



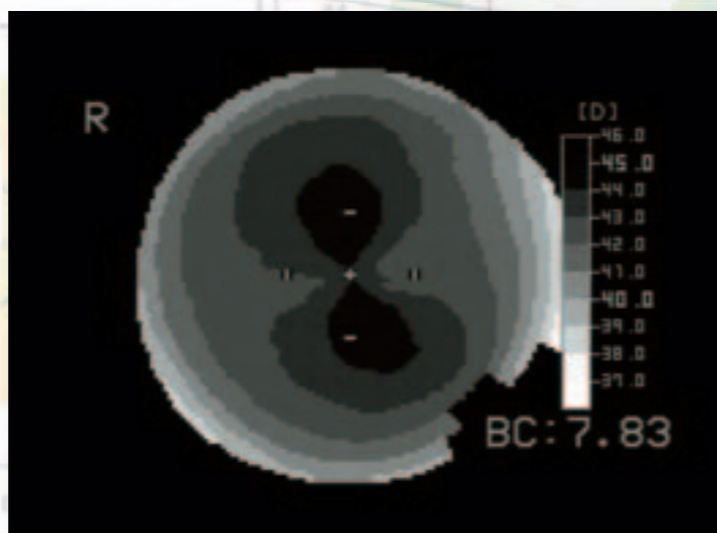
**AUTO KERATO-REFRACTOMETER**

# ***KR-8100PA/8100P***





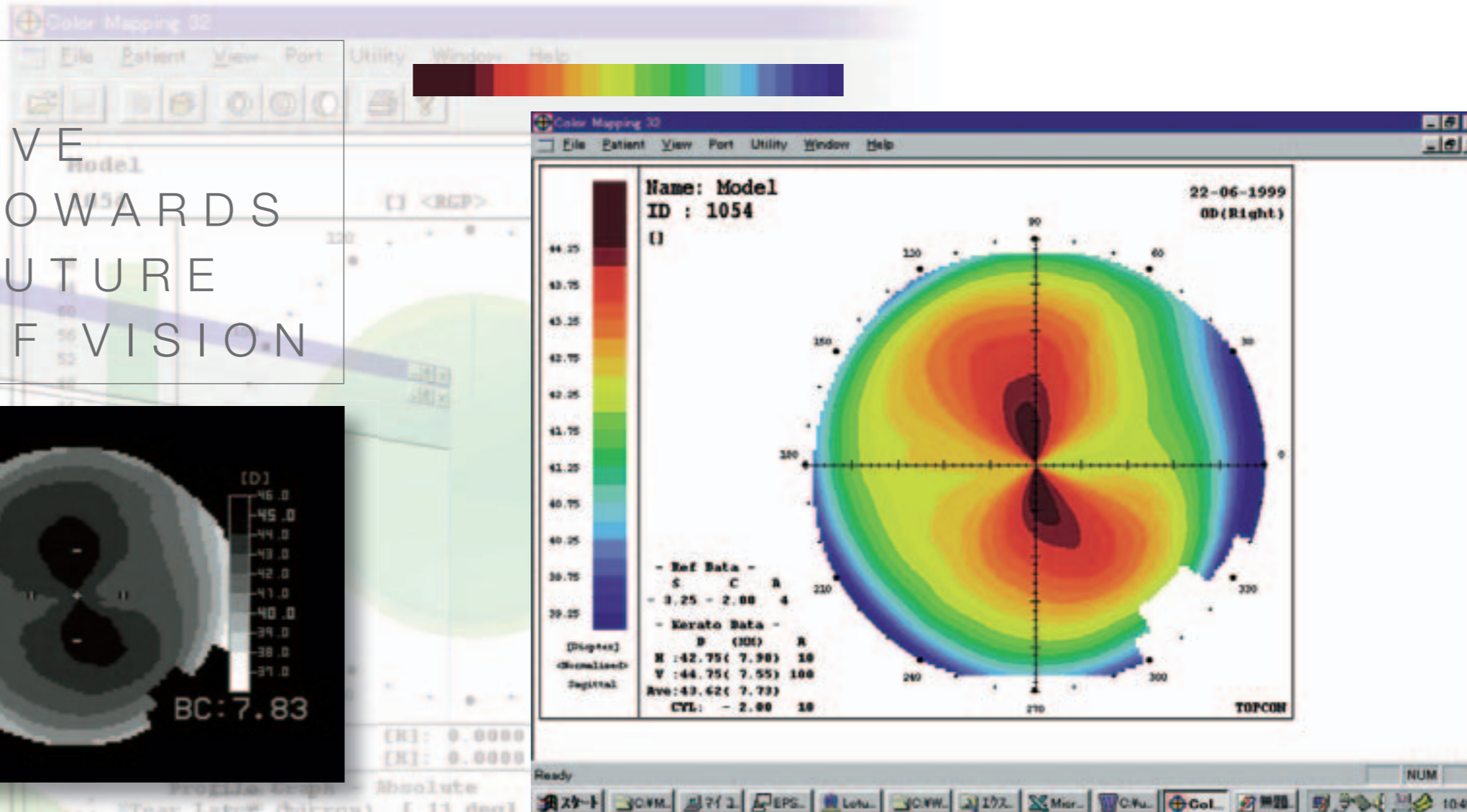
**M**OVE  
TOWARDS  
FUTURE  
OF VISION



Topcon, leader in the ophthalmic field, now offers the most advanced technology that provides significant operational conveniences and totally reliable diagnostic results in Auto Refractometry and Auto Kerato-Refractometry.

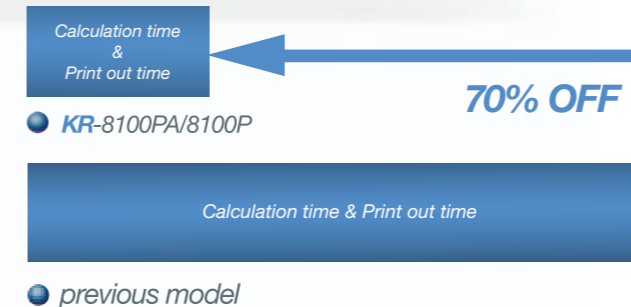
Topcon's KR-8100PA/8100P also features a highly sophisticated Corneal Mapping System.

**KR-8100PA**  
**KR-8100P**



**Faster for You  
Easier on your Patients  
70% faster on Mapping Output**

The time required for the calculation and printout of mapping has been cut down by 70% due to the latest CPU and sophisticated algorithms applied to the KR-8100PA/8100P.



