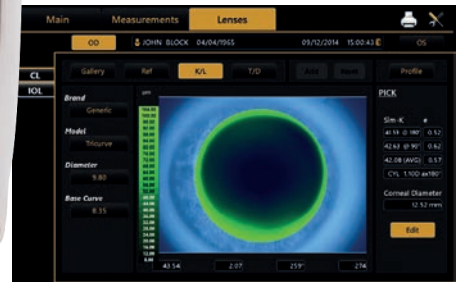


CA-800 Corneal Analyzer



PERFORMANCE
YOU CAN COUNT ON



CA-800

Ease of use

The CA-800 is extremely easy to handle and use. From image acquisition to analysis, the on-board software is intuitive and user-friendly and the 10.1-inch capacitive touch screen provides quick navigation. Visual guidance supports fast and easy alignment and focusing on the eye; the “best image” selection mode automatically acquires the best-focused image. The CA-800 is a placido-based topography system that delivers accurate, high resolution images of the anterior corneal surface. The keratoscope cone with 24 rings equally spaced on a 43D sphere analyses over 100.000 data points, with axial and instantaneous curvature evaluation.

Integrated PC

The brand new compact design of the CA-800 includes a fully integrated PC, so that an external PC is not required to manage a patient database for archiving and re-analysis purposes. The patient database is stored on an internal 320Gb SATA hard disk and the CA-800 includes a 32Gb SSD for a quick startup of the instrument and user interface.



Accurate, full
examination
of the anterior
corneal surface



CA-800 fully featured

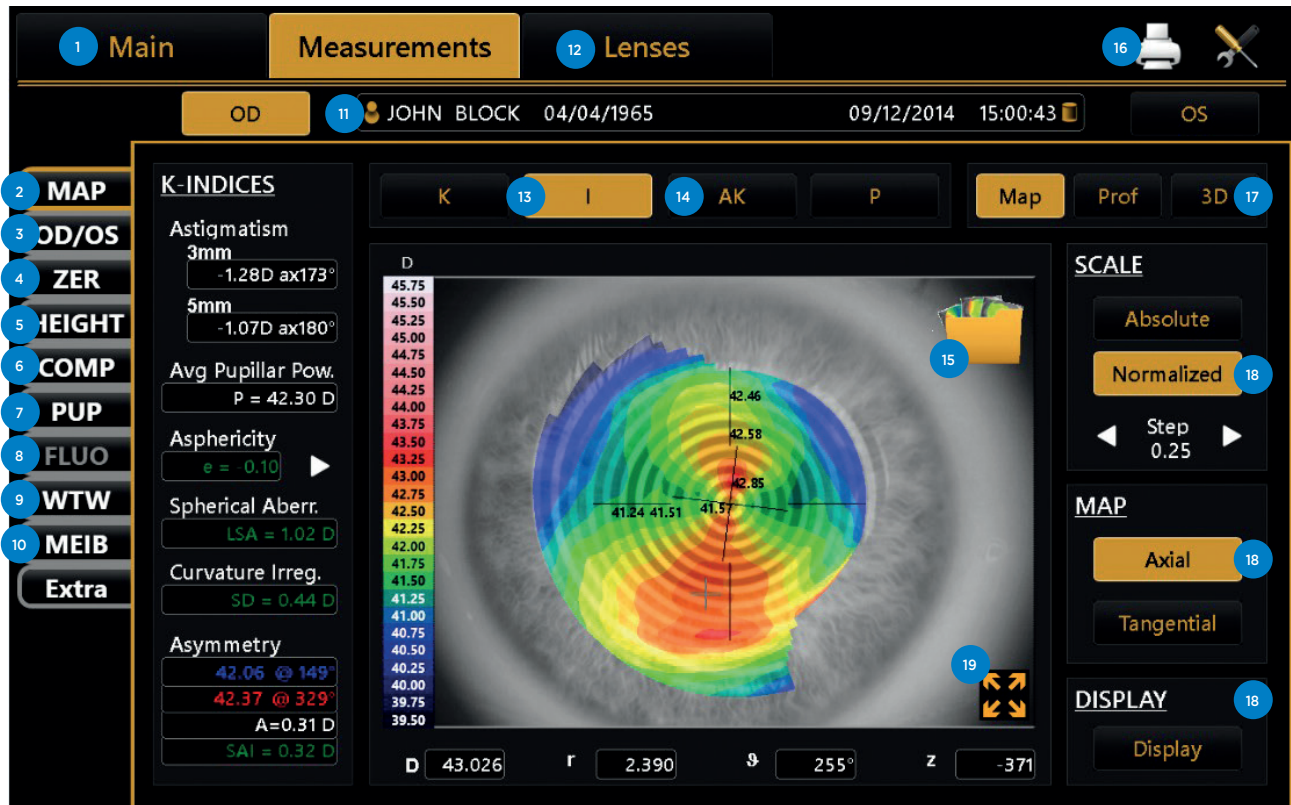
- » **Topography map**
 - » Map full screen mode
 - » Ring editing
 - » Keratoconus screening (KPI)
 - » Full 3D map of corneal surface
 - » Automated best image selection
- » **OD/OS results on same screen**
- » **Corneal wavefront (Zernike) analysis**
- » **Corneal surface height map**
- » **Comparison map**
 - » Reviewing of previous patient examinations
- » **Differential map**
 - » Post-operative monitoring of corneal healing
- » **Pupillometry**
 - » Automated pupil recognition
 - » Dynamic, Photopic, Mesopic & Scotopic
 - » Latency graph
- » **Real time fluorescein acquisition and imaging**
 - » Internal yellow barrier filter
- » **White to white measurement**
- » **Meibomian gland analysis**
- » **Contact lens fitting simulation**
 - » Complete contact lens fitting software
 - » Contact lens database on-board
- » **Toric IOL calculation¹**
 - » Oculentis
- » **10.1" Capacitive touch screen**
- » **Fully integrated patient database**

