

# PPT (Photic Phenomena Test) Operation Manual

This manual summarizes the procedures required to reproduce the Photic Phenomena Test (hereafter referred to as PPT) as reported in a paper published in [PLOS ONE](#).

Ukai Y, Okemoto H, Seki Y, Nakatsugawa Y, Kawasaki A, Shibata T, Mito T, Kubo E, Sasaki H. Quantitative assessment of photic phenomena in the presbyopia-correcting intraocular lens. PLoS One. 2021 Dec 1;16(12):e0260406. doi: 10.1371/journal.pone.0260406. PMID: 34851975; PMCID: PMC8635348.

## <Required Operating Environment>

The application requires one of the following three environments to function correctly.

**\*Please note that using environments other than those listed below may result in operational issues.**

### ■ OS: Windows 11, Browser: Chrome

If you are using a Windows device (including tablets), please use Windows 11 as the OS and the latest version of Chrome as the browser.

### ■ OS: OS X 10.10 (Yosemite) or later, Browser: Safari

If you are using a Mac, please use OS X 10.10 or later and the latest version of Safari as the browser.

### ■ OS: iPadOS 13.1 or later, Browser: Safari

If you are using an iPad, please use iPadOS 13.1 or later and the latest version of Safari as the browser.

Additionally, this application operates on a web browser, so an online connection is required. Please ensure you have a wired or Wi-Fi connection.

## 1. Measurement Environment

**Illuminance (room):** Mesopic (twilight) condition (7 lux)

**Test distance:** 2.0 m from the subject to the light source

**Light source luminance:** 45,241 cd/m<sup>2</sup>

## 2. Procedure (Standard Protocol)

Allow the subject to undergo dark adaptation for 5 minutes in the mesopic examination room.

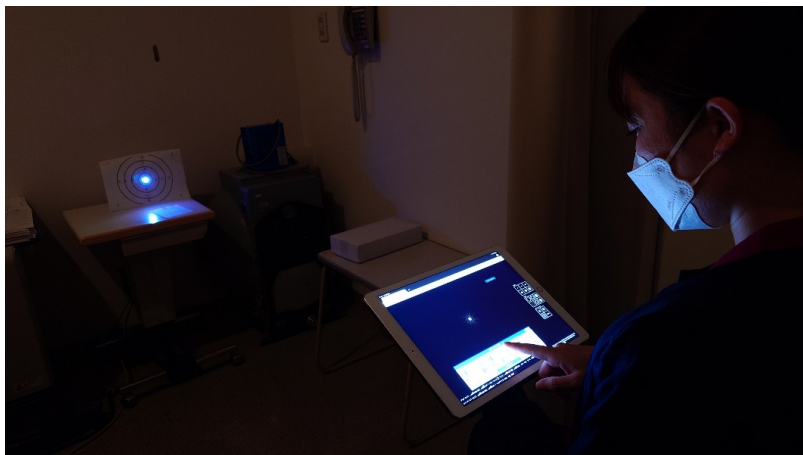
Adjust the test distance to 2.0 m and have the subject wear fully corrected trial lenses with an additional +0.50 D.

Present the light source and have the subject reproduce the perceived appearance on the screen in the following order: **glare**, **halo**, and **starburst**.

*At the start of each examination, it is recommended to present the same initial screen before beginning the test.*

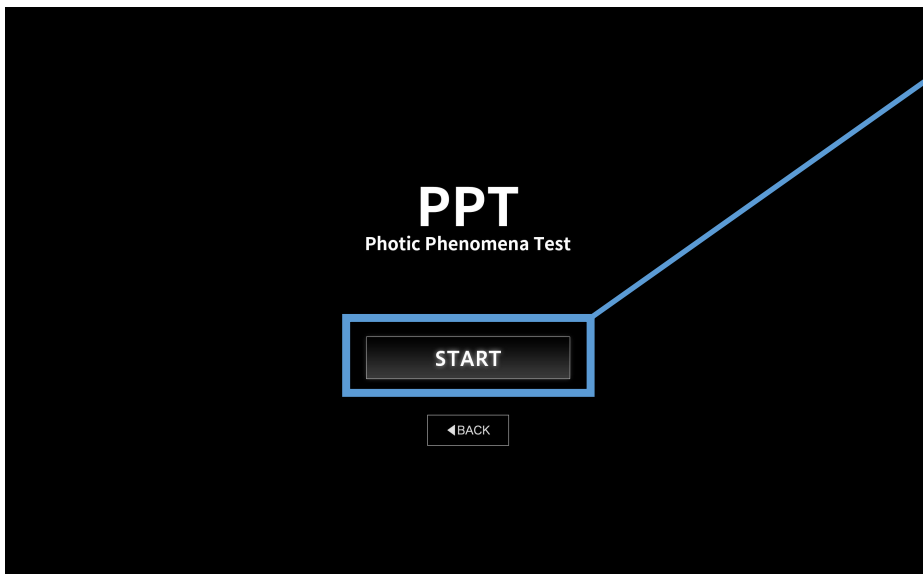
*It is recommended to perform measurements in the order of **size** → **brightness**.*

After completing the measurements, record all measurement values.





