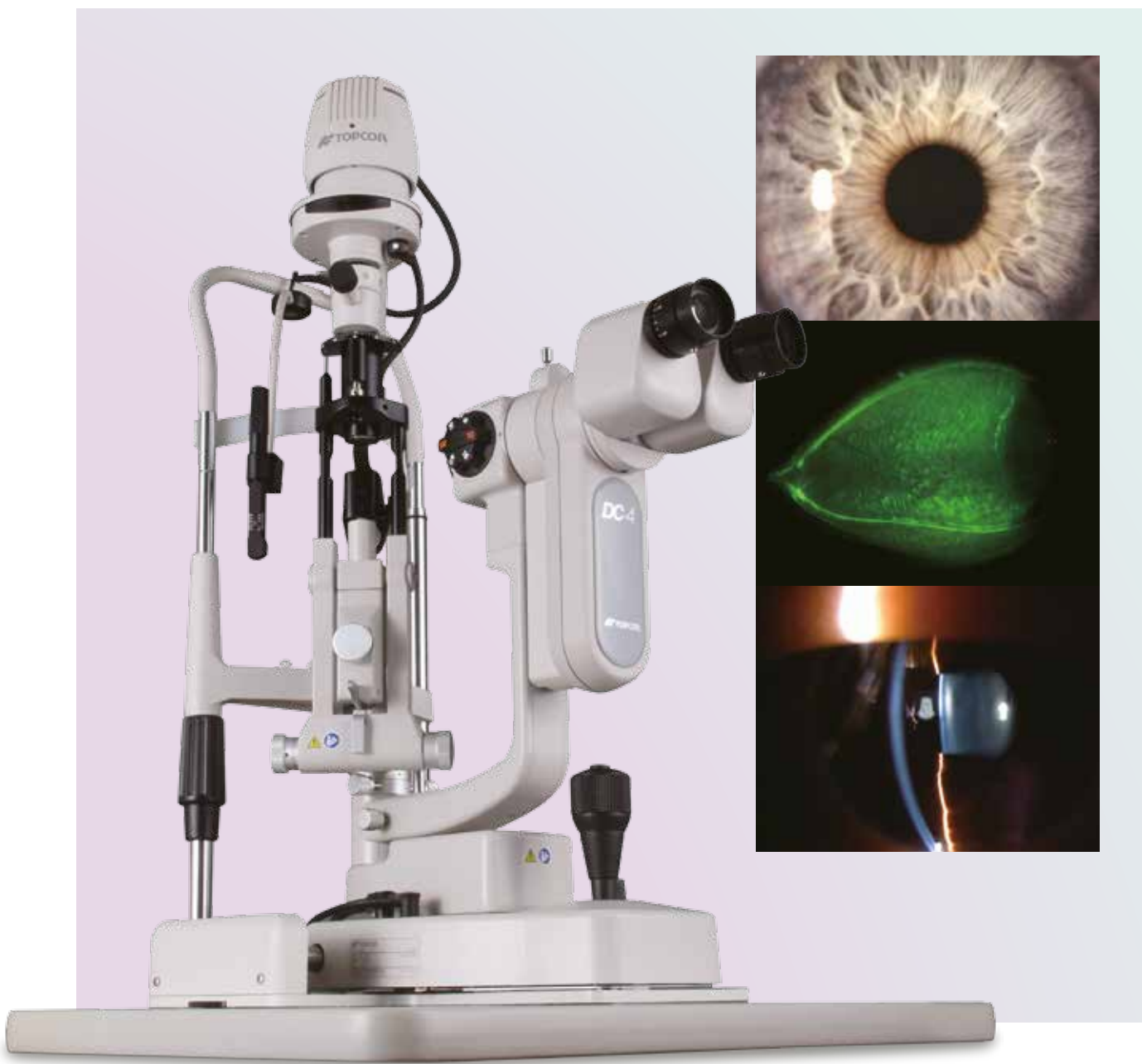


SL-D Series

Digital slit lamp



PERFORMANCE
YOU CAN COUNT ON

Excellence in optics
in high quality digital
slit lamp series



The Topcon SL-D Series is a digital slit lamp series that combines high optical performance with versatile digital capability. The concept of the high quality digital slit lamp is based on the extensive range of optional digital capture devices that can be mounted on these outstanding clinical instruments. Paramount among these is the dedicated **NEW Digital Camera DC-4** with compact body that provides easy-to-capture and high quality digital images. These premier diagnostic instruments offer superior clinical performance with digital capability.

