Absorption And Desorption Educational Unit Operations Pilot Plant

Item Number: LPK-BABD-C

Introduction

Dual packed column absorption and desorption pilot plant for chemical engineering education, offering real-time mass transfer coefficient measurement, durable mobile frame, industrial touch-screen interface, and customizable design for varied laboratory curricula, enabling hands-on study of gas absorption and stripping.

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Parameter	Description / Specification	Educational / Operational Value
System Columns	Packed absorption column and packed desorption column	Supports side-by-side study of absorption and stripping mechanisms.
Frame Material	High-quality industrial aluminum alloy with locking casters	Ensures durability and allows flexible laboratory floor plan layouts.
Dimensions	≤ 2200 mm × 580 mm × 2300 mm (L × W × H)	Compact footprint suitable for standard university teaching laboratories.
Control Unit	Industrial touch-screen all-in-one PC	Exposes students to professional Human-Machine Interfaces (HMI).
Data Handing	Real-time online data display and automated software calculation	Enhances data accuracy and reduces manual calculation errors during lab sessions.

Experimental Module	Key Unit Operation / Physical Concept	Academic Textbook Reference
Absorption Column Dynamics	Gas absorption in packed towers, determination of volumetric mass transfer coefficients ($K_y a$), liquid film resistance.	*Unit Operations of Chemical Engineering*
Desorption & Stripping	Solute removal from liquid phases, mass transfer driving force, counter-current flow patterns.	*Transport Processes and Separation Process Principles* (formerly *Transport Processes and Unit Operations*)
Hydrodynamics of Packed Columns	Pressure drop measurement, determination of flooding and loading points, spray density effects.	*Chemical Engineering Design*