First, to navigate to the PPT top screen, please press the PPT button.



Pressing the SART button will launch the PPT application. To return to the top screen, please press the BACK button.

Start subject registration and the questionnaire.

Begin changing the photic phenomena.

Record the subject information, questionnaire results, and photic-phenomena parameters.

Toggle colors and scales on/off.

Reset Settings  
(New in v4.2)

Download the recorded database.

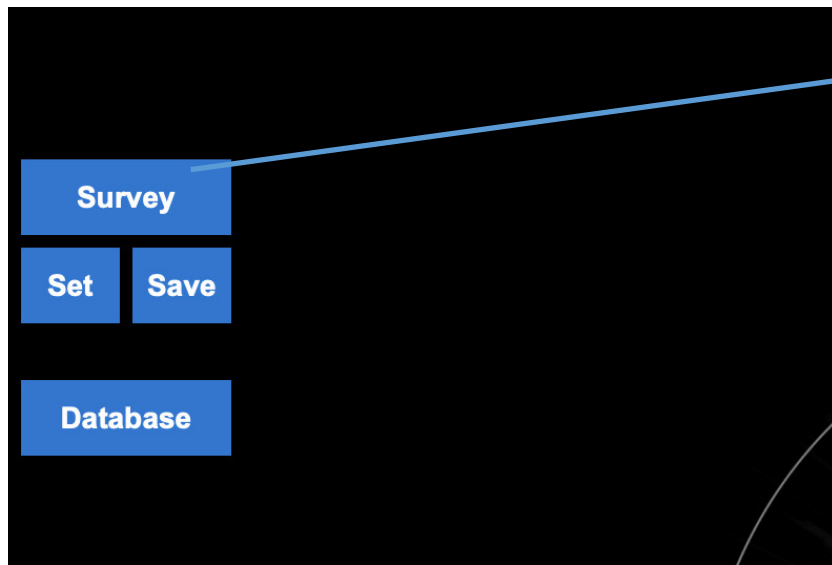
Display the photic-phenomena parameters.

Survey  
Set Save  
Database

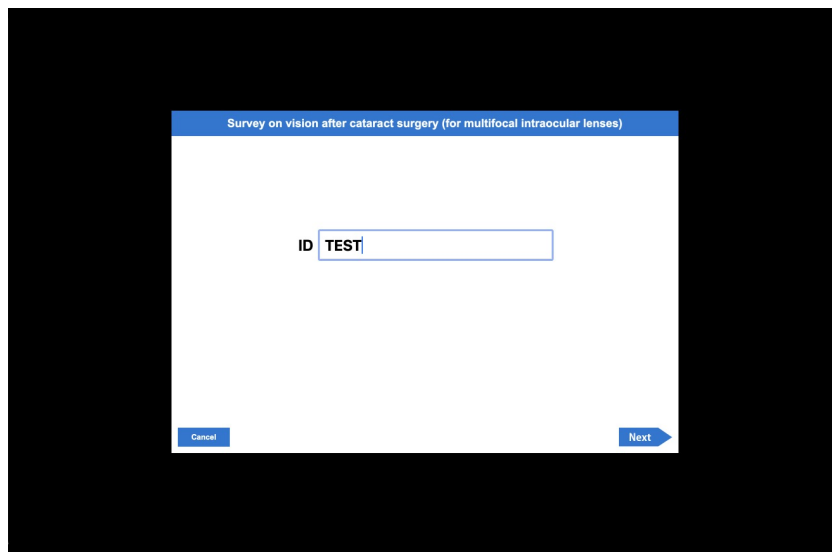
W R G B  
Scale ON  
Reset

Glare Size : 0.06 Brtns : 1.00 | Halo Type : Size: 0.18 Brtns: 0.50 Thickness : 4.00 # : 8 Spacing : 6.90 Dimming : 1.00  
Starburst Size : 0.50 Brtns : 0.50 | Haze Size : 0.00 Brtns: 0.00