LED light source sharp, bright and
homogeneous illumination



SL-D701 with LED and halogen light source*

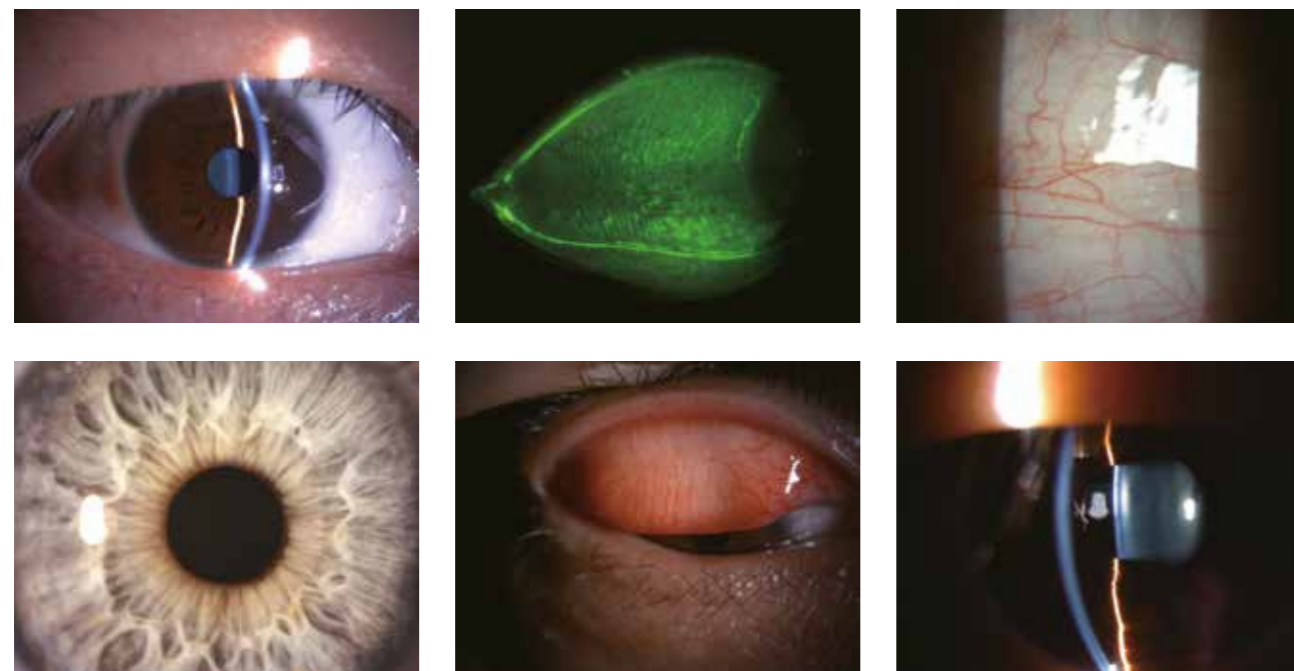
- » Illumination boost
- » New DC-4 digital camera
 - High resolution
 - Smart capture function
 - Still image with auto exposure function
 - Seamless integration
 - Infra red sensitivity
- » Blue Free Filter™ system for superior fluorescent viewing**
- » New BG-5 LED back ground illumination
 - Meibomian gland observation capability



* Factory option
** Fluo model

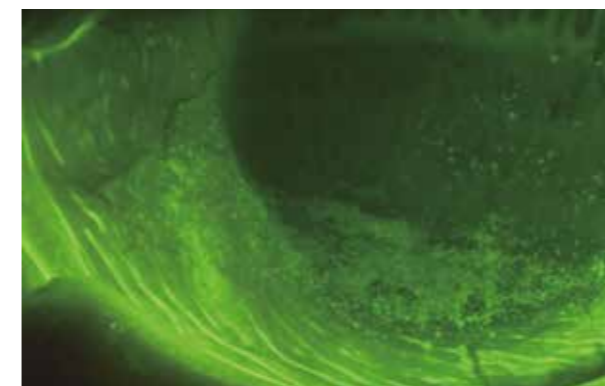
LED light source

The new LED illumination source allows observation under a brighter, more homogeneous condition than the conventional halogen bulb source. The short wavelength of the LED spectrum enables the operator to see minute details such as flare in the anterior chamber and vitreous. Color temperature remains uniform when adjusting light intensity insuring consistent viewing results throughout the entire eye's optical path.



