

PURIFICATION OF RAW AND TREATED WASTEWATER: *LUCAS*[®] *Aerobic*

LUCAS[®] stands for: Leuven University Cyclic Activated Sludge
Low cost Unobtrusive Compact Advanced Sustainable

LUCAS[®] *Aerobic* offers a compact and modular design. *LUCAS*[®] *Aerobic* combines the advantages of the conventional and the sequencing batch reactor technology. Like in the conventional system, the reactor volume and level in the tanks is always constant. It is a continuous system for both influent feed and effluent discharge. Unlike the fill-and-draw system, the reactor operates according to a time controlled process cycle that allows for the alternation of all essential processes (aeration, mixing, sedimentation) in a single compartment.

The biological reactor consists of three or four units. Each unit has a similar design, similar equipment and similar functional cycle. All units are hydraulically inter-connected and completely redundant. By using the most advanced processes, in combination with the autonomous monitoring and controlling system the treated water will be continuously of the highest quality. This allows for safe effluent discharge and stable process performance.

Main advantages of *LUCAS*[®] *Aerobic* compared to conventional systems and compared to sequencing batch reactors are that no external clarifiers, sludge rakers, recycle pumps/screws/piping are needed and that the reactor volume is always used for 100%. In addition, the system can be easily controlled and the treatment efficiency is very high (80-95%).

