



# Lamella EcoFlow<sup>®</sup>

## Inclined Plate Settler

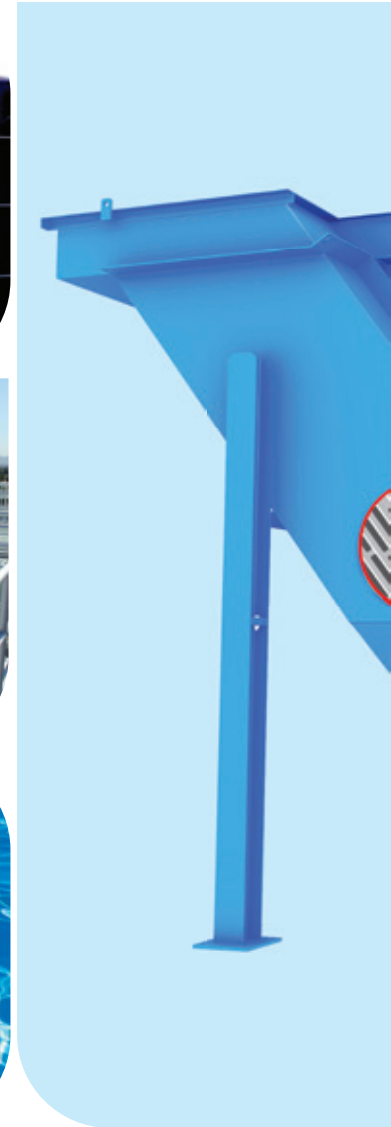
- 25% increase in capacity over traditional plate settlers
- Improved hydraulics yield improved efficiency
- Easy to retrofit existing settlers
- Improved effluent quality and sludge thickening

# Optimizing settling by using Lamella®

Lamella® Gravity Settler requires only one tenth the space of conventional clarification equipment with the same settling capacity. This means faster settling 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® by substituting projected area for the surface settling area of a conventional clarifier.

## Principle of Operation

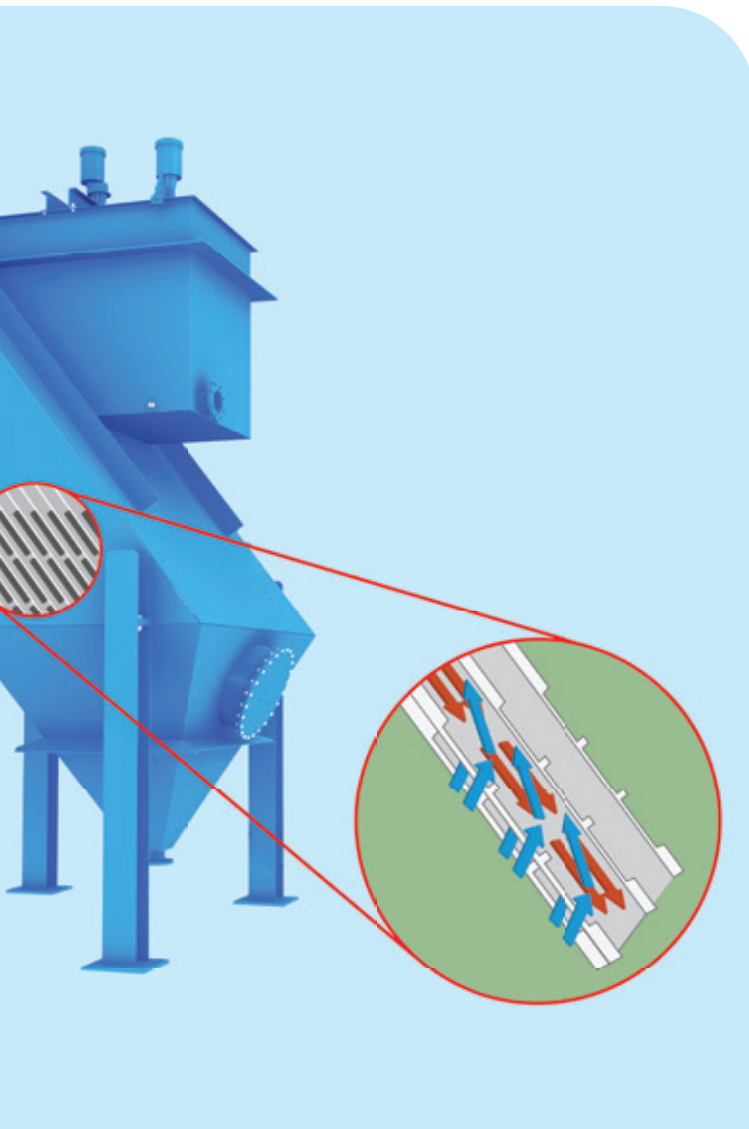
Influent enters the Lamella® Gravity Settler and flows downward through the inlet chamber and enters the plates through side-entry plate slots. The countercurrent design, unlike typical bottom feed designs, reduces the risk of disturbing previously settled solids. As the liquid flows upward, the solids 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 ensure uniform flow distribution across the plates in order to utilize the full area for settling.

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 mean low maintenance costs.





## Three Standard Designs

The LGS (Lamella® Gravity Settler) design is a self-contained, packaged settling unit with a conical sludge hopper. The LGST (Lamella® Gravity Settler/Thickener) design is a high rate gravity settler combined with a circular, picket-fence sludge thickener/scraper.

The LGST handles solids loadings beyond the capacity of a packaged settler unit. It produces higher sludge concentrations and provides sludge storage providing flexibility for further sludge dewatering equipment. Underflow sludge concentrations are up to 3 to 5 times higher.

