

HalCon Batch Tunnel Benefits

Coatings

The HalCon Batch operates in electric-convection, Medium-Wave IR, and Short-Wave IR. Solvent and Water-based coatings require different cure and flash schedules, which can be changed with the touch of a button. Typically, solvents start with Heated-Air Flash, followed by Medium-Wave IR heat which gently raises the solvents to the surface. Once the solvents are up, the system switches to the more intense Short-Wave heat for the final cure. Water-based coatings require less Flash time and have greater temperature tolerance, thus are typically faster to cure due to entering Short-Wave IR much earlier than solvents. Short-Wave IR penetrates the coating and cures from the inside out as it is critical to remove the water from the coating for a full cure. Outside-In processes such as Gas-Convection or Air-Drying can trap water below the surface, which will lead to cure issues such as Printing.

Controls

All tunnel functions are controlled by PLC via a 7" touch-screen HMI, allowing for easy modification to the cure schedule's durations and temperature set-points. IR sensors monitor and control the product temperature +/- 3F. Heated air is controlled by a thermocouple with all temperatures displayed on the touch screen. When the cure program completes the tunnel automatically shuts off and the product is finished.

Operation

HalCon Tunnels only use power while activated. The Halogen Element reaches full operating temperature in one second. It operates in Infrared, which is just above the UV spectrum thus posing no danger or health risk associated with UV. It won't give you a tan. The elements are red, so they are soft on the eyes. They last 6,000 to 8,000 hours and take a minute to replace.

Factory

HalCon Tunnels are very comfortable to work around. IR absorbs into the product instead of heating the entire volume, thus immediately upon cycle-end product can be safely removed from the oven. The same cannot be said for gas-convection or Catalytic Ovens, which drastically affect the working environment's temperature.

Cost to Operate

HalCon Tunnels cure faster than any other system and only operate when necessary. No preheating or purging is required before use; thus, it does not need to be left on during breaks. The product's temperature typically reaches set-point in 45 seconds, whereupon the lamps will pulse on and off to maintain the surface temperature +/- 3F for the duration of the cure schedule. Power use is typically 30% of the KW rating.

Prime Heat has manufactured HalCon Tunnels for 34 years. Our customers range globally from Aerospace to Woodworking. There's no finer curing system and if there was, we would build it.