

## ZEISS Z CALC 2.2 Toric and Non-Toric IOL Calculation and Ordering User Guide

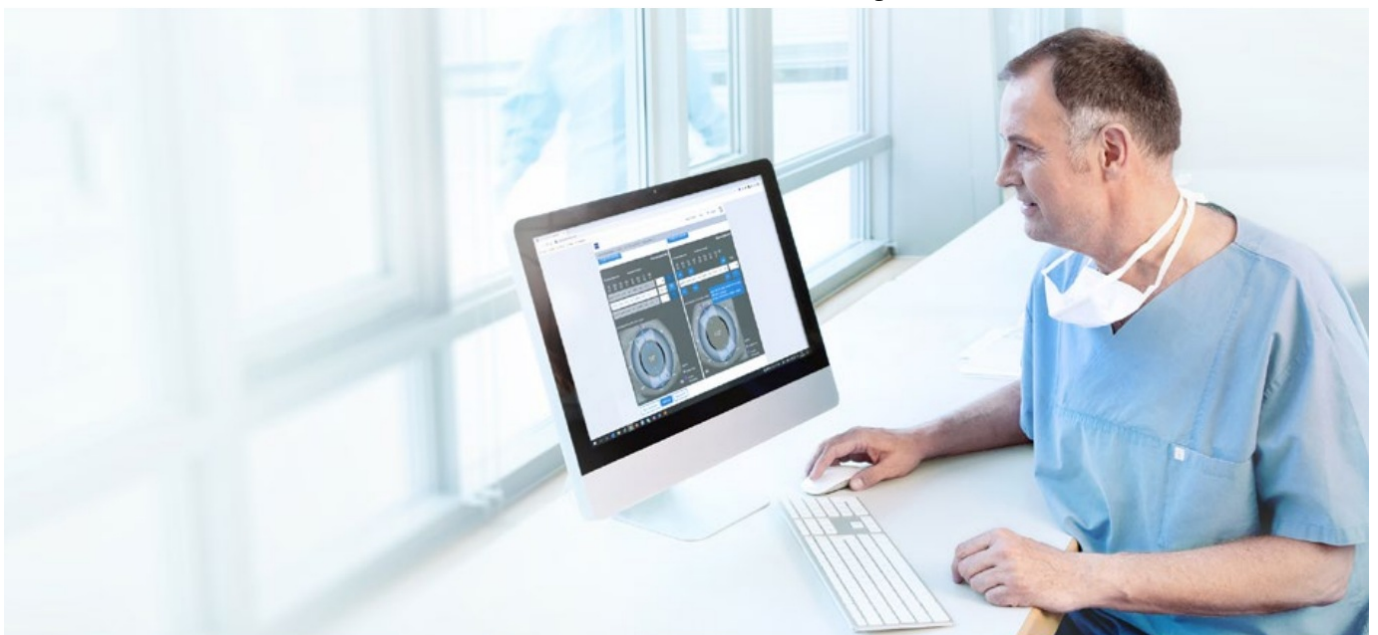
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### Seeing beyond

Z CALC 2.2 Quick Guide

Toric & non-toric IOL calculation and ordering with Z CALC®



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## Z CALC 2.2 Toric and Non-Toric IOL Calculation and Ordering

### Z CALC:

Z CALC is a software intended to support a user in selecting intraocular lenses by calculation of intraocular lens power and predicted residual refraction. Z CALC can also be used for IOL power calculations for patients with previous LASIK, LASEK and PRK treatments.

### The new Z CALC is compatible with the following browsers:

Microsoft Edge Version 18 or higher, Apple Safari Version 13 or higher, Mozilla Firefox Version 69.0 or higher (PC/Mac), Google Chrome Version 76.0 or higher (PC/Mac), Internet Explorer Version 11, Google Chrome Mobile for Android Version 77.0 or higher and Apple Safari mobile 12.1 for iPhone/iPad Version 12.4 or higher.