1. Available outside the US.

PERFORMANCE
YOU CAN COUNT ON



All features accessible on just one screen



- 1 Patient database and acquisition
- 2 Topography
- 3 OD/OS on one screen
- 4 Aberrometry
- 5 Height map
- 6 Comparison and Differential map
- 7 Pupillometry
- 8 Fluorescein imaging
- 9 White to white
- 10 Meibography
- 11 Patient ID
- 12 IOL calculation¹ and Contact lens fitting
- 13 Keratometry and Indices
- 14 Keartoconus screening
- 15 Ring editing
- 16 Report printing
- 17 3D map
- 18 Display options
- 19 Full screen mode

1. Available outside the US.

CA-800 - Corneal Analyzer

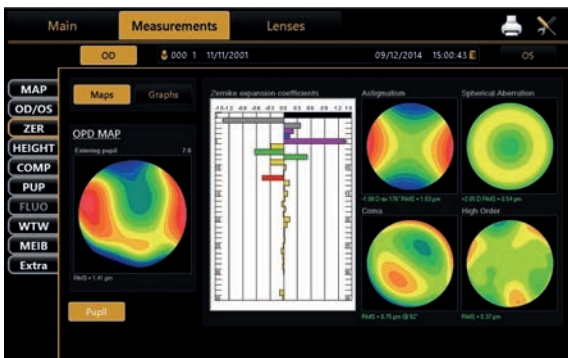


Acquisition

The CA-800 is easy to use. Visual signals support fast and easy alignment and focusing on the patients eye. The CA-800 has a Right and Left eye detection and prevents incorrect savings in Right / Left eye measurements. The automated best image selection mode in the software of the CA-800 decides the best focused position and automatically acquires the image. Acquisitions can be made for topography, pupillometry and real time fluorescein imaging.

Keratoconus screening

With the CA-800, signs of asymmetry of the cornea can easily be detected even in an early stage. By analyzing the apical curvature, apical gradient and symmetry of the cornea, a Keratoconus probability index will show in color code (green, yellow & red) if the topography is compatible with Keratoconus. With the CLMI (Cone Location and Magnitude Index) it is easy to follow-up on keratoconus and keratoconus-like patterns.



