

LuxIQ Protocol for Use in the Home or Clinic Setting by Occupational Therapists & LV Rehabilitation Specialists

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Introduction:

The LuxIQ™ allows low vision rehabilitation and eye care specialists to recommend task and floor lamps and light bulbs that are tailored to the client's lighting level and color temperature preferences. This process requires about 10-15 minutes, depending on the client. In addition to the LuxIQ device, practitioners will need the following equipment and materials:

- Light meter
- Near visual acuity chart (Ex: Lighthouse Near Acuity Chart or Colenbrander Mixed Contrast Chart)
- iPad access LightChooser™ App
- Print reading materials relevant to the client (newspaper, mail, book)
- Lap desk may be useful in the home setting if client is not seated at a table or desk

Protocol:

Step 1: Measure baseline lighting level

- When using the LuxIQ in the home, use the light meter to measure the lighting level at the location where the client reads. This provides a baseline to compare with optimal task light level readings determined by the LuxIQ and is helpful in the client education process.
- Ask the client to sit in the location where they typically read with usual lighting and hold the reading material in their lap (or whatever position they use).
- Place the sensor of the light meter on the surface of the reading material.
- When using the LuxIQ in the clinic, it is also helpful to take a quick light meter reading of the table-top surface to use as a comparison to the lighting levels achieved by the LuxIQ.
- Baseline light meter readings, typically in the range of 75 – 300 lux, may be recorded in a chart format if desired. See p. 4 for example chart.

Step 2: Determine baseline near visual acuity

- Determine baseline near visual acuity under ambient lighting using the Lighthouse Near Acuity Vision Chart or Colenbrander Mixed Contrast Chart.
- Ask the client to read the smallest line they can comfortably read at their preferred focal distance and prompt them to read as far down the chart as possible.
- Record the client's baseline VA OU, using the chart on p. 4 if desired.

Step 3: Determine illumination preferences

- Dim room lighting, if needed.
- Place the LuxIQ over the standard vision chart. Set the Lux slider at 0 and the color temperature slider at 5000°K.
- Turn on the LuxIQ and increase illumination by moving the Lux slider in 500 increments until the client feels the lighting level is optimal. Give the client a few seconds (or as long as needed) to experience each lighting level increment. Ask the client if they are experiencing any concerns with glare or discomfort.

Step 4: Determine color temperature preferences

- Next, ask client if they have a sense of whether they usually prefer a warmer (yellowish) or cooler (bluish) light.
- If a preference for warmer light is indicated, move °K slider to the right at 500 K increments.
- If a preference for cooler light is indicated, move °K slider to the left at 500 K increments.
- If client is not sure of their preference, demonstrate warm and cool light colors by moving the °K slider left and right and proceed accordingly.
- Give the client a few seconds (or as long as needed) to experience each color level increment.

Step 5: Double check illumination and color temperature preference.

- Once the client has identified the most comfortable °K level, adjust Lux slider up 500 and down 500 to be sure the client is content with their selection. You may opt to re-visit adjusting the °K slider up and down 500 as well to confirm the best combined setting for the individual.
- Record the client's lighting level and color temperature preferences, using the chart on p. 4 if desired.

Step 6: Re-test near VA with preferred lighting configuration

- After determining illumination and color temperature preferences, re-test near VA with preferred lighting configuration. Remind the client of the last line they read with ambient lighting. Most individuals will be able to read 1-3 more lines than they could with the typical room lighting.
- Make a point of sharing the change in ability to read smaller text due to enhanced lighting with the client. This will serve as a confidence booster and motivator to pursue lighting recommendations, as this comparison directly shows the benefit of better lighting.

Step 7: Allow client to experience improved lighting with personal reading materials

- Give the client an opportunity to experience the preferred lighting configuration with reading material that is relevant to them by placing newspaper, book or other printed material of their choice under the LuxIQ and ask them to view at their preferred focal distance.
- Ask client for feedback re: impact of optimal lighting on their reading experience. This may also serve as a confidence booster and motivator to pursue lighting recommendations.

Step 8: Provide lamp and light bulb recommendations using LightChooser™ App

- Use the free LightChooser App to convert lighting level and color preferences to task/floor lamps and light bulb recommendations. (For more information about downloading this App, see www.jasperridge.net.)
- Enter client name, clinician name and Lux and color preference values. Click on “Dispense Lamps”; a list of a variety of lamps in a range of prices will appear. The list also includes the distance between the light source and reading material that is needed to attain the prescribed lighting level.
- Alternately, click on “Select Light Bulbs” to access a light bulb calculator that provides recommendations for light bulbs the client can use with a lamp they already have.
- Click on icons in upper left corner to either email or print a pdf of the page.

Step 9: Follow up & re-assessment

- When the client obtains the lamp from list of recommended options, follow up is recommended to ensure proper positioning of the task lamp. Practitioners should also address positioning of the client and reading material relative to the task lamp.
- Periodic re-assessment of light level and color preferences is indicated if the client’s vision changes over time or to observe disease progression.

Sample Recording Charts and Results

| Ct. Name | Date | Baseline lighting (lux)/ Location | Working Distance | Baseline VA Chart 1 High Contrast | Lux Pref | K° Pref | Post VA Chart 2 High Contrast | Comments |
|------------|--------|-----------------------------------|------------------|-----------------------------------|----------|---------|-------------------------------|--|
| Bill Jones | 7.1.14 | 75 Kitchen table | 12" | 20/200 OU | 2500 | 6000 | 20/125 OU | Ct. reported glare with higher Lux levels. |

| Ct. Name | Date | Baseline lighting (lux)/ Location | Working Distance | Baseline VA Chart 1 Hi/low contrast | Lux Pref | K° Pref | Post VA Chart 2 Hi/low contrast | Comments |
|------------|--------|-----------------------------------|------------------|-------------------------------------|----------|---------|---------------------------------|---|
| Mary Smith | 7.1.14 | 125 Easy chair in living room | 10" | Hi: 20/160 Low: 20/200 | 3000 | 4500 | Hi: 20/100 Low: 20/125 | Ct. receptive to prescribed bulb recommendation. Will re-position existing lamps due to limited financial resources |