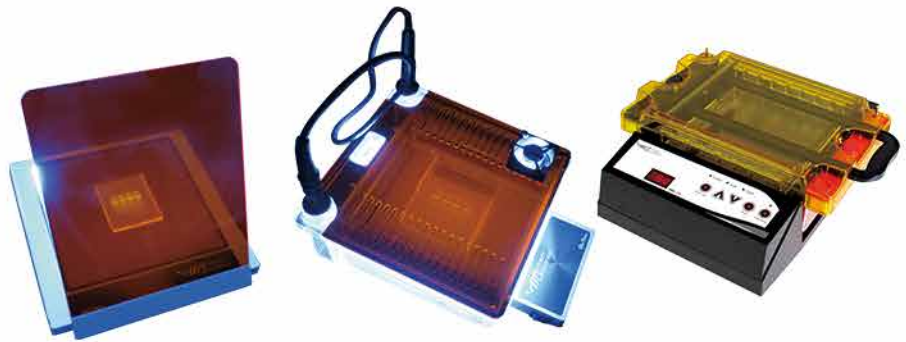


2019-2020 Catalogue

version 1.0



Blue light Technology

 **major
science**
Innovative Life Sciences Tools

Blue Light Technology

Blue light technology allows you to view your DNA/RNA bands without causing photo nicking damage to your samples. The SafeBlue series and BluView Series are designed for wide range of application.

The amazing SafeBlue product series makes use of the intensity of blue light from the side, while the BluView series radiates from below. Both SafeBlue and BlueView series allow you to run your standard electrophoresis experiment with immediate and outstanding results but without compromising your safety and protection.

SafeBlue system comprises the SafeBlue Illuminator, SafeBlue Electrophoresis System and SafeBlue Imager Systems. All three products are completely compatible with each other. Different accessories are also available in case of necessary extensions or replacements. For the BluView system, packages of BluView Transilluminator, Mini Horizontal Gel Electrophoresis System, and power supply are available. Our new product, Major Blue, a two way fluorescence and loading dyes is now also on the market.

Blue Light Technology

SafeBlue System

51-54

SafeBlue Illuminator Electrophoresis System

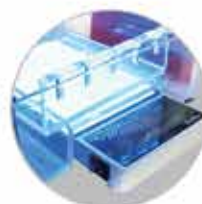
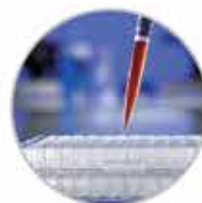
SafeBlue Imager System / Darkroom Viewer

Blue Light Illuminator

55-57

Major Blue

BluView Transilluminator



*All images are for reference only, actual products might differ from the images.

*Please visit our website at www.majorsci.com for more product selection and detailed information.

*Technical specification subject to change without notice.

SafeBlue Illuminator Electrophoresis System

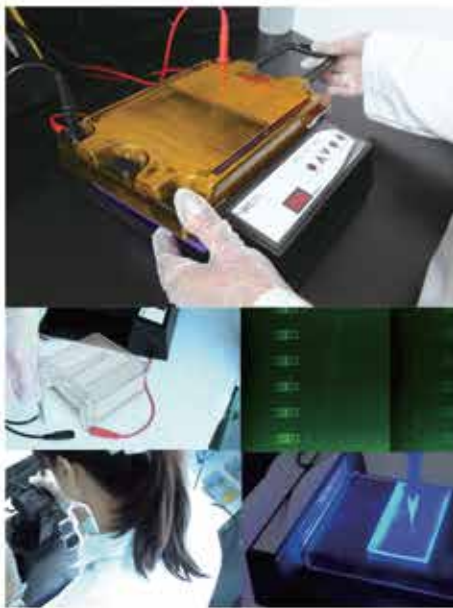
MBE-150 MBE-150-PLUS

For MBE-150

The innovative SafeBlue Illuminator is a unit which combines of a small power supply with a blue light illuminator. The system emits blue LED light which allows you to view your DNA/RNA bands without worrying about harmful UV damage samples. SafeBlue Illuminator could also be used as a simple blue light illuminator to cut your samples from gels.

