



LAMELLA PLATE

CLARIFIER

SMALL IN SIZE - BIG IN PERFORMANCE



Ionic Lamella plate clarifier configuration ensures laminar flow conditions, which results in hydraulic uniformity and high effluent quality. It permits great reduction in the space needed for clarification equipment and allows the compact equipment to be located indoors if desired, or to be easily relocated at a later date. It also makes point-source treatment not only feasible, but logical for many applications. The Lamella Clarifier system consists of a series of inclined overlapping plates, which are arranged to form separate sedimentation chambers or cells between each pair of adjacent plates. The overlapping additive projected area of the plates is a factor of increased surface settling which is proportional to the number of plates used.

KEY ADVANTAGES OF LAMELLA CLARIFIER SYSTEM

- No moving parts, thereby minimizing maintenance.
- Time required to stabilize the Lamella Clarifier system after start up is only approximately 20 minutes.
- Continuous operation possible for any length of time without shutdown
- Sludge thickener zone having four sloped hopper bottoms replaces the extra thickener
- Maximum projected effective settling area(PESA) per m² of plate area available due to better hydraulic distribution and collection systems
- Each plate is constructed of FRP corrosion resistant material
- Lifting arrangements are not required for plate installation or inspection individual Lamella plates can be easily removed and installed during installation or maintenance by a single operator without the need to shut down the system
- Internal flow feed ducts ensure even distribution of water to each and every plate controlling velocity and thereby minimizing turbulence
- Adjustable weir plates ensure even collection of the treated water without short circuiting
- The tank and structural support design is completely self supporting for continuous working conditions and is also compatible with supporting walkways, ladders etc. The flash mix cum flocculation tank is a one piece configuration for bolt up to the lamella tank in the field.
- Manual floor space and building height clearances required
- The Lamella Clarifier system design is such that it does not build up deposits, thereby minimizing the frequency of cleaning as well as other maintenance problems usually faced with conventional clarification

Small in Size- Big in Performance

Flow Entry:

In the Ionic lamella clarifier, flow enters from both sides of the lamella plate. This allows the feed flow to be equally proportioned, directed and distributed to all settling surfaces without impeding the movement of solids already settled. The inlet flow is divided and enters the lower part of each sedimentation cell from its two opposite sides. **As the water is displaced upward in smooth, gentle flow, the suspended solids coalesce to form precipitates which settle in the chambers on the lower portion of each lamella plate. Influent water flows upwards over the plates. The deposited precipitates increase in size until they slide or roll down the inclined surface of the plates.** This is then collected in the hopper provided at the bottom of the separator.

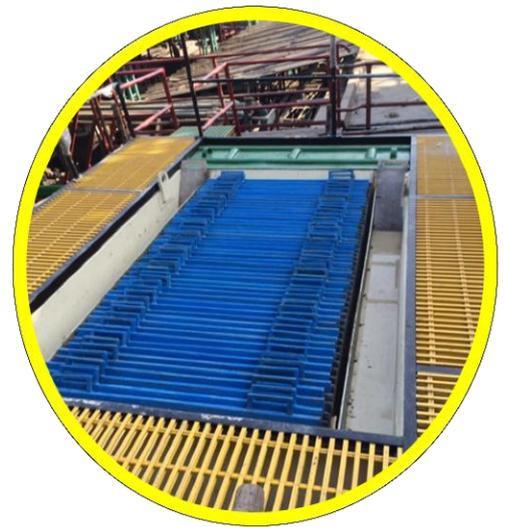
Weir Take Off:

A weir plate with custom-sized orifice holes is used to provide more effective collection designs. The orifices are positioned so that each compartment bounded by a pair of plates is serviced by an orifice on each side. This results in more efficient hydraulic conditions and thus higher effluent quality. Near the top of each plate, clarified water leaves each cell through a pair of circular openings in the adjustable weir plate located along each side of the separator tank. The weir plate should be set horizontally in order to provide a design water level which is lower than the top of the tank.

