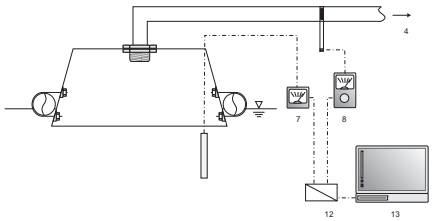
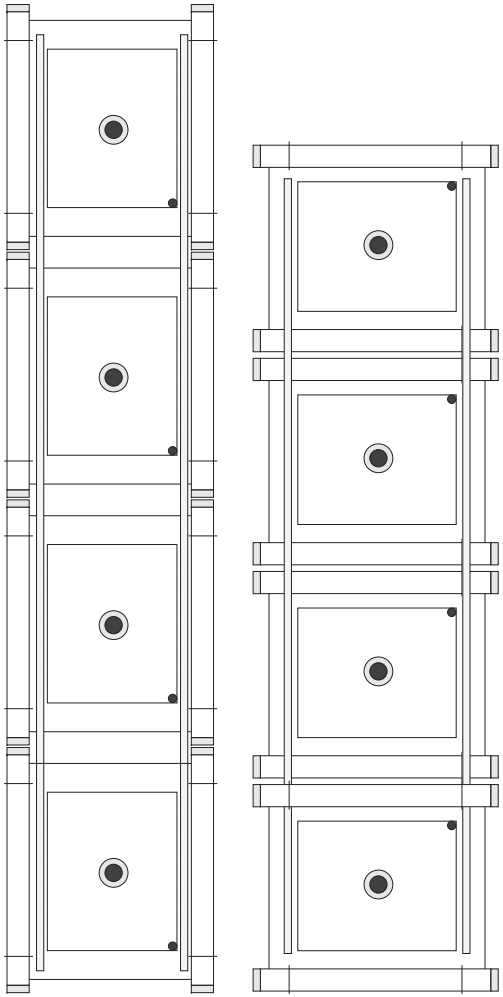
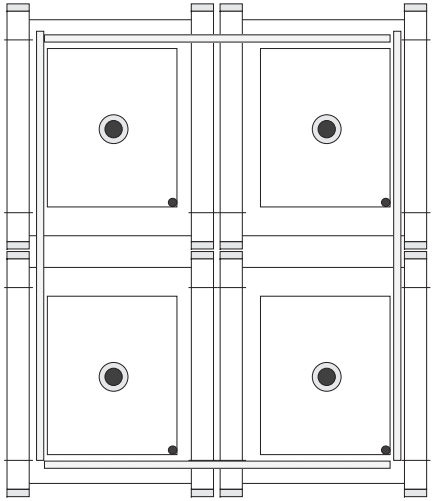


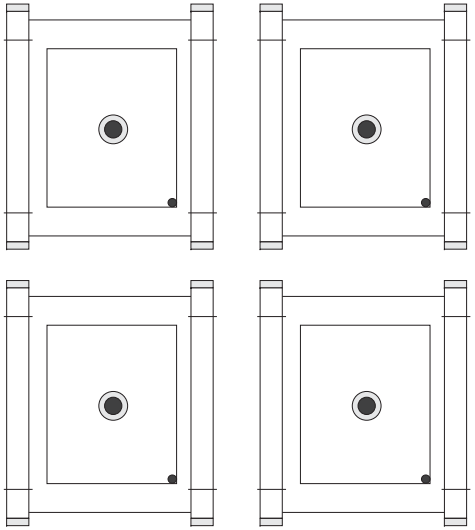
Side view of a modular hood connected with a CPU for dissolved oxygen (DO) and air flow rate (AFR) measurement. On the side of the hood are anchored two sealed hollow pipes that can be either sealed empty (i.e., acting as floats) or filled with weights (i.e., acting as ballast), depending on the testing conditions. The off-gas is released through the flow pipe (4) and is analyzed in a off-gas analyzer for oxygen and greenhouse gases (analyzer not shown in this figure). Key: 7) DO meter; 8) air velocity meter; 12) digital/analog converter; 13) CPU



A



B



C

Example of multiple configurations of modular hoods with DO probes for concurrent off-gas analysis and variable-depth oxygen profiles to study oxygen and mixing gradients. These hoods can be placed in single or multiple configurations and can be used for process monitoring and process control. Key: A) in-line configuration of 4 hoods in lengthwise and sideways layout (hatched lines are connecting bars); B) 2-by-2 configuration of 4 hoods (hatched lines are connecting bars) ; C) free configuration of 4 hoods for free floating and investigation of gradients in different parts of the tanks. Separate collection hoses and DO probes are always employed to monitor separately the off-gas and DO in different points of the surface, therefore identifying small-scale variations and DO and mixing gradients.