Optical Inspection System with special lenses for BGAs, Flip Chips and much more

Technical Highlights

- ■ Flip Chip optical lens (≤50 µm)
- ■ High resolution BGA optical lens (≤280 µm)
- ■ Wide angle, 0°, »Look down« optical lens (250x)
- ■ Light management: fiber optic front and back lights with mechanical iris, fiber optic light brush and -flat brush, goose neck
- ■ Tripod and table with a total of 7 movable axis' for the optics and the board
- ■ ImageDoc software for both beginner and advanced Operators
- ■ Large Database of Problems & Solutions

The ERSASCOPE 2 plus –
the world's only optical inspection system for Flip Chips and CSPs

The ERSASCOPE 2 plus optical carrier is a highly advanced, endoscope based system offering three optical heads (lenses) with precise image focussing, superior light management and software supported image processing.

The complete system comes standard with a MHLS Metal Halide Light Source. The long life metal halide light bulb offers a much cleaner and brighter white light compared to other systems. A mechanical iris on the MHLS station regulates the light quantity without changing the temperature or colour during dimming. Two mechanical irises on the optic carrier allow for individual and separate continuously variable dimming (0 to 100 %) of the front and back lights. Also standard is a newly designed fibre optic light brush made up of individual fibres (0.050 mm diameter) which can be inserted

under most area array packages for optimal lighting during inspection.

Optical image quality depends not only on precision optics, but also on the camera technology as well as lighting technology. The high-resolution and highly light sensitive Ersa USB 2.0 digital camera with 1.3 megapixels delivers images of high detail and perfect contrast. Even the smallest object details can be captured and used for quality assurance and documentation purposes.

The ERSASCOPE stand and inspection table offer the most accurate BGA inspection in the fastest cycle time when compared to all competitive systems on the market. The greatest flexibility with a total of 7 axes of movement of the ERSASCOPE 2 plus optic positioning is

guaranteed: unlimited camera rotation with 90° lock position, unlimited table rotation, free tilting of optic between ±90° with zero degree lock position, X-Y-Z adjustment in micrometer range.

Finally, the ERSASCOPE 2 plus runs with Ersa's ImageDoc inspection software. This multimedia software package includes a large database of typical problems and solutions as well as advanced recording, measurement and reporting functions.
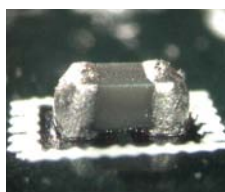
Software package Image Doc Basic 3.X is included in the standard system.
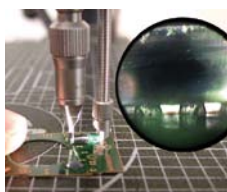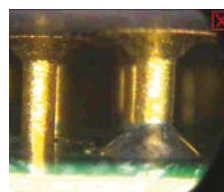

Typical inspection gap of Flip Chip lens ~30 µm

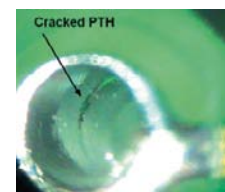*Small footprint of Flip Chip lens: 0.6 mm x 4.0 mm*

High magnification inspection of 0201s

THT inspection under PGA

PCB inspection inside via hole

ImageDoc inspection software

ERSASCOPE 1 ordering information and technical data

Artikelnummer	Beschreibung	Technische Daten	Abbildung
0VSSC600	**ERSASCOPE 2 plus System, consisting of:**		
0VSSC200-T	**Optical carrier** endoscope with integrated lens and fibre optic system	calibration scale, focus ring and two each mechanical iris for front and back light	
0VSSE200-90K	**90° Optical lens** with integrated lens and fibre optic system	footprint 3 x 6 mm magnification up to 425x* typical inspection gap ~300 µm	
0VSSE200-FCK	**Flip Chip Optical lens** with integrated lens and fibre optic system	footprint 1.5 x 4.5 mm (0.6 x 4.0 mm) magnification up to 700x* typical inspection gap ~30 µm	
0VSSE200-0K	**0° Optical lens** for surface inspection	footprint ø 6 mm magnification up to 250x* *20" monitor, 1600 x 1200 pixel resolution, no digital zoom	
0VSCA2240	**High resolution CCD** color inspection camera	SXGA digital (USB 2.0) manual or auto white balance 1.3 million pixels; 1/3" CCD chip	
0VSTV200	**TV Adapter** connects optical carrier to CCD camera	60 mm focus area C-Mount type	
0VSLS300	**Light source MHLS** Metal Halide Light Source with long-life metal halide bulb	W x H x D: 175 x 82.5 x 202 mm 220 V – 240 V~, 50 Hz, 120 W or 115 V – 127 V~, 60 Hz, 120 W weight: ~2.5 kg	
0VSLR200	**Light regulator for gooseneck**	mechanical iris adjusts 0 to 100 %	
0VSLLVL200	**Light fibre extension**	L 200 mm	
0VSLF200	**Fibre light fan**	L 35 mm, W 5 mm	
0VSLF300	**Fibre optic light brush**	L 80 mm, W ~10 to ~35 mm	
0VSRM100	**Glass calibration scale**	10 µm lines at 100 µm pitch	
0VSLC100	**Lens cleaning kit**	Cleaning cloth, papers and liquid	
0VSSH100	**Dust cover**	antistatic textile	
3VP00640	**Storage Case**	W x H x D: ~325 x 230 x 110 mm aluminum with padded insert	
0VSST210	**ERSASCOPE stand** with z-axis micrometer adjustment; integrated fibre optics and camera cables	W x H x D: ~500 x 400 x 520 mm total weight ~5 kg surface, antistatic includes 1000 mm coated fibre optic cable with gooseneck	
0VSXY100	**ersaSCOPE 2 table** with 4 each PCB supports	X-Y-movement with fine adjust wheels and antistatic mat with grid dimension: ø 320 mm; weight: ~5 kg	

ERSASCOPE 2 can only run with ImageDoc inspection software, choose one of the packages below:

0VSID300	ImageDoc Basic 3.X	Standard software package (included in the delivery)	
0VSID300L	ImageDoc EXP 3.X	Professional multimedia inspection software (option)	

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