Blue Free Filter™ System

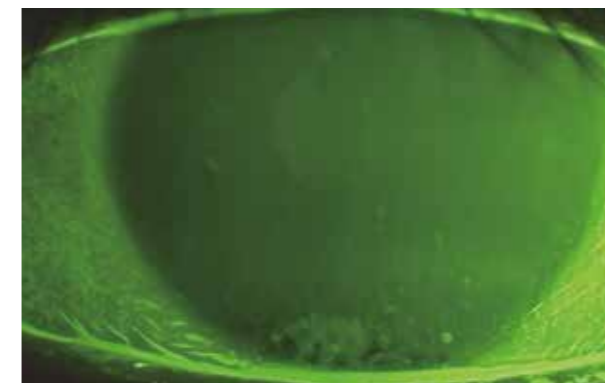
Topcon Blue Free Filter™ observation can be carried out using the exciter* filter and barrier* filter both for slit lamps. Tear flow details and scars can be clearly viewed with less glare or pooling.



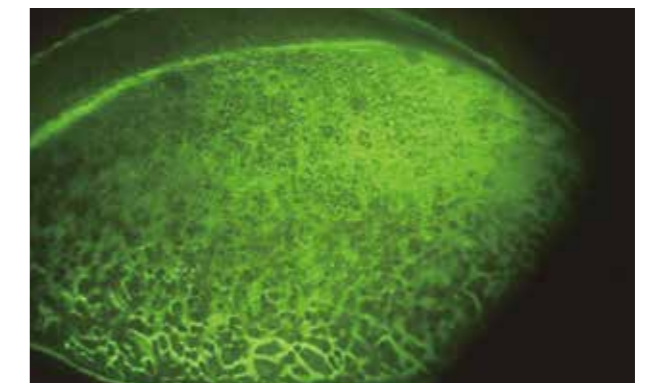
Blue Free Filter™



Cobalt Blue Filter



Blue Free Filter™



Blue Free Filter™

Images provided by Toru Noda, MD, PhD, Department of Ophthalmology, Tokyo Medical Center

Amber filter

A warmer, more pleasant tone of the skin and eye structures can be obtained by inserting the amber filter. This color correction filter produces a pleasant coloration that is especially useful in slit lamp imaging.



Amber



Non Amber



LED features

- » Brighter illumination enhances observation of the eye structures
- » LED wavelength characteristics allow for easy visualization of subtle details such as flare and inflammation
- » Consistent color temperature throughout the entire light intensity adjustment
- » Substantial reduction in bulb replacement
- » Energy efficient and cost saving



Digital camera DC-4

High quality digital images new compact digital camera DC-4*

The DC-4 digital camera is built exclusively for the SL-D Series to provide superb digital documentation. A variety of image capture modes can be employed including still or video images. The DC-4 integrates the beam splitter and the high-resolution digital camera into one unobtrusive compact system. The images captured by the DC-4 can be quickly downloaded to any PC imaging software package via a LAN cable. For more efficient patient database management, all SL-D digital slit lamps can be connected to Topcon IMAGEnet Systems.

» Smart capture function

With a simple push of the joystick trigger the operator can obtain a rapid series of images that are quickly saved for later revision and selection. The smart capture function minimizes failed images or blurry pictures, especially with children and non-cooperative patients.

» Live view

When using the Capture software in conjunction with the DC-4, a real time live image will be seen on the monitor to facilitate centering and focusing. The live image can be used to show the eye condition to third party individuals for teaching and education. Sensitivity, shutter speed and white balance can be adjusted from the pc.

» Still image with Auto Exposure (AE) function

By adjusting the shutter speed and sensor gain, the brightness of the image will be automatically compensated. As a result the live image used for alignment and the final picture will have the same color balance.

» Video capability

The DC-4 makes it easy to obtain video clips of the eye movements without interfering with the examination.



Meibomian gland observation

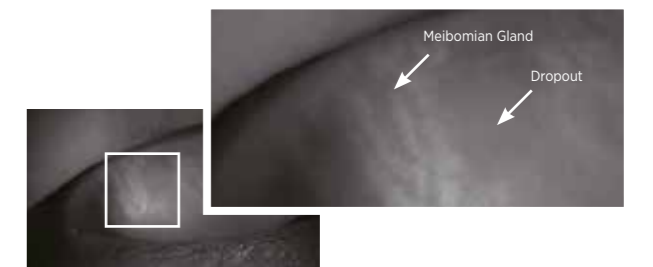
Meibomian gland observation

Meibomian gland observation can be performed and documented using the optional meibomian gland observation system*. Because of the high resolution of the DC-4, fine detail of glandular acinus and subtle changes of meibomian glands can be seen and photographed for a better understanding of its condition.