Corneal Zernike analysis

The Zernike analysis module consists of 36 polynomials into the 7th order, and provides a clear view on the optical deficiencies which can disturb vision. Based on this information, the CA-800 provides the visual acuity summary. Zernike analysis is the basis for the calculation of the ablation area for laser treatment. The Zernike expansion coefficient is used to determine which component(s) dominate the aberration structure of the cornea and to what degree.

All features accessible on just one screen

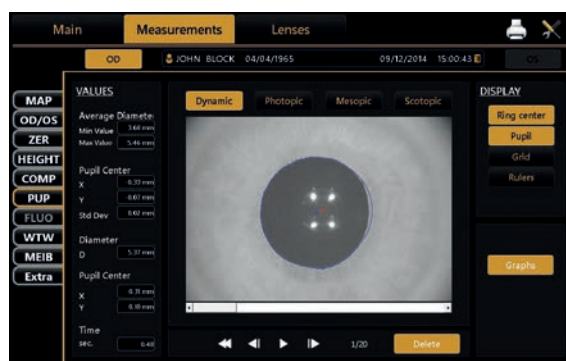


Corneal comparison & differential map

With the CA-800, it is easy to compare topography maps between two examinations of a patient, which can be used for follow up and for pre- and post-operative corneal analysis. With the differential map, progress in recovery of the cornea can be observed after refractive surgery. Parameters such as keratometry, apical curvature and corneal symmetry can be analyzed to follow the development of any corneal surface changes. The CA-800 comparison and differential maps help you with the treatment of collagen cross linking to stop the development of corneal keratoconus.

Pupillometry

The CA-800 is equipped with two white LED's for dynamic and static pupillometry. With the CA-800 on-board, the user can check the pupil position and diameter (from Photopic to Scotopic condition) in relation to the position of the optical zone in Ortho-K, laser treatment or refractive surgery treatments. Dynamic pupillometry provides clear information on the reaction time of the pupil and the contraction of the pupil.



Fluorometry

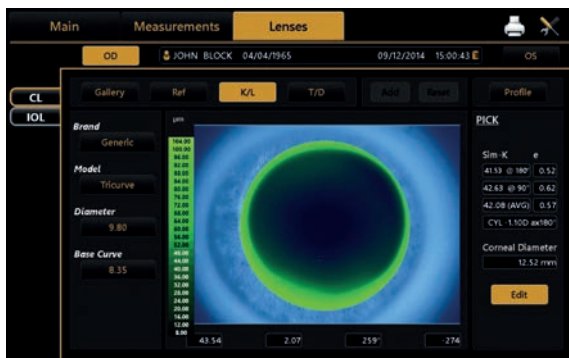
The CA-800 incorporates eight blue LED's for fluorescein images and real time fluorescein videos which are essential for contact lens fitting. During every measurement, the CA-800 automatically registers the pupil diameter, which is critical information during contact lens fitting. Real time fluorescein films allow the eye care practitioner to judge the movement of the contact lens on the cornea, the distribution of the tear film under the contact lens as well as the wetting of the outer contact lens surface. The corneal condition can be observed by recording a real time fluo film without wearing a contact lens. The tear film condition, corneal artifacts and break up tear time (BUT) can be observed.



CA-800 - Corneal Analyzer

Meibomian gland analysis

With the Infra-red illumination of the CA-800, the Meibomian Glands of the upper and lower eyelid can be captured and analyzed. Posterior blepharitis is the most common form of lid margin disease. MGD (Meibomian Gland Dysfunction) can cause or exacerbate dry eye symptoms and eyelid inflammation. The oil glands become blocked with thickened secretions. Chronically clogged glands eventually become unable to secrete oil which results in permanent changes in the tear film and dry eyes. With the CA-800, MGD can easily be observed and compared with previous Meibomian gland examinations of the patient.



