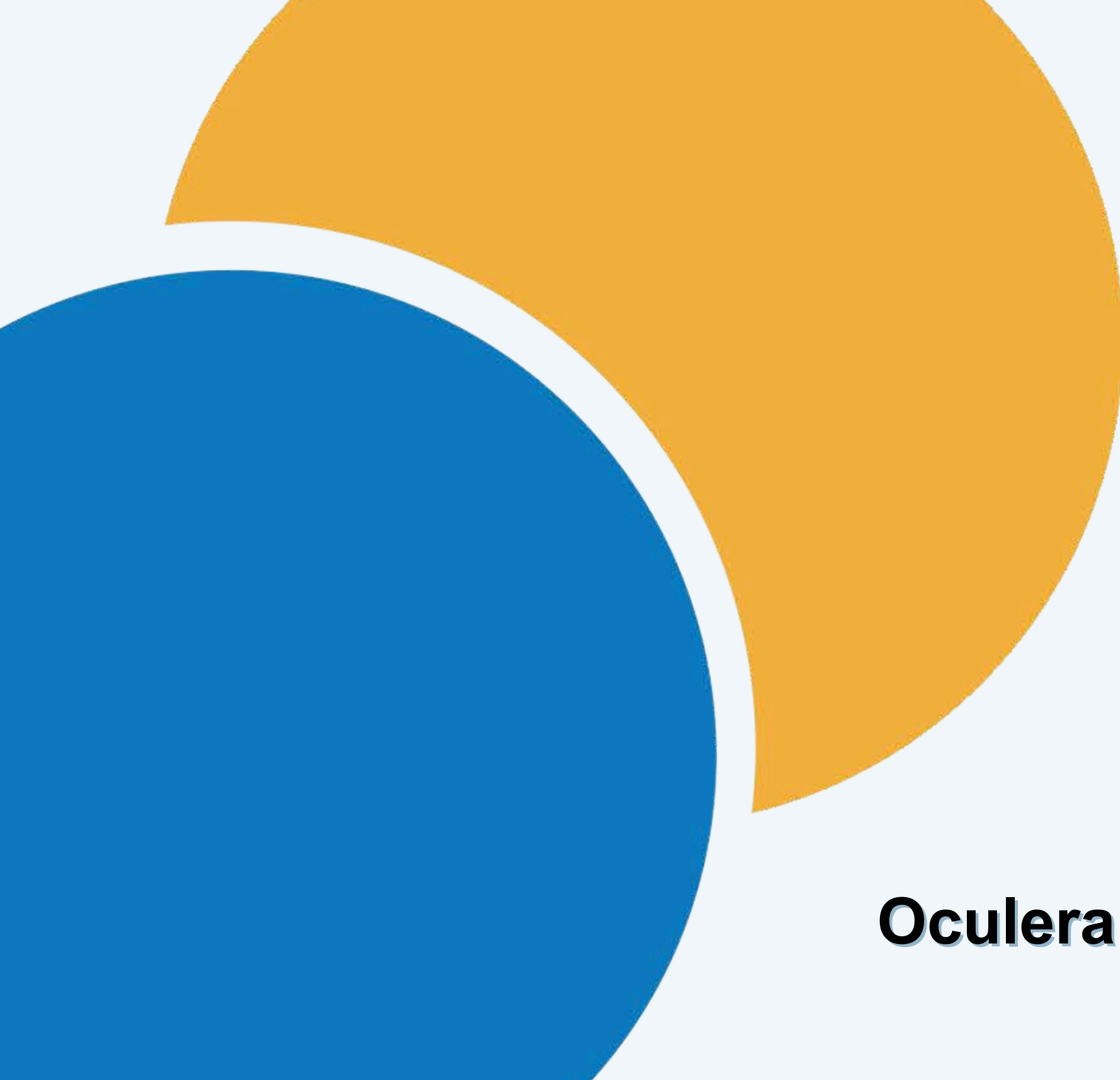




oculera

**Everything about
Oculera Visual Field Examination**



FEATURES

Low cost

Significantly cuts the traditional perimetry equipment cost. You can purchase the device or pay a monthly fees to adjust your own economical plan.

Low maintenance

Thanks to the compact design, your perimetry service will not be affected by any maintenance or calibration service. Simply return your device and we will replace the whole hardware.