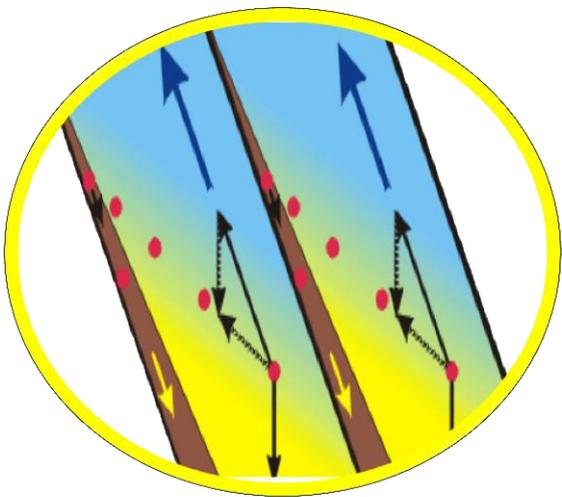
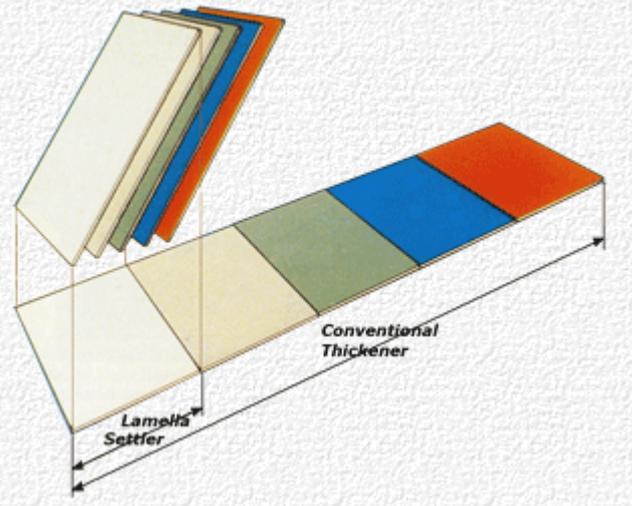
Hopper Arrangement:

Several options are available for sludge storage. The standard arrangement is a four sided, inverted pyramid, hopper bottom. A second option is to mount the lamella on top of a mechanical thickener in order to achieve a higher solids concentration, while at the same time providing a large liquid sludge storage volume. **The sludge which is formed is periodically removed by opening the drain valve in the hopper bottom of the settling tank.** Continuous sludge bleed off is recommended depending on the suspended solids load, in order to utilize the maximum volume of the settling zone effectively.

Optionally during periods of low turbidity, part of the sludge formed is recycled back into the flash mix cum flocculation tank to increase efficiency of the system.



The Area of a Clarifier vs a Lamella Settler



Available Options:

- Flash mix/flocculation tanks with mixers
- Full FRP or stainless steel construction
- Concrete tank designs
- Special coatings and plate materials
- Integral mechanical sludge thickener
- Access platform and ladder
- In-house laboratory analysis for equipment optimization
- Potable water design
- Gasketed and removable covers
- Automatic desludging
- Instrumentation and controls
- Chemical feed equipment
- Sludge handling and dewatering
- Pilot size units for on-site testing

Principle of Operation

The flash mix cum flocculation tank is divided internally into two compartments. Water to be treated is fed into the bottom of the flash/static mix compartment, where it is thoroughly mixed with chemicals. The partition plate dividing the tank allows the water to pass over to the flocculation compartment.

In the flocculation compartment, formation of flocs continues and flocculation is completed. Water containing the flocs passes into the Lamella Plate clarifier. The flow is divided after the water enters the Lamella at the lower part of each sedimentation cell, from its opposite sides. As the water moves upwards along the inclined plate, suspended solids coalesce to form precipitates which settle at the bottom of the plate. The clarified water continues to flow upward along the plate until it reaches the top of the plate and thereafter flows over the adjustable weir outlet onto the outlet of the Lamella System. The precipitate slides downward into the hopper bottom of the Lamella clarifier system, from where it is periodically removed for suitable disposal.

Features and Options:

Standard Features:

- Structural steel support legs
- 1/4" minimum tank wall thickness
- Epoxy painted carbon steel tank
- Individually removable FRP plates
- Adjustable effluent weir plates
- Standard units can be manufactured for flows from 2 to 75 m³/hr and above, in a single above grade tank
- One-piece prefabricated units are available with up to 1000 square ft. of effective settling area.
- One-piece construction with integral flash mix/floc compartments for smaller units

MODELS	ILPC-0725	IPLC-1140	IPLC-1760	IPLC-2380	IPLC-32110	ILPC-42150
Max. flow m ³ /hr	25	40	60	80	110	150
Treated Water Quality						
• Turbidity NTU	< 25	< 25	< 25	< 25	< 25	< 25
• Suspended solids ppm	< 25	< 25	<25	<25	<25	<25
Feed water quality	< 2000 ppm anionic load free from suspended solids @ < 40 deg C°					
Electrical data Supply – 415 V AC 3 Ø Power consumption	1.5-5.0 HP					

Note:- for higher flow rate and special applications pl. contact us with your specific requirements.

STANDARD SPECIFICATION

A) Painted internally with Epoxy and externally with Red oxide – Optional PU / Epoxy external coating

B) Provided with Ladder, Platform, and supporting structures

C) Material of construction Mild steel – optional SS

D) SMFT and its associated accessories not part of scope

E) Accessories include sampling valves and manual sludge line valves are part of our scope

F) Optional – Automatic desludging

G) Optional – Coagulant and Polymer Chemical dosing station and flow measurement

Contact us today:- for “ Peace of Mind”

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