Contact lens fitting simulation

The CA-800 provides the perfect platform for contact lens fitting. Simulation software is provided on-board, which automatically selects the best fitting contact lens based upon an included complete contact lens database for all the main manufacturers (upgradable and customizable by the user). With the option to input refractive powers, the contact lens proposal is accurate and complete. The on-board fluorescein acquisition system allows full control of the contact lens position on the eye. The comparison between different contact lenses is easy in order to ensure the best fit.



Reports Topography

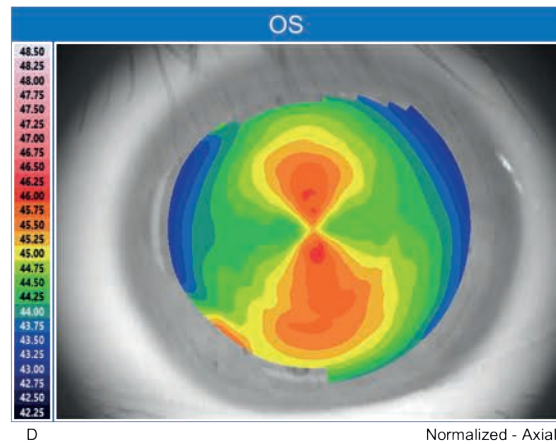
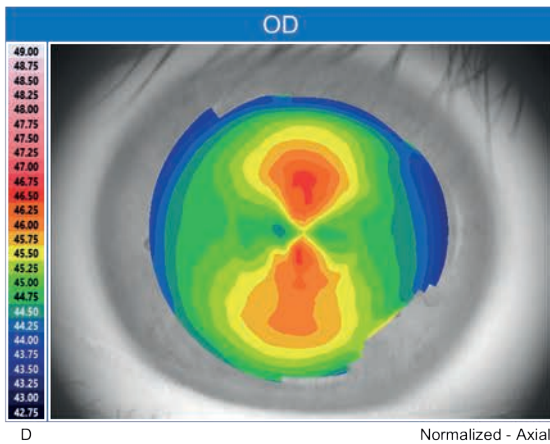


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Patient Information

| | | | |
|---------------|------------------|-----------|---------------------|
| Patient | CORNEAL ANALYZER | Gender | M |
| Patient ID | 12345678 | Exam Date | 17/02/2015 13:37:29 |
| Date of Birth | 01/01/2000 | Surgeon | |

TOPOGRAPHICAL MAP



Sim-K

| K1 | K2 | CYL | K1 | K2 | CYL |
|--------------|-------------|---------------|------------|-------------|-------------|
| 44.84 @ 180° | 46.27 @ 90° | -1.43D ax180° | 44.36 @ 7° | 45.78 @ 97° | -1.41D ax7° |

Cornea Data

| Cornea Decentralization X - Y | | Cornea Decentralization X - Y | |
|--|---------|--|----------|
| -0.23 mm | 0.04 mm | 0.20 mm | -0.11 mm |
| Diameter 12.28 mm | | Diameter 12.27 mm | |
| Pupillar Decentralization X - Y H= -0.04 mm V= 0.11 mm | | Pupillar Decentralization X - Y H= -0.18 mm V= 0.14 mm | |
| Avg. Pupillar Diam. 3.54 mm | | Avg. Pupillar Diam. 4.88 mm | |
| Avg. Pupillar Power 45.51 D | | Avg. Pupillar Power 45.15 D | |

Keratoconus Screening

| AK | AGC | SI | Kpi | AK | AGC | SI | Kpi |
|--|-----------|-----------|-----|--|-----------|-----------|-----|
| 45.80 D | 0.50 D/mm | 0.05 D | 0% | 46.26 D | 0.88 D/mm | 0.30 D | 0% |
| Topography not compatible with keratoconus | | | | Topography not compatible with keratoconus | | | |
| A | D | Ro - Teta | Rnd | A | D | Ro - Teta | Rnd |
| | | | | | | | |

Keratometric Indices

| SD | SAI | e | Kc | SD | SAI | e | Kc |
|-------------|--------------|----------|-------|-------------|--------------|----------|-------|
| SD = 0.38 D | SAI = 0.19 D | e = 0.42 | 45.45 | SD = 0.29 D | SAI = 0.34 D | e = 0.36 | 45.18 |

