



# **FOCUS TECH PROCESS CHEMICALS**

## **Technical Data Sheet**

### **IMAGEpro DC-3020**

#### **Developer Controller**



#### **Description**

The IMAGEpro DC-3020 provides accurate, reliable control for developing processes. The DC-3020 controls solution concentration, resist loading and, most importantly, process breakpoint. Automatic delivery of chemical concentrate directly from factory packaging minimizes chemical handling. The IMAGEpro DC-3020's user friendly, easy-to-install design allows it to be used with all conventional developing processes. The IMAGEpro DC-3020 can be designed to independently control multiple developers.

<b>Features</b>	<b>Benefits</b>
High quality process instrumentation	Accurate, reliable process control
Automatic delivery of replenishment chemicals from factory packaging to the process	Minimizes chemical handling
Volumetric working solution preparation	Most consistent concentration control of all systems available

## 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.

A continuous process sample loop is drawn from the spray manifold, passes a pH sensor and returns to the process sump. As parts are processed, resist loading increases and the pH of the process drops. When the pH falls below the desired set point, the DC-3020 opens an electrically actuated ball valve and energizes a pump that adds working solution to the process from a pre-made day tank. The DC-3020 automatically prepares fresh working solution by measuring set volumes of water and developer concentrate and then mixing the two components into the day tank. This control strategy consistently maintains process breakpoint with less than 5% variation.

The DC-3020's PLC (programmable logic controller) control platform and touch screen operator interface offer high level process automation that is incredibly user-friendly. Numerous alarms alert the operator of potential process issues before they become process problems. An audible alarm sounds and a beacon flashes whenever an alarm condition is detected. The alarm can be silenced by touching a button on the operator interface, but the beacon will flash until the alarm condition is corrected.

## System Requirements

Electrical	120 VAC, 60Hz, 15 amps
Dimensions	68.5" X 40" X 30" (H X W X D)
Water	1 – 10 gpm