

 **ESSILOR**  
INSTRUMENTS

**VISION-R 800**

  
DIGITAL OO  
REFRACTION

High-resolution  
smart phoropter

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INSTRUMENTS



The Vision-R® 800 smart phoropter integrates high-resolution optical modules and advanced control algorithms to perform refractions from traditional 0.25 D down to 0.01 D resolution in both sphere and cylinder.

By measuring dioptric vision sensitivity, the Vision-R® 800 enables precise use of the patient's perceptual threshold for precise final adjustments. It allows several types of refraction procedures: manual refraction using gold-standard tests, automated routines via embedded Smart Programs and customized sequences.

The continuous power variation offers a smooth patient experience with no break in vision. Real-life inspired images, in addition to gold-standard vision charts, change the way the patient discovers their new prescription.



## 1. Empower your refraction practice

### Precision & Efficiency

Thanks to the exclusive optical modules and Smart Programs, you can measure your patient's dioptric sensitivity to effectively personalize the refraction outcomes to 0.01 D.

### An extensive range of visual tests

You can expand your capabilities with a comprehensive suite of embedded visual tests (e.g. Binocular Vision, Charts, etc.), enabling you to deliver a tailored refraction process – all from one refraction system. To efficiently streamline your workflow and enhance your daily practice and habits, you can develop your own programs using the tests library.

### A comprehensive range of visual acuity charts

- Logarithmic, Decimal, Snellen types
- Letters, Numbers, Tumbling E, Landolt C, HOTV
- The Auckland Optotypes
- Wide range of customization: Crowding effects, Pointers, Low or Reverted contrasts, Duochrome filter
- Record the visual acuity directly from the Vision-R® 800 console



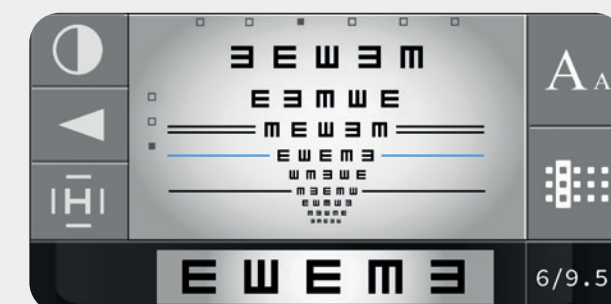
Pointers



Crowding effects



The Auckland Optotypes



Tumbling E

### A wide range of binocular vision testing

- Binocular perceptual equalization: prismatic, polarized, red/green, letters
- MKH complete testing sequence: cyclophoria, Stereo Acuity Test D10 by Stollenwerk up to 4.8", horizontal and vertical aniseikonia
- Binocular vision and accommodation: Von Graefe dissociated phorias, associated phorias, Maddox, Convergence Amplitudes, NRA / PRA, LAG, Fusion



Visual acuity records



Stereo Acuity Test D10 by Stollenwerk



Associated phorias

## A powerful optical module

The exclusive optical module provides a seamless refraction experience thanks to continuous power variations: variable step size from 0.25 D up to 0.01 D in sphere and cylinder with 1° axis. Silent instantaneous power changes with no vision interruption leads to patient comfort.

Digital Infinite Refraction™ technology synchronously compensates and makes necessary adjustments in sphere, cylinder and axis to refract in 3 dimensions. Final results can be reached more directly than with traditional methods.



## Comfort thanks to ergonomic controls

Refract intuitively thanks to the minimalistic physical phoropter controls. Equipped with a 10.4" wide touchscreen and keyboard, the system allows you to run complete refraction sequences while focusing on the patient. The user interface is designed to gain efficiency when performing manual examinations.



## 2. Deliver high-resolution examinations

### From standard to high-resolution increments

Choose your preferred refraction step size: 0.01 D with Precise Programs or 0.05 D to 0.25 D and more manually.

### Digital vertex distance measurement

Integrated bilateral vertex distance measurement allows automatic compensation of the correction and ensures precise patient positioning, contributing to a personalized and accurate refraction examination.