### Preconditions for use:

Please ensure that your pop-up blocker is deactivated. For detailed instructions on how to deactivate the popup blockers, please review our [Z-CALC-Quickguide-Addendum-EN-32-025-0028III.pdf](#). Before using the product, please consult the instructions for use.

## Region Selection / Terms & Condition / Data Protection

Welcome! Where are you from?

Australia ▼

- ☒ I have read and agreed to the [Terms and Conditions of Use](#).
- ☒ I have read and agreed to the [Data Protection Requirements](#).

Agree and continue

- Select region.
- Please read “Terms and Conditions of Use” and “Data Protection guidelines”. Click both checkboxes.
- Click “Agree and continue”.

## Patient Information

The screenshot shows a web form titled "Patient Information". It contains several input fields and a radio button group. Red boxes with numbers 1 through 4 highlight specific elements: 1 points to the "Patient ID" text input field; 2 points to the "Yes (LASIK, LASEK, or PRK)" radio button option; 3 points to the "Biometry Date" date input field; and 4 points to the "Surgery Date" date input field. The form also includes a "Laser Vision Correction" section with a "No" radio button selected and a "Yes" option. A small help icon is next to the "Laser Vision Correction" label. Below the "Patient ID" field, there is a note: "Enter the anonymized patient ID for the patient for unique identification. Do not use patient names for data protection reasons."

Patient Information

Patient Identification

Patient ID **1**

Enter the anonymized patient ID for the patient for unique identification. Do not use patient names for data protection reasons.

Laser Vision Correction ⓘ

☒ No ☐ Yes (LASIK, LASEK, or PRK) **2**

Biometry Date (optional)

DD/MM/YYYY **3**

Surgery Date (optional)

DD/MM/YYYY **4**

1. Enter patient ID (Please do not enter the patient's name!).
2. Select whether or not patient has undergone a previous LASIK/LASEK/PRK laser vision correction procedure:
  - LVC status must be selected for both eyes.
  - If yes; be sure to enter whether myopic or hyperopic treatment has occurred.
3. Enter biometry examination date (optional).
4. Enter surgery date (optional).

## Calculation Screen

The screenshot shows the ZEISS IOLMaster 700 software interface with the following fields and options highlighted by numbered red boxes:

- 5:** AL (Axial Length) input field showing 23.85 mm.
- 6:** ACD (Anterior Chamber Depth) input field showing 3.26 mm.
- 7:** Measurement Method selection: ☒ IOLMaster, ☐ Applanation.
- 8:** Measured from selection: ☒ Epithelium, ☐ Endothelium.
- 9:** Keratometry (K) input field showing 7.82 dpt.
- 10:** Refractive Index dropdown menu showing 1.3375.
- 11:** Z CALC Nomogram selection: ☐ Yes, ☒ No.
- 12:** Target Refract. SE input field showing 0.00 D.
- 13:** Toric/Non-toric selection: ☒ Toric, ☐ Non-toric.
- 14:** IOL selection dropdown menu showing AT LISA® toric 909.

Other visible fields include: R1 (flat) 7.82, R2 (steep) 7.53, Flat Axis 125°, Steep Axis 35°, Cyl (ΔK) 1.66, Incision Orientation 0°, and SIA 0.00. A blue "Accept and calculate" button is at the bottom.

5. Enter axial length from the patient's record. Select IOLMaster for measurements with an optical biometry device or immersion ultrasound. Select applanation for measurements with applanation ultrasound.
  6. Enter the ACD from the patient's record and indicate if it has been measured from the epithelium or endothelium.
  7. Please choose if you want to enter standard (K) Keratometry values or "Total Keratometry (TK)" values, if you want to use the TK values incorporating the posterior corneal curvature measurements from the IOLMaster 700.
  8. Enter Flat Axis.
  9. Enter the K- or TK-readings either in dpt or radii in mm.
  10. Select the Refractive Index from the drop down menu.
  11. Select Z CALC Nomogram\*, if desired.
  12. Insert target refraction, incision orientation and SIA for personalized calculation (optional).
  13. Choose between toric or non-toric IOL calculation.
  14. Select the desired IOL from the drop-down menu.
- Click "Accept and calculate".

