



# Velorum

Visual Acuity System

# VELORUM VISUAL ACUITY SYSTEM (VVAS)

Welcome to Velorum Visual Acuity System.

Ver 3.7

VVAS is freely downloadable from

[www.oculab.org](http://www.oculab.org)

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## LOOKS GREAT

- This visual acuity system is designed to keep in mind the research studies to accurately measure the visual acuity in any setup up to 0.004 fraction in LogMAR scale.
- Usual logMAR Charts give projected visual acuity up to 0.02.
- VVAS gives real and physical object size up to 0.001 of LogMAR.
- And following the LogMAR rule VA can be projected up to 0.0002 level of accuracy.
- E.g., if two letters from 0.945 line are readable the visual acuity will be  $(0.945 + (2 * 0.0002)) = 0.9452$
- Letter sizes has been calculated in less than FEMTOMETER of accuracy.
- The letter size of 0.0 or 6/6 scale is kept at 0.008726646259971650 meter of height and width at 6 meters.
- The letter size of 20/20 scale is 0.008866272600131190 meter of height and width at 20 feet.
- For practical purpose 1.0 letter size is taken as 20/200 in feet scale, actually it is not because 6 meters are not exactly equal to 20 feet!.

## GIVE IT THAT FINISHING TOUCH

- Single Letter and Single Line Charts shows accurate scale on LogMAR (First) line.
- Metric, Feet and Visual Potential scales available from 0 to 12th decimal fraction.
- The success of the system is totally based on accurate calibration and resolution of screen.
- Whole program is controllable through an ordinary wireless mouse.
- There is no need of special dedicated remote to operate the software.
- Currently only Windows version of VVAS is launched. It will not run on MAC or Android OS.

## MOUSE BUTTONS

|       |   |
|-------|---|
| Right | Right click menu.   |
| Left  | <p>Increase the letter size (in Single letter and Single Line displays) if mouse is in upper half of screen.</p> <p>Decrease the letter size (in Single letter and Single Line displays) if mouse is in lower half of screen.</p> <p>Shuffles the optotypes in other charts.</p> <p>Increase the contrast of letters while measuring the contrast sensitivity, if mouse is in upper half of screen.</p> <p>Decrease the contrast of letters while measuring the contrast sensitivity, if mouse is in lower half of screen.</p> <p>Hide the GIF animation in Pediatric mode.</p> |
| Wheel | Shuffle the optotypes.  |

## IMPORTANT KEYBOARD SHORTCUTS:

|          |  |
|----------|--|
| Z        | Single Letter (Starts with 1.0 letter).  |
| X        | Single Line (Starts with 1.0 letter).  |
| C        | LogMAR Chart Vertical.   |
| D        | Activate / Deactivate Duochrome  |
| V        | LogMAR Chart Vertical Line.  |
| B        | LogMAR Chart Horizontal.   |
| N        | LogMAR Chart Horizontal Line.  |
| M        | Mirror Yes / No.   |
| S        | Snellen Chart (LogMAR based).  |
| P        | Play / Stop GIF animation.   |
| 0 (Zero) | Crowding: Standard, 50%, 25%. (Default: Standard).   |
| Right    | Toggle letters keeping same size.  |
| Left     | Toggle Fonts: Sloan, Digits, Tumbling E, Landot C and Lea Like. (Default: Sloan).          |
| Up       | Increase letter size in Decrements mentioned above (Only in Single Line or Single letter). |
| Down     | Decrease letter size in Decrements mentioned above (Only in Single Line or Single letter). |
| Space    | Same as Down.  |
| Esc      | Quit application / Quit Contrast Measurement / go to previous screen.                      |
| Alt + F4 | Quit application / Quit Contrast Measurement.  |

## HOW TO MEASURE VISUAL ACUITY UP TO 0.0002 LOGMAR

### EXAMPLE

Go to Single line chart (or press X).

On RIGHT click of mouse click “Reset to 1.0” if logMAR scale value at top LEFT is not 1.0.

Select “Steps” then “0.10” from RIGHT mouse click menu.

Decrease the letter size by LEFT clicking lower half of screen.

Now for example the person is unable to read 0.8 line.

Select “Steps” then “0.01” from RIGHT mouse click menu.

Increase the letter size by clicking upper half of screen.

Now for example the person is able to read 0.83 line.

Select “Steps” then “0.001” from RIGHT mouse click menu.

Decrease the letter size by clicking lower half of screen.

Now for example person is unable to read 0.832, but was able to read three letters from 0.834 line.

So the visual acuity will be  $0.832 + (3 * 0.0002) = 0.8326$ .

Similarly, Contrast sensitivity can also be measured up to 0.0002% of accuracy.

## WORTH FOUR DOTS LIGHT TEST (W4LT)

Angle subtended is measured from an imaginary circle around all four circles.

To detect suppression start from 1.25 degrees and for fusion 6 degrees  
W4LT target is used.

Errors, omissions, suggestions, comments, reviews are accepted.

Coming in next version:

Muscle balance charts, Amsler Grids, and .....





20%



Y U X T Y

String 1

1.0  
6/60  
20/200  
20%



String 1.0

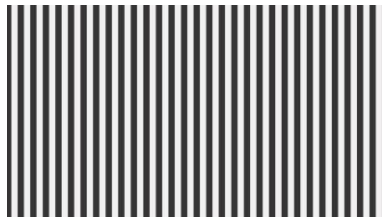
Intention: 17"



1.60  
6/239  
20/796  
8%

N

String 1.60





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