Topographers put through their paces: a focus on dry eye management

Three versus the reigning champion

Four devices, one objective: to beat the market leader in dry eye management. In this hands-on review, Thorsten Boss pitches the Topcon Tera, Huvitz HTG-1 and Bon Antares plus against the Oculus Keratograph 5M. In focus: tear film analysis, meibography, lipid layer, report quality – precisely the factors that determine diagnosis and patient counselling in everyday practice. New measurement approaches, automated workflows and contrasting system concepts meet a well-established ecosystem. The crucial question: can any of the newcomers mount a serious challenge to the reigning champion?

Until now, anyone in ophthalmic optics looking for a modern dry eye and topography system could scarcely look past one particular name: Oculus Keratograph 5M. On the German market since 2012, with over 2,500 units sold in Germany and a software lineage with data continuity dating back to 1997 – it is not simply a device; it is the reference. A benchmark in scientific settings, and firmly established in practices and clinics alike.

Yet the title is hotly contested. Three contenders have stepped up: the Korean newcomer Huvitz HTG-1, making its debut on the German market; the Bon Antares plus, which has been on the market for many years and is included in the comparison as a model with solid integration into everyday practice; and the new Topcon Tera, which enters the field with systematic automation and a well-considered operating concept. The Huvitz and Topcon systems are designed as uncompromising stand-alone devices with an integrated computer. The question: do they have the more up-to-date measurement technology – and is that enough to seriously challenge the reigning champion?

This comparative review evaluates device philosophy, operating concept, topography, and keratoconus screening. The focus is on dry eye management: tear film, lipid layer, meibography, redness grading, questionnaires and report quality. Contact lens fitting is also assessed in comparative terms.

(Left) A four-way fight for the title (clockwise from top left): Topcon Tera, Oculus Keratograph 5M, Huvitz HTG-1 and Bon Antares plus.

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The starting line-up: four concepts, four personalities

The four candidates follow noticeably different philosophies – and this is apparent even before the first measurement.

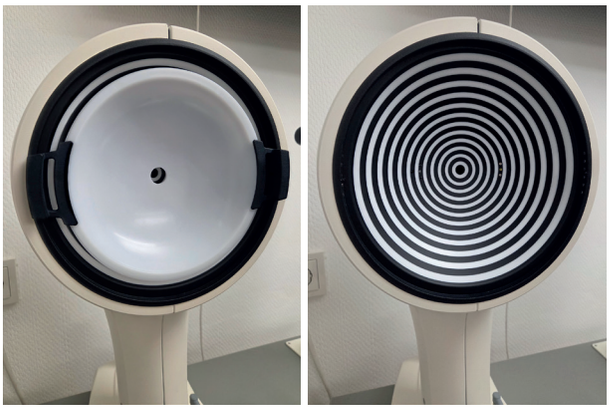
Oculus Keratograph 5M: A modular all-rounder, strictly PC-dependent. Measurement functions and the hardware base (with/without chin and forehead rest + base plate) can be freely configured to meet specific requirements; the most common mounting variant is on the examination unit. Patient data management, network connectivity, a floating licence concept and direct interfaces to numerous contact lens fitting programs are included in the base price of €10,990. Data continuity with predecessor devices goes back to 1997. Dry eye modules such as TF-Scan, R-Scan and Meibo-Scan are paid-for software options (priced at an additional €4,150).

Huvitz HTG-1: A stand-alone device from South Korea, distributed in Germany by companies including Breitfeld & Schliekert (B&S), with an integrated Windows PC, a 10.1-inch touch panel (rotates 90 degrees to the left and right) and one terabyte of storage. Operation is based on the concept of modern autorefractometers: auto tracking, autofocus with manual fine adjustment and automatic capture. While optional connection to an external PC offers improved image display and greater ease of operation, stand-alone operation remains fully functional in its own right. In terms of price, the device is just under €10,000.

Bon Antares plus: A classic system mounted next to the slit lamp with a split chin/forehead rest. Requires a PC for operation. Manual focusing with integrated focusing aid, and manual capture. The complete soft-

ware package with all modules (topography, contact lens fitting, NIBUT, meibography, pupillography and keratoconus screening) is included as standard at no extra cost. The Phoenix software connects the Bon Antares plus with other Bon devices to create a networked diagnostic system and updates automatically in the background. Thanks to its long-standing market presence, the device is integrated into numerous third-party practice and fitting software solutions. At €12,390, it represents excellent value for money.

