

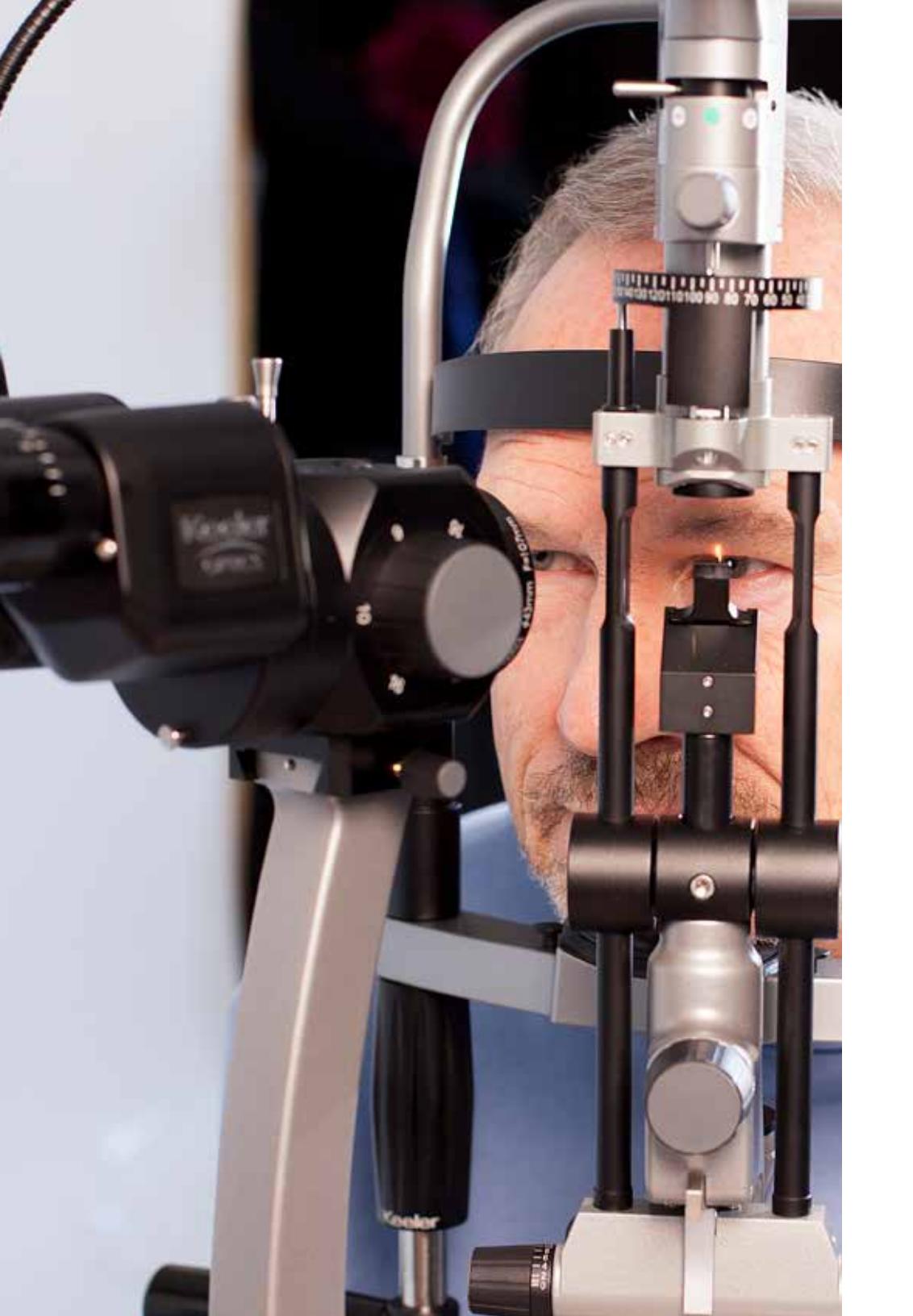


# Keeler

— A world without vision loss —

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Full  
Product  
Catalog



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# Over A Century of Innovation

We have been manufacturing ophthalmic instruments since 1917 and we continue to lead the market with our innovative instruments. This has been achieved through our continuous program of customer involvement in the design process to ensure our instruments meet the rigorous demands of daily practice.

## UK manufacturer

We still manufacture and assemble our instruments in the UK. We combine optical precision, high-quality illumination, ergonomic design, and lightweight, durable materials to provide you with the best possible choice of equipment.

## Reliability

To confirm our commitment to quality, our manufactured devices carry up to three years warranty; please see our website or individual user instructions for full details.

## Service

Our technical service team and our authorized distributors will carry out repairs and routine maintenance to your equipment. We offer a service exchange plan that covers most direct and indirect ophthalmoscopes. This is a quick and economic way of keeping your instruments in top working order.

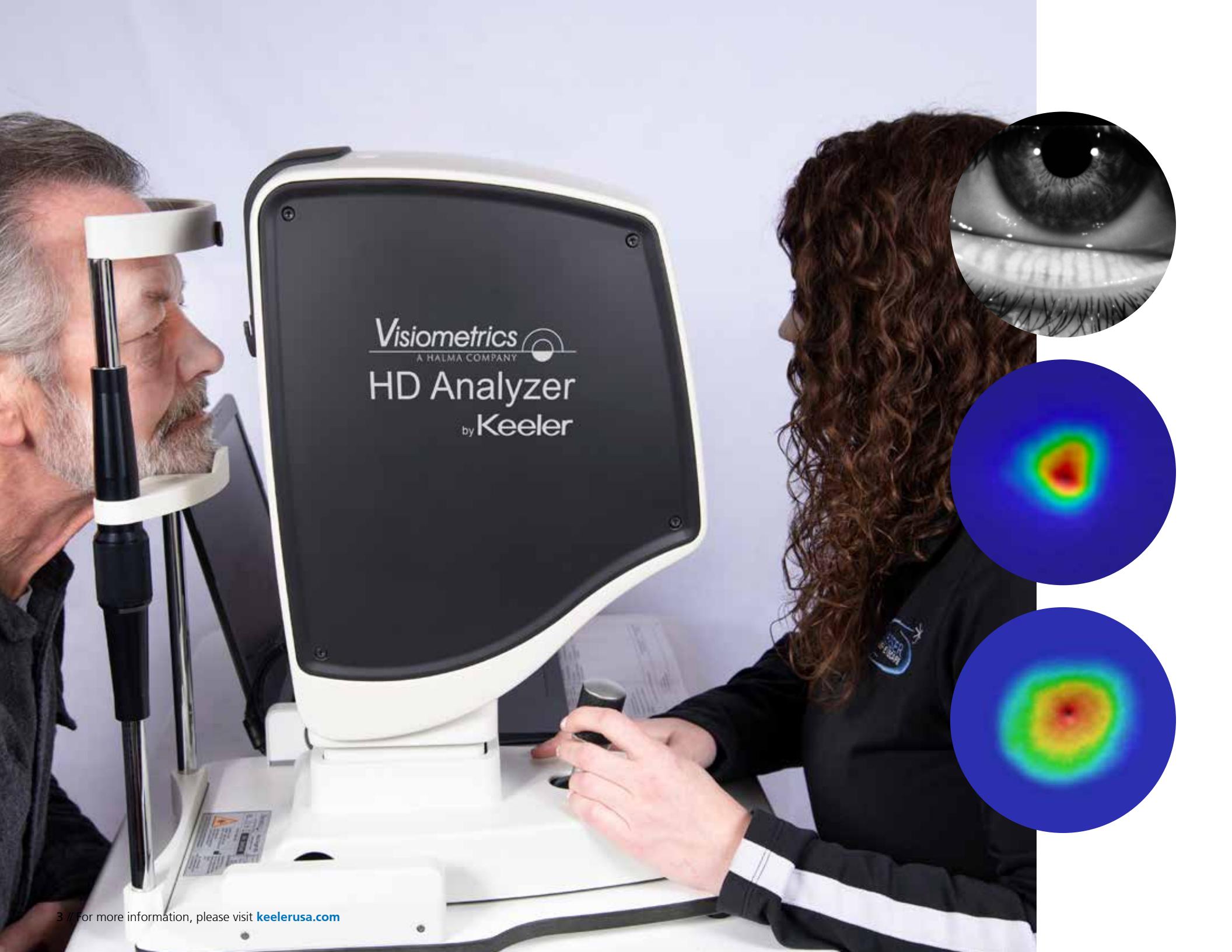
**Quotations can be supplied upon request.**



1 // For more information, please visit [keelerusa.com](http://keelerusa.com)



2 // For more information, please visit [keelerusa.com](http://keelerusa.com)



# The HD Analyzer

## The new standard for cataract, refractive, and dry eye assessment.

20/20 visual acuity does not guarantee vision quality. Only the HD Analyzer measures total optical quality. It does this through the OSI (Objective Scatter Index), which physically shows the amount of light that passes through, or “scatters” through the ocular system (or cataract, if one is present) on a scale of 0 to 6 (see example below). The HDA not only shows light scatter from pathologies like early cataracts, it also shows light scatter from tear film instability. Wavefront aberrometers overestimate patient optical quality because they assume clear optics — ignoring scatter.

### Measuring light scatter

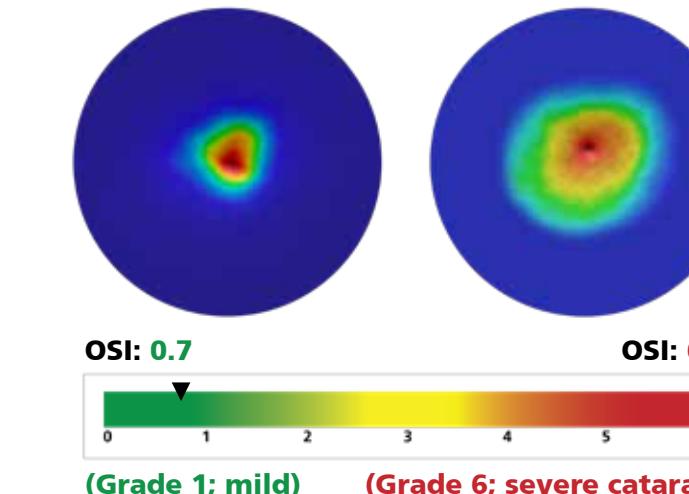
The HD Analyzer measures the Objective Scatter Index (OSI) of each patient, offering the only complete and objective measurement of vision quality available today. Measuring scatter from early lens changes and asymptomatic dry eye disease is the key to successful outcomes and happy patients. Differences in the OSI for a patient can result in 20/20 vision that remains blurry. Even a flawlessly performed surgery can result in a 20/unhappy outcome if you don't screen for scatter from the lens and tear film ahead of time. The HD Analyzer is the only diagnostic tool that can pre-diagnose the subtle, forward light scatter that affects surgical outcomes for cataract and refractive patients.

### Check for early changes in the lens

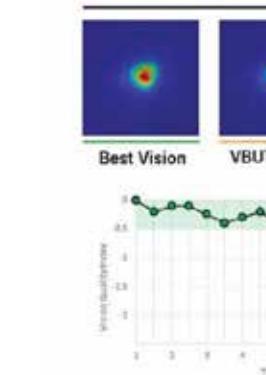
The HD Analyzer allows you to identify the right candidates for the right procedures. Low OSI (i.e. 0.7; see image to the right) is an indication that the optics are clear for cornea-based procedures. High OSI (i.e. 6.0; see image to the right) means that the patient is likely a good candidate for lens-based procedures. An OSI value over 1 indicates that there is at least some significant impact on the quality of vision. You can and should do a cataract surgery well before an OSI reading of 6.

### Check for dry eye disease

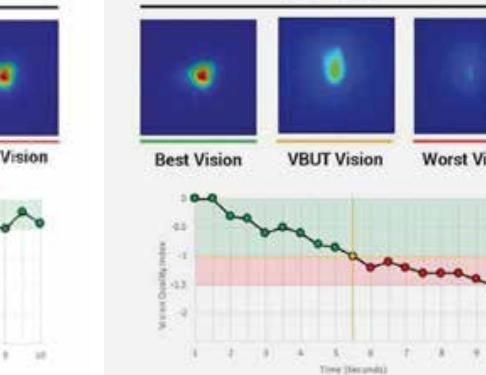
The HD Analyzer uses dynamic screening capabilities (including meibomian gland imaging) to diagnose vision fluctuations and structural damage (see image to the right). If the vision break-up time is greater than 10 seconds (seen in image to the right), the tear film is stable and will not affect premium outcomes. If the vision break-up time is 5.5 seconds (see image to the right), the vision is impacted by unstable tear film – a good candidate for dry eye therapy.



