CLS Software

We help contact lens manufacturers worldwide to create unique value products, ideas, and customer experiences. We help them operate at their peak, nurturing their unique brand, product capabilities, business model and culture.

Our aim is to facilitate stakeholder affection and appreciation through the provision of specialist high value contact lens design and related manufacturing and lens-fitting systems.

Our core tools are tLab and tLink which have many customisable applications and processes. We adapt, add on and develop new features as required to enable our clients to operate at their peak.

We began in 1992. Since then we have worked with many great companies, big and sometimes small: Novartis, Johnson & Johnson, Bausch & Lomb, Saflon, MJS Automated lens Technology, No 7 Contact Lens Laboratory, Cantor + Nissel, Con-Lens, Lambda-X, PhaseFocus, Visionix, Rotlex, Contamac, Vista Optics, … and on.

We believe in value, peak performance, uniqueness, whole systems, a fair partnership; and the power of strong insights to lens design, functionality, on eye performance and manufacturing process. Our clients ask us back again and again; we believe this is the best testimony to the quality of our work.

Partners

We also work in partnership with other corporations, agencies and consultancies and with a strong collaborative network of associates. In particular we have long established business partner relationships with Sterling UltraPrecision Inc (Ametek) and DAC International Inc.

We are strengthened by our ties with the University of Manchester and the University of Bradford in the UK. Tony Hough, founder of CLS Software, is a leading authority on lens design and manufacturing and a Visiting Scientist at the University of Manchester. This has led to even better insights, tools and methods that can really add value for clients.
tLab
Manufacturing software that fits your laboratory

tLab is designed to provide seamless integration of your established lens designs with new premium products
The specialist lens manufacturing business today is tough and competitive. It demands a fresh approach to ensure you continue to flourish. tLab delivers established successful lens designs using smart laboratory software and automatic lathe technology to provide you with a solution to the problem of growing your business in the current tough world of custom contact lens manufacture.

tLab also offers you a range of specialist niche contact lenses which can grow your business, including:
- silicone hydrogel lenses for keratoconus;
- wavefront (aberration controlled) soft and rigid lenses;
- rigid multifocals – our ray tracing technology is at the forefront of multifocal design;
- large diameter rigid lenses including fitting guides;
- standard rigid lenses for keratoconus, including fitting guides;
- toric soft / silicone hydrogel lenses using dynamic and prismatic stabilization;
- linear lenses, where the lens sag is controlled by tangent lines in either intralimbal or corneoscleral designs;
- all the standard designs from traditional lathes; continuous offset, progressive eccentricity and more;
- custom silicone hydrogel ray trace multifocals; either centre near or centre distance.

US enquiries to:

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tLink: Connecting eye care practitioners to your product range
tLink
Connecting eye care practitioners to your contact lens product range

tLink has been developed by CLS Software to enable any contact lens manufacturing laboratory to place its own individual designs in the office of the eye care practitioner (ECP).

In times where the specialist lens manufacturing business is tough and competitive, tLink offers the custom laboratory an opportunity to flourish by offering niche products and making them available in the ECP clinic.

tLink is installed on the same computer as the topographer in the eye care practice. Supported topographers are Keratron, Medmont, Zeiss, Topcon and Oculus.

tLink is optimized for the Keratron and Medmont instruments where installation to the topographer software is a simple click. Other supported topographers have file export systems which are very easy to work with.

tLink imports raw topography data which it converts to a corneal model. The user ECP selects the lens design to fit then tLink will suggest the lens most likely to work based on fitting criteria provided by the laboratory. The user can then edit or change the lens parameters if they wish and then order the lenses.

Designs which work very well with tLink are:
• Orthokeratology
• Torics, especially complex bitorics where tLink can calculate not only for back surface design but also the bitoric powers
• Aspheric
• Corneoscleral designs – this is a new feature including full corneoscleral modelling based on topography

Orthokeratology and complex bitorics are two of the most important products for tLink

The ECP can either send the complete file or order lenses they have designed

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Contact lens industry: Short summary
Mr Hough has worked in the contact lens industry since 1975, as a lens manufacturer and in lens manufacturing technology. He has been responsible for the development of a number of current contact lens products, including varifocal rigid contact lenses, Bausch & Lomb’s post-laser surgery RGP lens (with Prof. Keith Edwards), a popular moulded aberration control monthly disposable hydrogel lens including the manufacture of the associated mould masters and several soft bifocal and soft toric lenses.