Notes

Reports Pupillometry



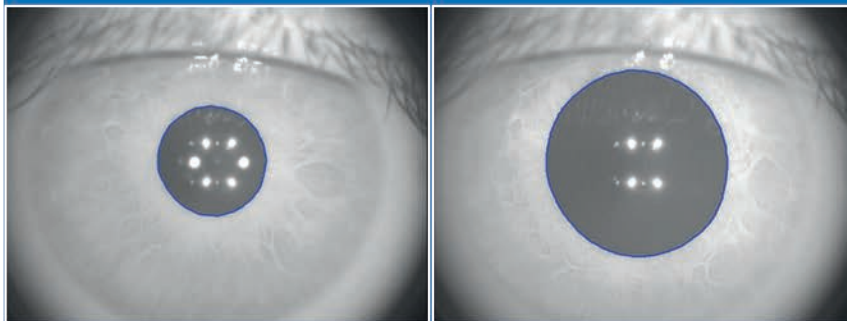
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Patient Information

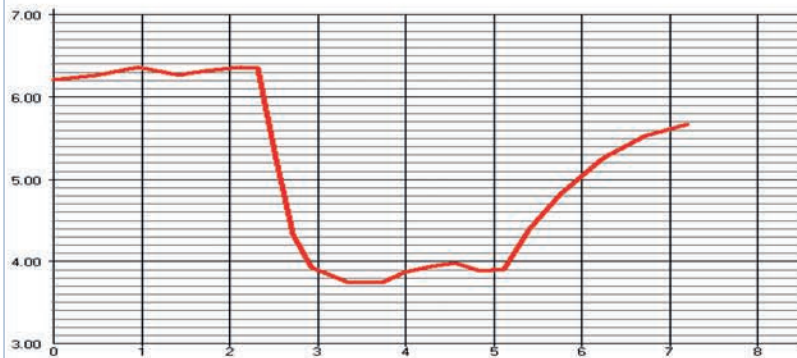
| | | | |
|---------------|------------------|-----------|---------------------|
| Patient | CORNEAL ANALYZER | Gender | M |
| Patient ID | 12345678 | Exam Date | 06/03/2015 18:06:43 |
| Date of Birth | 01/01/2000 | Surgeon | |

PUPILLOMETRY

OD



Latency



Dynamic pupillography

| Diameter | | Pupil Center | |
|----------|---------|--------------|----------|
| Min | Max | Center Mean | Std Dev. |
| 3.74 mm | 6.36 mm | -0.22 mm | 0.02 mm |
| | | 0.01 mm | |

Photopic pupillography

| Diameter | | Pupil Center | |
|------------|----------------|--------------|---------------|
| Avg. Diam. | Diam. Std Dev. | Center X - Y | Gen. Std Dev. |
| 3.76 mm | 0.06 mm | -0.20 mm | 0.06 mm |
| | | 0.03 mm | |

Mesopic pupillography

| Diameter | | Pupil Center | |
|------------|----------------|--------------|---------------|
| Avg. Diam. | Diam. Std Dev. | Center X - Y | Gen. Std Dev. |
| 4.90 mm | 0.33 mm | -0.18 mm | 0.33 mm |
| | | 0.02 mm | |

Scotopic pupillography

| Diameter | | Pupil Center | |
|------------|----------------|--------------|---------------|
| Avg. Diam. | Diam. Std Dev. | Center X - Y | Gen. Std Dev. |
| 5.53 mm | 0.11 mm | -0.16 mm | 0.11 mm |
| | | -0.01 mm | |

