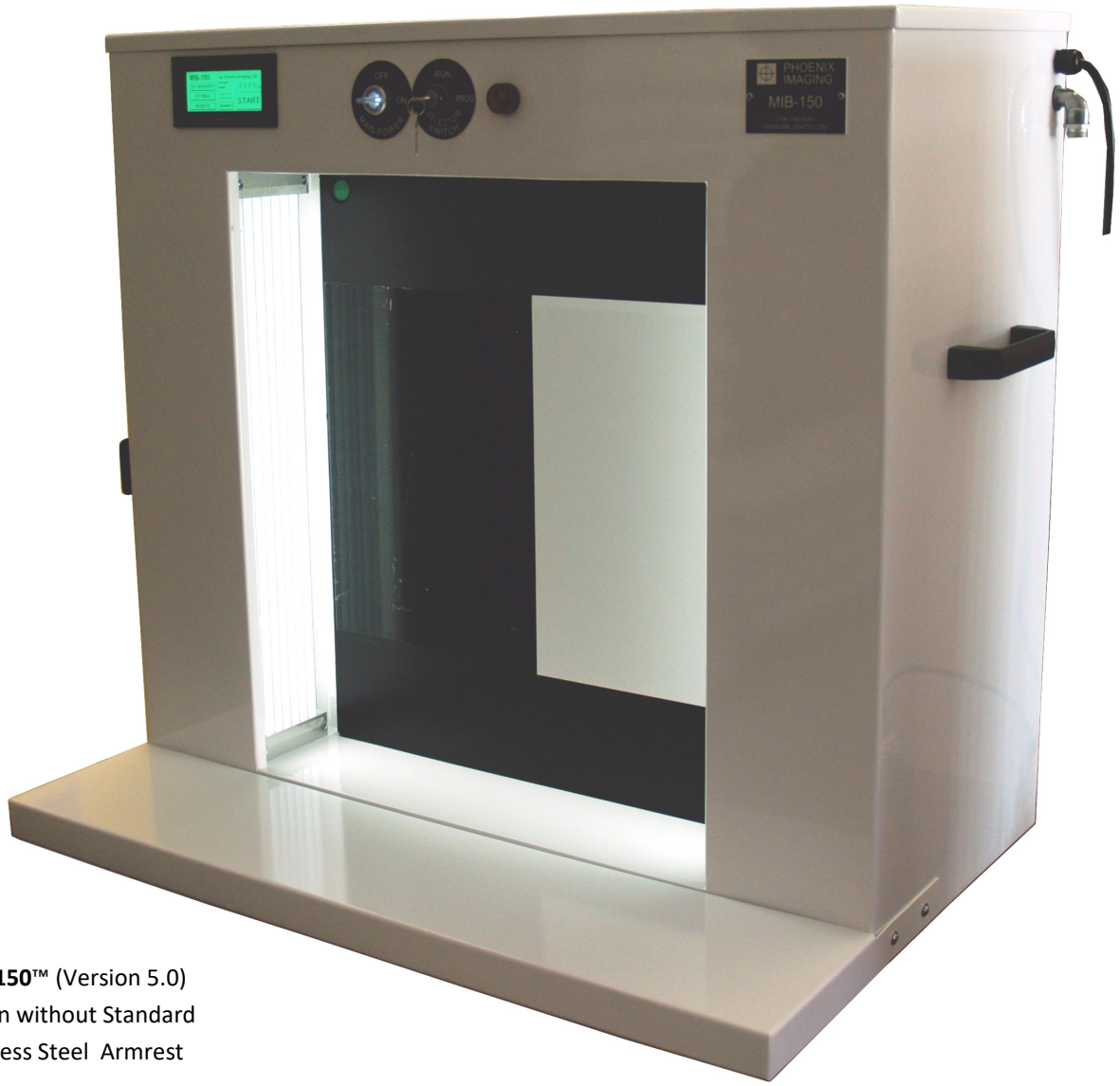
PHOENIX IMAGING, LTD.