The vertex distance control with bilateral cameras ensures precision throughout the examination. Automatic compensation to the reference vertex and screen distance calculates the true prescription. Multiple customizable export formats are available for ophthalmic spectacle lenses (e.g., 12 mm) or contact lenses (0 mm), using manufacturers' reference back vertex distances. Data can be exported in 0.01 D or 0.25 D resolution, with or without compensation for chart system distance proximity.



## Precision at the heart of the vision care journey

Most patients have greater sensitivity than the traditional 0.25 D increments during the refraction examination\*.

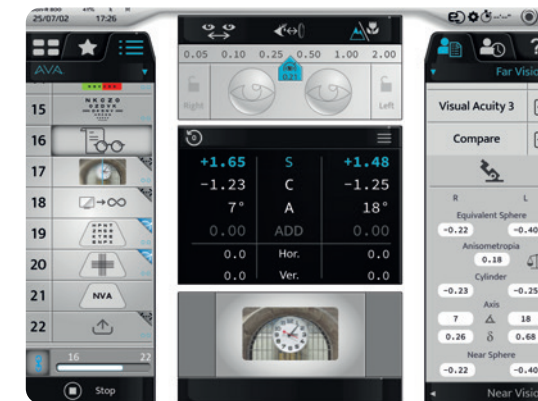


## Prescribe Vision Performance (PVP™)

With PVP™ (Prescribe Vision Performance), the Vision-R® 800 enables measurement of personal dioptric sensitivity\*\* during the examination. This individual parameter is used to perform fine adjustments, which can be perceived by the patient.

When performing final subjective adjustments, the PVP™ image can be displayed to guide the patient's perception towards comfort and performance.

This visual target, developed by vision scientists, contains several cues in addition to high-contrast visual acuity: textures, line orientations, diverse spatial frequencies, and colors, in a real-life inspired scene.



PVP™ user interface



PVP™ visual target

\*Sensitivity to high-resolution increments during the eye examination was demonstrated in internal and independent studies:  
 - EssilorLuxottica - Data on file. 2016. Based on a Study conducted by Essilor - N=146 patients between 18yo and 65yo - Singapore.  
 - Jia, T., Tilla, D., Papas, E., Stapleton, F., Zhen, Y., Conrad, F., & Tan, J. (2023). Comparison of vision performance of spectacles prescribed to 0.05D versus 0.25D steps. Clinical and Experimental Optometry, 107(1), 66-74.  
 \*\*Calculation of the patient sensitivity thanks to Vectorial refraction and psychophysics:  
 - Claim of vision superiority only with AVA™ lenses - Study: AVA™ in-Life Concept Use Test - Independent third party - France - 2021 - N=105.  
 - Essilor International - Data on file 2020 - Based on the study Essilor AVA™ clinical evaluation of patients' experience by a 3rd independent party, including N=116, performed in the US.

3. Enhance your refraction capacity

In addition to manual refraction operation, the Vision-R® 800 phoropter offers multiple algorithm-based Smart Programs.

The Fast & Secure programs are designed and clinically tested to provide a refraction time under 3 minutes for eligible patients, yielding similar outcomes as a gold standard manual refraction<sup>1</sup>. More time can be allocated to extra examinations and screening of vision needs.

