

BATCH-INLINE CLEANING SYSTEM For service modules and SMT- assemblies

The KLN BATCH-INLINE cleaning system is based on <u>many years of experience with Inline Cleaning</u> <u>systems</u> for the electronics production and unites, for the first time, the technological advantages of Inline cleaning with low space requirement of a Batch system. By far, most of the Inline cleaning systems in Germany for the <u>large-scale production "Automotives" and "alternative energy"</u> come from company KLN.

This system was developed to make the efficient Inline cleaning technology available now also for customers with <u>smaller budgets and throughputs</u>.



Advantages of the KLN Batch-Inline process:

- <u>Two-chamber system</u> permits throughput of up to 4m2/h (Simultaneous cleaning and drying)
- <u>Modular design.</u> Base version is growing with your throughputs. Can be upgraded to "Comfort" and "Comfort plus" versions.
- <u>100% reproducibility</u> by uniform control of all parts by the homogeneous spray field of the nozzle bars
- Process and result assurance (0% shadowing)
- <u>All components in stainless steel.</u> Lowmaintenance, robust, long-lasting.
- <u>Consumption costs optimization</u> by geometry of the process chamber
- <u>Horizontal goods control</u> avoids typical "draining edges"
- <u>Energy-efficient, quick drying</u> by separate chamber
- Goods carriers possible to be designed customized.

This system is optimized and released for the application of water-based cleaning media of the company ZESTRON.

Set-up:

- Process visualization by means of HMI / Operator Panel
- Preparation for ZESTRON EYE for the automatic concentration management
- · Rinsing open or with completely closed circulation
- · Cleaning track for washing frame approx. 890 mm wide
- · Cleaning temperatures of 40-80°C according to parts requirement
- · High-quality filtration for optimum processing of the cleaning and rinsing media
- · Nozzle bars with high-pressure flat jet nozzles and pressure regulation
- · Automation level according to design in 3 steps Basic, Comfort, Comfort plus
- External dimensions L 2100 x B 1700 x H 2000mm

The system is made modular, can be extended and will grow with your requirements:

1. Design "Basic"

Initial model

- Manual supply and removal of the goods carriers •
- Suitable for laboratory operation / prototypes up to small series •
- Operating panel with Operator-Panel TFT display with keys and touch operation
- Can be extended to designs "Comfort" and "Comfort plus"

2. Design "Comfort"

Design "Basic" with the following additional functions:

- Automatic pressure control and balancing according to filter state for constant results
- Automatic monitoring of the filter loading ٠
- Variable process control by adjustable speed •
- Can be extended to designs "Comfort plus"

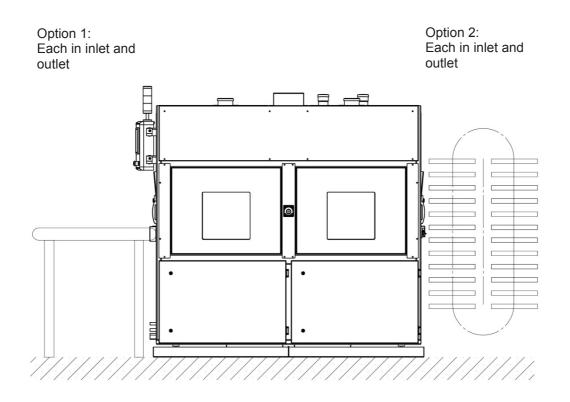
3. Design "Comfort plus"

Design "Comfort" with the following additional functions:

- Discharge of the ultra-pure water production by the second storage tank for rinsing water with cascade overflow
- Integration ZESTRON EYE with fully automatic cleaner management (dosage / concentration)
- System can be scaled for increasing production figures with:

Option 1: Partial automation by supply and discharge station (e.g., roller conveyer)

Option 2: Full automation (loading and unloading) for multi-hour, autonomous operation (e.g., with paternoster hopper or integration in system available with the customer)





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