Also the total time for 5 measurements ( Kerato-Refractometry) of both eyes and printout including mapping has been cut down by more than 50%

**The World's smallest Pupil  
Dilation : 2.0 mm  $\phi$**

The innovative design of the KR 8100PA/8100P enables accurate, reliable refraction and keratometric measurements within a pupil dilation as narrow as 2.0mm  $\phi$ . This means it is easier to obtain more precise diagnostic results when dealing with glaucoma, asymmetric pupils or elderly patients.



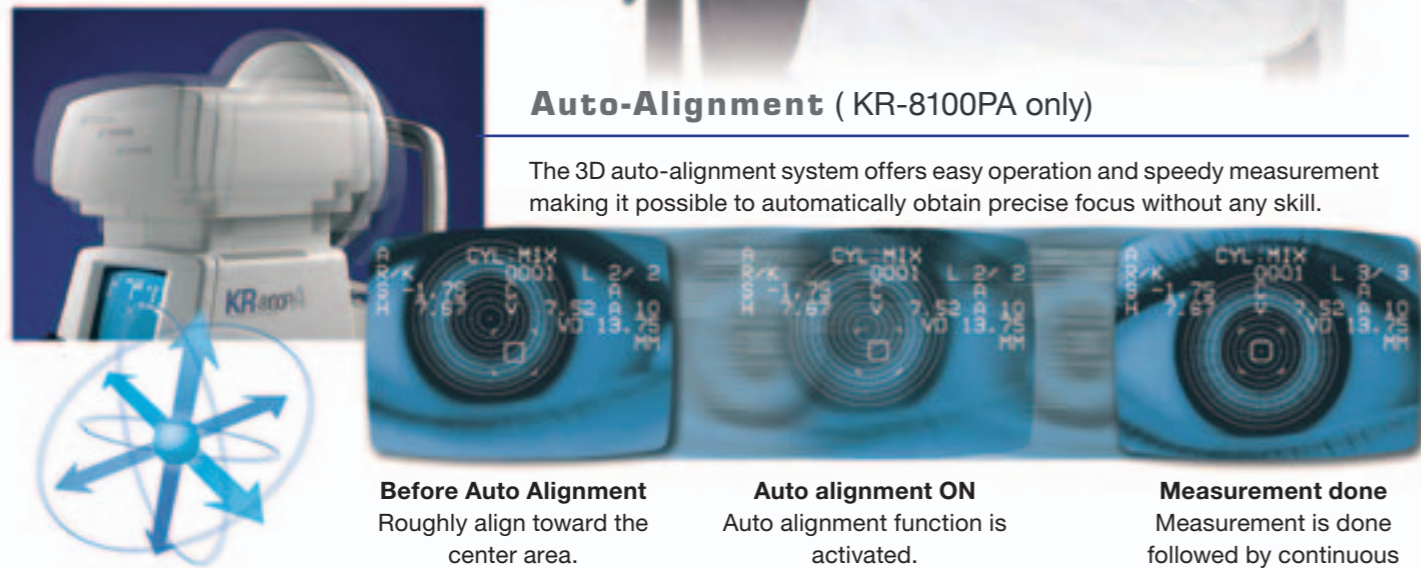
The newly introduced KR-8100PA/8100P features superior handling and multi-functionality in a compact design. It offers you the most reliable and accurate kerato values by making use of the placido ring and the sophisticated measurement principle.

