

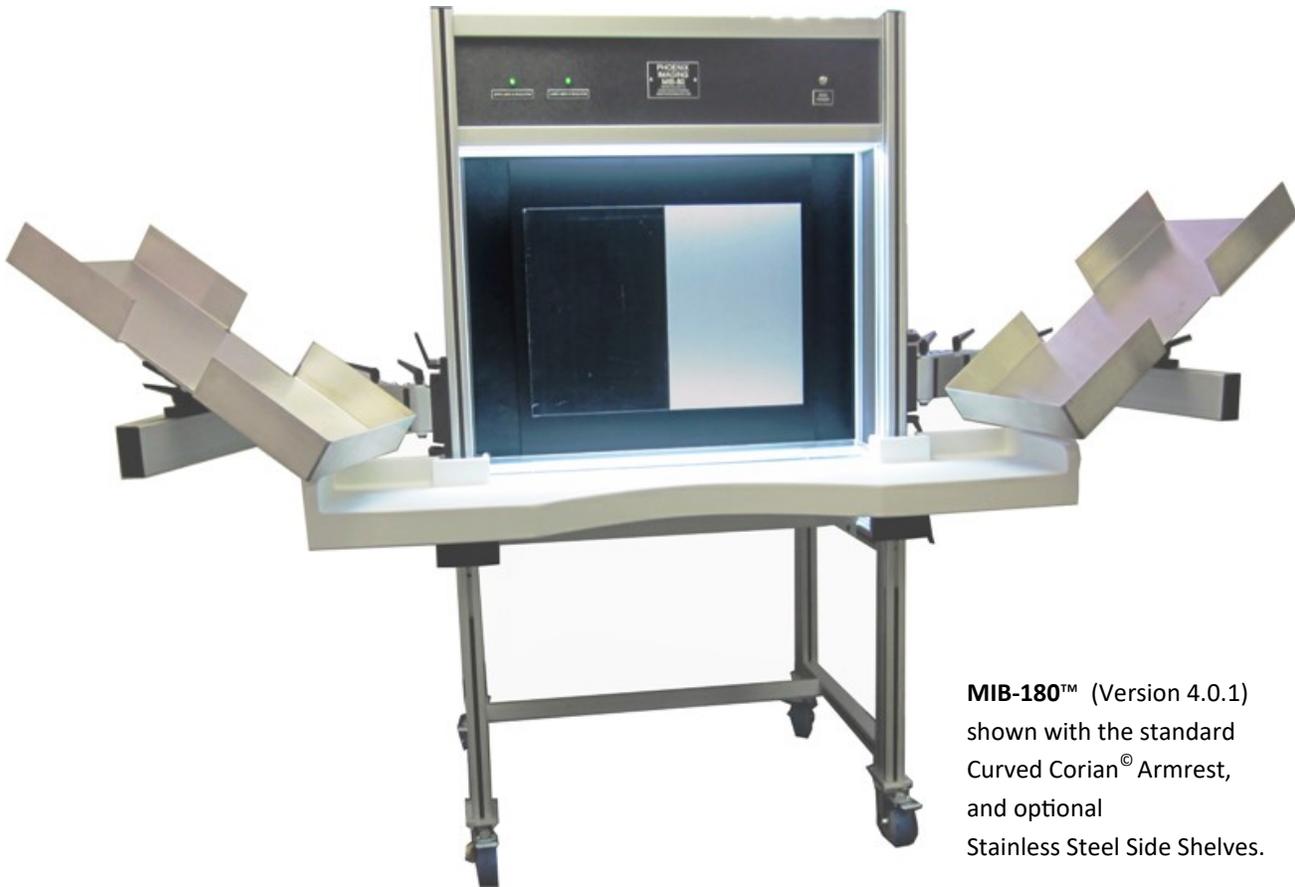


PHOENIX IMAGING, LTD.

