

NPi®-300 Pupillometer

Quick Start Guide



Power Up

Charging the NPi-300 Pupillometer

1. Connect the NPi-300 Power Adapter to the NPi-300 Charging Station and plug into a power outlet. The indicator light at the base of the Charging Station will display a white color to indicate power has been established to the Charging Station.
2. Place the NPi-300 into the Charging Station. The Charging Station indicator light will turn **blue**, and the LCD screen will display within the battery icon, indicating the NPi-300 is charging. The indicator light will turn **green** when fully charged.

NOTE: Prior to first-time use, ensure the NPi-300 is fully charged and Date/Time are set accurately (refer to Setting Date and Time section).



3. The NPi-300 Pupillometer goes to sleep in the Charging Station to efficiently charge:

- The NPi-300 will initially turn ON (or remain on) upon being placed in the Charging Station.
- After 5 minutes in the Charging Station, the NPi-300 will go to sleep to efficiently charge. The screen will go dark. If any button is pressed or the screen is touched within this 5-minute window, the time period before the NPi-300 goes to sleep is extended by an additional 5 minutes.
- To use the NPi-300 after it has gone to sleep in the Charging Station, simply remove from the Charging Station, and it will wake up automatically.



4. If the NPi-300 Pupillometer is not in the Charging Station, to conserve battery life it will:

- Go into sleep mode after 5 minutes. To turn ON, touch the screen or push any button.
- Power down after 20 minutes.



Turning On the NPi-300 Pupillometer

5. If the NPi-300 is out of the Charging Station and has powered down, press (do not hold) the **On/Off** button on the side of the device.



Setting Date and Time

- To modify the date and time, from the Home Screen, select the **Settings** icon  and then select **Date** or **Time**. Follow the prompts to input the current date and time using 24-hour time configuration and select .
- Customers in the United States have the option to enable **Automatic Daylight Savings Time (DST)** in the **Time** settings. Automatic DST is disabled by default. Automatic adjustments occur based only on US DST regulations and are not updated according to geographic location.

Date and Time Maintenance:

- Regular quarterly maintenance is necessary to ensure date and time are correct. The set date and time will affect the timestamp listed for subsequent patient pupil measurements on the NPi-300 and SmartGuard. Changing the date and time will not alter the timestamps on previous measurements.
- Immediately adjust the time after any time change if Automatic DST is disabled.



Returning to the Home Screen

- Press the **RIGHT** or **LEFT** buttons (green circles) to return to the Home Screen.



Measuring Pupils Using the NPi-300 Pupillometer

The NPi-300 provides objective pupil size and reactivity data independent of examiner – removing variability and subjectivity. The NPi-300 expresses pupil reactivity numerically as the Neurological Pupil index, NPi (see the Neurological Pupil index Scale below).

The Neurological Pupil index (NPi) Pupil Reactivity Assessment Scale

Measured Value*	Assessment
3.0 – 4.9	Normal/“Brisk”
< 3.0	Abnormal/“Sluggish”
0	Non-Reactive, Immeasurable, or Atypical Response

*A difference in NPi between Right and Left pupils of ≥ 0.7 may also be considered an abnormal pupil reading

*Per the Neurological Pupil index (NPi) algorithm

Taking a Bilateral Pupil Measurement

- Two components are required to initiate a bilateral pupil measurement:
 - NPi-300 Pupillometer (Ex. 9)
 - Single Patient Use SmartGuard (Ex. 10)

Open a new SmartGuard. Slide the SmartGuard onto the NPi-300 with the foam pad at the bottom (Ex. 9). There will be an audible click when the SmartGuard is properly positioned.



Associate SmartGuard with Patient ID

For the first patient use, the SmartGuard requires a one-time association of the Patient ID. For subsequent measurements, the Patient ID will be permanently saved on the SmartGuard, which can store up to 168 bilateral pupil measurements of the associated patient.

11. There are two options for associating the Patient ID to the SmartGuard. Select **Scan Code** to scan the patient's wristband barcode using the NPi-300 Incorporated Barcode Scanner, or select **Manual ID** to manually enter the Patient ID with either alpha or numeric characters.

Scan Barcode Using Incorporated Barcode Scanner

12. Select **Scan Code**. The NPi-300 will emit a white light from the top of the device. Center the light over the barcode until you hear an audible beep.

13. The Patient ID will now appear on the NPi-300 touchscreen. Confirm the patient information is correct and select **Accept**.

Manual Entry of the Patient ID

14. Select **Manual ID**. Using the touchscreen or keypad, enter the alpha or numeric Patient ID and select . Confirm the patient information on the screen is correct and select **Accept**.

Measure Pupils

15. Position the NPi-300 with SmartGuard at a right angle to the patient's axis of vision, minimizing any tilting of the device.

16-17. Press and hold either the **RIGHT** or **LEFT** button until the pupil is centered on the touchscreen and the display shows a green circle around the pupil. A green frame around the screen indicates the pupil is properly targeted (Ex. 16), while a red frame indicates the pupil needs to be re-centered on the screen before the measurement is initiated (Ex. 17). Once the green frame appears, release the button, holding the NPi-300 in place for approximately three seconds until the results screen is displayed.