## OPERATIONAL CONVENIENCES SUPPORTED BY ADVANCED TECHNOLOGY



### Auto-Alignment (KR-8100PA only)

The 3D auto-alignment system offers easy operation and speedy measurement making it possible to automatically obtain precise focus without any skill.



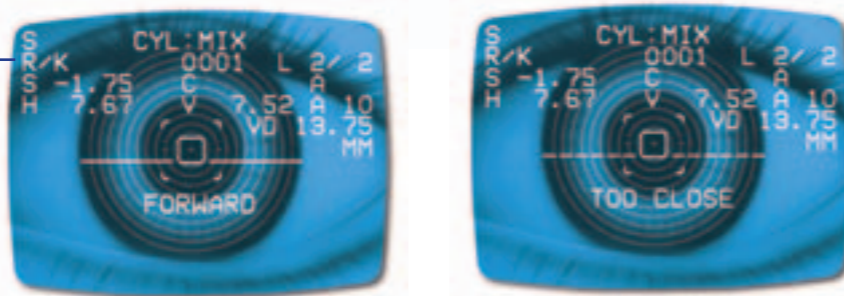
**Before Auto Alignment**  
Roughly align toward the center area.

**Auto alignment ON**  
Auto alignment function is activated.

**Measurement done**  
Measurement is done followed by continuous measurements.

### Auto-Start

The KR-8100PA /8100P offers an Auto-Start function. As soon as the instrument is properly aligned, this innovative function initiates the measurement process and completes three readings of each eye. When the readings are complete, a printout of measurement results is automatically generated.



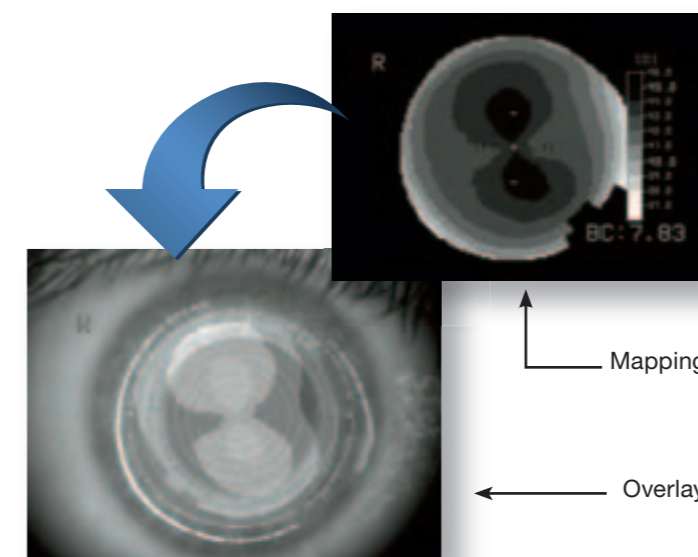
\* This photo image is KR-8100PA only

## ADVANCED OPHTHALMIC TECHNOLOGY INSIDE THE MULTIFUNCTIONAL KR-8100PA/8100P

TOPCON'S KR-8100PA/8100P provides you with the functions of an auto-refractometer, auto-keratometer and even a mapping function in a single compact designed instrument.

### Mapping/Overlay

The KR-8100PA/8100P provides accurate refraction and keratometry measurements. It also displays corneal mapping very quickly and even overlays the mapping output onto the anterior segment by a single touch.



### Wider Measuring Area

Now with the KR-8100PA/8100P, wider area of 1.5mm  $\phi$  ~9.2mm  $\phi$  can be measured using 10 placido rings (in case of R=8mm).

