-0.88				

Olsen Formula

Abulafia-Koch astigmatism cylinder correction for Toric IOL calculations incorporated

The Abulafia-Koch correction formula calculates the estimated total corneal astigmatism based on standard keratometry measurements.



IOL & Toric IOL Calculation

The ALADDIN guides you through the choice of the right IOL for each patient. A combination of IOL brand, type and formulae can be viewed and compared to various chosen combinations, in order to obtain the best post-operative Visual Acuity result for the patient.

A pre-defined IOL selection can be programmed for each individual surgeon.

When implanting a toric IOL, specific toric calculation software assist you in calculating the best option.

This integrated toric IOL calculator saves you time and avoid unnecessary mistakes when manually entering data online. IOL Toric Rotation Simulation Software calculates the induced spherical and cylindrical power for every five degrees toric IOL rotation.

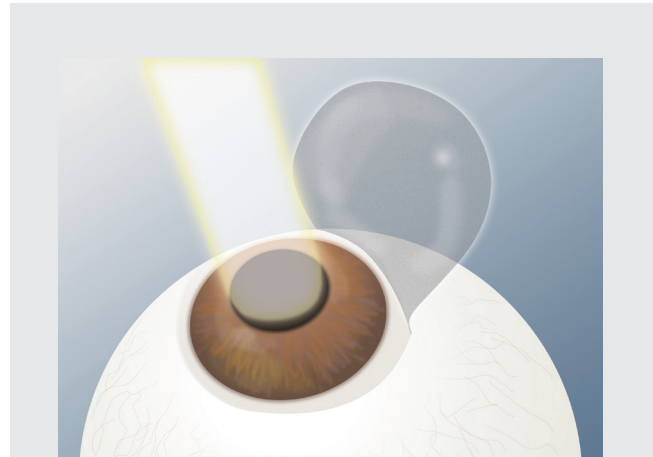
The screenshot shows the 'IOL Calculation' tab with a grid of IOL options. The grid has columns for 'IOL (D)' and 'REF (D)' for multiple brands and models. The brands listed include ZEISS, Alcon, Ophtec, AMO, L-303, CT 475(Acri.Lyc 475), AcrySof MA30BA, PC420, Hoffer Q, Halgis, SRK/T, SRK II, and Holladay 1. The 'REF (D)' column shows values for Spherical, Cylindrical, and Axis of Placement.

The screenshot shows the 'Toric IOL Calculation' tab. It features a 'Toric IOL' section with a 'Model' dropdown set to 'Oculentis LU-313 MF20T'. Below this is a 'Res Astigmat' table with columns for 'Lens' and 'Res Astigmat'. The table lists three options: 'LU-313 MF20T -0.02 D @ 8', 'LU-313 MF20T -0.03 D @ 8', and 'LU-313 MF20T -0.01 D @ 8'. A circular diagram on the right shows the axis of placement at 98 degrees.

IOL & Toric IOL Calculation

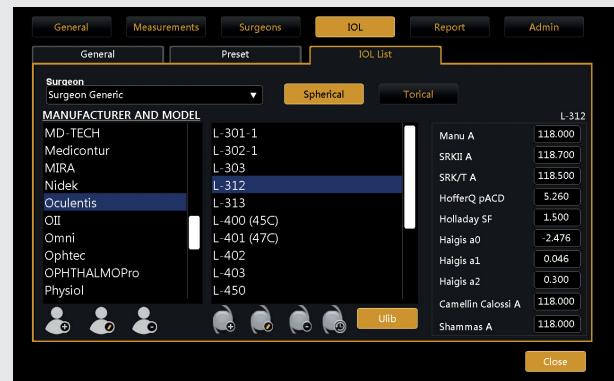
Post refractive IOL

In eyes that have previously undergone refractive surgery such as RK, PRK, Lasik, Lasek, LK and PTk, spherical aberrations are often outside the standard values. Aladdin's on board Barrett True-K, True-K Toric, Camellin-Calossi and Shammas No-history formulae provide the tools for post-refractive IOL calculations.



Customisable IOL database

The ALADDIN provides a full database which can be upgraded and customised. You can manually upgrade the A- constant for each individual IOL to obtain even a higher accuracy every time you perform cataract surgery. Your favorite IOL's can be pre-defined and programmed for each individual surgeon, simplifying and personalising IOL selection.



