

5 Steps to Interpret the OU Report

Patient data: This section displays general patient data as patient name, birth date, patient ID and descent.

Quality: Evaluation of image quality based on the standard deviation (SD) of the image. Below, focus setting and astigmatic lens used for the acquisition are given, as well as the operator name.

Disc area: The disc area of each eye is evaluated.

Cup: In the topography image, cup (red) and rim (green and blue) are represented as overlay on the topography image. This facilitates a quick qualitative assessment of the relation of rim tissue and cup, and detection on local areas of rim thinning. For follow-up reports, the result of the topographic change analysis is displayed as overlay on the black and white reflectivity image (if sufficient qualified images are available for progression analysis).

Rim: Sectorial classification based on the relation of rim to disc area is given for each sector under consideration of the age of the patient according to Moorfields-Regression Analysis. Measured values are compared to the respective reference database. The classification symbols are indicated in the legend below the RNFL profile.

RNFL-Profile Graph: Height profile of the retina along the disc margin as marked by the contour line. The green shaded area indicates the normal range, yellow is borderline, and the red zone indicates values outside normal limits compared to the respective reference database.

**Heidelberg Retina Tomograph
OU Report**

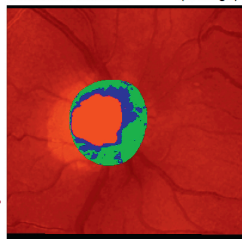
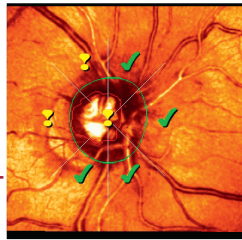
HEIDELBERG ENGINEERING

Patient: _____ DOB: _____ Examination: _____
 Pat-ID: _____ Gender: _____ Ethnicity: _____

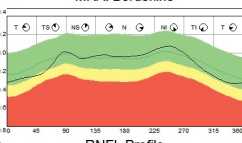
Quality: **Very good** (SD 11 µm) **Initial Report** Quality: **Very good** (SD 11 µm)
 Focus: 1.00 dpt Focus: 1.00 dpt
 Operator: _____ Operator: _____

OD

Disc Size: 1.73 mm² (average)

MRA: Borderline



RNFL Profile

CUP

Linear Cup/Disc Ratio []

0.62 ✓	Asymmetry -0.05 ✓	0.67 ✓
p = 0.09	p = 0.36	p = 0.08

Cup Shape Measure []

-0.09 ✓	Asymmetry 0.04 ✓	-0.13 ✓
p = 0.05	p = 0.22	p = 0.23

RIM

Rim Area [mm²]

1.06 ⚠	Asymmetry -0.04 ✓	1.10 ⚠
p = 0.03	p = 0.4	p = 0.01

Rim Volume [mm³]

0.32 ✓	Asymmetry 0.08 ✓	0.24 ✓
p > 0.5	p = 0.31	p = 0.1

RNFL

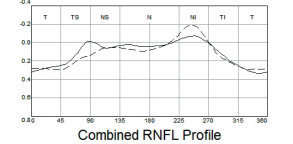
Height Variation Contour [mm]

0.41 ✓	Asymmetry -0.07 ✓	0.48 ✓
p > 0.5	p = 0.1	p > 0.5

Mean RNFL Thickness [mm]

0.27 ✓	Asymmetry 0.05 ✓	0.22 ✓
p > 0.5	p = 0.25	p > 0.5

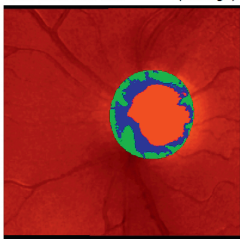
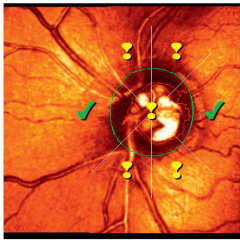
Inter-Eye Asymmetry: 8 %



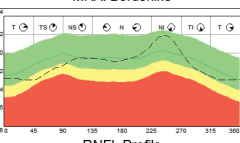
Combined RNFL Profile

OS

Disc Size: 1.97 mm² (average)

MRA: Borderline



RNFL Profile

Comments:

Signature: _____
 Date: _____

www.HeidelbergEngineering.com

Cup, Rim and RNFL parameters: Important parameters are displayed for each area. They are classified according to the respective p-values (colored symbols, please refer to the box in the low left corner).