Vision Break-Up Time  
STABLE VISION



Vision Break-Up Time  
5.5 sec





# Keeler Slit Lamps

The Keeler slit lamp has emerged as the newest product in our ophthalmic family, designed with you and your patients in mind. We designed it to be a visually pleasing, customizable device using our tried-and-tested optics and everything that the Keeler name stands for.

## Keeler optics

We have spent decades perfecting our optics design to produce some of the clearest and sharpest images on the market today. Manufactured in-house, every Keeler slit lamp (KSL) comes equipped with our world-class optics to produce stunning images for clearer and more accurate examination results.

## Product configurability

We aim to be flexible with your needs, therefore each slit lamp can be configured to your liking. From number of magnification settings to digital or traditional systems, you can adjust many different features. Along with this, third-party accessories provide even more options for digital solutions in order to get the most out of your slit lamp.

## Visual aesthetics

Line up different brands of slit lamps side-by-side, and you will immediately be able to pick the KSL out of the bunch. With its silver paint, the KSL stands out amongst the other slit lamps in the market.

## Value for money

The KSL is a top-quality product that won't break the bank. With mid-range pricing, stunning optics, unique design, and quality performance, the KSL provides a cut above the rest in its price range.

## Market adaptability

We have worked hard to create a product that can adapt to fit the market and consumer needs through design, configurability, and digital solutions. We have recently partnered with Advanced Ophthalmic Systems (AOS) as their exclusive global distributor for their anterior analysis software to enhance the digital slit lamp functionality.

Other third-party accessories, ranging from imaging adaptors to software, are constantly being added to the portfolio to give end users one of the most adaptable slit lamps on the market. Not only do we sell slit lamps under the Keeler name but we also provide OEM solutions using engineering expertise.



## Slit lamp naming codes

The Keeler slit lamp (KSL) naming scheme has been developed to provide a description of the product configuration within the name itself. The following section provides the naming scheme as well as tables containing the part numbers associated with each code.

Product range name	Slit lamp style (choose one)	Slit lamp drum type (choose one)	Slit lamp configuration (choose one)	
KSL  (Keeler Slit Lamp)	H  H-Style	5  5-Step Drum	Traditional – No Code	
	<b>(OR)</b>		DR  Digital Ready	
	Z  Z-Style		D  Digital	
<b>FOR EXAMPLE, IF YOU CHOOSE A TRADITIONAL H STYLE SLIT LAMP WITH 3 DRUM MAGNIFICATION, THE CODE IS KSL-H3</b>				
<b>FOR EXAMPLE, IF YOU CHOOSE A DIGITAL H STYLE SLIT LAMP WITH 5 DRUM MAGNIFICATION, THE CODE IS KSL-H5-D</b>				

Description	Product name
<b>H-STYLE // TRADITIONAL // 5-STEP DRUM</b>	KSL-H5
<b>H-STYLE // DIGITAL READY // 5-STEP DRUM</b>	KSL-H5-DR
<b>H-STYLE // DIGITAL // 5-STEP DRUM</b>	KSL-H5-D
<b>H-STYLE // TRADITIONAL // 3-STEP DRUM</b>	KSL-H3
<b>H-STYLE // DIGITAL READY // 3-STEP DRUM</b>	KSL-H3-DR
<b>H-STYLE // DIGITAL // 3-STEP DRUM</b>	KSL-H3-D
<b>Z-STYLE // TRADITIONAL // 5-STEP DRUM</b>	KSL-Z5
<b>Z-STYLE // DIGITAL READY // 5-STEP DRUM</b>	KSL-Z5-DR
<b>Z-STYLE // DIGITAL // 5-STEP DRUM</b>	KSL-Z5-D
<b>Z-STYLE // TRADITIONAL // 3-STEP DRUM</b>	KSL-Z3
<b>Z-STYLE // DIGITAL READY // 3-STEP DRUM</b>	KSL-Z3-DR
<b>Z-STYLE // DIGITAL // 3-STEP DRUM</b>	KSL-Z3-D



H-Style traditional,  
5-step or 3-step



H-Style digital,  
5-step or 3-step



Z-Style traditional,  
5-step or 3-step

## Image capture options

### Kapture Lite video

Kapture Lite is a stand-alone system including still capture with live preview, video capture, patient database, image processing, import, and export. This software is included with the digital camera upgrade package and the complete KSL digital system.

### Kapture Digital

This includes all of the features of Lite plus video capture, measurements, network connectivity, and multiple image printing and saving.

## Upgrade options

### Digital

Upgrade from Kapture Lite to Kapture Digital to have network connectivity (essential if you require a review station), measuring, and multiple image printing and saving.

### Kapture View

Allows patient data and images to be viewed over the network – this requires the Kapture station to be networked.

### Kapture View Plus

Includes file import and measure – the Kapture station must be networked.

### Kapture features

- Freeze and freeze-frame review.
- Still capture and optional upgrade to video capture.
- Image import and export, compare.
- Color balance, crop, zoom, split RGB, and more.
- Annotate, flip, draw, invert color.
- Sharpen, contrast/brightness, and gamma control.



## Keeler Certified slit lamp accessories

In order to enhance the user experience to the best of our ability, we offer a variety of "Keeler Certified" slit lamp accessories to improve image quality, capture methods, and analysis.

### TTI beam splitter adaptor with Canon SLR camera

The TTI beam splitter and camera adaptor will allow users to connect a Canon EOS camera directly to their slit lamps. The camera, combined with the connected beam splitter, gives strikingly clear images from the slit lamp. Cameras range in resolution from 18.1 to 24.1 megapixels (depending on the camera) with a removable prism in the beam splitter to have 100% of the light transmitted. An optional foot switch is included for image capture.

**For more information or to order, visit [ttimedical.com](http://ttimedical.com) or email Ross Howes at [rhowes@ttimedical.com](mailto:rhowes@ttimedical.com).**

### Eye Photo Systems

The Eye Photo Systems EasyCapture software is an image capture and management software that has an intuitive user interface. It allows users to capture high-quality slit lamp images with ease. With a software that automatically adjusts the camera setting based on the part of the eye selected, users can expect an image that looks amazing every time.

**For more information or to place an order, visit [eyephotosystems.com](http://eyephotosystems.com) or email [sales@eyephotosystems.com](mailto:sales@eyephotosystems.com)**



### Extra large slit lamp breath shield

This Keeler manufactured breath shield provides both clinician and patient protection while still allowing easy use of the slit lamp. Sitting between the binoculars and the magnification block, this breath shield is compatible with any Keeler slit lamp, as well as any slit lamp with a 70mm (diameter) dovetail joint. It is made of clear plastic with a 1.5mm thickness. The overall size measures 13.7" x 13.7" – allowing the clinician to easily reach around the shield to use a lens during the exam.

#### PART NUMBER

- EP39-80753 – Extra large slit lamp breath shield

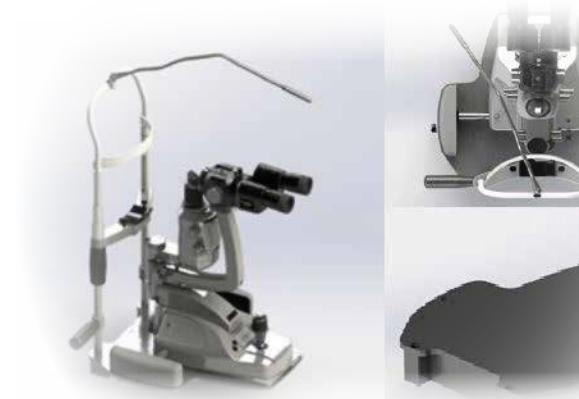


### Teaching tube and beam splitter

For use in university or teaching settings, this device allows an observer to look through the oculars from a side observation tube while someone else looks through the eyepieces and controls the slit lamp.

#### PART NUMBERS

- 10.02.03.613 – Observer tube
- 10.02.13.309 – Beam splitter



### Slit lamp mounting plate

The mounting plate is recommended for any installation on a refraction unit. It removes the possibility of misalignment when mounting runners and chinrest assembly directly to a unit and reduces the amount of time required for the installation.

#### PART NUMBERS

- EP29-27118 – Stand-alone plate (price separately; different part number with slit lamp included)

## Portable Slit Lamps (PSL)

Versatility and portability are the key benefits of the PSL One and PSL Classic slit lamps. We designed and manufactured them with the strength to withstand the daily traumas of the demanding ophthalmic environment. Both PSL models are lightweight, durable, and robust.

### Advanced optics

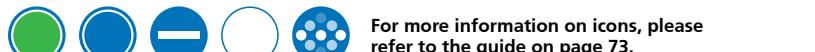
Choose between 10x and 16x magnification with the Classic, or 10x magnification with the One. Top quality, multi-layered glass is crafted into our multi-element and multi-layer coated optics to give maximum performance. Clarity is guaranteed.

### Controllable illumination

Illumination levels are controlled by a rheostat, giving you control of your examination parameters. From zero to maximum, you choose.

### Big slit lamp features, portable usability

Unique features such as the fixation targets, and the 1mm square light patch for assessing anterior chamber flare set the new standard for portable slit lamps.



For more information on icons, please refer to the guide on page 73.



Slit wheel

### Carrying case

Protect your investment with a strong, aluminum carrying case – perfect when your slit lamp is not in use or when you are traveling.



MAGNIFICATION	10x & 16x	10x
CHARGING BASE	Yes	No
DIRECT CHARGING	Yes	Yes
COLOR	Blue & white	Blue & black
ALUMINUM CASE	Yes	Option

## Slit lamp part numbers

### KSL-H (traditional) with LED illumination

#### 3 STEP MAGNIFICATION DRUM

- 3020-P-2090 – KSL-H3, table model
- 3020-P-2091 – KSL-H3, refraction model (with mounting post)

#### 5 STEP MAGNIFICATION DRUM

- 3020-P-2007 – KSL-H5, table model
- 3020-P-2013 – KSL-H5, refraction model (with mounting post)

### KSL-H-DR (digital ready) with LED illumination

#### 3 STEP MAGNIFICATION DRUM

- 3020-P-2096 – KSL-H3-DR, table model
- 3020-P-2097 – KSL-H3-DR, refraction model (with mounting post)

#### 5 STEP MAGNIFICATION DRUM

- 3020-P-2020 – KSL-H5-DR, table model
- 3020-P-2021 – KSL-H5-DR, refraction model (with mounting post)

### KSL-H-D (digital) with LED illumination

#### 3 STEP MAGNIFICATION DRUM

- 3020-P-2094 – KSL-H3-D, table model
- 3020-P-2093 – KSL-H3-D, refraction model (with mounting post)

#### 5 STEP MAGNIFICATION DRUM

- 3020-P-2010 – KSL-H5-D, table model
- 3020-P-2015 – KSL-H5-D, refraction model (with mounting post)

### KSL-Z (traditional) with LED illumination

#### 3 STEP MAGNIFICATION DRUM

- 3020-P-2042 – KSL-Z3, table model
- 3020-P-2043 – KSL-Z3, refraction model (with mounting post)

#### 5 STEP MAGNIFICATION DRUM

- 3020-P-2051 – KSL-Z5, table model
- 3020-P-2052 – KSL-Z5, refraction model (with mounting post)

### KSL-Z-DR (digital ready) with LED illumination

#### 3 STEP MAGNIFICATION DRUM

- 3020-P-2030 – KSL-Z3-DR, table model
- 3020-P-2031 – KSL-Z3-DR, refraction model (with mounting post)

#### 5 STEP MAGNIFICATION DRUM

- 3020-P-2038 – KSL-Z5-DR, table model
- 3020-P-2040 – KSL-Z5-DR, refraction model (with mounting post)

### KSL-Z-D (digital) with LED illumination

#### 3 STEP MAGNIFICATION DRUM

- 3020-P-2045 – KSL-Z3-D, table model
- 3020-P-2046 – KSL-Z3-D, refraction model (with mounting post)

#### 5 STEP MAGNIFICATION DRUM

- 3020-P-2054 – KSL-Z5-D, table model
- 3020-P-2055 – KSL-Z5-D, refraction model (with mounting post)