Topcon Tera: A stand-alone dry eye imager with integrated Windows 11 PC. The high-resolution operating display can be rotated and swivelled a full 360 degrees, allowing flexible positioning in the room – including for examiners standing to the side behind the patient. The device is supplied with all software options and a PC viewer at a price of €13,190, positioning it as a genuine innovation in operating comfort and functionality.



The Bon Antares plus with (left) and without light diffuser. The light diffuser eliminates reflections caused by the Placido rings when used as a light source during measurements such as redness scans. Easy to handle and clean. This is not possible with Oculus or Huvitz. With Topcon, the same effect is achieved using a permanently installed light diffuser and software optimisation.

Round 1: day-to-day measurement – focusing and operating concept

In terms of ease of operation in day-to-day measurement, the different development philosophies become clearly apparent. The Topcon Tera offers the smoothest measurement workflow: automatic alignment and one-touch capture noticeably reduce operator variability. According to the manufacturer's data sheet, not all measurements can be performed fully automatically. A guided focus is provided for meibography, which requires active involvement from the examiner. Overall, the device remains the easiest system in the test to delegate, while its 360-degree rotating and swivelling display allows for flexible room configurations.

The Huvitz HTG-1 works with auto tracking and autofocus. From a certain point onwards, manual fine adjustment is required before automatic capture is triggered, a concept closely modelled on modern autorefractometers. Anyone familiar with this category of device will find their way around immediately. The display, which can be rotated 90 degrees to the left and right and tilted, allows flexible positioning at the workstation.

The Oculus Keratograph 5M relies on a manual joystick. Focusing and locking are entirely manual, while measurement capture is automatic. Compared with the newer stand-alone devices, the measurement process requires more experience and familiarisation. Its mechanical design, however, is robust and low-maintenance.

The Bon Antares plus uses manual focusing, supported by an integrated focusing aid, as well as manual capture. In terms of measurement speed, it sits just behind Oculus, meaning that both older systems take slightly more time than the newer stand-alone devices. For a slit lamp-oriented practice in which the device is firmly integrated into the examination workflow, this workflow remains practical.

Round 2: topography and keratoconus screening

At their core, all four contenders measure using Placido disc technology; the differences lie in the depth of analysis and in the specific screening tools.

The Oculus Keratograph 5M offers the established package: topographic keratoconus classification, Fourier and Zernike analysis, elevation maps and asphericity calculation, all scientifically grounded and kept up to date through continuous updates.

The Huvitz HTG-1 is surprisingly strong in keratoconus screening, offering a high level of detail: alongside KPI (Keratoconus Prediction Index), the Zernike coefficients can be displayed in full, broken down into all individual components. In addition, an integrated point spread function allows conclusions to be drawn about visual quality based on (anterior) corneal regularity. It should be noted that, as with the K5M, areas in the topography maps are simulated by the software, making the maps appear larger than the area actually measured.

The Topcon Tera uses the Keratoconus Probability Index and the Cone Location and Magnitude Index (CLMI) for keratoconus screening. The integrated point spread function is also particularly relevant in preoperative scenarios and when assessing refractive issues.

The Bon Antares plus delivers the standard repertoire: sagittal radii, peripheral values, Zernike coefficients, keratoconus screening including classification, and pupillography under scotopic, mesopic and photopic conditions – all as part of the standard software package.

Round 3: contact lens fitting

The Keratograph 5M boasts strengths here that have matured over many years: a fully-fledged contact lens fitting module, an extensive database with free manufacturer prioritisation, orthokeratology modules and elevation maps. Numerous contact lens manufacturers read Oculus measurement data directly into their own software – an ecosystem advantage built up over years.

The Bon Antares plus likewise offers fully-fledged contact lens fitting with fit simulation and display of bevel, tear clearance and decentration. Via Phoenix export, many renowned contact lens manufacturers import the topography data directly into their calculation programs. Its long-standing market presence delivers tangible benefits here: the Bon Antares plus is well integrated into existing third-party practice and fitting software, creating a network that the newcomer HTG-1 cannot yet match to this depth. In colour image mode, fluorescein imaging also enables assessment of the contact lens fit.

The Huvitz HTG-1 comes with its own contact lens database featuring German and international manufacturers. Fluorescein-assisted analysis and imaging functions enable documentation of wetting and lens movement. Interfaces with external fitting programs have been announced, but were not yet implemented at the time of testing.

The Topcon Tera does not have an integrated contact lens fitting module. Measurement values can be exported, for example to Menicon EasyFit. The fluorescein function allows rigid contact lenses to be assessed in colour image mode, without providing a dedicated measurement mode for this purpose. For those who handle contact lens fitting in a separate program, the Tera offers a clean export workflow; however, those looking for everything from a single source will be better served elsewhere.