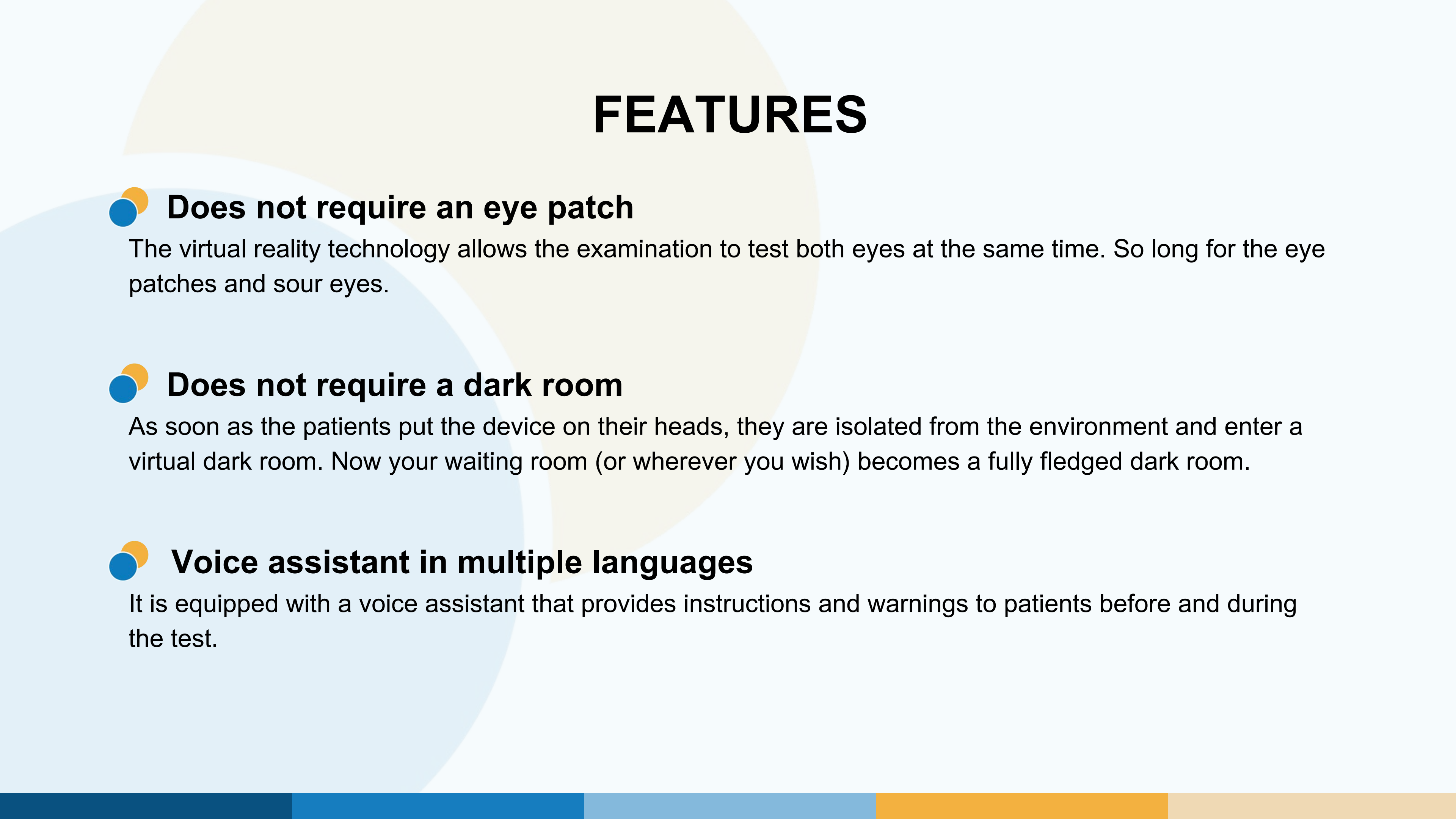
High mobility

Only weighs 500 grams. Does not require any connection or secondary device to run anywhere you desire.

Easy to use for the patients

Patients are not required to sit and place their heads still during the test. Any chair to lean and relax will do the trick. oculera lowers the accuracy loss due to poor ergonomics.

FEATURES



Does not require an eye patch

The virtual reality technology allows the examination to test both eyes at the same time. So long for the eye patches and sour eyes.



Does not require a dark room

As soon as the patients put the device on their heads, they are isolated from the environment and enter a virtual dark room. Now your waiting room (or wherever you wish) becomes a fully fledged dark room.



Voice assistant in multiple languages

It is equipped with a voice assistant that provides instructions and warnings to patients before and during the test.

FEATURES

Use any device for testing

The test can be started from your computer, tablet, or phone at any preferred location, and patient test results can be accessed from any device with an internet connection. The Oculera website should be visited.

Use online or offline system alternatively

Offline work can also be done entirely. The offline desktop app should be installed on your PC, and the headset should be connected to your PC via cable. Your data is synced with the online system, allowing for a switch to online usage at any time. If preferred, all data can remain solely on your PC, without being uploaded to the cloud.

DICOM format

Test results can be exported in DICOM format. DICOM test results from other devices can also be imported. It is compatible with all available EMR systems.

FEATURES

Intended for use in diagnostics and therapeutic services.

Commonly, it is used in ophthalmology services for glaucoma patients because an early diagnosis of the disease is successfully possible with this technique. Also the techniques are useful for neuro-ophthalmic diseases.

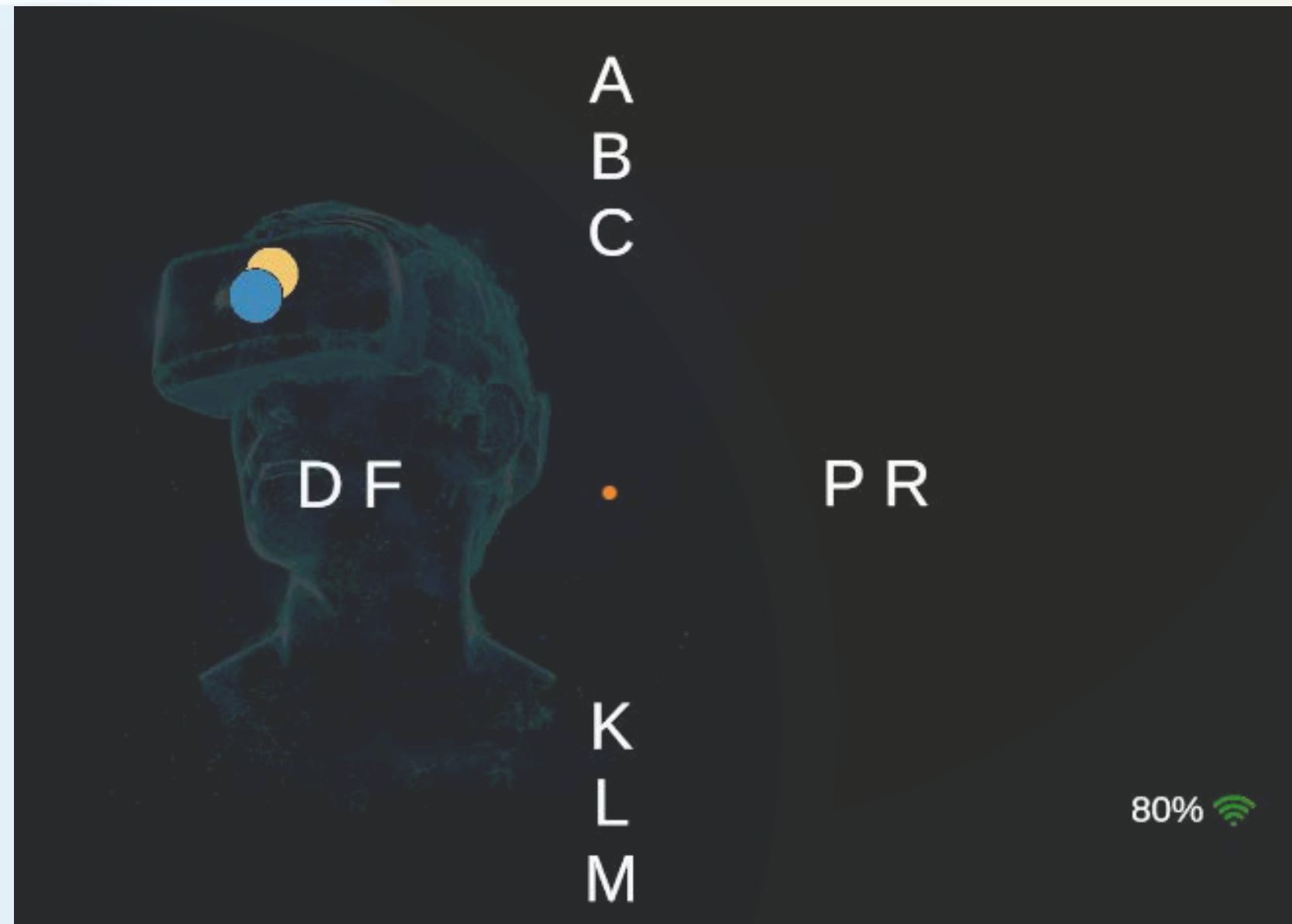
Classified as Class IIa CE certified medical device

