



INSTRUCTIONS FOR USE

Contact lenses

Goldmann/Diagnostics/Laser

14. Edition / 2021 – 08



HS HAAG-STREIT
DIAGNOSTICS

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Preface

Thank you for choosing a Haag-Streit device. Provided you comply carefully with the regulations in these instructions for use, we can guarantee reliable and trouble-free use of our product.

**WARNING!**

Read the instruction manual carefully before commissioning this product. It contains important information regarding the safety of the user and patient.

**NOTE!**

For USA only: Federal law restricts this device to sale by or on the order of a physician or licensed practitioner.

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1 Safety



DANGER!

Failure to comply with these instructions may result in material damage or pose a danger to patients or users.



WARNING!

These warnings must absolutely be complied with to guarantee safe operation of the product and to avoid any danger to users and to patients.



NOTE!

Important information, please read carefully.

1.1 Comments on these instructions for use



NOTE!

In these instructions for use the point is used as decimal separator.

1.2 Ambient conditions

Transport	Temperature	-40 °C	...	+70 °C
	Air pressure	500 hPa	...	1060 hPa
	Relative humidity	10 %	...	95 %
Storage	Temperature	-10 °C	...	+55 °C
	Air pressure	700 hPa	...	1060 hPa
	Relative humidity	10 %	...	95 %
Use	Temperature	+10 °C	...	+35 °C
	Air pressure	800 hPa	...	1060 hPa
	Relative humidity	30 %	...	90 %

1.3 Shipment and unpacking

- Before unpacking the contact lenses, check whether the packaging shows traces of incorrect handling or damage. If this is the case, notify the transport company that delivered the goods to you.
- Unpack the contact lenses together with a representative of the transport company. Make a report of any damaged parts. This report must be signed by you and by the representative of the transport company.
- After unpacking, check the contact lenses for damage.
- Return defective contact lenses in the appropriate packaging.
- Store packaging material carefully so that it can be used for potential returns or when moving.

1.4 Operation, environment



DANGER!

- Never look directly into the sun with the contact lenses.
- Never use damaged contact lenses.



WARNING!

- Only use clean and disinfected contact lenses.
- The contact lenses may only be serviced by qualified personnel. Their training is the responsibility of the user.
- The contact lenses may only be used in accordance with the instructions in the 'Intended purpose / intended use' chapter.
- The contact lenses must be inspected following any external force (e.g. accidental impact, dropping) and should be sent to the factory for repair if required or where possible.
- In case of eye infections or cornea injuries, the examinations should be carried out at the discretion and judgement of the medical professional, since the medical condition of the patient might be affected by the examination.



NOTE!

Only Haag-Streit accessories may be used.

1.5 Cleaning and disinfection of contact lenses



DANGER!

- Do not disinfect with alcohol
- Do not clean with acetone
- Do not disinfect using UV radiation
- Do not sterilise using steam or ethylene oxide
- Do not expose to temperatures above 60°C



WARNING!

Contact lenses are not delivered in disinfected state and must be cleaned and disinfected before their first use in accordance with the separate instructions for use on the cleaning and disinfection of tonometer measuring prisms and contact lenses.

- Preparation may only be conducted by qualified and trained personnel. Their training is the responsibility of the user.
- Appropriate professional assessment and caution are necessary.
- The operator will be liable in the event of non-observance of the cleaning and disinfecting process.



NOTE!

- Only those disinfectants tested by Haag-Streit for material compatibility may be used for disinfection.
- The current list is enclosed with every contact lens and can also be found on the Haag-Streit AG website (www.haag-streit.com).
- The separate instructions for use on the cleaning and disinfection of tonometer measuring prisms and contact lenses must be consulted regarding the exact mode of action, contact time and dwell time.
- Improper preparation can result in the transmission of diseases to the patient and user as well as damage to the contact lenses.
- Residue from cleaning agents and disinfectants may irritate and burn the patient's eye.
- As a rule, the contact lenses may be treated together with each other, but not with any other products.

In order to achieve efficient disinfection, we recommend the use of one of the validated disinfectant listed in the separate instructions for use on the cleaning and disinfection of tonometer measuring prisms and contact lenses.

- The validation report is available from Haag-Streit on request.
- A summary of the validation report can be found on the Haag-Streit website (www.haag-streit.com).
- The operator accepts all liability for the use of other disinfectants.



NOTE!

