

# The DAMATO Campimeter

## Patient

Name: \_\_\_\_\_  
 DOB: \_\_\_\_/\_\_\_\_/\_\_\_\_  
 Sex: \_\_\_\_\_  
 No: \_\_\_\_\_

## Eye

Right Left

Dist. Acuity \_\_\_\_\_  
 Near Acuity \_\_\_\_\_  
 Correction \_\_\_\_\_  
 Pupil Diam. \_\_\_\_\_

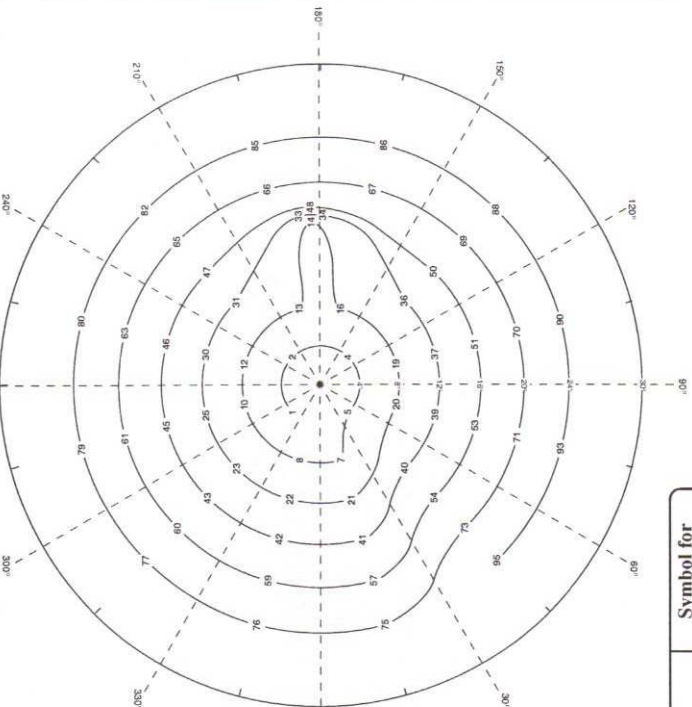
## Method

Optical Correction: \_\_\_\_\_  
 Illumination: \_\_\_\_\_  
 Strategy: \_\_\_\_\_  
 Single-level ☐ Stimulus: % mm  
 Suprathreshold ☐ Threshold ☐

Comment: \_\_\_\_\_

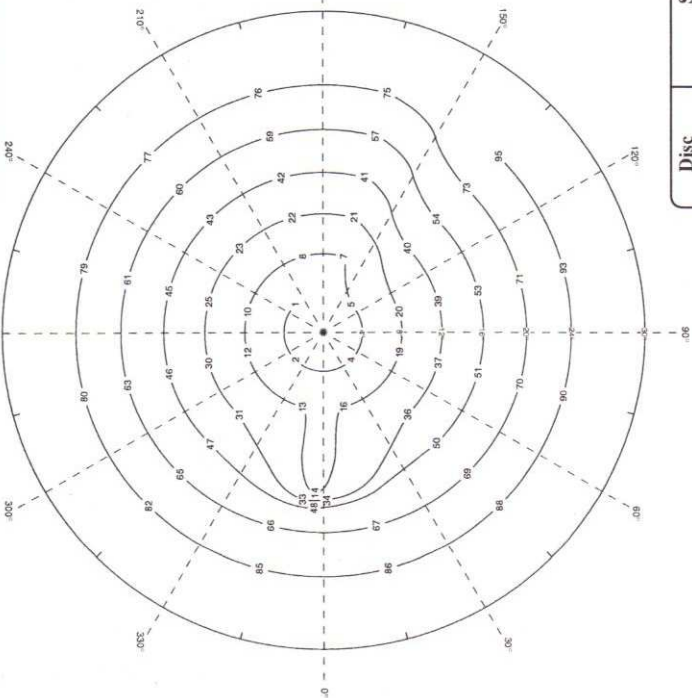
Examiner: \_\_\_\_\_  
 Date: \_\_\_\_\_

Left eye



Left eye

Right eye



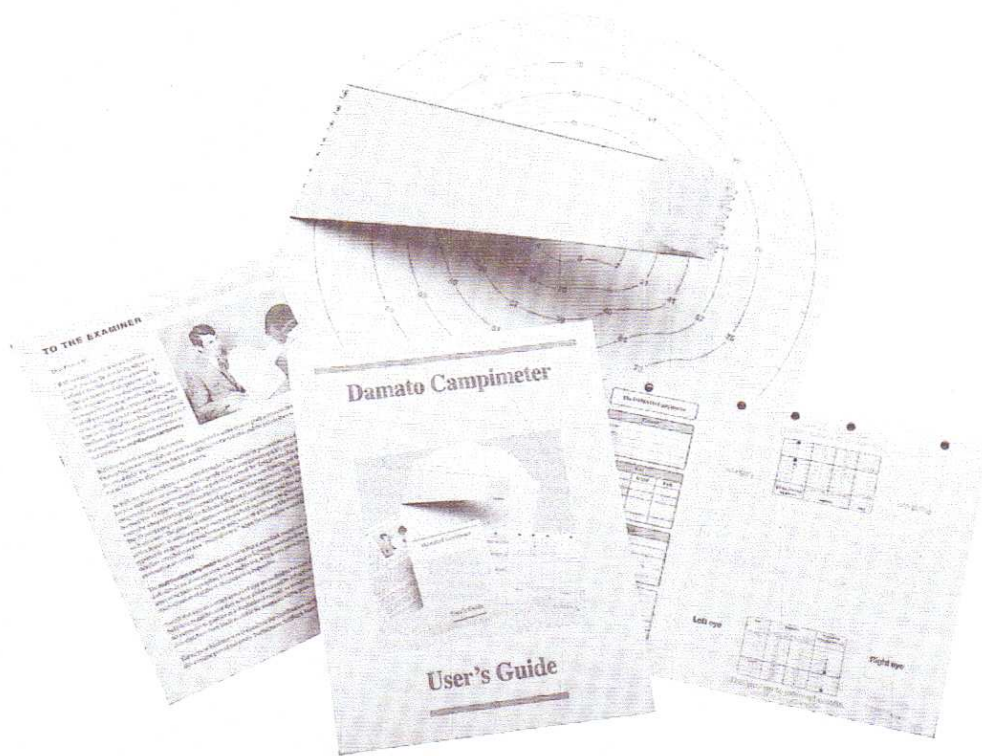
Right eye

**This way up to record results.**  
 invert to interpret results.

Disc	Stimulus		Symbol for Stimulus Missed
	Contrast (%)	Size (mm)	
5-Contrast	2.5	3	—
	5	3	+
	10	3	✱
	25	3	✱
	100	3	✱
1-Contrast	100	6	●
	100	0.75	/
	100	1.5	×
	100	3	⊗
	100	6	●

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# Damato Campimeter



## User's Guide

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## TO THE EXAMINER

Dear Examiner:

With so many excellent visual field tests around, you may be wondering why a new method is needed, especially a manual technique in an era of computerization. In 1983, it occurred to me that visual field examination is often omitted because patients cannot cooperate with computerized programs or because their practitioners do not have the time or the special skills demanded by manual methods. I therefore set about designing a test that would be both simple and inexpensive, and the result is **multifixation campimetry**.



With this method, a series of numbered fixation targets move the patient's eye in a controlled manner so as to place a stimulus at known points in the visual field. The examiner does not need to move the stimulus and the patient does not need to keep the eye still for more than a few seconds at a time.

As with any visual field test, it is essential to reduce the number of points examined as much as possible, because examiners are usually such busy people and because patients quickly get tired. The 60-point campimeter allows examination of all, or part of, the central 30° field in a flexible manner and usually takes between 6 to 12 minutes. Patients tend to find the examination user-friendly, but the examination time is excessive when screening large numbers of patients, or when examining very young or very old patients. The 30-point campimeter and the dedicated 26-point glaucoma screener have therefore been developed for such situations. The glaucoma screener examines only parts of the field that are most likely to be abnormal in this disease. It seems a pity to restrict a visual field examination to glaucoma screening when there is an opportunity to detect other conditions as well, some of which are life-threatening. The glaucoma screener is therefore intended only as a "minimalist test," when the alternative would be to forgo visual field examination altogether.

The **DAMATO Multifixation Campimeter** is unusual in that it uses dark stimuli on a light background. This is because dark stimuli are more constant under variable lighting conditions than light stimuli. Dark stimuli therefore seem to be more appropriate for a portable test, which will inevitably be used in situations where standardization of ambient illumination is impossible.

