NIDEK Toric IOL Calculator User Guide

Outline

NIDEK Toric IOL Calculator is software to calculate the astigmatic amount of a Toric IOL expected to be optimal for each patient with corneal astigmatism undergoing cataract surgery. Postoperative predictive corneal astigmatism is calculated using not only the amount of preoperative corneal astigmatism but also taking into account the amount of astigmatism induced during surgery. The cylindrical power of the Toric IOL and the fixed axis angle in the eye that are optimal for the correction of the postoperative predictive corneal astigmatism are calculated.
Among NIDEK Toric IOLs, this software is a supplementary tool for doctors to use when selecting an optimal Toric IOL for patients.

Access to NIDEK Toric IOL Calculator

It is suggested that NIDEK Toric IOL Calculator be used with the following Internet browsers. This software is available for both personal computers and tablets connected to the Internet.

- Microsoft Edge 108 or above, Chrome 110 or above, Firefox 108 or above, Safari 16.3 or above.

Connection to Network

If NIDEK Toric IOL Calculator is connected to other devices via the medical system network, ensure that there is no risk to patients, operators or third party. If any change is made to the network, also ensure that there is no risk to patients, operators or third party. In any case, it is recommended that the network administrator ensure that information security measures are proper by identifying, analyzing, and evaluating risks, and by implementing necessary security control.
Changes to the network includes the following:

・Changes to network configuration

・Addition, deletion, update, and upgrade of the network components (hardware, software platform, software application)

Information regarding NIDEK Toric IOL Calculator Compatibility

Depending on the computer settings in use, improper screen display and print results may occur. In these cases, check the following and change the settings as necessary.

- Unicode (automatic selection) is used for character encoding.
- Cookies are enabled.
- JavaScript is enabled.
- The font size is set to default.
- The font type is set to standard.

Select Language and Country

After the software is activated successfully, select your language and country. After the selection, click “Submit” to move to the next screen “License Agreement”.

License Agreement

After reading the License Agreement, click “I accept” when you agree with the terms and conditions. The screen advances to the next screen (Calculator data entry screen).

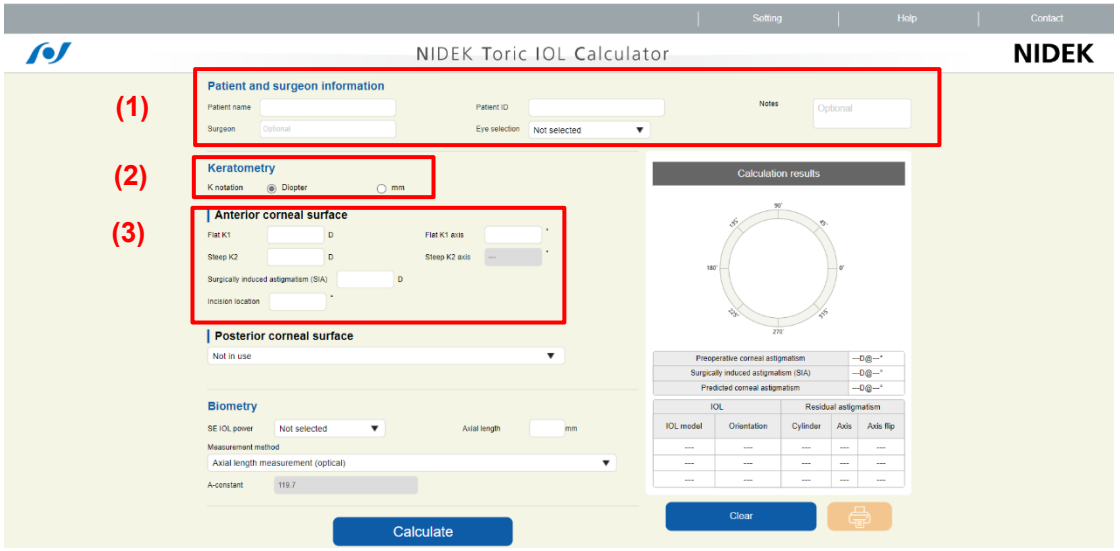
Calculator Data Entry

(1) Patient and surgeon information

Enter “Patient name” and “Patient ID”.