Contact lenses which are used with the Stery Cup need not be disinfected. Rinse the contact lens thoroughly with cold or lukewarm water immediately after use. Put a few drops of mild liquid soap (i.e. neutral pH value of 7.0) on a moistened cotton pad and gently wipe it over the contact lens in circular motions. Then rinse thoroughly with cold or lukewarm water and dry off with a lint-free cloth. The contact lens is now ready for another use with the Stery Cup.



1.6 Visual inspection of the contact lenses for damage



DANGER!

Never use damaged contact lenses.

- Inspect the contact surface of the contact lenses for contamination or damage (scratches, cracks, chips or sharp edges). To do so, it is best to use the slit lamp microscope at 10× to 16× magnification.
- Disinfectants may seep into cracks or defective sealant at the front part of the contact lenses, causing eye irritations for the patient.
- Contact lenses that have allowed condensation to penetrate to the interior may no longer be used.

1.7 Warranty and product liability

- Haag-Streit products must be used only for the purposes and in the manner described in the documents distributed with the product.

- The product must be treated as described in the 'Safety' chapter. Improper handling can damage the product. This would void all guarantee claims.
- Continued use of a product damaged by incorrect handling may lead to personal injury. In such a case, the manufacturer will not accept any liability.
- Haag-Streit does not grant any warranties, either expressed or implied, including implied warranties of merchantability or fitness for a particular use.
- Haag-Streit expressly disclaims liability for incidental or consequential damage resulting from the use of the product.
- This product is covered by a limited warranty granted by your seller.
- For USA only: This product is covered by a limited warranty, which may be reviewed at www.haag-streit-usa.com.

1.8 Reporting obligation



NOTE!

Any serious incident that has occurred in relation to the device must be reported to Haag-Streit and the competent authority of the Member State in your country.

1.9 Description of symbols



Read the instructions for use attentively



European certificate of conformity



Date of manufacture



Manufacturer



Haag-Streit reference number



LOT number



Listed European Authorized Representative



Medical Device



Trademark of the manufacturer Haag-Streit AG

2 Intended purpose / intended use

The Haag-Streit Contact Glasses are a family of diagnostic and therapeutic contact lenses used in the examination of eye fundus, retina and irido-corneal and vitreous bodies and for the laser therapy of intraocular abnormalities.

2.1 Device description

The contact lenses are optical instruments which enable the eye-care specialist to inspect the posterior segment and the chamber angle of the human eye with the slit lamp.

2.1.1 Intended users

Users are qualified medical professionals such as ophthalmologists, optometrists, opticians, nurses and researchers or other qualified specialists as permitted by local legislation.

2.2 Medical purpose

These devices have the following medical purpose:

- Diagnosis and monitoring of diseases of the posterior segment of the eye
- Diagnosis and monitoring of injuries of the posterior segment of the eye
- Investigation of the anatomy and physiological or pathological state of the posterior segment of the eye

2.2.1 Indications

The use of contact lenses is indicated for the following medical conditions:

- Local and systemic diseases affecting the eye
- Lesions and defects of the posterior segment
- Acute infections and inflammations
- Presence of intraocular foreign bodies
- Other traumata of the eye

2.2.2 Part of the body

The contact lenses are intended for the examination of the human eye, specifically the posterior segment of the eye (i.e., vitreous, fundus, optic disc).

2.2.3 Patient population

These devices are intended for use on human patients with the physical ability to sit in front of a slit lamp, with their head resting against the headrest in a steady position and the mental ability to follow instructions.

2.2.4 Contraindications

The list of known contraindications includes, but is not limited to:

- Active corneal infections
- Corneal epithelial defects
- Ocular chemical burn
- History of recurrent epithelial erosions

2.3 Principles of operation

The contact lenses are applied to the eye in a manner similar to other diagnostic contact lenses: After the eye is anaesthetised the patient takes a seat in the proper position in front of the slit lamp microscope. A sterile methylcellulose or other interface solution is applied to the concave contact surface of the lens before it is placed onto the cornea of the eye by gently pushing it onto the surface of the cornea. The lens may be held by an assistant or with an appliance as recommended in the instructions for use. The user performs the examination by looking through the slit lamp during which the contact lens may be rotated to change the angle of view. The integrated mirrored surfaces direct the users view to areas of interest in the posterior chamber of the eye.

2.3.1 Operating environment

These devices are intended to be used in professional health care facilities such as hospitals, physician's, optometrist's and optician's practices in conjunction with a slit lamp.

2.4 Clinical benefit

The use of the contact lenses allows for the systematic examination of the eye under magnification, thus permitting the diagnoses of pathologies that may have otherwise remained unidentified and could have lead to blindness if left untreated.