Stimuli that vary in contrast instead of size are preferable because they enhance the detection of mild visual field defects and because they reduce artifact caused by refractive errors. Nevertheless, low-contrast stimuli are expensive to produce in a standardized manner, so inexpensive sets of black stimuli, which vary in diameter, have been made available for situations where resources are severely limited.

The original intention was to distribute the multifixation campimeter free of charge. But after several years, this exercise proved too costly. Furthermore, feedback from users around the world indicated a need for



more durable and more sensitive campimeters. The most expensive part of the test is the examiner's time. If this is to be used most profitably, then it is best to have a high-quality campimeter with standardized stimuli.

With any test, there is inevitably a learning curve. An examiner using the multifixation campimeter for the first time should interpret early results with due skepticism. Until the examiner becomes confident using the campimeter, personal results should be checked with those obtained using conventional methods.

Non-specialists would do well to review their general knowledge of visual fields and universal, basic principles of visual field examination. They should also request expert feedback, if possible. Anyone delegating multifixation campimetry to assistants or volunteers needs to supervise the situation carefully. Attention to detail is all important, even with a simple test. Finally, although the multifixation campimeter enables selected patients to perform self-examination, such individuals should only be entrusted with this responsibility if there is no other alternative and then only after proving they are capable of achieving reliable results.

The DAMATO Multifixation Campimeter has evolved a great deal since it was first conceived in 1983. With the help of friends and colleagues, I am confident the campimeter will continue to evolve. There are already new versions on the drawing board, such as the one meter wall chart.

I hope you find the multifixation campimeter helpful. I would welcome any feedback and, with pleasure, will endeavor to respond to your questions, criticisms and suggestions.



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# TABLE OF CONTENTS

3

Features.....	4
Methods.....	7
Preparation for the Exam	
Examination of the Left Eye	
Patient Instruction	
The Examination Proper	
Examination of the Right Eye	
Examination Strategies	
Threshold	
Suprathreshold	
Abbreviated Screening Tests	
General Screening Test	
Glaucoma Screening	
Neurological Screening	
Macular Examination	
Technical Variations	
Examination of Additional Points	
Poor Fixation	
Unilateral Central Scotoma	
Documentation of the Results.....	21
Interpretation of the Results	
Hygiene.....	22
Sample Examination Procedure.....	22
Acknowledgments.....	24

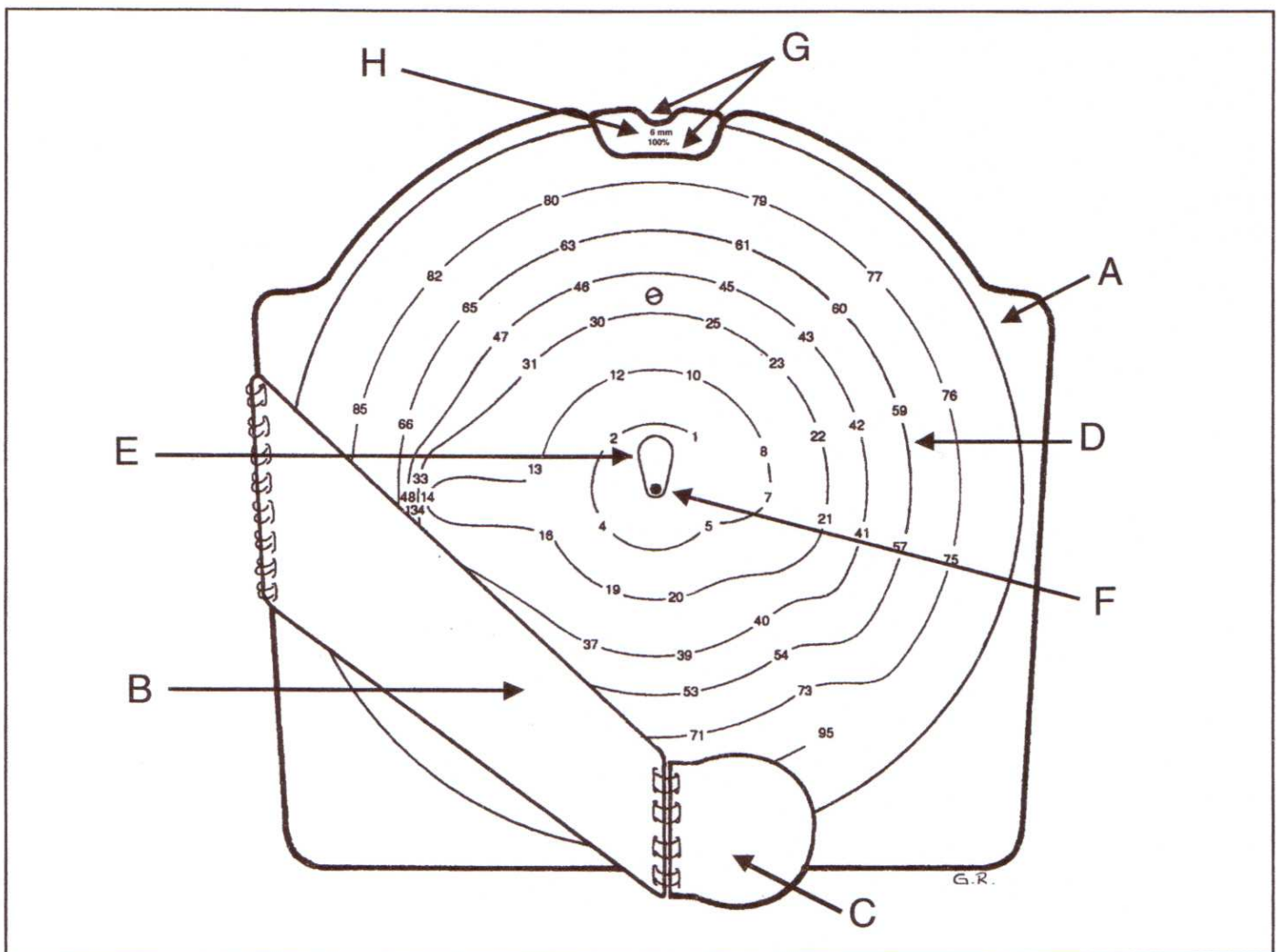


The **multifixation campimeter** uses numbered fixation targets to control the patient's gaze so as to place the test stimulus precisely at known points in the visual field.

The **hand-held campimeter** is a double-sided card, with a test grid for one eye on one side and another test grid for the fellow eye on the reverse side. The test grid has a series of fixation targets situated around a central window, in which selected stimuli are presented by the examiner dialing a disc inside the card (*Figure 1*).

An **eye-cover** is available for the fellow eye. The cover is white and semi-translucent so as to prevent a dark shadow over the covered eye from interfering with the vision in the fellow eye.

A rigid **side-arm** joining the eye-cover to the campimeter helps the patient to maintain the **correct working distance** of 13 inches (33.3 cm). The arm also ensures that the left or right eye is examined with the proper test grid for that eye.



**Figure 1.** The multifixation campimeter with (A) card, (B) side-arm, (C) eye-cover, (D) test grid, (E) stimulus window, (F) stimulus (G) finger-notches on disc and card, and (H) stimulus description.

The **fixation targets** are numbered to simplify communication with the patient and recording of the results. The numbering is non-consecutive so the examiner can ensure that the patient actually looks at the numbers without guessing (*Figure 2*).

The **lines linking the numbers** direct the eye movements from one fixation target to the next.

The **numbers spiral outward** so that stimulus intensity can conveniently be varied according to eccentricity. The spiral arrangement also makes it easier to shorten the examination, for example, when screening for a particular condition.

On the **60-point grid**, the numbered fixation targets are located so as to examine 60 points in the

central 24° field. A notched circle at 30° allows examination of additional points in selected patients.

On the **30-point grid**, the numbered fixation targets are located so as to examine 30 points in the central 24° field. Notched circles at 30° and 4° allow additional points to be examined. The information presented in the *Damato Campimeter User's Guide* applies to both the 60-point and 30-point campimeters.

Examined points are situated on each side of the horizontal meridian for arcuate and altitudinal defects and on each side of the vertical meridian for hemianopic or quadrantanopic defects.