### Kapture software, upgrades, & review stations

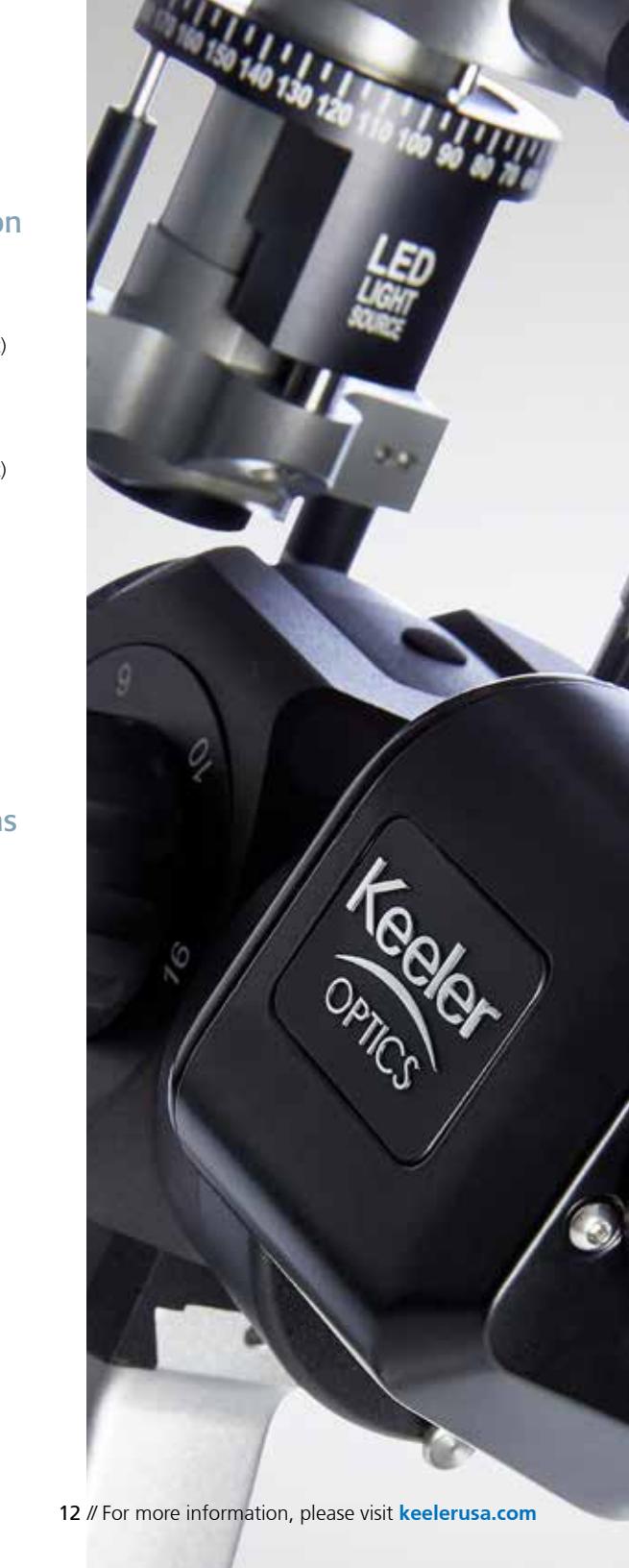
- 3020-P-7036 – Kapture Lite
- 3020-P-7038 – Kapture Digital
- 3020-P-7042 – Upgrade Kapture Lite to Digital
- 3020-P-7045 – Kapture View
- 3020-P-7046 – Kapture View Plus

### PSL slit lamps

- 3010-P-2000 – PSL Classic
- 3010-P-2001 – PSL One

### PSL accessories

- 3010-P-7000 – PSL carrying case
- 1030-P-7195 – PSL LED replacement module (instead of bulb)
- 3010-P-5026 – Base charger for PSL Classic
- 1030-P-7187 – Replacement bulb (6 volts, 15 watts)
- EP59-47130 – Replacement lithium battery
- 3010-P-7004 – Replacement eye caps (2)
- EP39-70737 – Test bar





# Binocular Indirect Ophthalmoscopes

Since 1958, when we introduced the Fison, our first binocular indirect ophthalmoscope, we have developed a reputation as the innovator in the development and manufacturing of indirect ophthalmoscopes. In 2003, we introduced the first Keeler "wireless" indirect ophthalmoscopes available on our All Pupil or Vantage models. Wireless gives you the freedom to move from room to room without any constraints – no more wires, cords, or tangles – just a lightweight, balanced, and comfortable indirect ophthalmoscope. When you choose a Keeler indirect ophthalmoscope, you are guaranteed the following standard benefits in all of our instruments.

## Keeler optics

Our optics are specially coated and individually laser aligned to provide the sharpest, clearest images every time you use your indirect.

## Comfort and balance

Lightweight materials are used throughout the design of each unit; combined with soft cushioning and a non-slip headband to maximize comfort and balance. These features will be particularly important during long examinations.

## Easy-fit illumination

Our indirects have been designed to ensure optimal performance. LED modules and bulbs are easily accessible and quick to change.

## Adjustable brilliant illumination

Why have all of the controls on the wall when the unit is on your head? On the All Pupil II and Vantage, the illumination rheostat is located on the headband; providing easily accessible, fully controllable light. Our indirects have the brightest illumination but can be turned down to as low as 2%.

## IR/UV filters

You are always 100% protected with our IR/UV filters that are built into the optics. LED products emit no harmful UV or IR wavelengths.

## Wide-angle diffuser

The wide-angle diffuser eliminates shadows on the edge of the condensing lens, which will expand the field of view significantly. This is particularly useful during difficult and peripheral examinations. There is also less discomfort for the patient, because the light is softer.



Bulb OR LED module installation

Illumination rheostat



## Vantage Plus LED Digital

### Digital imaging anywhere you want it

As the world leader in binocular indirect technology, we lead the way with the first digital binocular indirect system by moving away from analog video with true digital imaging. Utilize the Vantage Plus LED Digital in your office, operating room, teaching facility, or anywhere you want to capture digital images.

The intuitive and powerful Keeler software allows you to use your laptop, tablet, or any USB interface to optimize the examination, by providing still or dynamic images that aid in the documentation and diagnosis of your patient.

Increase your practice profile by educating your patients and their families with digital dynamic imaging in your office.

### Features

**USB INTERFACE** Plugs into any laptop or computer system; record exams in digital format

**KEELER SOFTWARE** For still or dynamic imaging, storage, and documentation

**OPERATING SYSTEM** Windows 7 and Windows XP

**PART NUMBERS**  
1205-P-5010 – Vantage Plus LED Digital wireless ophthalmoscope system  
1205-P-7001 – Optional footswitch

**INCLUDES**  
Docking station, power supply, additional slimline polymer battery, Keeler software, remote control, and carrying case



### Camera Specifications

**INTERFACE** USB 2 mini B

**SUPPLY** Taken from USB 2 interface

**RESOLUTION** To test pattern 6 of group 2 on the 1951 USAF TEST PATTERN (conforms to MIL-STD 150A standard), when used in combination with a 20D lens

**DRIVER** When installed, will work with any video package capable of receiving video input from a USB source

**CONNECTOR** To connect camera to a PC, Keeler recommends a 5m long USB 2.0A to a mini 5 pin (sometimes packaged as a USB 2.0A to a mini B lead)

**RANGE** The camera can be adjusted ±7 degrees

### Variable working distance

**FOCUS** 11–24 inches

### Adjustment

**VERTICAL ADJUSTMENT** Achieved by rotating the adjustment screw on the mirror holder the image should be adjusted so that the light patch is in the center

**HORIZONTAL** Factory set adjustment

### Physical

**SIZE** Approximately 50mm longer than the standard Vantage Plus

**WEIGHT** Total weight is 662g



## Vantage Plus

US Patent Number 8,132,915

### LED illumination

The LED cooler color provides brighter, whiter illumination, longer battery life, and freedom from purchasing bulbs.

Superior optics combined with the LED illumination provides greater detail, allowing you to find retinal pathologies that are not visible with the xenon bulb.

### Slimline lithium polymer battery

The slimline lithium polymer battery weighs only 53 grams, making it comfortable and perfectly balanced.

Wireless technology allows you to move from room to room and lasts up to six hours because of its combined LED illumination and lithium polymer battery.

### Convertible technology

The Vantage Plus convertible technology offers you the choice between a LED for longer life and better contrast, or a traditional xenon bulb.

### Quality and efficiency

The high-contrast optics combined with the neutral LED or xenon light source offer brighter and higher definition retinal images.

### 15% lighter

Advanced textured engineering materials provide a lighter, smaller, and more-compact instrument without compromising the renowned Keeler reputation for robustness, reliability, and quality.

### Filters and apertures

IR/UV filters are built into the optics of the Vantage Plus with optional filters and a choice of three apertures, plus, a soft light diffuser.



Convertible technology – Interchangeable LED module and xenon bulb



Slimline lithium polymer battery

The cooler color temperature of the LED light source resulted in a level of image clarity that I've not found in another BIO. I have been able to find retinal pathology that was not visible with the xenon bulb BIOs in our clinic.

Todd J. Purkiss, M.D., Ph.D.  
Ophthalmology and Visual Sciences, Kentucky Eye Care in Louisville

I chose Keeler's BIO over competitors' because it is an easy fit, comfortable, and light. The portable LED lamp is spectacular. The optics and view with the lighting system is better than any other BIO I've used.

Dr. Shane Sanders, O.D.

## Intelligent Optical System (IOS)

US Patent Number 8,132,915

When you change the aperture, the optics and mirrors automatically adjust for you without the need to flip another lever! We have designed this unique, single-step movement to make your examinations easier and faster. When you select the small, medium, or large aperture, the optics automatically adjust through the IOS mechanism. This provides three-dimensional stereoscopic views of the retina through all pupil sizes.

### Large pupil

When looking through a large, fully-dilated pupil, the optics are separated and the light source remains in the upper position, achieving maximum stereopsis.

### Intermediate pupil

When looking through an intermediate pupil, the optics and light sources are in a "mid position" for maximum stereopsis.

### Small pupil

When looking through a small pupil, the viewing optics and light source are converged to allow you to view the retina through the smallest pupils stereoscopically.

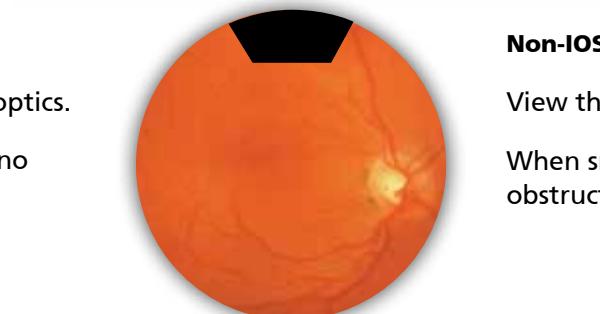
### IOS Optics without obstructions



#### Vantage Plus IOS optics

View through Vantage Plus with IOS optics.

When small pupil is selected, there is no obstruction of the retina.



#### Non-IOS optic system

View through non-IOS optical systems.

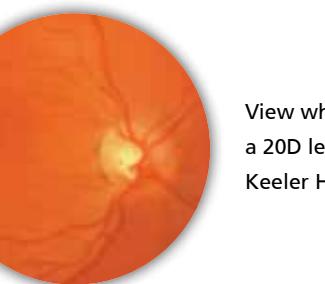
When small pupil is selected there is an obstruction, reducing your clinical information.



## HiMag Lens

### Slides on and off with ease

This unique feature is only offered with the Vantage Plus indirect. It gives you a 1.6x additional magnification than with a condensing lens alone, providing superb stereoscopic images. Scratch-resistant coated optics guarantee high-quality images at all times, and the HiMag can be simply flipped out of view when not required.



View when using a 20D lens and the Keeler HiMag lens.



View when using a 20D lens only.



HiMag Lens



Teaching mirror





## All Pupil II

The All Pupil II is based on the design of the number-one selling All Pupil indirect. Look out for the features designed to make your examinations easier and more comfortable.

### Go wireless

No more wires and cords – the user now has freedom to move from room to room without any constraints.

### Outstanding brightness

The All Pupil II offers maximum illumination with total control. With 2,000 lux, the illumination can also be turned down to 2%.

### Lightweight and comfortable

The device weighs just 520 grams, and extra padded materials have been incorporated into the headband to make this indirect extremely comfortable for all examinations.

### Simple controls

The All Pupil II has a unique single control to change aperture size and position in one movement to view through all pupil sizes.

### Convertible technology

All Pupil II convertible technology offers you the choice between a neutral LED for longer life, better contrast, and a white light or a traditional xenon bulb in the same product.

### LED illumination

The neutral LED cooler color provides brighter, whiter illumination, longer battery life, and freedom from purchasing bulbs. Clinically, the superior optics combined with the natural LED illumination could provide greater detail, allowing you to find retinal pathology that was not visible with the xenon bulb.



47–75mm



Convertible technology – Interchangeable LED module and xenon bulb



LED module and bulb installation



### Slimline lithium polymer battery

The slimline lithium polymer battery weighs only 53 grams, making it comfortable and perfectly balanced. Wireless technology allows you to move from room to room and lasts up to six hours because of its combined LED illumination and lithium polymer battery.

### 15% lighter

Advanced textured engineering materials provide a lighter, smaller, and more compact instrument without compromising the renowned Keeler reputation for robustness, reliability, and quality.

### Filters and apertures

IR/UV filters are built into the optics of the All Pupil II with optional filters and a choice of three apertures, plus a soft light diffuser. The built-in IR/UV barrier guarantees improved patient protection and safety.

