



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



Optomap Wide-Field Fundus Photography	
Specific Instrument	Optomap P20MA
Measures/Output	Wide-field fundus photography
Sample clinical use	Diabetic retinopathy, peripheral retinal disorders, choroidal nevi/melanoma



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



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



Pachmate Ultrasonic Pachymetry	
Specific Instrument	DGH pachmate
Measures/Output	Total corneal thickness
Sample clinical use	Glaucoma assessment, corneal disorders



Tomey A-Scan and B-Scan Ultrasonography	
Specific Instrument	UD-6000a
Measures/Output	A-Scan biometry and B-Scan eye cross-section/morphology
Sample clinical use	Assessment for cataract surgery, posterior eye tumours, optic disc drusen



Instrument List

The Centre for Eye Health will provide 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 currently available for use upon referral by registered health-care practitioners. It is envisaged that additional equipment will be purchased during the future operation of the Centre.



Canon Fundus Photography	
Specific Instrument	CF-1 mydriatic and CR-1 non-mydriatic fundus cameras
Measures/Output	En face colour fundus images
Sample clinical use	Stereoscopic viewing of the optic nerve head, imaging of retinal and choroidal pathology



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



Diagnosys Electrophysiology Suite	
Specific Instrument	Diagnosys
Measures/Output	Electrophysiological assessment of the retina (ERG) and visual pathways (VEP) using full-field and multifocal stimulation
Sample clinical use	Retinal dystrophies, visual pathway lesions



GDx Scanning Laser Polarimetry	
Specific Instrument	GDx Pro
Measures/Output	Peripapillary retinal nerve fibre layer thickness with ECC and VCC options
Sample clinical use	Glaucoma, optic neuropathies



Haag-Streit Digital Goldman Tonometry	
Specific Instrument	AT 900D
Measures/Output	Goldmann tonometry to 0.5mmHg with digital output
Sample clinical use	Intraocular pressure measurement



Haag-Streit Optical Biometry Using Partial Coherence Interferometry

Specific Instrument	Lensstar
Measures/Output	Axial length, corneal thickness, anterior chamber depth, crystalline lens thickness, vitreous chamber depth, retinal thickness, IOL power
Sample clinical use	Assessment for cataract surgery, glaucoma, myopia progression



Haag-Streit Pachymetry

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



Haag-Streit Video Slit Lamp Imaging

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



Heidelberg HRT3 Corneal Assessment

Specific Instrument	HRT III with Rostock Cornea Module
Measures/Output	En face confocal microscopy of the cornea
Sample clinical use	Epithelial/total corneal thickness, corneal substructure and morphology, endothelial cell count



Heidelberg HRT3 Glaucoma Assessment

Specific Instrument	HRT III with glaucoma module
Measures/Output	Confocal microscopy of the optic nerve head, optic nerve head morphology, peripapillary retinal nerve fibre layer thickness
Sample clinical use	Glaucoma, optic neuropathies



Heidelberg Optical Coherence Tomography

Specific Instrument	Spectralis OCT
Measures/Output	Retinal/macula/optic nerve head cross-section and morphology, macular thickness, peripapillary retinal nerve fibre layer thickness, fundus auto-fluorescence
Sample clinical use	Age-related macular degeneration, diabetic retinopathy, glaucoma, retinal dystrophies



Humphrey Visual Field Analysis

Specific Instrument	HFA Model 750
Measures/Output	Sensitivity of the visual field using white-on-white or blue/yellow stimuli plus GPA analysis
Sample clinical use	Glaucoma assessment, pathology of the anterior and posterior visual pathways



Humphrey Matrix Perimetry

Specific Instrument	Matrix
Measures/Output	Sensitivity of the visual field using frequency-doubling stimuli
Sample clinical use	Glaucoma assessment, pathology of the anterior and posterior visual pathways



iCare Tonometer

Specific Instrument	iCare rebound tonometer
Measures/Output	Intraocular pressure measurement without corneal anaesthesia
Sample clinical use	Glaucoma assessment



ImagineEyes Wavefront Aberrometry

Specific Instrument	IRX3
Measures/Output	Total eye refractive aberrations expressed in Zernike coefficients, modulation transfer and point spread function, Strehl ratio
Sample clinical use	Assessment for, and post-operative management of, refractive/cataract surgery, keratoconus



Keeler Wireless Binocular Indirect Ophthalmoscopy

Specific Instrument	Keeler Vantage wireless and video LED binocular indirect ophthalmoscopes
Measures/Output	Imaging of the posterior eye and ability to record results using video technology
Sample clinical use	Assessment of the retina



Medmont Corneal Topography

Specific Instrument	E300
Measures/Output	Corneal topography and curvature variations across the corneal surface
Sample clinical use	Keratoconus, corneal graft, pterygium