The ultimate test: dry eye management

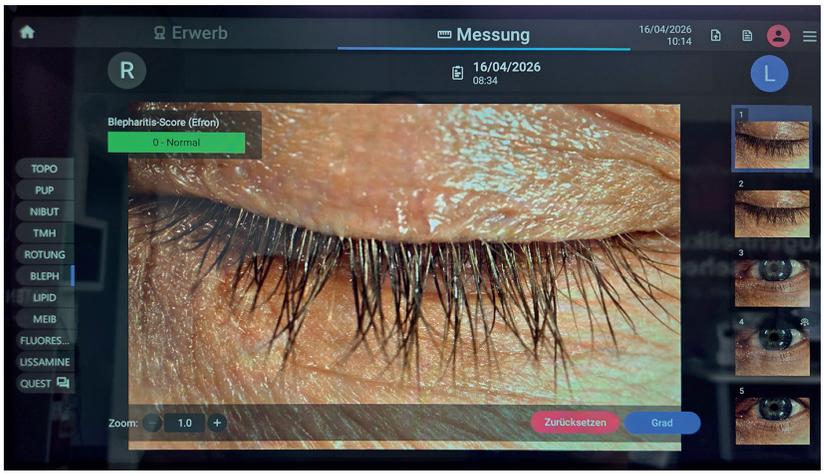
Dry eye disease is a serious, multifactorial condition – and not only according to DEWS III. Optical practices are increasingly the first point of contact for those affected. This is where it becomes clear which device genuinely supports which user.

Tear break-up – NIBUT, NIKBUT, NIKUT: All four devices measure non-invasive tear break-up time by tracking distortions of the Placido rings after a blink, without dye and in accordance with the DEWS III standard. For the user, the different designations used on the market are ultimately of little practical significance: Oculus uses its proprietary designation NIKBUT, where the “K” stands for Keratograph and is a manufacturer-specific brand term rather than a separate measurement term. Huvitz uses NIKUT in a similar way. Bon and Topcon both use the generic term NIBUT. Functionally, all four describe the same measurement principle.

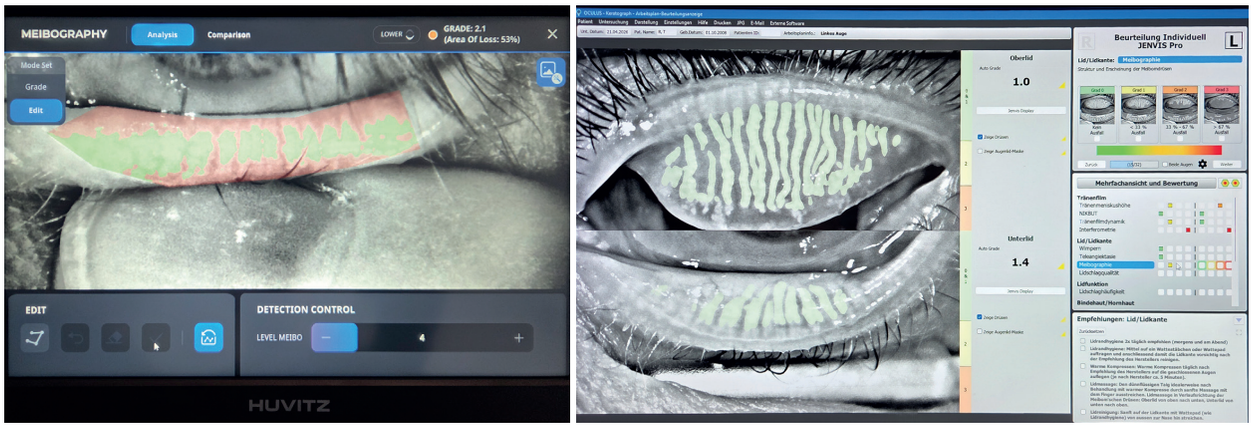
The Topcon Tera goes one step further in tear film screening: in addition to NIBUT, it captures blink frequency and the mean inter-blink interval (IBI), from which the Ocular Protection Index (OPI) is calculated. This provides additional insight into tear film dynamics beyond the break-up time value alone.

The Huvitz HTG-1 offers automated blink analysis on a timeline, determining the IBI value over a period ranging from three seconds to one minute.

Tear meniscus height: Tear meniscus height (TMH) is captured by all four contenders using either colour or infrared light. The Topcon Tera automates imaging of the lower meniscus under controlled lighting conditions, determining tear volume and meniscus profile. The Bon Antares plus features an area measurement function in its free colour image mode. This allows sizes and distances to be determined in square millimetres



The blepharitis score (Efron) on the Topcon Tera is shown directly on the display at the highest resolution.



