Humphrey visual fields example

0

1

Single Field Analysis

Eye: Right

Name: XXXXXX

DOB: XXXXXX

ID: XXXXXX

Central 24-2 Threshold Test

Fixation Monitor: Gaze Track
Fixation Target: Central
Fixation Losses: 0/0
False POS Errors: 3 %
False NEG Errors: 66 %
Test Duration: 08:08

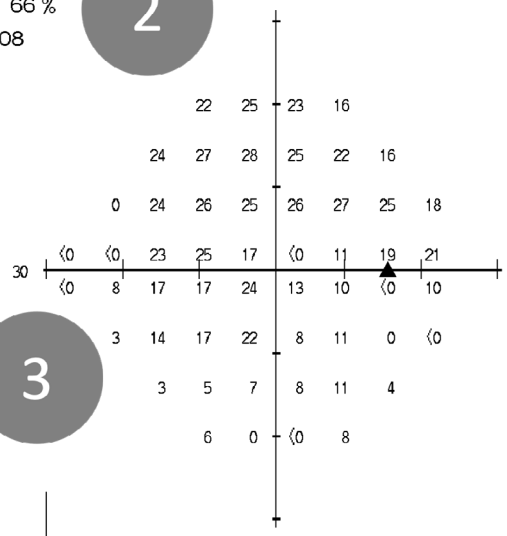
Fovea: OFF

Stimulus: III, White
Background: 31.5 ASB
Strategy: SITA-Standard

Pupil Diameter:
Visual Acuity:
RX: +3.25 DS DC X

Date: 20-01-2015
Time: 9:41 AM
Age: 79

2



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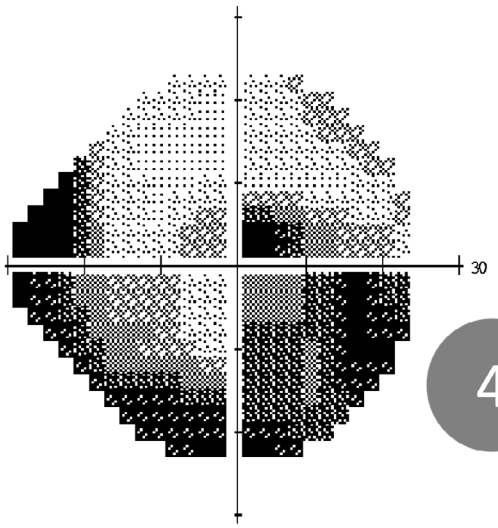

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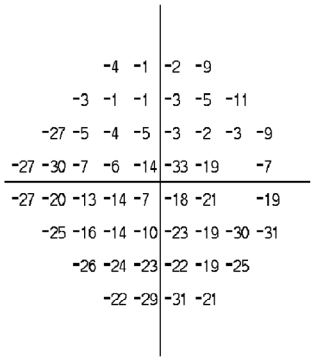

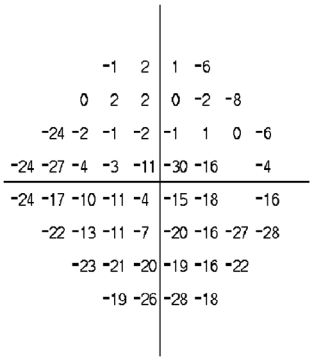

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GHT
Outside normal limits

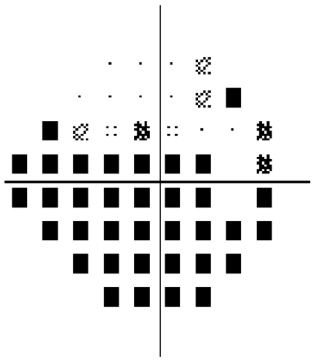
VFI 52%

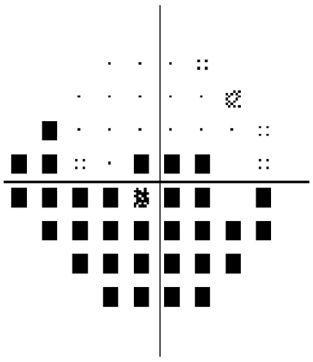
MD -15.02 dB P < 0.5%
PSD 10.11 dB P < 0.5%