## Result Screen

## Standard Mode

Standard Mode interface showing IOL Refractive Power and Predicted Outcome. The interface includes a table of IOL values and a dropdown menu for selecting the IOL variant.

IOL Refractive Power				Predicted Outcome			
SE [D]	Sph [D]	Cyl [D]	Axis [°]	SE [D]	Sph [D]	Cyl [D]	Axis [°]
+19.50	+18.50	+2.00	35	-0.37	-0.32	-0.08	125
+19.00	+18.00	+2.00	35	0.00	+0.05	-0.09	125
+18.50	+17.50	+2.00	35	+0.37	+0.41	-0.09	125

Visualization of the IOL Values: 90°

Select the IOL variant via the fold out menu:  
 MP: MICS, preloaded  
 M: MICS (microincision cataract surgery)  
 MV: MICS, violet and blue filter (yellow)

## Expanded Mode

Expanded Mode interface showing IOL Refractive Power and Predicted Outcome. The interface includes a table of IOL values and a dropdown menu for selecting the IOL variant.

IOL Refractive Power				Predicted Outcome				ELP [D]
SE [D]	Sph [D]	Cyl [D]	Axis [°]	SE [D]	Sph [D]	Cyl [D]	Axis [°]	ELP [D]
+19.00	+18.00	+2.00	35	0.00	+0.05	-0.09	125	4.43

Visualization of the IOL Values: 90°

Select the IOL variant via the fold out menu:  
 MP: MICS, preloaded  
 M: MICS (microincision cataract surgery)  
 MV: MICS, violet and blue filter (yellow)

A You may switch between “Standard Mode” or “Expanded Mode” by clicking the desired mode (top right corner).

- Standard Mode: Z CALC presents three calculations from which you may choose the most appropriate based on your requirements.
- Expanded Mode: You may vary Spherical Equivalent (SE) and cylinder powers (toric IOLs only) to review associated residual refraction and Effective Lens position (ELP).

\* Mathematical compensation for the posterior corneal astigmatism (first implemented with v2.0).

## IOL type selection

IOL type selection interface showing IOL Refractive Power and Predicted Refraction. The interface includes a table of IOL values and a dropdown menu for selecting the IOL variant.

IOL Refractive Power				Predicted Refraction			
SE [D]	Sph [D]	Cyl [D]	Axis [°]	SE [D]	Sph [D]	Cyl [D]	Axis [°]
+19.50	+18.50	+2.00	31	-0.37	-0.27	-0.18	121
+19.00	+18.00	+2.00	31	0.00	+0.10	-0.19	121
+18.50	+17.50	+2.00	31	+0.37	+0.46	-0.19	121

Visualization of the IOL Values: 90°

Select the IOL variant via the fold out menu:  
 MP: MICS, preloaded  
 M: MICS (microincision cataract surgery)  
 MV: MICS, violet and blue filter (yellow)