Enter “Surgeon (Optional)” and “Notes (Optional)”.

Choose “Eye selection”, from either “OD (right eye)” or “OS (left eye)” using the pull-down menu.



Calculator data entry screen

(2) Keratometry

Select “K notation”, from either “Diopter” or “mm”.

(3) Anterior corneal surface

• Flat K1

Enter the measured corneal refractive power for the flattest meridian in the selected unit (D or mm).

The entry range is from 30.00 D to 55.00 D or from 6.14 mm to 11.25 mm.

• Flat K1 axis

Enter the measured Flat K1 axis.

The entry range is from 0° to 180°.

• Steep K2

Enter the measured corneal refractive power for the steepest meridian in the selected unit (D or mm).

The entry range is from 30.00 D to 55.00 D or from 6.14 mm to 11.25 mm.

• Steep K2 axis

When “Flat K1 axis” is entered, this value is automatically entered.

• Surgically induced astigmatism (SIA)

Enter a value in diopters for the expected change in corneal astigmatism induced by the surgical incision.

The entry range is from 0.00 D to 2.00 D.

• Incision location

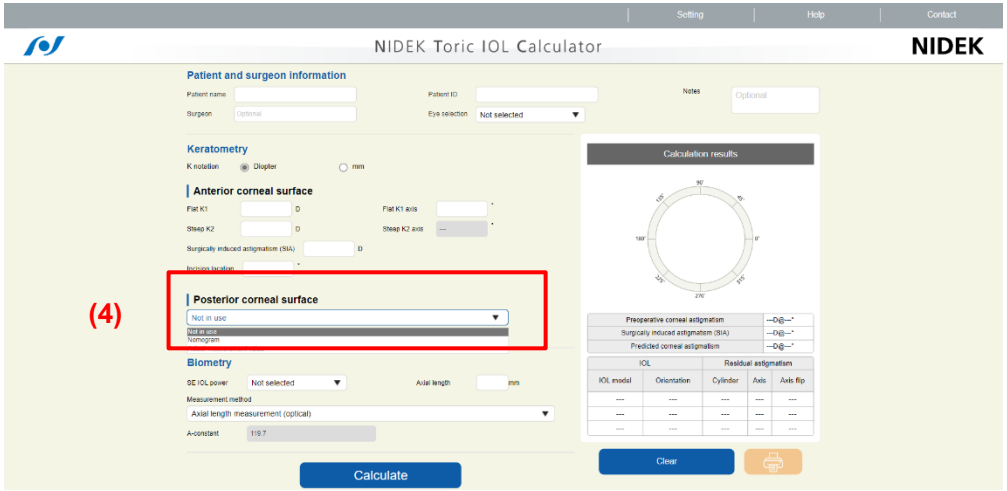
Enter “Incision location” in degrees. The entry range is from 0° to 359°.

*** About corneal refractive index**

<u>When the measured value of the posterior corneal surface is not used for calculation, the conversion refractive index 1.3375 is used.</u>

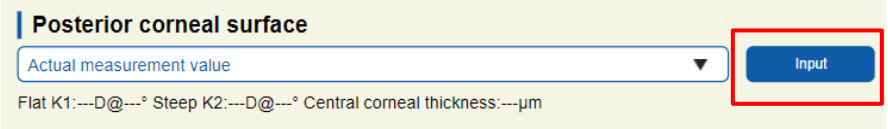
(4) Posterior corneal surface

Select “Not in use”, “Nomogram[*1)]”, or “Actual measurement value” from the pull-down menu.



Calculator data entry screen _ Posterior corneal surface

When entering the measured value of the posterior corneal surface, select “Actual measurement value”, and then click “Input”.