Total Deviation

Pattern Deviation

6





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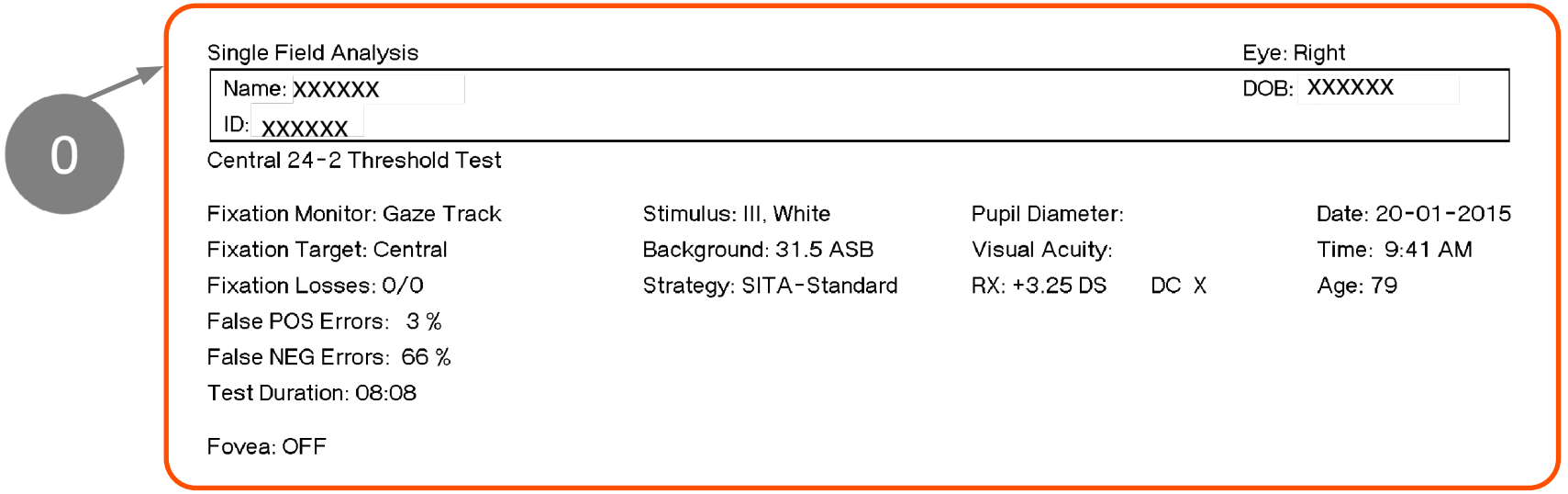
:: < 5%
▒ < 2%
▓ < 1%
■ < 0.5%

