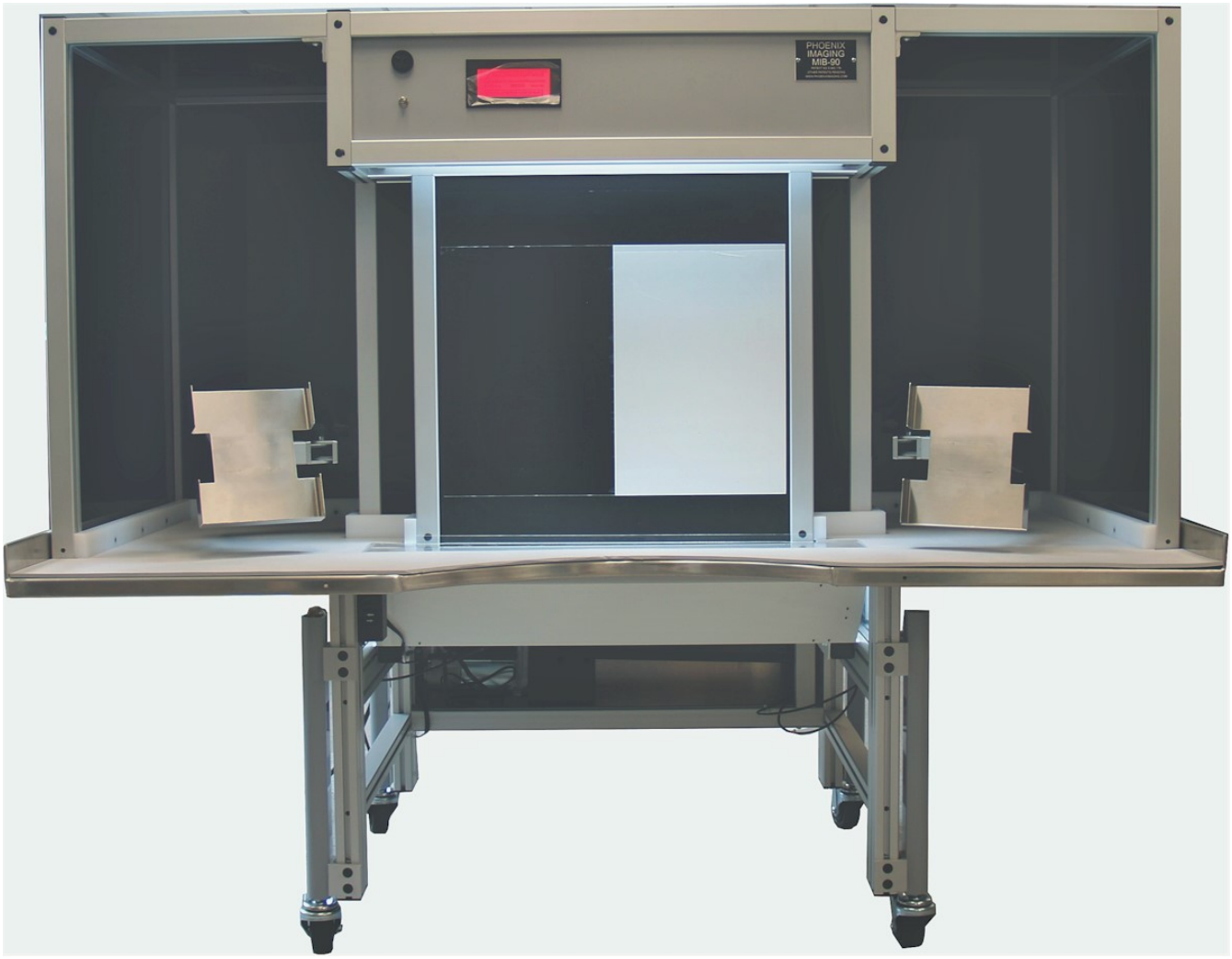
PHOENIX IMAGING, LTD.

Providing Equipment and Tools for Manual Inspection

MIB-90™

Precision Engineered Lighting Equipment



Highly Optioned **MIB-90™** (Version 3.1) shown with:
Stainless Steel Armrest, Stainless Steel Side Shelves, Adjustable Hydraulic Lift Legs.