The clinical benefits of the product outweigh the remaining residual risks to the patient.

3 Use of contact lenses



WARNING!

It is imperative to read the "Safety" chapter and to observe its precautions before using the contact lenses.

3.1 Fundamentals

- A prerequisite for the successful use of contact lenses is good anaesthetisation of the cornea and conjunctiva with an agent that does not damage the corneal epithelium.
- The space between the eye and contact lens is filled with Methocel 2%, an isotonic fluid that is innocuous to the cornea and conjunctiva.

3.2 Product overview

Lens type	Scleral flange	Laser	Mirror	Observation area								Magnification (*)	Laser spot magnification (*)	Ball radius [mm]	ø Contact [mm]	ø Exterior contact [mm]	Height [mm]	Weight [g]	Antireflex coating			Stery Cup	Chap.
				Central	Central (pupil)	Central (vitreous)	Mirror 73°	Mirror 66°	Mirror 59° (fundus)	Mirror (gonio)	Iris								450 – 650 nm (vis) R<0.5%	450 – 810 nm R<1%	1064 nm R<0.3%		
630	-	-	3	•	-	-	•	•	•	59°	-	0.95× / gonio 0.85×	-	7.4	12	18	25.3	10	-	-	-	-	6.2
630 L	-	•	3	•	-	-	•	•	•	59°	-	0.95× / gonio 0.85×	1.053× / gonio 1.176×	7.4	12	18	25.8	11	•	-	•	-	10.1
901	-	-	-	•	-	-	-	-	-	-	-	1×	-	7.4	12	15.5	16	2	-	-	-	-	4.1
902	-	-	1	-	-	-	-	-	-	62°	-	0.85×	-	7.4	12	15.5	21.7	5	-	-	-	-	5.1
902 S	•	-	1	-	-	-	-	-	-	62°	-	0.85×	-	7.4	12	20	24	6	-	-	-	-	5.1
903	-	-	3	•	-	-	•	•	•	59°	-	0.95× / gonio 0.85×	-	7.4	12	18.3	32	18	-	-	-	•	6.1
903 L	-	•	3	•	-	-	•	•	•	59°	-	0.95× / gonio 0.85×	1.053× / gonio 1.176×	7.4	12	18.3	33	20	•	-	•	•	10.1
903 S	•	-	3	•	-	-	•	•	•	59°	-	0.95× / gonio 0.85×	-	7.4	12	20.5	33.5	19	-	-	-	-	6.1
905	-	-	2	-	-	-	-	-	-	62°	-	0.85×	-	7.4	12	15.5	21.7	5	-	-	-	-	5.2
905 S	•	-	2	-	-	-	-	-	-	62°	-	0.85×	-	7.4	12	20	24	6	-	-	-	-	5.2
906	-	-	3	•	-	-	•	•	•	59°	-	1.0× / gonio 0.87×	-	7 (infant)	10	15.4	28	12	-	-	-	-	6.3
906 L	-	•	3	•	-	-	•	•	•	59°	-	1.0× / gonio 0.87×	1× / gonio 1.149×	7 (infant)	10	15.4	28.5	13	•	-	•	-	10.2
906 S	•	-	3	•	-	-	•	•	•	59°	-	1.0× / gonio 0.87×	-	7 (infant)	10	17.6	29.5	12	-	-	-	-	6.3
907	-	-	3	•	-	-	•	•	•	59°	-	0.97× / gonio 0.86×	-	7.3 (child)	11	16.8	30.2	14	-	-	-	-	6.3
907 L	-	•	3	•	-	-	•	•	•	59°	-	0.97× / gonio 0.86×	1.03× / gonio 1.16×	7.3 (child)	11	16.8	30.8	15	•	-	•	-	10.2
1210	-	-	-	•	-	-	-	-	-	-	-	1.93×	-	12.5	12	18	25.5	7	-	-	-	-	7.1
CGAL	-	•	1	-	-	-	-	-	-	58°	-	1.44×	0.69×	7.4	12	16	24	16	•	-	•	-	9.1
CGIL	-	•	-	-	-	-	-	-	-	-	•	2.47×	0.4×	7.4	12	14	24	15	•	-	•	-	11.2
CGPL	-	•	-	-	•	-	-	-	-	-	-	1.68×	0.6×	7.4	12	15	13	4	•	-	•	-	11.4
CGRL	-	•	-	•	-	-	-	-	-	-	-	0.71×	1.41×	7.4	12	15.5	13	5	•	-	•	-	11.1

CGVL	-	•	-	-		•	-	-	-	-	-	1.24x (**)	0.8x (**)	7.4	12	16	13	6	•	-	•	-	11.3
RETINA 145 L	-	•	-	•	-	-	-	-	-	-	-	-0.7x	1.42x	7.4	12	18	27.5	27	-	•	-	•	11.5

(*) = The magnification is determined by the eye model used and the microscope. With other eye models, these values could differ. Information on the eye model used can be made available upon request.