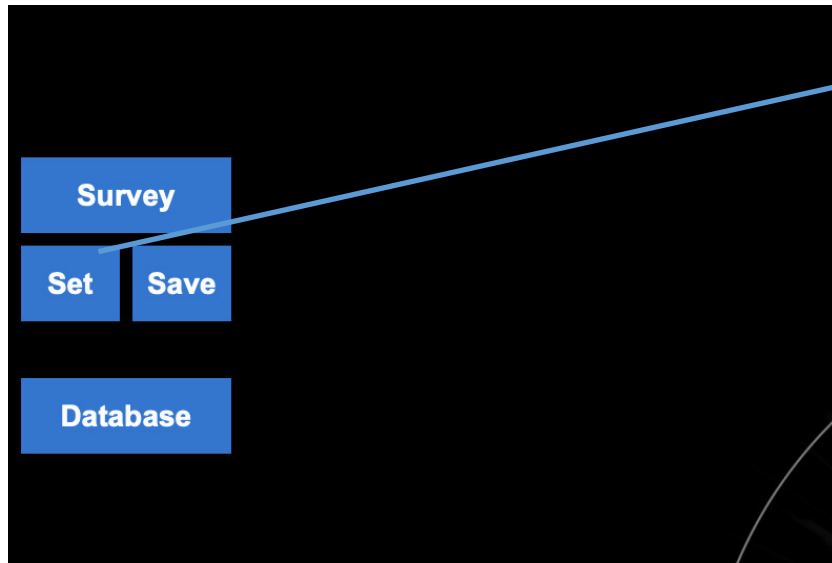
These images are provided for illustrative purposes only.  
The simulation is an image and it does not guarantee  
how the real situation looks.



Pressing the Survey button will open the subject information registration window.



Enter the required information, press the Next button to proceed with the questionnaire, and complete it.

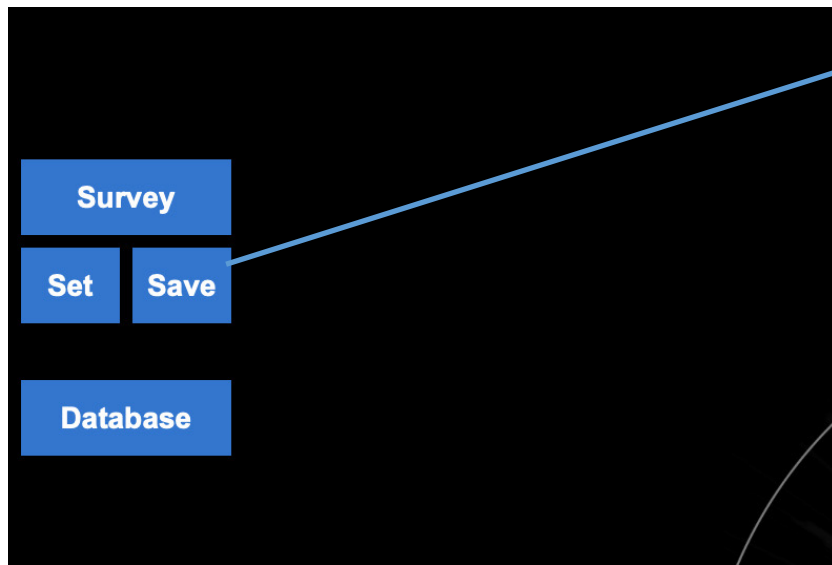


Next, press Set button to enable modification of the photic phenomena.



Adjust the settings while eliciting feedback on the subject's visual perception.  
You can easily make changes by pressing the presets on the right; please use them as needed.  
Pressing the Customization button allows fine adjustment of the halo.

Press the Close button to finish.



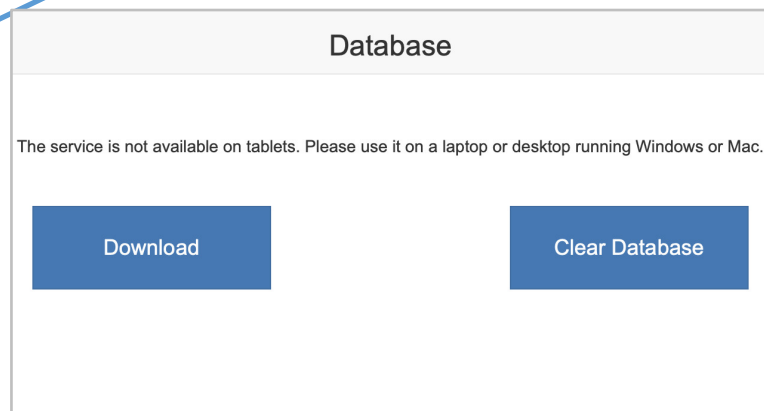
Pressing Save button will save the current subject information, questionnaire data, and photic-phenomena parameters.

To proceed to the next subject, press the Survey button again and repeat the same procedure.



Pressing the Database button allows you to download all registered information to date in CSV format.

*Please note that the data will be deleted if the browser cache is cleared.*



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Contact Email: [info@vs-eyesarc.org](mailto:info@vs-eyesarc.org)