Figure 2A

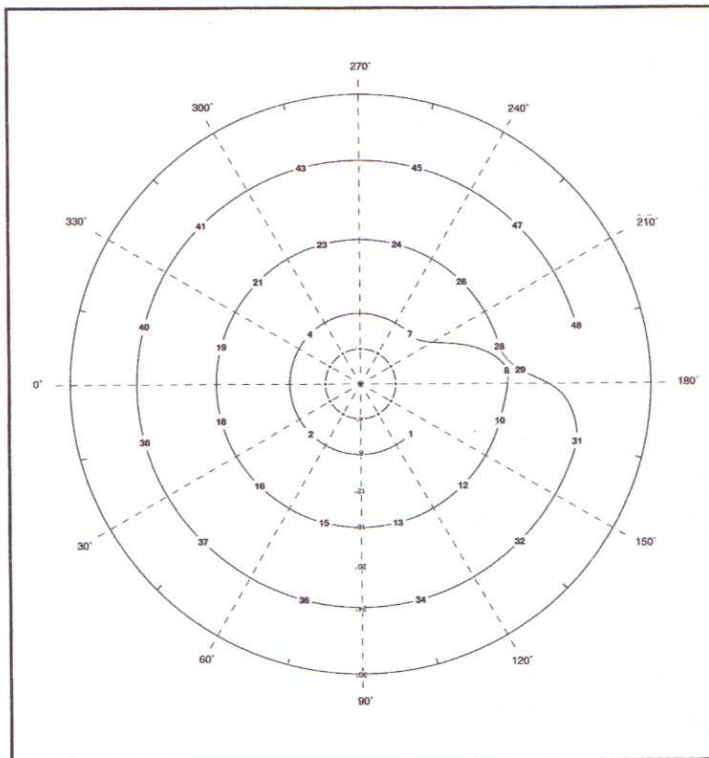
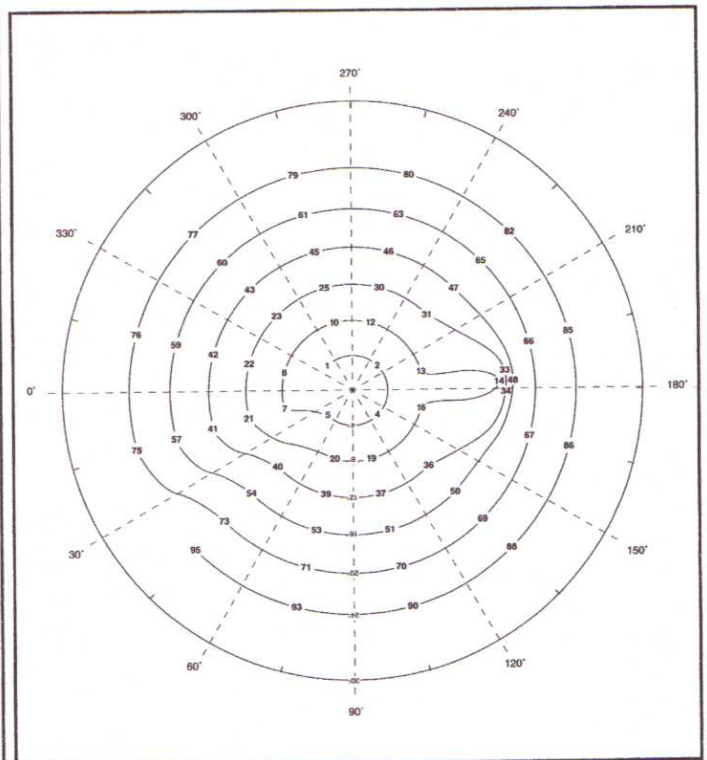


Figure 2B



**Figure 2.** Test grids for (2A) the 30-point campimeter and (2B) the 60-point campimeter, each having numbered and un-numbered fixation targets. The meridians refer to stimulus location with respect to the fixation targets and are adjusted by 180° because the eye moves during the examination instead of the stimuli.



Test stimuli are printed on the disc inside the card so that a selected stimulus can be made to appear briefly in the central window by dialing the disc (Figure 3).

The **sensitivity of the test** is varied by selecting the appropriate stimulus. Two stimulus discs are available.

The **5-contrast disc** has 3 mm stimuli with contrast levels of 2.5%, 5%, 10%, 25% and 100%, and a 6 mm stimulus with a contrast of 100%. This *User's Guide* focuses on the 5-contrast disc.

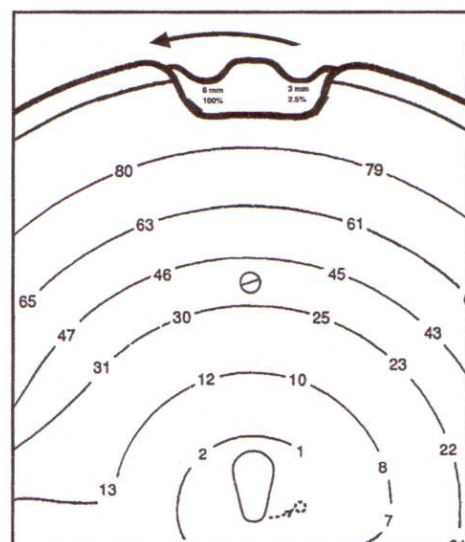
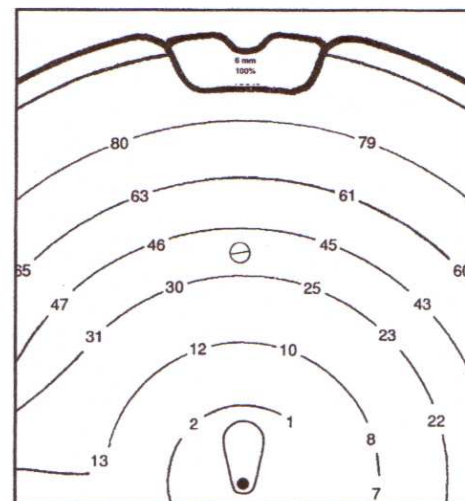
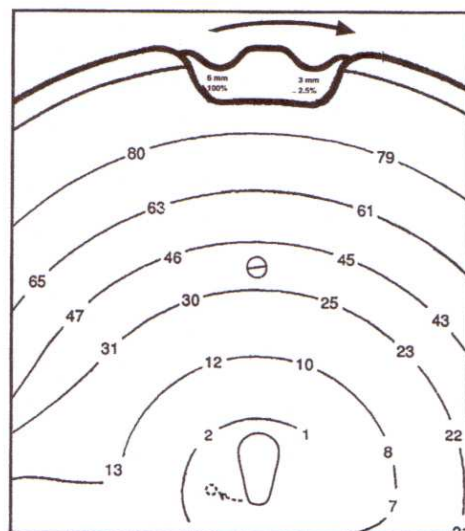
The **1-contrast disc** has 100% contrast stimuli with diameters of 0.75 mm, 1.5 mm, 3.0 mm and 6.0 mm. The 3.0 mm and 6.0 mm stimuli subtend visual angles of  $0.5^\circ$  and  $1.0^\circ$  respectively.

The **stimulus window** is shaped so as to minimize shadowing on the disc. At the level of the stimulus, the window is 10 mm wide so the stimulus position has an error of less than  $1^\circ$  on either side of its central position.

**Notches on the disc and card** help the examiner to position and move the finger properly when dialing the disc so that the stimulus is presented efficiently.

**Intermittent stimulus presentation** standardizes stimulus intensity and prevents the patient from guessing. Blanks on the disc also help the examiner to detect false positive responses (i.e., guessing). The **disc is removable** so it can be cleaned or replaced.

The **record sheet** has a miniature version of the test grid for each eye for documentation of the numbers associated with disappearance of the stimulus. The test grids on the record sheet are printed in a light color so symbols drawn with blue or black ink will be clearly visible.



**Figure 3.** When the finger is moved from one side of the notch to the other, you are ready for presentation of the next stimulus. To present stronger stimuli, rotate the disc toward the side-arm.



### PREPARATION FOR THE EXAM

Seat the patient comfortably at a desk or in front of an adjustable music stand (*Figure 4*).

Confirm that the patient is wearing any required optical correction (i.e., reading glasses, bifocals or contact lenses).

Ensure that the screen is well lit (i.e., more than 80 cd.m<sup>2</sup>) and the patient is not dazzled by any oncoming bright lights.

Position yourself in front of the patient so you can observe both eyes and make sure you are comfortable. If you use a music stand to support the campimeter, you will need a table for the record sheet. The table should be at the same height as the campimeter so you do not need to bend to record the results.

Write down the patient's particulars on the record sheet and invert the sheet. For recording results, use writing materials that would allow any errors to be deleted.

### EXAMINATION OF THE LEFT EYE

Avoid lengthy instructions which cause delay and may be misunderstood; a few brief introductory remarks should be adequate.