Oculera VFA is the first CE certified Class IIa medical device as a VR Perimetry.

Operating in 5 continents 35+ countries

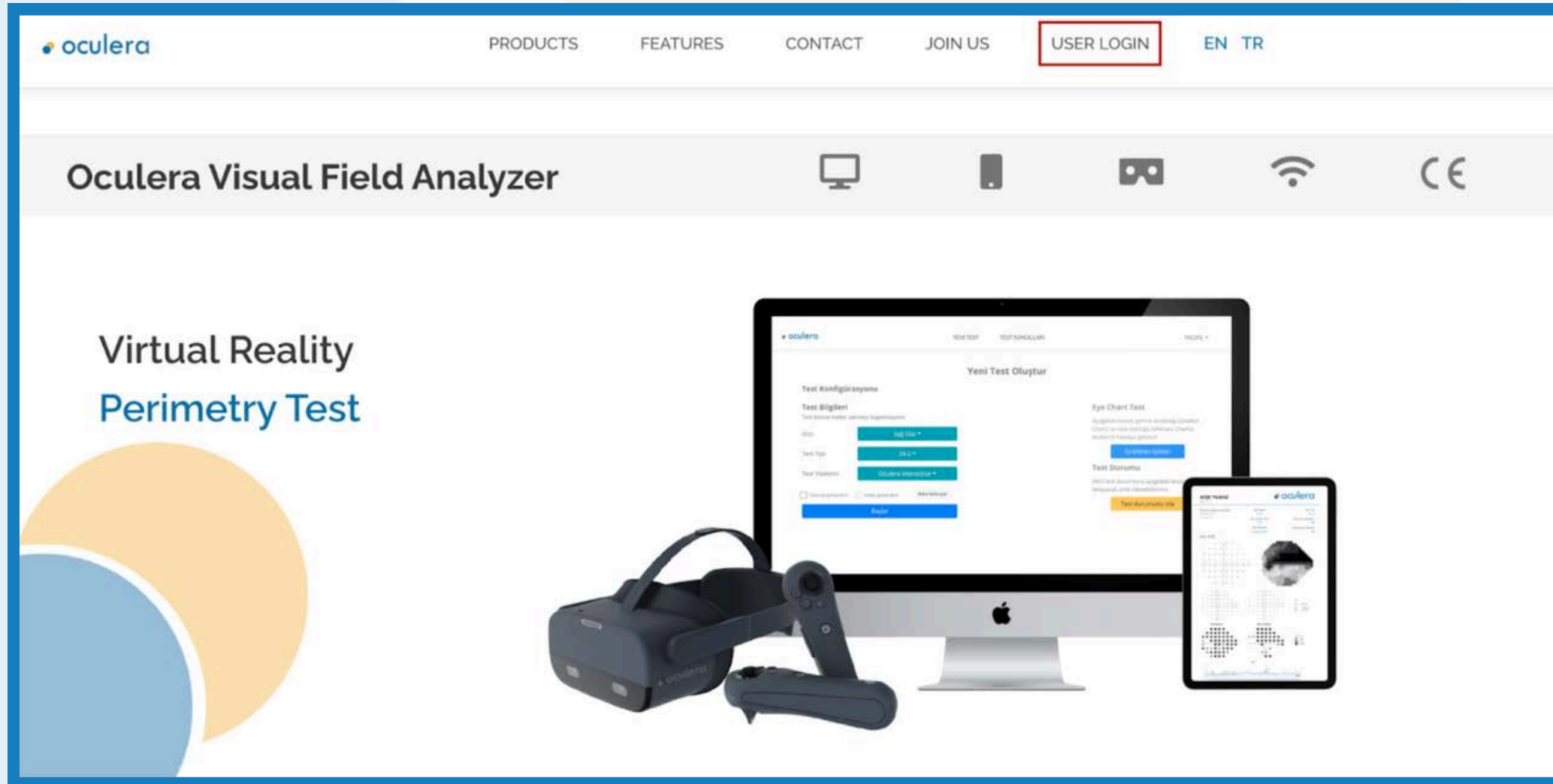
Oculera is rapidly expanding its global reach and achieving new milestones every day.

POSITIONING THE HEADSET



- An image is presented to the patient before the test to check whether the head is properly placed.
- If the headset is positioned properly, each letter can be identified on the screen.
- Green Wifi logo  must be seen at the bottom right.
- Battery level must be **at least 15%**.

TESTING



"User Login" button on the www.oculera.health home page is clicked to go to the login page.