Providing Equipment and Tools for Manual Inspection

MIB-150™

Precision Engineered Lighting Equipment



MIB-150™ (Version 5.0) shown without Standard Stainless Steel Armrest

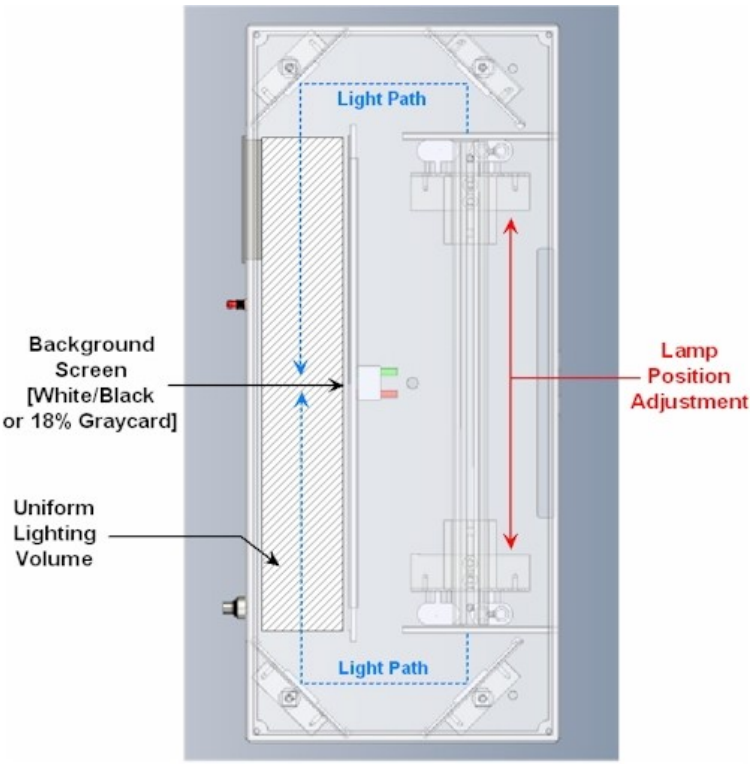
Advanced Dual-Sided Lighting System

Left / Right Side Lamp Orientation
Benchtop Unit

Manual Inspection Solutions That Work

Technology at work for you

MIB-150™ MANUAL INSPECTION BOOTH



MIB-150™ Folded Mirror Light Path

The latest iteration of the MIB-150™ is now is offered after its third major upgrade since introduction. The dual lighting configuration remains a key feature as well as the feedback circuitry to maintain constant luminous flux from the lamps. The folded mirror light path of the MIB-150™ permits a small foot print for the benchtop as well as maintaining the adjustable LED module lamp positions.

The lamp position is adjusted by simply removing the White/Black Background and sliding the lamp plates to the desired position. The light intensity is decreased when the light plates are moved toward each other and increased when the light plates are moved away from each other. The light intensity can also be adjusted with the "Master Intensity Control" located on the front of the MIB-150™ enclosure.

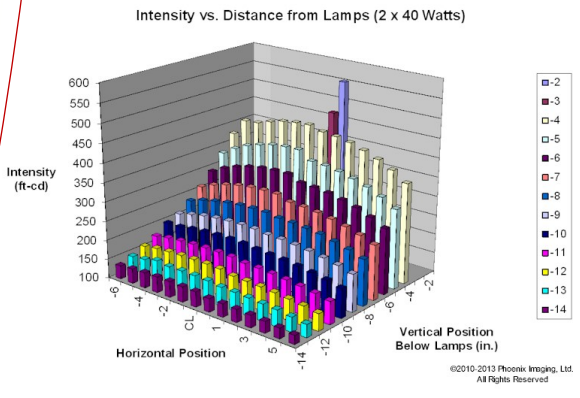
The dual-sided lighting provide very uniform light intensity (±10%) inside the inspection volume of about 6 L.

