EyeView $^{\text{TM}}$ Functional Vision Analysis Software Software for use with the Functional Vision Analyzer

INSTRUCTION MANUAL





8600 W. Catalpa Ave., Suite 703 | Chicago, IL 60656 USA | 1.773.867.0380 | Toll-Fee1.800.344.9500 Fax: 1.773.867.0388 | Email: Sales@StereoOptical.com | www.StereoOptical.com

Table of Contents

EyeView™ Functional Vision Analysis Software	1
INSTRUCTION MANUAL	1
Table of Contents	2
Functional Vision Analysis Software EyeView™	3
Introduction	3
Purpose	3
Definitions	3
Setup	4
Procedures	5
Software Launch	5
Activation Process	5
Software Overview	6
Patient Data	6
Testing a new patient	6
Testing an existing patient	7
Perfoming the test	7
Reviewing pre existing test or Patient data	7
FACT Test Contrast Sensitivity	8
FACT Contrast Sensitivity Testing	8
Visual Acuity (ETDRS) Testing	10
Depth Perception Testing	12
Color Perception Testing	13
Review Data	15
Draw FACT Chart	17
Summary	18
Eyeview ™	19

Functional Vision Analysis Software EyeView™

Introduction

Purpose

To allow doctors and clinicians to digitally record patient data and responses from the FACT (contrast sensitivity), ETDRS (visual acuity) Color Perception and Depth Perception tests.

Definitions

Acuity	The ability to identify the smallest black and	
	white details of an image. Does not test	
	sensitivity to contrast for a range of sizes. It tests	
	only the ability to resolve high contrast black-on-	
	white letters	
Contrast	The difference in brightness levels from one part of an image to another. A	
	white cat on a white snow bank is low contrast;	
	a black cat on a white snow bank is high	
	contrast.	
Contrast Sensitivity Function	Curve that describes a person's sensitivity to	
	contrast as a function of size. Used to help	
	detect optical problems, as well as diagnose and	
	track certain visual disorders. Determines	
	visual capability to detect and identify everyday	
	objects	
ETDRS Visual Acuity	Special visual acuity charts used in clinical	
	studies.	

Minimum System Requirements for EyeView® software

- PC Platform (Macintosh not currently supported)
- Windows 7 or above
- VGA color monitor

Setup

To install the EyeView™ Functional Vision Analysis Software:

- 1. Download EyeViewFVA Setup zip file
- 2. Unzip this file EyeViewFVA.zip to a local directory (Desktop for instance)



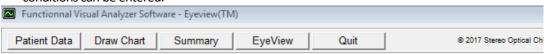
- 3. This directory looks like
- 4. Double click the file "setup.exe"
- 5. A message box labeled "Install" should appear with the following message: "Copying files, please stand by". This process may take several seconds.
- 6. Once files are copied, the screen should turn blue and a message box should appear with the following message: "Welcome to the Functional Vision Analyzer installation program".
- 7. Click "OK" to continue installation.
- 8. The next message box contains a button with an image of a computer; click this button to continue installation.
- 9. You will then be asked to "Choose Program Group Or Startup menu". Ensure that "EyeViewFVA" is selected in both fields. Click "Continue"
- 10. Setup will begin. The program files will be installed in the following directory, C:\Program Files\EyeViewFVA.
- 11. Once setup is complete, a message box will appear indicating, "EyeViewFVA setup was completed successfully". Click "OK"
- 12. Setup is now complete.
- 13. Please note that the screen area must be set to 1024 x 768 pixels or higher in order to view the screen properly.

For quick "EyeViewFVA" program access, create a "Shortcut to EyeView FVA" icon on the desktop. Double-click this icon to begin the program.

Procedures

Software Launch

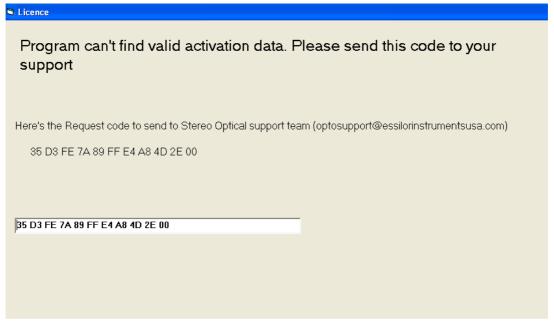
- Power on the computer.
- Choose the "Shortcut EyeView FVA" icon from the desktop to start the program.
- The Eye View FVA screen should appear with a message that states "Program Loading..."
- First launch will ask you activation code see
- Next, the "Patient Data" screen will appear and information pertaining to the patient and testing conditions can be entered.



