

Nuovi Biometri ottici e nuove misure in biometria



**XVI CONGRESSO SOCIETA'
OFTALMOLOGICA CALABRESE**

**CLAUDIO CARBONARA
ROMA**



NUOVE MISURE BIOMETRICHE

- Non più K e AxL, ma anche ACD e LT
- Correttivi di AxL per occhi > di 25mm
- Angolo Kappa
- Aberrazione sferica

Correttivi di AxL per occhi > 25mm

- Holladay 1 = $0.8814 * AxL + 2.8701$
- Haigis = $0.9621 * AxL + 0.6763$
- SRK/T = $0.8981 * AxL + 2.5637$

- Hoffer Q = $0.8776 * AxL + 2.9269$

NUOVE MISURE BIOMETRICHE

- pupillometria
- Sensibilità al contrasto
- Distanza di lettura e di lavoro
- Nuove IOL progressive/extended range/ continuous focus



00:00:00:00

Nidek AlScan - 10 sec

IOLMaster 500 - 55 sec

Topcon Aladdin - 1 min

Nidek AI-Scan

- No Windows!
- Accensione immediata, no password
- Autofocus e autoshot
- Misurazioni velocissime

The screenshot displays the Nidek AI-Scan software interface. At the top, the NIDEK logo is on the left, and fields for ID and Name are on the right. Below the logo are four buttons: AL, KM (selected), ACD/CCT, and WTW/PS. On the far right are Back and Print buttons. The main area is divided into 'Right' and 'Left' sections, each containing a table of measurements for 10 points. The 'Right' section shows a diameter of $\phi 2.4$ and the 'Left' section shows $\phi 2.4$. Below each table is a summary of K1, K2, and Axis values.

No.	K1	K2	Axis	$\phi 2.4$
1	41.98	42.67	167	
2	41.98	42.61	168	
3	41.93	42.61	167	
4				K1 41.98
5				K2 42.61
6				Axis 167
7				
8				
9				
10				

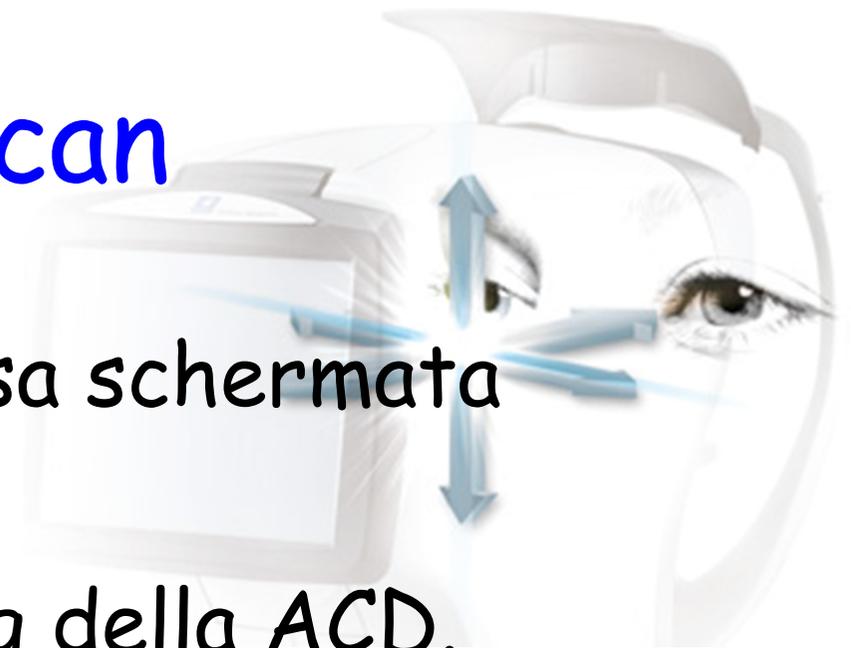
No.	K1	K2	Axis	$\phi 2.4$
1	42.67	42.78	130	
2	42.56	42.72	137	
3	42.56	42.72	137	
4				K1 42.56
5				K2 42.72
6				Axis 137
7				
8				
9				
10				

No.	K1	K2	Axis	$\phi 3.3$
1	42.13	42.51	180	
2	42.08	42.45	180	
3	42.08	42.40	178	
4				K1 42.08
5				K2 42.45
6				Axis 180
7				
8				
9				
10				

No.	K1	K2	Axis	$\phi 3.3$
1	42.45	42.83	88	
2	42.45	42.72	92	
3	42.40	42.72	90	
4				K1 42.45
5				K2 42.72
6				Axis 90
7				
8				
9				
10				