XXXXXX
XXXXXX
XXXXXX
XXXXXX

HFA II 740-17434-4.2/4.2

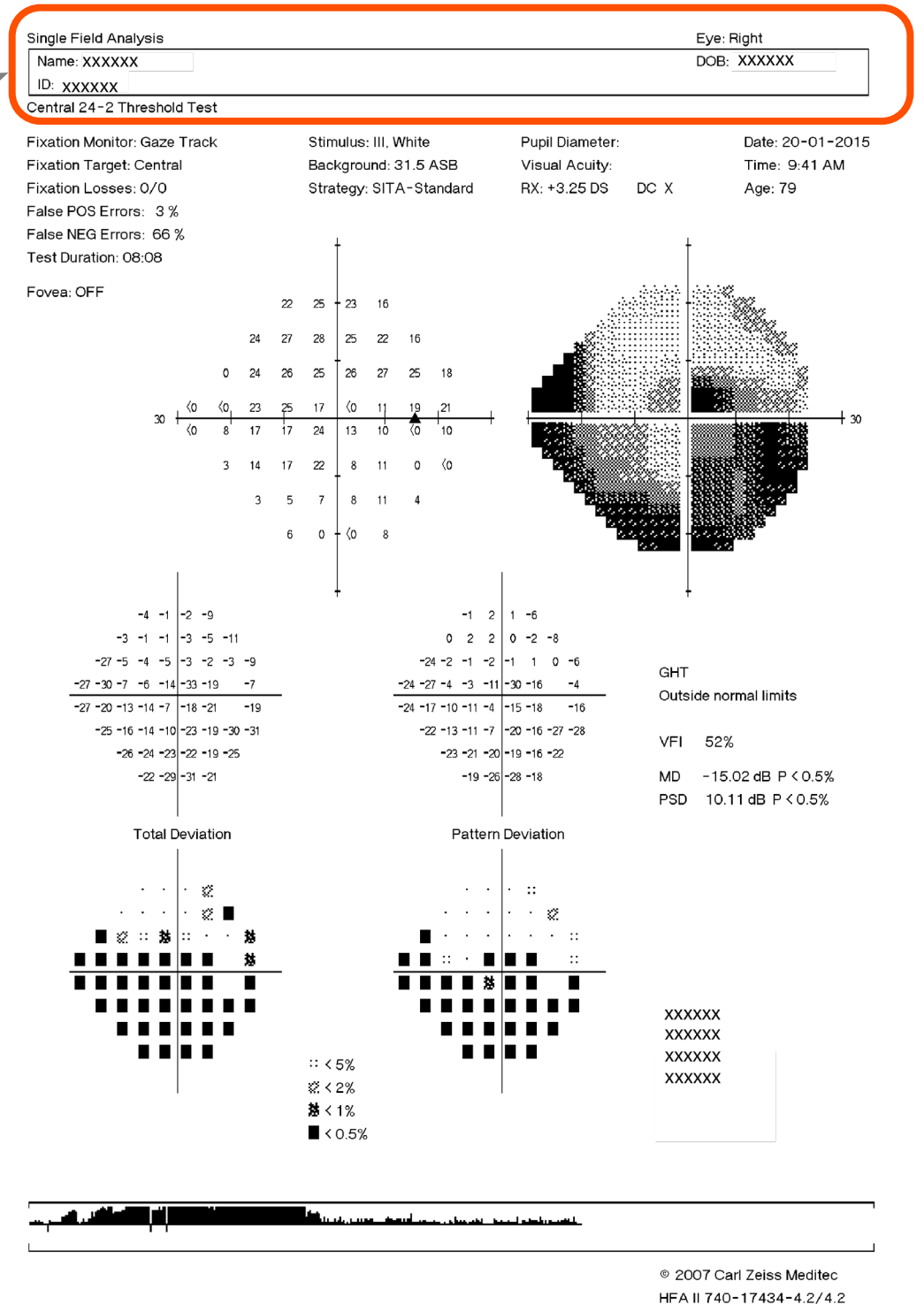


0. Perimeter set-up:

- Each eye is tested individually for glaucoma patients (Single Field Analysis).
- Check the date of the test and which eye is being tested.
- The standard stimulus is 'III. White' with a background illumination of 31.5 apostilb. Commonly used testing strategies are either the SITA-Standard (slowest), SITA-Fast or SITA-Faster (quickest).
- The 24-2 test is most commonly used for glaucoma. This test uses the central 24° with 54 test locations (spots) each spaced 6° apart.
- Other options are: The 30-2 tests the central 30° and takes longer. The 10-2 tests the central 10° with test locations spaced 2° apart and can be useful for patients with advanced glaucoma who present with just a small island of central vision remaining.

1. Preparing the patient:

- Check that the name, ID and date of birth details are correct for the patient on whom the tests are to be performed.
- Ensure that the patient's pupil diameter is at least 2.5mm. This is key to obtaining a reliable result .
- Near vision corrective lenses should be used for those with refractive error.
- Explain to the patient what will happen during the test and what they need to do. Instruct the patient to look at the fixation point, and ask them to click when they see a light anywhere within the bowl of the perimeter.
- Each eye is tested individually for glaucoma patients (single field analysis).
- Check the date of the test and which eye is being tested.