PATIENT DATA

Activation Process

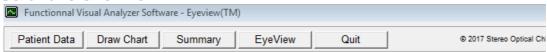
When you first start the application, it gives you an request code and it asks you an activation code.



You can copy the code and send it to optosupport@essilorinstrumentsusa.com).

Our support team will send you back a code that you can key in on bottom edit box

Software Overview



PATIENT DATA

Each screen contains a taskbar at the top with the following buttons:

- "Patient Data" takes the user to the Patient Data screen.
- "Draw Chart" allows the user to plot the contrast sensitivity scores for one or multiple testing sessions of the selected patient.
- "Summary" refers to the Session Summary screen, which allows the user to view the summary results of the selected patient.
- "EyeView" takes the user to the EyeView™ selection screen for the selected patient. The user can then highlight the test session to be viewed and click "ok". EyeView™ will process only one test session at once. Therefore if two sessions are highlighted, the session that appears first in the list will be used.
- "Quit" will quit the program entirely. To restart the program, simply choose the "Shortcut to EyveView FVA" icon from the desktop.

Patient Data

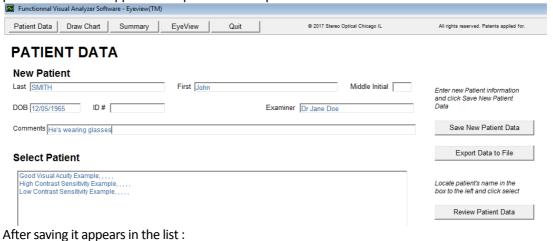
Testing a new patient

The Patient Data screen allows both existing and new patients to be tested.

For demonstration purposes, sample data has been entered for two FACT tests and one ETDRS test.

Enter the patient's full name into the system (the last name is the only required field). Optional information includes the patient's date of birth, ID number, examiner name and comments such as "wears contacts."

Once the patient data has been entered, choose "Save New Patient Data." This will save the information to the database. The patient's information must be saved in order to save test results. Once saved, the patient's name will appear in the patient list in alphabetical order.



PATIENT DATA



Testing an existing patient

1. Highlight the patient's name on the list. The selected patient should appear as the "Test Subject" located under the patient list.

Perfoming the test

Once the new patient information is saved, highlight the patient's name on the list. The selected patient should appear as the "Test Subject" located under the patient list.



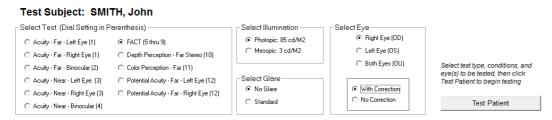
- 1. Several testing options appear under the patient list including luminance and glare conditions, test type (FACT or Acuity ETDRS Color, Depth perception), Eyen and vision correction.
- 2. Configure the FVA accordingly (Eye selection, Glare, Illumination & Test number. For instance, in the picture you will record FACT result (Dial 5 to 9), on photopic conditions without glare for both eye and patient has correction.
- 3. Choose the appropriate testing conditions and select Test Patient to record test result.
- 4. The user will be taken to the score form for the chosen test.

Reviewing pre existing test or Patient data

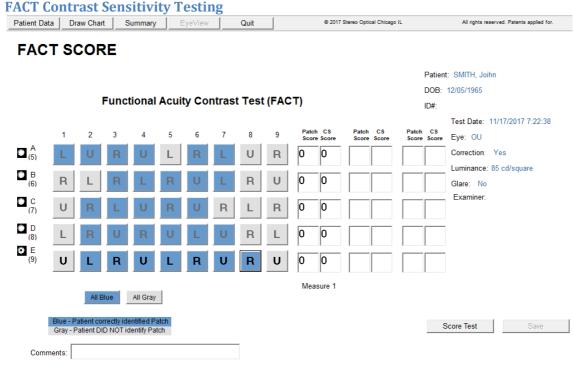
Click on Review Patient Data to modify patient data or review pre existing test on this patient.

FACT Test Contrast Sensitivity

The order of testing will vary depending upon the patient or the clinical trial. A suggested test order would involve first testing the right eye, left eye, then both eyes beginning with the higher light level (Photopic 85 cd/M²) and proceeding to the lower light level (Mesopic 3 cd/Ma). Consider testing with glare last as it will temporarily bleach the patient's eyes.