### Base Curvature Advice

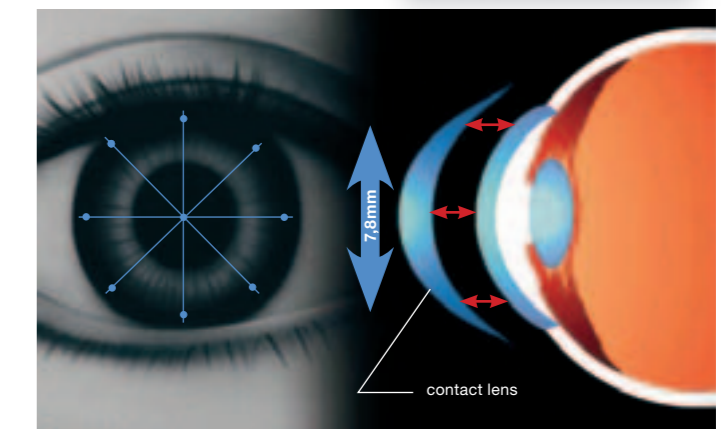
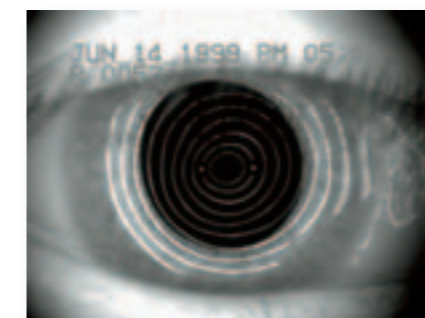
Based on the mapping data, the KR-8100PA/8100P advises the base curvature (BC) for the contact lens. The KR-8100PA/8100P reconstruct corneal shape from mapping data of the whole cornea obtained by the projected placido rings. The internal software calculates the radius of curvature of a circle consisting of 3 points (2 optic zone ends and corneal peak on the same meridian).

NAME	22 JUN 1998 PM 03:07
NO	D100
VD	13.75
CYL	MIX
CR	S -2.25 C -2.00 A 4
S.E.	-4.25
CL	S -3.00 C -1.00 A 178
S.E.	-3.50
PD	68mm
KRT. DATA	
CR	D MM A
H	42.75 7.80 10
V	44.75 7.55 100
AVE	43.75 7.73
CYL	-2.00 10
HC	103 8.50 0.51
(180)	7.88 0.30
V(100)	7.78 0.55
(180)	7.88 0.55
BC(02:7.8):	7.83mm

This is done for totally 4 meridians to assure the best BC. This method has proven to be effective even in case of keratoconus.

### Corneal Irregularity Detection

In case of corneal irregularity, the placido ring projected on the cornea will be sort of distorted. However, if the irregularity is not substantial, it will not be noticeable. KR-8100PA/8100P detects corneal irregularity like irregular astigmatism and gives a marking to attract the operator's attention.

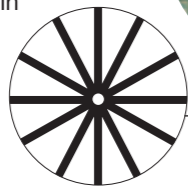
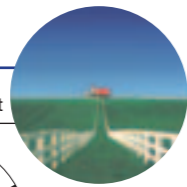




## Fixation Chart

There are two fixation charts available, both adjustable in two brightness levels for larger or smaller pupils. You can select a scenic four-color chart, which assists in maintaining eye fixation, or a starburst alignment.

Picture Chart



Starburst Chart

## Omni-Directional Joystick

Fast, positive and responsive control of operation is performed with TOPCON's omni-directional joystick that leaves the user one hand free to operate other functions. Even novice operators can obtain excellent results. The vertical movement is motorised. In combination with the auto-alignment it makes the handling of the instrument very easy.

## Improved Functionality

### Auto Shut-Down

To conserve energy and prevent any built-up of heat from electronic circuitry, the instruments incorporate an automatic function that shuts down the instrument when left unused for more than 10 minutes.

### Automatic PD Measurement

For binocular readings, PD measurements are performed automatically; the value obtained are stored in the patient's data file and printed out together with the results of objective tests.

## Cornea Diameter Measurement

Corneal diameter can be measured either during testing of the patient or later by recalling an image of the cornea on the monitor. Measurements can be obtained for both eyes, with the data recorded on the printouts if required.



Positioning bar

## Convenient Control Panel

The clustered touch-switches on the control panel are multi-functional and simplify operation.