In meibography, the Huvitz HTG-1 shows area loss and grading (left), while the Oculus Keratograph 5M features automatic AI grading, including detection and classification of the gland structure.

at a click, which is relevant for monitoring changes over time, such as the growth of a naevus. This function is available in free image mode and is not restricted to the TMH measurement workflow.

The Huvitz HTG-1 also captures tear meniscus height across several individual measurements. In addition to the mean value, it outputs the area-based standard deviation, which indicates variability in tear volume beyond the individual measurements.

Lipid layer: The Topcon Tera uses a patented diffuse light technique for lipid layer assessment, producing high-quality images free from reflections. The measurement area is larger than with the Oculus Keratograph 5M, and image capture is fast and reproducible thanks to the automated workflow. Classification is based on the Dr Guillon scale.

The Oculus Keratograph 5M integrates lipid layer assessment via the TF-Scan as an optional software module within the Jenvis Pro Dry Eye Report. The Huvitz HTG-1 also features lipid layer measurement, with its own report segment and its own classification scale. The Bon Antares plus enables lipid layer analysis using a magnetically mounted image diffuser, which is available as an optional accessory.

Meibography and grading: Meibography is possible for both the upper and lower eyelids on all devices, though there are distinct differences in operation and classification.

The Topcon Tera allows the relevant area to be marked directly on the touch display with a finger swipe. As noted in the manufacturer's data sheet, guided focus is provided for meibography, requiring active involvement from the examiner even though the rest of the measurement workflow is largely automated. Within the marked segment, gland loss is analysed automatically. Classification is based on Dr Heiko Pult's validated, internationally recognised Meiboscale.

The Huvitz HTG-1 marks the area by framing it directly on the display, after which automatic area analysis calculates gland dropout relative to the total area. Operation is intuitive, and the underlying classification scale is shown as a grading system.

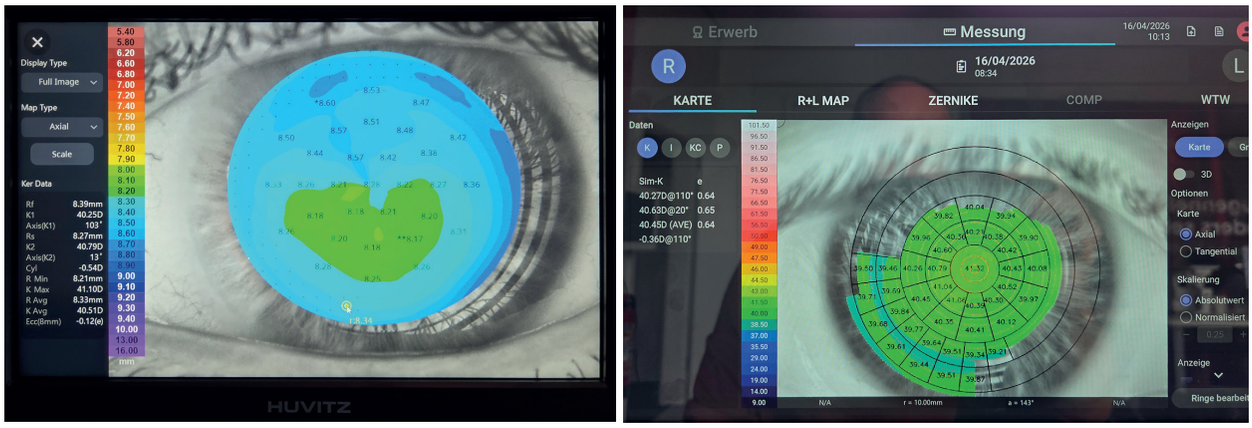
The Oculus Keratograph 5M visualises changes in gland tissue using comparative displays. Classification is based on the Jenvis grading scales, a semi-manual reference image system with a slider tool. In addition, Oculus now offers AI-assisted meibography grading as a software extension, a development that automates classification and improves comparability across examinations.

The Bon Antares plus uses manual mouse control: the lid area is marked, the glands are then traced, and the difference in area is output as gland dropout. This is functionally reliable, but somewhat more demanding to operate than the touch-based systems.

Redness grading and blepharitis: In redness grading, the Topcon Tera demonstrates its imaging strength: a high-resolution colour camera, motorised aperture, and wide-to-wide capture from caruncle to canthus. Light artefacts are also actively minimised. Classification is based on Efron or Jenvis. The device also enables Efron-based assessment of the lid margins for blepharitis – a feature offered only by the Topcon Tera and Oculus Keratograph 5M in this test group.