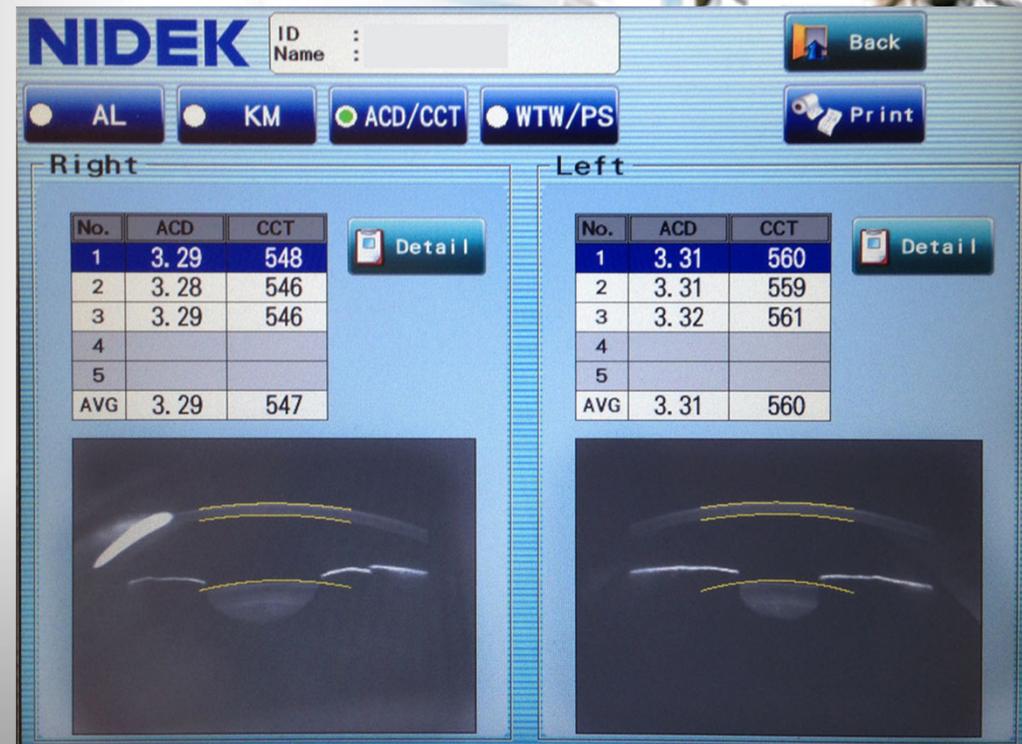
Nidek AI-Scan

- Misure OO sulla stessa schermata
- Immagine scheimpflug della ACD.
- Tutte le formule biometriche (troppe!)
(SRK, SRK2, SRK/T, Binkhorst, Hoffer Q, Holladay 1, Haigis)



Nidek AI-Scan

- Pachimetro e biometro ad ultrasuoni
- 10 secondi per misurare tutto
- interfaccia inglese o giapponese



Nidek AL-Scan



- Risultati identici a IOLMaster
- Stesse difficoltà nei casi difficili
- Assoluta insensibilità al film lacrimale 😊

NIDEK

ID Name :

 Back

AL

KM

ACD/CCT

WTW/PS

 Print

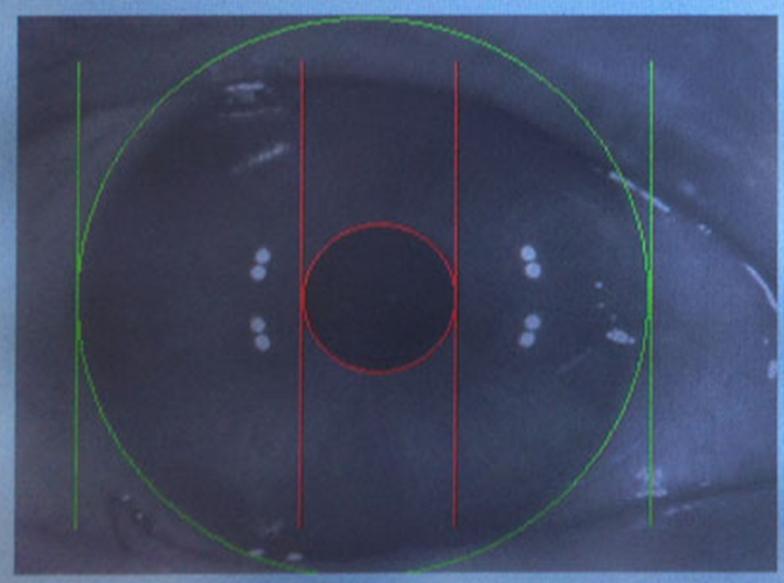
Right

WTW 11.9

 Detail

PS (OFF) 3.2

PS (ON)



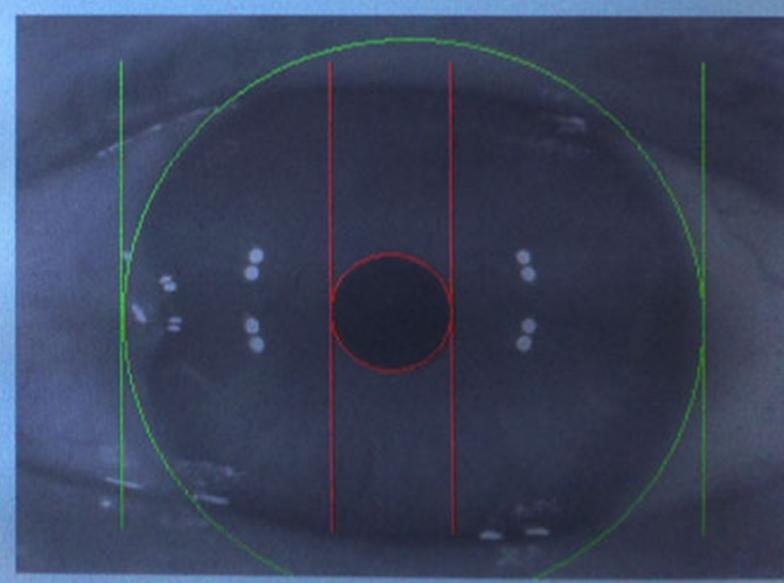
Left

WTW 11.9

 Detail

PS (OFF) 2.5

PS (ON)



Nidek AI-Scan



- Camellin-Calossi e Shammas PL per pazienti post-refrattivi
- Software per ottimizzare le costanti

NIDEK ID Name :

Back

AL KM ACD/CCT WTW/PS Save Output Print

Right

No.	AL (mm)	SNR
1	23.55	23.2
2	23.53	14.5
3	23.54	18.5
4		
5		
6		
7		
8		
9		
10		

