



District 50 Lions



Vision Screening Manual

Oahu

(Regions 2,3,4 and 5)

September 2018 – June 2019



Hawaii Lions District 50
D50 VISION SCREENING MANUAL

Forward and Explanations:

This manual is being constructed to bring all of the parts of the Vision Screening process into one document. It is divided into three parts.

A) Critical Line Screening B) S12 manual and use C) Overall screening Procedures.

Critical Line Screening

Equipment:

Sloan Letters in LogMar Sizes for screening at 10 feet

LEA Symbols for screening at 10 feet

Purchase at www.schoolnursesupply.com or www.good-lite.com

Purchase price is between \$18.00 - \$25. Occluders are also available.

Definition:

In “critical line” screening, a child must correctly identify the majority of optotypes (figures or letters) on a line that matches the optotype (figures or letters) size a child should be able pass according to the child’s age.

This list of thresholds are included below.

Procedural Steps:

1. The child is presented with the largest line of optotypes (figures or letters) to identify. (The trial lines at the top of the charts.)
2. The screener confirms that the child can successfully identify this trial line of large optotypes (figures or letters) **with both eyes open.**
3. The screener moves directly to the line that matches the child’s age for single eye screening.
4. Both eyes are tested individually using an occluder or special glasses to cover the eye not being tested.
5. The child is referred when the majority of optotypes are not identified on this line. **Pass: 3 out of 5**
6. **Further testing with smaller optotype sizes is not required.**

Visual acuity thresholds are age-dependent.

Ages 36-47 months – 3 years+:

Critical line testing for referral is worse than the 20/50 line.

Must correctly identify the majority on the 20/50 line to pass.

Ages 48-59 months – 4 years+ :

Critical line testing for referral is worse than the 20/40 line.

Must correctly identify the majority on the 20/40 line to pass.

Ages 60+ months – 5 years+:

Critical line testing for referral is worse than the 20/32 line.

Must correctly identify the majority on the 20/32 line to pass.

Critical Line Screening drops the two-line difference measurement.

Plus Optix S12

Equipment:

- S12c with memory unit or
- S12r without memory unit
- S12 user's manual
- Dymo 450 printer or Plus Optix S12 printer
- Labels for printer
- Plus Optix S12 error messages sheet
- Plus Optix S12 user's manual
- Plus Optix S12 certified user
- Shade Tunnel (optional)

Explanation:

- The Plus Optix S12 is a self-contained, self correcting, hand held optical measurement device. As such, all that needs to be done by the user is to follow the directions laid out in the user's manual.
- PRACTICE is the key to the use of this device. With practice, one can achieve speeds of 10 or more screenings in a minute. The assistance of other experienced users as part of a three man team is all that is needed to become proficient.
- A copy of the error messages sheet should be made available to each work station. Over time, these messages and their solutions will become second nature to the user but are good reference points.
- A copy of the user's manual should be located at each work station.
- Shade Tunnel: rather than attempting to shade a room from direct sunlight, a shade tunnel was created that only blocks the direct sunlight from the S12 and the child. Credit for this device rests with the Akaka Falls Lions club.
 - It is 3 meters long, the distance the child should be from the S12.
 - The child sits at one end and looks through it to the other end which has the S12.
 - It focuses the child's attention on the camera that can be seen at the front of the tunnel.
 - It is made out of card board or anything else available. They can be as elaborate as you want.
 - This device is not used by all users all the time or by all users at all. It is strictly voluntary.
 - Light conditions may not require the drastic curtailment of a direct sun source. However, in larger elementary schools, the cafeteria is the normal location that we are given to screen in they are airy and subject to direct sunlight.
 - These are samples and use. Left pic is at a preschool. Middle is doing 2 year olds. Right is an elementary school.



User's Manuals, Screening Procedures, and Error Messages

Quick Plusoptix S12 Operation Guide (5/07/15) Lion Sam Fisk

A. New Device:

- Never operate your unit without the batteries in place.
- Charge the batteries as soon as circumstances allow. Whether to purchase additional batteries and perhaps an external charger is up to the operating organization.
- Set the device sensitivity to the #4 setting.

B. On-Site Set Up:

- Set up in the dimmest corner of the room. The screener sits in the corner facing out.
- A 3.3 foot measure is taken and ¾” strips of blue painter’s tape are applied to the floor. Seating for the screener and the children are positioned from these two strips. The S12 body is over the screener’s tape strip and the one nearest the children is just under their chair seat where their chin projects.
- Keep the screening lane clear behind the screening Lion. Have a neutral background so that children focus on the S12, not novel items behind the screener. Also, members of the screening team are to avoid stepping behind the screening Lion during active screening.
- The circulation of the children into and out of the screening area should enable the children awaiting screening to move up and observe the process. The familiarization puts them at ease and encourages a light mood in the group.
- An adjustable height office chair is optimal for the screener. Children should be seated in a “child’s chair” suitable for pre-school kindergarten. The tiny chairs lower the children’s eyes to more efficiently align with the screener’s position facilitating the S12 measurement process. Having some pillows available may help to stabilize small children. Do not allow children to slouch in their seat. Their posture needs to be erect in order to facilitate the passage of the lasers horizontally through their pupils.
- Have on hand child-sized *non-polarized* sunglasses to encourage the dilation of some children’s pupils in order to get a screening. Tip the glasses forwards on the child’s face to remove glare. The S12 functions very well through sunglasses when a child has particularly small pupils.