USER LOGIN

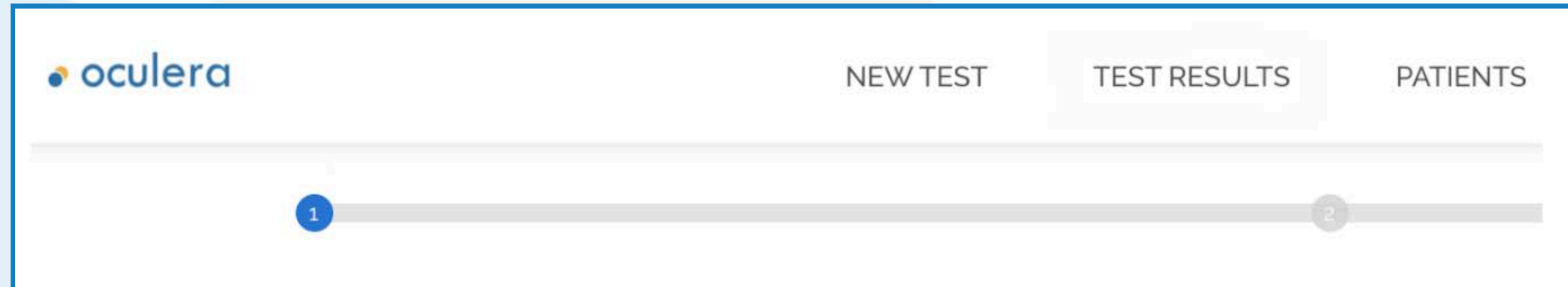
User Name / E-mail

Password

Login

The user name and password are entered and the product main portal is accessed.

TESTING



- The page automatically opens on the “**New Test**” screen. On this screen, a new patient can be registered or an existing patient can be selected.
- The “**Test Results**” button is used to see the old test results.
- The “**Patients**” button is used to see the patient information and search in detail.

TESTING

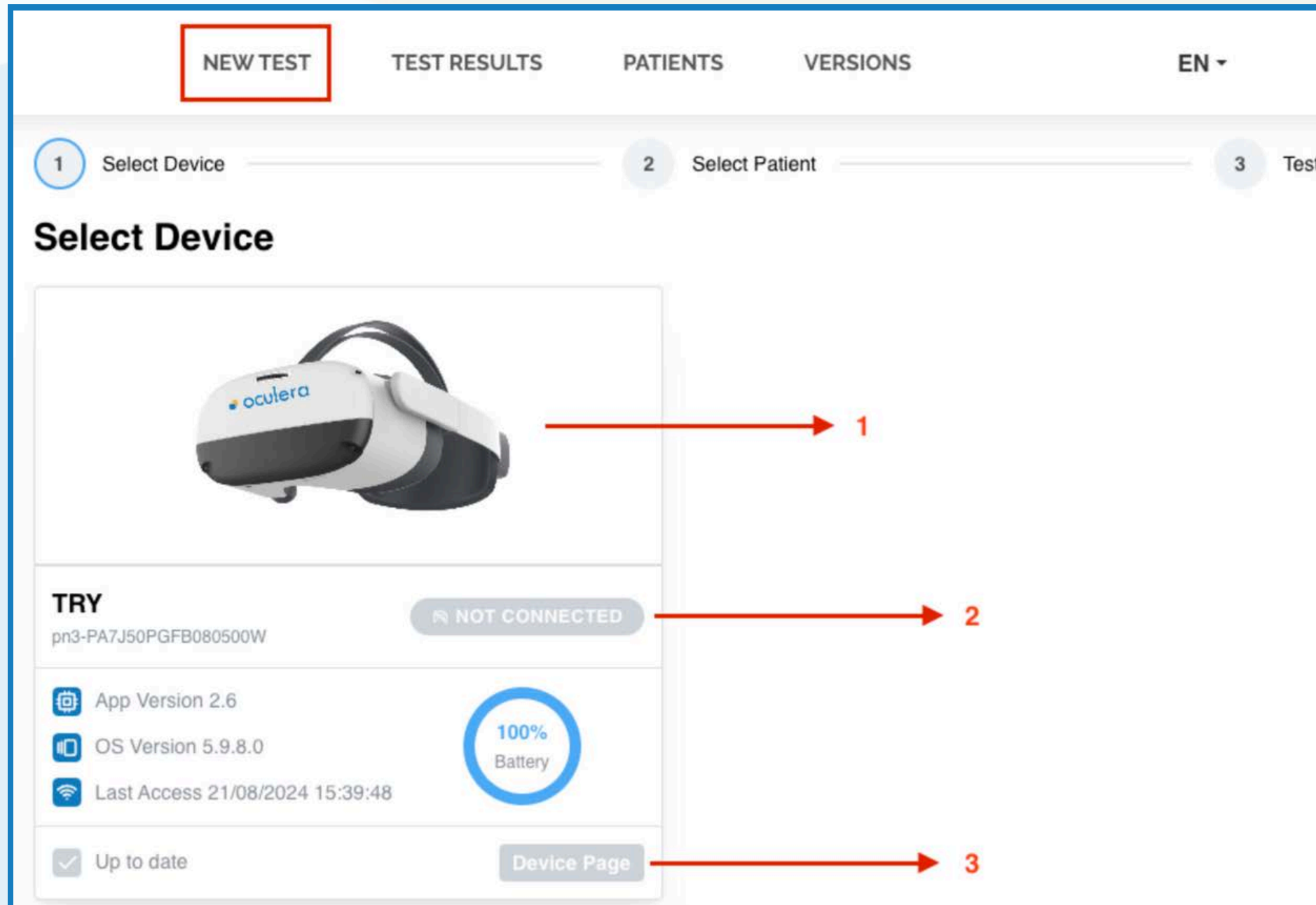
The 1st Step of “New Test” is **Device Selection**.

This step provides brief information about the device's status, including whether it needs an update, its battery level, and the last time it was used, among other details.

1. **Select Device**

2. **Device Status: Connected or Not Connected**

3. **Device Page: Info about device version**



TESTING

✓ Select Device

2 Select Patient

3 Test

Select Patient i

i Start typing the name of the patient to select or create a new patient.

Add New Patient or Select Existing One

John|

+ Add New Patient John

John Doe 04/01/1977 # 0259a33c-7ac6-457b-aa15-a4...

The 2nd Step: **Patient Selection**

If the patient is already registered, they can be selected, or a new patient can be added.

