

Simpler, Lighter & Faster VOG goggles from NKI The Falcon™ VOG: Improving the Science to See™

Introducing another NKI innovation, leading the market...AGAIN! The I-Portal® Falcon™ VOG, our newest goggle, helps clinicians with a simpler setup, an enhanced eye image capture for a wider range of patient faces, lighter weight for greater patient comfort, and optional high speed data capture (adjustable up to 500Hz.)

Effective immediately, all new I-Portal NOTC or VNG systems will ship with the 100Hz version of the Falcon VOG goggle. At a later date any Falcon VOG can be upgraded to the high speed option!

The key technological advancement which permits this leap in performance is the expanded viewing area of two new high speed USB3 cameras plus these cameras' ability to autoselect the "Area of Interest" without action by the clinician using NKI's patented technology. The benefits of these combined technologies are many:

1. Dramatic expansion of the range of measurable IPD (interpupillary distance) making the Falcon VOG the right choice for narrow faces and most children.
2. Elimination of mechanical adjustments of camera position permitting easy setup and quick calibration.
3. Simplification of the mechanical design eliminating weight and pressure on the nose bridge. While NKI already had one of the lightest VOG's on the market, we eliminated another 10%, now only 244 grams, increasing patient acceptance further.
4. Enabling collection of high speed data capture enabling measurements of faster eye movements.

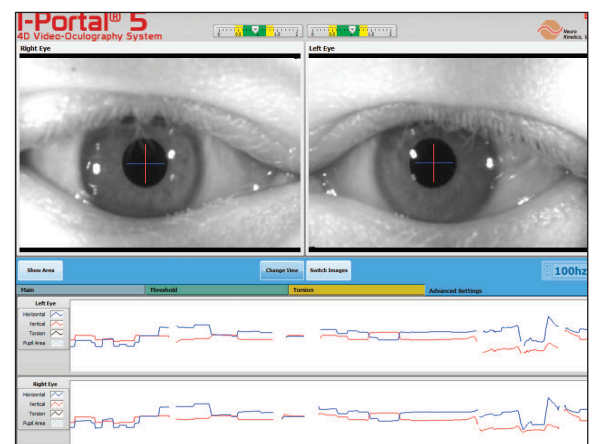
As you would expect the Falcon VOG maintains all of NKI's unsurpassed 4D performance including: precise horizontal, vertical, pupil area, and torsional eye data.

For existing VNG's, the Falcon VOG is plug and play compatible. For existing NOTC's, the system can be converted by a qualified NKI technician. The Falcon VOG requires VEST™ 7.5.2 and I-Portal 5.0 versions or higher.

Call or email us for a quote, we think you will like our value proposition!



- 100 Hz Standard, upgradable to 500 Hz data acquisition
- Only 244 grams! 10% lighter!
- Highest quality eye image and resolution
- Patented technology
- IPD range of 50 to 75mm, covering
- +99% of the population above age 5.
- Compatible with existing I-Portal
- NOTC and VNG systems



System Specifications

Video System

Eye measurements:	Horizontal, vertical, torsional and pupil area
Image acquisition:	USB3 compatible digital camera; High resolution grayscale image
Spatial resolution:	Between 0.02 and 0.1 degree
Linearity error:	Vertical: $\pm 5\%$
Horizontal:	$\pm 5\%$
Torsional:	$\pm 5\%$
Measurement range:	Vertical: $> \pm 20$ degrees Horizontal: $> \pm 30$ degrees Torsional: $> \pm 15$ degrees

Measurement Algorithms

Center of mass determination of pupil center location: horizontal and vertical Geometrically compensated polar cross-correlation: torsional (rotation around line of sight)

Inter-pupillary Distance (IPD)

IPD between 50mm to 75mm

Nominal mean IPD*:
Adults - 62mm nominal
5-7 year old children - 55mm nominal

*Variation and extrema of human interpupillary distance per SPIE (International Society for Optics and Photonics) publication: Proc. SPIE 5291, Stereoscopic Displays and Virtual Reality Systems XI (21 May 2004).

Subject Field of View

Non-occluded: $\sim 120^\circ$ horizontal & $\sim 40^\circ$ vertical

Illumination

Pulsed modulation controlled IR (infrared) emitting diodes at a wavelength of 940 nm and an intensity of < 10 mW/cm²

Safety

Patient is isolated from all internal voltages ($< \text{or} = 5$ Vdc) and ground

Goggle Weight

Weight: 244 grams

Camera Power

Power sourced from computer through USB3 port