This in situ vision analysis system incorporates back lighting to allow remote observation, analysis, verification and recording in real time of physical changes occurring during a process or testing procedure. The BL units can be permanently mounted and reside in a process vessel or can be inserted through vessel ports to observe different areas of the process. In addition, the system offers various viewing angles through articulation that show process areas not accessible in the past. The EnviroCam BL Systems are composed of a hermetically sealed probe, digital high speed, high resolution camera, lighting component and software. The probe is comprised of a high purity sapphire window which is hermetically brazed with a noble metal to a stainless steel shroud that is compatible with standard ingold ports and sanitary fittings. The EnviroCam Vision Analysis Software is integrated to work with National Instruments LabVIEW®. The system is based on a modular concept and can easily be reconfigured to meet changing requirements. EnviroCam BL Systems are compatible with pharmaceutical process materials and are not affected by CIP, SIP, autoclaving or chemical sterilization.

SPECIFICATIONS AND UPGRADES

- Body Material- 316 Stainless Steel (optional: Titanium, Hastelloy C, Ni 2900)
- Window- High Purity Annealed Sapphire
- Hermeticity- 10⁻⁹ cc Helium per second
- Operating Temperature- -40°C to 100°C (Extended temperature range capability available)
- Operating Pressure- 1000 psi (Extended pressure capability to 5000 psi available)
- Mounting Options- Ingold, TriClover, Metal Compression (Variety of flange mounts available)
- CIP-Clean In Place-Steam In Place options available
- Gas Cooling Option- 50 scf internal flow allows operation to 500°C
- Lens Cleaning Options- Systems available to remove condensation or particulate from lens
- Fiber optic or LED lighting systems (LED systems are low voltage.<20VDC)
- Computer Controlled articulation, magnification, focus or remote control
- Custom Camera, Lighting and Optics for opaque media

TYPICAL APPLICATIONS FOR THE BL SERIES ENVIROCAM

- Calibration, Color Changes, Verification
- Corrosion and Droplet Analysis
- Gas Flow Rate and Foam Analysis
- Insitu Analysis of Culture Media
- Visual Inspection Records Electronic Batch Records