

SPL – SPD LAMELLA PACK SEPARATOR M O D U L E S

WATER IS PRECIOUS WE KNOW HOW TO LOOK AFTER IT
WE OFFER INNOVATIVE WATER TREATMENT SOLUTIONS

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CIEM Engineering
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Our expertise ...

... benefiting your process



SPL & SPD lamella packs

Features

Quality of the materials

The frame and the lamellas are made from materials that are resistant to mechanical and chemical forces and high temperatures, making the lamella packs highly **durable over time**.

Regenerative system

The lamella pack's structure and lamellas can be individually replaced if they become damaged, ensuring the modules are durable throughout their life.

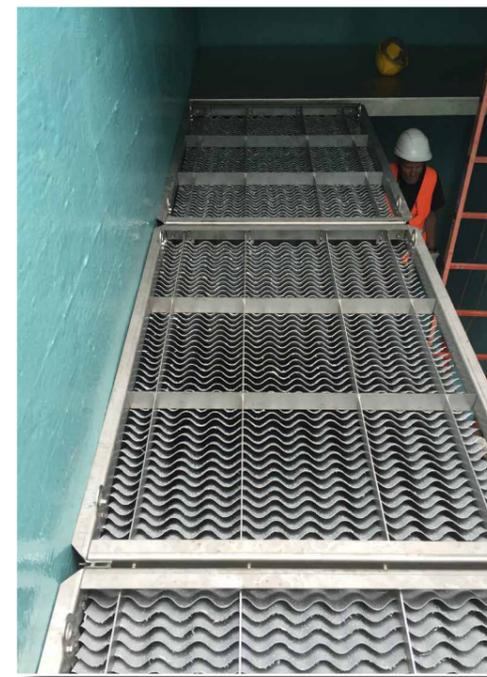
Anti-blocking

Unlike with tubular systems, the **continuity of the channels** also ensures lateral passage between the lamellas, thus eliminating blockages in the system itself.

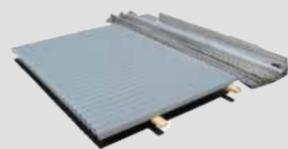
Easy maintenance

In order to clean the lamella surfaces, you don't need to **remove the entire pack**. Because of their geometrical shape, they can be cleaned faster and more effectively than cellular systems.

- Custom sizes
- Equivalent surface areas available upon request
- Different spacings to optimise performance
- Side channels to collect the clarified effluent
- STAINLESS STEEL or GFRP lamellas
- Module with high specific weight



Advantages over other systems



System can be disassembled

- The SPL system can be fully disassembled and assembled at the installation site.

Packable

- The disassembled system can be placed on a standard transportation pallet before being sent to its destination.

Save on transport costs

- A system that can be disassembled and packed drastically reduces transport costs.

Example of a fulfilled delivery

System that can be disassembled

- Sedimentation plant travelling to Ethiopia by sea;
- Total of 90 lamella packs for a total volume of 190 cubic metres;
- Disassembled lamella packs arranged on 7 Europallets;
- Space occupied:** 1/2 a 40' container.

Concurrent systems

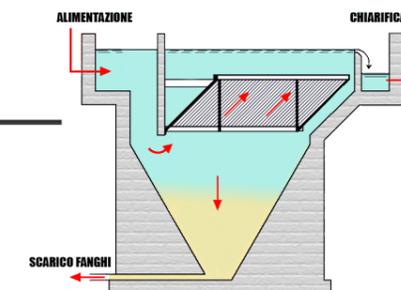
- Sedimentation plant travelling to Ethiopia by sea;
- Total of 90 lamella packs with a total volume of 190 cubic metres;
- Space occupied:** 5 x 40' containers (300 usable cubic metres).

Flow

Types of flow used inside the separators to enable full use of the equivalent surface area, which is determined according to your requirements.

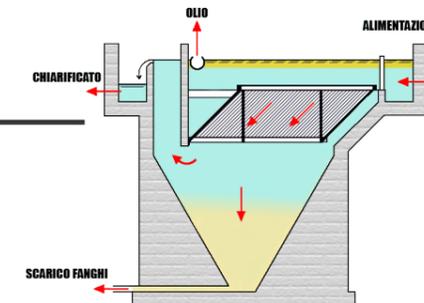
Ascending flow

Due to the enlargement of the particles, ascending flow heightens the effects of flocculation, promoting sedimentation.



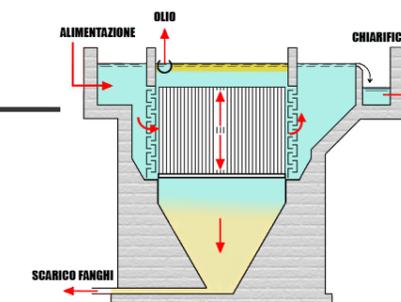
Descending flow

Due to the increase in the particles' size, descending flow heightens the effects of coalescence, promoting oil removal/flotation.



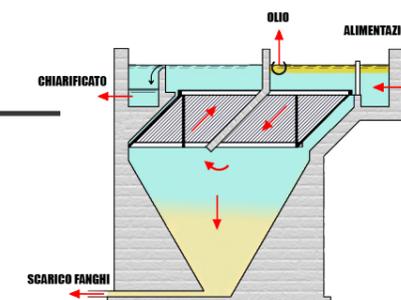
Horizontal flow

The horizontal flow lamella pack can be used with wastewater where particles have already formed at the settling tank inlet.



Ascending/descending flow in series

The lamella pack has two sections in series that provide the equivalent surface area for both the flotation and sedimentation stages.