Providing Equipment and Tools for Manual Inspection

MIB-180™

Precision Engineered Lighting Equipment



MIB-180™ (Version 4.0.1)
shown with the standard
Curved Corian® Armrest,
and optional
Stainless Steel Side Shelves.

Advanced Dual-Sided Lighting System
Top / Bottom Lamp Orientation
Floor Standing Unit

**Manual
Inspection
Solutions
That Work**

Technology at work for you

MIB-100™ MANUAL INSPECTION BOOTH



Original MIB-100™ (Ver. 1.0)
Circa 1995

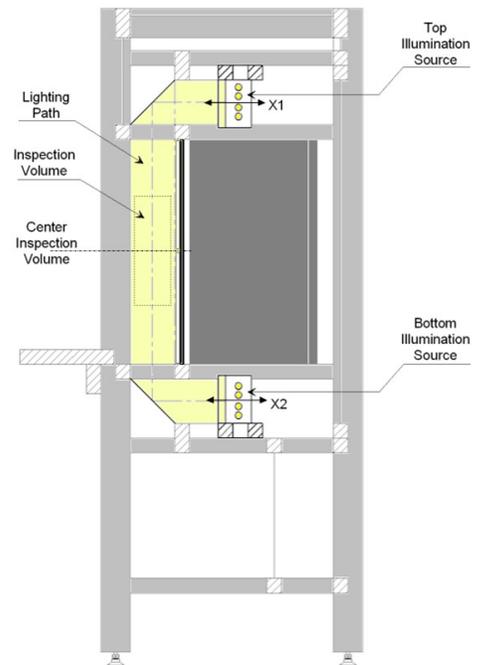
Like any great product the MIB-100™ has undergone multiple changes in since the initial conception. The basic principle of using a dual illumination design to provide a large uniform inspection volume has remained a constant. The original design (pioneered by Julius Z. Knapp and Gerald W. Budd) provided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

The MIB-80™ is similar to the MIB-100™ less the PLC / Pacer components. 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-80™ permits the system to have a small foot print and it still retains the adjustable lamp positions.

MIB-180™ DESIGN BENEFITS

The core of the MIB-180™ design is the Dual-Sided Lighting which provides a large inspection volume (>8 L) in which the light intensity varies by less than $\pm 10\%$. 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.

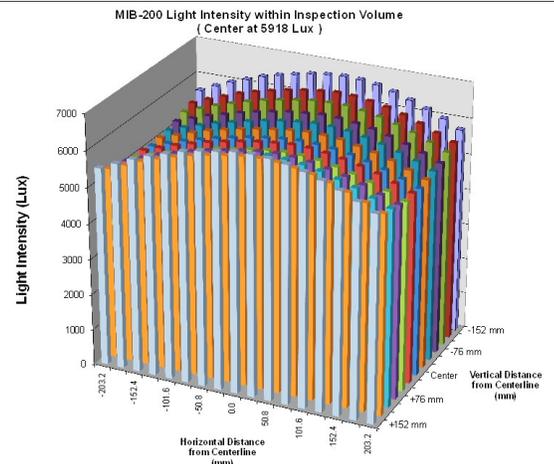
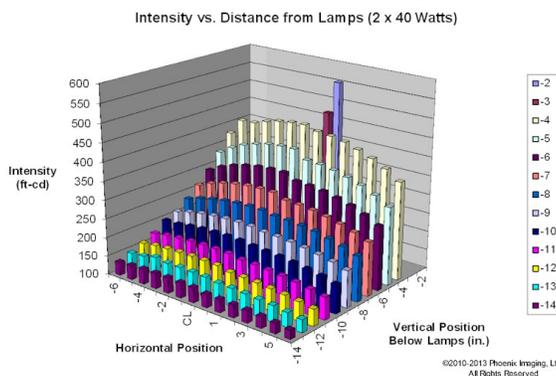
The lighting system uses advanced LED lighting controllers with lamp monitoring feedback to maintain constant luminous flux for the life of the LED modules. As the LEDs age, the lighting system will automatically adjust the current to keep the LED output at the user specified intensity. The LED lighting controllers provide “flicker-free” DC lighting within the large inspection volume. The light intensity in the inspection volume can be adjusted between 2,000 and 8,000 Lux.