15. Choose between different IOL types from the dropdown menu from the generated readings.

16. Click on the “Add to wish list” button adjacent to the drop-down menu to transfer the result to the wish list.

**M** MICS (Micro Incision Cataract Surgery), suitable for 1.8mm incision size

**MP** MICS (Micro Incision Cataract Surgery), suitable for 1.8mm incision size & Preloaded

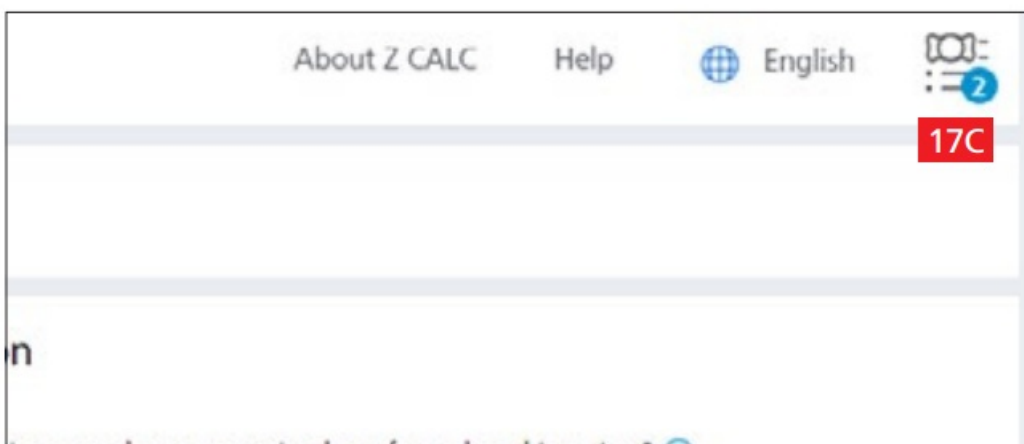
**MV** MICS (Micro Incision Cataract Surgery), suitable for 1.8mm incision size & Violet and blue filtering (yellow)

**P** Fully Preloaded in injector

**PY** Fully Preloaded in injector & Yellow blue-light filtering

“-” No variant

## Navigate to the Wishlist/PDF-Printouts



### 17A

Click on Save as PDF button to save the selected results as PDF directly from the calculation screen.

### 17B

Click on wish list button at the bottom. This will lead you to the second screen, where you can select lenses for ordering or PDF-print-outs.

### OR

### 17C

Click on the wish list symbol in the right upper corner, which will lead you to the same screen as the wish list button at the bottom of the page.

## Create PDF printouts for selected IOLs or order via e-mail



**AT LISA® toric 909MP**

IOL Refractive Power				Predicted Outcome ⓘ				
SE [D]	Sph [D]	Cyl [D]	Axis [°]	SE [D]	Sph [D]	Cyl [D]	Axis [°]	
+19.00	+18.00	+2.00	35	0.00	+0.05	-0.09	125	1 ▼

**AT LISA® toric 909MV**

IOL Refractive Power				Predicted Outcome ⓘ				
SE [D]	Sph [D]	Cyl [D]	Axis [°]	SE [D]	Sph [D]	Cyl [D]	Axis [°]	
+19.00	+18.00	+2.00	35	0.00	+0.05	-0.09	125	1 ▼

Order by e-mail    Save as PDF    Delete wish list

**18**

Select the desired quantity for the IOL.

**19A**

Click “Order by E-Mail” (to directly send your order to the local ZEISS sales representative).

**OR**

**19B**

Click “Save as PDF” to create a PDF with the calculation results and ordering information of the selected IOLs in the wish list.

**Order by e-mail or create PDF printouts**

Send order e-mail

Select which PDF form(s) you want to create and enter your information.

☐ IOL Order Form  
☐ IOL Calculation  
☒ IOL Order Form and IOL Calculation

E-mail Address of ZEISS IOL Representative

E-mail Address of ZEISS IOL Representative

Clinic Name

e.g., Clinic for Ophthalmology

Department(optional)

e.g., Ophthalmology

Street and Number

e.g., 20 Main Street

Additional Address Information(optional)

e.g., Building C

City

e.g., Potsdam

Zip Code

e.g., 01010

State(optional)

e.g., Brandenburg

Country

e.g., Germany

Telephone Number(optional)

e.g., +49 11 1122000345

Your E-Mail Address

e.g., test@mail.com

Fill out all mandatory fields: name and address of the clinic, e-mail address of ZEISS IOL representative.

Check your entries

Send Cancel

For Ordering

### For Ordering:

- Enter all the relevant details including clinic name, department, address, phone number and email address (your local ZEISS partner's email address is filled in automatically based on your country selection).
- By hitting the "Send" button, an email with your order is sent out to the local ZEISS business partner (automatically filled based on your country selection).

### For Printing and/or manually faxing

- For saving as PDF, you don't need to enter your data (data entry is only required for direct ordering).
- Please just scroll down and click "Save", the PDFs will be created and open in a new tab window in your browser.