Keratometry / Topography

Full Corneal topography provides much more information than just K-values. Specific data for toric IOL surgery, instantly detects regular and irregular astigmatism. The keratometry provided by the placido rings of ALADDIN is extremely accurate due to simultaneous use of the interferometer.

- Axial and tangential map
- Absolute and normalized scale
- Millimeters or diopters
- Grid, rings, and 3, 5 and 7 mm zones

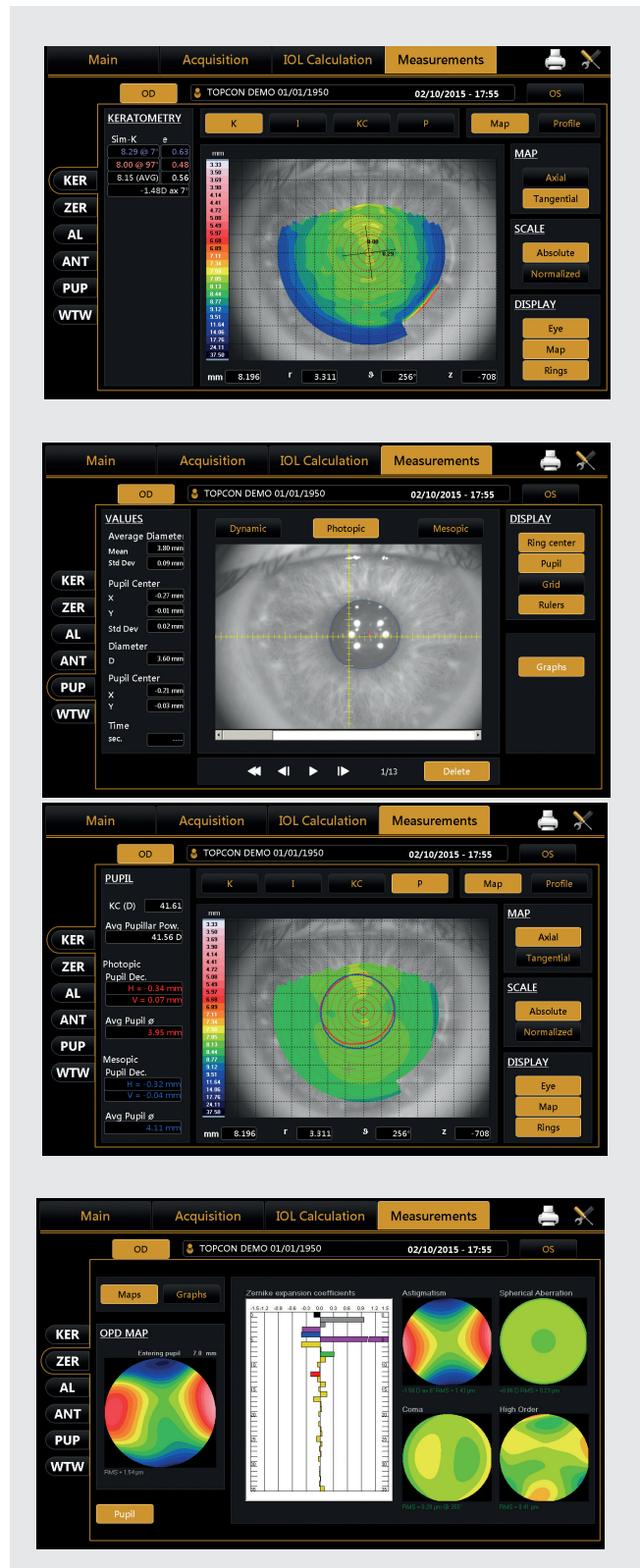
Pupillometry

During Placido evaluation pupillary response is observed to assess a pseudo Photopic and pseudo Mesopic pupil size, indicating response and normal range of the pupil. Full pupillometry screening assists to evaluate eyes for multifocal IOL implantation or refractive surgery. For any refractive procedure it is vitally important to diagnose the pupil very carefully in different light conditions, and exclude cases of extreme small or decentered pupils.

