



### Optovue Optical Coherence Tomography

<b>Specific Instrument</b>	Optovue
<b>Measures/Output</b>	Anterior segment/retinal/macula/optic nerve head cross-section and morphology, macular thickness, peripapillary retinal nerve fibre layer thickness.
<b>Sample clinical use</b>	Lasik; keratoconus; age-related macular degeneration; diabetic retinopathy; glaucoma; retinal dystrophies.



### Pascal Tonometer

<b>Specific Instrument</b>	Pascal dynamic contour tonometer
<b>Measures/Output</b>	Measures intraocular pressure by a method which reduces the effect of corneal properties on the measurement.
<b>Sample clinical use</b>	Glaucoma



### Pachmate Ultrasonic Pachymetry

<b>Specific Instrument</b>	DGH pachmate
<b>Measures/Output</b>	Total corneal thickness.
<b>Sample clinical use</b>	Glaucoma assessment; corneal disorders.



### Psychophysical Visual Testing \*

<b>Specific Instrument</b>	Custom visual psychophysical testing suites using the Cambridge Research System.
<b>Measures/Output</b>	Quantitative study and measure of visual perception of both monocular sensory and binocular sensory processes. Provides for threshold-level assessment of visual functions that are known to be affected in ocular disease.
<b>Sample clinical use</b>	To investigate suspected anomalies of colour vision, spatial or temporal vision (including contrast sensitivity), higher order visual processing (hyperacuity, motion perception) and binocular vision. Testing allows for early detection and quantification of small changes in visual function over time.



### Tomey A-Scan and B-Scan Ultrasonography

<b>Specific Instrument</b>	UD-6000a
<b>Measures/Output</b>	A-Scan biometry and B-Scan eye cross-section/morphology.
<b>Sample clinical use</b>	Assessment for cataract surgery; posterior eye tumours; optic disc drusen.

\* Available from August 2010

#### Centre for Eye Health

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# Centre for Eye Health

## Instrument List for Ophthalmologists

Centre for Eye Health (CFEH) provides access to the latest diagnostic instrumentation for assessing the structural and functional integrity of the eye and visual pathways. Below is a list and brief description of the instrumentation (in alphabetical order) currently available for use upon referral by Ophthalmologists registered with CFEH. It is envisaged that additional equipment will be purchased during the future operation of the Centre.



### Canon Fundus Photography

<b>Specific Instrument</b>	CF-I mydriatic and CR-I non-mydriatic fundus cameras
<b>Measures/Output</b>	En face colour fundus images.
<b>Sample clinical use</b>	Stereoscopic viewing of the optic nerve head; imaging of retinal and choroidal pathology.



### Clinical Visual Electrophysiology Suite \*

<b>Specific Instrument</b>	Diagnosys Espion
<b>Measures/Output</b>	Measures electrical potentials from the retina and the visual cortex using multifocal, pattern and Ganzfeld (full-field) stimulations and provides objective measurement of functional vision.
<b>Sample clinical use</b>	Provides baseline measurements and aids in monitoring side-effects of medication (such as Plaquenil); visual acuity estimation; and monitoring patients with optic neuritis using VEP.



### Confoscan Corneal Assessment

<b>Specific Instrument</b>	Nidek Confoscan 4
<b>Measures/Output</b>	En face confocal microscopy of the cornea with up to 500x magnification.
<b>Sample clinical use</b>	Epithelial/total corneal thickness; corneal substructure and morphology; endothelial cell count.



### GDx Scanning Laser Polarimetry

<b>Specific Instrument</b>	GDx Pro
<b>Measures/Output</b>	Peripapillary retinal nerve fibre layer thickness with ECC and VCC options.
<b>Sample clinical use</b>	Glaucoma; optic neuropathies.