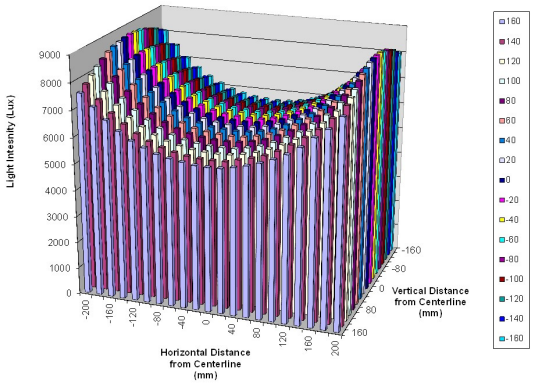
flexible solutions for your inspection needs

MIB-150™ DESIGN BENEFITS

The core of the MIB-150™ design is the Dual-Sided which provides a large inspection volume (>8 L) in which the light intensity varies by less than 10%. This is made possible by the light entering the inspection volume from both the left and right sides. As one moves further from one light source, the light intensity from that source will decrease while the light intensity from the opposite source will increase, keeping the total light intensity approximately the same. The advantage of this configuration is that the intensity in front of the White and Black backgrounds can be made equal. The lighting system uses advanced lighting controllers with lamp monitoring feedback to maintain constant light intensity for the life of the LED modules. As the LEDs age, the lighting system will automatically adjust the current to keep the lamp output at the user specified intensity. The dual channel lighting controller (model 3622) drive the LED modules at a constant voltage and variable current to provide "**flicker-free" DC** lighting inside the inspection volume. The light intensity in the inspection volume can be adjusted between 2,000 and 8,000 Lux.

The MIB-150™ product is superior to other lighting configurations because it offers a uniform inspection volume that is much larger . The Light Intensity Maps shown below are for the common inspection booth with two lamps mounted above the inspection volume (left diagram) and that of the MIB-150™ inspection volume (right diagram). The inspector is not required to hold the product in exactly one position for consistent light intensity.





MIB-150™
Standard Components

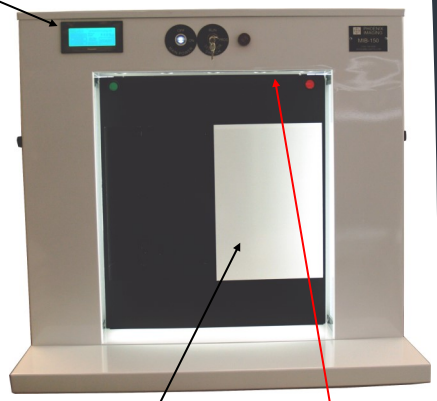
The MIB-150™ includes all of the features as standard equipment, all you have to provide is power.

Master Intensity Control (MIB-150):

The Master Intensity Control is used in conjunction with the internal light plate slides to adjust the light intensity in the inspection volume. The Light Intensity is can be programmed using the Touch Screen Interface when the unit is Program Mode (Key Switch). Light Intensity can be adjusted between 2,000—8,000 Lux. The LED 3622 Lighting Controller has photo-diode feedback that ensures that the intensity is at the target value.

Touch Screen Operator Interface:

The Operator Interface provides access to the MIB-150™ Setup menus. It also displays the current inspection time for the electronic pacer and counts for "Accept" and "Reject" products. The screen is normally Green when system is functional, Red with alarm condition



Front Armrest:

The armrest attached to the front of the MIB-150™ is used to front-arm position to align with the center of the inspection volume.

Replaceable White / Black Background:

Easy to install / easy to remove and replace White / Black Inspection Background. The background is attached using Velcro fasteners. Should the background get damaged during use, it can be easily changed without tools.

Light Curtain Option: (mounted inside enclosure)

The light curtains are used to Start / Stop Inspection Sequence. It requires that the product in held in the inspection volume of MIB-150™ for pacer to count down.

Heavy Duty 2 Position Foot Pedal: (cable connection in side)

The foot pedal is used to Start / Stop Inspection Sequence and to register Accept and Defect product conditions. Standard component on the MIB-150™.

Digital Intensity Control:

This feature in the MIB-150™ allows the user to simply input the desired intensity value for the center of the booth and the system will maintain the desired intensity.