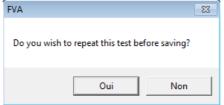


Score results accordingly for visual acuity (ETDRS) and Contrast Sensitivity Testing (FACT):



- 1. Use the FACT chart to test the right eye, left eye, and both eyes. On the FACT Score Form, ensure that the appropriate testing condition (Photopic or Mesopic; glare none or level 1 or 2) has been selected.
- 2. If not, choose "Patient Data" and select the appropriate conditions on the Patient Data screen. Then choose "Test Patient" to return to the score form.
- 3. The patient should read across each line, starting with the slide for row A and indicate the direction of each grating.
- 4. The answer guide is as follows: R = Right, U = Up, L = Left
- 5. Click in the circle to the left of the testing row to select that row. The dial number indicates where to set the dial on the tester in order to view that slide. To score the patient, click on the answers that are correct. A blue patch indicates a correct answer. Clicking on a blue patch will turn it gray indicating an incorrect answer. To correct a mistake in scoring, simply click on the patch again to

- change the color. You will need to select a row in order to score or make changes within that row.
- 6. As a shortcut, the "All Blue" button under the FACT chart can be selected to automatically select all answers in that row as correct. The "All Gray" button can be selected to automatically select all answers in that row as incorrect.
- 7. Once a measure is completed, select "Score Test". The patch and the contrast sensitivity scores will appear in the columns to the right. The measure is labeled underneath the columns.
- 8. After scoring, select the "Save" button to retain test results. Once the scores have been saved, the user will be asked if they wish to repeat the measure. This allows the user to repeat the FACT test under the same luminance conditions. At least two measures should be taken for each patient for each luminance condition although the program will allow up to 3 measures to be completed.
- 9. If a patch difference greater than 2 patches exists between the measures, the user will be asked if



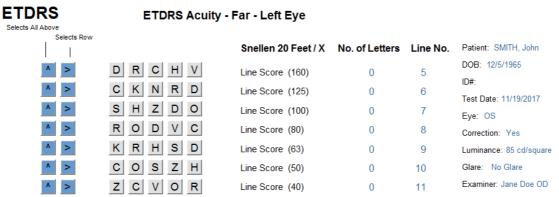
they wish to retest.

- 10. If the user selects "Yes", another measure will be taken and the inconsistent measure will be deleted. If the user selects "No", the scores will need to be saved by selecting "Save". Multiple measures should be within 2 patch scores and this function ensures that any wide difference between measures is intentional.
- 11. When the FACT testing is completed, the measures will be averaged and the results displayed on the Session Summary screen.
- 12. A Session Summary report can be printed from this page either at the time of testing or the user may come back to this screen at any time by selecting "Summary." Choose the desired test results by selecting the test date from the pull-down menu.
- 13. Please note that if a patient is tested with less than 3 measures and then tested again under the same conditions within a 24-hour period, one testing parameter must be changed. It is recommended that this modified parameter be simple such as the removal or addition of the middle initial.
- 14. You then can access result on Summary, print a chart of this result in "Draw Chart". If you want to evaluate impact of this result on vision click on EyeView™ button.

Visual Acuity (ETDRS) Testing

Ensure that the appropriate luminance condition (Photopic or Mesopic; with or without glare) has been selected and that the eye being tested is correct.

If not, choose "Patient Data" and select the appropriate conditions on the Patient Data screen. Then choose "Test Patient" to return to the score form. Check that Data on the right side are correct then configure



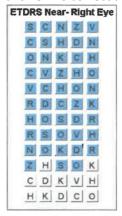
Have the patient read the smallest line of letters possible.

If they miss any letters on this row, have them read the line above it. Repeat this step until they are able to read an entire line correctly.

If they read the line correctly on the first try, encourage them to read the line below that and, if appropriate, the line below that, etc.

To score the patient's test performance, click on the answers that are correct. A blue patch indicates a correct answer.

For incorrect answers, click on a blue patch to turn it gray as a gray patch indicates an incorrect answer. To correct a mistake in scoring, simply click on the patch again to change the color.



Once a measure is completed, select button. The line score, correct letter ID score, and Snellen visual acuity scores will be calculated and displayed.