### Quality and efficiency

The high-contrast optics combined with the neutral LED or xenon light source offers brighter high-definition retinal images.



Teaching mirror attachment



## Spectra Iris

Little indirect, bigger benefits!

The Spectra Iris has been specifically designed as a compact, lightweight, and portable indirect with big benefits for professionals on the move. It can be tucked away in its carrying case or hung around your neck when not in use. You can also adjust the size of the aperture at the touch of a slider.

### Keeler sport frame

Spectra Iris comes on the new Keeler Sport Frame. This wrap-around frame is not only attractive but provides maximum comfort and balance.

### LED long-lasting illumination

No more bulbs, just a long-lasting, white homogenous light patch that can be used for up to four hours continuously.

### Flip-up optics

The whole optical box and light pod can be flipped up, allowing direct eye contact when talking to patients or for writing notes.

### Single-movement hinge

The hinge allows the Spectra Iris to sit closer to your eyes for a better view and a more comfortable fit.

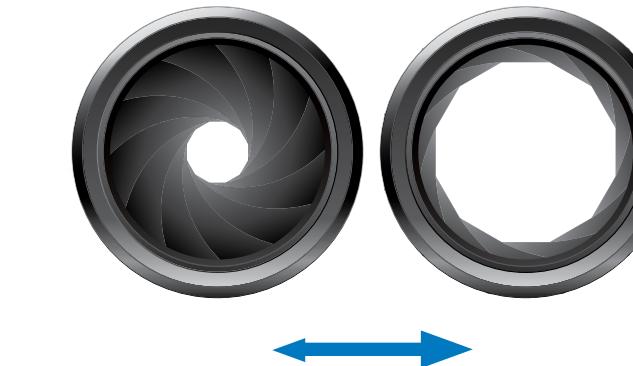
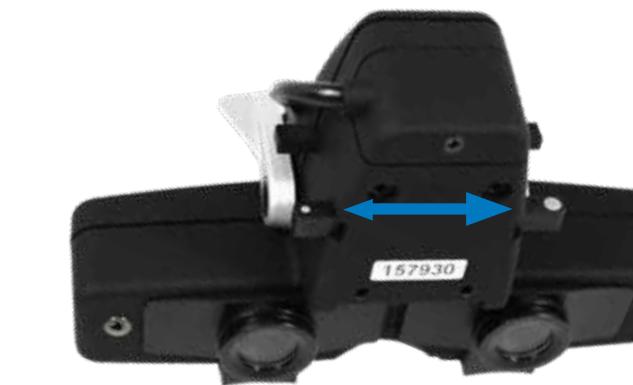


Teaching mirror attachment



### Adjustable Aperture Slider

Now you can adjust the aperture simply by moving the slider. Slide to the right to increase aperture size, and slide to the left to decrease it. The aperture range is from 20mm to 60mm.



## Wireless power supply options

Keeler wireless technology allows you to move from room to room without any constraints. The chargers are either desktop or wall mountable, and they hold an extra lithium battery as a back-up.

### Slimline wireless charger

The desktop or wall-mountable charger remains as durable as the standard wireless with the facility to store your extra battery in the top compartment. The charger has an easy-release button to remove the extra battery. LED indicators show the level of charge in both batteries when BIO is docked and the spare battery is clipped in back.



### Lithium-ion battery

- Lightweight – six ounces (171 grams)
- For use with Spectra Plus and Spectra Iris
- Fully charges in two hours
- Usable charge in five minutes



### Wall pack

The wall pack is used to mount your indirect to the wall and has a built-in microswitch.



### Universal power plug

The cord used to power the slimline wireless charger can also be used across our entire product line (with the exception of our cryo units). This allows you to easily swap out power cords from your PSL to your duo charger, or even your Pulsair Desktop. We try to make our products as convenient to use as possible, and our power source is no different.

### Smart pack

The smart pack is a stylish power supply system that combines three options in one product. No longer will you need to purchase a portable system for domiciliary use, another system for mounting on your wall, and another for tabletop use. All you need now is a smart pack for your Vantage Plus or All Pupil II.

### Features

- Lightweight
- 120 minutes of continuous use
- Fully charges in two hours
- Indirect can be used while charging
- Usable charge in five minutes
- Shows the state of your battery





## Part numbers for indirects, power supplies, and accessories

### Vantage Plus LED Convertible indirect ophthalmoscope

Wired and wireless units come with an LED module, HiMag lens, and dimmer control.

- 1205-P-1010 – Wired headset only (no battery/charger)
- 1205-P-1020 – Slimline wireless headset with charger and (2) batteries
- 1205-P-1014 – Slimline wireless headset only (no battery/charger)

### Vantage Plus LED Digital indirect ophthalmoscope

- 1205-P-5010 – Wireless headset with Kapture Lite video software, docking station, power supply, (1) extra battery, and carrying case
- 1205-P-5010-001 – Wireless headset with NO SOFTWARE. Docking station, power supply, (1) extra battery, and carrying case included.
- 1205-P-7005 – Optional Dell E5420 Notebook
- 1205-P-7009 – Optional Surface 3 tablet with power supply and carrying pouch
- 1205-P-7001 – Optional footswitch

### All Pupil II Convertible indirect ophthalmoscope

All Pupil II wired and wireless units come with a dimmer control.

#### BULB ILLUMINATION

- 1204-P-3100 – Wired headset with 10w halogen bulb

#### LED ILLUMINATION

- 1205-P-2000 – Slimline wireless headset with charger and (2) batteries
- 1205-P-2003 – Slimline wireless headset only (no battery/charger)

### Spectra Iris indirect ophthalmoscope

Spectra Iris comes with the optics, frame, lithium power pack, and charger.

- 1205-P-2012 – Spectra Iris on black sport frame, small temples (130mm)
- 1205-P-2010 – Spectra Iris on black sport frame, regular temples (135mm)
- 1205-P-2011 – Spectra Iris on black sport frame, large temples (150mm)

### Power supplies for wired indirects

- 1945-P-1001 – Smart pack
- 1945-P-1000 – Wall pack
- 1941-P-5385 – Spectra Plus/Iris lithium charger and power supply
- 1919-P-5215 – Spectra Plus/Iris lithium battery with rheostat

### Other accessories

- 1012-P-7008 – All Pupil II LED module
- 1012-P-5276 – Vantage Plus LED module
- 1202-P-7205 – Vantage Plus teaching mirror
- 1202-P-7117 – All Pupil II teaching mirror
- 1205-P-7000 – Spectra teaching mirror
- EP39-22079 – Smart pack battery
- 1201-P-6076 – Pencil-type depressor
- 1201-P-6075 – Small depressor
- 1201-P-6067 – Large depressor

### CASES

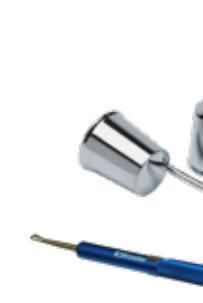
- 3412-P-7002 – Spectra Iris soft case
- 3412-P-7000 – Vantage Plus or All Pupil II professional 3-in-1 carrying case. Easily convert from roller case to a handheld backpack.



3-in-1 case



Spectra case



Depressors



# Tonometry – Let's Fight Glaucoma

## TonoCare

We are delighted to present our most advanced handheld tonometer to date. The TonoCare is set to revolutionize the handheld market. Designed and built with patient comfort in mind, the TonoCare is truly simple to use and gives consistently fast, accurate and reliable readings. Whatever the mobility of the patient and wherever it's being used, the TonoCare offers exceptional performance time and time again.

### Using air saves you money

Rebound tonometry can get expensive! In addition to the base cost of a rebound tonometer, disposable pins have to be purchased on a regular basis. Each patient requires two pins, one per eye, to prevent cross contamination. If a practice sees one patient a day they are purchasing 624 pins a year. A practice that sees 40 patients a day purchases at least 24,960 pins per year. The cost for that many pins is exorbitant.

Why spend that much money when you don't have to? The TonoCare uses air puff technology, eliminating any re-occurring costs. Not only is the air free, but there is no risk of cross contamination between eyes.

### Features

- Ease of use** - Easy-to-follow instructions and intuitive controls ensure easy training. The lightweight, yet robust, handheld form means it quickly and easily adaptable to be used in many different environments.
- Patient comfort** - The highly portable unit allows measurements to be taken wherever the patient is most comfortable. The sleek product profile means the clinician can maintain visual contact with the patient throughout the measurement process.
- Accuracy** - Uses advanced optical and sensor technology for positional detection and puff control. Clear user controls and a colored internal display combine to provide exceptional usability.
- Speed of use** - Ready to use in less than 10 seconds after being switched on; readings for both eyes can be achieved in 30 seconds.
- Patient safety** - Ensures a minimal risk of eye damage or cross contamination.

### Specifications

<b>MEASUREMENT RANGE</b>	5mmHg to 50mmHg
<b>MEASUREMENT DISTANCE</b>	~11mm from eye
<b>EQUIPMENT STANDARD</b>	Conforms to BS EN ISO 8612
<b>INPUT VOLTAGE RANGE</b>	The camera can be adjusted $\pm 7$ degrees
<b>POWER RATING</b>	4.6 – 7.4VA
<b>PC INTERFACE</b>	USB
<b>WIDTH</b>	136mm (hand unit) 155mm (docking station)
<b>DEPTH</b>	206mm (hand unit) 183mm (docking station)
<b>PART NUMBER</b>	2418-P-2000 – TonoCare



### Classifications & safety standards

<b>COMPLIES WITH</b>	EN60601-1, UL60601-1
<b>EQUIPMENT CLASSIFICATION</b>	Class II
<b>MODE OF OPERATION</b>	Continuous
<b>PROTECTION AGAINST INGRESS</b>	IPX0 (Hand Unit and Docking Station)

### Environmental Conditions

<b>OPERATING TEMPERATURE</b>	+50°F to +95°F (+10°C to +35°C)
<b>STORAGE TEMPERATURE</b>	-50°F to +131°F (-10°C to +55°C)
<b>RELATIVE HUMIDITY</b>	10% to 95% (storage) 30% to 90% (operating)
<b>ATMOSPHERIC PRESSURE</b>	700hPa to 1060hPa (storage) 800hPa to 1060hPa (operating)

## Pulsair tonometers

In 1986, the Pulsair Tonometer revolutionized non-contact tonometry with its unique, handheld and portable system. It brought a new dimension to patient care as well as increasing the management of space and time.

Pulsair and tonometry are synonymous – the fifth generation IntelliPuff handheld model combines contemporary styling together with technologies, and the Pulsair Desktop brings the Pulsair name to those requiring a chin-rest desktop device. Applanation tonometry is a widely practiced and respected technique; the Keeler Applanation Tonometer (KAT) will match that level of respect with our exceptional quality and manufacturing consistency.

### Stylish and practical

Both the Pulsair Desktop and Pulsair IntelliPuff have exceptional patient visualization; the slim profiles of the Pulsair optical mainframe allows the clinician to maintain visual contact with the patient at all times during the measurement process.

### Engineering and design excellence

Pump, solenoid control valves, a plenum chamber, and an optical mainframe are all designed to function optimally to allow efficient and fast measurement. LED illumination provides a constant and reliable light source for the alignment camera and the positional detection systems. Pulsair tonometers are cost effective and require no sterile consumables. Printing is also under your control, so ongoing costs are managed.



## Pulsair IntelliPuff

Bringing versatility to tonometry, wall-mounted or desk-mounted, the lightweight handheld optical mainframe allows the clinician to measure all patients with equal comfort. The flexibility of use and space-saving design make this instrument virtually unbeatable for performance and value.

### Handheld

Being handheld, Pulsair IntelliPuff avoids the need to position the patient in a chinrest. It is fast and easy to use while the patient is already seated in an examination chair.



## Pulsair Desktop

A small, space-saving footprint combined with the elegant, slim optical mainframe allows the Pulsair Desktop to blend seamlessly into the clinical environment. The openness of the design increases the confidence of both patient and clinician.

### Comfort and speed

Less is more. This unit is uncomplicated and therefore is quick to use for the novice and professional alike. Taking control of tonometry has never been easier or faster. Clear user controls and a color video alignment screen combine to set a new standard in usability.



## Sophisticated technology

Keeler Pulsair tonometers use advanced optical and sensor technology for positional detection and puff control. They have software controls to manage the measurement data; if two consecutive readings are within +/- 1mmHg of each other, the Pulsair will inform the user that sufficient readings may have been taken for that eye, saving precious time and increasing patient comfort.