Notes

Reports Zernike analysis



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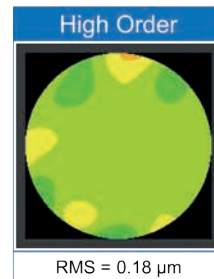
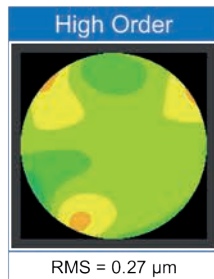
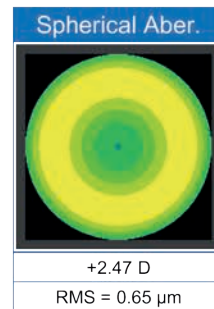
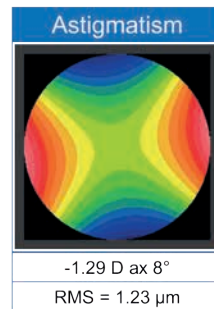
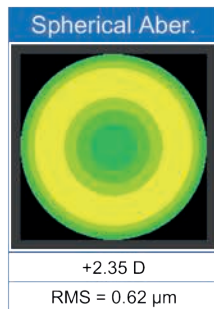
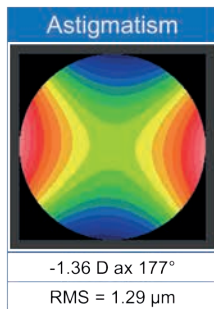
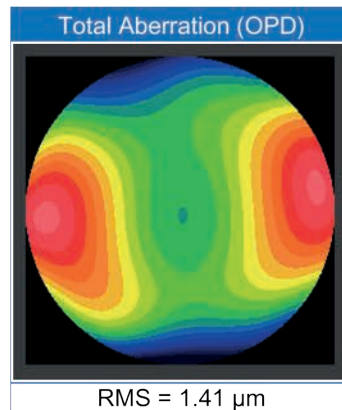
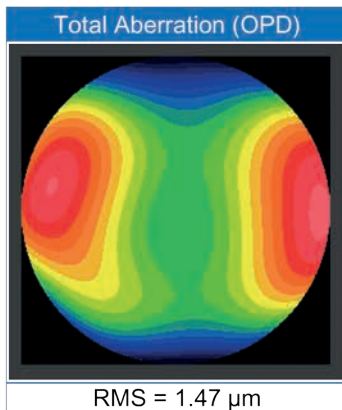
Patient Information

| | | | |
|---------------|------------------|-----------|---------------------|
| Patient | CORNEAL ANALYZER | Gender | M |
| Patient ID | 12345678 | Exam Date | 17/02/2015 13:37:29 |
| Date of Birth | 01/01/2000 | Surgeon | |

ZERNIKE

OD

OS



Notes

Reports Contact lens fitting

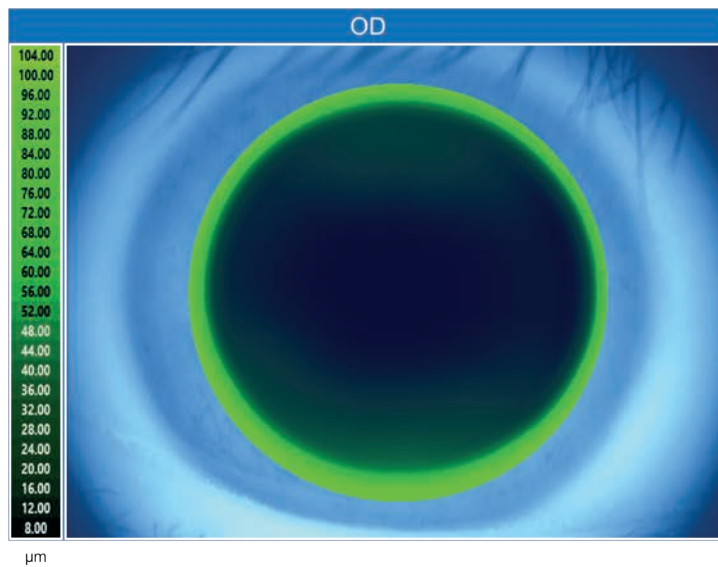


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Patient Information

| | | | |
|---------------|------------------|-----------|---------------------|
| Patient | CORNEAL ANALYZER | Gender | M |
| Patient ID | 12345678 | Exam Date | 17/02/2015 13:37:29 |
| Date of Birth | 01/01/2000 | Surgeon | |