**Note:** Please ensure the pop-up blocker is deactivated in your browser. Otherwise please follow the instruction in the addendum: [Z-CALC-Quickguide-Addendum-EN-32-025-0028III.pdf](#).

Save PDF form

Select which PDF form(s) you want to create and enter your information.

☐ IOL Order Form  
☐ IOL Calculation  
☒ IOL Order Form and IOL Calculation

Clinic Name(optional)

e.g., Clinic for Ophthalmology

Department(optional)

e.g., Ophthalmology

Street and Number(optional)

e.g., 20 Main Street

Additional Address Information(optional)

e.g., Building C

City(optional)

e.g., Potsdam

Zip Code(optional)

e.g., 01010

State(optional)

e.g., Brandenburg

Country(optional)

e.g., Germany

Telephone Number(optional)

e.g., +49 11 1122000345

Your E-Mail Address(optional)

e.g., test@mail.com

Check your entries

Save Cancel

For Printing



Gender

Patient ID 123456 Surgeon

Operator

**Clinic name**  
 Department  
 Street and Number  
 Additional Address Information  
 Zip Code City State  
 Country  
 Telephone number  
 Your E-Mail Address

**[OS] Warning:** You have modified IOLMaster data. However, calculations for patients with whom refractive myopic or hyperopic surgery has already been carried out (LASIK/LASEK/PRK type) are intended for original IOLMaster data only. Using the results of the calculation is at your own risk!

**OD** right

**IOL Calculation**

left **OS**

Eye Status							
Lens Status	Phakic	VS	--	Lens Status	Phakic	VS	--
LVC	untreated	LVC Mode	untreated	LVC	LASIK/LASEK/PRK	LVC Mode	Myopic
Target Refraction	0.00 D	SIA	+0.10 D	Target Refraction	0.00 D	SIA	+0.10 D
		Inc.	@ 35°			Inc.	@ 35°

Biometry							
Date of Measurement 2020-04-21				Date of Measurement 2020-04-21			
AL	23.56 mm			AL	23.57 mm		
ACD	3.48 mm	From	Epithelium	ACD	3.49 mm	From	Epithelium
LT	--			LT	--		
WTW	--	n	1.3375	WTW	--	n	1.3375
K1	41.25 D @ 124°	Cyl	-- @ --	K1	41.24 D @ 125°	Cyl	-- @ --
K2	43.58 D @ 34°	SE	--	K2	42.90 D @ 35°	SE	--
TK1	-- @ --	Cyl TK	-- @ --	TK1	-- @ --	Cyl TK	-- @ --
TK2	-- @ --	TSE	--	TK2	-- @ --	TSE	--

**[C] ZEISS AT LISA tri toric 939 | MP**

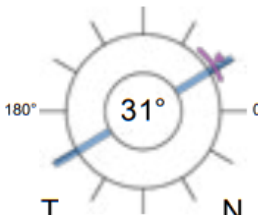
**[E] Z CALC | Keratometry with Z CALC Nomogram**

IOL				Predicted Outcome		
SE [D]	Sph [D]	Cyl [D]	Axis [°]	SE [D]	Cyl [D]	Axis [°]
+23.50	<b>+22.00</b>	<b>+3.00</b>	<b>31</b>	-0.76	-0.07	121
+23.00	<b>+21.50</b>	<b>+3.00</b>	<b>31</b>	-0.39	-0.08	121
+22.50	<b>+21.00</b>	<b>+3.00</b>	<b>31</b>	-0.02	-0.08	121
+22.00	<b>+20.50</b>	<b>+3.00</b>	<b>31</b>	+0.35	-0.09	121
+21.50	<b>+20.00</b>	<b>+3.00</b>	<b>31</b>	+0.71	-0.09	121