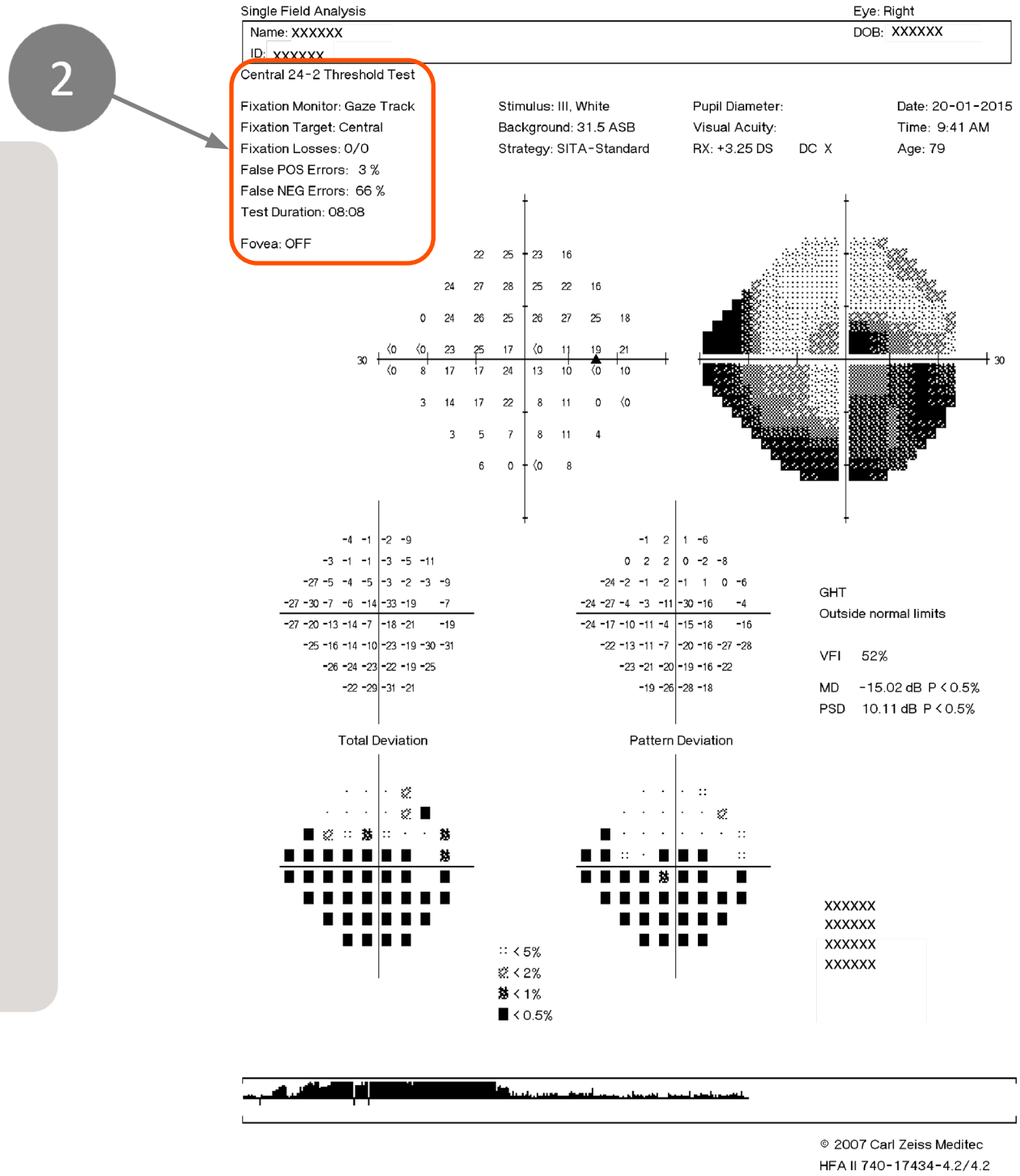
2. Check the reliability indices

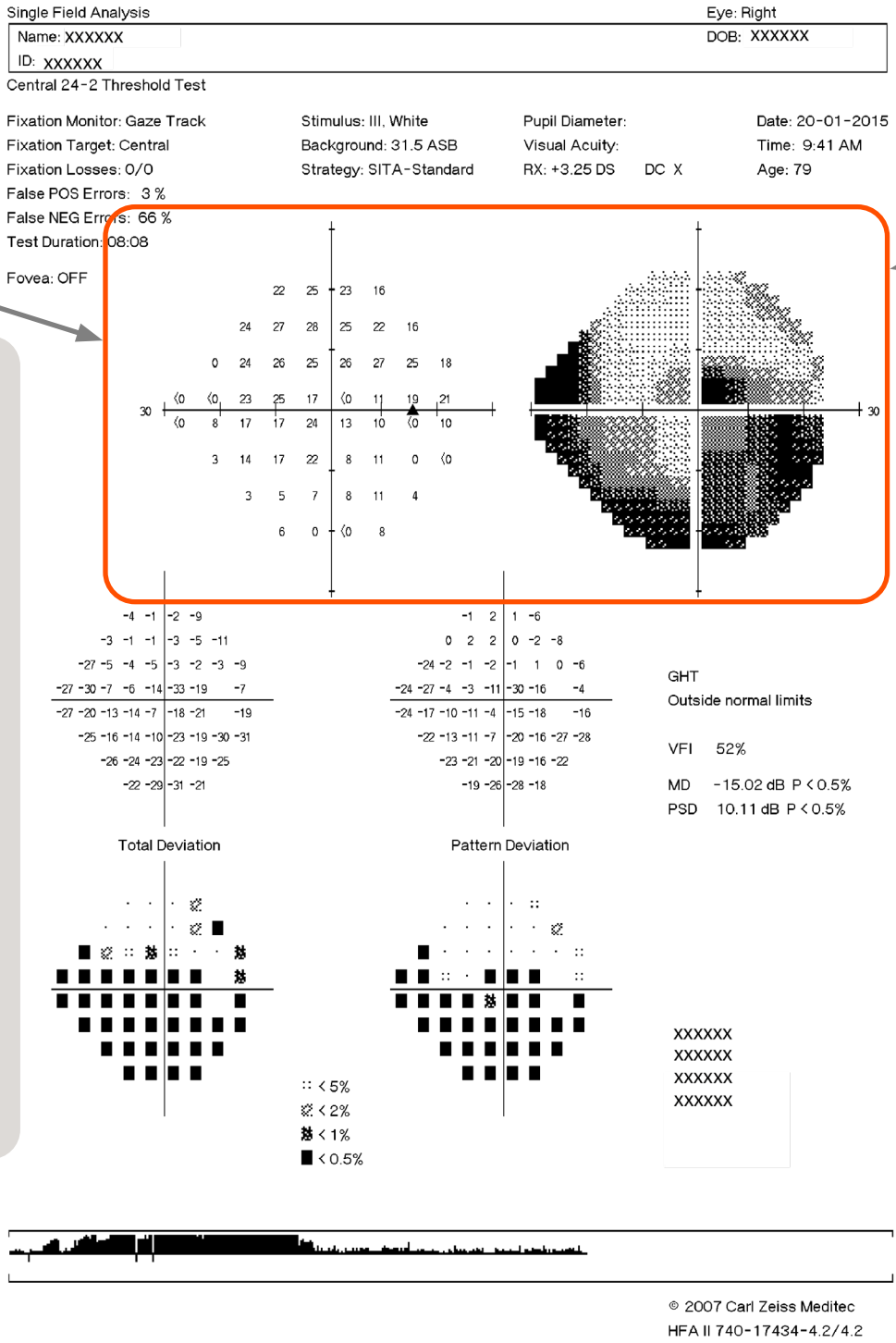
Errors greater than 15-20% indicate the test may not be reliable. This may be due to:

- **Fixation losses:** the patient needs to keep looking at the central target throughout the test for it to be valid. The testing protocol assesses this central fixation, e.g., by testing whether the patient responds to a stimulus where the blind spot should be. High fixation losses suggest the patient is not following the test properly but, may also be an indicator of very advanced glaucoma.

- **False-positive errors:** the patient is pressing the button even when not seeing a stimulus ('trigger-happy').

- **False-negative errors:** the patient fails to respond to a relatively bright stimulus even though they have previously responded to a fainter stimulus ('trigger-shy'), suggesting possible inattention.





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3. Interpretation of test results - the numeric scale

- The numeric scale shows the sensitivity at the test location, expressed in decibels (dB).
- Higher sensitivities are found in the central field and lower sensitivities at the periphery (the 'Hill of Vision').
- The test data is represented from the patient's perspective (it is as if you looking out of the patient's eye). This can be checked by the position of the blind spot which should be temporal. The blind spot is represented by a small triangle.