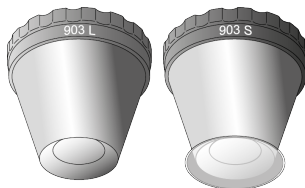
(**) = 1mm behind the lens

3.3 Product description

The renowned Goldmann three-mirror contact lens is an all-rounder which allows examining the entire retina and the irido-corneal angle with the slit lamp.

Name

- Laser contact lenses are designated with an "L".
- Contact lenses designated with an "S" feature a special scleral flange that serves as an eyelid block.



L = Laser

S = Scleral

Material

- Contact lenses for exclusively diagnostic purposes are made out of acrylic lens.
- Contact lenses for laser treatments consist of mineral lens or acrylic lens with a mineral lens with anti-reflection coating (see table in chapter 'Product description').

Stery Cup

- Contact lenses which are marked with the following symbol may be used in combination with Stery Cup.



4 Direct contact lenses for diagnostic purposes

4.1 Contact lens 901

This lightweight contact lens provides a direct image of the central fundus (30°). It is a lens made up of two parts: the optically-active lens with haptic, and the funnel for comfortable handling of the contact lens. The optically-active surface has a diameter of 12 mm.

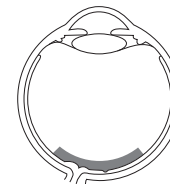
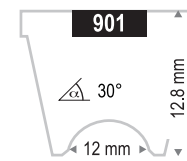
Examination of the ocular fundus

Before examination with the fundus contact lens, a maximum mydriasis is desirable. Anaesthesia and positioning of the contact lens using Methocel 2%, see chapter 'Use of contact lenses'.

The patient's eye is guided to the desired position using the fixation light, and the area to be examined is observed at 10x or 16x magnification using a narrow slit. During examination, a binocular, stereoscopic slit examination is primarily aimed for. For this purpose, the widest-possible angle between illumination and the microscope is advantageous. At the start of the examination the angle is small, and is enlarged as soon as the slit image is viewed binocularly.



Fundus contact lens 901



Working area

5 Mirror contact lenses for diagnostic purposes

5.1 One-mirror contact lens 902/902 S

The 902 is a one-mirror lens (62°) which allows the examination of the anterior chamber.

Examination of the ocular fundus

A magnification of 10× is best for initial adjustments and 16× is best for the actual examination.

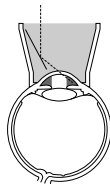
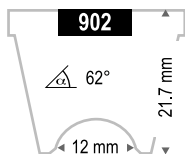
The chamber angle is illuminated with a narrow slit via the contact lens mirror. An angle of approximately 10° (lateral dwell position for the Haag-Streit slit lamp 900) is set between the illumination instrument and the microscope. If the angle between the microscope and the illumination instrument is larger than 15°, the slit image will no longer be sharp in the eyepiece's normal setting.

Blurry slits at angles smaller than 15° may be corrected by altering the position of the chamber angle lens.

It is also possible to examine the lateral chamber angle sections using diffuse lighting on the scleral fold. To do so, the illumination must be removed from the centre (after loosening the centring screw on the Haag-Streit slit lamp 900).



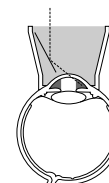
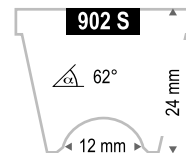
Gonio one-mirror contact lens
902



Working area



Gonio one-mirror contact lens
902 S



Working area

5.2 Two-mirror contact lens 905/905 S

Two mirrored surfaces, each with an inclination of 62° towards the front surface, have been cut into the 17 mm long lens cone. This makes it possible to examine and compare both irido-corneal angles without rotating the contact lens.

Examination of the chamber angle

A magnification of 10× is best for initial adjustments and 16× is best for the actual examination.

