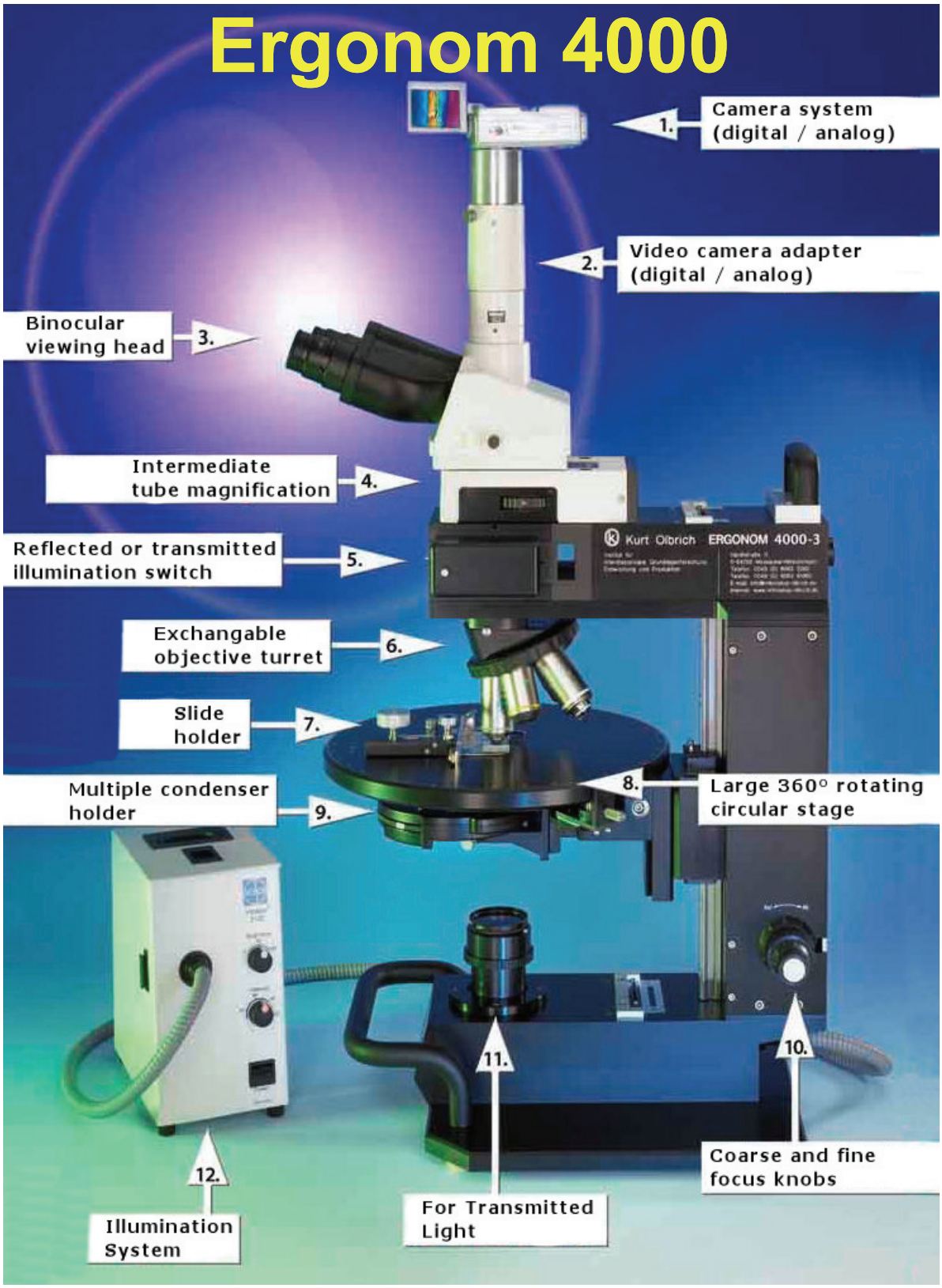
http://www.grayfieldoptical.com – info@grayfieldoptical.com – USA: (702) 425-7775 – UK: (020) 8133 4321 – EU: +49 221 20046970



Research Microscope

Registered Office
P.O. Box 27740
Las Vegas
Nevada 89126
U.S.A.

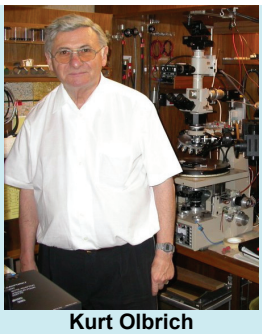
European Office
Kohlenstr. 23
50825 Köln (Cologne)
Germany
www.grayfieldoptical.com

Research & Development by Kurt Olbrich
Institute for Interdisciplinary Basic Research
Hardtstr. 11, 64756 Mossautal, Germany
Tel: +49 (0)6062-3282, Fax: 06062-61360
www.mikroskop-olbrich.de

Contact Telephone/Fax
USA: 1 (702) 425-7775
UK : +44 (0)20 8133 4321
EU : +49 (0)221 20046970
Fax: +49 (0)221 20046973

Company Mission
Grayfield Optical Inc. specialises in sales and marketing of the Olbrich Lens Systems, developed by German engineer Kurt Olbrich The Olbrich Lens System features enhanced true resolution, depth of field in real time and true colour without parallax errors.