Place the eye-cover in the patient's right hand and the card in the patient's left hand (unless the card is supported by a music stand).

**Figure 4.**  
Correct examination position. Sit in front of the patient so you can watch both eyes.

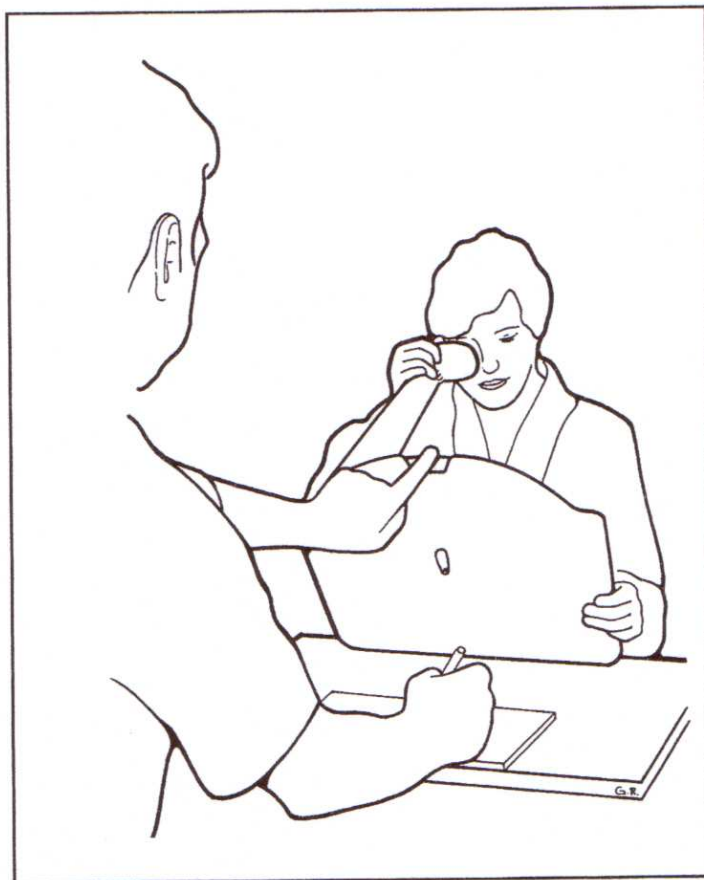
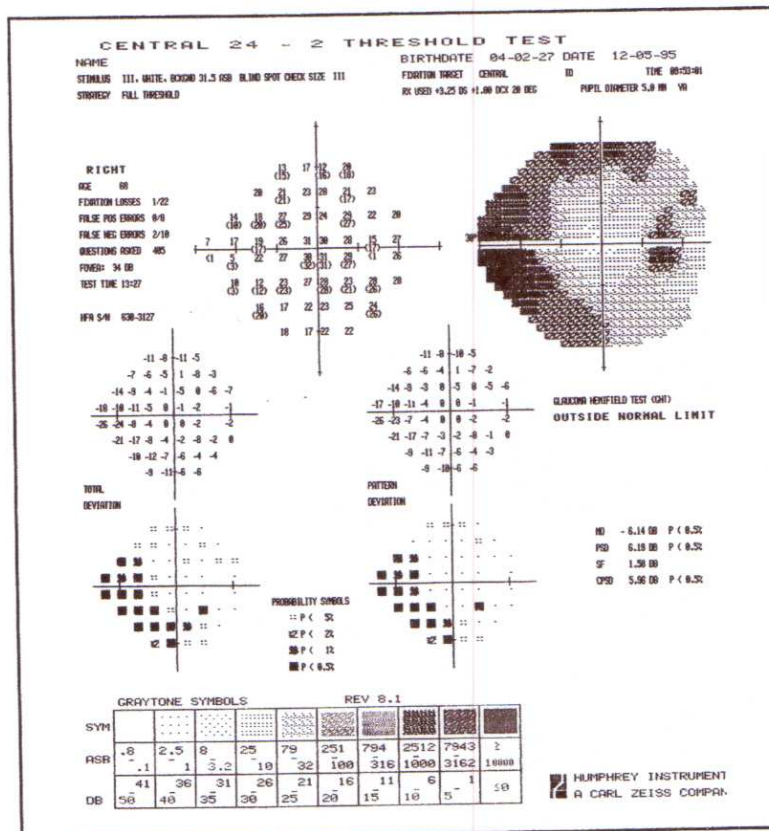
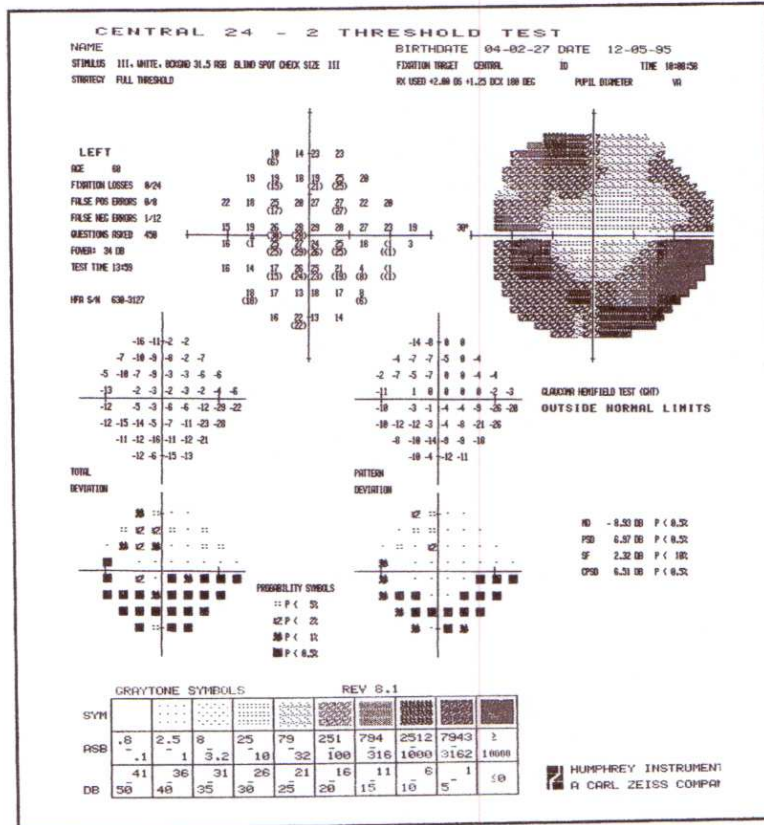