C. Lighting:

- The S12 takes its measurements using very low wattage infrared lasers harmless to living tissue. Heat producing sources of light from the sun and incandescent light bulbs interfere with the device’s sensors and lasers. Cool light from neon, eco-bulb and LED lighting will not impact the operation of the devices.
- Neither dark nor bright surroundings are optimal for S12 operation. You want a screening environment where the children’s pupils are just sufficiently dilated for measurement to take place. Optimal room lighting is dim but just sufficiently bright to read a newspaper.
- Set-up is in the dimmest corner of the room. Rooms that have large expanses of windows may not work for S12 screening due to the amount of hot light entering the space interfering with the device and dilating the children’s pupils.

- Contractor heavy plastic garbage bags can be cut into sheets. Using 2-inch blue painter’s tape the sheets can be used to temporarily cover windows and sliding glass doors letting in too much light.
- A golf umbrella can also be brought to play to block intruding light and darken the area around the child.

D. Manpower:

A team of three (3) supports an efficient S12 screening process. There is the screener, who operates the S12, the label printer operator, and the child’s aide, who works closely with the child sitting them straight in their chair and oriented correctly. The aide assists with putting on sunglasses, moving hair away from eyes and, in a few cases, asking the child to lift their eye lids when eye lashes are interfering with the laser optics. The printer operator only prints the data for referred children. The S12 is taken from the screener by the printer operator to print referral labels. By allowing the screener to remain seated their physical position and posture is maintained in order to remain efficiently prepared to measure the next child. Suggested staffing is as follows:

<u>1-Station</u> (8+)	<u>2-Station’s</u> (10+)	<u>3-Station’s</u> (15+)	<u>4-Station’s</u> (17+)
1 Screening Team	2 Screening Teams	3 Screening Teams	4 Screening Teams
1 Traffic control	1 Traffic control	2 Traffic control	2 Traffic control
1 Forms & roster	1 Forms & Roster	2 Forms & Roster	2 Forms & Roster
1 Miscellaneous (One printer)	1 Miscellaneous (One shared printer)	1 Miscellaneous (Two shared printers)	1 Miscellaneous (Two shared printers)

At least one Critical Line Screening chart is required to screen those children unable to be tested (UTT) with the S12 in support of 1 to 4 Plusoptix screening lines.

E. Screening Tips:

- We have been advised by the S12 distributor that encouraging difficult to screen children to “wiggle their toes” actually does increase pupil dilation.
- Once the screener has the focus adjusted between the S12 and the child’s eyes and is screening children quickly they will get a feel for a “Sweet Spot”. The “Sweet Spot” is the result of learned postural adjustments that result in increasingly accurate use of the S12’s sensing capability. There is a learning curve. Progress comes with experience, faster for some screeners than others.

F. DYMO LabelWriter Label Printer Mod 450:

- With the S12 models C & R our current vision screening operations involve what is termed, “Anonymous Vision Screening.” No data remains with the device under Anonymous Vision Screening. The data from each child screened is automatically deleted from temporary memory and cannot be retrieved. With no electronic vision screening record remaining, the only record of the child’s screening data is the label that is printed for attachment to Lion Phil’s latest version of the consent-referral form (2-2015 Consent Form V 005.pdf). Labels are printed for children referred for Eye Care Provider (ECP) follow-up examination. (*) (**)

- It is suggested that TWO labels be printed per student. This is in case the first is damaged or the S12 is turned to another student before the label process is completed. Once this happens, the child needs to be rescreened in order to obtain another label.
- The DYMO: LabelWriter 450 can be found locally at some large office supply stores. A good choice would be Amazon.com to save running around. Additional label rolls are available from:
Labelvalue.com or call 800-750-7764; Product Code: Dymo 30324 Compatible Diskette Labels (LV-30324). BE AWARE: the DYMO LabelWriter Turbo is NOT supported by Plusoptix. The regular label writer will work right out of the box. No software installation is required.
- When more than one S12 is in operation at a vision screening, the most efficient positioning of the DYMO label printer is a set-up having a label printer/operator shared between two screening stations. Since only referrals will be printed, the process should be supported smoothly.