Statistical Value (significance): P-values give the statistical probability that the measured value is in the normal range (from the comparison to the respective reference database).

- p > 0,05 = within normal limits
- p < 0.05 = borderline
- p < 0.001 = outside normal limits

If the p-value is in the borderline range (0.001-0,05), exact values are displayed.

Asymmetry: Quantifies the difference between both eyes and shows the level of significance (p-value).

RNFL Profile Comparison: Degree of asymmetry can be visually assessed.

Inter-Eye Asymmetry: Evaluates the symmetry of the RNFL profile between eyes. If the correlation between the eyes is good, the value will be near 0%.

5 Steps to Interpret the OU Report

HRT3

1 Assess image quality

The first step in clinical interpretation of a printout is an assessment of image quality. Make sure you are interpreting a good-quality image, since poor quality can affect the results and should be interpreted with caution. Look for a standard deviation (SD) of 30µm or less, otherwise, image acquisition should be repeated when possible.

2 Check optic disc size

The size of the optic disc is given in mm² and is evaluated as small, average, or large. Small optic discs will tend to have small cups, even in glaucoma, while large optic discs will tend to have large cups, even in healthy eyes.

Please note that classification results for MRA and GPS are only valid for discs within a certain range (e.g. for European patients: 1.0-3.6 mm²). Discs outside this range are not sufficiently represented in the database to warrant a reliable classification result.

3 Evaluate the Cup

Check the size, shape and classification status of the cup parameters. The cup shape parameter has been shown to be very sensitive for detecting early glaucoma¹. Also check for asymmetric cupping and asymmetric cup parameters.

4 Evaluate the Rim

Check the Moorfields-Regression Analysis (MRA) results and rim parameters. When the MRA shows that the rim area for a sector is outside the normal range, the sector will be marked with a yellow exclamation point (!, borderline) or a red x (x, outside normal limits).

Even one abnormal sector can indicate significant damage. Pay particular attention to the superior temporal and inferior temporal sectors, as these tend to reveal damage first. Asymmetry values provide additional information by using the patient as their own reference.

5 Evaluate the RNFL

Carefully inspect the RNFL profile graphs for local regions that fall outside normal and for areas of asymmetry between eyes. If damage is very localized, the RNFL profile graph may dip into the abnormal area only briefly. This may reflect early, focal damage. Look for localized dips into the abnormal region to indicate early loss. Also, symmetry between the eyes is important. Even if both eyes are within the normal range, a large asymmetry can indicate early damage. The inter-eye asymmetry parameter provides a quantitative assessment of the symmetry between eyes.

6 Descent-specific reference databases

The Glaucoma Module Premium Edition software utilizes descent-specific reference databases to determine the normal range of healthy eyes. For the classification of an eye, the measured parameters are compared to data from the respective reference database.

People of African descent as well as Hispanics have been found to be at greater risk for developing glaucoma, and some research suggest descent differences in the optic nerve head exist that are mainly associated with differences in optic disc size².

Database	Disc sizes	Number of normal eyes
European descent	1.0 – 3.6 mm ²	> 700
African descent	1.4 – 3.4 mm ²	> 200
Indian descent	0.9 – 4.1 mm ²	> 100
Hispanic descent	In preparation	
Asian descent	In preparation	

¹Uchida H, Brigatti L, Caprioli J. Detection of structural damage from glaucoma with confocal laser image analysis. *Invest Ophthalmol Vis Sci*. 1996;37:2393-2401.

²Girkin CA, McGwin G Jr, Xie A, Deleon-Ortega J. Differences in optic disc topography between black and white normal subjects. *Ophthalmology*. 2005;112:33-39.

Headquarters

Heidelberg Engineering GmbH
Max-Jarecki-Str. 8
69115 Heidelberg · Germany
Tel. +49 6221 64630

AUS

Heidelberg Engineering Pty Ltd
404 Albert St.
East Melbourne 3002 · Victoria
Tel. +61 396 392 125

CH

Heidelberg Engineering GmbH
Schulstrasse 161
8105 Regensdorf
Tel.: +41 44 8887 020

UK

Heidelberg Engineering Ltd.
55 Marlowes · Hemel Hemstead
Hertfordshire HP1 1LE
Tel: +44 1442 502 330

**HEIDELBERG
ENGINEERING**

www.HeidelbergEngineering.com