Figure 8B





## EXAMINATION STRATEGIES

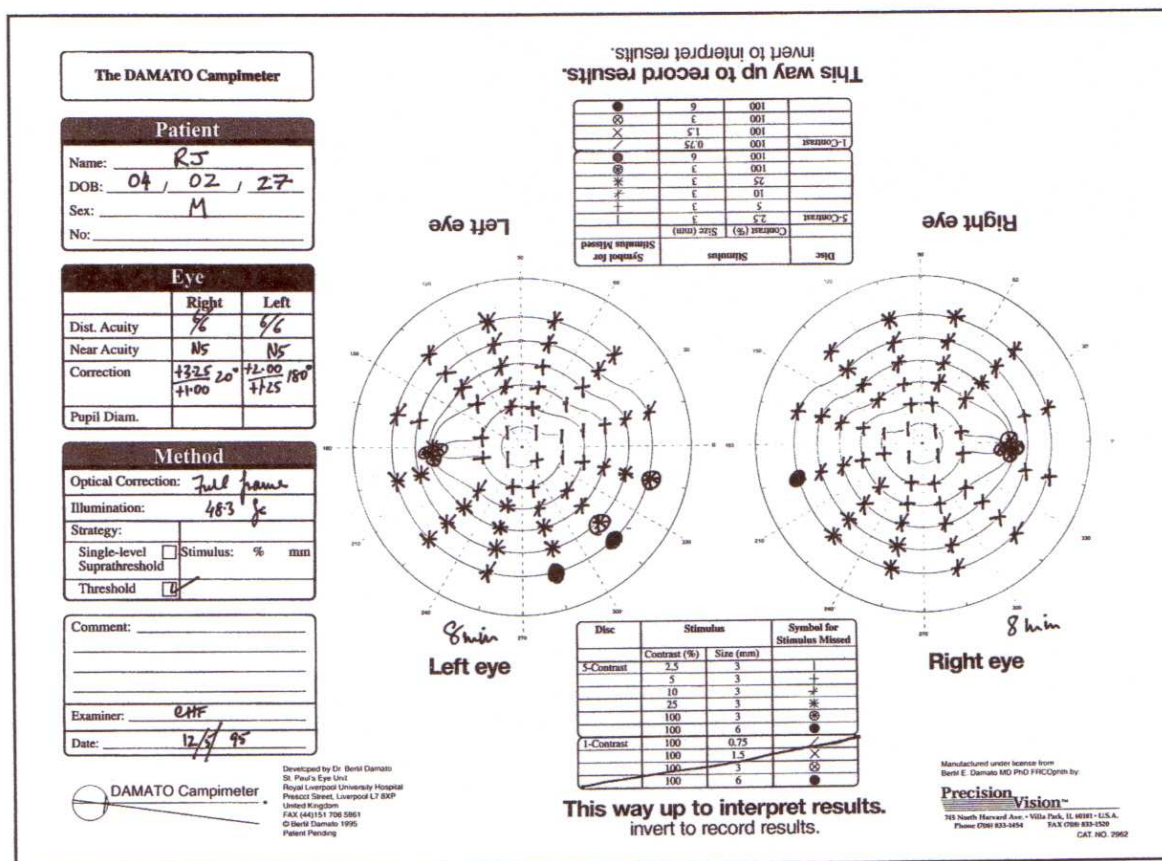
**Threshold**

This is the most intensive type of examination possible and is the preferred method. The objective of this examination is to determine for each point the intensity at which a stimulus becomes visible (*Figure 8*).

Start by presenting the weakest stimulus and then move to progressively stronger stimuli until one is seen. As the examination proceeds, you may be able to predict which stimuli are too weak to be seen and these can be omitted to save time.

**Figure 8.** Threshold examination. Visual fields of a 68-year-old man with glaucoma, plotted with (8A) the 60-point multifixation campimeter and (8B) the Humphrey Visual Field Analyzer. Each eye has superior and inferior arcuate visual field defects with a nasal step.

.Figure 8A



### Suprathreshold

This simplified method is designed to detect only dense visual field loss. It is suitable for screening purposes when the patient is uncooperative or when time is limited. Examine all points with the 3 mm black (i.e., 100%) stimulus or the 25% stimulus (Figure 9).

### ABBREVIATED SCREENING TESTS

Abbreviated tests should be performed only when it is not possible to examine all 60 points. In any

abbreviated test, select the stimulus according to the sensitivity required. For example, if cooperation is limited or if visual acuity is reduced, you should use a strong stimulus, whereas if it is possible to achieve greater sensitivity, it would be preferable to use weaker stimuli.

### General Screening Test

To perform a rapid general screening test with the 60-point chart, examine every second or third point so that points are evenly distributed throughout the field. If any points are found to be abnormal, then examine additional points as necessary.

Figure 9A

**The DAMATO Campimeter**

**Patient**

Name: DS

DOB: 7 / 6 / 20

Sex: F

No: \_\_\_\_\_

**Eye**

	Right	Left
Dist. Acuity		0.1
Near Acuity		N5
Correction		+3.00 +2.00
Pupil Diam.		3 mm

**Method**

Optical Correction: full frame

Illumination: 48.3 lx

Strategy:

Single-level ☒ Stimulus: 100% 3mm


Suprathreshold ☐

Threshold ☐

Comment: \_\_\_\_\_

Examiner: CHF

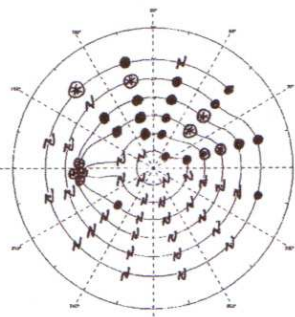
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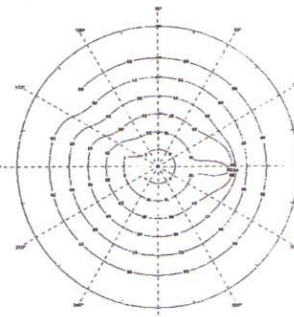
**This way up to record results.**

**Left eye**



**Left eye**

**Right eye**



**Right eye**

Disc	Stimulus		Symbol for Stimulus Missed
	Contrast (%)	Size (mm)	
5-Contrast	2.5	3	+
	5	3	+
	10	3	+
	25	3	+
	100	3	+
1-Contrast	100	6	+
	100	0.75	+
	100	1.5	+
	100	3	+
	100	6	+

**This way up to interpret results.**

invert to record results.

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### Glaucoma Screening

When using the 60-point chart to examine the areas that best discriminate between glaucoma and normal, test the points 34 to 48. This strategy tests the Bjerrum areas in (i) the superior field at 12°, avoiding eyelid artifact, and (ii) the nasal and inferior field at 16°.

The normal blind-spot area is tested at the beginning and the end of the examination to check patient cooperation. To increase sensitivity, look for a nasal step by examining points 57, 59, 75 and 76. (Figure 10). On the 30-point chart, the Bjerrum areas correspond to numbers 8-28.

**Figure 10.** Glaucoma screening test. Right visual field of a 66-year-old man with primary open angle glaucoma plotted with (10A) the abbreviated glaucoma screening test; (10B) the full threshold examination using the 60-point campimeter; and (10C-1, 10C-2) the Dicon automated perimeter. There is a dense inferi-or arcuate defect with a nasal step detected with all three tests.

Figure 10A

**The DAMATO Campimeter**

**Patient**

Name: GM

DOB: 03 / 07 / 29

Sex: M

No: \_\_\_\_\_

**Eye**

	Right	Left
Dist. Acuity	<u>0.1</u>	<u>0.0</u>
Near Acuity	<u>N 8</u>	<u>N 5</u>
Correction	<u>/</u>	<u>/</u>
Pupil Diam.	<u>2 mm</u>	<u>2 mm</u>

**Method**

Optical Correction: nil

Illumination: 48.3 lx

Strategy:

Single-level ☒ Suprathreshold


Stimulus: 3 mm

Threshold ☐

Comment:

Examiner: CHF

Date: 30/5/95

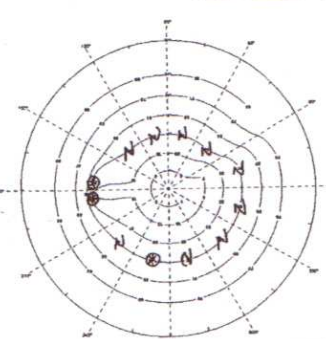
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invert to interpret results.

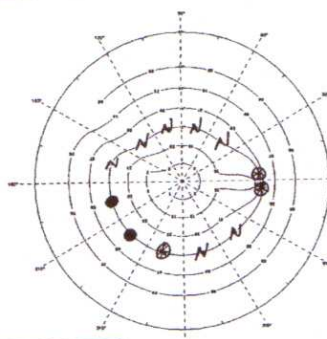
Disc	Stimulus	Symbol for Stimulus Missed
S-Contrast	Contrast (%)	Size (mm)
	2.5	3
	5	3
	10	3
	25	3
I-Contrast	Contrast (%)	Size (mm)
	100	3
	100	6
	100	0.75
	100	1.5

**Left eye**



**Left eye**  
1 1/2 min

**Right eye**



**Right eye**  
2 min

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Figure 10B

**The DAMATO Campimeter**

**Patient**

Name: GM

DOB: 03/07/29

Sex: M

No: \_\_\_\_\_

**Eye**

	Right	Left
Dist. Acuity	<u>0.1</u>	<u>0.0</u>
Near Acuity	<u>N8</u>	<u>N5</u>
Correction	<u>/</u>	<u>/</u>
Pupil Diam.	<u>2 mm</u>	<u>2 mm</u>

**Method**

Optical Correction: 1.00

Illumination: 48.3

Strategy:

Single-level ☐ Suprathreshold ☒ Stimulus: % mm

Threshold ☒

Comment:

Examiner: CAF

Date: 30/5/95

**Left eye**

**Right eye**

**Left eye**

10 mins

**Right eye**

12 mins

Disc	Stimulus		Symbol for Stimulus Missed
	Contrast (%)	Size (mm)	
5-Contrast	2.5	3	+
	5	3	*
	10	3	•
	25	3	•
	100	3	•
1-Contrast	100	0.75	+
	100	1.5	*
	100	3	•
	100	6	•
	100	9	•

Disc	Stimulus		Symbol for Stimulus Missed
	Contrast (%)	Size (mm)	
5-Contrast	2.5	3	+
	5	3	*
	10	3	•
	25	3	•
	100	3	•
1-Contrast	100	0.75	+
	100	1.5	*
	100	3	•
	100	6	•
	100	9	•