Clicking “Input” displays a pop-up window as shown on the right. Enter values for the posterior corneal surface.

- **Flat K1**

  Enter the measured corneal refractive power for the flattest meridian in the selected unit (D or mm).

  The entry range is from -3.00 D to -10.00 D or from 4.00 mm to 13.33 mm.

- **Flat K1 axis**

  Enter the measured Flat K1 axis. The entry range is from 0° to 180°.

- **Steep K2**

  Enter the measured corneal refractive power for the steepest meridian in the selected unit (D or mm).

  The entry range is from -3.00 D to -10.00 D or from 4.00 mm to 13.33 mm.

- **Steep K2 axis**

  When “Flat K1 axis” is entered, this value is automatically entered.

- **Central corneal thickness**

  Enter “Central corneal thickness” in μm. The entry range is from 200 μm to 999 μm.

*** About corneal refractive index**

When the measured value of the posterior corneal surface is used for calculation, the corneal refractive index 1.3760 is used.

(5) Biometry

• SE IOL power

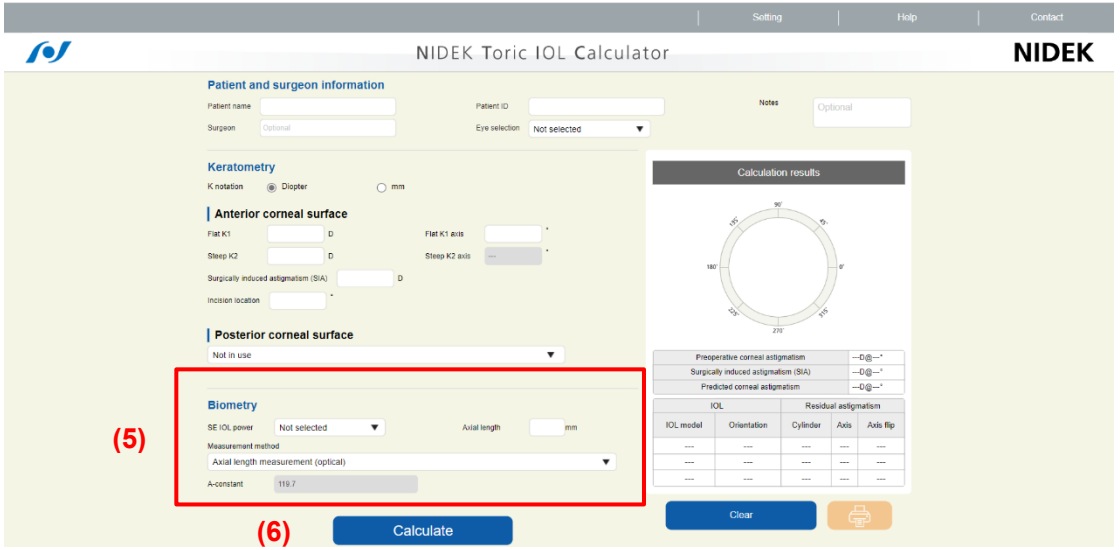
Select the power from the pull-down menu that resulted from use of the IOL power formula.

• Axial length

Enter “Axial length” in mm.

• Measurement method

Select one from “Axial length measurement (optical)”, “Axial length measurement (ultrasound)”, “Surgeon factor (SF)”, “Personal A-constant”, or “Personal ACD”, using the pull-down menu. When selecting “Surgeon factor (SF)”, “Personal A-constant”, or “Personal ACD”, also enter the constant (to the second decimal place) below the Measurement method field.



Calculator data entry screen _ Biometry

(6) Calculate[*2)]

Make sure the entered data is correct, and click “Calculate”. The results are displayed in the Calculation results field on the right.