\* Available from August 2010



Haag-Streit Optical Biometry Using Partial Coherence Interferometry	
<b>Specific Instrument</b>	Lenstar LS-900
<b>Measures/Output</b>	Axial length, corneal thickness, anterior chamber depth, crystalline lens thickness, vitreous chamber depth, retinal thickness, IOL power.
<b>Sample clinical use</b>	Assessment for cataract surgery; glaucoma; myopia progression.



Humphrey Visual Field Analysis	
<b>Specific Instrument</b>	HFA Model 750
<b>Measures/Output</b>	Sensitivity of the visual field using white-on-white or blue/yellow stimuli plus GPA analysis.
<b>Sample clinical use</b>	Glaucoma assessment; pathology of the anterior and posterior visual pathways.



Haag-Streit Pachymetry	
<b>Specific Instrument</b>	Haag-Streit OLCR pachymeter
<b>Measures/Output</b>	Corneal thickness to one micrometer accuracy using an interferometry technique.
<b>Sample clinical use</b>	Central corneal thickness.



Humphrey Matrix Perimetry	
<b>Specific Instrument</b>	Matrix
<b>Measures/Output</b>	Sensitivity of the visual field using frequency-doubling stimuli.
<b>Sample clinical use</b>	Glaucoma assessment; pathology of the anterior and posterior visual pathways.



Haag-Streit Video Slit Lamp Imaging	
<b>Specific Instrument</b>	Haag-Streit BQ 900 video slit lamps and Haag-Streit BX photographic slit lamp
<b>Measures/Output</b>	Video and still digital imaging of the anterior segment.
<b>Sample clinical use</b>	Imaging pathology of the anterior segment of the eye.



ImagineEyes Wavefront Aberrometry	
<b>Specific Instrument</b>	IRX3 (Shack-Hartmann)
<b>Measures/Output</b>	Total eye refractive aberrations expressed in Zernike coefficients; modulation transfer and point spread function; Strehl ratio.
<b>Sample clinical use</b>	Assessment for, and post-operative management of; refractive/cataract surgery; keratoconus.



Heidelberg HRT3 Corneal Assessment	
<b>Specific Instrument</b>	HRT III with Rostock Cornea Module
<b>Measures/Output</b>	En face confocal microscopy of the cornea.
<b>Sample clinical use</b>	Epithelial/total corneal thickness; corneal substructure and morphology; endothelial cell count.



Medmont Corneal Topography	
<b>Specific Instrument</b>	E300
<b>Measures/Output</b>	Corneal topography and curvature variations across the corneal surface.
<b>Sample clinical use</b>	Keratoconus; corneal graft; pterygium.



Heidelberg HRT3 Glaucoma Assessment	
<b>Specific Instrument</b>	HRT III with glaucoma module
<b>Measures/Output</b>	Confocal microscopy of the optic nerve head; optic nerve head morphology; peripapillary retinal nerve fibre layer thickness.
<b>Sample clinical use</b>	Glaucoma; optic neuropathies.



Oculus Pentacam Scheimpflug Photography	
<b>Specific Instrument</b>	Pentacam HR
<b>Measures/Output</b>	Anterior chamber cross section and volumetric assessment, total corneal pachymetry, corneal aberration analysis, crystalline lens densitometry.
<b>Sample clinical use</b>	Keratoconus; corneal dystrophies; glaucoma assessment; cataract surgery assessment.



Heidelberg Optical Coherence Tomography	
<b>Specific Instrument</b>	Spectralis OCT
<b>Measures/Output</b>	Retinal/macula/optic nerve head cross-section and morphology; macular thickness; peripapillary retinal nerve fibre layer thickness; fundus auto-fluorescence.
<b>Sample clinical use</b>	Age-related macular degeneration; diabetic retinopathy; glaucoma; retinal dystrophies.



Optomap Ultra-Widefield Fundus Photography	
<b>Specific Instrument</b>	Optomap P20MA
<b>Measures/Output</b>	Ultra-widefield fundus photography.
<b>Sample clinical use</b>	Diabetic retinopathy; peripheral retinal disorders; choroidal nevi/melanoma.