G. Plusoptix Error Messages:

- The Plusoptix vision screening devices will not estimate a reading. If a reading is not completed an “Error Message” and an “Action Recommendation” are displayed with a suggestion for immediate response. Causes of errors as recognized by the device are highlighted in red on the measurement result and review video pages. Check these pages using the “<>” directional arrows. It is generally easier to identify causes of errors on camera pictures rather than on the measurement result page.
- The following is a complete listing of error messages and ready responses extracted from the Plusoptix Mobile Vision Screener “Plusoptix S12R” User Manual:

Picture out of focus
 Patient does not focus on camera.
 Pupils too big.
 Pupils too small.
 Pupils not found.
 Too much IR ambient light.
 Measurement incomplete
 Corneal reflexes are too dark

- **Error Causes, Reasons and Resolutions:**

1) Picture out of focus:

Cause: The child is too close to the unit or too far away from it.

Reason: The camera has a fixed focus of 3.3 feet.

Tip: The focus is correct when the camera image appears on screen with every hair of eyebrows and lashes clearly visible.

2) Patient does not focus on camera:

Cause: The child is not fixated visually on the clown's nose on the camera.

Reason: To obtain proper measurements, both eyes must be directed at the center of the camera.

Tip: Reposition the child such that knees and nose are in line with the camera

3) Pupils too big.

Cause: This error message is displayed when one or both of the pupil diameters are larger than 8.0 mm.

Reason: The measurement is overly exposed.

Tip: Light up the screening room so that the pupils become smaller.

4) Pupils too small.

Cause: This error message is displayed if one or both of the pupil diameters is smaller than 4.0 mm

Reason: The measurement is under exposed.

Tip: Darken the room so that the pupils become larger. Do Not overly darken the room such that reading a newspaper is difficult.

5) Pupils not found.

Cause: Pupils this error message when the device is unable to recognize pupils in the camera image. Sometimes the pupils are partially covered by hair, lashes or eyelids.

Reason: To obtain a measurement both pupils must be completely visible and the infrared light of the camera must be reflected from the corneas.

Tip: Have an assistant to help with hair management and posturing the child during set-up. When performing measurements through glasses, lift the temple arms off the ears so that the lenses tilt downwards. In this manner, the reflections are directed away from the camera image.

6) Too much IR ambient light.

Cause: Too much interfering light is entering into or is inside the examination room.

Reason: Other infrared light sources are interfering with the device.

Tip: Shut out sunlight and switch off, dim or turn away other light sources that radiate heat.

7) Measurement incomplete.

Cause: This error message occurs when a measurement has started but could not be completed.

Reason: Once a measurement is started it must be completed in 0.5 seconds.

Tip: Check positioning of the child to assure that knees and nose are in line with the camera. Restart the measurement.

8) Corneal reflexes are too dark

Cause: Too little reflected light.

Reason: The measurement takes place with infrared light, which is reflected from the cornea. Where insufficient light is reflected from the cornea, a measurement cannot be performed.

Tip: Darken the screening room so that the pupils become larger and more infrared light is reflected to the camera.

(*) The S12 Model C does provide for the data management of the screening results which are stored on a removable SD Card. The details of this option are beyond this guide.

(**)Special recognition and thanks on the excellent Consent-Referral Form that Vision Committee Chair Lion Phil Sharp created and his tireless work for children's benefit.

OVERALL SCREENING PROCEDURES

There is an overall procedure that has been set up over the years since 2010. It has been tried and modified as needed. It works. The steps, if followed, will cover everything that you need to know and do in order to have a successful screening. There are a number of 'experts' when it comes to setting up and following through with a vision screening. PLEASE do not hesitate to call on any of them. They do have the answers you need or know of someone who does. In no particular order, they are:

Lion Alice Kudo pback@hawaiiantel.net

Lion Al Sasaki ats616@yahoo.com

Lion Steven Onoue steven_onoue@msn.com

Lion Phil Sharp opihi64@gmail.com

There are others who profess to know but, alas, do not. They will have partial information or have modified steps to suit them. Go to the correct sources.

If you go on to the D50 website, you will find most of the information you need under the VISION SCREEN drop down menu which is part of the INFORMATION drop down menu.

This section is in the process of being edited and should be completed shortly.

VISION SCREENING CALENDAR will show you what dates are already taken by another club. This may not be relevant if you are in different zones but it could.

CALENDAR REQUEST is the form you would send to me to enter your screening data on the calendar. Give me a call and I will assist you. 373-3998

This form, along with the calendar, the Critical Line Quickie guide line and the S12 Error messages are the only forms you will need.

For someone going to do a first-time screen,

This D50 Vision Screening Manual will supercede all

set up a screening. I suggest you take someone from the list to go with you to set up the initial screening. I am available – 373-3998.

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