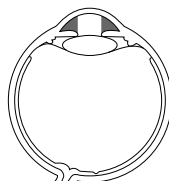
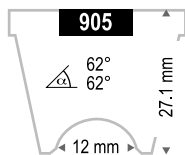
The chamber angle is illuminated with a narrow slit via the contact lens mirror. An angle of approximately 10° (lateral dwell position for the Haag-Streit slit lamp 900) is set between the illumination instrument and the microscope. If the angle between the microscope and the illumination instrument is larger than 15°, the slit image will no longer be sharp in the eyepiece's normal setting.

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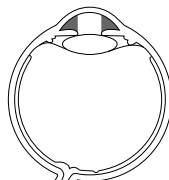
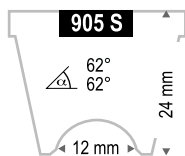
Gonio two-mirror contact lens
905



Working area



Gonio two-mirror contact lens
905 S

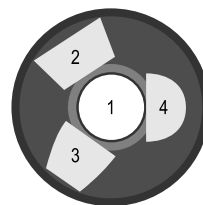


Working area

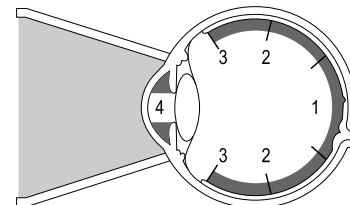
6 General information on three-mirror contact lenses

The Goldmann three-mirror contact lens allows the examination of the entire retina and the irido-corneal angle with the slit lamp.

- Zone 1 =** Lens (1) Examination of the ocular fundus in the 30°-zone, mostly with a magnification of 10×
- Zone 2 =** Mirror (2) with an inclination angle of 73°, observation of the area outside of the 30° range
- Zone 3 =** Mirror (3) with an inclination angle of 66°, observation of peripheral sections of the ocular fundus, and under favorable conditions, of the ora serrata
- Zone 4 =** Mirror (4) with an inclination angle of 59°, observation of the vitreous body and ocular fundus sections neighboring the ora serrata, and gonioscopic examination



Mirror positioning 1 - 4 and eye zones



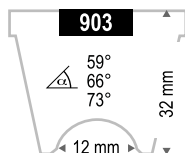
Working area

6.1 Three-mirror contact lens 903/903 S

The classic contact lens from Professor Goldmann – with or without scleral flange.



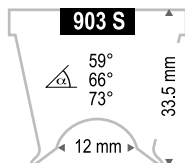
Fundus iridocornea three-mirror contact lens 903



Stery Cup



Fundus iridocornea three-mirror contact lens 903 S

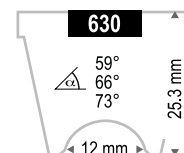


6.2 Three-mirror contact lens 630

This contact lens is especially suited for slit lamps that feature a smaller distance between the eye and the reduction prism, as compared to the Haag-Streit slit lamp 900.



Fundus iridocornea three-mirror contact lens 630



6.3 Three-mirror contact lenses for infants and children 906/906 S and 907

Infants: 906/906 S

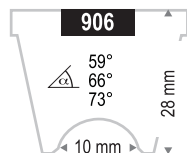
Children up to 4 years of age: 907

The mirrors of these three-mirror contact lenses, especially designed for use on children, are smaller than the normal three-mirror contact lenses. The inclination angles are identical, however.

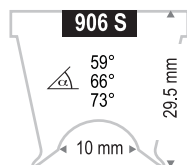
Two models are available. In the model for infants (model 906), the corneal portion has an internal diameter of 10 mm and in the model for children up to 4 years of age (model 907), it has a diameter of 11 mm.



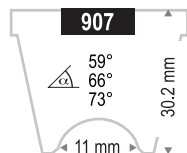
Fundus iridocornea (infants) three-mirror contact lens 906



Fundus iridocornea (infants) three-mirror contact lens 906 S



Fundus iridocornea (child) three-mirror contact lens 907



7 Contact lens 1210 endothelium according to Eisner

For examination of the corneal endothelium and epithelium, magnification 1.93x.

7.1 Using the contact lens 1210

- After removing the protective plug (4) fill the liquid reservoir with Methocel 2 %.
- Insert into the eyelid gap with the release opening (1) or marking (2) facing upwards.

7.2 Locating specular reflections

- Slit lamp settings:

Magnification: **small**

Slit width: **small**

Angle between slit lamp and microscope: **small**

- Sharply focus and centre the optical system with silver-coloured ring (3).
- Slide the slit lamp until the following appear successively in sharp focus: the reflection of the lens (5) and then the epithelium (6) and endothelium (7) corneal areas being examined.
- Adjust the contact lens until mirror reflections are illuminated.

