

STAYING AT THE TOP

Empowering Providers with the Multimodal Maestro2



In 2018, Topcon Healthcare launched the Maestro2, a fully automated, compact, comprehensive system that combines spectral domain optical coherence tomography (SD-OCT), a non-mydratric high-resolution retinal camera for true colour fundus photography, and OCT angiography (OCTA).^{*} User uptake was rapid as clinicians recognised the broad clinical utility and benefits of the Maestro2, and it quickly became the leading product in Topcon Healthcare's

OCT portfolio.

In 2019, sales of the Maestro2 topped 10,000 units, and in 2021, a new milestone was reached with 15,000 devices installed at eye care facilities around the world. Testaments from leading ophthalmologists highlight the attributes of the Maestro2 and its value in supporting patient care.

Ursula Schmidt-Erfurth, MD, PhD, Head of the Department of Ophthalmology and Optometry at the Medical University of Vienna, Austria, describes the Maestro2 as an indispensable tool in her hands-on clinical practice and a reliable partner in patient care. Professor Schmidt-Erfurth said, "For a clinician coming from academia, the Maestro2 OCT is a pleasant surprise. It is easy, highly efficient, and intuitive to use. It provides precise information and is a great tool for basing treatment decisions."

Samer Elsherbiny, MD, a medical retinal specialist and Consultant Ophthalmic Surgeon, Machen Eye Unit, Warwick Hospital, South Warwickshire Foundation Trust, UK, also appreciates the efficiency of scanning with the Maestro2 and the information it provides. Dr Elsherbiny said, "Advances in treatment for retinal diseases over the last decade have led to a continuously rising workload. We have been able to meet this challenge, however, thanks to the user-friendly acquisition protocols of the Maestro2 that allow our techs to handle a large volume of patients per clinic. Then, coupling of the data provided by the Maestro2 with its intuitive end-user tools allows the clinician to quickly assimilate information in the context of each case."

J Fernando Arevalo, MD, PhD FACS, Edmund F and Virginia B Ball Professor of Ophthalmology, The Johns Hopkins University School of Medicine, Baltimore, USA and Chairman of the Department of Ophthalmology at Johns Hopkins Bayview Medical Center, Wilmer Eye Institute, USA, highlighted the advantage of acquiring colour fundus photographs and OCT images simultaneously. "Images are easy to acquire using the Maestro2, and it provides valuable information for clinicians with a single scan," he said.

Thoughtful design

To develop the Maestro2, engineers at Topcon Healthcare applied their technical expertise, understanding of the needs of the eye care professionals, and input from knowledgeable end-users. Their goals were to create a complete clinical workstation that would enable workflow efficiency, be

small enough to fit in almost any size consult room and provide a comprehensive range of detailed reports to assist practitioners in clinical care.

Its features and functions include:

- » High resolution OCT imaging and simultaneous true-colour, red-free, or infrared fundus photography with the ability to obtain high quality fundus images, even in patients with small pupils
- » 3-dimensional including widefield (12 mm x 9 mm) OCT scanning, with seven-layer automated segmentation, including the choroid, that enables measurement and topographical mapping of the optic nerve and macula in a single scan
- » Complete glaucoma module: retinal thickness, retinal nerve fiber layer (RNFL), ganglion cell layer (GCL), optic nerve measurements and reference database, anterior chamber scanning, Hood report and trend analysis
- » Automated OCTA, giving information on the retinal vasculature without the need for contrast dye injections
- » Easy comparison between specified areas on the OCT and OCTA scans with the colour fundus image through proprietary PinPoint Registration
- » Follow-up support for enabling clinical assessment of treatment response or disease progression: tracking based on the reference image allows precise scanning of localized areas of interest, and a "compare" function allows evaluation of serial OCT images
- » Anterior segment imaging using the optional anterior headrest support (HA-2)

^{*}Release dates may vary depending on the region. OCTA is an optional extra feature in some countries