- Dynamic
- Photopic
- Mesopic

Aberrometry analysis (Zernike)

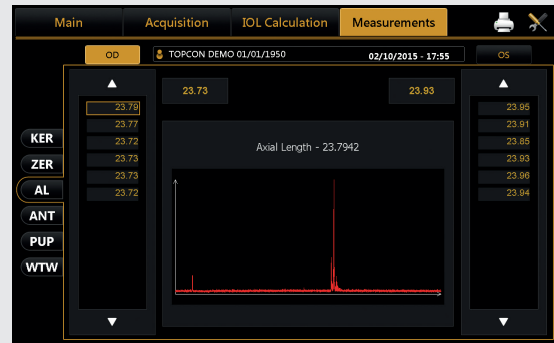
Zernike analysis of the topographic data provides the Optical Path Difference (OPD) and information on astigmatism, spherical aberrations, higher order aberrations and Coma for pupil sizes of 2.5mm to 7.0mm



Aladdin Features

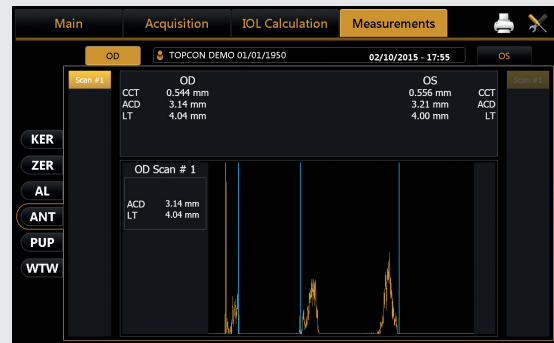
Axial length

Using a low-coherence interferometry system with a super luminescent diode of 850 nm and signal processing, the ALADDIN achieves Axial length measurement with high signal-to-noise ratio and is able to penetrate even high grade dense cataracts. Axial length measurements can be done on normal eyes as well as on aphakic, pseudo-aphakic and silicone oil-filled eyes.



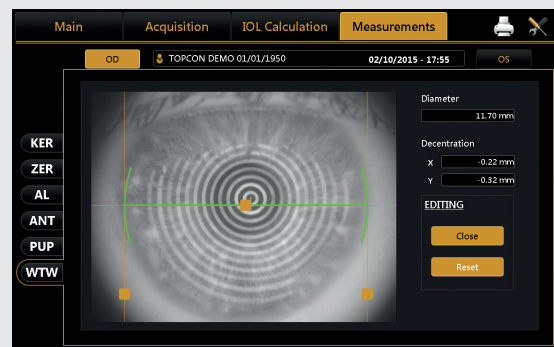
Anterior biometry

Anterior biometry with the ALADDIN allows measuring the Central Corneal Thickness, Anterior Chamber Depth and the crystalline Lens Thickness. Pachymetry is a key feature to measure for all cataract surgery procedures. ACD is measured through interferometry, providing high precision and reproducibility. All interferometry measurements are shown in a graph to make it visible.



White to white

ALADDIN measures automatically white to white dimension which can be manually edited. Reliable white to white measurement is used with anterior chamber intraocular lens and sulcus fixated posterior chamber intraocular lens in highly myopic eyes.



Patient : TOPCON DEMO
Patient ID :
Date Of Birth : 01/01/1950
(mm/dd/yyyy)

Surgeon : Surgeon Generic
Exam Date : 02/10/2015 - 17:55
(mm/dd/yyyy)

OD

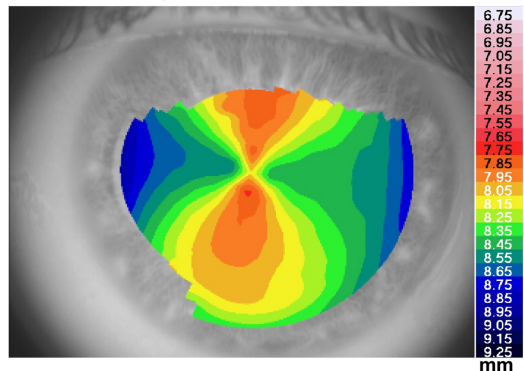
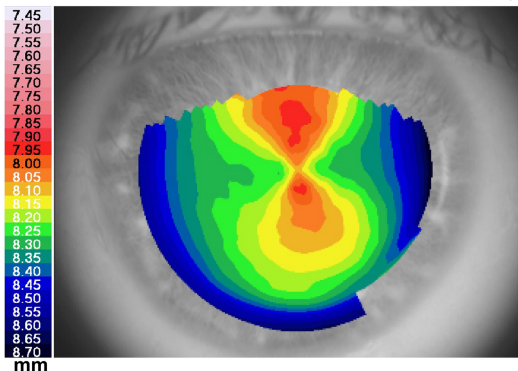
OS