Materials

Complete plants by CIEM IMPIANTI

LAMELLAS

Lamellas: GFRP/STAINLESS STEEL/SUPER DUPLEX

Linear lamella packs developed in line with the environment where they will be used and the physical and chemical characteristics of the water being treated.

The GFRP lamellas come in the following versions:

- Light
- Heavy
- Food grade



FRAME

Materials available: STAINLESS STEEL/SUPER DUPLEX

The frame can be built entirely out of stainless steel or super duplex with a customised layout, to fit its specific use.

Here at Ciem Impianti Srl, we can design and construct full plug & play separation plants that can also be stored in containers, meeting any needs you may have. This is all down to our treatment plant design experience and our direct insights in the field.

Physicochemical treatment for water purification

Secondary sedimentation plant with SPL-model lamella packs installed at the plant's construction site (Ethiopia). Assembly and installation carried out by site operators, under our supervision.



Water treatment for removing hydrocarbons from the roadway

Plant for separating oils from service areas, consisting of SLV-model lamella packs with 45° inclination and a surface area equivalent to a total of 200 m².



SPL.D

Lamella separator for oil removal

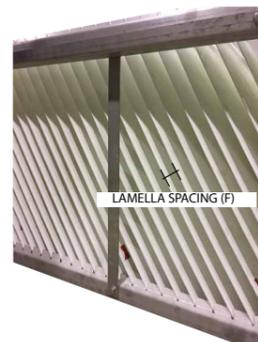
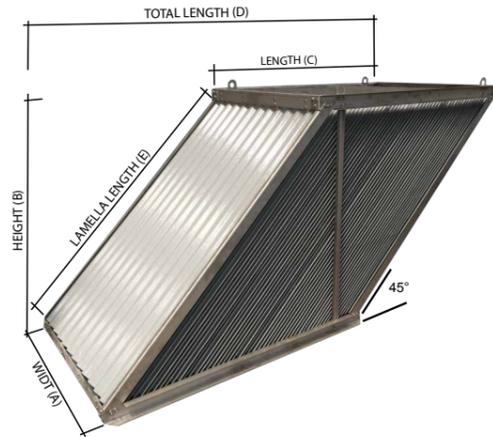
100% customisable oil removal modules to remove hydrocarbon particles or oils inside the wastewater.

Materials available:
 - **Lamellas:** AISI 304, AISI 316, GFRP, Duplex
 - **Frame:** AISI 304, AISI 316

Technical specifications of the standard modules*

Model	A (cm.)	B (cm.)	C (cm.)	D (cm.)	E (cm.)	F (mm.)	Eq. m ² per module
SPL.D 1.5	max. 125	118	max. 100	max. 205	150	20	Eq. 45 m ²
SPL.D 1	max. 125	77	max. 100	max. 170	100	20	Eq. 30 m ²
SPL.D 0.5	max. 125	48	max. 100	max. 135	50	20	Eq. 15 m ²

*: "max" indicates that smaller sizes are available depending on the size requirements of the existing tanks.



SIZE CALCULATION DATA

Equivalent surface area of SPL.D separators in square meters per cubic metre of separator

Eq. 35 m² = 1 real cubic metre of the separator module

(Real cubic metre of the separator refers to the volume occupied by the lamella module, excluding the rhomboid)

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Lamella separator for sedimentation

The lamella separator suitable for sedimentation for all biological and physicochemical processes requiring secondary sedimentation.

Materials available:
 - **Lamellas:** AISI 304, AISI 316, GFRP, Duplex
 - **Frame:** AISI 304, AISI 316

MODELS

The SPL lamella packs come in two models:
 - **LIGHT (L):** light versions for installations in small tanks. The light versions can be equipped with GFRP, food-grade GFRP or AISI 304/316/Duplex lamellas
 - **HEAVY (H):** heavy versions for installations inside large tanks. The lamellas available are made from GFRP and AISI 304/316/Duplex.

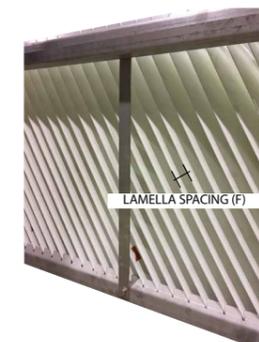
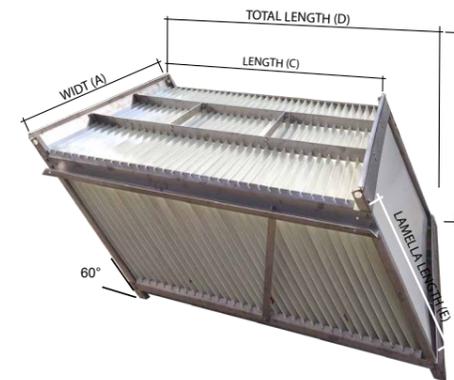
SMALLER SIZES

Lamella packs that can be completely disassembled to considerably reduce transport volume and costs.

Our standard measurements are inserted in the table.

Model	A (cm.)	B (cm.)	C (cm.)	D (cm.)	E (cm.)	F (mm.)	Eq. m ² per module
SPL (L)	120	76	137	180	75	20	32
						40	16
						60	8
SPL (H)	255	120	190	250	100	20	100
						40	50
						60	34
						80	25

For SPL (H) models, versions with 50 and 150 cm lamellas are also available.



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Convert Green Sagl - Via al Mulino, 22 CH-6814 Cadempino Switzerland
T +41 79 601 57 50 - info@convertgreen.ch - www.convertgreen.ch

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Ingegneria per l'ambiente

<http://www.sedimentatorilamellari.it/>
<http://www.ciemimpianti.com/>