CONTACT LENSES



| Sim-K | | |
|--------------|-------------|---------------|
| K1 | K2 | CYL |
| 44.84 @ 180° | 46.27 @ 90° | -1.43D ax180° |

| Refraction | | | |
|------------|----------|------|-------|
| Sphere | Cylinder | Axis | VD |
| 1.25 | -0.50 | 110 | 12.00 |

| Cornea Data | |
|-------------------------------|----------|
| Cornea Decentralization X - Y | --- --- |
| Diameter | 12.28 mm |

| Lens Data | | |
|-----------|----------|------------|
| Brand | Model | Base Curve |
| Generic | Tricurve | 7.6 |
| Diameter | Power | Toricity |
| 9.8 | | |

Notes

Specifications

| | |
|--|--|
| Keratascop cone | 24 rings equally distributed on a 43D sphere |
| Analyzed points | Over 100.000 |
| Measured points | Over 6.200 |
| Corneal coverage | Up to 9.8mm on a sphere of radius 8.00mm (42.2 diopters with N=1.3375) |
| Diopter power range | From 1D to 120D |
| Resolution | ,+/- 0.01D, 1 micron |
| Accuracy / Precision axial radius | ,+/- 0.03mm altimetric data +/- 2µm at 4mm |
| Capture system | Auto-focus with Auto-capture |
| Output ports | USB, LAN |
| Monitor | LCD 10.1 inch capacitive touch screen |
| Database | Internal |
| Pupillometry | Dynamic, Photopic, Mesopic, Scotopic |
| Fluorescein | Image, Video |
| Report | Corneal map, Comparison map, Contact lens, Height map, Zernike analysis, pupillometry, Toric IOL , Screenshot |
| Working environment | 10°-40°C, Relative humidity 30-75% (no dewing), Atmospheric pressure 700-1060hPa |
| Power source | AC 100-240V 47-63 Hz |
| Power consumption | <100VA |
| Dimensions | 320mm (W) x 490mm (H) x 470mm (L), 15 Kg |
| Connections | Wi-Fi Optional, LAN integrated |
| Printing options | USB printer, Network printer, PDF on network shared folder, PDF on USB |
| Operating System | Windows 8 Embedded |
| RAM | 2GB |
| Hard Disk | 320 GB SATA Hard Drive (database storage) 32 GB Solid State Drive (operating system and application software) |



IMPORTANT Subject to change in design and/or specifications without advanced notice.
In order to obtain the best results with this instrument, please be sure to review all user instructions prior to operation.



TOPCON CORPORATION

75-1 Hasunuma-cho, Itabashi-ku, Tokyo 174-8580, Japan. Phone:3-3558-2523/2522 Fax:3-3965-6898 www.topcon.co.jp

TOPCON MEDICAL SYSTEMS, INC.
111 Bauer Drive, Oakland, NJ 07436, U.S.A.
Phone:+1-201-599-5100 Fax:+1-201-599-5250 www.topconmedical.com

TOPCON MEDICAL LASER SYSTEMS, INC.
3130 Coronado Drive Santa Clara, California 95054 USA
Phone:+1-408-235-8200 Phone:(USA only)+1-888-760-8657
Fax:+1-408-235-8259 Email:tmlsinfo@topcon.com

TOPCON CANADA INC.
110 Provencher Avenue, Boisbriand, QC J7G 1N1 CANADA
Phone:+1-450-430-7771 Fax:+1-450-430-6457 www.topcon.ca

TOPCON EUROPE MEDICAL B.V.
Essebaan 11, 2908 LJ Capelle a/d IJssel, P.O.Box145,
2900 AC Capelle a/d IJssel, THE NETHERLANDS
Phone:+31-(0)10-4585077 Fax:+31-(0)10-4585045
E-mail:medical@topcon.nl; www.topcon.eu

ITALY OFFICE
Viale dell'Industria 60, 20037 Paderno Dugnano, (Milano), ITALY
Phone:+39-02-9186671 Fax:+39-02-91081091 E-mail:info@topcon.it; www.topcon.it