TESTING

✓ Select Device

✓ Select Patient

3 Test

Create New Test ⓘ

Device Status

CONNECTED

Selected Patient

JOHN DOE (47)

Auto Test Pause

Pause the test if gaze is not on the fixation point.



Binocular fixation

Make the fixation point visible for both of the eyes.



Test Speed

 Standard Slow Slower

Fixation size

Goldmann III Goldmann IV Goldmann V

Stimuli size

Goldmann III Goldmann IV Goldmann V

Test Options

Eye*: Left Eye

Test Type*: 24-2

Test Style*: Fast Tracking

Voice Assistant:

  EN

Show tutorial

Show tutorial before the test starts

☐

The 3rd Step: Test Configurations

The test eye, test type, and test strategy should be selected; other configurations can also be adjusted.

TESTING

Patients should start the test while looking at the fixation point.

The test can then be monitored on this screen. You can adjust certain settings during the test or terminate it if necessary.

Test Started!🔒

▶ TEST

JOHN DOE (47)

Terminate Test ✕

Finished (%0):

00:00

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.	.	.	.	.	.

Test Style: Fast Tracking

Test Type: 24-2

Eye: Left Eye

👁️

Binocular fixation

Test Speed

Standard

Slow

Slower

🎯 Trigger Start

The test starts when the patient presses the trigger button. Please ensure they are looking at the fixation point.

Test Started!🔒

▶ TEST

JOHN DOE (47)

Terminate Test ✕

Finished (%14):

00:21

		18	.	18	.		
	.	.	.	.	.	.	.
14	.	14	.	.	.	14	.
.	.	.	.	.	.	.	.
.	.	.	.	.	16	.	14
.	.	.	.	.	.	.	.
.	.	.	.	.	14	.	.
.	.	.	.	.	.	.	.

Test Style: Fast Tracking

Test Type: 24-2

Eye: Left Eye

👁️

Auto Test Pause

📷

Binocular fixation

Test Speed

Standard

Slow

Slower

• oculera VISUAL FIELD ANALYZER



Test Types

Reliability
Scores

Test Algorithms

Academical
Studies

Test Results

Test Type	Field	Test Pattern	Extent of Visual Field Tested / Number of Points Tested	Application
10-2	Narrow	Monocular points	10 degrees/68 point grid	Macula, retinal, neurological, advanced glaucoma
24-2	Medium	Monocular points	24 degrees/54 point grid	Glaucoma, general, neurological
30-2	Wide	Monocular points	30 degrees/76 point grid	Glaucoma, retinal, neurological, general

Test Type	Test Pattern	Extent of Visual Field Tested / Number of Points Tested	Application
C-40	Monocular points	30 degrees/40 points	Glaucoma, general, neurological
C-76	Monocular points	30 degrees/76 points	Glaucoma, general, neurological
FF-120	Monocular points	55 degrees/120 points	Glaucoma, general, neurological
Esterman	Binocular	1. 120 degrees bitemporal/ 120 points 2. 160 degrees bitemporal/ 120 points	Assessment of visual field in both eyes together (binocular vision), Functional disability
Superior 36	Monocular points	60 degrees, superior hemifield/36 points	Superior Field Screening, Ptosis
Superior 64	Monocular points	60 degrees, superior hemifield/64 points	Superior Field Screening, Ptosis

RELIABILITY SCORES

Blind Spot Test (Fixation Loss)

Blindspot testing relies on known blind spot locations to ensure proper headset placement and maintain patient focus during tests. Stimuli sent to the blind spot assess parameters, with correct perception indicating accurate settings. If the blind spot is visible, test reliability decreases, due to fixation loss.

Eye Tracking Graph

Eye tracking graph shows eye movements during the test. Upper peaks represent deviations from the fixation point. Negative values show the blinks.

Test Types

Reliability
Scores

Test Algorithms

Academical
Studies

Test Results

False Negative

Recorded when a patient does not respond to brighter stimuli where a duller stimulus has already been seen. High false negative scores indicate that the patient is fatigued, inattentive, a malingerer or has genuine significant visual field loss.

False Positive

The number of positive answers obtained during these 'listen' periods and the listen time are recorded and together called 'listen time data'.