(7) Calculation results

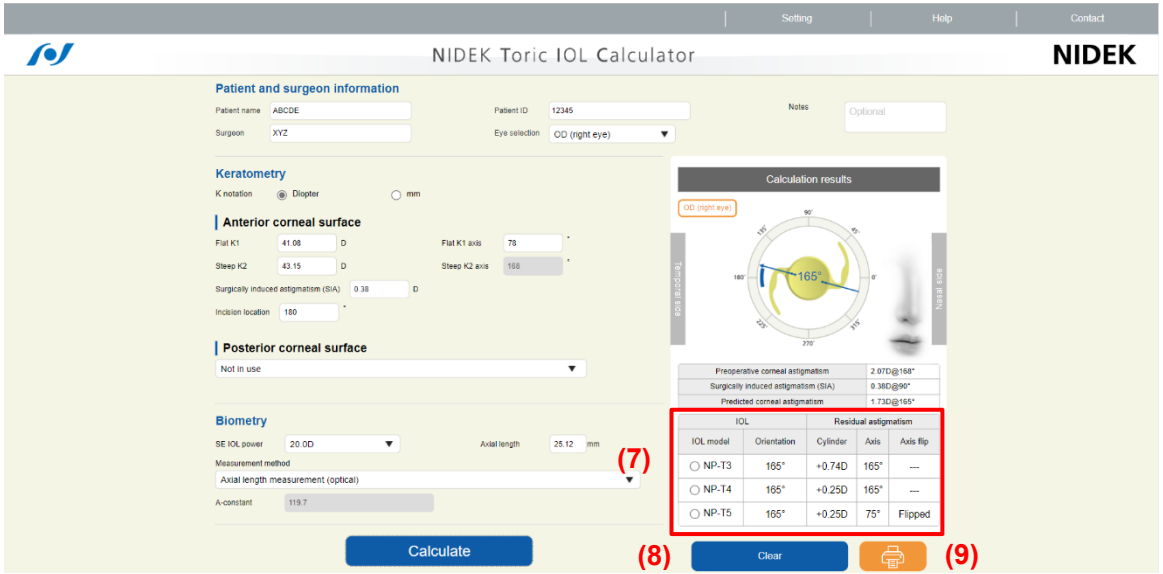
Three types of Toric IOL models are displayed as calculation results. Select one of the models to be used.

(8) Clear

Clicking “Clear” displays a message indicating “Delete the entered items?”. Then, selecting “OK” deletes all the entered data and calculation results.

(9) Printing

Clicking the print icon prints a hard copy of the calculation results.



Calculator data entry screen _ Calculation results

*If a dialog box “This website has been blocked from automatically printing.” appears, click “Allow”.

Error Message

Error indication	Causes and remedies
500Error	No configuration file is found, or internal error occurred. Activate the software again later.

Related Documents

*1) Nomogram:

Douglas D. Koch, et al. Correcting astigmatism with toric intraocular lenses: Effect of posterior corneal astigmatism. J Cataract Refract Surg. 2013; 39: 1803-1809

*2) Formula:

Han Bor Fam, Kooi Ling Lim. Meridional analysis for calculating the expected spherocylindrical refraction in eyes with toric intraocular lenses. J Cataract Refract Surg. 2007; 33:2072-2076

OSS License Information

https://www.nidek-intl.com/aboutus/entry-4677.html/

UDI Information

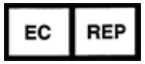
UDI Information Display / GTIN+SW Version Information

・UDI　：　(01)04987669203750(10)1.2.0

・GTIN　：04987669203750

・Ver.　：1.2.0

Symbols

Symbol	Description
	Manufacturer
	Authorized representative in the European Community
	Swiss Authorized Representative
	Medical device

NIDEK CO., LTD.
34-14 Maehama, Hiroishi-cho,
Gamagori, Aichi 443-0038, JAPAN

URL: https://www.nidek.com

NIDEK S.A.
Ecoparc, rue Benjamin Franklin,
94370 Sucy En Brie, FRANCE

MedEnvoy Switzerland
Gotthardstrasse 28, 6302 Zug, Switzerland

Manufactured in 2017