18. Repeat the scan procedure for the patient's other eye to complete the bilateral pupil exam.

19. When the bilateral pupil exam is complete, the NPi-300 measurement results will be displayed in green for the Right eye and in yellow for the Left eye. The NPi-300 is defaulted to open "Results Page 1," displaying NPi and Size measurements, following the completion of the Bilateral Pupil Measurement.

20-21. Using the touchscreen or keypad, select  to view "Results Page 2" with additional Pupillary Measurement Parameters (Ex. 20). Select  to view the Pupillary Light Reflex Waveform (Ex. 21). To return to "Results Page 1" with NPi and Size, simply select .

22. From the Results screen, select the **Video** icon  to view the playback of the reading.

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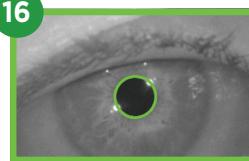
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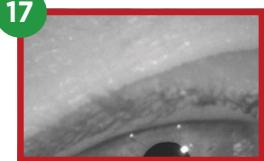
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18

JID: 300		06/01/21 11:11:43	
		Right	Left
NPi	4.1	Scan	
Size [mm]	4.43	L. Eye	
  			

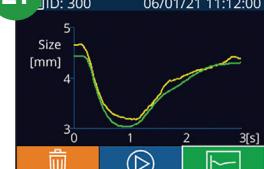
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JID: 300		06/01/21 11:12:00	
		Right	Left
NPi	4.1	> 4.0	0.1
Size [mm]	4.43	< 4.65	0.22
  			

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JID: 300		06/01/21 11:12:00	
		RIGHT	LEFT
NPi	4.1	4.0	R > L 0.1
Size [mm]	4.43	4.65	L > R 0.22
Min [mm]	3.03	3.17	L > R 0.14
CH (%)	32	32	
CV (mm/s)	2.97	2.85	
MCV (mm/s)	4.18	4.16	
LAT [s]	0.23	0.20	
DV (mm/s)	0.93	1.40	
  			

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Trend for Changes

23-24. To review the patient's previous bilateral pupil measurements stored on the attached SmartGuard and Trend for Changes:

- From the Home Screen: Select the **Records** icon 
- Select the **SmartGuard** icon 
- The most recent measurement will appear first. Press the **DOWN Arrow** button  on the keypad to scroll through all previous patient measurements stored on attached SmartGuard.

NPi Summary Table

25. The NPi Summary Table provides a quantitative summary from the attached SmartGuard of the number of Right and Left Eye NPi Measurements in the following categories:

- $NPi \geq 3$
- $NPi < 3$
- $NPi = 0$
- $\Delta NPi \geq 0.7$

To view the NPi Summary Table:

- Return to the Home Screen by pressing either the **RIGHT** or **LEFT** buttons on the keypad.
- Select the **Trend** icon 

NPi/Size Trending Graph

26. To visualize the trend of all NPi and Size measurements taken on the attached SmartGuard over 12-hour time windows:

- Navigate to the NPi Summary Table from the Home Screen by selecting the **Trend** icon .
- Tap anywhere on the screen to access the NPi/Size Trending Graph.
- Move forward and backward in time by pressing  or .

Power Off

To turn the NPi-300 Pupillometer OFF, either:

- Navigate to the Home Screen and select the **Power** icon 
- Press and hold the **On/Off** button 

The NPi-300 may occasionally require a System Reboot. To reboot, simply press and hold the **On/Off** button 

Cleaning and Maintenance

Isopropyl alcohol (IPA)-based cleaning solutions, in formula concentrations up to 70% IPA, are recommended for use in cleaning the NPi-300 Pupillometer and NPi-300 Charging Station. Please refer to the Cleaning and Maintenance Instructions included in the **Instructions For Use**, which can be found at NeurOptics.com.

Ordering Information

NPi-300-SYS	NPi®-300 Pupillometer System
SG-200	SmartGuard®
SGR-01	SmartGuard® Reader (Please contact Customer Service to determine the specific reader compatible with the hospital requirements)

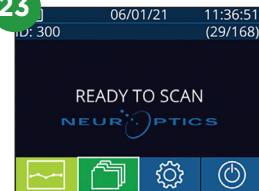
For additional information regarding our product, please refer to the **Instructions For Use**, which can be found at NeurOptics.com.



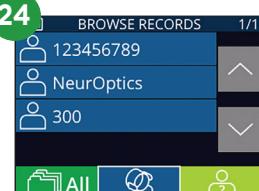
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leaders at the point of care

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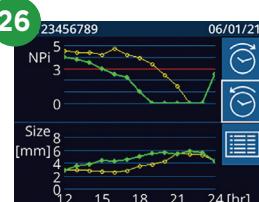
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Summary	RIGHT	LEFT
$NPi \geq 3$	27	32
$NPi < 3$	5	3
$NPi = 0$	5	2
$\Delta NPi \geq 0.7$	0	5

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