MIB-180™ Folded Light Path

Uniform Lighting Environment for reproducible inspection results

The MIB-180™ product is superior to other lighting configurations because it offers a uniform inspection volume that is much larger. The Light Intensity Maps shown below left are for the common inspection booth with two 40 W lamps mounted above the inspection volume (left diagram) and that of the MIB-200™ inspection volume (right diagram), the MIB-180™ and MIB-200™ have similar lighting controllers and operating characteristics. The inspector requirements are not as critical for holding the test sample in a predetermined position to obtain consistent light intensity.



MIB-180™

Optional Components

The MIB-180™ is a special build product which requires a purchase of a minimum of 10 booths on a single order. The MIB-180™ offers optional components to customize a system to meet your exact inspection requirements. This is an analog unit using a single balance point between the upper and lower lighting sources. If multiple light intensities will be required for your application it is recommended that you examine the MIB-200™.

Stainless Steel Side-Shelves:

This option provides a pair of custom sized side-shelves used to hold customer trays. The position 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°.



Top Shroud with Cooling Fans:

The top shroud is used to prevent external lighting sources from interfering with lighting in the inspection volume. The fan speed control allows operator to adjust the air velocity. Must be ordered at the time of MIB-80™ build.



Plastic Catch Basin:

This option is available on all MIB units. The basin is designed to prevent product from entering the MIB interior. It will also prevent small vials from breaking if dropped. The Catch Basin's are offered in 500 ml and 2500 ml volumes.



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 button. The hydraulic pump is self-leveling and has an automatic stop valve that prevents the booths from lowering should a power failure occur. This option must be ordered at the time of MIB fabrication and includes stainless steel motor/pump shroud.



Light Blind Option:

The Light Blinds collimate the light path so that light enter the inspection volume parallel to the Black / White Background. This prevents the inspector from viewing the light sources directly. This option must be requested at the time of ordered and installed at the time system fabrication.



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-180™ Specifications

System Power Requirements:

115VAC, 3.0 A, 1 Ø (Hydraulic Lift add 2 A)
220VAC, 2.0 A, 1 Ø (Hydraulic Lift add 1 A)

| | |
|---|------------------|
| Width (without armrest): | 875 mm (34.5") |
| Width (with armrest): | 1345 mm (53.0") |
| Depth (without armrest): | 710 mm (28.0") |
| Depth (with armrest): | 940 mm (37.0") |
| Depth (with armrest and Hydraulic Lift Option): | 1025 mm (40.4") |
| Height (without Hydraulic Lift): | 1745 mm (68.75") |
| Height (maximum with Hydraulic Lift Option): | 1985 mm (78.15") |
| Height (minimum with Hydraulic Lift Option): | 1685 mm (66.35") |
| Side Shelf Option (minimum add per side): | 875 mm (34.45") |

The MIB-180™ system uses universal power supplies and operates at 100—220 VAC, 50-60 Hz, 1Ø. Please specify the geographical region in which the MIB-180™ will be used at the time of order. All of the MIB LED Lighting Controllers are equipped with Power Factor Correction (PFC) to meet European and world standards for operation.

The MIB-180™ Main Power Switch is located on the right side of the upper panel. A pair of green LED lamps located on the left side of the upper panel are used to indicate the status of the LED lighting modules.

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 models 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.

Other Phoenix Imaging PRODUCTS

- MIB-140™ Low Cost Entry Top-lighting Unit, Benchtop
- MIB-150™ Dual-Sided Lighting System, Benchtop, Left-Right Light Path.
- MIB-160™ Dual-Sided Lighting System, Benchtop, Top-Bottom Light Path. 300 mm inspection volume depth.
- MIB-170™ Dual-Sided Lighting System, Benchtop, Top-Bottom Light Path. 200 mm inspection volume depth.
- 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.

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.

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