Meiboscore: grade 0 ~ 3



Meibomian gland close-up



Right / Left eye indicator

When in photography mode, the SL-D701 automatically recognizes the patient's right and left eye, simplifying the photographic procedure.

More than just the basic function

Versatile lens coatings, including a preservative layer, and the use of apochromatic optics enhance the observation and require less maintenance.

* Optional Accessory

Images and meiboscore provided by: Reiko Arita, MD, PhD, Itoh Clinic, Department Ophthalmology, the University of Tokyo School of Medicine

* System of SL-D701 +DC-4 (optional) + BG-5 (optional)

SL-D2 & SL-D4 digital slit lamp

System configuration SL-D2/D4

A complete range of digital-ready slit lamps is available to meet the clinical needs of every eye care specialist. From the versatile SL-D2/D4 to the premier SL-D701 photographic slit lamp, the SL-D Series provides excellence in image clarity, color fidelity, image definition and light transmission.

SL-D2

Three magnification digital slit lamp

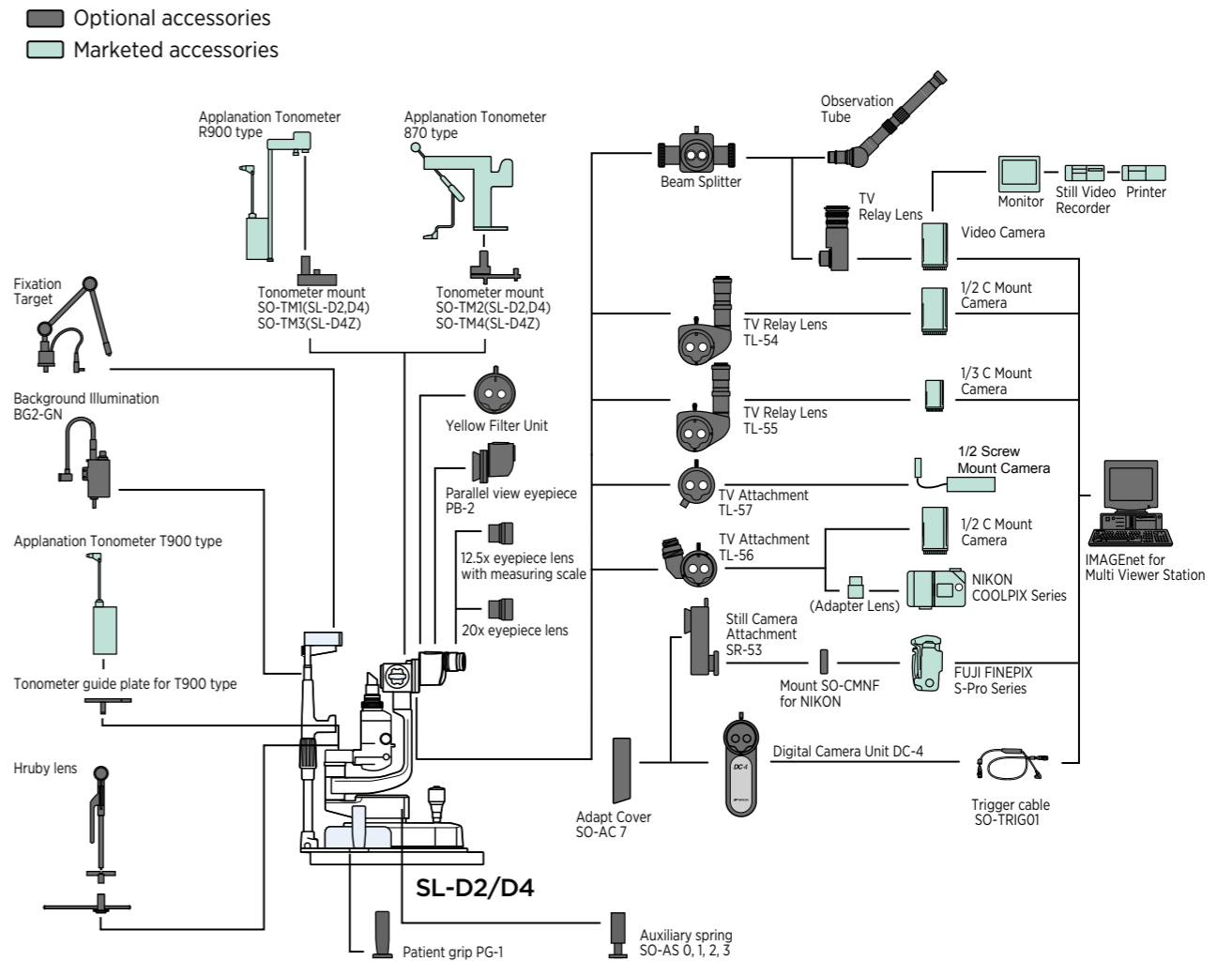
The SL-D2 incorporates a parallel drum magnification changer that allows for quick and easy selection between three convenient magnifications of 10x, 16x and 25x. The SL-D2 offers the most cost-effective digital imaging solution with optimal clarity, color resolution and depth-field.