The Oculus Keratograph 5M features R-Scan, providing automatic classification of bulbar and limbal redness based on the Jenvis grading scale.

The Huvitz HTG-1 automatically grades redness in fine-grained 0.1-grade increments. Currently, however, it only displays temporal and nasal redness; displaying limbal redness was not possible at the time of testing. Lid assessment based on the Efron scale, as available on the K5M and Tera, is also not yet offered.



Comparison of the topography maps from the Topcon Tera (left) and Huvitz HTG-1. The black dots on the Huvitz map, which simulate topography data outside the measurement area, are faint but visible. Topcon displays corneal refractive power in dpt, while Huvitz also shows the radii.

The Bon Antares plus uses Efron overlays, applied manually in whole-number increments. The classification covers the full breadth of the Efron scale, but without automatic analysis. The analysis and measurement functions include, among other things, blepharitis, infiltrates and neovascularisation.

Lissamine green: The Topcon Tera is the only device in the test with a dedicated lissamine green colour image mode, which is also included in the dry eye report. This function is particularly relevant for diagnosing conjunctival damage in dry eye patients.

Validation: who speaks which scientific language?

The question is not merely what is being measured, but the scientific basis on which the results are classified.

Oculus Keratograph 5M: NIKBUT (proprietary name for NIBUT), Jenvis grading scales (meibography), R-Scan (bulbar + limbal redness grading, Jenvis), TF-Scan (lipid layer), Meibo-Scan; OSDI questionnaire. AI-assisted meibography grading available as a software extension. All dry eye modules are paid-for options. Highly customisable reports via Jenvis Pro, including treatment recommendations.

Topcon Tera: DEWS III-compliant. Efron (redness, blepharitis), Jenvis (fluorescein, redness), Guillon (lipid layer), Pult Meiboscale (meibomian glands); OSDI-6 and DEQ-5 questionnaires; lissamine green imaging. Broad, clearly documented validation portfolio. All software options included as standard.

Huvitz HTG-1: NIKUT (proprietary name for NIBUT); Efron-based classification (not clearly documented for every area); OSDI questionnaire (German). No Efron-style lid assessment; limbal redness currently cannot be displayed.

Bon Antares plus: Efron scale as the basis for all assessments (whole-number increments, manual); OSDI questionnaire; dry eye report. Complete software package included as standard at no extra cost. Classification is extensive, but lacks automated analysis.

The report: what does the customer leave with?

The report is the key output of the dry eye clinic – it provides documentation for the optician and gives the customer something tangible to take away.

The Oculus Keratograph 5M sets the highest bar for reporting in this test group, and is the only system in the comparison that directly links the cause with the recommended action in the same document. With the Jenvis Pro Dry Eye Report, measurement results, custom logos, explanatory texts and specific treatment recommendations can be brought together in an individualised patient report at the touch of a button. Free-text notes can be entered directly within the system. This unique selling point comes at a price: the Jenvis Pro Dry Eye Report is a paid-for add-on module – a deliberate choice that makes economic sense primarily for specialised dry eye clinics.

The Huvitz HTG-1 produces a report of up to nine pages, showing only the measurements actually performed. Topography maps can be displayed in high detail, with a choice of viewing options. Custom logos and user-specific details can be saved in the report template. Free-text notes can optionally be added to the generated PDF by the user; however, there is no integrated text input function within the system.

The Topcon Tera generates a structured, DEWS III-compliant dry eye report, available either as an individual report or an overview. It can be exported as a PDF via USB or sent directly to a connected printer, ready

