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## ***OCULUS Keratograph 5M – The Revolution in Topography and Dry Eye Screening***

The introduction of the new Keratograph 5M is a revolution in topography and screening for dry eye disorders. The high-resolution colour camera and integrated magnification changer open up entirely new perspectives in professional tear film analysis. A complete range of diagnostic possibilities are based on the new colour camera. For the first time it is possible to record bulbar and limbal redness and classify the results automatically and objectively. Due to the magnification changer, the Keratograph 5M allows a larger distance to the patient's eye to perform meibography and examine the upper eyelid as comfortably as the lower eyelid.

The tear film is assessed under white or infrared illumination, while a new high-resolution colour camera makes structures visible in their finest detail. Objective measurements of NIKBUT (Non-Invasive Keratograph Break-Up Time) and tear meniscus height as well as other important tear film analysis methods can be performed swiftly and easily. The interference colour pattern and structure of the lipid layer are made visible and recordable. The structure and colour of the lipid layer permits an assessment of its thickness. A video recording function with up to 32 images per second makes it possible to study the spreading of tear film particles and draw conclusions on tear film dynamics and viscosity.

The multifunctionality of the new Keratograph 5M permits inclusion of difficult examinations, such as meibography, in a routine ophthalmologic and optometric check-up. Dysfunction of the meibomian glands is the most frequent cause behind dry eye disorders. The morphological alterations of the gland tissue associated with this dysfunction can be made visible by means of the Meibo-Scan. The new Keratograph 5M provides a larger distance to the eye than previous models, thus facilitating eyelid eversion. This allows both the lower and the upper eyelid to be examined under optimal conditions in a 26 mm field of view. Functions for marking individual examination fields or selecting between different representations of the meibomian glands are included in the software.

The Keratograph 5M is the first instrument to offer fully automatic determination of bulbar redness. In the past, assessment of conjunctival redness was always subjective, i.e. examiner-dependent. The OCULUS R-Scan is the first ever module to document and classify bulbar and limbal redness in an objective, fully automatic process. The R-Scan detects conjunctival vessels and assesses the degree of redness. This is followed by automatic classification, saving the effort of comparing the results with classification samples.

In addition to these unique analysis functions, the Keratograph 5M measures corneal topography according to gold standard rules. In combination with automatic measurement release, the integrated keratometer guarantees perfect reproducibility. Corneal alterations such as keratoconus can be diagnosed at an early stage. The Keratograph 5M supplies precise, reliable data for determining both the pre- and postoperative status. This also creates a basis for

professional contact lens fitting as well as providing assurance to newcomers. Data are generated by contact-free measurement, evaluated automatically and represented in diagrams which offer a wealth of information. An extensive, continuously updated contact lens database is available for finding the most suitable lens or simulating fluo-images. The colour imaging function can be used to create real-life fluo-images or videos, permitting assessment and documentation of the fit and movement of the contact lens. An eyelid angle measurement function is available for precise determination of inclination when fitting toric contact lenses.

An intact tear film and good oxygen supply to the cornea are indispensable for contact lens wearing comfort. The OxiMap<sup>®</sup>, which is easy to understand, represents oxygen transmissibility as a function of refractive power. Oxygen transmissibility also depends on the material and thickness of the contact lens. Manufacturers still quote oxygen transmissibility globally with reference to the centre of a 3.00 D contact lens. The OxiMap<sup>®</sup> provides a graphic representation of Dk/t values over the entire surface of the lens as a function of refractive power, which is much more realistic.

The integrated infra-red illumination is used in the optional pupillometry function, which can test the pupillary reflex with and without glare. The software provides various examination methods for this purpose. It permits comparison of the left and right pupillary reflex as well as easy identification of anisocoria.

Please contact your local dealer for more information:

<http://www.oculus.de>

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