7.3 Examination of the specular reflections

- Slit lamp settings:

Magnification: **large**

Slit width: **large**

Angle between slit lamp and microscope: **large**

7.4 Examination of the periphery of the cornea

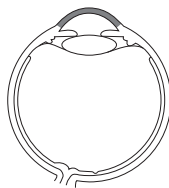
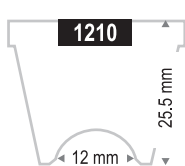
- Guide the patient's line of vision in the desired direction.
- Adjust the contact lens.

7.5 Disinfecting the contact lens 1210

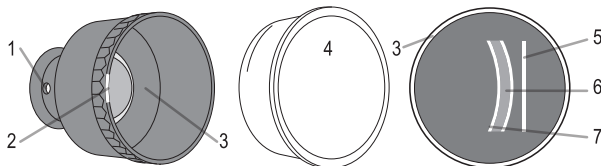
- Insert protective plug (4) into the contact lens. Then, proceed according to the separate instructions for use on the cleaning and disinfection of tonometer measuring prisms and contact lenses.



Endothelium contact lens according to Eisner 1210



Working area



Specular reflections

8 Use of oculars with reticle according to McIntyre and contact lens 1210

8.1 Ocular 25× for Haag-Streit slit lamp BM 900

- Insert ocular halfway into microscope tube and hold the cylinder housing firmly with one hand.
- With the other hand, loosen the knurled ocular refraction ring (2) by turning it anticlockwise about 10°.
- De-focus the reticle by turning the occluder (1) anticlockwise. The knurled ocular refraction ring should not turn with the occluder.
- Slowly turn the occluder clockwise until the reticle appears in sharp focus.
- Tighten the knurled ocular refraction ring.
- Slide in the ocular to the stop point in the barrel.
- Align centre marks vertically.
- Use knurled ocular refraction ring on microscope to adjust dioptre setting to zero.



BM 900

Ocular 25× with reticle acc. to McIntyre

8.2 Ocular 12.5× for Haag-Streit slit lamp BQ 900

When adjusting the ocular to the user's refraction, look towards a light surface and adjust the ocular from the + side by turning the knurled ocular refraction ring with dioptre scale (3) until the eyepiece crosshairs appear sharply focused.

**BQ 900**

Ocular 12.5× with reticle acc. to McIn tyre

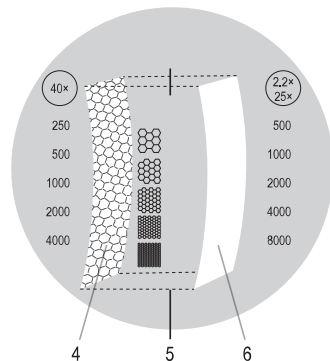
8.3 Estimating the cell density of the endothelium

without contact lens

- Microscope magnification 40×.
- Reading taken in column 40×.

with contact lens 1210 acc. to Eisner

- Microscope magnification 25× (overall magnification: microscope magnification × contact lens magnification 48.25×).
- Take reading of control sample in column 1.93 × 25×.



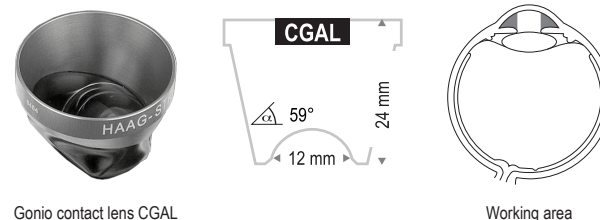
- (4): Endothelium
(5): Cells/mm
(6): Epithelium

9 Mirror contact lenses for laser use

9.1 Gonioscopy contact lens CGAL

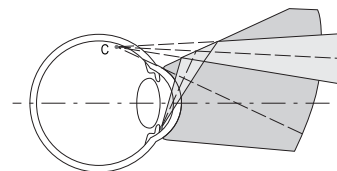
The CGAL gonioscopy contact lens was developed by Roussel and Fankhauser for laser treatments of the chamber angle. It is made of laser-resistant lens and has anti-reflection coating. It reduces the laser spot by a factor of 1.44 as compared to Goldmann contact lenses. As a result, less energy is required to cut strands during the cataract incision with the YAG laser. Thanks to its magnifying effect, the CGAL contact lens also improves the aiming accuracy and success rate of laser trabeculoplasty.

During office examinations, the CGAL contact lens allows for detection of the fine structures of the trabeculum thanks to its high resolution, and produces excellent photographs and video recordings due to the low-reflectivity coating in the visible spectral area.