SL-D4

Five magnification digital slit lamp

The SL-D4 incorporates a parallel drum useful magnification levels: 6x changer that allows for quick selection between five convenient magnifications; 6x, 10x, 16x 25x and 40x. The 40x magnification is especially useful for corneal Endothelium observation. Suitable for a variety of ophthalmic applications, the demanding eye care specialist can produce excellent images of both the anterior and posterior structures of the eye.



Optional accessories SL-D Series



Background illumination



Patient grip

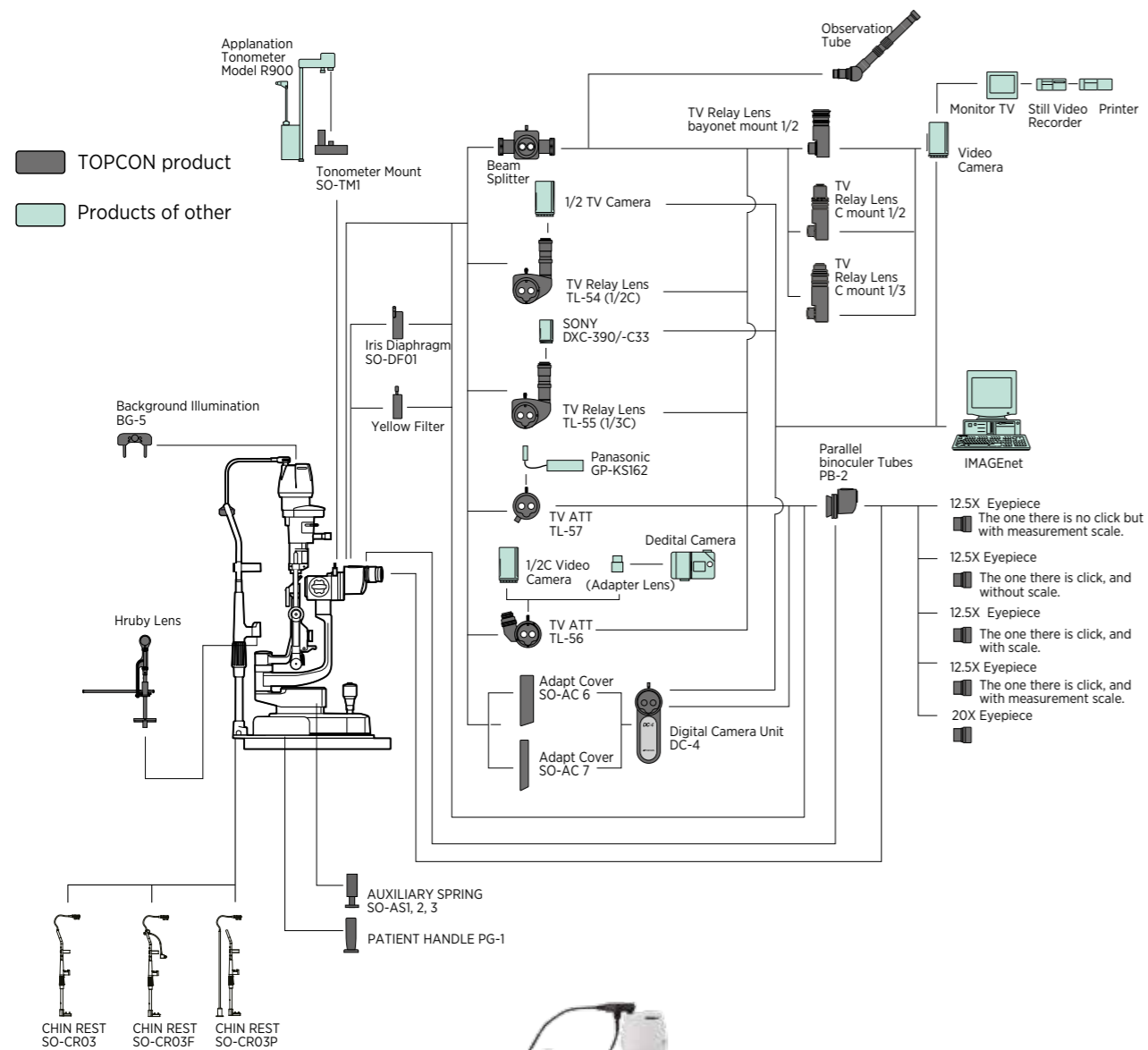


Observation tube



Yellow filter unit

System configuration SL-D701



Specifications DC-4 digital camera

System	Beam flux division by beam splitter
Focus distance	Operator side: 50%, Camera side: 50% (R eye)
Sensor type	1/2.5 inch CMOS, 5.04M Pixels
Pixel size	2.2 x 2.2 μm
Image size	2592 x 1944
Movie size	1294 x 970
Frame rate	24 fps
Resolution	125 line pair / mm (40X)
Filter	Infra-red cut filter
Power input	12V DC, 2.4W
Output	LAN (GigE) (Cat6)
Dimensions	76mm (W) x 163mm (D) x 304mm (H)
Weight	430g
Power supply	100-240V AC, 50-60Hz, 110VA



Specifications picture magnification and field of view

SL-D701, SL-D4		
Displayed magnification	Picture magnification	Picture field (mm)
6x	0.135	31.8 x 42.3
10x	0.211	20.4 x 27.2
16x	0.336	12.7 x 17.0
25x	0.537	7.97 x 10.6
40x	0.839	5.10 x 6.81

SL-D2		
Displayed magnification	Picture magnification	Picture field (mm)
10x	0.211	20.4 x 27.2
16x	0.336	12.7 x 17.0
25x	0.537	7.97 x 10.6

* Shown with optional DC-4 digital attachment, optional handle bars and optional electric table.

Specifications SL-D Series

Slit lamp	SL-D2	SL-D4	SL-D701
Type	Galilean magnification changer with converging binocular tubes		
