
Droplet separator TB

Description

The TB droplet separator (type Balewa) has been designed for removing liquid droplets from gas streams. The robust and lamellar-like droplet separator element is manufactured by plastic injection moulding. It is passed by the gas stream either vertically from the bottom to the top, or horizontally, or - preferentially - in an angle of 30 to 60 degrees.

The intelligent construction allows simple installation for many different applications, forms, sizes and positions. Often, the droplet separator can be integrated into the washing apparatus without any additional peripheral constructions. The modular structure facilitates the installation or removal of small building blocks, respectively, which are not too heavy for handling.

Characteristics of the TB droplet separator



The TB droplet separator is a stable and solid packing unit. The unit consists of individual plastic elements linked by a central plastic rod.

A number of droplet separator units are aligned according to request either in a parallel or serial way. The dimensions of the packing units and the required number of units depends on the gas flow rate to be treated.

The installation of the droplet separator is carried out by the use of openings or manholes available in the gas treatment unit. The droplet separator can also easily be built into existing wet scrubber systems.



The separator package units are posed onto supports within the apparatus. They are mounted transversally against the long side of the packing units.

The special construction of the elements allows easy maintenance, for example by manual cleaning during operation or by the installing of rinsing tubes equipped with spray nozzles (on the left).

Technical data

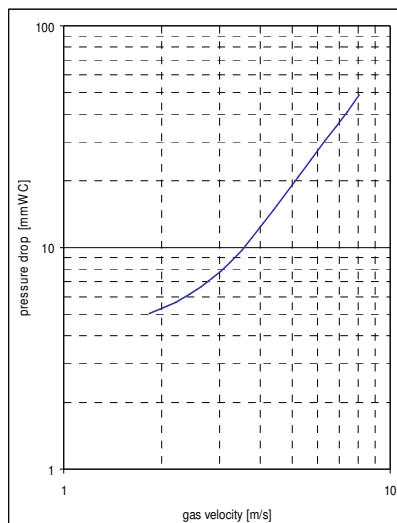
Dimensions: Element height: 252 mm Element width: 223 mm
 Length of an element: 30 mm Maximal length for 1 packing unit: 1'500 mm
 Angle of element-level 15°
 Material: Polypropylene; maximum operation temperature 80° C°
 Weight: 1 Element: 0.3 kg
 Maximum weight per packing unit: 15 kg (consisting of maximally 50 elements)

Performance data

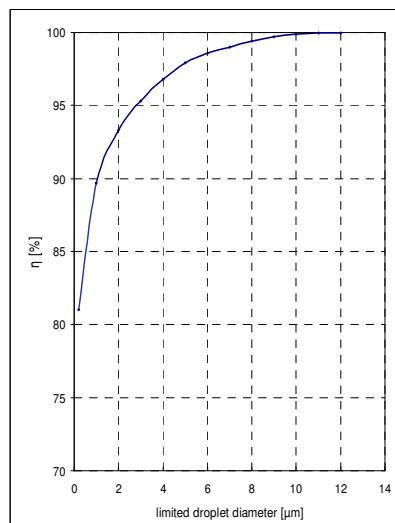
Maximal gas flow velocity: 4.5 m/s
 Limited droplet diameter: 12 µm

Pressure drop

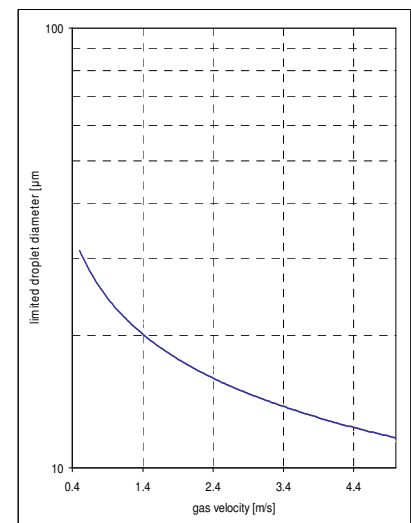
Air density 1.2 kg/m³



Fraction efficiency



Limited droplet diameter*



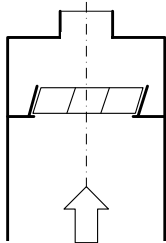
* The limited droplet diameter corresponds to the smallest diameter of droplet (12 µm) removed from the gas stream at a velocity of 3 to 4.5 m/s at a pressure drop of 5 to 14 mm water-column.

The main advantages of the TB droplet separator are its

- high performance efficiency at a minimal pressure drop
- simple integration into gas treatment systems
- robustness under acidic or alkaline conditions
- robustness against clogging

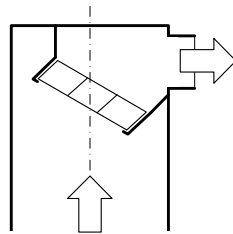
Mounting options

Column in counter-current systems



horizontal installation

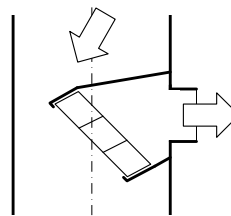
v_{\max} 3 m/s



at an angle of 30°

v_{\max} 4.5 m/s

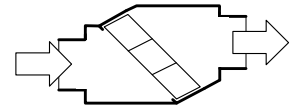
Column in co-current system



at 45°

v_{\max} 5 m/s

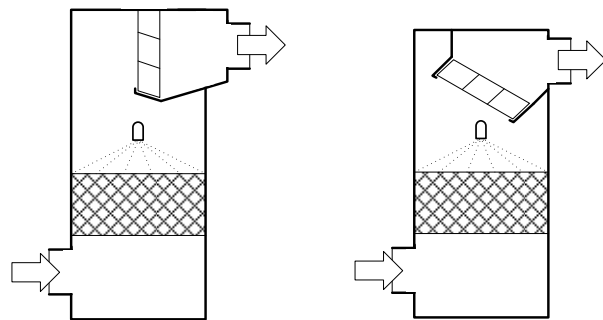
Installation in horizontal gas streams



at 45°

v_{\max} 5 m/s

The illustrations on the right show potential installations of droplet separators in a slanted way against the gas flow. Thus, a higher velocity of the gas stream is applicable, requiring less space for the installation of the droplet separator. As a result, smaller dimensions at lower prices with the same droplet removing efficiency are achievable.



Applications

The TB droplet separator is mainly used for the treatment of gases of wet scrubbers containing high liquid or droplet-spray loading rates

- after wet scrubbers of flue gas treatment units of **incinerators** for domestic or industrial wastes
- after scrubbers of odour treatment units at waste water treatment plants
- in off gas treatment plants in the chemical- or pharmaceutical industry

The TB droplet separator ideally complements our Hedgehog packing material for wet scrubbers allowing a high gas-liquid mass transfer and our Ring-Jet unit for efficient removal of particle off gas streams

Sales

Design, sizing, sales

Packaging

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 in boxes, larger quantities on one-way-pallets