MIB-160™

Precision Engineered Lighting Equipment
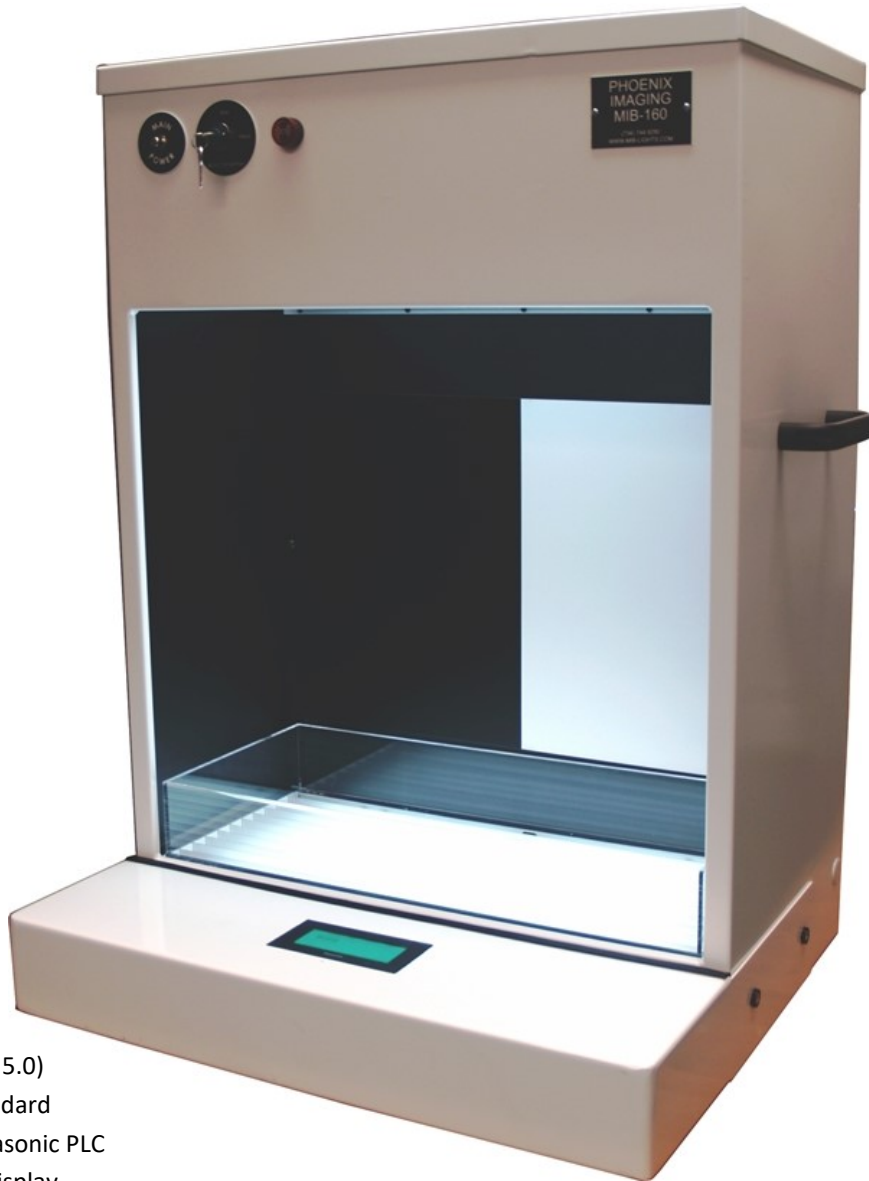
MIB-160™ (Version 5.0)
shown with the standard
white surfaces, Panasonic PLC
and monochrome Display

Advanced Dual-Sided Lighting System

Top / Bottom LED Lamp Orientation
Table Top Unit with Large Inspection Volume

Manual
Inspection
Solutions
That Work

Technology at work for you

MIB™ MANUAL INSPECTION BOOTHS

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

Like any great product line the MIB-100™and MIB-200™ have undergone multiple changes 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-160™ is similar to the MIB-200™ using PLC / Pacer components. The dual lighting configuration remains as well as the feedback circuitry to maintain constant luminous flux from the lamps. The lighting system in the MIB-160™ uses Flat Panel LED illumination to provide a larger inspection