Topographers compared – functional overview

	Oculus K5M	Huvitz HTG-1	Bon Antares plus	Topcon Tera
Device and setup				
Design	Modular, PC required	Stand-alone (integrated PC)	Slit lamp-mounted, PC required	Stand-alone (integrated PC)
Focusing / capture	Manual (joystick) / automatic	Auto tracking + autofocus + manual / automatic	Manual with focusing aid / manual	Semi-automatic / one-touch (Meibo: guided focus)
Display rotation	—	90° left-right	—	360° rotation and swivel
Software package	Paid modules (optional)	Fully included as standard, no extra charge	Fully included as standard, no extra charge	Fully included as standard, no extra charge
Topography & keratoconus screening				
Placido rings	22	24	24	22 + 2
Analysed points	22,000	> 100,000	6,144	> 100,000
Keratoconus index	Topogr. classification	KPI, highly detailed Zernike	Standard maps + KPI	CLMI + probability index
Point spread function	—	✓	—	✓
Pupillography	✓ (Optional)	✓	✓ (As standard)	✓
Contact lens fitting				
CL fitting module	✓ Fully-fledged, large DB	✓ Proprietary DB, being developed	✓ Fully-fledged, Phoenix export	— Export possible (e.g. Menicon EasyFit)
Direct interfaces	✓ Many manufacturers	◑ Announced	✓ Phoenix export, long-standing, broad 3rd party integration	◑ Announced
Fluorescein/CL fit	✓ Colour images + video	✓ Colour images + video	✓ Colour image mode (no separate measurement mode)	✓ Video recording (no separate measurement mode)
Dry eye – tear film & tear meniscus				
NIBUT terminology	NIKBUT (proprietary name)	NIKUT (proprietary name)	NIBUT	NIBUT (TBT)
Blink analysis/IBI	◑ NIKBUT dynamics	✓ IB value, timeline (3 s – 1 min)	—	✓ IBI + OPI
Tear film colour/IR	✓	✓	—	—
Tear meniscus height	✓	✓	✓ + Area measure-ment µm² (free image mode)	✓
Dry eye – lipid layer				
Lipid layer imaging	✓ TF-Scan (paid-for)	✓ Proprietary report segment	✓ Diffuser (optional accessory)	✓ Patented diffuse light, larger area
Classification scale	Jenvis	Proprietary scale	Efron overlays	Dr Guillon scale

Key: ✓ = available — = not available ◑ = partial / limited

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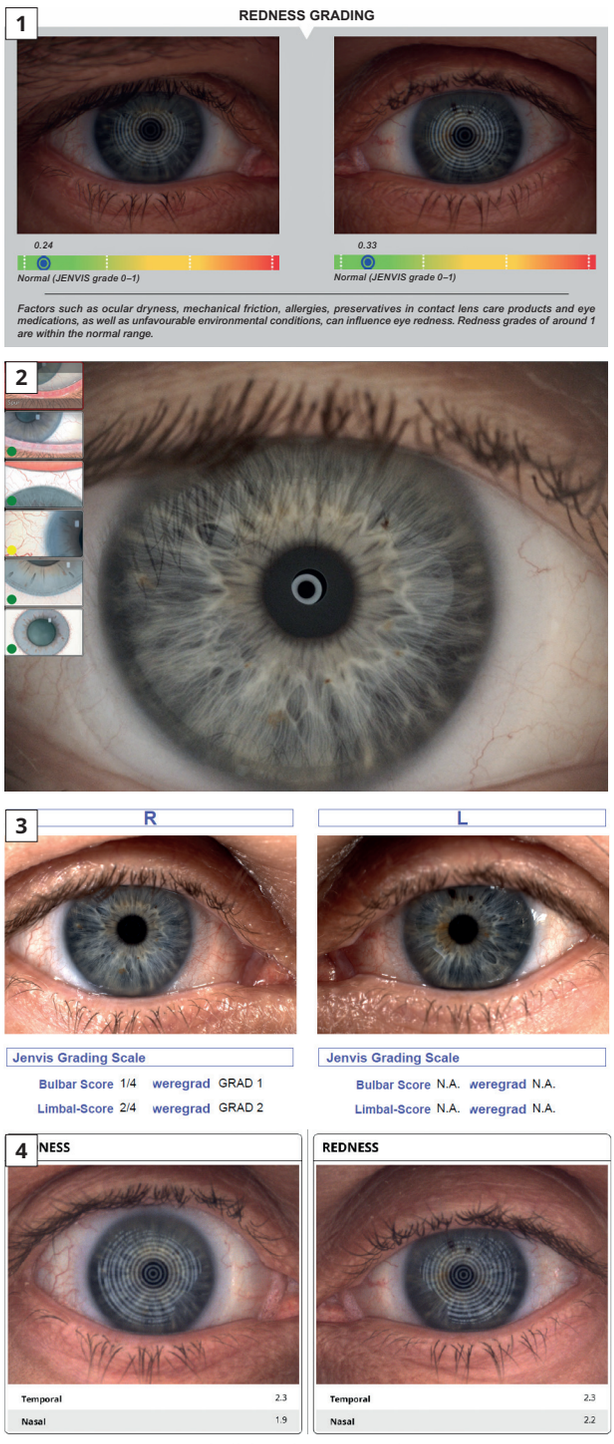

R-Scan comparison of all four keratographs: (1) Oculus Keratograph 5M, (2) Bon Antares Plus, (3) Topcon Tera, (4) Huvitz HTG-1

to give to the customer. Details about the optician or free-text notes cannot be entered within the system. The report is designed to present measurement results clearly; interpretation and treatment recommendations are left to the practitioner.