AL (3)
Phakic Addition
AL (mm)
23.55
SNR
18.6

Edit

14 40

Left

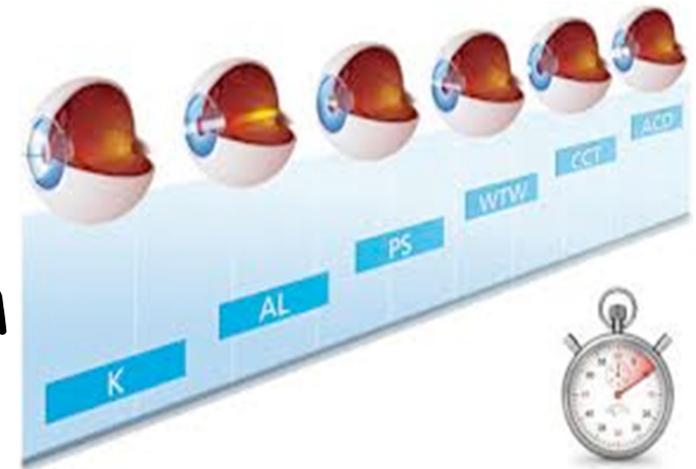
No.	AL (mm)	SNR
1	23.59	16.9
2	23.55	13.3
3	23.58	17.2
4		
5		
6		
7		
8		
9		
10		

AL (3)
Phakic Addition
AL (mm)
23.58
SNR
18.4

Edit

14 40

Nidek AL-Scan



- K readings a 2.4mm e 3.3mm
- Asse del cilindro
- AxL
- ACD
- Pachimetria
- Pupil size
- W-to-W
- K readings da 25D a 67D
- AxL da 14mm a 40mm
- ACD da 1.5mm a 6.5mm
- W-to-W da 7mm a 14mm
- Pupil size da 1mm a 10mm

Pazienti esaminati

- 256 occhi di 171 pazienti
- 21 occhi con pregressa chir. refrattiva
- 15 occhi con pregressa chir. refrattiva miopica
- 6 occhi con pregressa chir. refrattiva ipermetropica

LE MISURE

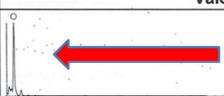
AxL	TOPCON	NIDEK	ZEISS
MAX.	33.69	33.78	33.56
MIN.	21.41	14.74	14.84
AVERAGE	24.32	24.22	24.23
ACD			
MAX.	4.74	6.07	4.34
MIN.	1.19	1.89	1.98
AVERAGE	3.19	3.24	3.19

Nome: **maruccio, antonio**
 ID:
 Data di nascita: 11/12/1983
 Data dell'esame: 10/05/2013

n: 1.3375



Occorre verificare la plausibilità dei valori di misurazione KER, poiché potrebbero presentarsi variazioni patologiche!

Valori lunghezza assiale			
OD destro			OS sinistro
			
Fachico		Fachico	
Comp. AL: Valutazione! (SNR = 219.6)		Comp. AL: Valutazione! (SNR = 379.5)	
AL	SNR	AL	SNR
14.87 mm	3.8	15.02 mm	4.7
14.86 mm	2.9	15.04 mm	4.6
14.86 mm	3.4	15.06 mm	5.4
14.83 mm	4.2	15.03 mm	6.5
14.84 mm	5.0	15.03 mm	5.7
		15.04 mm	5.5

Valore Curvatura Corneale			
VM: 50.37/51.68 D	SD: 0.02 mm	VM: 50.07/51.29 D	SD: 0.00 mm
D1: 50.75 D x 42°	6.65 mm	D1: 50.00 D x 91°	6.75 mm
D2: 51.61 D x 132°	6.54 mm	D2: 51.37 D x 1°	6.57 mm
KK: -0.86 D x 42°		KK: -1.37 D x 91°	
D1: 50.15 D x 175°	6.73 mm	D1: 50.15 D x 90°	6.73 mm
D2: 51.76 D x 85°	6.52 mm	D2: 51.21 D x 0°	6.59 mm
KK: -1.61 D x 175°		KK: -1.06 D x 90°	
D1: 50.30 D x 0°	6.71 mm		
D2: 51.61 D x 90°	6.54 mm		
KK: -1.31 D x 0°			

Valore ACD			
ACD: 2.71 mm		ACD: 2.85 mm	
2.71 mm	2.72 mm	2.71 mm	2.71 mm
2.85 mm	2.85 mm	2.85 mm	2.85 mm

Valori Bianco - Bianco			
WTW: 11.7 mm	Pup: 4.9 mm	WTW: 11.9 mm	Pup: 4.8 mm
Ix:+0.3mm Iy:-0.1 mm	Px:+0.2mm Py:-0.0mm	Ix:-0.1mm Iy:-0.1 mm	Px:-0.0mm Py:-0.1mm
WTW: 11.6 mm	Pup: 4.6 mm	WTW: 11.9 mm	Pup: 4.0 mm
Ix:+0.3mm Iy:+0.1 mm	Px:+0.3mm Py:+0.0mm	Ix:-0.3mm Iy:-0.2 mm	Px:-0.2mm Py:+0.0mm
WTW: 11.6 mm	Pup: 4.6 mm	WTW: 11.8 mm	Pup: 4.1 mm
Ix:+0.3mm Iy:-0.0 mm	Px:+0.3mm Py:-0.0mm	Ix:-0.3mm Iy:-0.1 mm	Px:-0.2mm Py:-0.0mm

Note:
dott. bocuzzi

(* = modifica manuale, ! = valore limite)

Nome: **maruccio, antonio**
 ID:
 Data di nascita: 11/12/1983
 Età del paziente: 29
 Data dell'esame: 10/05/2013

Refrax. target: 0 D
n: 1.3375



Chirurgo oftalmico: **Claudio Carbonara**
 Lente: AMO Sensor AR40E

Occorre verificare la plausibilità dei valori di misurazione KER, poiché potrebbero presentarsi variazioni patologiche!

