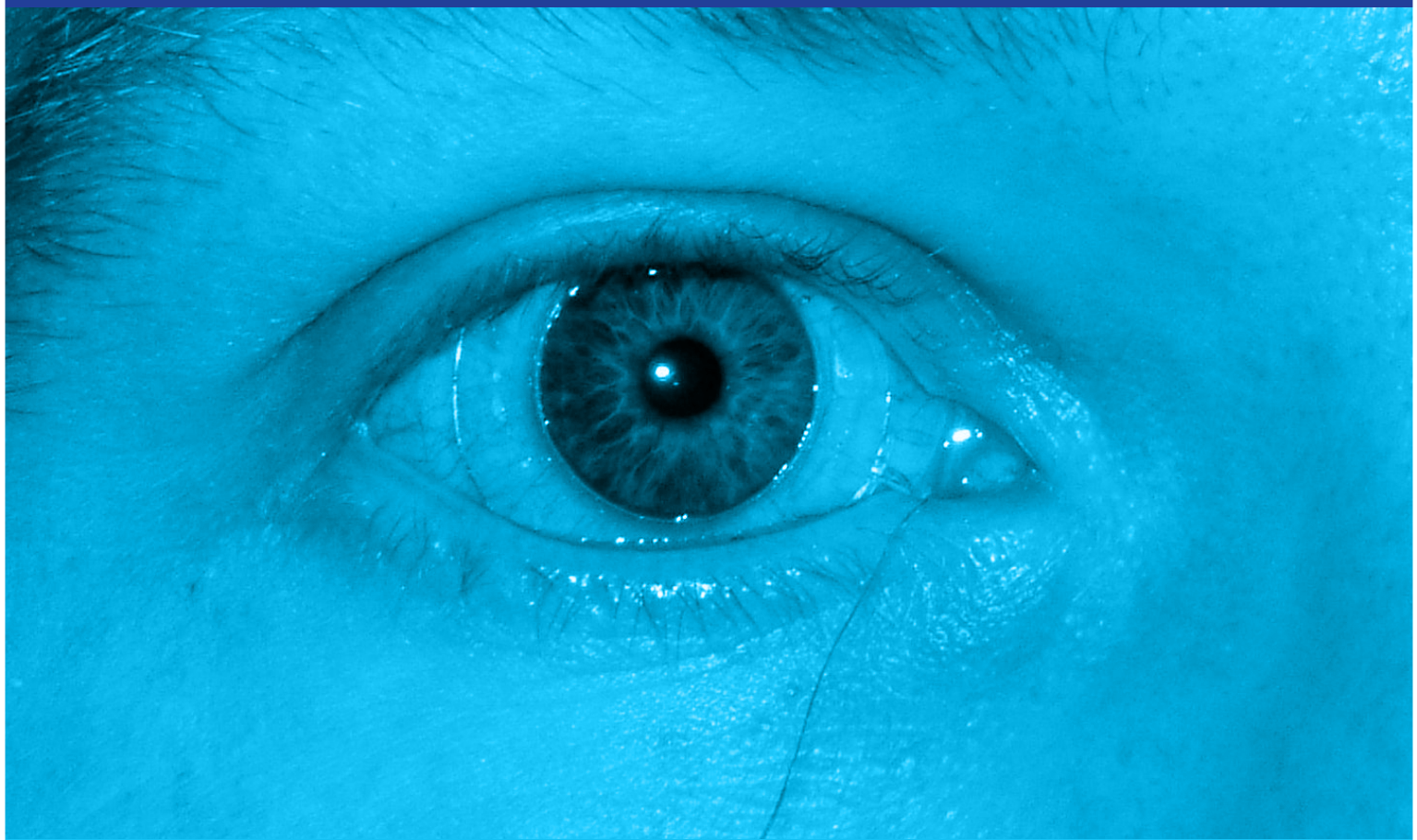




CHRONOS VISION

Your partner for vision based decisions



Scleral Search Coils 2D/3D

- Use of medically grade silicone components
- Suitable for medical diagnostics and research

MADE IN GERMANY

SSC 2D/3D

Ergonomic Design

The scleral search coil (SSC), as originally designed by H. Collewyn and his colleagues, consists of a silicone rubber annulus which is suitably formed to adhere to the sclera of the eye around the iris. The induction coils of insulated copper wire are embedded in the silicone ring. The inner curvature of the silicone annulus is dimensioned to ensure adhesion to the eyeball by capillary and suction forces. This design effectively eliminates measurement artefacts due to slippage.

To ensure comfort and fitting the inner diameter of the annulus has a diameter of 12.5 mm. The coils are manufactured in one size, corresponding to the 95% range of eyeball dimensions in the human.

Product Versions

As official successor to the original manufacturer of search coils, SKALAR Medical of Delft (NL), CHRONOS VISION manufactures and distributes 2D and 3D coils. The search coils have been tested successfully in a number of research laboratories in Europe and in the USA.

Technology

The measurement technique is based on phase-locked amplitude detection of the voltage induced in the copper windings, i.e. corresponding to the position of the coil with respect to the external ac magnetic field generated by the Helmholtz coils.

While this technique is semi-invasive it has proved reliable for the precise measurement, particularly of three-dimensional eye movements and in cases where extreme eye movements are required for experimental purposes, or caused by oculomotor pathology.