He has worked on the international standardization of contact lenses, having particular interest in the measurement of lens power and optical quality, lens radius and terminology. He was the principal United Kingdom expert at ISO and the European Standards Committee (CEN) meetings on contact lenses and test methods over the period 1980-2002 and project leader on several groups during the development of ISO/EN standards, including the groups which developed the current standards on power measurement. He was responsible for the management of several international 'ring tests' which are used by ISO to determine the accuracy and precision of any test methods which are to be included as ISO methods (radius, diameter, power using the focimeter, power using the Shack-Hartmann method, power using the Moiré fringe method). During the 1980s and 1990s he helped to introduce the system of nomenclature and in particular the mathematical symbols which have now been adopted by ISO.

He has continued to design and develop speciality contact lenses and related areas of technology. Recently, he has developed a software interface for videokeratoscopes (commonly known as 'topographers') which is used by specialist practitioners to facilitate the fitting of rigid contact lenses. This is an area of special interest for small and medium sized lens manufacturing companies; for example such software plays an important part in the lens design and specification for the procedure known as orthokeratology.
He has had experience in designing and manufacturing contact lenses, knowledge of and the ability to use instruments used in the contact lens business to measure surface curvature and power of contact lenses, and an understanding of the optical principles underlying the action of contact lenses in correcting the refractive errors of the human eye. His work in the field of rigid contact lenses has given him an understanding of the on-eye optical systems in the case of multifocal contact lenses. He is the inventor in the case of United States Patent 6,390,624 which relates to a rigid multifocal contact lens and in particular the management and control of the spherical aberration of the on-eye optical system comprising the lens, tears and cornea.

He continues to work in the design and manufacture of soft and rigid contact lenses and in a number of associated areas, in particular the development of computer software which is intended to be used in specialist lens manufacturing and fitting environments.

In contact lens manufacture, he has developed software which can be used by manufacturing companies to design rigid and soft lenses and then to cut those lenses on any of the main automatic CNC lathes; specifically, Sterling Optoform, DAC International and Contamac BV Diatop lathes. He has an agreement with Sterling International to utilise their minifile technology as part of this activity.

He has had feature and peer-review articles published worldwide; in the UK, US, Europe and India. He is the author of the CD ROM which is included in two recently published reference books: Phillips & Speedwell’s Contact Lenses 5th Edition and Gasson & Morris’s Contact Lens Manual 3rd edition. Both books are published by Elsevier Science; both are primary reference works for contact lens teaching worldwide. The CD-ROM in both cases includes some reference materials to support the text but additionally includes mathematical calculators which are intended to analyse or demonstrate various aspects of contact lenses, both the lens cornea relationship and the optical performance of the lens.

He has presented scientific papers and posters at the annual conference meetings of the American Academy of Optometry, the British Contact Lens Association, the European Federation of Contact Lens Industry (EFCLIN), the American Contact Lens Manufacturers Association (CLMA) and other venues.

He has been a visiting lecturer at the Department of Optometry and Neuroscience at the University of Manchester and a technical consultant to Eurolens Research Limited.

He has also lectured at the University of Bradford MSc course on Optometry; the advanced contact lens course at the City University, London; Moorfields Eye Hospital contact lens courses; and the PhD research group at Anglia Ruskin University, Cambridge.

He has been an expert witness in complex technical lawsuits related to intellectual property infringement of contact lens designs.

He has served on the council of the British Contact Lens Association (BCLA) as technical section member 1996-7; Hon Meetings Secretary and Technical Section Chairman 1997-2000; President Elect 2000-1 and President 2001 2.

Selected activities related to corneal topography:

June 1997: (With Prof. Keith Edwards) Recipient of the Dallos award from the BCLA for the study The between-clinic reproducibility of videokeratography as applied to the
measurement of human corneal topography. Work presented at the annual conference of the BCLA. This study also presented at the American Academy of Optometry meeting December 1997 and the Scottish Contact Lens Society meeting April 1998. Peer-review article published in Contact Lens & the Anterior Eye.

May 1996: (With Prof. Keith Edwards, Prof. W A ('Bill') Douthwaite and Harinder Notay): BCLA conference presentation; An updated model of the human cornea based on videokeratographic data. This work also presented at the American Academy of Optometry annual meeting December 1996.

Peer review paper published based on the data: The EyeSys videokeratoscopic assessment of apical radius and p-value in the normal human cornea.