D R C H V	Line Score (160)	5	5
C K N R D	Line Score (125)	10	6
SHZDO	Line Score (100)	15	7
R O D V C	Line Score (80)	20	8
K R H S D	Line Score (63)	25	9
C O S Z H	Line Score (50)	30	10
Z C V O R	Line Score (40)	35	11
CRDVH	Line Score (32)	40	12
D C V H S	Line Score (25)	43	13
K V S C R	Line Score (20)	43	14
OCNKD	Line Score (16)	43	15
D K C V Z	Line Score (12.5)	43	16
	Correct Letter ID Score	43	
t Correctly Identified Letter nt DID NOT Identify Letter	Snellen Visual Acuity	20/25-2	

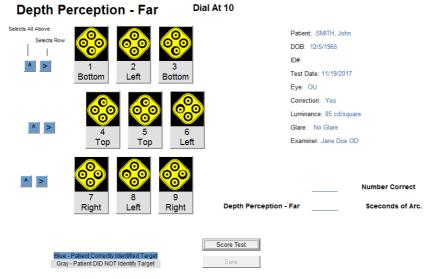
After scoring, select "Save" to retain test results.

Depth Perception Testing

To activate depth perception testing select it on Patient data page & configure FVA accordingly (test 10,day illumination, no glare, Right & Left Eye activated on this example)

Test Subject: SMITH, John -Select Test (Dial Setting in Parenthesis) -Select Illumination Select Eye -Right Eye (OD) Photopic: 85 cd/M2 C FACT (5 thru 9) C Acuity - Far - Left Eve (1) C Mesopic: 3 cd/M2 C Left Eye (OS) C Acuity - Far - Right Eye (1) Depth Perception - Far Stereo (10) Both Eyes (OU) Select test type, conditions, and C Acuity - Far - Binocular (2) Color Perception - Far (11) -Select Glare eve(s) to be tested, then click C Acuity - Near - Left Eye (3) C Potential Acuity - Far - Left Eye (12) No Glare Test Patient to begin testing C Level 1 With Correction C Acuity - Near - Right Eye (3) C Potential Acuity - Far - Right Eye (12) C No Correction Test Patient C Acuity - Near - Binocular (4)

Test Patient button brings you to the score page of Depth Perception test



Within each square are four circles. Have the patient look at each of the four circles and state which circle seems to be closest — top, bottom, left or right.

Click on the box to turn it blue which indicates a correct answer. A gray patch indicates an incorrect answer. To correct a mistake in scoring, simply click on the patch again to change the color. Continue until the patient gives up trying or makes two successive mistakes.

Once the patient has completed testing click on the "Score Test" button to show the number correct and the seconds of arc. After scoring, select the "Save" button to retain test results.



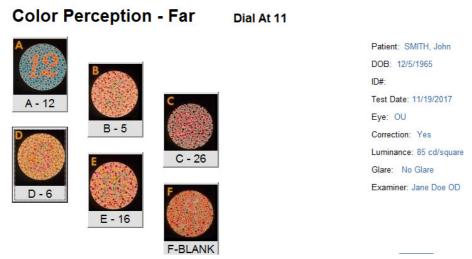
Color Perception Testing

On Patient Data page select the color perception, illumination, glare & click on Test patient. Configure FVA accordingly.

Test Subject: SMITH, John



It brings you to this page

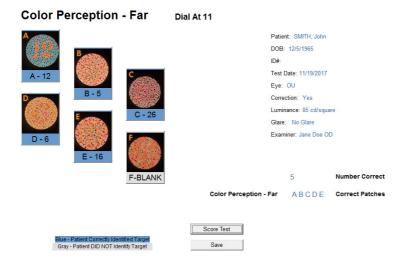


Have the patient read the number(s) in each circle.

To score, click the appropriate box once for one correct number which will turn the gray section to blue indicating a correct response. If the patient gets the second digit correct, click again to change to green indicating both digits were correctly identified.

To correct a mistake in scoring, simply click on the patch again to change the color. A gray patch indicates an incorrect answer.

Click on Score Test to evaluate a global result. Click on Save when finish to retain the result.



Review Data

On patient data page, you can select a patient and review its data. It brings you to this page:

EDIT/REVIEW PATIENT



^{*} Number correct, then Snellen Score or Depth Perception or Colors Identified - OR - Contrast sensitivity for each row.