MIB-160™ DESIGN BENEFITS

The core of the MIB-160™ design is the Dual-Sided Lighting System which provides a large inspection volume (>12 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 LED panels. As the LED's age, the lighting system will automatically adjust the current to keep the light output at the user specified intensity. The lighting controllers drive the lights with low voltage DC to provide "**flicker-free**" lighting inside the inspection volume. The light intensity in the inspection volume can be adjusted between 2,000 and 12,000 Lux.

Optional Stainless Steel Shell

This option provides protection for environments that have stringent cleaning requirements. The exterior shell is fabricated with stainless steel and all fasteners are stainless steel. The replaceable Black / White background is held in place with magnetic holders for use in clean room environments.

The unit shown to the left also has a stainless steel sidecar that can be mounted on either side of the MIB-60™ enclosure. The system can be ordered with either Panasonic or Allen-Bradley PLC and Display.
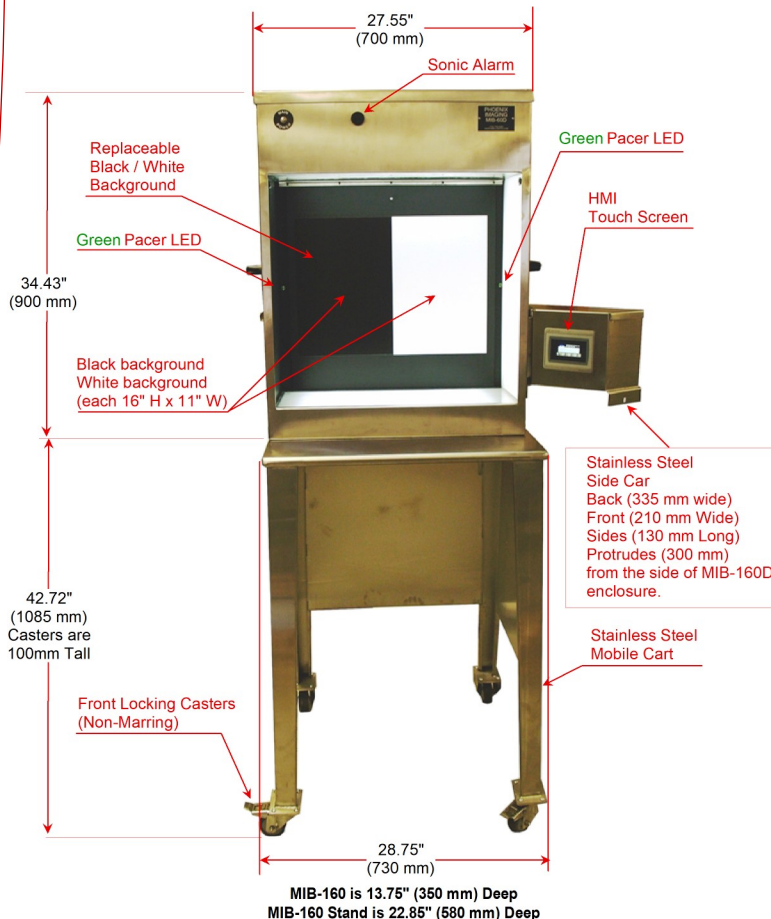
MIB-160™ can be ordered with or without the Mobile Cart

A Stainless Steel Mobile Cart is also available which allows the MIB-160™ to be securely attached. The legs of the Mobile Cart are canted to add stability when moving. The front casters swivel and lock while the rear casters are fixed. The Mobile Cart upper surface is about 1 M above the front and positions the center of the inspection volume eye level. Please call the office if a different cart height is required for your application.