Phakic

Normalized Axial Map

Normalized Axial Map

Phakic



Measurement Summary

AL	23.73 mm	K1	8.28 mm@	8 °	AL	23.93 mm	K1	8.51 mm@	173 °
ACD	3.14 mm	K2	8.00 mm@	98 °	ACD	3.21 mm	K2	7.90 mm@	83 °
LT	4.04 mm	CCT	0.544 mm		LT	4.00 mm	CCT	0.556 mm	
WtoW	11.70 mm	Dec	(-0.22, -0.29)		WtoW	11.92 mm	Dec	(0.40, -0.07)	

Keratorefractive Indices

CYL 3 mm	-1.44 D	Ax: 7°		CYL 3 mm	-3.18 D	Ax: 172°	
CYL 5 mm	-1.46 D	Ax: 8°		CYL 5 mm	-3.16 D	Ax: 172°	
SD	SAI	e	Kc	SD	SAI	e	Kc
0.36 D	0.47 D	0.49	41.61	0.44 D	0.55 D	0.39	41.40

Apical Keratometry

AK	AGC	SI	p	AK	AGC	SI	p
43.03 D	0.90 D/mm	-0.50 D	0%	43.46 D	0.68 D/mm	-0.40 D	0%

Pupil Data

Photo: Diam	3.95 mm	Dec	0.35 mm; 168°	Photo: Diam	4.24 mm	Dec	0.21 mm; 343°
Meso: Diam	4.11 mm	Dec	0.32 mm; 187°	Meso: Diam	4.45 mm	Dec	

Zernike Analysis 5 mm

OPD	Coma	Sph. Ab.	OPD	Coma	Sph. Ab.
rms: 0.80 µm	rms: 0.15 µm	rms: 0.10 µm	rms: 1.43 µm	rms: 0.07 µm	rms: 0.14 µm

Report Samples



Topcon Aladdin Biometer

Patient : TOPCON DEMO

Surgeon : SURGEON GENERIC

Patient ID :

Exam Date : 02/10/2015 - 17:55

Date Of Birth : 01/01/1950
(mm/dd/yyyy)

(mm/dd/yyyy)

OD

OS

Phakic

Phakic

Data Measurements n : 1.3375

Data Measurements n : 1.3375

Aladdin Optical

Aladdin Optical

AL : 23.73 mm K1 : 8.28 mm @ 8°
ACD : 3.14 mm K2 : 8.00 mm @ 98°
LT 4.04 mm CYL : -1.45 D ax 8°
CCT 0.544 mm

AL : 23.93 mm K1 : 8.51 mm @ 173°
ACD : 3.21 mm K2 : 7.90 mm @ 83°
LT 4.00 mm CYL : -3.06 D ax 173°
CCT 0.556 mm