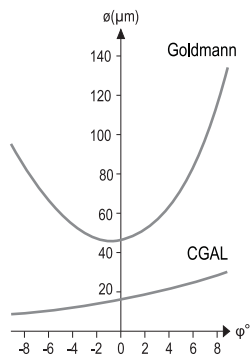


Gonio contact lens CGAL

Working area



The aiming point is the centre of curvature C of the spectral entrance surface and, as such, free of spherical aberrations and coma.



The beam aberration (α) is significantly lower with the CGAL than with Goldmann contact lenses (ϕ : inclination angle of the contact lens).

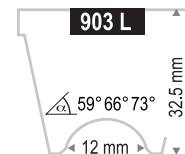
10 Three-mirror contact lenses for laser use

For a description see chapter 'General information on three-mirror contact lenses'.

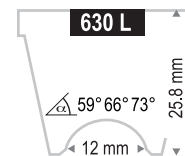
10.1 903 L and 630 L



Fundus iridocornea contact lens 903 L

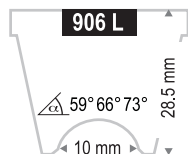


Fundus iridocornea contact lens 630 L

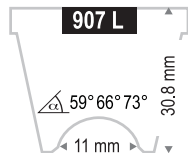


10.2 906 L and 907 L

Magnifications vary depending on eye size.



Fundus iridocornea (infants) contact lens
906 L



Fundus iridocornea (child) contact lens
907 L

11 Direct contact lenses for laser use

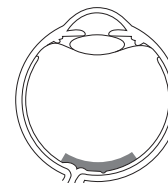
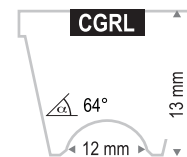
11.1 Retina contact lens CGRL

The CGRL retina contact lens is a wide angle contact lens designed for laser photocoagulation and diagnosis. It is a small, lightweight contact lens that expands the field of vision without increasing the working distance, while guaranteeing an excellent image quality and good resolution. The entire posterior pole, including the temporal vascular arcades, can be viewed simultaneously. It is used for axial and paraxial photocoagulation.

Optical attributes

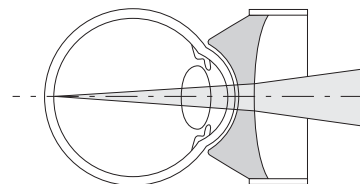
The CGRL retina contact lens creates an upright virtual image of the ocular fundus. The cone angles of both beams (laser and observation) are reduced from 6° in air to 3.2° in vitreous. As a consequence, the visual field is expanded from 46° to 64° , allowing for observation of the entire posterior pole.

Dioptic power in air: -50 D



Retina contact lens CGRL

Working area



Optical path of a laser beam through the CGRL contact lens.

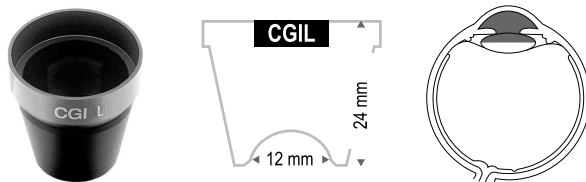
11.2 Iridectomy contact lens CGIL

The CGIL iridectomy contact lens was designed by Riquin, Fankhauser et al. to perform full-thickness peripheral laser iridectomies.

Optical attributes

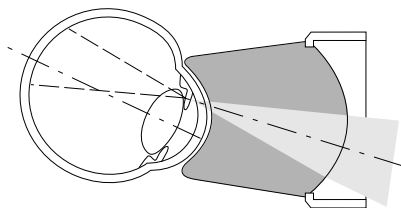
The CGIL contact lens increases the cone angle of the laser beam and therefore also the beam diameter on out-of-focus structures, while decreasing the diameter of the focal spot. The effective focal spot reduction is achieved by minimizing spherical aberrations and coma through application of the Young-Weierstrass theorem: The contact lens was designed so that the aplanatic point of the entrance surface falls on the iris, three millimeters behind the cornea.

Dioptic power in air: +5 D



Iris contact lens CGIL

Working area



Optical configuration of the CGIL iridectomy contact lens.

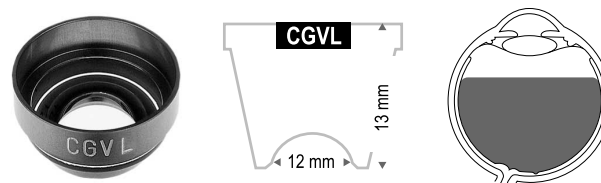
11.3 Vitrectomy contact lens CGVL

The CGVL vitrectomy contact lens was designed by Rol, Fankhauser et al., for photodisruptive YAG laser procedures in the posterior vitreous body.

