



# PHOENIX IMAGING, LTD.

Providing Equipment and Tools for Manual Inspection

## MIB-200™

Precision Engineered Lighting Equipment



**MIB-200™** (Version 4.6) shown with:  
Curved Stainless Steel Armrest,  
Stainless Steel Level 1 Side Shelves,  
Canted Roof, Light Curtain Option.  
The MIB-200™ can also be order  
with Corian® armrest.

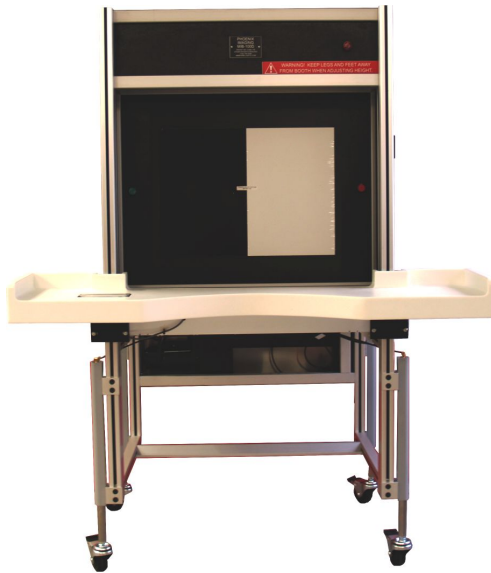
### Advanced Dual-Sided LED Lighting System

Top / Bottom Lamp Orientation  
Floor Standing Unit

Manual  
Inspection  
Solutions  
That Work

# Technology at Work

## MIB-200™ MANUAL INSPECTION



MIB-200™ shown with: Curved Corian® Armrest and Adjustable Hydraulic Lift Legs.

Like any great product the MIB-200™ comes from a long pedigree of lighting products designed specifically for manual inspection of pharmaceutical products. The MIB-200™ is the next generation of the inspection products. The MIB-200™ provides all of the advantages of the Top / Bottom lighting system plus the benefits of LED lighting.

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-200™ offers a very large dynamic range for the control of light intensity. The dual LED lighting system uses a feedback circuitry that maintain constant luminous flux from the LED modules. The folded light path of the MIB-200™ permits a small foot print and adjustable lamp position.

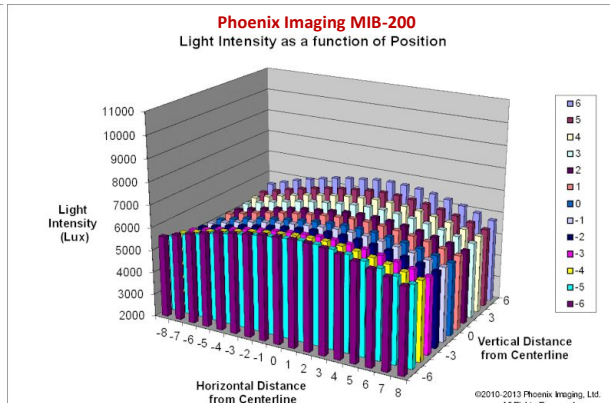
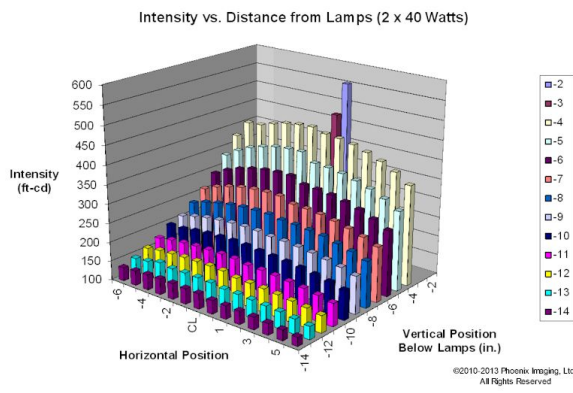
### MIB-200™ DESIGN BENEFITS

The core of the MIB-200™ 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 3622 LED lighting controller with photo-diode lamp monitoring to maintain constant luminous flux for the life of the LED modules. The LED lighting controller will automatically adjust the current to keep the LED module output at the user specified intensity. The DC lighting controller provides constant current to the LED modules to provide constant "flicker-free" lighting inside the inspection volume. The light intensity in the inspection volume can be adjusted between 2,000 and 12,000 Lux<sup>1</sup>.

## flexible solutions for your inspection needs

The MIB-200™ product is superior to other LED 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-200™ 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 diffuser selected for use in the MIB-200™. There are several diffuser options that allow for higher or lower light intensity ranges, consult factory.

# MIB-200™ & MIB-200D™

## Optional Components

The MIB-200™ and MIB-200D™ offer optional components to customize a system to meet your exact inspection requirements.

### MIB-200D™ - the “D” Option Digital Light 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.



### 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.



### 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 Curtain Option (LCO — Shown on Cover Unit):

This option is available on MIB-200D units. The LCO issues that the inspector performs the inspection for the proper duration. Removal of sample prior to specified inspection duration generates an alarm. Alarm must be serviced before inspection sequence is allowed to continue.

### Plastic Catch Basin:

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. The Catch Basin has a 500 ml volume limit.



### Top and Bottom Blinds (Not Shown):

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.

### Stain Steel Component Option:

The internal components of the MIB-200™ may be built with stainless steel electrical enclosure, light plates and components for use in clean room environments or when cleaning agents may be aggressive. Surfaces are replaced with ABS panels.



### Top Shroud with Cooling Fans:

The top shroud is used to prevent external lighting sources from interfering with lighting in the inspection volume. There is a fan speed control that allows the inspector to adjust the air velocity. This option must be ordered at the time of the MIB-200™ 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-200™ & MIB-200D™ Specifications

## System Power Requirements:

115VAC, 4.0 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 SS armrest):	1345 mm	(54.6")
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-200™ system is offered in both 100—120 VAC and 200—220 VAC editions. Please specify the geographical region in which the MIB-200™ 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).

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-40™ Low Cost Entry Top-lighting Unit, Benchtop**
- **MIB-50™ Dual-Sided Lighting System, Benchtop, Left-Right Light Path.**
- **MIB-170™ Dual-Sided Lighting System, Benchtop, Top-Bottom Light Path, LED Lighting.**
- **MIB-80™ Dual-Sided Lighting System, Floor Standing, 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 and Challenge Sets, Vials, Cartridges and Syringes.**

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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