DANMARK OFFICE
Præstemarksvej 25, 4000 Roskilde, DANMARK
Phone:+45-46-327500 Fax:+45-46-327555
E-mail:topcon@topcondanmark.dk www.topcondanmark.dk

IRELAND OFFICE
Unit 276, Blanchardstown, Corporate Park 2 Ballycoolin Dublin 15, IRELAND
Phone:+353-18975900 Fax:+353-18293915 E-mail:medical@topcon.ie; www.topcon.ie

TOPCON S.A.R.L.
BAT A1 3 route de la révoite 93206 SAINT DENIS CEDEX
Tel : +33 1 49 21 23 23 Fax : +33 1 49 21 23 24 E-mail:topcon@topcon.fr; www.topcon.fr

TOPCON DEUTSCHLAND G.m.B.H.
Hanns-Martin-Schleyer Strasse 41, D-47877 Willich, GERMANY
Phone:+49-(0)2154-8850 Fax:+49-(0)2154-885177 E-mail:med@topcon.de; www.topcon.de

TOPCON SCANDINAVIA A.B.
Neongatan 2, P.O.Box 25, 43151 Mölndal, SWEDEN
Phone:+46-(0)31-7109200 Fax:+46-(0)31-7109249 E-mail:medical@topcon.se; www.topcon.se

TOPCON ESPAÑA S.A.
HEAD OFFICE
Frederic Mompou 4 Esc. A Bajos 3, 08960 Sant Just Desvern Barcelona, SPAIN
Phone:+34-93-4734057 Fax:+34-93-4733932 E-mail:medica@topcon.es; www.topcon.es

TOPCON (GREAT BRITAIN) LTD.
Topcon House, Kennet Side, Bone Lane, Newbury, Berkshire RG14 5PX United Kingdom
Phone:+44-(0)1635-551120 Fax:+44-(0)1635-551170 E-mail:medical@topcon.co.uk; www.topcon.co.uk

TOPCON POLSKA Sp. z o. o.
ul. Warszawska 23, 42-470 Siewierz, POLAND
Phone:+48-(0)32-6705045 Fax:+48-(0)32-6713405 www.topcon-polska.pl

TOPCON SINGAPORE MEDICAL PTE. LTD.
1 JALAN KILANG TIMOR #09-01 PACIFIC TECH CENTRE SINGAPORE 159303
Phone:+65-68720606 Fax:+65-67736150 E-mail:medical_sales@topcon.com.sg www.topcon.com.sg

TOPCON INSTRUMENTS (MALAYSIA) SDN.BHD.
No. D1, (Ground Floor), Jalan Excella 2, Off Jalan Ampang Putra,
Taman Ampang Hilir, 55100 Kuala Lumpur, MALAYSIA
Phone:+60-(0)3-42709866 Fax:+60-(0)3-42709766

TOPCON INSTRUMENTS (THAILAND) CO.,LTD.
77/162 Sinnsathorn Tower, 37th Floor Krungthornburi Rd., Klongsai,
Klongsarn, Bangkok 10600, THAILAND
Phone:+66-(0)2-440-1152-7 Fax:+66-(0)2-440-1158

TOPCON CORPORATION BEIJING OFFICE
Block No.9, Kangding Street Beijing Economic-Technological Development Area,
Beijing, 100176, CHINA
Phone:+86-(0)10-6780-2799 Fax:+86-(0)10-6780-2790

TOPCON CORPORATION SHANGHAI OFFICE
14L Huamin Empire Plaza, No.726, Yan-an Xi Road,
Shanghai, 200050, CHINA
Phone:+86-(0)21-5238-7722 Fax:+86-(0)21-5237-0761

TOPCON CORPORATION BEIRUT OFFICE
P.O.Box 70-1002 Antelias, Beirut, LEBANON
Phone:+961-4-523525/523526 Fax:+961-4-521119

TOPCON CORPORATION DUBAI OFFICE
P.O.Box 293705, Dubai Airport Free Zone L.L.U, J-12, Dubai, U.A.E
Phone:+971-4-299-5900 Fax:+971-4-299-5901