OD destro			OS sinistro
AL: 14.86 mm (*) K1: 50.37 D / 6.70 mm @ 12° K2: 51.68 D / 6.53 mm @ 102° R / ES: 6.62 mm / 51.02 D Cil.: -1.31 D @ 12°		AL: 15.03 mm (*) K1: 50.07 D / 6.74 mm @ 90° K2: 51.29 D / 6.58 mm @ 0° R / ES: 6.66 mm / 50.68 D Cil.: -1.22 D @ 90°	
ACD: 2.71 mm		ACD: 2.85 mm	
Stato: Fachico		Stato: Fachico	

Haigis	HofferQ	Haigis	HofferQ
Cost. A0: -2.420	Cost. pACD: 5.41	Cost. A0: -2.420	Cost. pACD: 5.41
Cost. A1: 0.157		Cost. A1: 0.157	
Cost. A2: 0.288		Cost. A2: 0.288	

IOL (D)	REF (D)	IOL (D)	REF (D)	IOL (D)	REF (D)	IOL (D)	REF (D)
58.0	-1.11	75.5	-1.1	57.5	-1.27	73.0	-1.0
57.5	-0.70	75.0	-0.8	57.0	-0.87	72.5	-0.6
57.0	-0.31	74.5	-0.5	56.5	-0.47	72.0	-0.3
56.5	0.09	74.0		56.0	-0.08	71.5	0.0
56.0	0.48	73.5	0.2	55.5	0.31	71.0	0.4
55.5	0.86	73.0	0.5	55.0	0.70	70.5	0.7
55.0	1.24	72.5	0.8	54.5	1.08	70.0	1.0
IOL emme.: 56.61		IOL emme.: 73.77		IOL emme.: 55.90		IOL emme.: 71.56	

Holladay 1	SRK@/T	Holladay 1	SRK@/T
SF: 1.63	Cost. A: 118.70	SF: 1.63	Cost. A: 118.70

IOL (D)	REF (D)						
60.0	-1.09	59.0	-1.09	59.0	-1.11	58.0	-1.16
59.5	-0.70	58.5	-0.71	58.5	-0.72	57.5	-0.78
59.0	-0.33	58.0	-0.33	58.0	-0.34	57.0	-0.40
58.5	0.05	57.5	0.04	57.5	0.03	56.5	-0.03
58.0	0.42	57.0	0.41	57.0	0.40	56.0	0.34
57.5	0.78	56.5	0.77	56.5	0.76	55.5	0.70
57.0	1.14	56.0	1.13	56.0	1.13	55.0	1.06
IOL emme.: 58.56		IOL emme.: 57.56		IOL emme.: 57.54		IOL emme.: 56.46	

Note:
dott. bocuzzi

(* = modifica manuale, ! = valore limite)

LE MISURE

K1	TOPCON	NIDEK	ZEISS
MAX.	47.96	50.37	50.37
MIN.	38.9	35.09	36.21
AVERAGE	43.37	43.38	43.32
K2			
MAX.	51.19	52.33	51.68
MIN.	39.41	37.33	37.75
AVERAGE	44.30	44.28	44.33

Differenze con le misure dello IolMaster

- AxL: 0.005mm SD: 0.047mm
- ACD: 0.011mm SD: 0.327mm
- K1: -0.044D SD: 0.429D
- K2: -0.064D SD: 0.460D
- Cil axis: -2.063° SD: 81.27°

Nidek AL-Scan



- Stampa solo su carta termica o .PDF
- Connessione a PC esterno per software IOL-Station 😊
- Associato a OPD-Scan III completa dati per IOL-Station 😊

CATARACT SUMMARY by Paolo Vinciguerra

Exam No.1 Date 02/10/2013 18:53

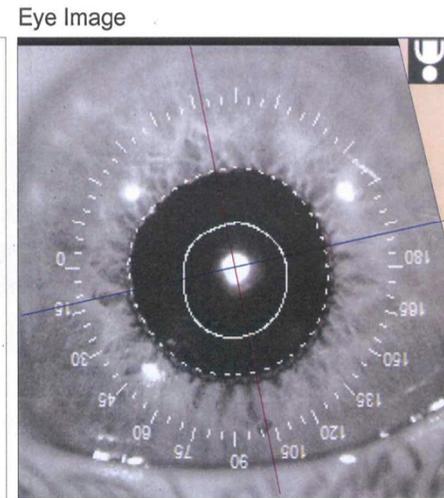
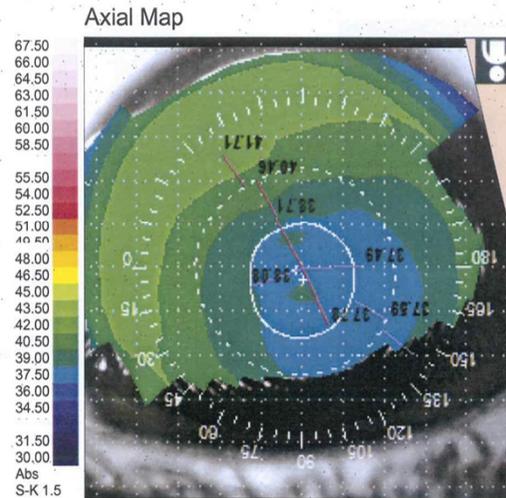
L
 ID : cs51
Ciarla, Stefano

