

# AUTOMATED LASER SAFETY ENCLOSURE

NOW AVAILABLE: THE ALE-3000 SYSTEM



ALE-3000 with the Pallet Conveyor Option

Presenting a standard line of automated laser enclosures engineered to easily **integrate a Laser Marking Cell** into an **Automated Production Line**. The **ALE-3000** is designed to be able to provide a standard enclosure that meets all safety requirements and can automatically meter products through the laser marking process. The system is turn key with on-board logic for monitoring and controlling the safety interlocks, doors, and product location. The **ALE-3000** is versatile with a modular design that allows it to work with most Datalogic Laser Platforms including; Ulyxe, Zeux, V-Lase, Green-Lase and UV-Lase.

## LASER PLATFORM VERSATILITY

The ALE-3000 base structure is a modular design and uses a common structure for all Datalogic Laser platforms. Modular sheet metal components are exchanged to accommodate the different laser designs. A standard adjustable laser mounting fixture is used for either top down or side marking applications and is adjustable for various lens focal distance requirements. An internal PLC monitors the safety relay and controls the motion operations.

## STANDARD MODE OF OPERATION

The AL-3000 In-feed **Door** is normally open, and the **Discharge Door** is normally closed. Once a product is conveyed into the ALE-3000 an optical sensor detects when the part is in marking position and closes the **In-feed Door**. At this point, the conveyor can continue to run or can be stopped depending on the nature of the product and conveyor. If it is desired to stop the conveyor, simply tie into the **ALE-3000** conveyor stop/start signal. For many applications the conveyor can continue run with the belt slipping under the part. Once the internal safety relay tells the laser the enclosure is in a safe condition, the laser marking process is started. When laser marking is complete both doors are opened and the product is released, then the cycle repeats. If it is not possible to space the parts sufficiently, so marking is complete before the next part arrives, an optional metering system can be purchased. Optional product positioning systems are available for justifying the part in front of the laser lens if the standard guides aren't sufficient.

## STANDARD ALE-3000 FEATURES

### MOUNTING

The ALE is designed to install on a standard belt or pallet conveyor using T-Slot brackets to attach to the frame of the conveyor. For use with conveyors that do not have T-slots, hard mount brackets are available. Adjustable support legs are also included.

### MECHANICAL

- The ALE assembly consists of powder coated sheet metal, Aluminum MIC6 and internal aluminum t-slot extrusions for easy mount of sensors and product positioning devices
- Universal adjustable laser mounting bracket for use with various laser platforms and lens positions
- Modular conveyor door panels to accommodate 1.5" wide to 12" wide conveyor belts
- Top and side opening Inspection Panels with viewing window. Each inspection panel has captive thumbscrew fasteners and is monitored with a safety switch.
- Hinged steel electrical enclosure NEMA1 (IP20)
- Two 3" diameter flanged ports for air inlet and fume extraction.
- 92mm filtered cooling fan and exit filter
- Steel frame product stop mounted on T-Slot rails for easy positioning
- Standard interior dimensions are 11" (conveyor travel direction) by 12" (tall) by 12" (wide).
- Overall ALE dimensions range from 14" W X 32" L X 22" h to 14" W X 36" L X 18" T

### PNEUMATICS

- Door opening and closing speed adjustable with flow control valves
- Optional product positioning ram mounted on T-slot rails inside of enclosure
- Internal air manifold. The number of valves depends on which options selected
- Compressed air regulator / filter system with manual quick shut off
- Air gauge with pressure switch and electronic feed back to the PLC
- Compressed air operation requirements 30 PSI at 2 SCFM.
- All pneumatic valves and tubing are routed inside the enclosure to the manifold

### ELECTRICAL

- Laser power supply (internal)
- PLC (internal) logic used for: Door control logic, Safety Interlock and laser marking logic, Positioning ram logic, External E-stop logic, Fume extraction relay logic, Conveyor Start/Stop Logic, Product Sensor logic, Metering Logic
- PLC program for enclosure operation pre-installed on PLC
- Key switch (external)
- System reset button (external)
- Main power switch (external)
- Four sets safety interlock switches for in-feed & discharge doors and two inspection panels
- Stack Light (external)
  - Red = Alarm
  - Amber = Shutter Open (Laser On)
  - Green = Stand By or Ready
- Datalogic sensors and components are standard
- All external wiring required is routed into the enclosure via cable glands
- The ALE-3000 can use: 440-480v 3 phase, 200-240v 3 phase, 200v - 240v single phase, or 80v - 120v single phase. Power requirements need to be specified at time of order
- All external devices are 24 volt DC
- Laser Enclosure interior light

## ALE-3000 OPTIONS

- Embedded PC in ALE-3000 Electrical Enclosure with display, keyboard and mouse mounted on a swing arm assembly attached to the ALE enclosure. Pre-loaded Datalogic Laser software.
- PC Panel (Windows XP Imbedded) with touch screen installed on floor mount stand. Pre-loaded Datalogic Laser software.
- Conveyor mounted pneumatic product metering ram.
- Automatic Product Positioning system for precise focal distance justification.
- Integrated conveyor VFD Control for automated conveyor stop and start.
- PLC programing software with touch screen and display for adjusting speeds and positioning.
- PLC input for optional product mark scanner or vision verification.
- ALE-3000 Laser Marking Module which comes complete with the ALE installed on a short mobile conveyor.

### Why start from scratch?

**We have the laser enclosure solution you need already designed.**

For a free analysis of how the ALE system will work with your specific laser marking application please, give us a call.

Don't need an automated conveyor mount system, then ask about our MLE-3000 stand-alone laser enclosure for work cell applications.

### Factory Representative:



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