## Pulsair Desktop specifications

<b>CALIBRATED RANGE</b>	5mmHg to 50mmHg
<b>DISPLAYED ACCURACY</b>	Displayed accuracy to 1 decimal place, e.g., 12.3
<b>DISPLAYED SCALE</b>	Single-line 16-character alphanumeric display
<b>WORKING DISTANCE</b>	20mm
<b>DIMENSIONS</b>	475 x 410 x 245mm (H x D x W)
<b>WEIGHT</b>	16kg
<b>COMPLIES WITH</b>	Electrical Safety (Medical) BS EN 60601-1:2006. Electromagnetic compatibility EN 60601-1-2:2007. Ophthalmic instruments – fundamental requirements and test methods ISO 15004-1:2006. Optical radiation hazard ISO 15004-2:2007
<b>POWER SUPPLY UNIT</b>	Switch mode, (110–240V) +/- 1% multi plug type compliant to EN 60601-1, EN 61000-6-2, EN 61000-6-3
<b>POWER SUPPLY OUTPUT</b>	30VA (12V DC 2.5A)
<b>FREQUENCY</b>	50/60Hz
<b>PRINTER</b>	Thermal line printer
<b>PART NUMBERS</b>	2417-P-2000 – Pulsair Desktop tonometer 3104-L-8201 – Chinrest papers 2208-L-7008 – Printer paper roll

## Pulsair intelliPuff specifications

<b>CALIBRATED RANGE</b>	5mmHg to 50mmHg
<b>MEASUREMENT SCALE</b>	mmHg (millimeters of Mercury)
<b>DISPLAYED ACCURACY</b>	0.1mmHg
<b>DISPLAY</b>	4-character dot matrix scrolling
<b>FIRING SYSTEM</b>	Automatic and objective
<b>ILLUMINATION SYSTEM</b>	LED infrared
<b>WORKING DISTANCE</b>	20mm
<b>MOUNTING SYSTEM</b>	Table/desktop/wall
<b>BASE UNIT DIMENSIONS</b>	260 x 215 x 220mm (H x D x W)
<b>BASE UNIT WEIGHT</b>	2.465Kg
<b>HANDPIECE DIMENSIONS</b>	315 x 150 x 46mm (H x D x W)
<b>HANDPIECE WEIGHT</b>	0.890Kg
<b>CORD LENGTH</b>	72 inches
<b>PRINTER</b>	Thermal line printer
<b>PART NUMBERS</b>	2414-P-2001 – Pulsair intelliPuff Tonometer 2208-L-7008 – Printer paper roll

## Applanation tonometers

The Goldmann principle is considered to be the most prevalent method of tonometry, as it is the most widely accepted method of determining the approximate intraocular pressure. Our manufactured applanation tonometers are designed and built to our exacting standards to give you the accuracy and quality you expect from a Keeler device. All KATs (Keeler Applanation Tonometers) are supplied with one reusable doubling prism, a calibration check bar, and either a Z-type (Zeiss), R-type, or T-type aluminium guide plate for slit lamp use.



### D-KATs (Digital Keeler Applanation Tonometers)

- LED display for easy use in darkened environments
- Z-type, T-type, and R-type available
- Display reading up to 1 decimal point



KAT R-Type (fixed)

KAT T-Type (take-away)



R-Type mounting post

T-Type guide plate

### KAPs (Keeler Applanation Prisms)

Goldmann-style doubling prism for most applanation tonometers



Disposable prism

Re-usable prism

### KATs (Keeler Applanation Tonometers)

- Reliable and repeatable applanation tonometry
- Goldmann applanation principle
- T-Type or R-Type available
- Designed to withstand the test of time and deliver reliable results year after year



## Applanation tonometer specifications

<b>MEASUREMENT FORCE</b>	By leverage weight
<b>INSTALLATION</b>	
Keeler T-Type for tower illumination slit lamps	Fitted to the guide plate on the optical axis for the microscope and illumination unit arm
Keeler R-Type for tower illumination slit lamps	Mountable on a post fitted to the microscope optical body
<b>MEASUREMENT RANGE</b>	0–80mmHg (0–10.64 kPa)
<b>APPROXIMATION OF THE IMPACT FORCE ON THE MEASUREMENT HEAD FOR A 0 TO 58,84 MN MEASUREMENT RANGE</b>	Standard divergence: $0.49\text{mN} \leq 3s \leq 1.5\%$ of nominal value
<b>OPERATING TEMPERATURE RANGE</b>	from 10°C to 35°C
<b>MEASUREMENT ACCURACY</b>	$\leq 0.49\text{mN}$
<b>NET WEIGHTS</b>	
Keeler T-Type	0.41kg (without accessories)
Keeler R-Type	0.69kg (without accessories)
<b>PART NUMBERS</b>	
	2414-P-2032 – D-KAT – Digital Keeler Applanation Tonometer (T-Type)
	2414-P-2042 – D-KAT – Digital Keeler Applanation Tonometer (R-Type)
	2412-P-2010 – D-KAT – Digital Keeler Applanation Tonometer (Z-Type)
	2414-P-2030 – KAT – Keeler Applanation Tonometer (T-Type)
	2414-P-2040 – KAT – Keeler Applanation Tonometer (R-Type)
<b>ACCESSORIES</b>	
	2401-P-8037 – KAT re-usable doubling prism
	2414-P-5032 – KAT T-Type guide plate
	2414-P-5042 – KAT R-Type mounting post
	2414-P-5005 – Calibration arm assembly



## AccuPen – Handheld applanation tonometer

The AccuPen handheld tonometer is ideal for screening IOP measurements in patients. Our gravity offset technology provides accurate IOP measurements with less calibration in any testing position. The AccuPen is accurate, easy to use, portable, and versatile, making it a must-have for any facility.

### Accurate

The AccuPen's gravity offset technology provides precise IOP measurements with less calibration compared to other handheld tonometers. Micro-strain gauge technology, combined with proprietary algorithm, provides reproducible results.

### Easy-to-use

An ergonomic design combined with sighting lines allows for easy visualization of the cornea, facilitating both centralization and perpendicularity. Contoured molding with large, visible LCD allows the AccuPen to be used ambidextrously and fit comfortably in any size hand.

### Ready-to-use

Eliminates the constant need for "up, down, and around" calibration. Long-lasting lithium battery lasts for four to six months.

### Portability

The AccuPen only weighs three ounces and comes with a custom, heavy-duty traveling case and lanyard for safe transportation.

### Versatility

The gravity offset technology allows for fast measurements with patients in any position. Frees up valuable office space.

### Smarter software

The AccuPen stores and averages nine measurements. The built-in IOP correction calculator adjusts IOP based on corneal thickness.

## AccuTips

AccuTips are designed for use with the AccuPen as well as the Reichert Tono-Pen®. These tonometer tip covers are used to keep your patients safe from infection due to cross-contamination.



### Individually packed

(Box of 100 or 300 sleeved tip covers).



### Sleeved tip covers

(Buy in bulk with a box of 100).



### Non-sleeved tip covers

(Bag of 600 or six boxes of 150 – 900 tip covers total).

## AccuPen specifications

<b>ACCURACY</b>	+/- 2mmHg (compared to Goldmann Tonometer)
<b>WEIGHT</b>	3.0 oz.
<b>DIMENSIONS</b>	7 1/4" x 1 1/4"
<b>TRANSDUCER DIMENSIONS</b>	1.0mm diameter
<b>MEASUREMENT RANGE</b>	5–60mmHg
<b>POWER SOURCE</b>	3.6v lithium battery
<b>ITEM NUMBER</b>	24-3000



# Pachymetry

## Handheld pachymeter

The PachPen is the perfect tool for testing a patient's corneal thickness with accuracy, portability, and comfort. The superior ergonomic design fits comfortably in any hand, offering a major advantage from other handheld models.

### Accurate

The PachPen's 65MHz sampling probe ensures precise measurements and uses digital signal analysis to analyze wave patterns and to eliminate non-perpendicular measurements.

### Easy-to-use

An ergonomic design, combined with sighting lines, allows for easy visualization of the cornea, facilitating both centralization and perpendicularity. The contoured molding with a large, visible LCD screen allows the PachPen to be used ambidextrously and fit comfortably in any size hand.

### Ready-to-use

Digital ultrasound analysis eliminates the need for calibration. The long-lasting battery will last for four to six months.



### Portability

The PachPen only weighs three ounces and comes with a custom heavy-duty traveling case and lanyard for safe transportation.

### Versatility

The ergonomic design allows you to take fast measurements with your patient in any position. This frees up valuable office space.

### Smarter software

The PachPen stores and averages nine measurements. It contains a built-in IOP correction calculator, which adjusts the IOP based on corneal thickness.

### PachPen specifications

#### ACCURACY

+/- 5 Microns

#### WEIGHT

3.0 oz.

#### DIMENSIONS

7 $\frac{1}{4}$ " x 1 $\frac{1}{4}$ "

#### PROBE DIMENSION

2.5mm diameter

#### MEASUREMENT RANGE

300–999 Microns

#### POWER SOURCE

3.6v lithium battery

#### ITEM NUMBER

24-5100



## AccuPach VI Pachymeter

### Easy-to-use

The unsurpassed ease-of-use of the touchscreen, and the straightforward graphical user interface guide you through every operation. The high-resolution LCD touchscreen provides an intuitive user interface.

### Superior accuracy

Industry-leading signal acquisition and processing helps ensure accurate measurements. State-of-the-art digital technology (Accutome's Digital Signal Analysis), combined with a probe sampling of 65 Mhz ensures precise readings.

### Smarter software

Allows entry of intraocular pressure (IOP) and provides corrected IOP based on corneal thickness measurements. Displays measured corneal thickness, entered IOP, corrected IOP, and average of standard deviation for all stored measurements. Automatically capture and store up to nine measurements for each eye, along with the running average of all measurements taken.

### USB interface

The USB flash drive is used to store patient data, which can be transferred to a computer for storage, or printed.

### AccuPach VI specifications

<b>MEASUREMENT RANGE</b>	+/- 5 Microns	300–999 Microns
<b>ELECTRONIC RESOLUTION</b>	+/- 1 Microns	
<b>POWER SUPPLY</b>	Medical grade power supply	
<b>ITEM NUMBER</b>	24-6200	



# Ultrasound Imaging

## Connect software

Connect is a single application solution for managing your ultrasound patient workflow, including A-Scan, B-Scan, and/or UBM. The software is a powerful and portable diagnostic tool designed to meet the demands of today's ophthalmic practice. The A-Scan, B-Scan, and UBM probes plug directly into a PC, laptop, or tablet device and offer flexible data transfer to meet your clinical needs. All patient data is easily updated to electronic medical records and can be stored, emailed, or printed quickly. Reports are generated with just a few clicks of a button. Take the Connect anywhere with no software licenses, allowing you to load the software in multiple exam rooms and offices. Protect your investment with easily upgradeable software, and streamline your patient data by sharing information between each system.

### It's all connected

Connect is the only system to use the same probes as our 4Sight, boasting reverse compatibility and industry-leading options for portability and functionality. Both systems also use the same graphical user interface, eliminating the learning curve and making the transition seamless when switching from one system to the other.



 CONNECT™

# A-Scan Plus Connect

## Features:

- Immersion and contact modes
- Industry-leading resolution
- IOL formulas including the Hoffer Q, SRK/T, Holladay I, Haigis, SRK II, Binkhorst II, as well as new post-refractive formulas
- Customizable lens, ACD and VCD materials for new emerging implant/chamber materials
- Optimized lens constants for superior surgical outcomes
- Easy to set up defaults, smooth customer interface, and automatic EMR exports to decrease examination time, increase patient throughput, and increase profit
- Automatic alignment detection and sclera recognition help eliminate marginally aligned scans
- Seamless workflow integration with IOLMaster 500 from ZEISS
- Fully upgradeable software
- Unlimited data storage, based on PC/network storage



- EMR capability with automatic transfer of data
- DICOM<sup>SM</sup> ready
- Unlimited IOL lens groups
- Piggyback calculation ability for ICL implant patients
- Rx surgery calculations for an aging Lasik population
- PC-based platform
- PDF reporting

## Specifications

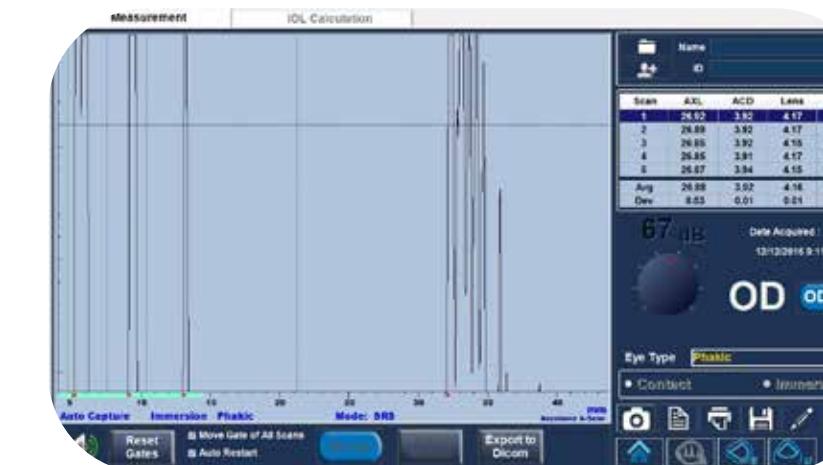
<b>WEIGHT</b>	0.43Kg (15.1 oz.)
<b>DIMENSIONS</b>	13.75cm x 9.50cm x 6.40cm (5.4" x 3.7" x 2.5")
<b>METHODS</b>	Immersion or contact
<b>DEFAULT EYE TYPE SETTINGS</b>	Phakic, Dense Cataract, Silicone Filled, Pseudo PMMA, Pseudo Silicone, Pseudo Acrylic, Aphakic
<b>CUSTOM EYE TYPE SETTINGS</b>	Unlimited with independent ACD, lens, VCD velocities
<b>MEASUREMENTS</b>	ACD, lens thickness, VCD, axial length
<b>CAPTURE MODES</b>	Automatic or manual
<b>FREQUENCY</b>	10MHz
<b>ELECTRONIC RESOLUTION</b>	0.016mm
<b>CLINICAL ACCURACY</b>	0.1mm
<b>ITEM NUMBER</b>	24-4400



Improved efficiency

Easy-to-use interface for fast scan capture.