27.55" (700 mm)

Sonic Alarm

Replaceable Black / White Background

Green Pacer LED

Green Pacer LED

HMI Touch Screen

34.43" (900 mm)

Black background White background (each 16" H x 11" W)

Stainless Steel Side Car
Back (335 mm wide)
Front (210 mm Wide)
Sides (130 mm Long)
Protrudes (300 mm) from the side of MIB-160D enclosure.

42.72" (1085 mm) Casters are 100mm Tall

Stainless Steel Mobile Cart

Front Locking Casters (Non-Marring)

28.75" (730 mm)

MIB-160 is 13.75" (350 mm) Deep
MIB-160 Stand is 22.85" (580 mm) Deep

MIB-160™ in Stainless Steel with AB Sidecar option shown

Uniform Lighting Environment
for reproducible inspection results

The MIB-160™ design is superior to other lighting configurations used for manual inspection because it offers a larger uniform inspection volume with a balanced dual-sided lighting system. With this larger inspection volume the inspector need not worry about exact product positioning in order to achieve consistent inspection results. The LED panel lights are monitored using an advanced photodiode system. The advanced LED3611 lighting controllers will automatically adjust to maintain the desired Lux level.

MIB-60™ Uniform Lighting

The MIB-160™ provides Lighting Blinds to prevent direct observation of the lighting surface by the inspector. The light is collimated and is directed into the product rather than the operator's eyes. The deep inspection volume allows the inspection of larger volume containers and IV Bags. The LED lighting system can be adjusted to approximately 100 Lux of target value as specified by the user.

Standard MIB-160™ GT-12 Operator Interface

The MIB-160™ provides an easy procedure for calibration of the lighting system. The user can perform a full instrument calibration in as little as15 minutes. All of the inspection system parameters are automatically stored in system non-volatile memory.

MIB-160™ Optional Components

Plastic Catch Basin:

This option is available on all units. It is designed to prevent product from entering the MIB interior. It will also prevent small vials from breaking if dropped. The Catch Basin has a 2,500 ml volume limit.

Stainless or Painted Steel Stand Options:

The MIB-160™ standard configuration provides the enclosure in Powder Coat White. As an option the customer may order the system in Stainless Steel if more aggressive cleaning solutions are used in the environment.

Allen-Bradley PLC and PanelView Display:

The AB PLC and PanelView Display are available as optional equipment. The display provides full color menus with Ethernet connection between the devices. Must be ordered at the time of MIB-160™ build.
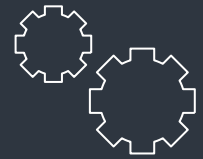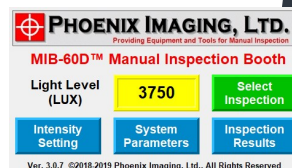
CUSTOM SOLUTIONS

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-160™ Specifications

System Power Requirements:
115VAC, 3.5 A , 1 Ø
220VAC, 2.0 A, 1 Ø

Width (without Mobile Cart):	700 mm (27.5")
Width (with Mobile Cart):	730 mm (28.75")
Depth (without Mobile Cart):	350 mm (13.75")
Depth (with Mobile Cart):	580 mm (22.75")
Depth (with Mobile Cart and Hydraulic Lift Option):	820 mm (32.25")
Height (without Mobile Cart):	900 mm (43.5")
Height (with Mobile Cart):	1985 mm (78.15")

The MIB-160™ system has a universal power supply for operation with 100—220 VAC. Please specify the geographical region in which the MIB-160™ 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 MIB-160™ standard configuration uses a Panasonic PLC and Display. Main Power Switch is located on the left side of the upper front panel. Pacer includes a pair of LED lamps that are located to the left and right sides of the Black / White background to indicate the operations current inspection region. All parameters are adjustable using the touch screen interface.

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-170™ Dual-Sided Lighting System, Benchtop, Top-Bottom Light Path.**

- **MIB-180™ Dual-Sided Lighting System, Benchtop, Top-Bottom Light Path, Basic System, No PLC.**

- **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 demonstrated and the customer decides to proceed with the project.

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