## CLAIMS

1. A method for implementing a tilted-grating, forced choice contrast sensitivity function test for correcting presbyopia, the method comprising the steps of:

pre-testing a patient using a Campbell-Robson test chart to identify an approximate contrast sensitivity function;

presenting separately each eye of a patient with a first series of randomized test chart sets with two or more choices per set on a high resolution display as a video and covering a first range of frequencies and contrasts;

having the patient select a first response from the two or more choices, recording if the first response is correct or incorrect, recording the time the patient utilized in making the first response, and providing the patient with additional choices until the first series of test charts are complete;

analyzing the first response to determine a first contrast sensitivity function;

presenting separately each eye of the patient with additional series of randomized test chart sets with two or more choices per set on a high resolution display as a video and covering a at least one of a second range of frequencies and contrasts in smaller increments than the first range of frequencies and contrasts, a change in spatial frequencies, a change in contrast, a change in spatial frequencies and contrast and continue until a contrast sensitivity function is generated to a desired precision;

having the patient select a second response from the two or more choices, recording if the second response is correct or incorrect, recording the time the patient utilized in making the second response, and providing the patient with additional choices until the second series of test charts are complete;

analyzing the first and second responses utilizing statistical methods;

comparing between the eyes the time the patient utilized in making the first response and the second response for test charts with consistent intensity frequencies or patterns to determine a binocular summation, wherein a certainty

factor of each response is calculated as inversely related to the time the patient utilized in making the response;

repeating the method until a desired ophthalmic resolution is obtained as determined by an adaptive algorithm; and

storing and plotting the contrast sensitivity function to provide an accurate quantitative result for the contrast sensitivity function.

2. The method for implementing a titled-grating, forced choice contrast sensitivity function test according to Claim 1, wherein the step of presenting a patient with a first series of randomized test chart sets and presenting the patient with additional series of randomized test chart sets includes presenting them one at a time at a prescribed viewing distance.

3. The method for implementing a titled-grating, forced choice contrast sensitivity function test according to Claim 1, further comprising a synchronized audio clue when a new chart set is presented.

4. The method for implementing a titled-grating, forced choice contrast sensitivity function test according to Claim 1, further comprising visual feedback upon receipt of a response by the patient in order to maintain the interest of the patient.

5. The method for implementing a titled-grating, forced choice contrast sensitivity function test according to Claim 1, further comprising introducing gaming features to maintain the interest of the patient.

6. The method for implementing a titled-grating, forced choice contrast sensitivity function test according to Claim 1, wherein the step of repeating the method until a desired ophthalmic solution is obtained includes fitting the patient with a lens design that optimizes performance and comfort for the patient.

7. A computerized video system configured to implement a tilted-grating forced choice contrast sensitivity function test for correcting presbyopia, the system comprising:

a computer and associated memory for storing a Campbell-Robson contrast sensitivity function pre-test chart, for storing separately for each eye multiple series of test charts with two or more choices per set and covering multiple ranges of frequencies and contrasts in various increments to be displayed as a video, the computer implementing an algorithm that generates the video of the test charts in a randomized manner separately for each eye, records choices made by a patient, records a time to make a choice, changes the frequency and contrast based upon analysis of data collected for a highly refined and accurate test, comparing between the eyes the time to make a choice for test charts with consistent intensity frequencies or patterns to determine a binocular summation wherein a certainty factor of each response is calculated as inversely related to the time to make a choice, and outputs a quantitative result of a contrast sensitivity function for the patient;

a high resolution display for displaying the Campbell-Robson contrast sensitivity function pre-test chart and the multiple series of test charts;

a means for ensuring that the patient is properly positioned a desired distance from the high resolution display for the pre-test and test; and

a patient interface configured to allow the patient to create an approximate contrast function curve and to select a response from the two or more choices.

8. The computerized video system configured to implement a titled-grating forced choice contrast sensitivity function test according to Claim 7, wherein the high resolution display includes a monitor with a bit depth of ten or greater.

9. The computerized video system configured to implement a titled-grating forced choice contrast sensitivity function test according to Claim 8, further comprising a shield to prevent ambient light from impacting the monitor and adding noise to the monitor

10. The computerized video system configured to implement a titled-grating forced choice contrast sensitivity function test according to Claim 8, wherein the monitor is placed a prescribed distance from the patient.

11. The computerized video system configured to implement a titled-grating forced choice contrast sensitivity function test according to Claim 8, further comprising an eyepiece system that is configured to image the monitor to a prescribed distance from the patient.

12. The computerized video system configured to implement a titled-grating forced choice contrast sensitivity function test according to Claim 7, wherein the patient interface comprises a mouse for making a response.

13. The computerized video system configured to implement a titled-grating forced choice contrast sensitivity function test according to Claim 7, wherein the patient interface comprises a touch screen for making a response.

14. The computerized video system configured to implement a titled-grating forced choice contrast sensitivity function test according to Claim 7, wherein the patient interface comprises a device with buttons for making a response.

15. The computerized video system configured to implement a titled-grating forced choice contrast sensitivity function test according to Claim 7, wherein the patient interface comprises a device with dials for making a response.

16. The computerized video system configured to implement a titled-grating forced choice contrast sensitivity function test according to Claim 7, wherein the patient interface comprises a device with sliders for making a response.

17. The computerized video system configured to implement a titled-grating forced choice contrast sensitivity function test according to Claim 7, wherein the algorithm

generates a synchronized audio clue to indicate a new choice must be made by the patient.

18. The computerized video system configured to implement a titled-grating forced choice contrast sensitivity function test according to Claim 7, wherein the algorithm generates a feedback signal for the user to indicate that a correct or incorrect choice has been made.

19. The computerized video system configured to implement a titled-grating forced choice contrast sensitivity function test according to Claim 7, wherein the algorithm implements a gaming function to maintain the interest of the patient.