<b>DATA POINTS PER WAVEFORM</b>	4,096
<b>MEASUREMENT RANGE</b>	0.01–63.6mm
<b>ADJUSTABLE GAIN</b>	30–100dB
<b>IOL FORMULAS</b>	Hoffer Q, Holladay I, SRK/T, Haigis, SRK II, Binkhorst II
<b>POST-REFRACTIVE FORMULA METHODS</b>	Clinical history, Contact Lens, Shammas Clinical
<b>IOL DATA STORAGE</b>	Unlimited, based on PC/network storage
<b>PATIENT DATA STORAGE</b>	Unlimited, based on PC/network storage
<b>DATA EXPORT</b>	EHR compatible, network ready
<b>PRINTER</b>	Any supported by PC
<b>ACCESSORIES</b>	USB footswitch, CD containing A-Scan Plus Connect software and manual, test block



Trusted accuracy

Trusted reliability and accuracy with industry-leading resolution.

## B-Scan Plus

The B-Scan Plus proprietary software combined with unique probe electronics make it the premier portable high-definition B-Scan. While developing the B-Scan Plus software, we visited many of the top facilities around the world. The results are a reliable and easy-to-use unit, which can quickly scan patients and transfer information.

### Features

- Superior Image – 0.015mm image resolution is among the highest in the medical industry
- Improved probe providing sharper, more focused images due to the elimination of signal loss
- Unsurpassed data analysis contains 12 useful measuring calipers, including six lines, two areas, two angles, and two arrows
- Optical zoom technology allows for 2x full-image zoom without distortion of real-time or captured scan
- The portable probe can plug into any Windows-based laptop or PC
- Adjustable film loops that range from 2 to 17 seconds
- Unlimited adjustable and transferable video recording
- Fully adjustable gain control before, during, or after scan
- Connect software allows the B-Scan Plus to integrate the option for A-Scan and UBM modes for improved patient workflow
- Easy to set up defaults, smooth customer interface, and automatic EMR exports to decrease examination time, increase patient throughput, and increase profit
- Unsurpassed compact file storage
- EMR compatible
- DICOM ready
- Multiple measuring velocities for ACD/VCD
- PDF reporting
- Archive data on a network or external hard drive



### Specifications

<b>WEIGHT</b>	6 oz.
<b>DIMENSIONS</b>	7" long x 1.25" diameter
<b>FREQUENCY</b>	12 or 15MHz
<b>AXIAL RESOLUTION</b>	0.015mm electronic
<b>LATERAL RESOLUTION</b>	0.085mm electronic
<b>GAIN</b>	0-112dB
<b>ADJUSTABLE GAMMA</b>	Linear, S-Curve, Log, Color
<b>SCANNING ANGLE</b>	60°
<b>FIELD OF VIEW</b>	12MHz = 64mm or 15MHz = 52mm
<b>FRAME RATE PER SECOND</b>	15
<b>SAMPLING RATE</b>	2,048 (points per line)
<b>VECTORS PER FRAME</b>	256
<b>FOCAL POINT</b>	22mm
<b>FOCAL ZONE</b>	20mm
<b>TGC</b>	Yes
<b>FROZEN IMAGE GAIN ADJUSTMENT</b>	Yes
<b>ZOOM</b>	2x optical zoom, 8x maximum
<b>REPORTS</b>	Integrated Microsoft Word
<b>SNAPSHOT FORMAT</b>	.jpeg, .bmp, .png, .tiff, .gif
<b>DATA ARCHIVE/EXPORT CAPABILITY</b>	Yes
<b>MAX. NUMBER OF FRAMES PER SCAN</b>	256
<b>SIZE OF CINE LOOP</b>	16-128MB
<b>MEASUREMENT CALIPERS</b>	6-line, 2 area, 2 angle, 2 arrows
<b>ACCESSORIES</b>	Durable traveling case, probe holder, footswitch
<b>ITEM NUMBER</b>	24-6100



## UBM Plus

The UBM Plus probe has a guarded tip to prevent damage to both the patient and the probe. The unit is used for anterior segment imaging. This unit is an incredibly portable device because the 48MHz probe plugs directly into any Microsoft Windows laptop or desktop computer. The UBM features an all-in-one probe design to eliminate signal loss and provide the sharpest images possible.

### Features

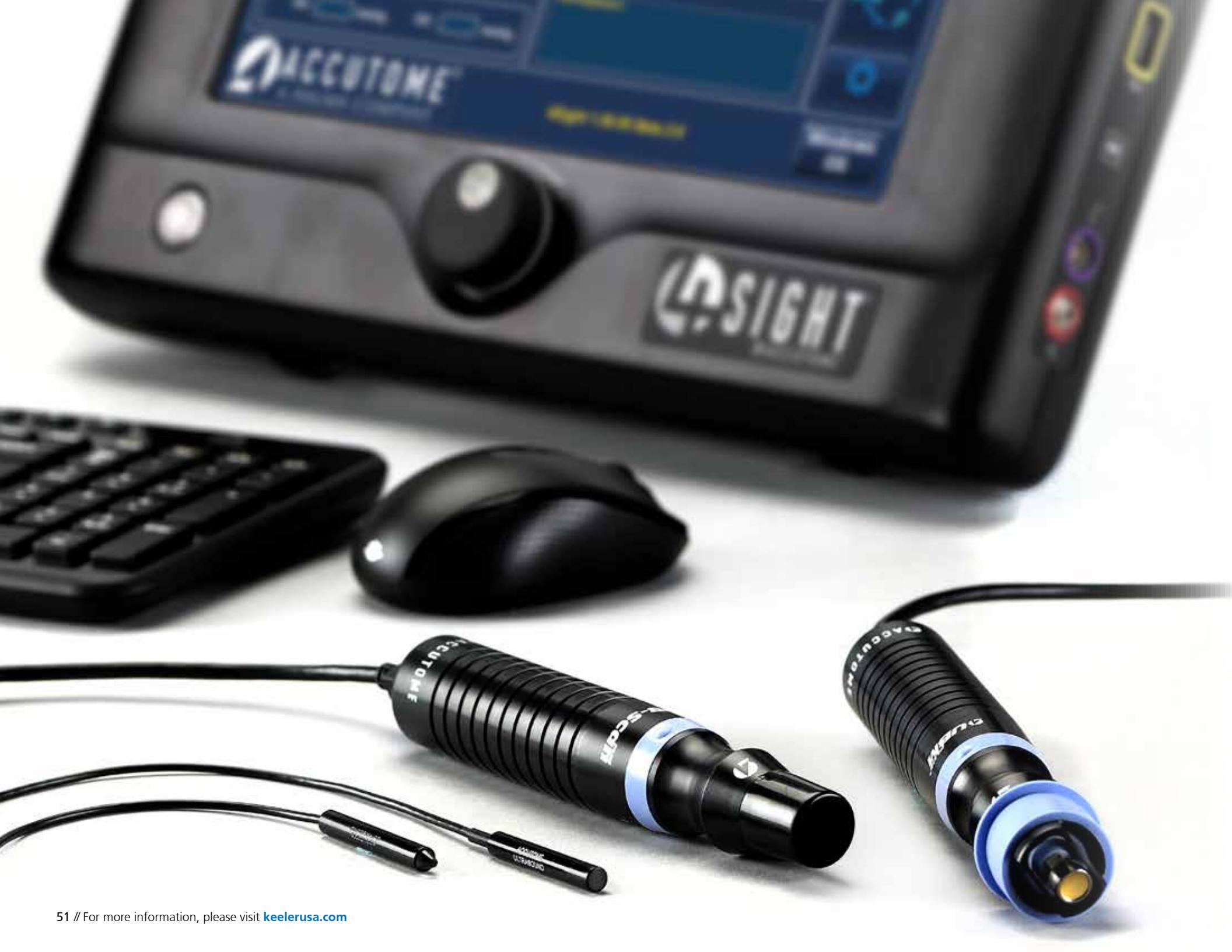
- High-definition imaging – Detailed structure definition, including cornea, iris, ciliary body, zonules, crystalline lens, and intraocular lens, as well as pathologies
- State-of-the-art probe design – Sharper, more focused images due to the elimination of signal loss
- Unsurpassed data analysis – Contains tools for measuring sulcus-to-sulcus, anterior chamber depth, positioning of intraocular lenses, and filtration angle of the eye
- Easy-to-set-up defaults, smooth customer interface, and automatic EMR exports that decrease examination time, increase patient throughput, and increase profit
- Adjustable video loop
- Full upgradeable software
- EMR compatible
- DICOM ready
- Multiple measuring velocities for ACD
- PDF reporting
- Fully adjustable gain-control before, during, or after scan
- Data archive – Network or external hard drive



### Specifications

<b>WEIGHT</b>	6 oz.
<b>DIMENSIONS</b>	7" long x 1.25" diameter
<b>FREQUENCY</b>	48MHz
<b>AXIAL RESOLUTION</b>	0.015mm electronic
<b>LATERAL RESOLUTION</b>	0.05mm electronic
<b>GAIN</b>	0–112dB
<b>ADJUSTABLE GAMMA</b>	Linear, S-Curve, Log, Color
<b>SCANNING ANGLE</b>	30°
<b>FIELD OF VIEW</b>	32mm
<b>FRAME RATE PER SECOND</b>	10
<b>SAMPLING RATE</b>	2,048 (points per line)
<b>VECTORS PER FRAME</b>	256
<b>FOCAL POINT</b>	13mm
<b>FOCAL ZONE</b>	4mm
<b>TGC</b>	Yes
<b>FROZEN IMAGE GAIN ADJUSTMENT</b>	Yes
<b>ZOOM</b>	8x maximum
<b>REPORTS</b>	Integrated Microsoft Word
<b>SNAPSHOT FORMAT</b>	.jpeg, .bmp, .png, .tiff, .gif
<b>DATA ARCHIVE/EXPORT CAPABILITY</b>	Yes
<b>MAX. NUMBER OF FRAMES PER SCAN</b>	256
<b>SIZE OF CINE LOOP</b>	16–128MB
<b>MEASUREMENT CALIPERS</b>	4 lines, 2 areas, 2 angles
<b>ACCESSORIES</b>	Durable traveling case, probe holder, footswitch, wireless mouse, 18mm and 20mm Immersion shells
<b>ITEM NUMBER</b>	24-6300-G





## 4Sight – See it from every angle

### A-Scan, B-Scan, UBM, and Pachymeter in one, easy-to-use platform

We understand the demands on today's busy clinics, which is why the 4Sight is designed to meet those needs. The 4Sight is a single solution for all ophthalmic ultrasound imaging at an affordable price. The A-Scan, B-Scan, UBM, and pachymeter have all been combined into one unit to eliminate wasted time switching modalities. The 4Sight is accurate, efficient, and affordable, making your job easier.