62 y.o. Female

Recommended IOL		
	First choice	Second choice
Maker	AMO	Alcon
Model	1ZCB00	SN60WF
A		
Post S.A.	+0.42 μm	+0.49 μm
AL corr.	27.75 mm	27.75 mm
ACD corr.	4.10 mm	4.10 mm
Cyl lens[Rx]	1.00 [-0.22]	0.00 [-0.76]
IOL		
	16.00 +1.27	15.50 +1.27
	16.50 +0.95	16.00 +0.94
	17.00 +0.62	16.50 +0.60
	17.50 +0.29	17.00 +0.26
	18.00 -0.04	17.50 -0.08
	18.50 -0.38	18.00 -0.42
	19.00 -0.71	18.50 -0.76
	19.50	
	20.00 -1.38	19.50 -1.45

IOL power formula & Used parameters

Formula : Camellin-Calossi
 Surgery : Laser ablation (PRK,LASIK)
 Surgeon : Unknown
 Implant : Primary
 Corneal Index : 1.3375
 K : 37.94 D (App@3mm)
 Cyl : -0.48 D @ 15
 AL :
 ACD : 4.10 mm
 LT : 4.55 mm



Keratometry

K1 : **38.79** D @ 102
38.35 D @
 Cyl : -0.44 D @ 12
 Avg. : **38.57** D

Biometry

AL : **27.75** mm
 ACD : **4.10** mm
 LT : **4.55** mm

IOP : **12.0** mmHg
 Lens hardness : Medium

Refraction

UCVA
 BCVA :
 Sph : D
 Cyl : D
 Axis :
 VD : 40.00

Cornea

H.O. : **1.216** μm @ **6.00** mm
+0.692 **6.00**
 App@P : **37.92** D
 Cyl: -0.52 D @ 14
 App@M : **38.34** D
 Cyl: -0.52 D @ 16
 App@A : **37.94** D
 Cyl: -0.48 D @ 15
 Center Pachy : **455** μm
 SIRC : -7.00 D

Endothelium

NUM : *** cells
 AVG : *** μm²
 SD : *** μm²
 CV : *** %
 MAX : *** μm²
 MIN : *** μm²
 HEX : *** %
 CT : *** μm
 Fixation : ***

Fellow eye

UCVA :
 BCVA :
 Sph : D
 Cyl : D
 Axis :

Pupillometry

Dia@P : 2.61 mm
 PDist : **0.32** mm @ 95
 MDist : **0.18** mm @ 36
 MPDist : **0.27** mm @ 310
 Total : 0.00 @ 0
 Corneal : 0.00 @ 0
 Internal : 0.00 @ 0

Undergone cataract surgery
 Unknown

Remarks column

Scheduled operation date : 07/10/2013 Printed : 07/10/2013 13:31:40



CATARACT SUMMARY by Paolo Vinciguerra

Exam No.1 Date 02/10/2013 18:53

L
 ID : cs51
Ciarla, Stefano

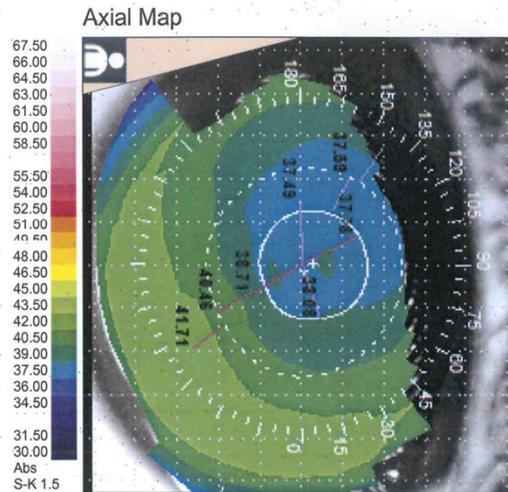
62 y.o. Female

Recommended IOL

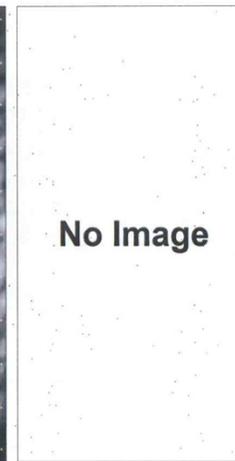
	First choice	Second choice
Maker	AMO	Alcon
Model	1ZCB00	SN60WF
Post S.A.	+0.42 μm	+0.49 μm
AL corr.	27.75 mm	27.75 mm
ACD corr.	4.10 mm	4.10 mm
Cyl lens[Rx]	1.00 [-0.22]	0.00 [-0.76]
IOL DIOP	IOL DIOP	IOL DIOP
16.00	+1.27	15.50 +1.27
16.50	+0.95	16.00 +0.94
17.00	+0.62	16.50 +0.60
17.50	+0.29	17.00 +0.26
18.00	-0.04	17.50 -0.08
18.50	-0.38	18.00 -0.42
19.00	-0.71	18.50 -0.76
19.50	-1.04	19.00 -1.08
20.00	-1.38	19.50 -1.45

IOL power formula & Used parameters

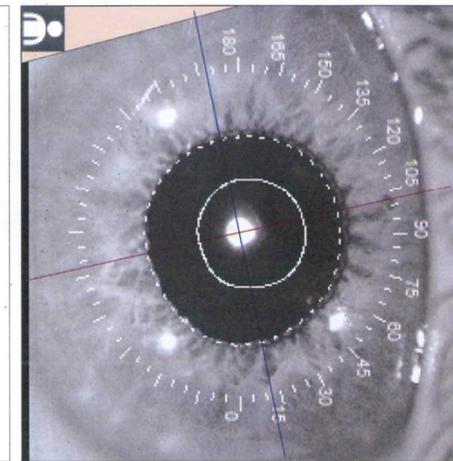
Formula : Camellin-Calossi
 Surgery : Laser ablation (PRK,LASIK)
 Surgeon : Unknown
 Implant : Primary
 Corneal Index : 1.3375
 K : 37.94 D (App@3mm)
 Cyl : -0.48 D @ 15
 AL :
 ACD : 4.10 mm
 LT : 4.55 mm



