

product **NEWS**

The Lumos[®] digital portable microscope Macro to micro photography

As many technologies place ever more features into smaller and smaller packages, more versatile methodologies are required for efficient work execution at the microscope level. Further, with ever increasing requirements for rapid and accurate information collection and processing, the need for more innovative techniques for the real-time gathering and onward transmission of such data also increases. Portability is a key consideration. Valuable time can be gained moving to the 'sample', rather than having to transport the sample for inspection. Indeed, it is often not possible to gather the sample from a 'field environment' without major disruption or cost.



The 'Assay Series'
/ A500

Current technologies, let alone human vision fall behind, as technological progress accelerates and innovative apparatus to extend current visualization capabilities becomes essential.

Until now portable close-up photography has been limited to the use of a standard SLR camera with the addition of a macro conversion lens, adapter rings with added illumination from a ring flash. This traditional method for trying to capture micro-images is not only complicated and time consuming but also results in images of varying quality, limited magnifications and in the professional arena, sometimes, limited application.

The 'Gazer-Series'
/ G20

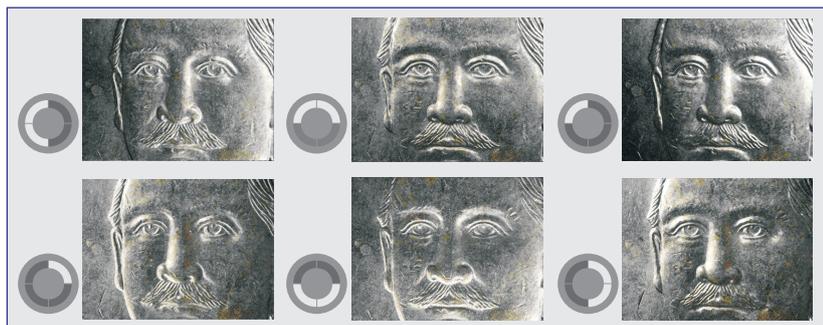


To extend the realm of macro-imaging, Lumous Technology have combined state-of-the-art DSL photographic equipment and microscope lens module technology, together with programmable LED lighting, to develop the X-Loupe[®] Portable Microscope Camera; a quantum leap for portable photographic microscopy.

The X-Loupe[®] Portable Microscope Camera is composed of a digital camera and a microscope module. The unit has interchangeable lenses and the flagship G 20 features two different built-in light sources. With more than 200 lighting modes and optical zoom functions. The X-Loupe[®] has the capability to capture object sizes ranging from 6 mm down to 2 microns. Significantly, the X-Loupe[®] provides for efficient, real-time optimization of micro images while retaining the needed precision and can interface directly to an available computer for immediate onward transmission: thus further redefining micro-visualization technology.

X-Loupe[®] microscope camera's are supplied in three ranges. The A-series is a basic field work horse; light and easy to use for less demanding object sizes and very good performance using UV. The G-series is the top-of-the-range, product; and the C-series sits between the two, with added optimisation for forensic work. Applications include; Agriculture / Art / Auto, Aerospace & Marine / Chemical / Engineering / Forensic / Medical / Oil / Research / Semiconductor, Electronics and related industries / Insurance cataloguing / and many more.

Low-angled 3D quadrant projection lighting



Dollar coin, viewed using six of the nine possible quadrant project illumination modes

Low-angled projection lighting (X-Loupe[®] G20) manages shadows and highlights to efficiently emphasize 3D topography in the observed objects. Further, low-angle illumination minimizes reflection distortion from specular surfaces.

Quadrant projection lighting

Lighting is one of the most important elements for successful microphotography. The built-in continuous lighting of X-Loupe® is the key to controlling this complex process. In addition to fully controllable 'coaxial lighting', the G20 provides low-angled 3D quadrant projection lighting. This permits illumination from different directions, allowing the user to adjust distracting reflections from objects with high specula surfaces.

The coaxial lighting (main) and low-angled lighting (sub) can be switched independently or operated simultaneously, as needed. The new coaxial lighting is provided by two sets (4 units for each set) of white LED's. Each set can be operated individually. The low-angled lighting is in the form of a switchable quadrant; delivering illumination from each 90 degree sector. Each quadrant contains two bright white LED's. In some instances, illumination from a single quadrant provides sufficient light for optimal photography

Specification overview:

Description	Assay Series		Conceiver	Gazer Series		
Camera type [macro-auto focus] [4x Optical zoom]	A 500 Starter	A 500 Pro	C 101	G20	G 21	
	Canon IXY 120	Canon IXY 120	Canon IXY 120	Canon IXUS 120	Canon IXUS 120	
	12 M pixel	12 M pixel	12 M pixel	12 M pixel	12 M pixel	
Lens	German made Schott lead-free, high performance, aberration corrected AR lens					
	One lens	Three lenses	Two lenses*	Three lenses		
	x 60	x 60, x 100, x150	x 80, x160	x 60	x 150	x 300
	1 element	1, 2, 3 elements	1, 3 elements	3 element	5 element	6 element
	n/a	n/a	Resolution: 90.5, 181 lp/mm	Resolution 90.5 lp/mm	Resolution 181 lp/mm	Resolution 228+ lp/mm
	Objects > 10 um		Objects > 5 um	Objects > 2 um		
Illumination source	Built-in 8 white light LED's			Built-in 16 white light LED's		
	Colour temperature 6000 K			Colour temperature 5000 to 6000 K		
Co-axial illumination	Yes	Yes	Yes, x 160	Yes adjustable	Yes adjustable	Yes adjustable
Low-angle illumination	No	No	Yes, x 80	Yes adjustable	Yes adjustable	Yes Adjustable

* The C101 design specifications included forensic applications: a x30 objective is available, optimized for typical subjects, e.g. finger prints.

Other key features:

Ergonomically designed for lightness and stability, to support precision handling and operational smoothness during photo-shooting

Ultra-high image resolution

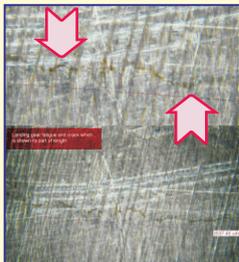
820mAh Li-ion rechargeable Sanyo battery providing up to 5 hours or more autonomous operation.

Digital Brightness Modulation

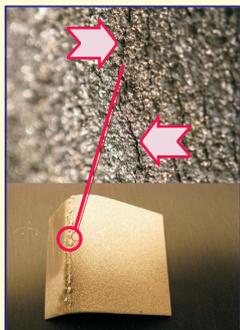
Accessories, e.g.; stands, mil-spec. carrying case, image processing software, etc.

Examples:

in aerospace:

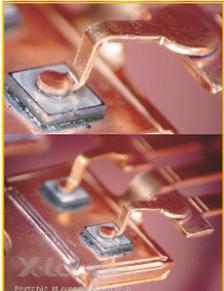


Landing gear crack; inspection / recording

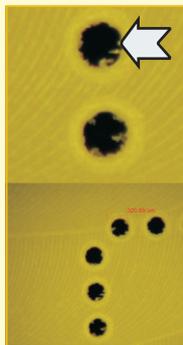


Aero-engine coating; corrosion check

in electronics:



Hi-brightness LED; weld control



IC mold; checking holes for internal cracks/debris

Further information

To find out more about these or other products in our program please call, email or visit us on the web at [HTTP://www.kiedon.com](http://www.kiedon.com) .