## Printing Measurement Results

A complete printout of test results for record purposes can be obtained by one touch of the print switch. The operator can choose out of 3 data formats:

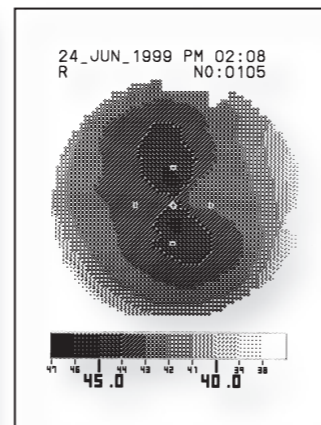
```

NAME
22 JUN 1999 PM 03:10
NO:0100

VD 13.75
CYL -2.00 10
CRD S C A
-3.25 -2.00 4
S.E. -4.25
CLD S C A
-3.00 -1.00 178
S.E. -3.50
PD = 68mm

KRT. DATA
CRD H A
42.75 7.30 10
V 44.75 7.55 100
AVE 43.75 7.73
CYL -2.00 10

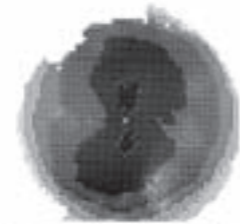
MM ECC
H(10) 8.09 0.51
(190) 7.96 0.30
V(100) 7.78 0.55
(260) 7.66 0.66
BC(OZ:7.8):7.89mm
    
```



```

CLD D MM A
H 43.00 7.60 171
V 44.25 7.63 81
AVE 43.50 7.75
CYL -1.25 171

MM ECC
H(171) 8.05 0.52
(361) 7.81 0.27
V(81) 7.79 0.48
(261) 7.68 0.60
BC(OZ:7.8):7.89mm
    
```



TOPCON

- **ALL**  
Prints out all measurements (10 readings per eye) with date
- **AVE**  
Prints out averaged value for all measurements with date.
- **SIM**  
Prints out only the average measurement value of all readings

By changing the output format, mapping images can be include/excluded. It is even possible to printout mapping separately.

# COLOR MAPPING 32 SOFTWARE FOR KR-8100PA/8100P

## Fluoresce in Pattern

In combination with the Color Mapping 32 software, the KR-8100PA/8100P provides simulation of contact lens fitting. From the contact lens shape and the measured cornea shape, the software simulates the fluo pattern. This can be an assistance for selecting contact lenses by inputting the parameters of the lens (spherical, aspherical, toric). In addition, the KR-8100PA/8100P offers the helpful function that indicates the base curvature and eccentricity for contact lens fitting practice.



## Versatile Color Mapping Software

The easy to use color mapping 32 software assists the more detailed mapping information. Single, multiple and differential mappings can be generated to compare the information for the pre-screening and post operative follow-up.

## System Requirements

The following hardware/software is necessary to run Color Mapping 32:

- 100% IBM compatible computer with i-486DX or better
- Min. 8MB of system memory
- Min. 1MB of video memory
- 1MB of free disk space at installation
- A color printer supported by Windows
- An available COM port
- Interface cable (KR/ PC)
- Microsoft Windows 95/98 or Windows NT

## Specifications

	KR-8100PA	KR-8100P
<b>OBJECTIVE REFRACTOMETER MODE</b>		
Sphere	-25 to + 22D in 0.25D step (0.12D step available)	
Cylinder	0 to ± 8D in 0.25D step (0.12D step available)	
Axis	1° to 180° in 1° step ( 5° step available)	
Minimal pupil diameter	2.0 mm $\phi$	
Method of relaxation	Automatic fogging	
Fixation chart	Picture chart or Starburst chart	
<b>CORNEAL CURVATURE MODE</b>		
Corneal curvature radius	5.00mm~10.00mm	
Refraction index	1.3375	
Corneal refraction	67.5D~33.75D	
Corneal astigmatism	0D~±10D	
Corneal astigmatism axial angle	1°~180°	
Measuring area	3mm with 7.7mm radius	
<b>MEASURING STEP</b>		
Corneal curvature radius	0.01mm	
Corneal refraction	0.25 D (0.12D step available)	
Corneal astigmatism	0.25 D (0.12D step available)	
Corneal axis angle	1°	
<b>OTHERS</b>		
PD measurement range	85mm max. in 1mm step	
Measuring start	Auto Alignment / Auto start / Manual	Auto start / Manual
Corneal diameter measurement (pupil diameter)	Yes Range; 2~13mm /Step; 0.25mm	
Measurement display	TV monitor screen	
Measurement recording	Built-in printer (Up to 10 measurements of each eye can be stored in memory)	
Alignment	Screen display	
Vertex distance	0, 12.0 and 13,75mm (selectable)	
Energy saving	Automatic switch off when left unused for 10 munites	
IOL	Special IOL switch to adjust to circumstances of IOL wearers	
Power supply	AC100, 120, 220, 240V	
Output	RS-232C VIDEO-OUT	
Weight	21kg.	
Dimensions	275(W) x 475(D)x500(H)mm	

\* Windows95/98 or Windows NT is a registered trademark of Microsoft corporation.

\* 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.

TOPCON CORPORATION

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