CUSTOM SOLUTIONS

Not all manual inspection projects can be performed using standard products. Some of the applications require custom hardware or system calibration. Phoenix Imaging will work with customers to create a Custom Tailored Solution (CTS) to meet exact customer requirements for both fit and function.

CALIBRATION SERVICES

When customer service is required we offer both On-Site and On-Line whenever possible. The Calibration service provides customers with the knowledge that their lighting system has been balanced and functioning correctly. All calibrations are performed using NIST traceable light meters and instrumentation.

EBUSINESS SOLUTIONS

Continuous product improvements often require modifications to the inspection software. Any changes to a customer's application are automatically logged in the secure project server. Any version of a customer's application is available for download upon request.

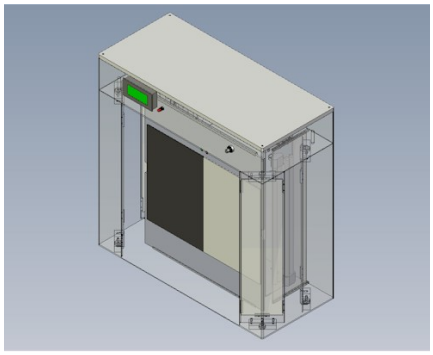
MIB-150™ Specifications

MIB-150™

System Power Requirements:

115VAC, 4 A , 1 Ø
220VAC, 2.25 A, 1 Ø

Width (without armrest):	**978 mm**	**(38.50”)**
Width (with armrest):	**978 mm**	**(38.50”)**
Depth (without armrest):	**428 mm**	**(16.88”)**
Depth (with armrest):	**584 mm**	**(23.0”)**
Height:	**812 mm**	**(32.0”)**



The MIB-150™ system operates with 120—220 VAC. Please specify the geographical region in which the MIB-150™ will be used at the time of order. All of the MIB Lighting Controllers are now equipped with Power Factor Correction (**PFC**) to meet European and world standards for operation. The Operator Interface Display now has a built in SD slot to allow easy software upgrades. The lamp mounting plates are now equipped with roller bearing guides for easy lamp position adjustment. The new **Digital Intensity Control** makes changing the light intensity as simple as a push of a button.

Other Phoenix Imaging PRODUCTS

- **MIB-140™ Low Cost Entry Top-lighting Unit, Benchtop**
- **MIB-160™ Dual-Sided LED Lighting System, Benchtop, Top-Bottom Light Path, 300 mm depth. Pacer PLC standard and Light Curtain Control (optional).**
- **MIB-170™ Dual-Sided LED Lighting System, Benchtop, Top-Bottom Light Path, 200 mm depth. Pacer PLC standard.**
- **MIB-190™ Dual-Sided Lighting System, Floor Standing, Top-Bottom Light Path, stainless steel arm-rest, large hooded work area, hydraulic height adjustment.**
- **MIB-200™ Dual-Sided Lighting System, Floor Standing, Top-Bottom Light Path, Corian arm-rest, PLC and Pacer Controls, (this model is the Industry Standard).**
- **RLPS™ Referee Level Particle Standards.**

Manual Inspection Solutions That Work

Our instrument laboratory is equipped with the latest optical, illumination and image processing technology. We have designed over 500 different types of lighting modules, including Custom and Standard model s of High Frequency Fluorescent and LED lighting. A full line of advanced machine vision systems using the latest image processing technology. Whether the applications requires intelligent vision sensors or high speed multiple-core vision processors, Phoenix Imaging offers a solution for your unique application.

Phoenix Imaging offers a wide range of special machine vision tools for a wide range of applications. From simple filter paper particle counters to non-destructive in-situ vial / cartridge particle detection / measurement systems. Phoenix Imaging will offer to perform an in-depth evaluation of your project for a nominal fee. The engineering fee may be applied to the project cost if feasibility is demon-strated and the customer decides to

optical gaging technology & consulting

Phoenix Imaging Machine Vision Systems

PHOENIX IMAGING Ltd.

29865 6 Mile Road
Livonia, Michigan 48152
734 744 9280 ph
734 744 9299 fax
www.phoeniximaging.com
www.MIB-Lights.com