Advanced Dual-Sided Lighting System

Top / Bottom Lamp Orientation
Floor Standing Unit

Manual
Inspection
Solutions
That Work

Technology at work for you

MIB-90™ MANUAL INSPECTION BOOTH

Original MIB-100™ (Ver. 1.0)
Circa 1996

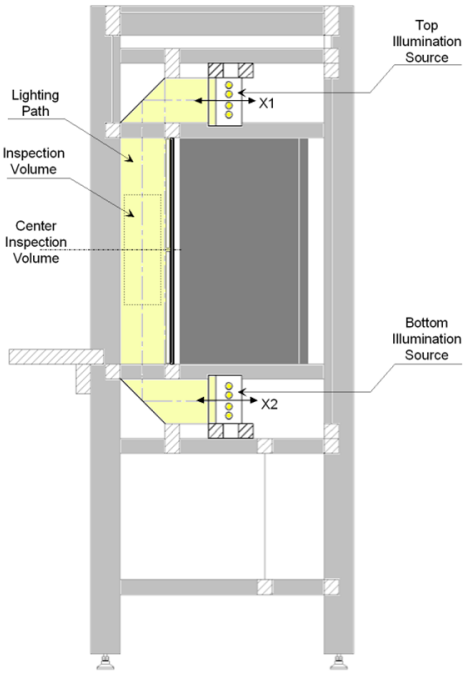
Like any great product the MIB-90™ has undergone multiple changes in since the initial MIB-100™ conception. The basic principle of using a dual illumination design to provide a large uniform inspection volume has remained a constant. The original design (pioneered by Julius Z. Knapp and Gerald W. Budd) provided a basis for consistent manual inspection of parental products.

The latest iteration of the MIB-90™ is now is offered after its third major revision since conception. The dual lighting configuration remains as well as the feedback circuitry to maintain constant luminous flux from the lamps. The folded light path of the MIB-90™ permits a small foot print and adjustable lamp position.

MIB-90™ DESIGN BENEFITS

The core of the MIB-90™ 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 top and bottom directions. 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.

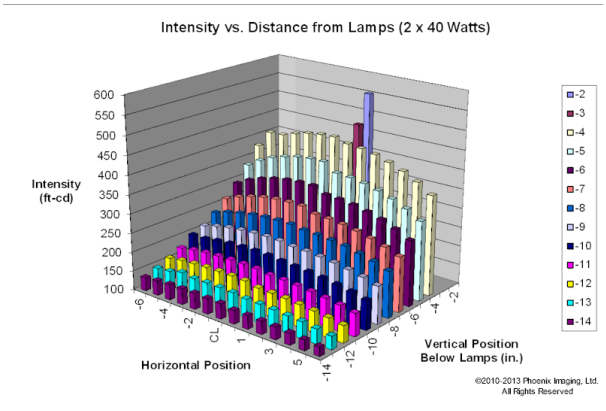
The lighting system uses advanced lighting controllers with lamp monitoring feedback to maintain constant luminous flux for the life of the lamps. As the lamps age, the lighting system will automatically adjust the current to keep the lamp output at the user specified intensity. The lighting controllers drive the lamps at 55 KHz to provide "**flicker-free"** lighting in side the inspection volume. The light intensity in the inspection volume can be adjusted between 2,000 and 8,500 Lux[1].

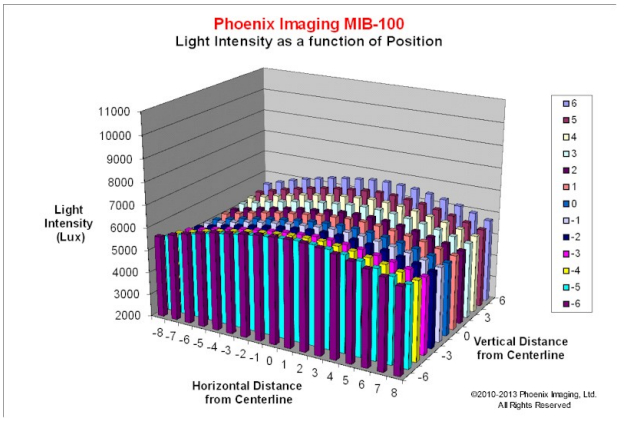


MIB-90™ Folded Light Path

flexible solutions for your inspection needs

Like the MIB-100™, the MIB-90™ product is superior to other lighting configurations because it offers a larger uniform inspection volume. The Light Intensity Maps shown below are for the common inspection booth that implements two lamps mounted above the inspection volume (left diagram) and that of the MIB-100™ inspection volume (right diagram). The design allows the inspector greater latitude in holding the product in the inspection volume with a consistent light intensity. Since the Probability of Rejection (P_R) is directly proportional to the light intensity in the inspection volume, a more consistent inspection result will be obtained.





1—The maximum intensity depends on the initial output of the lamps used in the MIB-100™.