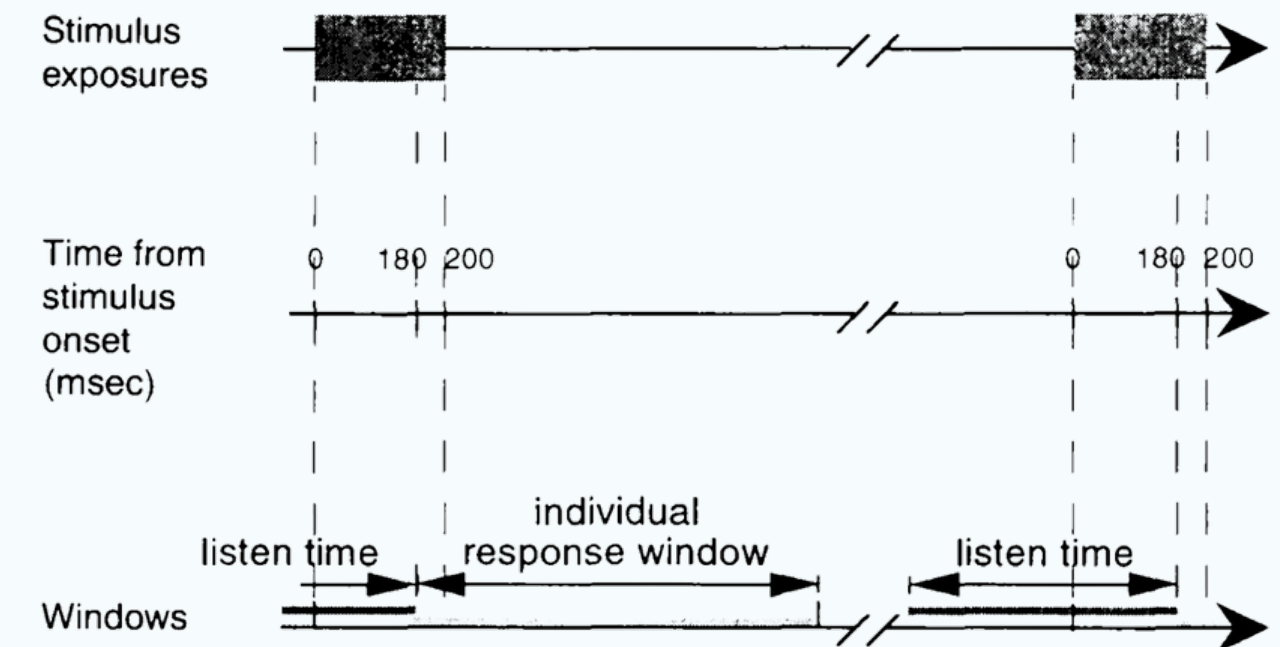


Fig. 1. Time window showing listen time used for determining false positive answers, and response window when responses are expected. First listen time window starts immediately after onset of a stimulus and ends 180 ms later. Second listen time window starts after a fixed time after end of response window and continues into next listen time window associated with subsequent stimulus.

TEST ALGORITHMS

Full Threshold

- The Full Threshold strategy is widely recognized as a standard method in static threshold perimetry, especially prevalent in clinical trials involving glaucoma.
- It tests all points with a fixed brightness and goes up and down according to the responses.
- Foveal threshold can be tested at the beginning of the test.
- The duration of the test typically ranges from 5 to 15 minutes for each eye.
- Test Patterns are: 10-2, 24-2, 30-2.

Fast Tracking

- The test takes 1-2 minutes per eye.
- It can be used for screening purposes.
- The recommended test pattern for the Fast Tracking Test is 24-2.
- 10-2, 24-2 and 30-2 can be used with this strategy.
- Excludes False Negative and Fixation Loss calculations to accelerate the test duration.
- Incorporates automated pauses with eye tracking to maintain test precision under various conditions.
- Foveal threshold can be tested at the beginning of the test.

Test Types

Reliability
Scores

Test Algorithms

Academical
Studies

Test Results

Oculera Interactive

- It is recommended in terms of duration and performance in patients' tests.
- It is an optimized testing strategy to get the most accurate and detailed result in a short time.
- It uses 4 dB and 2 dB steps and was designed to replace the Full Threshold program.
- The average test duration for Oculera Interactive is 3-8 minutes per eye.
- It can be used with 10-2, 24-2, and 30-2 test patterns.
- Foveal threshold can be tested at the beginning of the test.

Test Types

Reliability
Scores

Test Algorithms

Academical
Studies

Test Results

Supra-threshold

- Suprathreshold perimetry testing is a type of visual field test used primarily to screen for defects in the visual field, and it is also utilized for various practical evaluations such as disability measurement, assessing driving eligibility, and general vision examination.
- It is used in binocular and Central-40, Central-76, and Full Field-120 tests.

Esterman (Binocular)

- The binocular test algorithm has 120°-160° horizontal and 90° vertical range of points.
- It has 120 points in total.
- It takes about 1-2 minutes per eye.

Test Types

Reliability
Scores

Test Algorithms

Academical
Studies

Test Results

Comparison of a Virtual Reality-Based Visual Field Device (Oculera) with Humphrey Visual Field Analyzer in Glaucoma Patients and Healthy Individuals:

“A good correlation was found between standard automatic perimetry and Oculera. Oculera MD results were comparable to HFA II MD results. Oculera may be a useful alternative in clinical practice for functional testing in glaucoma patients. It also offers convenience as it is portable and can be applied at home.”

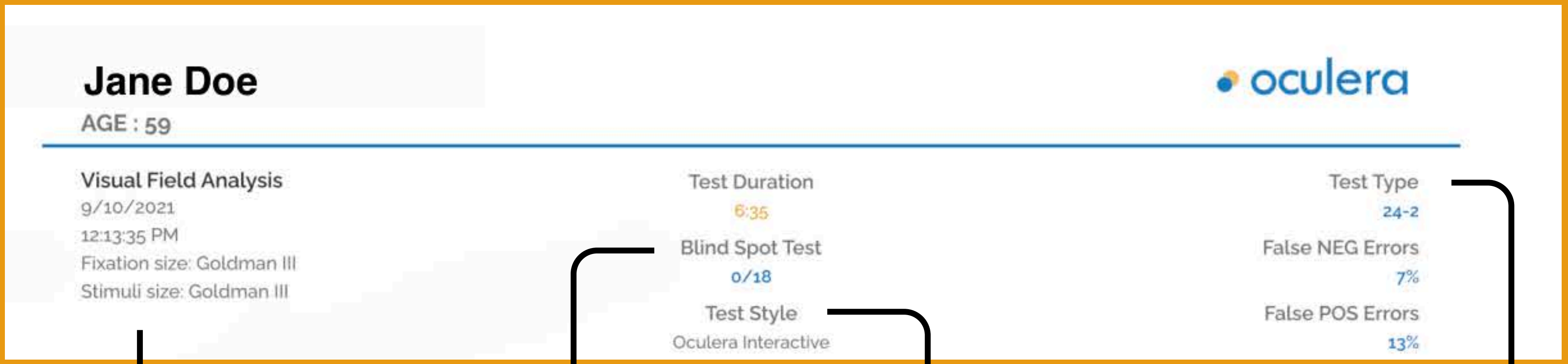
Test Types

Reliability
Scores

Test Algorithms

Academical
Studies

Test Results



This plot shows the deviation of the patient's result from that of age-matched controls at each test location.



Blind spot test is performed to calculate fixation loss ratio during the test.