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4. Interpretation of test results - the grey plot

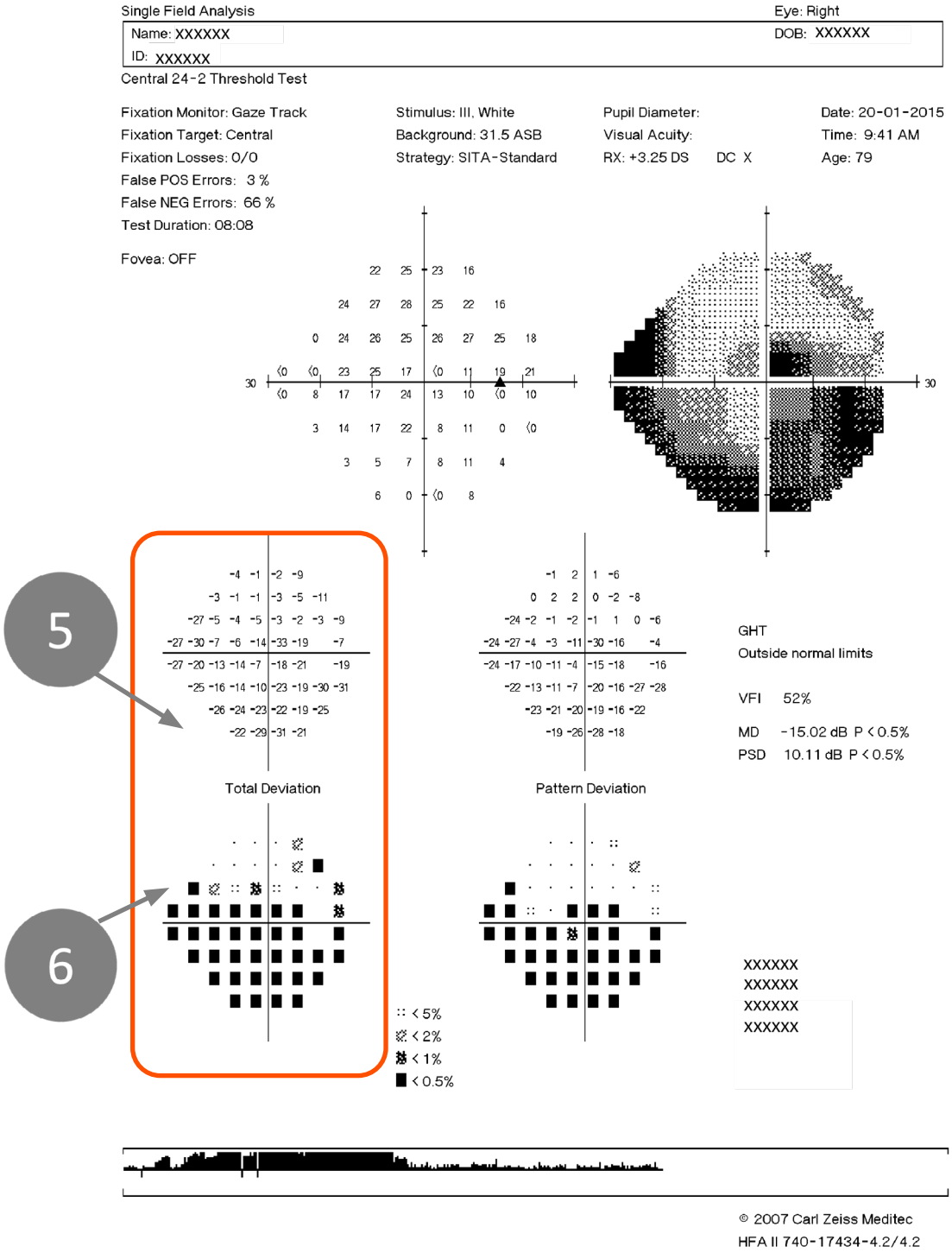
- The grey scale is a graphic representation of the numeric scale (this is often what eye care workers jump to first when looking at HVF test results). Regions of decreased sensitivity on the grey plot are displayed in darker tones, including the blind spot.
- The grey scale can be a useful way of showing patients and relatives the effect of glaucoma and changes over time.
- Typical glaucomatous defects include a nasal step, a superior arcuate defect or a temporal wedge. A central island of vision is often preserved in glaucoma until very late disease.