Figure 10C-1

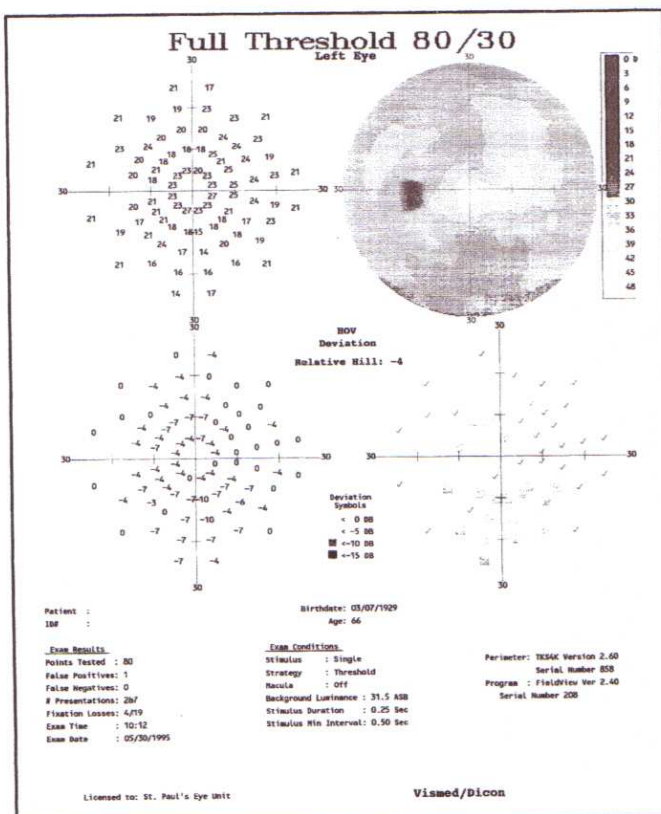
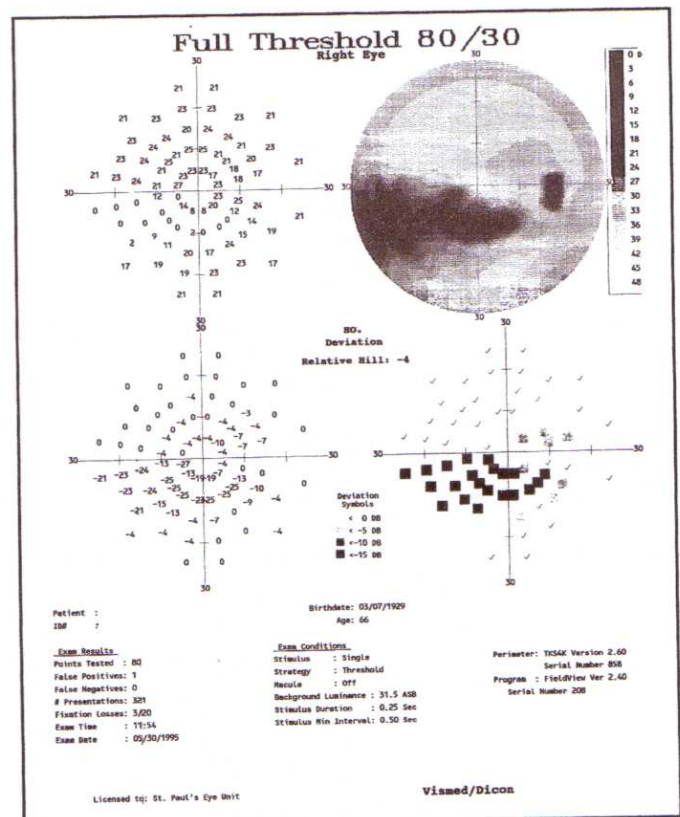


Figure 10C-2





### Neurological Screening

Examine only the outermost circle of numbers if a short test is required for the detection of hemianopia or quadrantanopia. Progress to full

field examination if any abnormalities are found. If it is preferable to test the field at 30°, then ask the patient to look at each notch on the circle in turn as you present the stimulus (Figure 11).

**Figure 11.** Neurological screening test. Visual fields of an 86-year-old woman with cerebrovascular disease, plotted with the 60-point multifixation campimeter using (11A-1) the abbreviated test (schematic illustration); (11A-2) the full test; and (11B-1, 11B-2) the Humphrey Visual Field Analyser. There is left homonymous hemianopia with central sparing.

Figure 11A-1

**The DAMATO Campimeter**

**Patient**

Name: HC

DOB: 05 / 06 / 09

Sex: F

No: \_\_\_\_\_

**Eye**

	Right	Left
Dist. Acuity	<u>0.2</u>	<u>0.1</u>
Near Acuity	<u>N5</u>	<u>N5</u>
Correction	<u>—</u>	<u>-3.00</u>
Pupil Diam.	<u>3 mm</u>	<u>3 mm</u>

**Method**

Optical Correction: full frame

Illumination: 48.3 lx

Strategy:


Single-level ☒ Suprathreshold ☐ Stimulus: 100% 3 mm

Threshold ☐

Comment: \_\_\_\_\_

Examiner: CAF

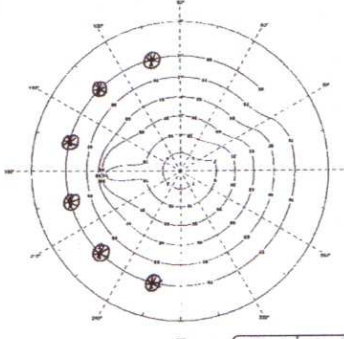
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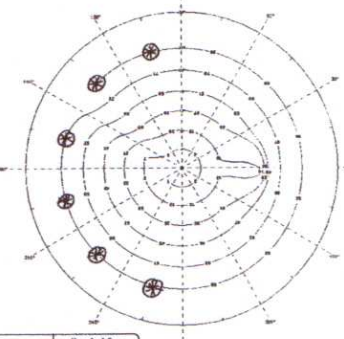
**This way up to record results.**

**Left eye**



**Left eye**

**Right eye**



**Right eye**

Disc	Stimulus	Symbol for Stimulus Missed	
	Contrast (%)	Size (mm)	
5-Contrast	2.5	3	+
	5	3	+
	10	3	+
	25	3	+
	100	3	+
	100	6	+
1-Contrast	100	0.75	×
	100	1.5	×
	100	3	×
	100	6	×

Disc	Stimulus	Symbol for Stimulus Missed	
	Contrast (%)	Size (mm)	
5-Contrast	2.5	3	+
	5	3	+
	10	3	+
	25	3	+
	100	3	+
	100	6	+
1-Contrast	100	0.75	×
	100	1.5	×
	100	3	×
	100	6	×

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invert to record results.

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Figure 11A-2

**The DAMATO Campimeter**

**Patient**

Name: HC

DOB: 05 / 06 / 09

Sex: F

No: \_\_\_\_\_

**Eye**

	Right	Left
Dist. Acuity	0-2	0-1
Near Acuity	N5	N5
Correction	Nil	Nil
Pupil Diam.	3mm	3mm

**Method**

Optical Correction: full frame

Illumination: 48-3 &

Strategy:

Single-level ☐ Stimulus: % mm


Suprathreshold ☐

Threshold ☒

Comment: \_\_\_\_\_

Examiner: CAF

Date: 02/06/95

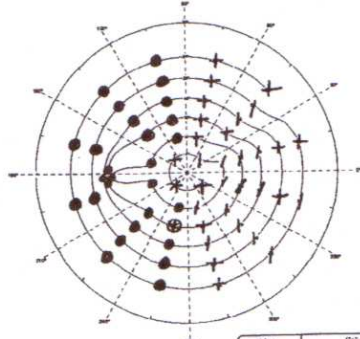
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**This way up to record results.**

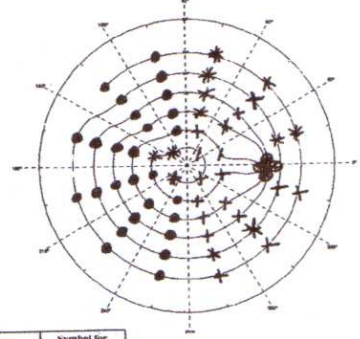
invert to interpret results.

Left eye



Left eye

Right eye



Right eye

**This way up to interpret results.**

invert to record results.