**[D] ZEISS AT LISA tri toric 939 | MP**

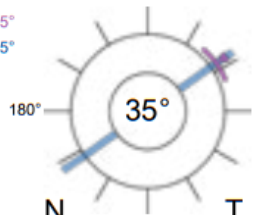
**[F] Z CALC | Keratometry**

IOL				Predicted Outcome		
SE [D]	Sph [D]	Cyl [D]	Axis [°]	SE [D]	Cyl [D]	Axis [°]
+25.00	<b>+24.00</b>	<b>+2.00</b>	<b>35</b>	-0.71	-0.04	125
+24.50	<b>+23.50</b>	<b>+2.00</b>	<b>35</b>	-0.34	-0.05	125
+24.00	<b>+23.00</b>	<b>+2.00</b>	<b>35</b>	+0.03	-0.05	125
+23.50	<b>+22.50</b>	<b>+2.00</b>	<b>35</b>	+0.40	-0.06	125
+23.00	<b>+22.00</b>	<b>+2.00</b>	<b>35</b>	+0.77	-0.06	125



Incision Orientation: 35°  
Implant Axis: 31°


**[G]**  
**[H]**



Incision Orientation: 35°  
Implant Axis: 35°

Comment:

Signature:



Zeiss Calculation Web Services - Version 1.3 Printed on 2020-04-21 12:40 (UTC) by test, isaac  
 Carl Zeiss Meditec AG | Template Version 1.3 [04/2020] | © Copyright 2020 All rights reserved.

Page 1 of 1

- A. Clinic-specific information (Optional).
- B. Warning for patients with previous refractive surgery.
- C. Name and type of the lens.
- D. Formula and type of measurement (Keratometry or Total Keratometry).
- E. Labeled values on the product package of the calculated lenses are highlighted with bold font and not labeled ones greyed out.
- F. Selected lenses from the Wishlist for OD and OS.
- G. Eye schematic with main incision position and implant axis for toric IOLs.
- H. Anatomical position.

Patient ID 123456  
Surgeon

Gender

Clinic name  
Department  
Street and Number  
Additional Address Information  
Zip Code City State  
Country  
Telephone number  
Your E-Mail Address

**!** [OS] Warning: You have modified IOLMaster data. However, calculations for patients with whom refractive myopic or hyperopic surgery has already been carried out (LASIK/LASEK/PRK type) are intended for original IOLMaster data only. Using the results of the calculation is at your own risk!

## IOL Order Form

OD

OS

IOL	ZEISS AT LISA® tri toric 939   MP	ZEISS AT LISA® tri toric 939   MP
IOL (SE / Sph / Cyl / Axis)	<b>A</b> +22.50 D / <b>+21.00 D / +3.00 D / 31°</b>	+24.00 D / <b>+23.00 D / +2.00 D / 35°</b>
Order Quantity	1	1
Surgery Date	2020-04-28	2020-04-28
Target Refraction (SE)	0.00 D	0.00 D
Axial Length	23.56 mm	23.57 mm
Anterior Chamber Depth	(from Epithelium) 3.48 mm	(from Epithelium) 3.49 mm
Refractive Index (n)	1.3375	1.3375
K1	41.25 D @ 124°	41.24 D @ 125°
K2	43.58 D @ 34°	42.90 D @ 35°
Cyl	-- @ --	-- @ --
TK1	-- @ --	-- @ --
TK2	-- @ --	-- @ --
Cyl TK	-- @ --	-- @ --
Incision Orientation	35°	35°
SIA	+0.10 D	+0.10 D
Predicted Outcome (SE / Sph / Cyl / Axis)	-0.02 D / +0.02 D / -0.08 D / 121°	+0.03 D / +0.06 D / -0.05 D / 125°

Order Reusable STACY: ☐

Disclaimer:

The order request follows a non-binding recommendation. I have accepted the Terms and Conditions of use of the ZEISS product that generated this order request. The recommendation is merely an approximate value on the basis of general experience and a calculation algorithm and I have verified it on the basis of my specialist expertise. The order request and a resulting order are based on the General Terms and Conditions of Carl Zeiss Meditec AG that I was able to access online at <https://www.zeiss.com/meditec/us/imprint/terms-and-conditions.html>.