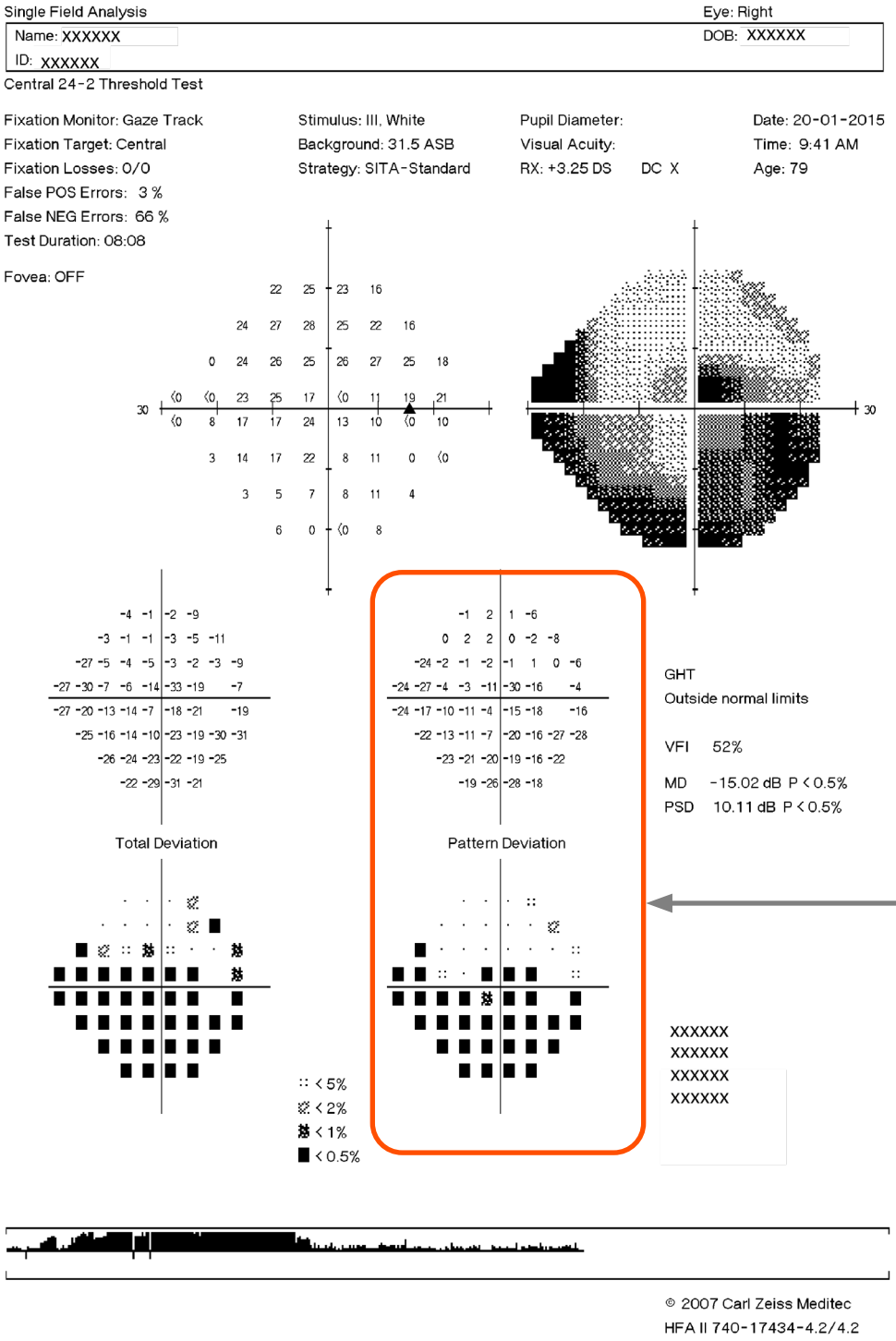
5. The total deviation scale
6. Probability plot

- The total deviation scale shows the difference (in dB) between the test results and the normal values that would be expected for a patient of the same age. 0 dB deviation is what would be expected in cases with no defects. A difference of -15dB shows a very large reduction in sensitivity in the location tested compared to what would be expected.

- The total deviation plot shows the probability of the test location being normal, with the scale shown underneath. The lower the probability, the lower the likelihood of a defect occurring by chance. A probability <0.5% (solid black square) indicates the test location is highly unlikely to be normal and less than 0.5% of the population would attain this result.

- The normal value data set used for HVFs has limitations in interpreting variation due to ethnicity and may not be accurate for certain geographic/ethnic contexts.