Endothelial Image



Eye Image



Keratometry

K1 : **38.79 D @ 102**
38.35 D @
 Cyl : -0.44 D @ 12
 Avg. : **38.57 D**

Biometry

AL : **27.75 mm**
 ACD : **4.10 mm**
 LT : **4.55 mm**

IOP : **12.0 mmHg**

Lens hardness : Medium

Refraction

UCVA :
 BCVA :
 Sph : D
 Cyl : D
 Axis :
 VD : 10.00 mm

Cornea

H.O. : **1.216 μm @ 6.00 mm**
+0.692 6.00
 App@P : **37.92 D**
 Cyl: -0.52 D @ 14
 App@M : **38.34 D**
 Cyl: -0.52 D @ 16
 App@C : **37.94 D**
 Cyl: -0.48 D @ 15
 Center Pachy : **455 μm**

SIRC : -7.00 D

Endothelium

NUM : *** cells
 AVG : *** μm²
 SD : *** μm²
 CV : *** %
 MAX : *** μm²
 MIN : *** μm²
 HEX : *** %
 CT : *** μm
 Fixation : ***

Fellow eye

UCVA :
 BCVA :
 Sph : D
 Cyl : D
 Axis :
 Undergone cataract surgery
 Unknown

Pupillometry

Dia@P : 2.61 mm
 PDist : **0.32 mm @ 95**
 MDist : **0.18 mm @ 36**
 MPDist : **0.27 mm @ 310**
 Total : 0.00 @ 0
 Corneal : 0.00 @ 0
 Internal : 0.00 @ 0

Remarks column

Scheduled operation date : 07/10/2013

Printed : 07/10/2013 13:26:23



VIEW SIMULATION

L

ID : cs51
Ciarla, Stefano

62y.o. Female

Exam No.1 Date 02/10/2013 18:53

IOL model : 1ZCB00

IOL Pwr 18.00D Rx -0.04D Cylinder 1.00

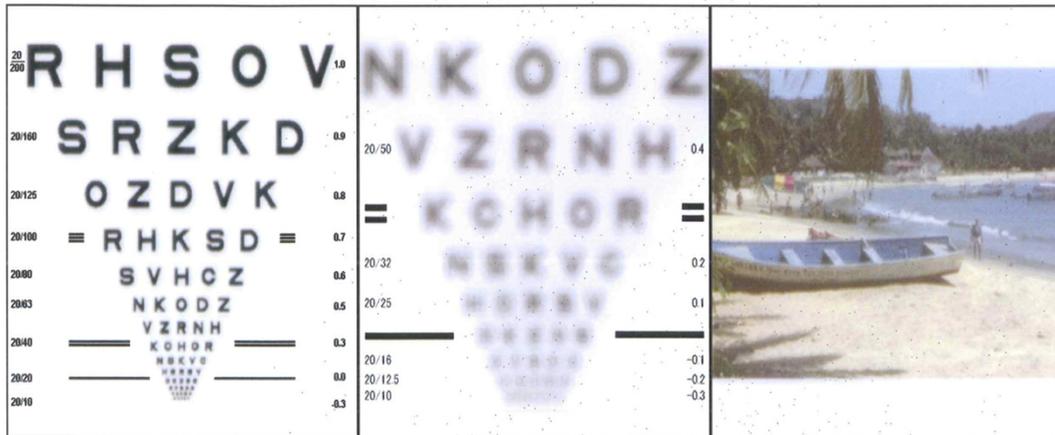
Simulation Results

pACD 7.625mm Sph/Cyl/Axis -0.26/-0.22/107 SE -0.37 Strehl Ratio 0.029 Residual S.A. +0.42 μ m