Disc	Stimulus	Symbol for Stimulus Missed
3-Contrast	Contrast (%)	Size (mm)
100	2.5	3
100	5	3
100	10	3
100	25	3
100	100	3
1-Contrast	Contrast (%)	Size (mm)
100	6	0.75
100	100	0.75
100	3	1
100	6	1

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Figure 11B-1

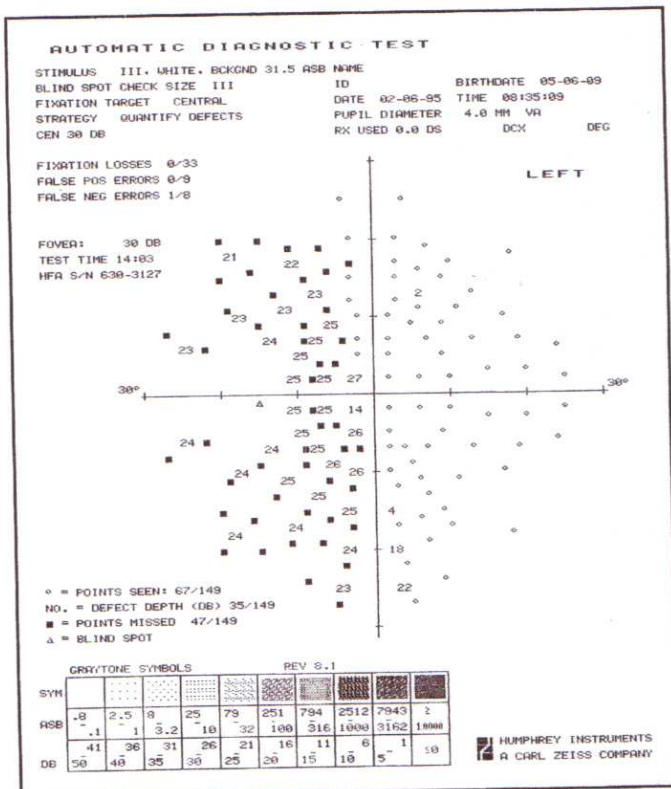
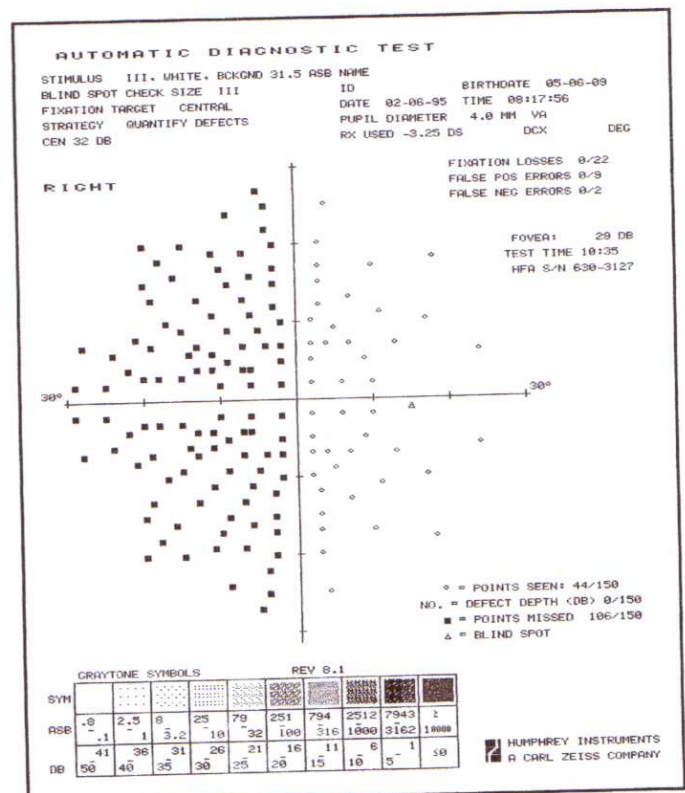


Figure 11B-2





## MACULAR EXAMINATION

If you wish to examine 60 points in the central 12° field, fold the side-arm behind the chart and, using a tape measure, position the patient so the eye is 26 inches (66.6 cm) from the chart. If you are only interested in the central 6°, then hold the chart 52

inches (133 cm) from the eye (Figure 12). You may need to use a "middle-distance" optical correction to enable the patient to read the numbers. If the numbers can be seen but not identified, you can let the patient say "read" instead of reading the numbers aloud.

**Figure 12.** Macular test. Right visual field of a 77-year-old woman with disciform macular degeneration plotted with the 60-point campimeter held at the normal working distance of (12A) 33.3 cm and (12B) at 60 cm. There is paracentral scotoma superiorly, extending very close to fixation. At a working distance of 60 cm, number "1" examines a point which is 2.2° from fixation (i.e., 4° x 33.3/60).

Figure 12A

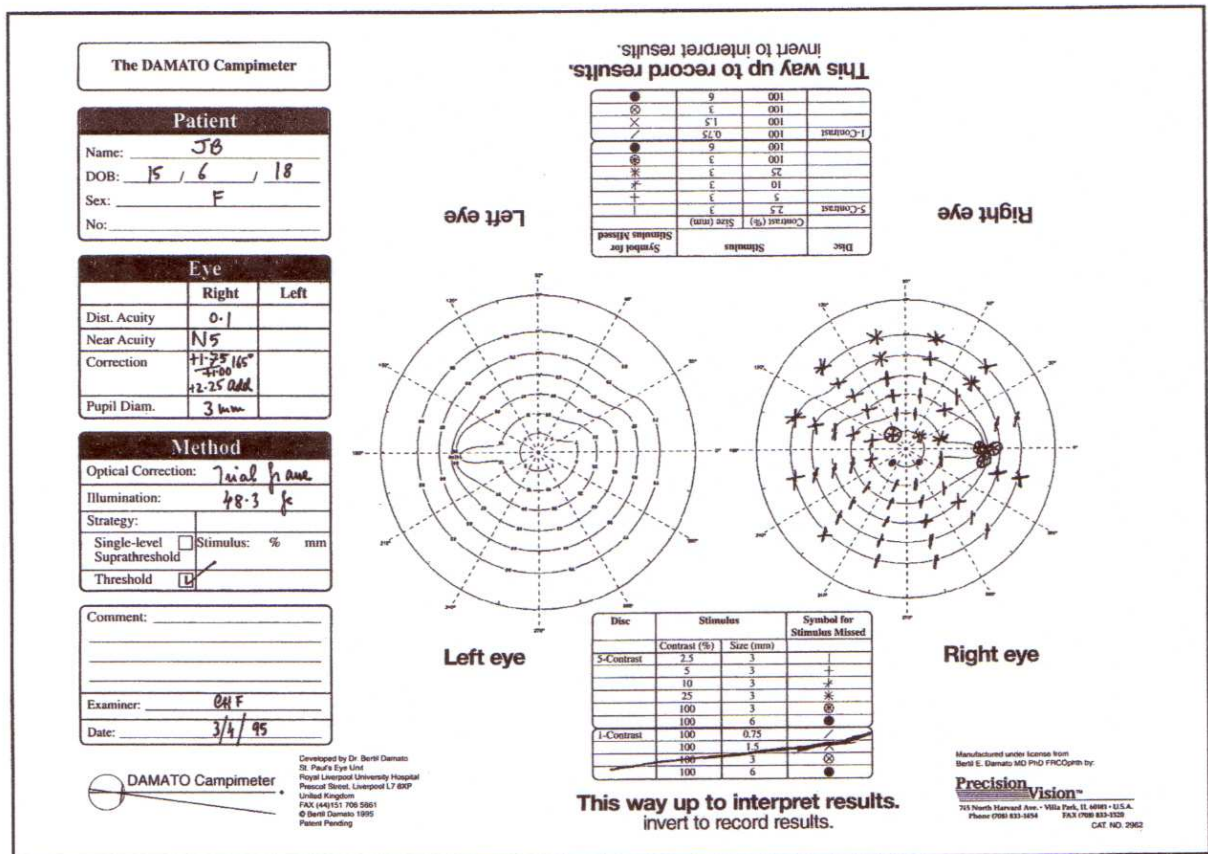


Figure 12B

**The DAMATO Campimeter**

**Patient**

Name: JB

DOB: 15 / 6 / 18

Sex: F

No: \_\_\_\_\_

**Eye**

	Right	Left
Dist. Acuity	<u>0.1</u>	
Near Acuity	<u>NS</u>	
Correction	<u>+1.75 x185°</u> <u>+1.00</u> <u>+2.25 add</u>	
Pupil Diam.	<u>3 mm</u>	

**Method**

Optical Correction: Trial Frame

Illumination: 48.3 lx

Strategy:

Single-level ☐ Stimulus: % mm

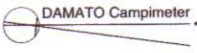
Suprathreshold ☐

Threshold ☒

Comment: Drinking Dist. 60cm

Examiner: CAF

Date: 3/4/95

 DAMATO Campimeter

Developed by Dr. Bernd Damato  
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Prescott Street, Liverpool L7 8JF  
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**This way up to record results.**

invert to interpret results.