Ergonom 4000 Research Microscope



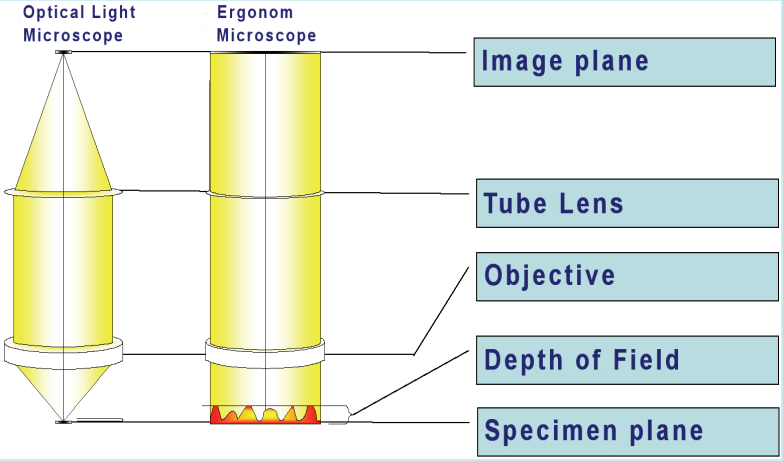
Kurt Olbrich

Ergonom 500

The Ergonom Series of Microscopes

In 1972, Kurt Olbrich investigated why the resolution and depth of field, of existing light microscopes, is so limited. In 1976, he discovered a unique new way of building microscopes where by using a different approach to optics and a new mathematical approach, he could build microscopes with a large "cylinder of sharpness" (depth of field) and a true resolution better than 100nm, while maintaining full contour sharpness and true colours without the need for staining, oil immersion, etc.

The Ergonom 4000-U is our top model and a direct successor of the Ergonom 500, with the same high resolution, depth-of-field, etc, yet is now even easier to use. It can be separated into 3 major parts for transport, and the illumination system has been further improved with the choice of a separate halogen lamp system, or an internal special LED light source. The microscope is built entirely to our own specifications in order to guarantee the use of top quality components.



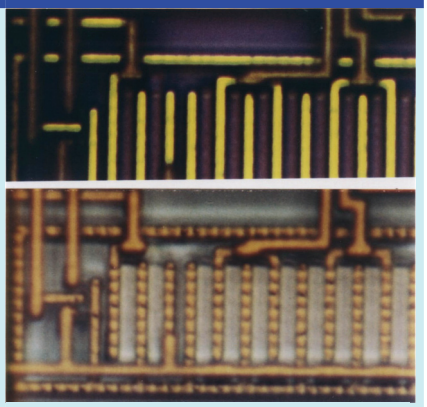
The Ergonom Technology

Depth of Field: All Ergonom microscopes feature variable depth of field where the true colors and contour sharpness remain clearly discernable, even with ever increasing magnifications comparable with that of mid-range scanning electron microscopes. This makes it possible to vary the depth of field independently of magnification, which also allows much more detail to be seen (see image on right), live and in real time!

No Staining, No Oil: The unique optical system provides so much contrast that staining is not required. This allows you to observe the specimens, under a white light source, in their true (living) state, in vivid contrast and true colours even at the highest magnifications. All objectives remain dry as oil immersion is not required.

Grayfield: An entirely new method in optical microscopy is the Grayfield method, developed by Kurt Olbrich. This method allows you to see detailed structures that are otherwise not even visible with conventional phase contrast microscopes. For example, the Grayfield method allows you to observe the *in vitro* decomposition processes of blood. During this transitional phase new viruses and structures arise, which tend to decay and could previously not be made visible due to the lack of suitable microscope techniques.

Phase Contrast: The phase contrast method is used for all thin-layered structures including fibres and textiles. With conventional methods, focusing is limited by overlapping layers and the structures also have the same fractal index causing the structures to become blurred. The Ergonom technology removes these limitations and provides clear and sharp contours.



Section of computer chip seen at 4656x

Upper: Using Confocal microscope
Lower: Ergonom with full depth of field

The Ergonom 4000-U (Universal) is the top model offering both incident (<100nm) and transmitted light (<200nm) capabilities in true color. Ideal for life sciences, the Ergonom 4000-U microscope allows prolonged observation of biological samples in their living state without staining or immersion oil. Ideal for medical and pharmaceutical research, this microscope allows you to view specimens within seconds. Clinics using such microscopes have reported a significant reduction in research time due to the ability to see the reactions of living tissue *in vitro* to various medicines which can also significantly reduce the need for animal testing. We recommend the use of our range of heated Olbrich chambers with self sealing openings to allow nutrients and drugs to be injected into it.

Heated Olbrich Chamber

The Ergonom 4000-I (Incident) is designed for incident light only. It is NOT possible to add transmitted light capability at a later date. Ideal for imaging electronic wafers, plastics, metallurgy, etc. not requiring transmitted light.

The Ergonom 4000-T (Transmitted) is designed for transmitted light only. It is NOT possible to add incident light capability at a later date. Ideal for demanding biological and medical applications, live cell analysis, etc. not requiring incident light.

All Ergonom microscopes are made in Germany to the highest technical standards and are available in a wide range of configurations. Further details are available online, yet in order to make sure you get the right system, it is important to discuss your needs with us personally in our German labs. Please call us to make an appointment.

Further example images and hours of video footage are available on DVD and online at www.grayfieldoptical.com