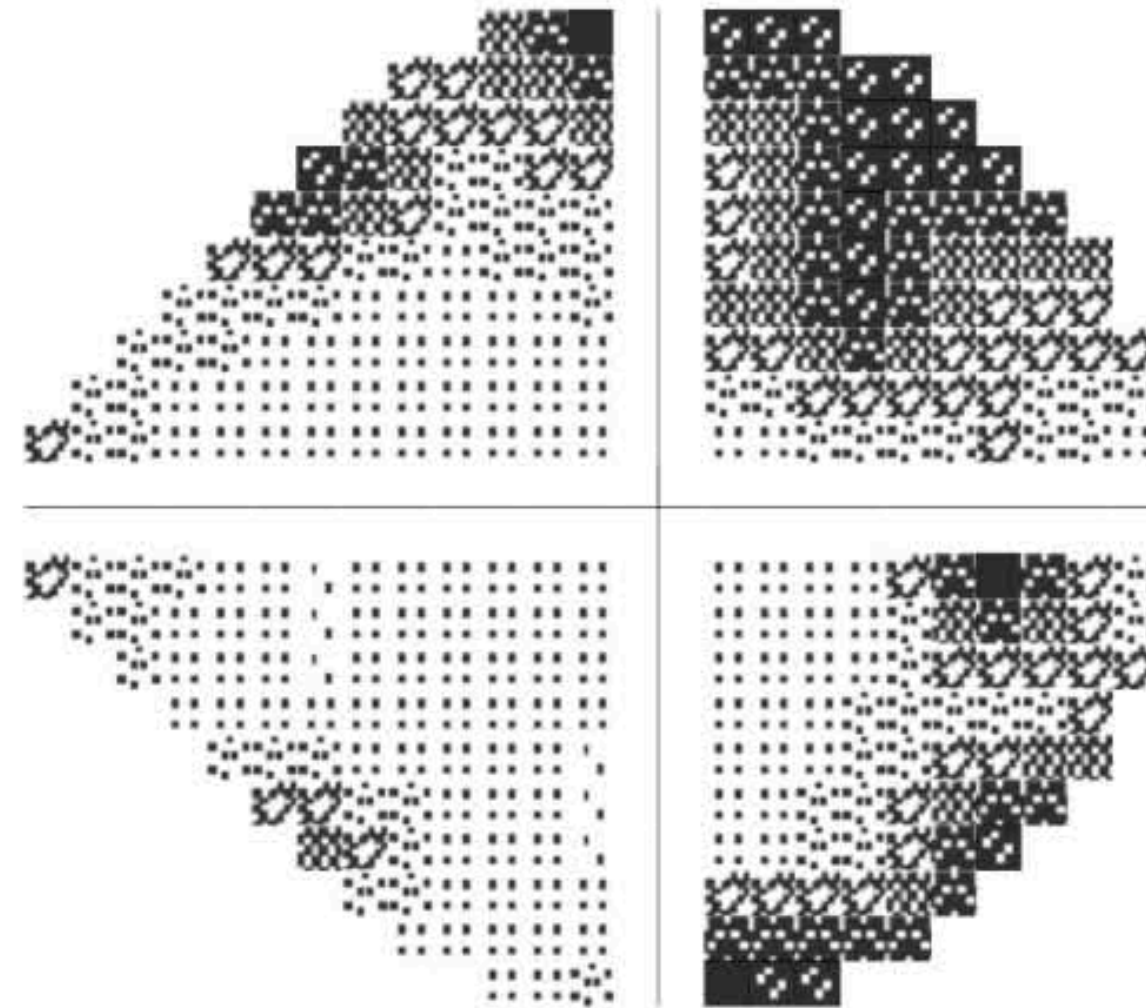
Oculera Interactive algorithm is an iteration of SITA-Standard. The level of resolution and accuracy are set to be on par with SITA-Standard. Moreover, average test duration is 30% shorter than SITA-Standard, with an average of 4.5 mins.



Test types can be 10-2, 24-2, 30-2.

Right Eye

			17	0	2	3		
		2	21	19	18	5	4	
	24	24	28	25	15	2	20	14
20	26	28	29	28	26	24	19	26
18	25	31	27	28	30	26	0	25
	26	30	30	30	30	25	24	15
		14	26	31	27	22	3	
			28	25	0	2		



The grey scale plot graphically demonstrates regions to visual field loss by displaying regions with decreased sensitivity in darker tones.

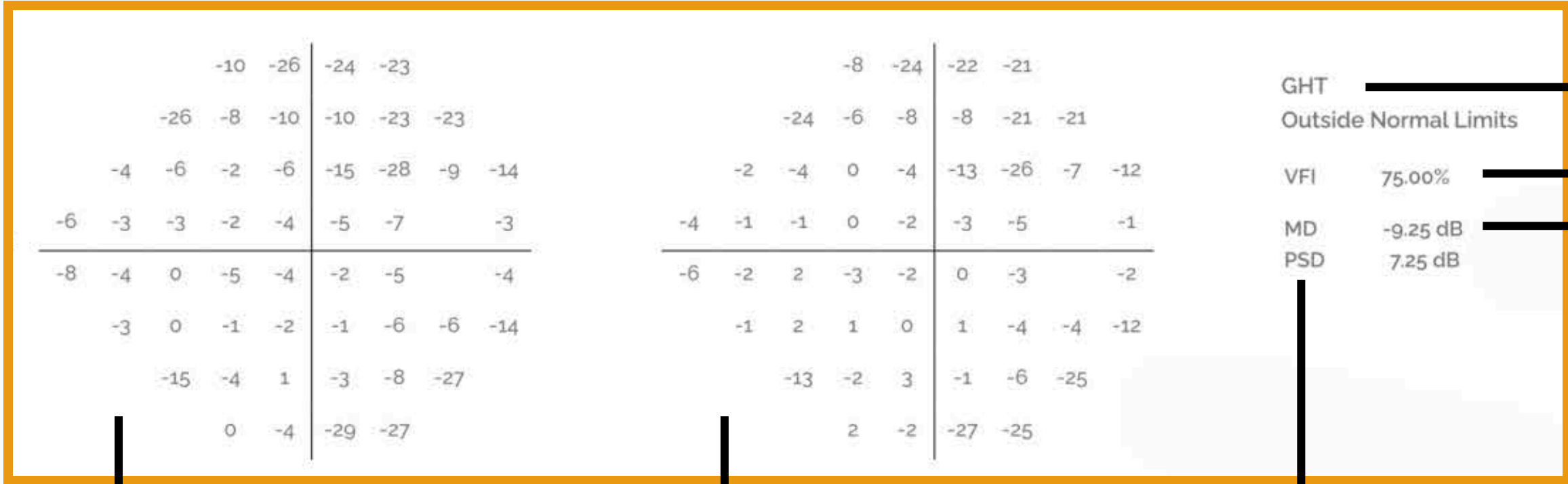
Test Types

Reliability
Scores

Test Algorithms

Academical
Studies

Test Results



This plot shows the deviation of the patient's result from that of age-matched controls at each test location.