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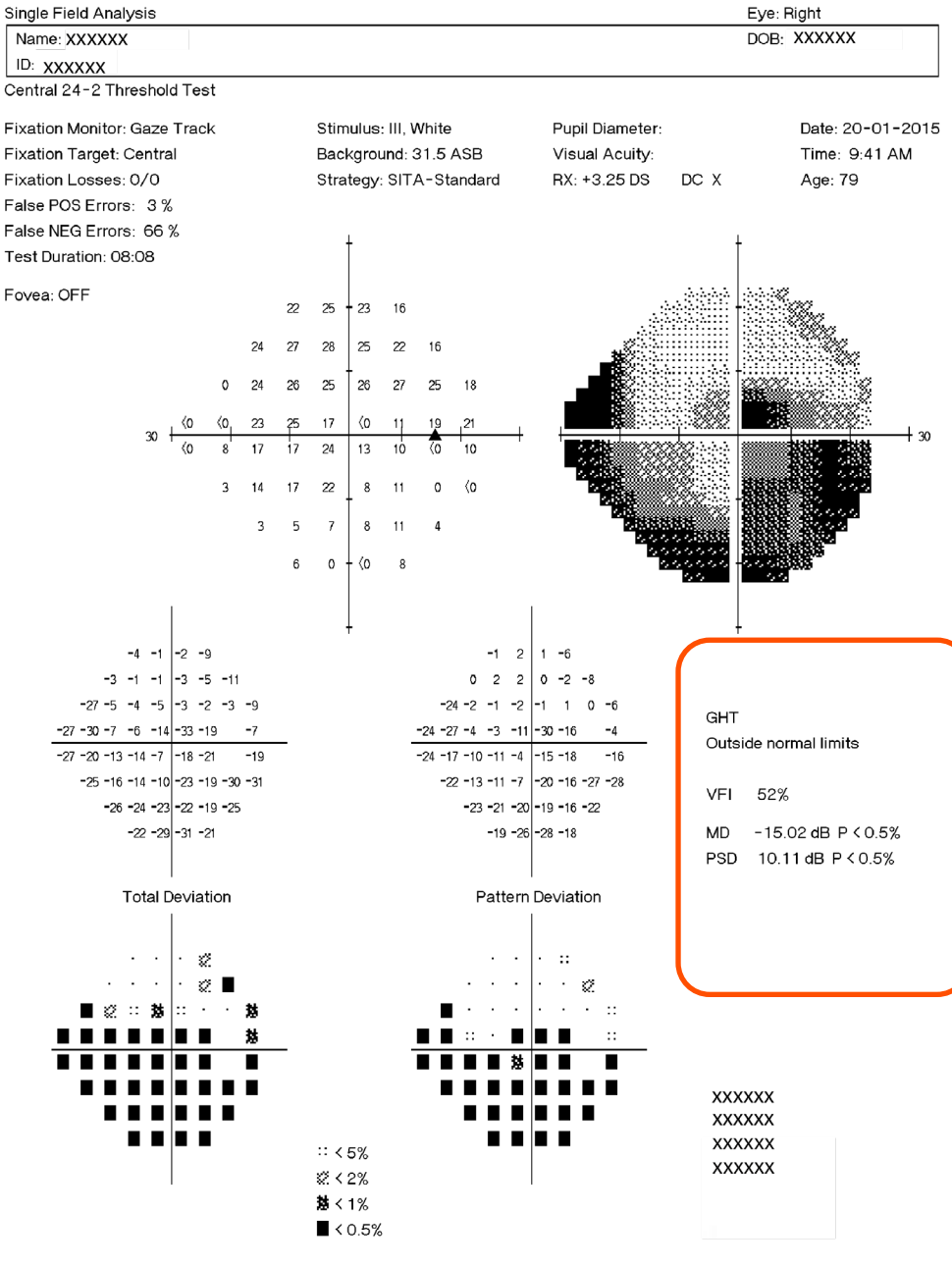
7. The pattern deviation scale

- This test takes into account overall changes in sensitivity, for example, due to the presence of cataract or media opacities which may cause a generalized reduction in sensitivity. This can be helpful to unmask changes from glaucoma which otherwise might be difficult to detect.



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8. Global indices

- These represents the statistical summary data and can be useful in providing an overall understanding of the visual field and can be monitored over time. It is not used in the initial diagnosis but monitoring progression.
- The mean deviation is the mean total deviation from the age corrected norm.
- The pattern standard deviation is a positive value. Therefore any negative value indicates field loss, and should not be less than -2dB. For glaucoma patients, a mean deviation of less than -12dB represents advanced field loss, and a mean deviation less than -20dB represents severe field loss.