On this one you can modify patient data, delete the patient or review a previous recorded test. Printed list will look like this

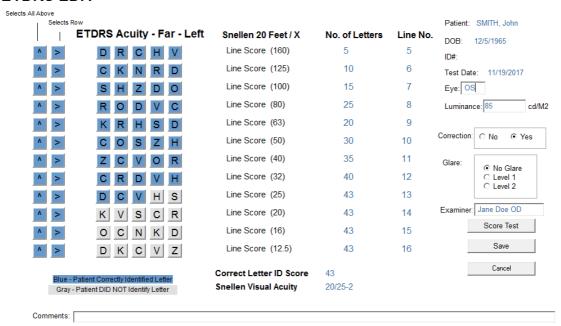
```
Patient: SMITH, John

Date, Examiner, Eye, Correction, Illumination, Glare, Test Type, Results*, Comments 11/19/2017 12:31:36 A, Jane Doe O, OU, Yes, 85 No Glare, FACT, 9, 100, 5, 40, 7, 90, 5, 30, 7, 33, 11/19/2017 12:31:36 A, Jane Doe O, OU, Yes, 85 No Glare, FACT, 6, 36, 7, 80, 6, 64, 7, 60, 5, 17, 11/19/2017 12:50:52 A, Jane Doe O, OS, Yes, 85 No Glare, ETDRS, 43, 20/25-2, 11/19/2017 1:18:55 AM, Jane Doe O, OU, Yes, 85 No Glare, ETDRS, 42, 20/32+2, 11/19/2017 1:18:51 AM, Jane Doe O, OU, Yes, 85 No Glare, ETDRS, 38, 20/32-2, 11/19/2017 1:20:09 AM, Jane Doe O, OU, Yes, 3 No Glare, ETDRS, 38, 20/32-2, 11/19/2017 1:20:37 AM, Jane Doe O, OU, Yes, 3 Level 1, ETDRS, 43, 20/25-2, 11/19/2017 1:20:37 AM, Jane Doe O, OU, Yes, 3 Level 2, ETDRS, 43, 20/25-2, 11/19/2017 1:28:07 AM, Jane Doe O, OU, Yes, 85 No Glare, Depth, 5, 50 Arc Sec, 11/19/2017 1:34:29 AM, Jane Doe O, OU, Yes, 85 No Glare, Color, 5, A B C D E Correct,
```

To review a record please select it.

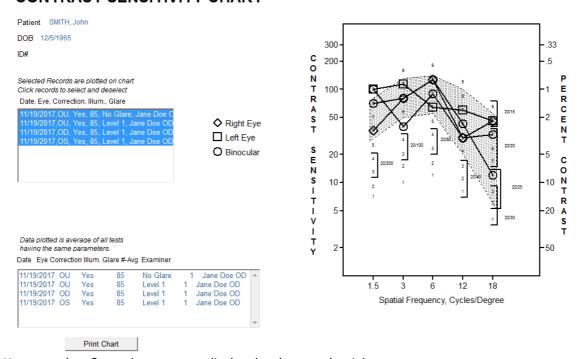
On each test you can modify previous results

ETDRS EDIT



Draw FACT Chart

Click on Draw Chart button to review all previous FACT results for this customer as a chart CONTRAST SENSITIVITY CHART

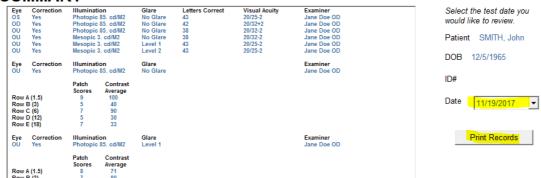


You can select & unselect a test to display the chart on the right You can also print the results.

Summary

For the selected patient, you can click on Summary button to review all tests of a day then print it.

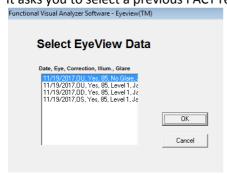
SUMMARY



You can select time of the exam and print these records.

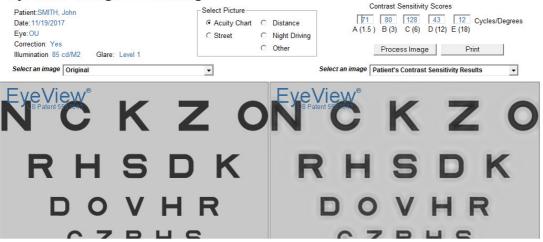
Eyeview ™

Click on <u>EyeView</u> button to access a page to simulate effect on vision of FACT results. It asks you to select a previous FACT result for this patient



Then you arrive on this page

EyeView[™]Image Processing



In which you can select a different picture & compute the constrast sensitivity results impact on this picture

This example with the Street review then click on Process Image



You can compare different images by selecting type of image Eyeviewtm Functional Visual Analyser