CHRONOS VISION's search coils have been tested successfully with all standard Helmholtz coil systems. They are suitable for a wide variety of studies in medical and physiological research where precise measurement of two- and three-dimensional eye movements is required.

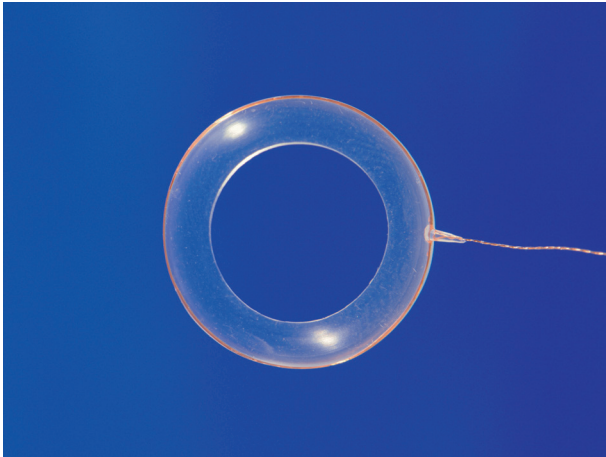
As with the predecessor devices manufactured by Skalar Medical BV, two types are available:

- **Direction**, or **2D coil**, designed for measurement of horizontal and vertical eye position.
- **Torsion**, or **3D coil**, designed for measurement of horizontal, vertical and torsional eye position.



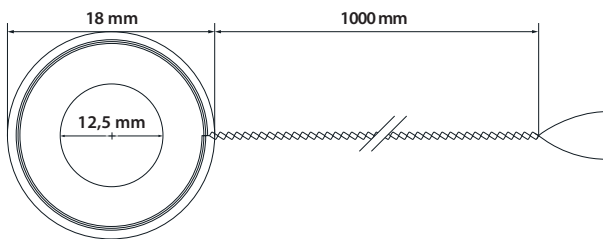
Torsion coil inserted on the eye with the leads exiting nasally. To ensure comfort and fitting the dimensions of the annulus are dimensioned to adhere to the sclera, with no contact to the sensitive cornea.

2D Scleral Search Coil



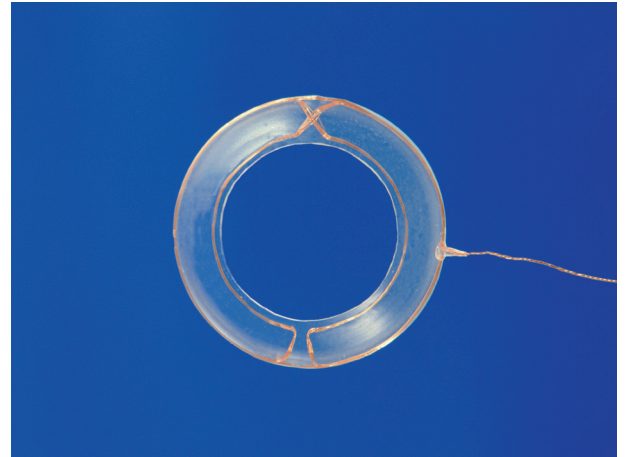
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The 2D device (direction) operates with a single coil consisting of 9 windings of enamelled copper wire. This type is used for measurements of horizontal and vertical eye position.



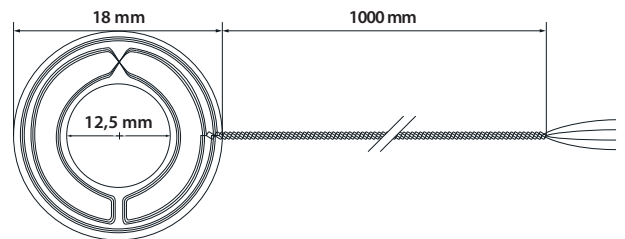
The two lead ends are tin-plated.

3D Scleral Search Coil



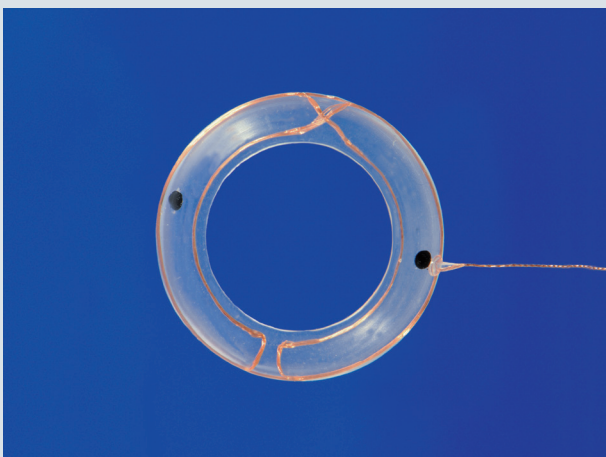
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The 3D device (torsion) includes two separate coils, each with 8 windings of enamelled copper wire. It is designed for measurement of horizontal, vertical & torsional eye position.



All four ends are tin-plated; the lead ends of the torsion coil are marked black.

Customer specific designs



On requests, CHRONOS VISION manufactures customized scleral search coils e.g. with embedded black markers for simultaneous measurements of three-dimensional eye movements using videoculography. For further details or special needs please contact us at eye.tracking@chronos-vision.de !

Packaging and User Instructions

Each coil is 100 % quality and performance tested and packaged individually in a closed plastic container. The product documentation includes user instructions, sterilisation procedure.



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