MIB-90™

Optional Components

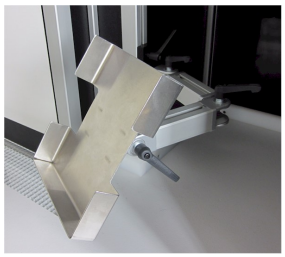
The MIB-90™ offers optional components to customize a system to meet your exact inspection requirements.

Digital Intensity Control:

This option allows the user to simply input the desired intensity value for the center of the booth and the system will go to that intensity. This option is only available on the MIB-100D.

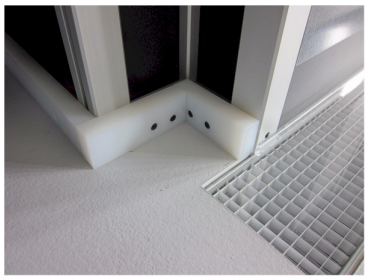
Adjustable Stainless Steel Side-Shelves:

This option provides a pair of custom sized side-shelves used to hold customer trays. The position, tilt and orientation are completely adjustable with locking pivots on the articulated arm and sliding brackets. The tray angle can be adjusted from 0° to 90°. Vertical Height of arm is also adjustable to provide inspector with maximum comfort. A Fixed Position Side Shelf option is available.



Anti-Microbial Armrest Pad:

The stainless steel armrest of the MIB-90™ can be cover with a laser cut anti-microbial foam pad. The Pad is secured to the armrest with nylon edge blocks around the perimeter to prevent material from entrapment. The Pad can be re-placed if damaged within minutes.



Plastic Lower Lamp Cover:

This option is available on all floor standing units. It is designed to prevent product from entering the MIB interior. It will also prevent small vials from breaking if dropped.

Top and Bottom Blinds (Shown above):

This option is available on all floor standing units. The blinds prevent direct viewing by the inspector of the MIB interior or lamps in forward most position.

Hydraulic Leg Lift Option:

This option allows the height of the inspection booth to be raised or lowered by 300 mm with the press of a but-ton. The hydraulic pump is self-leveling and has an automatic stop valve that prevents the booths from low-ering should a power failure occur. This option must be ordered at the time of MIB fabrication and includes stain-less steel motor/pump shroud.

Unobstructed Pass-Through:

The MIB-90™ offers an unobstructed pass-through of inspection volume. The side walls have been removed in this design to allow easier product flow during inspection.

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 ser-vice provides custom-ers with the knowledge that their lighting sys-tem has been balanced and functioning correct-

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 appli-cation is available for down-load upon request.

MIB-90™

MIB-90™ Specifications

System Power Requirements:

115VAC, 4.5 A , 1 Ø (Hydraulic Lift add 2 A)
220VAC, 2.25 A, 1 Ø (Hydraulic Lift add 1 A)

Width (with armrest):	**1772 mm**	**(69.75")**
Depth (with armrest):	**875 mm**	**(34.5")**
Depth (with armrest and Hydraulic Lift Option):	**956 mm**	**(37.65")**
Height (without Hydraulic Lift):	**1745 mm**	**(68.75")**
Height (maximum with Hydraulic Lift Option):	**1985 mm**	**(78.15")**
Height (minimum with Hydraulic Lift Option):	**1480 mm**	**(58.25")**

The MIB-90™ system is offered in both 100—120 VAC and 200—220 VAC editions. Please specify the geographical region in which the MIB-90™ 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. (Supervisor key allows access to programming switch in rear compartment).

The MIB-90™ (Rear View) implements a vented back enclosure door to maintain even temperature throughout the system. The MIB-90™ offers an optional monitor circuit for all lamps to insure proper light output.

Other Phoenix Imaging PRODUCTS

- **MIB-40™ Low Cost Entry Top-lighting Unit, Benchtop**
- **MIB-50™ Dual-Sided Lighting System, Benchtop, Left-Right Light Path.**
- **MIB-70™ Dual-Sided Lighting System, Benchtop, Top-Bottom Light Path.**
- **MIB-75™ Dual-Sided Lighting System, Benchtop, Top-Bottom Light Path, Basic System, No PLC.**
- **MIB-90™ Dual-Sided Lighting System, Floor Standing, Top-Bottom Light Path, stainless steel arm-rest, large hooded work area, hydraulic height adjustment.**
- **MIB-100™ 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.**

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 demonstrated and the customer decides to proceed with the project.

optical gaging technology & consulting

Phoenix Imaging Machine Vision Systems

PHOENIX IMAGING Ltd.

Manual Inspection Solutions That Work

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