Comment:

Signature:



**A.** Based on the labeling of the selected lens, ordering relevant values are displayed bold.

OD: Oculus Dexter

OS: Oculus Sinister

OU: Oculus Uterque

LVC: Laser Vision Correction

SIA: Surgical Induced Astigmatism

Inc: Incision

AL: Axial Length

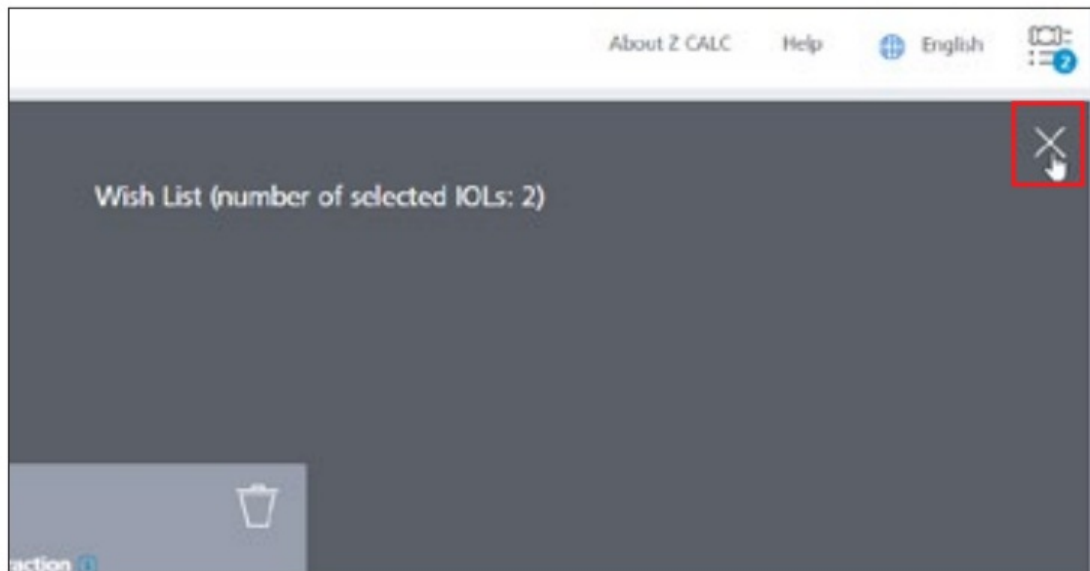
ACD: Anterior Chamber Depth

LT: Lens Thickness

WTW: White-to-White

K1 & K2: Keratometry Values  
TK1 & TK2: Total Keratometry Values  
n: Refractive Index  
Cyl: Cylinder  
ELP: Effective Lens Position

## Start new calculation



- Close the wish list window by clicking the cross on the top right of the screen.
- Start a new calculation by clicking on the “New calculation” button. Please note, that all input data and the calculation results including the wish list, will be deleted when you click this button. If you only want to add another calculation to add to your wish list, do not click “New Calculation”.


CE Z CALC 2.2.0






Carl Zeiss Meditec AG  
Goeschwitzer Strasse 51–52  
07745 Jena  
Germany

<https://zcalc.meditec.zeiss.com>  
[www.zeiss.com/med/contacts](http://www.zeiss.com/med/contacts)

## Documents / Resources

	<p><b><a href="#">ZEISS Z CALC 2.2 Toric and Non-Toric IOL Calculation and Ordering</a></b> [pdf] User Guide Z CALC 2.2 Toric and Non-Toric IOL Calculation and Ordering, Z CALC 2.2, Toric and Non-Toric IOL Calculation and Ordering, Non-Toric IOL Calculation and Ordering, IOL Calculation and Ordering, Calculation and Ordering, Ordering</p>
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## References

-  [Contact us](#)
-  [ZEISS Meditec Company Information](#)
-  [Z CALC Online IOL Calculator](#)