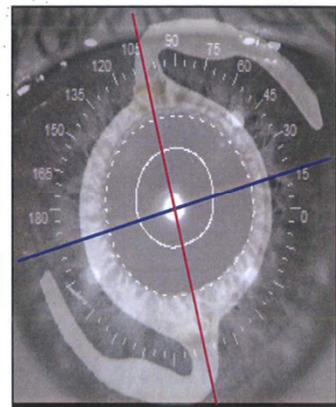
Whole ETDRS chart

Partial ETDRS chart

Scenic chart



First Choice
Corneal Steep Axis : 105°
Axis Offset : 0°
Pupil Size : 3.8mm



IOL model : SN60WF

IOL Pwr 17.50D Rx -0.08D Cylinder 0.00

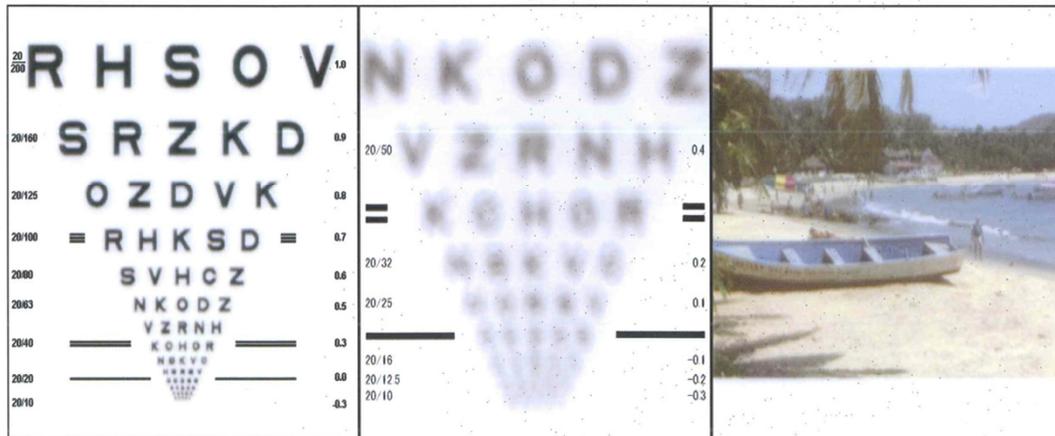
Simulation Results

pACD 7.269mm Sph/Cyl/Axis -0.01/-0.77/17 SE -0.40 Strehl Ratio 0.013 Residual S.A. +0.49 μ m

Whole ETDRS chart

Partial ETDRS chart

Scenic chart



Second Choice
Corneal Steep Axis : 105°
Axis Offset : 0°
Pupil Size : 3.8mm

ID : cs51
Name: ciarla, stefano M/F
Date: 02/Oct/2013 18:47
Oper: examiner01

AL
<L> mm SNR
Add 27.75 11.2
Type: Phakic

KM (Phi=2.4) Index=1.3375
<L> mm D deg
<R1 8.84 38.18 8 >
<R2 8.78 38.44 98 >
<AVG 8.81 38.31 >
<CYL + 0.26 98 >

KM (Phi=3.3) Index=1.3375
<L> mm D deg
<R1 8.76 38.53 14 >
<R2 8.68 38.88 104 >
<AVG 8.72 38.70 >
<CYL + 0.35 104 >

ACD CCT
<L> mm μ m
AVG 4.10 423

WTW Lamp OFF ON
<L> mm PS mm mm
12.2 4.1

NIDEK AL-Scan



Topcon Aladdin



Accensione

- Windows based
- Password su richiesta
- Avvio lento
- Topografia e Biometria ottica
- 10.1" monitor touchscreen
- Disco di Placido (24 anelli)



Principale | **Acquisizione** | Calcolo IOL | Misure

OD | BELARDONI ANNA 03/05/1932 | 24/09/2013 - 13:37 | OS

Fachico

AL

AL

ACD

ACD

KER

K1

K2

Axis

seudofachico (Sconosciuto)

AL

AL

ACD

ACD

KER

K1

K2

Axis

Biometria | Pupilometria

AL-ACD-K

AL | ACD | KER

Principale | **Acquisizione** | Calcolo IOL | Misure

OD | BELARDONI ANNA 03/05/1932 | 24/09/2013 - 13:37 | OS

Fachico

AL 22.14 mm (0.03)

AL 22.13

AL 22.13

AL 22.17

AL 22.22

AL 22.12

AL 22.15

ACD 3.16 mm (0.00)

ACD 3.16

KER K1= 46.11 D (0.06)

K2= 47.13 D (0.07)

CYL -1.02 D ax 117

K1 46.11

K2 47.13

Axis 117

seudofachico (Sconosciuto)

AL 22.10 mm (0.03)

AL 22.04

AL 22.09

AL 22.13

AL 22.10

AL 22.06

ACD 5.03 mm (0.00)

ACD 5.03

KER K1= 46.01 D (0.06)

K2= 47.15 D (0.07)

CYL -1.14 D ax 60

K1 46.01

K2 47.15

Axis 60

Biometria | Pupilometria

AL-ACD-K

AL | ACD | KER

Principale | **Acquisizione** | Calcolo IOL | Misure

OD | TEST PROVA 01/01/2000 | 24/09/2013 - 10:21 | OS

Fachico

AL

AL

ACD

ACD

KER

K1

K2

Axis

Fachico

AL

AL

ACD

ACD

KER

K1

K2

Axis

Biometria | Pupilometria

AL-ACD-K

AL | ACD | KER

Principale | **Acquisizione** | Calcolo IOL | **Misure**

OD | PROVA TEST 01/01/2000 | 24/09/2013 - 12:49 | OS

CHERATOM.

Sim-K e

5.41 @ 167° 0.36

46.08 @ 77° 0.39

45.74 (AVG) 0.37

-0.67D ax 167°

KER

ZER

AL

ACD

PUP

WTW

K | I | KC | P | Mappa | Profilo

D --- r --- s --- z ---

MAPPA

Assiale

Tangenziale

SCALA

Assoluta

Normalizzata

VISUALIZ.

Occhio

Mappa

Anelli

Topcon Aladdin

- Posizione e diametro pupillare; nuovo software per misurare l'angolo Kappa
- Risultati di un occhio alla volta in alcuni screen-shots, entrambi in altri
- ACD misurata con lampada a fessura

Topcon Aladdin



- Schermo grande e ben leggibile
- Software semplicissimo: 3 clicks → Iol Power
- Risultati praticamente identici a IolMaster

Main Acquisition IOL Calculation Measurement

R 11/01/2001 28/11/2012 - 12:53 L

KERATOCONUS

AK 44.34 D
AGC 0.93 D/mm
SI -0.69 D
Kpi 0%

KER
ZER
AL
ACD
PUP

Topography not compatible with keratoconus

K I KC P Map Profile

mm

MAP
Axial
Tangential

SCALE
Absolute
Normalized

DISPLAY
Eye
Map
Rings

D 7.993 r 2.487 ϕ 153° z -402

Principale Acquisizione Calcolo IOL Misure

OD DINI CECILIA 22/07/1939 29/04/2013 - 20:20 OS

KER
ZER
AL
ACD
PUP
WTW

Diametro 11.56 mm

Decentram.
X -0.36 mm
Y -0.23 mm

EDITING
Apri
Reset

Principale Acquisizione Calcolo IOL Misure

OD PROVA TEST 01/01/2000 24/09/2013 - 12:49 OS

INDICI-K

Astigmatismo 3mm -0.63 D ax 160°
5mm Sferico
Pot. Pupill. Medic P = 45.67 D
Asfericit  e = 0.36
Aberr. Sferica LSA = 1.02 D
Irregol. Curv. SD = 0.67 D
Asimmetria 45.55 @ 332°
45.72 @ 152°
A = 0.17 D
SAI = 0.17 D