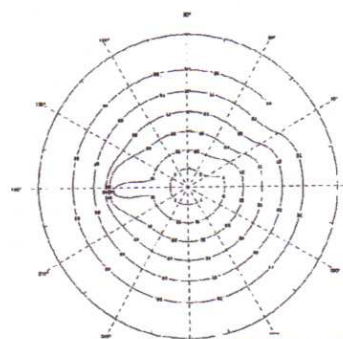
Disc	Contrast (%)	Size (mm)	Symbol for Stimulus Missed
5-Contrast	2.5	3	+
	5	3	+
	10	3	+
	25	3	+
	100	3	+
	100	6	+
	100	0.75	+
	100	1.5	+
	100	3	+
	100	6	+

**This way up to interpret results.**

invert to record results.

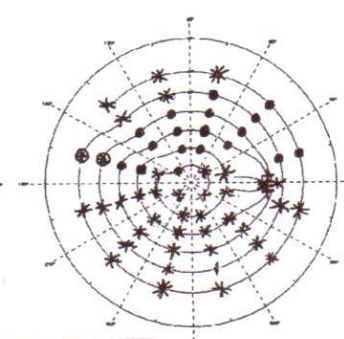
Disc	Contrast (%)	Size (mm)	Symbol for Stimulus Missed
5-Contrast	2.5	3	+
	5	3	+
	10	3	+
	25	3	+
	100	3	+
	100	6	+
	100	0.75	+
	100	1.5	+
	100	3	+
	100	6	+

**Left eye**

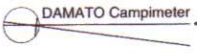


**Left eye**

**Right eye**



**Right eye**  
12 mins

 DAMATO Campimeter

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invert to record results.

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CA# NO. 2992



## TECHNICAL VARIATIONS

**Examination of Additional Points**

To examine points between numbered fixation targets, hold a pointer, such as a closed ballpen, over the chart and ask the patient to look at the tip of that pointer (Figure 13).

**Poor Fixation**

If the patient keeps looking at the central window,

then ask the patient to trace a pointer over the relevant number on the chart as you introduce the stimulus.

**Unilateral Central Scotoma**

If the patient is unable to read the numbers with one eye because of a central scotoma, place a pinhole over the fellow eye and ask the patient to read the numbers with that eye.

**Figure 13.** Examination of additional points. Visual fields of an 11-year-old girl with bilateral optic disc drusen, plotted with the 60-point campimeter. Using a pen as a pointer, additional points have been examined to show the enlarged blind spot.

**The DAMATO Campimeter**

**Patient**

Name: J V-W

DOB: 8 / 5 / 84

Sex: F

No: \_\_\_\_\_

**Eye**

	Right	Left
Dist. Acuity	<u>5/6</u>	<u>7/12</u>
Near Acuity		
Correction	-	-
Pupil Diam.	<u>9 mm</u>	<u>9 mm</u>

**Method**

Optical Correction: \_\_\_\_\_

Illumination: \_\_\_\_\_

Strategy: \_\_\_\_\_

Single-level ☐ Stimulus: % mm

Suprathreshold ☐

Threshold ☒

Comment: Disc Drusen

Dilated

Examiner: CHF

Date: 24/3/95

**DAMATO Campimeter**

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Patent Pending

**This way up to record results.**

**Left eye**

**Left eye**  
11 mins

**Right eye**

**Right eye**  
10 mins

**This way up to interpret results.**

Disc	Stimulus	Symbol for Stimulus Missed
	Contrast (%)	Size (mm)
5-Contrast	2.5	3
	5	3
	10	3
	25	3
	100	3
	100	6
1-Contrast	100	0.75
	100	3
	100	6

Disc	Stimulus	Symbol for Stimulus Missed
	Contrast (%)	Size (mm)
5-Contrast	2.5	3
	5	3
	10	3
	25	3
	100	3
	100	6
1-Contrast	100	0.75
	100	3
	100	6

**This way up to interpret results.**

invert to record results.

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If a number is associated with non-awareness of the stimulus, the corresponding number on the record sheet is marked with the appropriate symbol.

Use a pencil or special ballpen that enables you to delete errors.

Before presenting a stimulus, make a mental note of what it is. Refer to the stimulus details printed below the notch to ensure you are correct. When you finish examining a point, do not take your finger away from the notch until you have identified the last stimulus presented.

Disc	Stimulus		Symbol for Stimulus Missed
	Contrast (%)	Size (mm)	
5-Contrast	2.5	3	
	5	3	+
	10	3	✱
	25	3	✱
	100	3	⊗
	100	6	●
1-Contrast	100	0.75	/
	100	1.5	×
	100	3	⊗
	100	6	●

**Figure 14.** Symbol table.

For relative defects, the last stimulus presented will have been seen by the patient. Note that you need to draw the symbol for the strongest stimulus missed.

Document the result immediately after each point has been examined. The chances of error increase if you wait until you have examined several points before recording the results.

A table on the record sheet shows the appropriate symbol for each stimulus, according to the type of disc and examination strategy used (*Figure 14*).

When a threshold examination is performed, draw the symbol for the strongest stimulus missed. When a single level suprathreshold examination is performed, draw the symbol N (for "Normal") over corresponding numbers. Be sure to identify the stimulus by completing the Method Section of the form. If that stimulus is missed, and if stronger stimuli are presented, draw the appropriate symbol as described above.

## INTERPRETATION OF THE RESULTS

At the end of the examination, invert the record sheet to assess the results.

As with conventional perimetry, there may be artifact caused by the upper eyelid, or by spectacle rim. Other causes of spurious results include inadequate illumination, pupillary constriction and inaccurate correction of refractive errors.



**Examiner** *(Examiner dialing the disc to make the spot disappear...)* You will notice the spot has disappeared. Keep looking at the window, please, and say 'Now' as soon as the spot appears. *(Examiner slowly and silently presents the black stimulus.)*

**Patient** Now. *(Examiner immediately dials the disc so that the 2.5% stimulus is ready for presentation.)*

**Examiner** Well done. Let's do the same with a faint spot. Please say 'Now' when the spot appears. *(Examiner slowly presents the 2.5% stimulus.)*

**Patient** Now.

**Examiner** Thank you. We'll now start the examination proper. Please keep looking at number one. Without looking away from that number say 'Now' when you see the spot out of the corner of your eye. *(Watching the patient's eye closely, the examiner slowly dials the disc toward the side-arm, presenting first the 2.5% stimulus then progressively darker stimuli until the patient responds.)*

**Patient** Now. *(With one hand, the examiner immediately dials the disc so the 2.5% stimulus is ready for presentation. With the other hand, the examiner notes the missed stimuli on the record sheet.)*

**Examiner** Please follow the line, then read the next number aloud and keep looking at that number. When you see a spot in the window please say 'Now.' *(Examiner slowly presents the stimulus.)*

**Patient** One...Now. *(Examiner immediately removes the stimulus.)*

**Examiner** Good. Now please do the same for the next number.

**Patient** Two...Now.

**Examiner** Next.

**Patient** Four...Now.

**Examiner** Good. Keep going, please.

**Patient** Five...Now...Seven...Now...*(Etc.)*

**Patient** Fourteen...*(Examiner presents 2.5%, 5%, 10% and 25% stimuli without response.)*

**Examiner** Well done, you have found your normal blind spot, which is present in every eye.

**Patient** Sixteen...Now. *(Etc.)*

**Examiner** *(At the end of the examination...)* Well done. Now for the other eye. *(Examiner turns the chart over and places the eye-cover in the patient's right hand.)*

**Examiner** Please hold the flap against your right eye with your right hand and the corner of the chart with your left hand.

**Examiner** If you look at the window can you see the spot clearly?

**Patient** Yes.

**Examiner** Thank you. Now please look at

number one and read the number aloud when you are ready to start.

**Patient** One. (*Examiner presents stimulus.*)

**Patient** Now...Two...Now. (*Etc.*)

**Examiner** (*At the end of the examination...*)  
Thank you. (*Examiner inverts record sheet, writes comments about patient reliability, duration and other relevant details.*) Very good. Your results show...

## ACKNOWLEDGMENTS

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