



Lamella® Gravity Settler/Thickener



Lamella® Gravity Settler  
package unit

# Lamella<sup>®</sup> Gravity Settler

## Inclined Plate Settler

Conventional clarification equipment requires 10 times more physical area to even begin to approach the same settling capacity of a Lamella<sup>®</sup> Gravity Settler. This means faster settling in one tenth the space because the effective gravity settling area of the inclined plate design equals each plate's area projected on a horizontal surface. Up to ten square feet of settling area becomes available for each square foot of physical area occupied by the unit. Loading rates normally used for the design of conventional settlers can be applied to the sizing of a Lamella<sup>®</sup> settler by substituting projected area for the surface settling area of a conventional clarifier.

The compact design minimizes hydraulic disturbances caused by wind or temperature changes. Balanced flow distribution ensures equal flow to each plate and across the plate surface area preventing short-circuiting. Units and plate packs arrive at the job site factory assembled which reduces installation time and lowers installed costs. Minimal moving parts means low maintenance costs.

### Principle of Operation

Influent enters the Lamella<sup>®</sup> Gravity Settler and flows downward through the inlet chamber in the center of the unit and enters the plates through side-entry plate slots. The countercurrent design, unlike typical bottom feed designs, reduces the risk of disturbing previously settled solids.

As the liquid flows upward, the solids settle on the inclined, parallel plates and slide into the sludge hopper at the bottom. Further thickening of the sludge is achieved in the hopper due to compression in the quiescent zone achieved by the side feed design.

The clarified liquid leaves the plate assembly through orifices or weirs at the top and is distributed into collection channels leading to the clarified water outlet. This creates a pressure drop across the collection channels which ensures uniform flow distribution across the plates in order to utilize the full area for settling.

## Three Standard Designs

The LGS design is a self-contained, packaged settling unit with a conical sludge hopper.

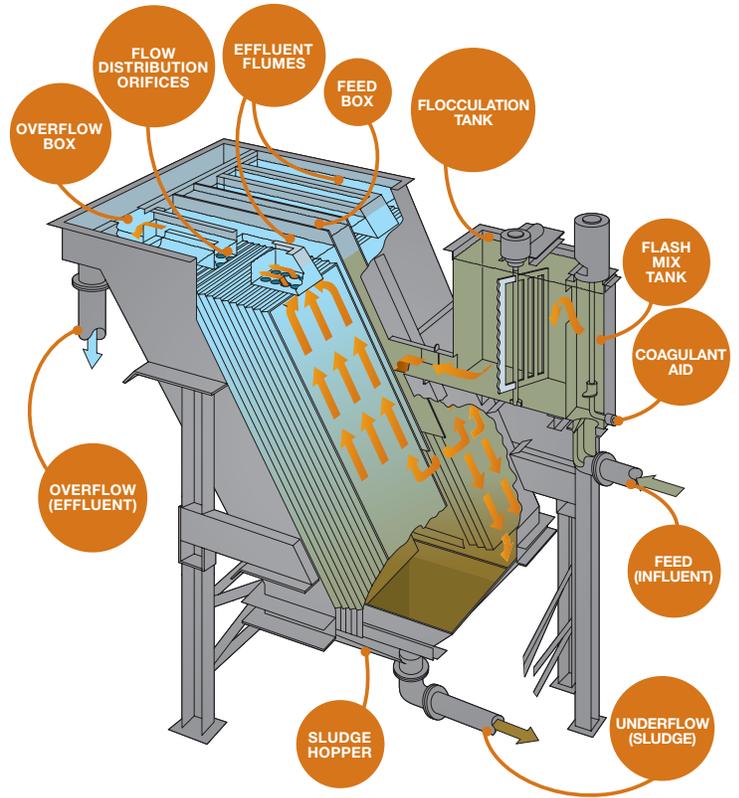
The LGST design is a high-rate gravity settler combined with a circular, picket-fence sludge thickener/scrapper. The settler section utilizes the same counter-current flow principle and the inclined plate design used in packaged Lamella Gravity Settlers. The LGST handles flow rates and/or solids loadings beyond the capacity of a packaged settler unit. It produces unprecedented sludge concentrations and provides sludge storage providing flexibility for further sludge dewatering equipment. Underflow sludge concentrations are up to 5 times higher.

In addition to self-contained designs, the LGS plate pack assembly is appropriate for installation in concrete basins or steel tanks. This can be a low maintenance, cost-effective means of increasing existing basin capacity. The plate pack assemblies operate in the same manner as the free-standing units.

Both designs can be equipped with a flash mixing and flocculation tank upstream of the inlet pipe. The chemical flocculant is added in the separate flash mixing compartment.



Lamella® plate packs in concrete basin



## Lamella Applications

- Potable water
- Filter backwash
- Industrial process water
- Clarification
- Effluent treatment in Pulp and Paper
- Washwater recirculation systems
- Tertiary Wastewater Treatment and Reuse

## Process Knowledge

The knowledge gained from 4,000 installations, 6,000 laboratory tests, and 900 pilot tests is the Parkson guarantee.