

DYNAMIC SYSTEM FOR VARIABLE HEATING OR COOLING OF LINEARLY CONVEYED SUBSTRATES

ABSTRACT OF THE DISCLOSURE

A system (100) is provided for heating or cooling discrete, linearly conveyed substrates (108) having a gap (114) between a trailing edge (112) of a first substrate and a leading edge (110) of a following substrate in a conveyance direction. The system includes a chamber (102), and a conveyor (132) operably configured within the chamber to move the substrates through at a conveyance rate. A plurality of individually controlled temperature control units (116), for example heating or cooling units, are disposed linearly within the chamber along the conveyance direction. A controller (118) is in communication with the temperature control units and is configured to cycle output of the temperature control units from a steady-state temperature output as a function of the spatial position of the conveyed substrates within the chamber relative to the temperature control units so as to decrease temperature variances in the substrates caused by movement of the substrates through the chamber.

Figure 1