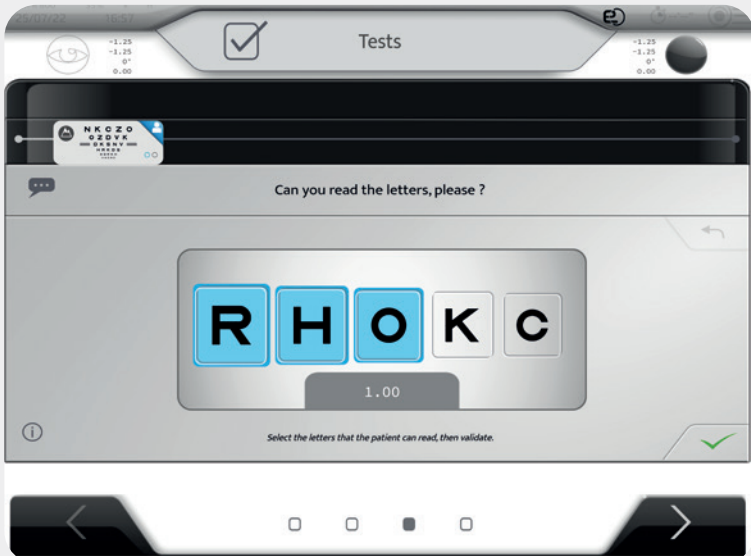
Fast & Secure built-in programs

- Semi-auto refraction: universal program for digital phoropter usage
- Smart Addition: 3-step near addition determination
- Smart Check: quick refraction without fogging
- Smart Complete: quick refraction with fogging



Easy Refraction Mode™\*

Whether you are looking for a fully-guided refraction experience or to implement a cross-functional workflow in your practice, the Easy Refraction Mode™ can help you to raise the refraction capacity. The Easy Refraction Mode™ is clinically designed to ease the prescription process by performing a complete refraction sequence including visual acuities and the patient's subjective preference.



It includes:

- a dynamic refraction program automatically adapting the testing sequence to the patient's answers
- a full-screen interface with clear instructions to follow
- a concise refraction report with key information
- an export feature to other Vision-R® 800 phoropters or Vision-S™ 700 refraction station, via LAN or QR code, supporting a multi-room patient journey



4. Make your patients see the difference

Your patient enjoys a smooth view and uninterrupted vision throughout the examination. Thanks to the Digital Infinite Refraction™ technology, power changes happen without any break in vision.

Occluders can be personalized, ranging from masks to fogging lens of any power, enabling to manage a customized binocular refraction approach.

Final comparison step

At the end of the refractive exam, the comparison feature allows to demonstrate to the patient the effect of their new correction on real-life inspired scenes and visual charts. Switch between the new refraction and the previous correction with a single click for a smooth comparison. Explain the benefits of the new correction to your patient, before prescribing.

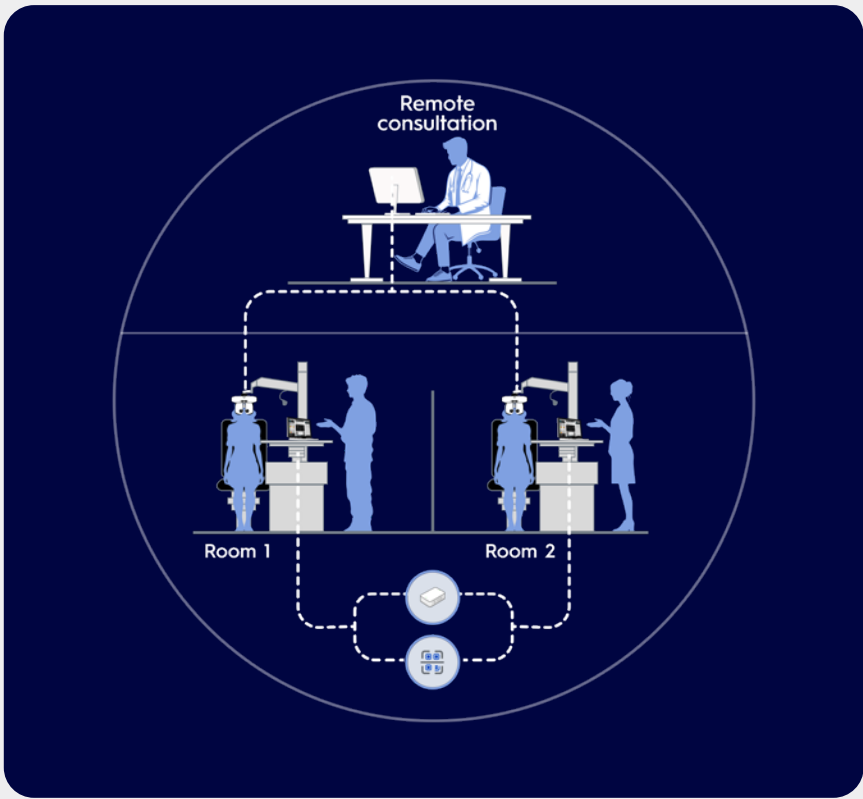


A fully-connected refraction system

You can create workflows with the Vision-R® 800 and other products from the range that will help you gain refraction capacity:

- On-site multi-room journey where a preliminary refraction examination session can be shared to all other rooms in the practice through LAN, compatible EHRs, QR code.
- Remote consultation is possible by taking control of all phoropter functions from a distant practice through compatible platforms\*.