KER
ZER
AL
ACD
PUP
WTW

K I KC P Mappa Profilo

MAPPA
Assiale
Tangenziale

SCALA
Assoluta
Normalizzata

VISUALIZ.
Occhio
Mappa
Anelli

D --- r --- ϕ --- z ---

Principale Acquisizione Calcolo IOL Misure

OD PROVA TEST 01/01/2000 24/09/2013 - 12:49 OS

PUPILLA

KC (D) 45.49
Pot. Pupill. Medic 45.67 D
Fotopica Decentram. Pup. H = 0.33 mm
V = -0.22 mm
 ϕ Pupill. Medio 2.47 mm
Mesopica Decentram. Pup. H = 0.32 mm
V = -0.12 mm
 ϕ Pupill. Medio 3.16 mm

KER
ZER
AL
ACD
PUP
WTW

K I KC P Mappa Profilo

MAPPA
Assiale
Tangenziale

SCALA
Assoluta
Normalizzata

VISUALIZ.
Occhio
Mappa
Anelli

D --- r --- ϕ --- z ---

Topcon Aladdin

- Netta superiorità rispetto ai concorrenti per cat. corticali posteriori 😊
- Scarsa sensibilità al film lacrimale scarso
- Stampa completissima via WiFi, USB or Lan

Topcon Aladdin limiti di misura

- Real Corneal Radius
- AxL
- ACD
- Pupil size e posizione
- W-to-W
- Topografia completa
- Aberrometria corneale
- K readings: da 32D a 67D
- AxL: da 15mm a 38mm
- ACD: da 1mm a 7mm
- W-to-W: da 8mm a 16mm
- Pupil size: da 2mm a 9mm

Topcon Aladdin: formule

- SRK 2, SRK/T, Holladay 1, Hoffer Q, Haigis
- Camellin-Calossi per post-refrattivi
- Oculentis toric iol calculator
- Aggiornamenti software frequenti 😊

Oculentis Toric IOL Calculator

Polinomi di Zernicke

5 formule per 5 IOL

[Generale](#)
[Misure](#)
[Chirurgici](#)
[IOL](#)
[Report](#)
[Amministrativa](#)

Chirurgo
 Surgeon Generic

Formule di calcolo
 Halijs Hoffer Q Holladay I SRK II SRK/T

Predefiniti

Produttore	Produttore	Produttore	Produttore	Produttore
AMO	AMO	.ZEISS	Alcon	Bausch&Lomb
Modello	Modello	Modello	Modello	Modello
Sensor AR40	Tecnis 1 ZCB00	AT LISA 801	Toric	Akreos AO
Formula	Formula	Formula	Formula	Formula
SRK/T	SRK/T	Hoffer Q	SRK II	Holladay I

Target Refrattivo:

[Principale](#)
[Acquisizione](#)
[Calcolo IOL](#)
[Misure](#)

OD 24/09/2013 - 12:49 OS

KER
ZER
AL
ACD
PUP
WTW

OPD
 Pupilla d'entrata: 5.0 mm

Piramide coefficienti di Zernike

Point Spread Function
 PSF
 Diameter PSF = 0.027 mm
 Max PSF = 40.2 %

Visus

Spot Diagram

Visus LC

Spot Center = 0.007 mm, 0.004 mm
 Spot Domain = 0.027 mm

[Main](#)
[Acquisition](#)
[IOL Calculation](#)
[Measurement](#)

OD 28/11/2012 - 12:53 OS

Surgical Pre Op Data

Spherical Equivalent Power (D)
 Induced Astigmatism (D)
 Incision Location (°)

Measures

AL (mm)	27.71	K1 (mm)	8.05	CYL (D)	-1.67@14°
ACD (mm)	3.06	K2 (mm)	7.74		

Toric IOL

Manufacturer
 Model
 Spherical Power (D)
 Cylindrical Power (D)
 Axis of Placement (°)

Pazienti esaminati

- 236 occhi di 157 pazienti
- 21 occhi con pregressa chir. refrattiva
- 15 occhi con pregressa chir. refrattiva miopica
- 6 occhi con pregressa chir. refrattiva ipermetropica

Differenze rispetto alle misure di IolMaster

- AxL: 0.021mm SD: 0.040mm
- ACD: -0.017mm SD: 0.256mm
- K1: -0.007D SD: 0.285D
- K2: -0.077D SD: 0.291D
- Cil axis: -5.256° SD: 53.745°

Confrontiamoli

- Tecnologia modernissima
- Molto più veloci dei concorrenti
- Entrambi schermo touchscreen HD
- Misure identiche e complete

Confrontiamoli

- Nidek più veloce ma stampa su carta termica (good printout on PDF)
- Aladdin più lento ma molte più informazioni
- Prezzi concorrenziali

Confrontiamoli

- Nidek: nessun problema con le lacrime
- Aladdin molto meglio di tutti su corticale
- Nuove versioni aggiornate in arrivo

Aladdin vs Nidek

Quale comprare?

Qual è migliore?

Quale suggerirei?

Impossibile da dire:

Entrambi eccellenti