Optical attributes

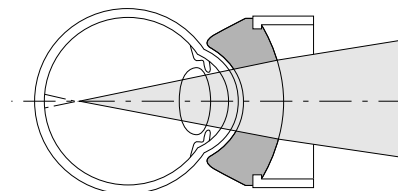
The CGVL vitrectomy contact lens increases the cone angle of the laser beam and therefore also the beam diameter on out-of-focus structures, while decreasing the diameter of the focal spot. The effective focal spot reduction is achieved by minimizing spherical aberrations and coma: the centre of curvature of the entrance surface – a point free of spherical aberrations or coma – coincides with the centre of curvature of the retina, while the other aplanatic point of the entrance surface is located on the retina.

Dioptic power in air: -33 D



Vitreous (vitreous body) contact lens CGVL

Working area



Optical configuration of the CGVL vitrectomy contact lens.

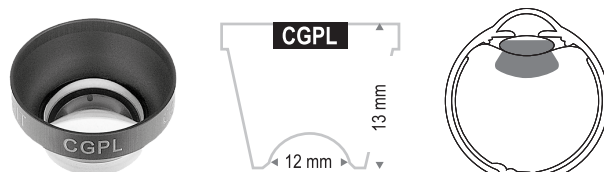
11.4 Capsulotomy contact lens CGPL

The CGPL capsulotomy contact lens was designed by Riquin, Fankhauser et al., for the dissection of opacified posterior lens capsules and membranes in the pupillary and retropupillary space with the YAG laser.

Optical attributes

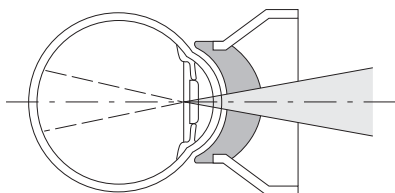
The CGVL contact lens increases the cone angle of the laser beam and therefore also the beam diameter on out-of-focus structures, while decreasing the diameter of the focal spot. The effective focal spot reduction is achieved by minimizing spherical aberrations and coma through application of the Young-Weierstrass theorem: the contact lens was designed so that the aplanatic point of the entrance surface falls on the retropupillary space, eight millimeters behind the cornea.

Dioptic power in air: +9 D



Pupillary region (pupillary space) contact lens CGPL

Working area



Optical configuration of the CGPL capsulotomy contact lens with a pseudophakic eye.

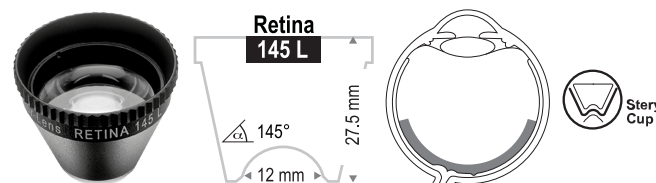
11.5 Contact lens RETINA 145 L

The Retina 145 L contact lens is a panfundus wide-angle contact lens designed to facilitate the diagnosis and treatment of the retina as far as the aequator. With an image magnification of 0.7 \times , this contact lens allows for a highly detailed assessment of even subtle changes in the fundus.

Optical attributes

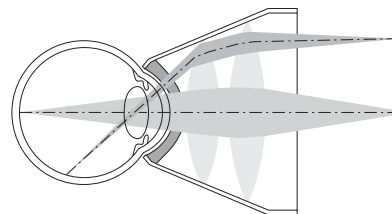
The quality of the laser-scan image is as high on the periphery as it is in the centre. There are no major image distortions. Simultaneous visualization of the posterior pole and centre periphery permits optimum orientation toward the back of the eye at any time.

Dioptic power in air: 86.5 D



Panfundus contact lens
RETINA 145 L

Working area



Optical configuration of the contact lens RETINA 145 L

12 Technical data

See chapter 'Product overview' and the respective product description.



NOTE!

Subject to technical alterations.

13 Legal regulations

- You can request a copy of the declaration of conformity for any contact lens from Haag-Streit at any time.
- Statutory accident regulations are to be observed.

14 Classification

CE Medical Device Regulation 2017/745

Class I

FDA

Class II

15 Observed standards

EN ISO 10993-1

EN ISO 17664

Should you have any further questions, please contact your Haag-Streit representative at:
<http://www.haag-streit.com/contact/contact-your-distributor.html>

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