#### Features

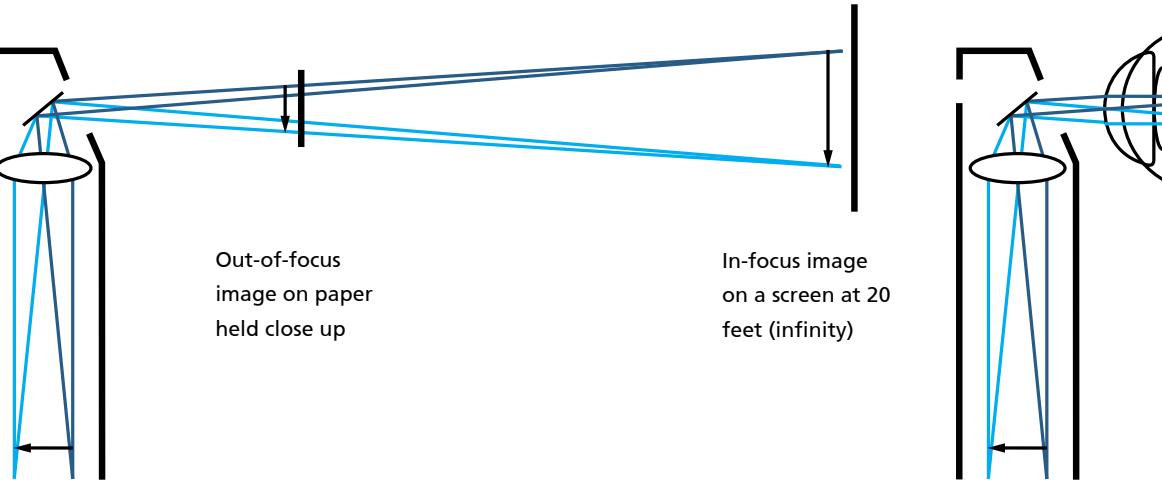
- Modular platform allows for mix-and-match options with a combination specific to your needs
- DICOM worklist compatible
- Easy-to-use software for all probes
- User-friendly interface with touchscreen capability
- Unsurpassed image quality
- Printer compatibility
- Mobility of probes; can be used with 4Sight or laptop
- Live help and dependable support for the life of the product
- Proprietary signal processing
- Industry-leading clinical accuracy
- Financing options available upon request





# Handheld Instruments

A combination of optical perfection, superb ergonomics, and versatile features makes all of our handheld instruments the ideal choice. From basic examination to detailed diagnosis, there is a Keeler hand instrument for you. The next couple of pages will guide your choice, but first, please read on to discover the standard features and benefits shared by all Keeler ophthalmoscopes.



## Keeler optics – the more you see, the better the diagnosis

Our ophthalmoscopes are adjusted for perfect focus where it's needed: in the eye, not on paper. Along with our wide-angle light beam and individual mirror alignment, this ensures that you will see the clearest view of the retina, regardless of the patient's pupil size.

## Comfort and fit

With curved surfaces and subtle patient side marking, each ophthalmoscope has been designed to fit snugly into the orbital bone. Unlike other straight-sided brands, the contoured, curved ophthalmoscope head guarantees an optimal viewing angle and larger field of view, while the smooth line surfaces provide a non-threatening aesthetic.

## Keeler slimline handles

Our handheld instruments have a slimline, lightweight handle with

## Light, tough, and built to last

All of our ophthalmoscopes are built from resilient, lightweight materials to give you many years of trouble-free service. High-impact resistant covers combined with a strong metal chassis protect the carefully aligned optics and allow Keeler ophthalmoscopes to withstand the rigors of everyday use for years to come.

## Controllable light for bright, clear images

The bright, white LED illumination is fully adjustable from zero. This ensures the comfort of your patients and the best possible diagnosis.

## Reflex-free images

Individually controlled optics reduce the effect of corneal reflex while minimizing shadows and providing clearer retinal visualization.

## Professional ophthalmoscope

### Total control at your fingertips

The Professional ophthalmoscope has been designed to ensure ultimate control. Lenses, graticules, and filters can all be introduced at the touch of a finger. No need to pull away from the patient – the Professional makes routine examinations far easier.

### LED illumination

We recognize that illumination is of fundamental importance to good diagnoses. That's why we have selected LED illumination for our ophthalmoscopes. This brighter, whiter, and longer-lasting light will meet any diagnostic challenge! With LED, you have the power to diagnose even through cloudy media. LED technology will last throughout your career.

### Positive action maywheel

The positive action, easy-access maywheel not only allows you to dial up the required lenses quickly but it also allows you to know where you are without the need to pull away from the patient.

## Pocket ophthalmoscope

### Portable and compact

Full diagnostic capability in a compact instrument makes the Pocket ophthalmoscope ideal for the practitioner on the move.

### Portable

An ideal choice for domiciliary and ward use or as a backup.



## Specialist ophthalmoscope

### The choice of the ophthalmic profession

The Specialist offers precision optics, versatile features, and practical ergonomics – making it the number one choice for ophthalmic practitioners.

### Exceptional quality

The Specialist ophthalmoscope is perfectly balanced for precise ocular examination. The comprehensive lens range ensures clear and accurate diagnosis, even in the most difficult eyes. The Specialist lens range is made up of tiny, individual ground glass lenses. The fine gearing of the Morton Track lens system allows you to dial up any lens quickly and easily.

### Pupillometer

The pupillometer comparison disc allows for quick assessment of pupil size.

### Versatility

The graticule range offers a total of six diagnostic beams for comprehensive ocular examinations. In addition to a choice of three viewing beam sizes, the Specialist includes a red-free filter for vessel examination, a fixation cross for assessment of eccentric fixation, and a slit to determine changes in retinal elevation. A snug orbital fit optimizes the field of view and guarantees increased comfort for both practitioner and patient.



## Jazz ophthalmoscope set

### Jazz otoscope

- Fiber-optic otoscope
- Brilliant LED illumination gives the best possible view and a longer battery life for a greener product
- 3x magnifying lens



Interchangeable color rings

### Jazz ophthalmoscope

- Brilliant LED illumination
- Renowned high-performance Keeler optics with aspherical lens



+/- 20D range of powers



Set consists of one handy package with two handles



## Finoff transilluminator

For use when the presence of intraocular tumors in patients with cloudy media is suspected. The Finoff transilluminator illuminates the fundus via the sclera and any tumors present in the light path will dim the normally bright red fundal reflex as seen through the pupil.



## Professional LED retinoscope

### Lifetime warranty

Our patent-pending LED retinoscope will last a lifetime, and comes with a warranty to match.

### BCS technology

Easiest and most accurate refraction from the brightest illumination, increased contrast, and sharpness in your hands.

### Longest battery life

Practice makes perfect, and our LED technology will increase your on-time up to 300%, as compared to non-LED technology.

### Double neutralization check

The Professional Combi (bulb) retinoscope allows for the user to switch from spot to streak with the facility to double-check neutralization in both modes.

### Easy access control

The Professional LED retinoscope uses rare earth magnet technology to provide optical precision refraction. A single control is used for rotation, convergence, and divergence.

A choice of apertures is included to optimize brightness or resolution of the retinal reflex in 4mm or 1.7mm.

The Professional LED retinoscope comes with easily interchangeable soft brow rest for glasses wearers.

### Light output

With up to 600 lux of brilliant illumination, the Professional LED retinoscope guarantees you more than enough light to refract even the most difficult eyes.

### Near point cards

Fixation cards for dynamic retinoscopy are included. Simply clip on and off for easy use.



weak axis compare working examples over  
yesterday step turn arrows direction printer  
accurate glasses testing shortcut summarise  
child error effect event  
remind list matured gift  
price system flag flower  
confirm lift promote lofty  
justification television machine optical observe  
recognise examine environment calculate  
I.P.N-1285K

jump cat happy go  
run ball hello  
ball dog  
mummy toy and rabbit  
I.P.N-1285K

Near point cards



## Accessories and chargers

### Color-coded grips

Add a bit of color to your diagnostic tools with color-coded grips. Available in four colors, these new grips are not only fun, but functional too! Available individually or as an assorted pack of four. Choose from pink, green, blue, or black.

### Keeler slimline handles

The lightweight, perfectly balanced, smooth handle is made from high-quality chrome, eliminating cross-infection.

### Keeler handle stand adaptor

The small, sleek adaptor converts your Keeler slimline handle to charge in any standard refraction stand.



### LED displays

LEDs indicate when battery life is low, charging, or fully charged.

### Metal hydride/lithium Duo charger

The compact charger takes two handles and fits neatly into your immediate testing environment, allowing easy access to your handheld instruments. It can be desk or wall mounted.

### Metal hydride/lithium Mini charger

This can be connected quickly and simply to the base of your Keeler handle, making it the perfect choice for domiciliary visits or practitioners on the move. Your instruments can still be used while the battery is charging. The Duo and/or Mini charger will charge your device within an hour.



## Part numbers

### Professional ophthalmoscope

- 1128-P-1004 – Professional (head only) with 3.6v bulb
- 1128-P-1007 – Professional (head only) with LED

#### **FOR USE IN REFRACTION STAND, ORDER HEAD + THE FOLLOWING HANDLE:**

- 1911-P-1244-500 – Keeler handle with metal hydride battery and stand adaptor

### Pocket ophthalmoscope

- 1102-P-1041 – Pocket (head only) with "AA" battery handle and 2.8v bulb

### Specialist ophthalmoscope

- 1132-P-1050 – Specialist (head only) with 3.6v bulb
- 1132-P-5000 – Specialist (head only) with 2.8v bulb
- 1132-P-1165 – Specialist (head only) with LED
- 1311-P-5041 – Presbyopic + lens to view dioptric correction

#### **FOR USE IN REFRACTION STAND, ORDER HEAD + THE FOLLOWING HANDLE:**

- 1911-P-1244-500 – Keeler handle with metal hydride battery and stand adaptor

### Jazz ophthalmoscope

- 1102-P-1105 – LED pocket ophthalmoscope
- 1702-P-1096 – LED pocket diagnostic set

### Finoff transilluminator

- 2903-P-7001 – 3.6v head
- 2903-P-1118 – 2.8v head

### Professional Retinoscope

- 1302-P-1012 – LED Retinoscope (head only)
- 1302-P-1007 – Combi Retinoscope (head only) with 3.6v bulb

#### **FOR USE IN REFRACTION STAND, ORDER HEAD + THE FOLLOWING HANDLE:**

- 1911-P-1244-500 – Keeler handle with metal hydride battery and stand adaptor

## Chargers

- 1941-P-1368 – Metal hydride/lithium Duo charger
- 1941-P-1341 – Metal hydride/lithium Mini charger

## Accessories

### COLOR CODED GRIPS

- 1901-P-7028 – Pink
- 1901-P-7036 – Green
- 1901-P-7044 – Blue
- EP29-05365 – Black

### NEAR POINT CARDS FOR RETINOSCOPY

- 1321-P-7021 – Near point cards (set of 3)

### SLIMLINE HANDLE ADAPTOR AND BATTERY

- 3301-P-7410 – Stand adaptor
- 1919-P-7149 – Metal hydride battery
- EP39-18918 – Lithium battery



# Sight and Color Vision Testing

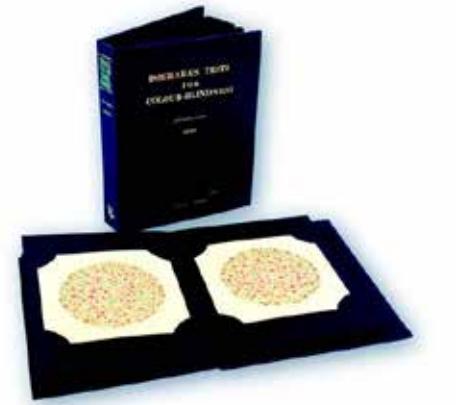


## Sheridan Gardiner test

A well-established test designed for children but suitable for disabled people, those with learning difficulties, or patients who do not share a common language with the examiner.

### PART NUMBERS

- 2204-P-1004 – Sheridan Gardiner Test without orthoptic booklets
- 2204-P-1063 – Sheridan Gardiner Test with orthoptic booklets

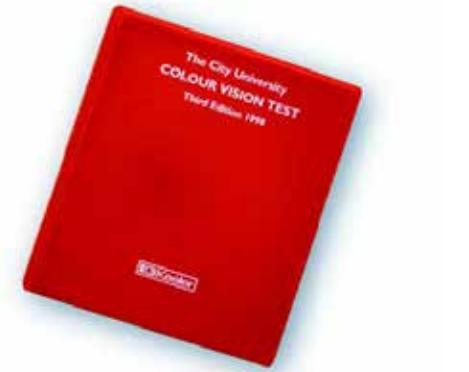


## 38- and 24-plate Ishihara color vision test

Ideal for commercial/industrial color screening. Tests for protan and deutan defects. Patients must identify numbers or patterns formed in a matrix of small colored dots varying in color and intensity. Two editions available – 38-plate for detailed investigation or 24-plate for quick screening.

### PART NUMBERS

- 2206-P-1008 – 38-Plate Ishihara color vision test
- 2206-P-1016 – 24-Plate Ishihara color vision test



## 3rd Edition City University color vision test

This test displays normal protan, deutan, and tritan colors. Differentiation is stronger in the red/green. Significant tritan defects may be detected if used in conjunction with the Ishihara. The test includes a screening option.