Target Refraction: 0

Target Refraction: 0

Oculentis
L-313

Oculentis
LS-313 MF30

SRK/T	
IOL(D)	REF(D)
20.50	0.83
21.00	0.47
21.50	0.10
22.00	-0.27
22.50	-0.64

IOL @ Target A = 118.100
21.64

SRK II	
IOL(D)	REF(D)
21.00	0.77
21.50	0.37
22.00	-0.03
22.50	-0.43
23.00	-0.83

IOL @ Target A = 118.600
21.97

Oculentis
L-313

Oculentis
LS-313 MF30

SRK/T	
IOL(D)	REF(D)
20.50	0.67
21.00	0.31
21.50	-0.06
22.00	-0.43
22.50	-0.81

IOL @ Target A = 118.100
21.42

SRK II	
IOL(D)	REF(D)
21.00	0.62
21.50	0.22
22.00	-0.18
22.50	-0.58
23.00	-0.98

IOL @ Target A = 118.600
21.77

Oculentis
LU-313 MF30T

Oculentis
LS-412Y

Haigis	
IOL(D)	REF(D)
21.50	0.58
22.00	0.21
22.50	-0.16
23.00	-0.54
23.50	-0.92

IOL @ Target A0 = 0.870
22.28 A1 = 0.400
A2 = 0.100

Hoffer Q	
IOL(D)	REF(D)
21.00	0.86
21.50	0.51
22.00	0.16
22.50	-0.20
23.00	-0.56

IOL @ Target pACD = 5.070
22.22

Oculentis
LU-313 MF30T

Oculentis
LS-412Y

Haigis	
IOL(D)	REF(D)
21.00	0.81
21.50	0.45
22.00	0.08
22.50	-0.30
23.00	-0.67

IOL @ Target A0 = 0.870
22.10 A1 = 0.400
A2 = 0.100

Hoffer Q	
IOL(D)	REF(D)
21.00	0.72
21.50	0.37
22.00	0.01
22.50	-0.35
23.00	-0.71

IOL @ Target pACD = 5.070
22.02

Oculentis
LU-800 RZI

Oculentis
LU-800 RZI

Holladay I	
IOL(D)	REF(D)
19.00	0.90
19.50	0.52
20.00	0.13
20.50	-0.25
21.00	-0.65

IOL @ Target SF = 0.310
20.17

Holladay I	
IOL(D)	REF(D)
19.00	0.76
19.50	0.38
20.00	-0.01
20.50	-0.40
21.00	-0.80

IOL @ Target SF = 0.310
19.99



TORIC IOL



Patient Information

Patient TOPCON DEMO	Surgeon SURGEON GENERIC	OS
Patient ID	Clinic	
Date of Birth 01/01/1950 <small>dd/mm/yyyy</small>	Exam Date 02/10/2015 - 17:55 <small>dd/mm/yyyy</small>	

Biometry Data

AL (mm)	23.93	LT (mm)	4.00	K1 (mm)	8.51	CYL (D)	-3.06@173°
ACD (mm)	3.21	CCT (mm)	0.556	K2 (mm)	7.90	n	1.3375

Surgical Pre Op Data

SEQ (D)	23.00	SIA (D)	0
Formula	Holladay I	IL (°)	83

SF = 1.980

Expected Post Op Cornea

K1 Post (mm)	8.51	K2 Post (mm)	7.90
CYL Post (D)	-3.06 @ 173°		

Toric IOL

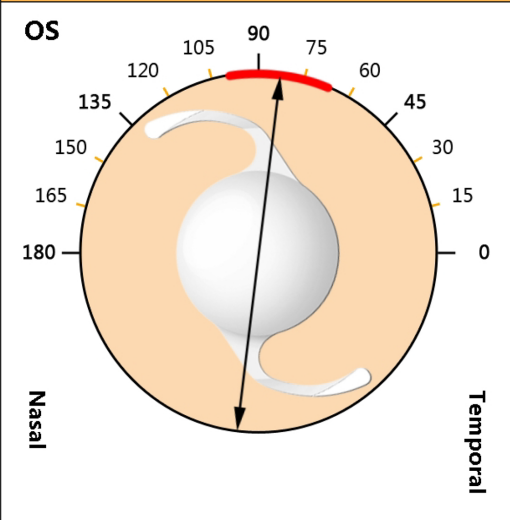
Lens Model
Alcon AcrySof SN6AT6

Spherical Power 21.50 D	Cylindrical Power 3.75 D
Sph. Equiv. Power 23.38 D	Axis Of Placement 83°

Expected Refraction
-0.02D -0.44 D @ 173°

Lens	Residual Astigmatism
AcrySof SN6AT4 (22.00D 2.25C)	-1.48 D @ 173°
AcrySof SN6AT5 (21.50D 3.00C)	-0.96 D @ 173°
AcrySof SN6AT6 (21.50D 3.75C)	-0.44 D @ 173°
AcrySof SN6AT7 (21.00D 4.50C)	-0.08 D @ 83°
AcrySof SN6AT8 (20.50D 5.25C)	-0.60 D @ 83°

Toric IOL Placement



Quantity **1**

Notes

Notes



Topcon Aladdin Biometer

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Surgeon : Surgeon Generic

Patient ID :

Exam Date : 02/10/2015 - 17:55
(mm/dd/yyyy)

Date Of Birth : 01/01/1950
(mm/dd/yyyy)