Magnification selection	3 steps by drum rotation 10x, 16x, 25x	5 steps by drum rotation 6x, 10x, 16x, 25x, 40x	
Eyepiece magnification	12,5x		
Eyepiece diopter range	-5D to +5D		
Binocular tubes PD range	55mm to 78mm		
Magnification ratio (Field of View)	9,94x(22,5mm) 15,87x(14,1mm) 25,37x(8,8mm)	6,37x(35,1mm) 9,94x(22,5mm) 15,87x(14,1mm) 25,37x(8,8mm) 39,62x(5,6mm)	
Slit illumination			
Slit width	Continuous from 0mm to 14mm (14mm Circle)		
Slit length	Continuous from 1mm to 14mm (14mm Circle)		
Aperture diameter	14 / 10 / 5 / 2 / 1 / 0,2 mm		
Slit angle	0 to 180 degree with horizontal scanning capability		
Slit direction	Side swing	Vertical to horizontal, can be altered gradually inclination 5° / 10° / 15° / 20° Side swing	
Filters	Blue, Red-Free, Amber UV Cut (normal use), IR Cut (normal use)	Blue, Red-Free, Amber UV Cut (normal use), IR Cut (normal use) ND filter (13% transmission) Exit & Barrier filter for Fluo type slit lamp	
Illumination halogen type	6V, 20W	12V, 30W	
Illumination LED type	-	3A, 10W	
Base unit			
Forward-backward movement	90mm		
Right-left movement	100mm		
Vertical movement	30mm (spring supported)		
Chinrest unit			
Vertical movement	80mm		
Fixation target	Fixation target with diopter adjustment Luminous fixation target		
Fixation lamp	RED (Red)		
Power & weight			
Input (primary)	100-120V, 220-240V AC		
Frequency	50/60Hz		
Power consumption	160VA		
Weight w/o chinrest	9,5 Kg	11,5 Kg	

IMPORTANT

Subject to change in design and/or specifications without advanced notice.

In order to obtain the best results with this instrument, please be sure to review all user instructions prior to operation.



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