The Bon Antares plus deliberately keeps its dry eye report compact and on one page: OSDI, redness, meibography, tear meniscus, NIBUT. It is generated at the press of a button, without a separate application. Free-text notes are not available within the system. This format is well suited as a quick, compact practice report at the POS. With the updated dry eye report scheduled for Q2 2026, the Bon Antares plus will introduce a complete DEWS III-compliant assessment form, with an overall assessment scale, lissamine green integration and an expanded documentation structure. This closes its biggest remaining gap compared to the Topcon Tera and the Oculus Keratograph 5M.

Ecosystem, training and updates

The Oculus Keratograph 5M leads the way in this category: video tutorials, manuals, handouts, training provided by the manufacturer and external specialist trainers, YouTube documentation, continuous software updates, and complete data continuity with predecessor devices. The Oculus Floating Licence Key manages all software licences centrally via a server. This allows each individual device to be configured independently, giving it exactly the examination functions required at the respective workstation. Review licences are available across the network and can be used from any connected workstation.

The Topcon Tera offers structured online training and e-learning resources via the freely accessible Topcon University. Hands-on training at the POS can also be booked. The Tera Review software allows analysis and report creation from any networked PC. Updates are deployed regularly.

The Bon Antares plus relies on field service training and benefits from the Phoenix software platform: it updates automatically in the background, similar to the Windows update mechanism, ensuring that all devices are always running the latest software version without any manual intervention. While structured e-learning resources are not available, product videos can be accessed in English via the @csoitalia YouTube channel. The integration of further Bon devices via Phoenix provides genuine added value for practices and businesses in the Bon environment.

The Huvitz HTG-1, being a new launch in Germany, is still building up its support environment. MDR-compliant induction by the Breitfeld & Schliekert field service team is available, but advanced training courses and e-learning materials are not yet on offer. The Huvitz software links all Huvitz devices within a shared data network; interfaces with external patient data management systems have been announced.

Topographers compared – functional overview (continued)

	Oculus K5M	Huvitz HTG-1	Bon Antares plus	Topcon Tera
Dry eye – meibography				
Meibography	✓ Upper/lower lid	✓ Upper/lower lid	✓ Upper/lower lid	✓ Upper/lower lid
Area marking	PC-assisted, comparison display	Touch framing, auto area analysis	Manual mouse control	Touch on display (guided focus), auto analysis
AI-assisted grading	✓ As software extension	—	—	—
Classification scale	Jenvis Grading Scales	Proprietary scale (not fully transparent)	Efron overlays	Pult Meiboscale (validated)
Dry eye – redness grading & blepharitis				
Redness grading	Automatic 0.1-grade increments, R-Scan, bulbar + limbal, Jenvis	Automatic 0.1-grade increments, temporal + nasal only	Efron overlays, manual, whole-number increments	Automatic, Efron + Jenvis
Limbal redness	✓	— Currently not possible	✓	✓
Blepharitis assessment	✓	— Not yet available	✓ Efron overlays	✓ Efron, colour imaging of lid margin
Lissamine green mode	—	—	—	✓ Dedicated mode, in report
Validation & questionnaires				
Efron scale	✓	◑ Efron-based, partially unclear	✓	✓
Jenvis scale	✓ Jenvis Pro (R-scan)	—	—	✓
Guillon scale (lipid)	—	—	—	✓
Pult Meiboscale	—	—	—	✓
OSDI questionnaire	✓	✓ (German)	✓	✓ OSDI-6, DEWS-III
DEQ-5 questionnaire	—	—	—	✓
DEWS-III conformity	◑ Jenvis, established	—	—	✓ Explicitly stated
Report & documentation				
Report scope	Very comprehensive, modular	Up to 9 pages	1 page (compact)	Structured, DEWS III-compliant
Free-text notes	✓ In the system	◑ Optional in generated PDF	—	◑ Optional in generated PDF
Treatment recommendations	✓ Jenvis Pro	—	—	—
Logo/practice customisation	✓	✓	—	—
Training & ecosystem				
E-learning/online	✓ YouTube, proprietary platform	— In development	◑ = YouTube, via CSO	✓ Topcon University, free of charge
Software updates	Regular, continuity since 1997	Regular	Automatic in the background (like Windows Update)	Regular
Network/ecosystem	Extensive (PDMS, EMR, DICOM)	Huvitz network; PDMS integration announced	Phoenix network; broad 3rd party integration	LAN, TERA Review Software

Key: ✓ = available — = not available ◑ = partial / limited

Compiled April 2026. Information is based on product documentation, manufacturer brochures and manufacturers' websites. Content has been assessed subjectively by the authors. Errors are possible. Subject to change.