### PART NUMBER

- 2206-L-1057 – 3rd Edition City University Color Vision Test



## Maddox Wing Test

A convenient, handheld, quick-and-efficient near test for heterophoria, which is measured on the red vertical scale. Esophoria and exophoria are measured by the white horizontal scale. Cyclophoria may be assessed by moving the red arrow pointer parallel to the horizontal scale.

### PART NUMBER

- 2301-P-1022 – Maddox Wing Test



## Amsler Manual

Assists in early recognition of changes in the macula and foveal areas. Only six patient responses are required for diagnosis of functional disturbances, from small scotoma to distortions. Full instructions include the interpretation of results.

### PART NUMBERS

- 2215-P-1034 – Amsler Manual
- 2215-P-7050 – Amsler Recording Charts



## Halberg Trial Lens Clips

Halberg Trial Lens Clips have become a required addition to every refraction stand. These useful and inexpensive clips may be fitted over your patient's glasses frame. Each cell has space for three lenses, and the rubber coating on the clip protects the glasses lenses.

### PART NUMBER

- 2207-P-1026 – Halberg Trial Lens Clips with case



## Keeler Retinoscopy Rack

An excellent tool for fast objective refraction, particularly with uncooperative patients and children. Comes complete in its own carrying case. There are 24 lenses, 13mm diameter –6D to +6D in 0.5D steps. Mounted in tough-yet-light alloy frame.

### PART NUMBER

- 2202-P-1019 – Keeler Retinoscopy Rack

# Surgical Loupes

Laser-aligned optics for magnification of superb optical quality; a lightweight aluminum assembly and precise pupil alignment system make Keeler loupes the perfect choice for thousands of surgical professionals.



Galilean system

## SuperVu SL (galilean system)

### 2.5x magnification

The true benefit of this system is its ease of use. Movement while maintaining focal clarity is made possible due to a superior depth of field. The lightweight aluminum bar and individual pupillary adjustment provides stability for the mounted loupes and optimal focal alignment, eliminating headache and eyestrain. Ideal for ocular plastic and retinal procedures.

## SuperVu SL Hi-Res (galilean system)

### 3.0x magnification

SuperVu SL Hi-Res loupes provide greater definition than a standard galilean with 15% increased field of view. The Hi-Res five element system provides a true 3x magnification in a lightweight system.



Prismatic system

## SuperVu XL (prismatic system)

### 3.5x, 4.5x, and 5.5x magnification

With higher magnification for advanced surgical procedures, Prismatic quality guarantees a true image. Edge-to-edge clarity and precise color rendition is ideal for intricate surgical applications. The XL's precision lenses are treated with an antireflective coating to produce a superior image. Ideal for surgeons who require higher magnification.

## LED Illumination

The K-LED illumination system clips quickly and easily onto the loupes bar. It provides 34,000 lux of homogenous, coaxial, white LED illumination. The lightweight (17g) LED offers 50,000 hours of life. The lithium battery will last for four hours before it needs charging.



64 // For more information, please visit [keelerusa.com](http://keelerusa.com)



## Sport frames

Stylish, comfortable, and attractive

Sport frames are available in a choice of bright colors, as shown. They can be worn over your own glasses, or your prescription can be incorporated into the supplied holder. The choice of color is black, blue, and red. All of our loupes are available to be purchased with sport frames.



### Designed for comfort

Choose from the frames or a headband mounted system to mount your loupes. Adaptable to all prescriptions.



## Part Numbers

Keeler Loupe systems are supplied in a soft carrying case and include protective caps, sterilizable flip lever, and cleaning cloth.

### 2.5x Standard

- 2112-P-1006 – 13" Working Distance (34cm)
- 2112-P-1007 – 16" Working Distance (42cm)
- 2112-P-1008 – 18" Working Distance (46cm)
- 2112-P-1009 – 20" Working Distance (50cm)

### 3.0x Mag – Hi-Res

- 2112-P-1050 – 13" Working Distance (34cm)
- 2112-P-1051 – 16" Working Distance (42cm)
- 2112-P-1052 – 18" Working Distance (46cm)
- 2112-P-1053 – 20" Working Distance (50cm)

### 3.5x Mag

- 2113-P-6004 – 13" Working Distance (34cm)
- 2113-P-6021 – 16" Working Distance (42cm)
- 2113-P-6022 – 18" Working Distance (46cm)
- 2113-P-6007 – 20" Working Distance (50cm)

### 4.5x Mag

- 2113-P-6008 – 13" Working Distance (34cm)
- 2113-P-6025 – 16" Working Distance (42cm)
- 2113-P-6010 – 18" Working Distance (46cm)
- 2113-P-6011 – 20" Working Distance (50cm)

### 5.5x Mag

- 2113-P-6012 – 13" Working Distance (34cm)
- 2113-P-6029 – 16" Working Distance (42cm)
- 2113-P-6014 – 18" Working Distance (46cm)
- 2113-P-6015 – 20" Working Distance (50cm)

### ORDER FRAMES SEPARATELY

#### Small sport frames (130mm temples)

- 2199-P-1982 – Black
- 2199-P-1983 – Blue
- 2199-P-1984 – Red

#### Medium sport frames (135mm temples)

- 2199-P-1500 – Black
- 2199-P-1519 – Blue
- 2199-P-1527 – Red

#### Large sport frames (150mm temples)

- 2199-P-1543 – Black
- 2199-P-1551 – Blue
- 2199-P-1578 – Red

### K-LED system

- 2004-P-1007 – K-LED with (2) batteries and (1) twin charger tray
- 2004-P-1012 – K-LED with (1) battery and (1) charger tray



Double-charger system



## Cryo Surgical Systems

We have been supplying the ophthalmic surgeon with high-performance, reliable cryo systems since 1966. Changes in technology and the surgeons' requirements have allowed us to improve and expand our range of cryo ophthalmic instruments.

### Cryomatic MK II

#### Smart technology

Electronic communication between the console and any probe that is connected to it allows for optimum operating parameters and self-adjustment. In other words, the console auto-configures to each probe's characteristics. The main advantage of this is that there is no longer a need for manual setups before or during a procedure. The gas pressure will also always be set automatically.

#### Back-flush facility

During purging, and about 20 seconds after the footswitch is released, the gas in the system reverses its flow, but at a lower pressure. This changed direction of gas after a freeze moves any debris or moisture that may be accumulating – eliminating any risk of problems during surgery.

#### Perfection evolved

Building on the exceptional reliability of its predecessor, the Cryomatic MK II delivers quality and versatility when using either disposable or reusable probes. The unit's new coupling system allows you to connect either a single-use disposable probe or a reusable probe without the need for an adaptor. The integral software automatically detects the type of probe in use and adjusts the unit accordingly, meaning the unit is ready to be used in a matter of minutes.

Single-use probe



#### No more sterilization concerns

The single-use, sterile, retinal probe is the perfect answer when a probe is demanded on short notice. Lightweight and comfortable to use, the disposable probe is a must-have to manage your infection-control processes and cut time and costs.\*

**\*THE SINGLE-USE PROBE IS NOT CURRENTLY FOR SALE IN THE USA.**

## Part Numbers

### Cryo

- 2509-P-1010 – Cryomatic MK II console with footswitch, high-pressure hose, exhaust hose, (specify CO<sub>2</sub>, or N<sub>2</sub>O gas use when ordering), and user manual

### Probes

#### DISPOSABLE – NOT CURRENTLY FOR SALE IN THE USA

- 2509-P-8033 – Single-use, sterile retinal probe (box of 10)

#### NON-DISPOSABLE

- #1: 2509-P-8020 – Standard retinal probe
- #2: 2509-P-8030 – Compact retinal probe
- #3: 2509-P-8021 – Extended retinal probe
- #4: 2509-P-8022 – Mid-Reach retinal probe
- #5: 2509-P-8025 – Glaucoma probe
- #6: 2509-P-8024 – Curved cataract probe
- #7: 2509-P-8023 – Intra-vitreal probe
- #8: 2509-P-8026 – Collins trichiasis probe



Probe with ice

### Supplies

- 3304-K-1085 – Cryomatic stand
- 1899-K-1163 – Chan wrist rest with pillow
- 1899-K-1219 – Surgical foam headrest
- 1899-K-1243 – Nevyas drape supports (box of 24 – minimum order of 4 boxes)
- 1899-K-1112 – Machemer stool



Cryomatic stand



Surgical foam headrest



Nevyas drape support



Machemer stool



Chan wrist rest - Item #1163

The Chan wrist rest has become an important standard in busy operating rooms. The unique height-adjustable horseshoe bar encircles the patient's head and supports arms and wrists during ophthalmic surgery. The horseshoe bar facilitates easy draping, especially when fluids are collected. The bar also flips up and out of the way for easy patient transfer on and off the table. The metal plate fits under the mattress of the O.R. table. Adapts to all O.R. tables and stretchers.

# Bulbs and Accessories

Accurate diagnosis depends upon a number of factors. Of these, top-quality illumination ranks as one of the most important. Only excellent visualization allows you to use your diagnostic skills to the fullest. All Keeler instruments use genuine halogen, xenon and LED technology, yielding a brighter, whiter illumination and a longer life. Look at the bottom of your bulb to identify if your instrument is 2.8v (dry cell battery) or 3.6v (rechargeable battery).



**All Pupil II LED module**

- 1012-P-7008



**Vantage Plus LED module**

- 1012-P-5276



**LED module for retinoscope**

- 1305-P-7000



**Specialist/Vista ophthalmoscope bulb**

- 1011-P-7034



**All Pupil II and Vantage bulb**

- 1012-P-7003



**Wide-angle twin-mag ophthalmoscope bulb**

- 1012-P-7004



**Pocket ophthalmoscope bulb**

- 1011-P-7050



**Professional/Vista Streak Retinoscope bulb, 35mm**

- 1013-P-7008 – 2.8v Professional
- 1013-P-7009 – 3.6v Professional

**PREVIOUS MODEL RETINOSCOPE, 20MM**

- 1013-P-7002 – 2.8v
- 1013-P-7003 – 3.6v



**Spectra bulb**

- 1299-P-7075



**Pulsair bulb for Mark 1, 2000, 3000, and EasyEye**

- 1024-P-7156



**Professional ophthalmoscope bulb**

- 1011-P-7114



**Combi/Vista spot retinoscope bulb, 35mm**

- 1013-P-7006 – 2.8v Professional

**PREVIOUS MODEL RETINOSCOPE, 20MM**

- 1013-P-7000 – 2.8v
- 1013-P-7001 – 3.6v



**Fison bulb**

**SUPPLIED INDIVIDUALLY**

- 1012-P-7000



**Vantage Plus bulb**

- 1012-P-7006

# Product Icon Guide

Throughout this catalog, you will find these icons underneath or beside specific products to showcase the different features of each. Here is a guide to what each one means for you to reference.



**Semi -circle** – Provides a combination of depth perception and field of view.



**Large aperture** – Ideal when examining fully dilated pupils.



**Pupillary Distance** – Distance between users pupils.



**Clear filter** – Allows user to view the eye in crystal clear detail.



**Slit** – Used primarily to determine retinal elevations and depressions, but may also be used to assess anterior chamber depth.



**Intermediate aperture** – Permits easier access through an undilated pupil and in peripheral examination. Particularly useful in pediatric examinations.



**Diopter range** – Single-step diopter changes to compensate for patient and examiner refractive error.



**Red-free** – Used to examine blood vessels in fine detail. By filtering out the red light, blood vessels are silhouetted black against a dark green background.



**Glaucoma** – Projects a graticule onto the retina to assess the optic cup/disc ratio as an aid to glaucoma diagnosis.



**Small aperture** – Ideal for undilated pupils.



**Portable** – Convenient for transportation.



**Cobalt blue** – Used with fluorescein dye for angiography.



**Fixation cross** – Projects a graticule onto the retina for assessment of the degree and direction of eccentric fixation.



**Adjustable aperture** – Ideal for all pupil sizes.



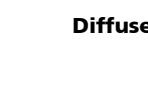
**Long-lasting** – LED and lithium polymer battery can provide up to six hours of use on a single charge.



**Bright** – 25% brighter than standard bulbs.



**Neutral Density (0.8)** – Reduces the amount of light patients receive equally across the spectrum, which is perfect for light-sensitive patients.



**Diffuser** – Softer light patch to be used with patients uncomfortable with a concentrated light. Perfect for pediatric examinations.



**Lightweight** – Stronger and lighter materials allow for comfort without sacrificing quality.



**LED** – Long-lasting white illumination that is bright and allows you to see better details.

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Building 50, Malvern  
PA 19355 USA

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Tel: 610 353 4350

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**Keeler**  
— A world without vision loss —