Table. Maestro2 Reports

Scan type	Data
Macula	3D Macula Report (for single eye or OU) <ul style="list-style-type: none"> 3D Macula 6 mm x 6 mm scan area with horizontal scan 3D Macula 7 mm x 7 mm scan area with vertical scan 5 Line Cross Report <ul style="list-style-type: none"> 5 line cross scan (6 mm, 9 mm) in both horizontal and vertical layouts
Widefield OCT	3D Wide Report (12 mm x 9mm) <ul style="list-style-type: none"> Imaging of the macula and optic nerve head, providing thickness and reference data for the retina (ETDRS grid), RNFL (retina nerve fiber layer), GCL+ (ganglion cell layer + inner plexiform layer), GCL++ (ganglion cell + inner plexiform layer + circumpapillary retinal nerve fiber layer)
OCTA	Scan protocols <ul style="list-style-type: none"> 3 mm x 3 mm, 4.5 mm x 4.5 mm, and 6 mm x 6 mm OCTA Density (ratio between the high signal area and low signal area, displayed in colour and/or number). This is for the macula only.
Glaucoma	3D Wide Glaucoma Report (12 x 9 mm) <ul style="list-style-type: none"> Imaging of the macula and optic nerve head, providing thickness and reference data for the RNFL, GCL+, GCL++, and disc topography Hood Glaucoma Report with probability maps <ul style="list-style-type: none"> Hood Glaucoma Report enables the easy comparison of structure (probability maps for ganglion cell layer/retinal nerve fiber layer) with function through overlay of visual field test locations) 3D Disc Report <ul style="list-style-type: none"> Combines disc topography, fundus photography and RNFL thickness measurements Incorporates reference database for RNFL and disc parameters Glaucoma Analysis Report – Macula (based on the 3D Macula Vertical Scan) <ul style="list-style-type: none"> Provides RNFL, GCL+ and GCL++ thickness maps, comparison with reference data and symmetry analysis 3D Disc Trend Analysis Report <ul style="list-style-type: none"> Trends provided for disc parameters and RNFL thickness along with a reference database comparison
Central fundus photography	Non-mydriatic colour fundus photography <ul style="list-style-type: none"> Based on fundus only imaging or simultaneously with OCT or OCTA
Panoramic fundus photography	Peripheral fundus imaging <ul style="list-style-type: none"> Based on fundus only imaging with automatic selection of 9 standard fields or optional manual manipulation of the patient's fixation to create a mosaic image
Anterior segment OCT	Measurements of corneal thickness, contact lens clearance, anterior chamber angle and other anterior segment features using the integrated caliper tools and optional anterior segment software.

Simple and seamless from scanning to output

The Maestro2 can operate with fully automated alignment, focus, and capture capabilities, making it highly user friendly. The ease and convenience of image acquisition with the Maestro2 enables quality images to be captured even by less experienced operators, and its fast acquisition speed enhances patient throughput in a busy clinic, while ensuring the testing is patient friendly.

Automated capture is initiated by a

single touch after selecting the OCT or OCTA scan type on the device touchscreen. The highly adaptable Maestro2 also offers a manual acquisition mode for patients who are particularly difficult to image.

As another benefit for users, the Maestro2's touchscreen monitor rotates a full 360°, allowing operators to distance themselves from the patient or position the device in tight space if needed. Remote Tablet Control is also available to support a social distancing protocol.[†]

Topcon Healthcare's reviewer

software (IMAGeNet6) allows detailed image analyses and generates an extensive portfolio of reports from OCT macular scans, widefield OCT imaging, glaucoma scans and OCTA scans, all with simultaneously captured fundus imaging. The reports include advanced diagnostic data to support accurate diagnosis and management decisions (Table). Figures 1-4 show a sample report and images from patients presenting with various retinal pathologies.

Easy connectivity is another important feature of the Maestro2. All reports

[†]Applicable distance is subject to the device's communication performance and the communication environment.