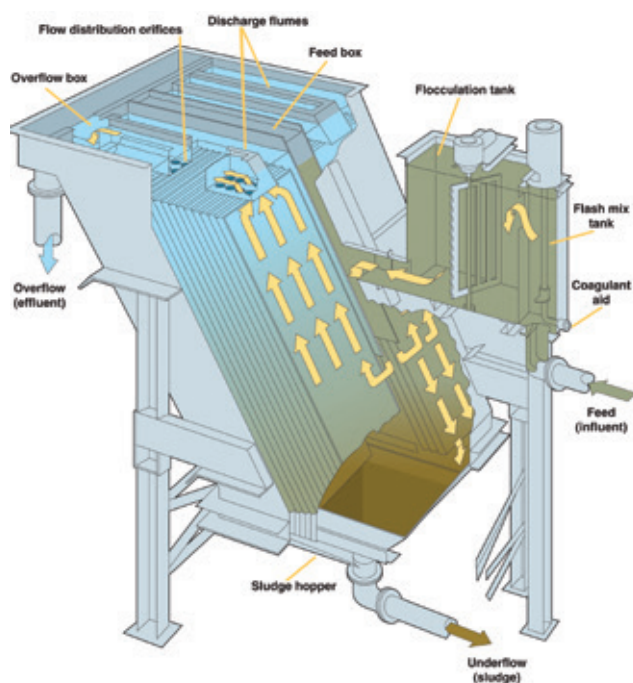
In addition to self-contained designs, the plate pack assembly is appropriate for installation in concrete basins or steel tanks for larger flows. This can be a low maintenance, cost-effective means of increasing existing basin capacity. The plate pack assemblies operate in the same manner as the free-standing units. Both designs can be equipped with a flash mixing and flocculation tank upstream of the inlet pipe. The chemical flocculant is added in a separate flash mixing compartment.

Parkson offers integrated flash/floc design for space constraint projects and FRP units for highly corrosive applications.

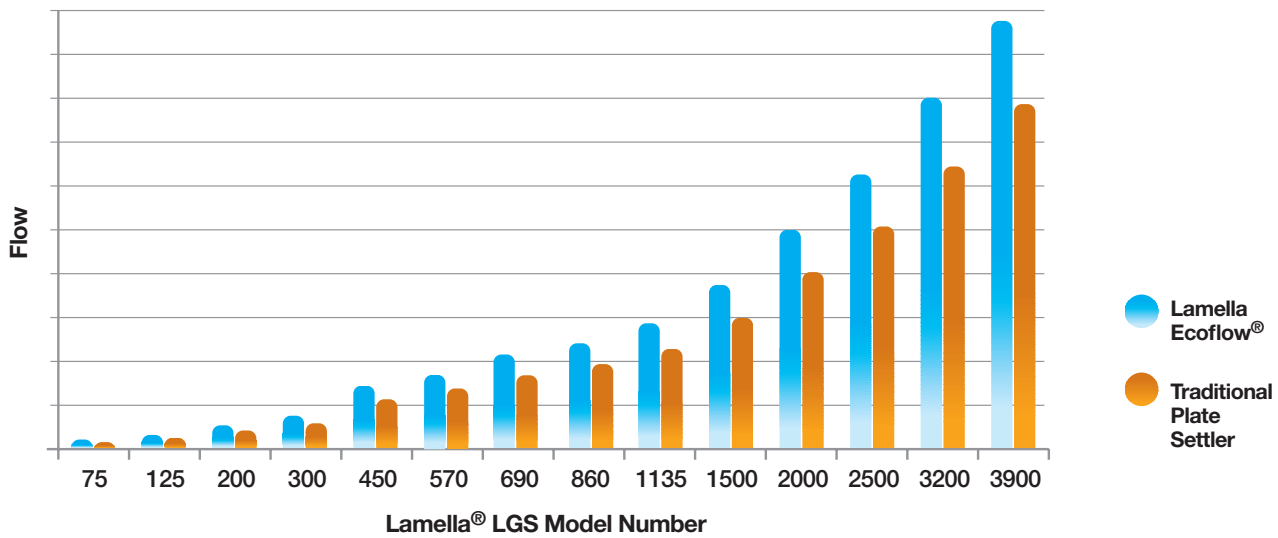
## EcoFlow way – 100% Settling Area

Traditional plate settlers orient the feed slots in such a way that the influent stream collides with the solids front moving down the plate to the sludge hopper. This creates a zone of interference that renders the bottom 20% of the plate area unusable for settling.

The patented EcoFlow design changes the orientation of the feed slots to allow the influent to flow over the top of the solids front. Elimination of the mixing zone allows for 100% utilization of the plate settling area. The increase in settling area allows for 25% more flow to be processed in a given Lamella® tank with traditional plates. Alternatively, a given flow rate can be handled with a 25% reduction in equipment size. Patented EcoFlow plates allow for better effluent quality and enhanced sludge thickening due to influent, effluent and solids streams not interfering with each other.



## Added Capacity Using Lamella EcoFlow®



## Process Knowledge

Parkson has unparalleled process knowledge gained from more than 4,000 installations, 12,000 laboratory tests and 1,000 pilot tests.

## Water Research Facility

The Parkson Water Research Facility is staffed with separations experts that are available to perform jar testing and optimization studies on your custom application. Parkson has full pilot-scale Lamella EcoFlow® units available for on-site testing.

## Retrofits of existing plate settlers

Parkson can retrofit plate settlers from most manufacturers. A Lamella EcoFlow® plate retrofit is the most cost-effective way to increase capacity with the benefit of not changing the footprint. Parkson can perform the work with our personnel or offer the option of supervising a customer's employees. Either option utilizes the 41 years of experience that we have in plate settler retrofits and all of the work comes with a warranty.



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