Verdict: four personalities – four application profiles

Four devices, four philosophies and no clear overall winner. That is not a weakness of this comparison, but its honest outcome: each contender solves certain tasks better than the others.

Oculus Keratograph 5M – depth and ecosystem. The reigning champion remains the benchmark – not because it has the most modern hardware, but because of the overall package: the most comprehensive report format (including treatment recommendations), fully-fledged contact lens fitting, data continuity since 1997, a mature training offering, and the deepest ecosystem. AI-assisted meibography grading as a software extension further strengthens its position in dry eye management. Its weakness lies in ease of operation: manual joystick control, PC dependency and paid-for software modules require both a willingness to invest and a certain level of user experience.

Topcon Tera – ease of operation and innovation. A systematic stand-alone concept with a high-resolution operating display that can be rotated and swivelled through 360 degrees, automated alignment with one-touch capture, and DEWS III-compliant documentation. A clearly documented validation portfolio (Efron, Jenvis, Guillon, Pult, OSDI-6, DEQ-5), dedicated lissamine green mode, and all software options included as standard. Its limitations: no integrated contact lens fitting module, no free-text notes in the report, no guided treatment workflow. A genuine innovation for qualified optometrists with a clear focus on dry eye.

Huvitz HTG-1 – functional depth at an entry-level price. A stand-alone concept with integrated computer, autorefractometer-style operating concept with auto tracking and autofocus, automated blink analysis (IB value), point spread function, report of up to nine pages, purchase price under €10,000. The trade-offs: limbal redness cannot currently be displayed, there is no Efron-style lid assessment, grading scales are not always transparently documented, training provision by Breitfeld & Schliekert is still being built up, and external interfaces are not yet available. As a newcomer with visible development momentum, it is an attractively priced offering.

Bon Antares plus – robustness, connectivity and a long track record. Fully-fledged contact lens fitting, a complete software package at no extra cost (including pupillography, keratoconus screening, NIBUT and meibography), Phoenix connectivity with other Bon devices, area measurement functionality in free image mode, compact one-page dry eye report. The free, automated update function of the Phoenix software keeps the device up to date with no effort required. Its long market presence pays off: the Bon Antares plus is already integrated into existing third-party practice and fitting soft-

ware. For Bon-oriented businesses or slit-lamp-centred practices with solid basic dry eye requirements, it is an attractively priced choice with a proven foundation. With the DEWS III-compliant report update announced for mid-2026, professionally endorsed by Professor James Wolffsohn (Aston University, TFOS DEWS III Executive), the Bon Antares plus will also receive a significant upgrade in its reporting capabilities.

The podium: by application profile

For the specialised dry eye clinic with in-depth documentation, contact lens fitting and guided workflows: Oculus Keratograph 5M.

For automated dry eye diagnostics with an innovative operating concept and DEWS III compliance: Topcon Tera.

For an entry-level stand-alone solution with extensive functional depth and an attractive price: Huvitz HTG-1.

For slit lamp-centred practices in the Bon ecosystem with a complete software package and proven integration: Bon Antares plus.

Outlook

Competition in the topography and dry eye segment has gained momentum. The Oculus Keratograph 5M is the established benchmark, but it will need to raise its game in both ease of operation and hardware modernisation if its challengers continue to improve. With the Tera, Topcon has carved out a strong position in automation and imaging. Huvitz has positioned price as a key argument and delivers considerable functional depth for its price class. With the announced DEWS III-compliant report update, the Bon Antares plus shows that even a well-established system can respond actively to scientific developments.

For eye care professionals, this means more choice, sharper decision-making criteria – and a market that continues to evolve. Increasingly, science is setting the pace: TFOS DEWS III not only defines new standards, but also sets out specific requirements for devices, workflows and report formats. Manufacturers that implement this guidance systematically not only secure the professional relevance of their systems but also the long-term added value of the investment for their customers.

A more detailed overview, including the manufacturer survey, is available to download via this QR code.

Limitations

This comparison was compiled in April 2026 and is based on the product documentation, manufacturer brochures and publicly accessible information from the manufacturers' websites available at that time. All devices were tested in practice; measurements were always performed on the device itself, with the involvement of the respective product management teams.
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Thorsten Boss
Holds a BA in Business Administration, is a master optician (Augenoptikermeister) and works as a business coach specialising in strategic business development. Through Optikstrategie.de, he supports specialist practices and manufacturers in the ophthalmic optics and medical technology sectors in implementing modern sales and consulting concepts and successfully putting commercially sound business strategies into practice.

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