OD

OS

Phakic

Phakic

Axial length values			
Comp. AL: 23.73 mm		Comp. AL: 23.93 mm	
AL	AL	AL	AL
23.79 mm		23.95 mm	
23.77 mm		23.91 mm	
23.72 mm		23.85 mm	
23.73 mm		23.93 mm	
23.73 mm		23.96 mm	
23.72 mm		23.94 mm	
Value Corneal Curvature			
KER: 8.28/8.00 mm CYL: -1.45 D Ax 8°		KER: 8.51/7.90 mm CYL: -3.06 D Ax 173°	
K1: 8.28 mm @ 8°	40.74 D	K1: 8.51 mm @ 173°	39.64 D
K2: 8.00 mm @ 98°	42.19 D	K2: 7.90 mm @ 83°	42.71 D
CYL: -1.45 D ax 8°		CYL: -3.06 D ax 173°	
ACD value			
ACD: 3.14 mm		ACD: 3.21 mm	
3.14 mm		3.21 mm	
LT value			
LT: 4.04 mm		LT: 4.00 mm	
4.04 mm		4.00 mm	
CCT value			
CCT: 0.544 mm		CCT: 0.556 mm	
White to White			
WTW 11.70 mm Dec (-0.22 mm, -0.29 mm)		WTW 11.92 mm Dec (0.40 mm, -0.07 mm)	



Topcon Aladdin Biometer

Patient : TOPCON DEMO

Surgeon : Surgeon Generic

Patient ID :

Exam Date : 02/10/2015 - 17:55
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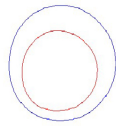
Date Of Birth : 01/01/1950
(mm/dd/yyyy)

Dynamic Pupillography

OD

Diameter (mm)

Min	Max
3.48	4.98



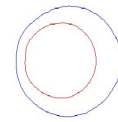
Center (mm)

Mean	Std Dev
x= -0.27 y= 0.02	0.07

OS

Diameter (mm)

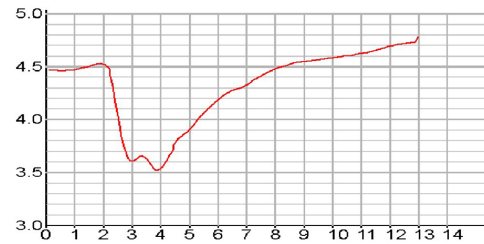
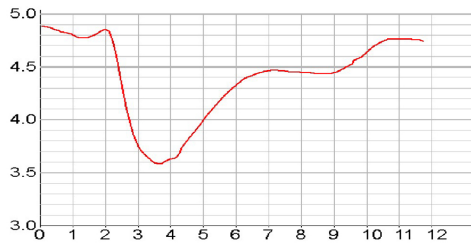
Min	Max
3.27	4.78



Center (mm)

Mean	Std Dev
x= 0.25 y= -0.04	0.08

Latency



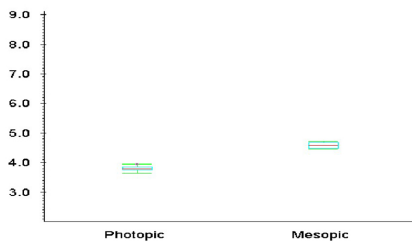
Static Pupillography

Diameter (mm)

	Mesopic	Photopic
Mean	4.57	3.80
Std Dev	0.09	0.09

Center (mm)

	Mesopic	Photopic
X	-0.33	-0.27
Y	0.04	-0.01

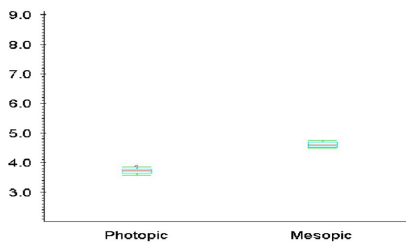


Diameter (mm)

	Mesopic	Photopic
Mean	4.60	3.71
Std Dev	0.09	0.10

Center (mm)