The Vision-R® 800 shares all input data and measurements performed (recorded refractions, visual acuities, binocular vision tests) in one single export. Daily examination data can be stored locally in a temporary memory to be reused if needed.



\*Easy Refraction Mode™ is an option, its availability varies depending on local languages and regulations in different markets. Contact your local Essilor Instruments distributor.  
1 - Essilor International. Data on file 2021- VISION-R™ 700 clinical validation study performed by a third independent party, in Portugal including N=41 patients (20-65 years old).

\*Remote refractive care is only available with a compatible platform and where permitted by local regulations.

# Technical specifications

## Centering

|                         |                                                                                                           |
|-------------------------|-----------------------------------------------------------------------------------------------------------|
| Interpupillary distance | 49.0 to 80.0 mm at far distance (in 0.50 mm steps)<br>55.0 to 83.0 mm at near distance (in 0.50 mm steps) |
| Convergence             | Automatic, in relation to the near vision chart location and patient's interpupillary distance            |
| Vertex distance         | From 4.0 to 30.0 mm in 0.5 mm steps, monocular, measured by cameras                                       |

## Measuring Range

|                      |                                                                                                                                  |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Sphere               | From -20.00 D to +20.00 D                                                                                                        |
| Cylinder             | Up to 8.00 D                                                                                                                     |
| Increments step size | · "Standard" mode: 0.25 D increments, adjustable to 0.05, 0.10, 0.25, 0.50, 1.00 and 2.00 D<br>· "Smart" mode: 0.01 D increments |
| Axis                 | 0° to 180° in 1° increments, with adjustable steps to 5°, 10°, 20°, 45° and 90°                                                  |
| Prism                | 0Δ to 20Δ in 0.1Δ increments, with adjustable steps to 0.5, 1, 2, 3 and 6Δ                                                       |

## Auxiliary Lenses

|                         |                                                                                                   |
|-------------------------|---------------------------------------------------------------------------------------------------|
| Occluders               | Dark                                                                                              |
| Pin hole                | Yes                                                                                               |
| Retinoscopic lenses     | +1.50 D, +2.00 D (powered by optical modules)                                                     |
| Fog lenses              | +1.50 D, +2.00 D and personalized (powered by optical modules)                                    |
| Jackson cross cylinders | ±0.25 D, ±0.50 D (powered by optical modules)                                                     |
| Fixed cross cylinders   | ±0.50 D (powered by optical modules)                                                              |
| Prisms                  | 3Δ base up, 3Δ base down, 6Δ base up, 10Δ base in<br>(powered by varying prisms / diasporameters) |
| Maddox rods             | Red, horizontal and vertical                                                                      |
| Red/green filters       | Red on the right eye, green on the left eye                                                       |
| Polarized filters       | Linear                                                                                            |

## Dimensions And Weight

|                             |                                                                                                                                 |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Head of the phoropter       | Width: 29.6 cm at top - 21.9 cm at bottom / height = 22.2 cm<br>Depth: 8.4 cm at top - 6.5 cm at bottom<br>Total weight: 3.5 kg |
| Console (keyboard + screen) | Keyboard: 28x22 cm<br>Screen display: 10.4"<br>Total weight: 3.0 kg                                                             |
| Power supply                | Length: 16.3 cm<br>Width: 19.3 cm<br>Depth: 5.8 cm<br>Total weight: 1.0 kg                                                      |



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Vision-R® 800 is a EU Class I medical device intended for Optometry.  
Manufacturer: Essilor International. For professional use only, read  
attentively the instructions for use. As improvements are made, these  
specifications are not contractually binding and may be modified  
without prior notice.

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