This plot is similar to total deviation plot except that it is adjusted for any generalized depression, such as that caused by a cataract or miosis.

GHT
Outside Normal Limits
VFI 75.00%
MD -9.25 dB
PSD 7.25 dB

Glaucoma Hemifield Test notation is a meta data calculated by using other parameters such as MD, PSD, Raw data etc. The result is completely generalized and tells if the patient is healthy or not.

Visual Field Index expresses the visual field status as a percent of a normal age-adjusted visual field.

Mean Deviation is the average of these deviations across all test locations.

Pattern Standard Deviation measures irregularity by summing the absolute value of the difference between the threshold value for each point and the average visual field sensitivity at each point.



Eye tracking graph shows eye movements during the test. Upper peaks represent deviations from the fixation point. Negative values show the blinks.

Test Types

Reliability
Scores

Test Algorithms

Academical
Studies

Test Results

Progression Analysis

NEW TESTTEST RESULTS

PATIENTSPROGRESSION

Patient Name: Jennifer Doe

Date of Birth: 5/19/1976

ID: 058396883578

Distance Prescription

Edit

Left Eye

Sphere

Cylinder

Right Eye

Sphere

Cylinder

3

0

0

0

Tests

OPA Summary

OPA Follow-Up

OPA Overview

OPA Baseline

Tests

Filter

Date	Type	Style	Eye
5/2/2024	24-2	Oculera Interactive	Left Eye
5/2/2023	24-2	Oculera Interactive	Left Eye
1/2/2023	24-2	Oculera Interactive	Left Eye
7/12/2022	24-2	Oculera Interactive	Left Eye
11/12/2021	24-2	Oculera Interactive	Left Eye
7/12/2021	24-2	Oculera Interactive	Left Eye

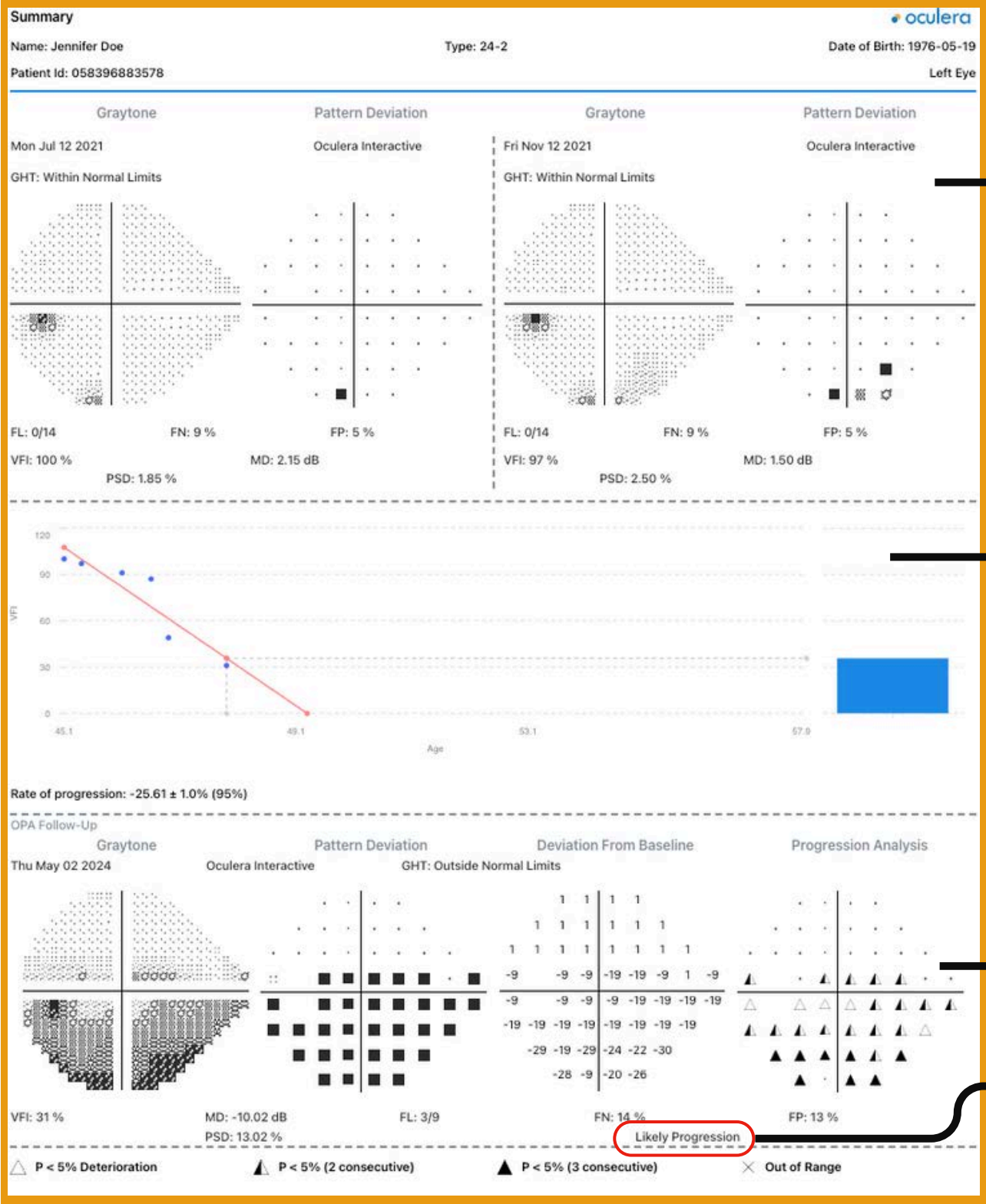
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- Summary, Follow-up, and Overview reports are available in the Progression tab.
- The baseline tests and the tests included in the reports can be adjusted.
- Tests from other devices can be imported into Oculera’s system and included in the progression analysis.

Progression Summary Report



Test Types

Reliability
Scores

Test Algorithms

Academical
Studies

Test Results