	Mesopic	Photopic
X	0.25	0.21
Y	-0.15	-0.09



Topcon's Cataract Workstation

Cataract surgery quality control

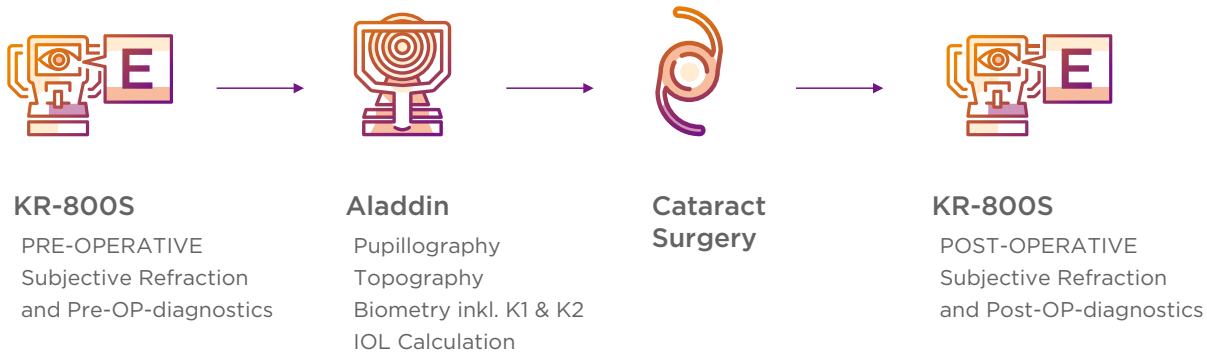
Visual acuity (VA) is the most common clinical measure of the quality results of cataract surgery. It is how we describe and measure the success of surgery and it is therefore critical that it is measured well. Measurement of VA must be standardized and systematic. Topcon's KR-800S Auto Kerato- Refractometer with subjective VA check will do exactly that. With the KR-800S the VA can be subjectively tested pre- and post-operative cataract surgery. With the unique features of the KR-800S such as "Glare" test and "Contrast" test you can even evaluate the progression of cataract and distinct Nuclear cataract from Cortical cataract.

VA Simulation Premium IOL

KR-800S offers a Spherical Equivalent mode which can simulate the benefit of a premium (toric) IOL, to educate the patient on the advantages of a better post-operative VA. The subjective VA test for near will assist the patient in considering a Multifocal IOL.

Cataract workstation

The KR-800S completes the screening workflow of cataract surgery. All necessary cataract pre-op information can be obtained by KR-800S and ALADDIN, while the KR-800S assist you post-op in Visual Acuity evaluation and the success of the cataract surgery. ALADDIN and KR-800S the perfect combination for your cataract practice.



Aladdin
Optical Biometry &
Topography System



KR-800S
Auto kerato refractometer
with subjective function

Technical Specifications of Aladdin

Measurement range for IOL	
Axial Length (Interferometry)	Super luminescent diode 830nm, 15 mm - 38 mm
Corneal Radii	5.00mm - 12.00mm / 28.00D - 67.50D
ACD measurement	Interferometer 1.5mm - 6.5mm
WTW measurement	6,0 mm- 18,0 mm
Pupillometry	Dynamic, Photopic & Mesopic, pupil size 0.5 mm - 10 mm
Lens Thickness (interferometry)	0.5mm - 6.5mm
CCT measurement (interferometry)	0.300mm - 0.800mm
On-board calculation formulas	
IOL formulas	Haigis, Hoffer Q, Holladay 1, SRK*II, SRK*T, Barrett, Universal II, Olsen
Post Refractive Surgery IOL formulas	Camellin Calossi and Shammas No History, Barrett True K, Barrett Rx
Placido Topography specifications	
Keratoscopic Cone (topographic map)	24 rings on a 43 dpt sphere, working distance 80 mm
Points analysed	Over 100,000
Points measured	6,200
Cornea coverage	up to Ø 9,8 mm (on a 8 mm sphere) 42.2 dpt with N=1.3375
Guided focus system	Yes
Keratoconus screening	
Apical Curvature	Yes
Apical Gradient of Curvature	Yes
Symmetry index	Yes
Software features	
Toric IOL calculator	Generic Toric IOL, Oculentis Toric IOL
Zernike analysis	Pupil size 2.5 mm - 7.0 mm
Print to	USB printer, Network printer, PDF to shared network folder & PDF to USB drive
Instrument Specifications	
Display	10.1" touch screen
Storage	320 GB HDD + 32 GB SSD
Operating system	Windows 10
Processor	AMD G-T56N
Internal memory	2GB RAM
Power input	AC 100 - 240V 46-63 Hz
Dimensions	320 mm (W) x 490 mm (H) x 470 mm (L)
Weight	18 kg
Connections	1 x LAN, 2 x USB
Supports	USB Barcode scanner, External USB keyboard / mouse
Marking	CE, ETL
Reports	
Aladdin report	Yes
Measurement overview	Yes
Pupillometry	Yes
IOL	Yes
Generic Toric IOL	Yes
Oculentis Toric IOL	Yes



CE 0123

* Not available in all countries, please check with your distributor for availability in your country
* Subject to change in design and/or specifications without advanced notice

IMPORTANT In order to obtain the best results with this instrument, please be sure to review all user instructions prior to operation.

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