FOCUS TECH PROCESS CHEMICALS

Technical Data Sheet

IMAGEpro DC-3070

Developer Conductivity Controller

Description

The IMAGEpro DC-3070 provides accurate, reliable working solution for developing processes. The IMAGEpro DC-3070 controls solution concentration and works in conjunction with process controls at each individual process to control resist loading and, most importantly, process breakpoint. Automatic delivery of chemical concentrate directly from factory packaging minimizes chemical handling. The IMAGEpro DC-3070's user friendly, easy-to-install design allows it to be used with all conventional developing processes.

Features	Benefits
High quality process instrumentation	Accurate, reliable process control
Automatic delivery of replenishment chemicals from factory packaging	Minimizes chemical handling
Compact, modular design	Saves space and allows working solution to be distributed to multiple process lines simultaneously

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Theory of Operation

Process breakpoint is the critical variable in controlling a developing process. Maintaining a consistent breakpoint over a narrow range opens the process operating window and minimizes the chance for many of the major quality issues associated with developing and subsequent processes. The two process variables that have the greatest impact on process breakpoint are working solution concentration and resist loading. Controlling these variables to good tolerances will produce a consistent and reproducible breakpoint.

The DC-3070 makes up consistent developer working solution by combining water and concentrate based on a continuous conductivity sampling. When the working solution tank level falls, the water and concentrate are added quickly. Once the tank is done filling, the DC-3070 goes into a final adjust phase to dial in the concentration of the full working solution.

While the DC-3070 fills the working solution tank, it is also supplying processes with working solution. The DC-3070 works in conjunction with other control systems that monitor an individual developer process, such as the DC-3030 controller. This allows the DC-3070 to supply multiple developer lines simultaneously.

At each process line, a continuous recirculating sample loop is drawn from the spray manifold passed a pH sensor. As parts are processed, resist loading increases and the pH drops. When the pH falls below the desired set point, a DC-3030 opens a solenoid and allows working solution from the DC-3070 into the process. This control strategy consistently maintains process breakpoint with less than 5% variation.

System Requirements

Electrical	120 VAC, 60Hz, 13.4 amps
Dimensions	68” X 34” X 45” (H X W X D)
Water	5 – 10 gpm

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