For MBE-150-PLUS

The SafeBlue Electrophoresis System also uses blue LED light to allow for immediate visualization of DNA/RNA bands while running agarose electrophoresis gel. The complete system comes with three different sizes of gel trays for your convenience of use, 150x70mm, 150x100mm and 150x150mm. The system is RoHS and CE compliant for environmental and safety concerns. Different accessories are also available for user to select.



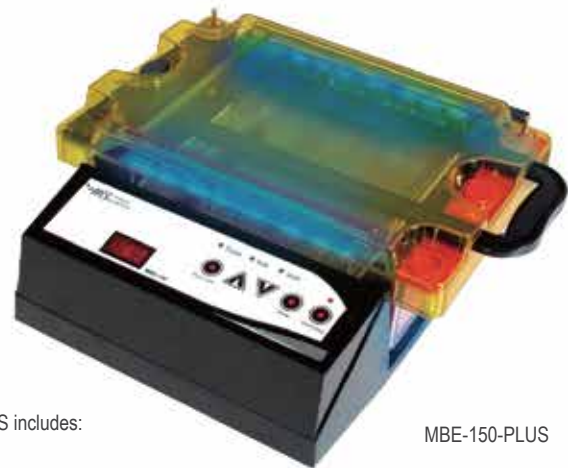
4 in 1 feature allows you to run as you see in real-time motion



MBE-150

MBE-150 includes:

- 1 x SafeBlue Illuminator
- 1 x Power adaptor
- 1 x Power cord



MBE-150-PLUS

MBE-150-PLUS includes:

- 1 x SafeBlue Illuminator
- 1 x SafeBlue Electrophoresis Tank
- 1 x Filter lid
- 1 x Threaded Black and Red Electrophoresis Cable
- 1 x 150x70mm UV tray
- 1 x 150x100mm UV tray
- 1 x 150x150mm UV tray
- 2 x 20 sample combs (1mm thick)
- 2 x UV tray casting dams
- 1 x SafeBlue electrophoresis gel tank image enhancer film



Features

- Innovative - a complete 4-in-1 system (run, view, capture and cut gel) with simple and easy set up on the image capture/analysis software.
- Convenient - run as you see, real time visualization on your DNA/RNA band migration
- Compact - footprint smaller than most UV transilluminator, easy to move and ideal for limited bench top space
- Economical - an inexpensive imager system with digital camera. Multiple accessories are also available to increase experimental efficiency
- Safe - 470nm blue light less invasive than UV light
- Flexible - UV tray adaptors available, compatible with MJ-105A.
- Versatile - support gel trays 150x150mm or smaller
- Optimized performance - Major Blue, SYBR series DNA/RNA stains, Novel Juice and Midori Green series
- Simple - DNA/RNA recovery method



Specification

Cat. No.	MBE-150
Output Voltage / Inc.	10-150V / 1V
Output Current / Inc.	10-300mA / 1mA
Max. Power	30W
Operating Mode	Constant Voltage or Current
Timer	999 (min) with alarm / Continuous
Safety Device	No load detection
Crossover	Yes
Blue Light Wavelength	470nm
Operating Temperature	Ambient to 40°C
Dimension (WxLxH)	Approx. 11.5"x7.9"x3.2" (293x200x80mm)
Weight	Approx. 2.4lb (1.1kg)
Material	Polycarbonate housing and aluminum base plate
Power Adaptor	Input: 100-240VAC, 50/60Hz, 1.4A Output: 15VDC, 4.0A, 60W max.
Cat. No.	MBE-TANK
Dimension (WxLxH)	Approx. 10.4"x6.9"x3.5" (265x175x90mm)
Gel Dimension (WxL)	Approx. 5.9"x2.8" (150x70mm), 5.9"x3.9" (150x100mm), 5.9"x5.9" (150x150mm)
Maximum Sample	70 for 5.9"x2.8" (150x70mm) Tray (2x35 sample combs) 140 for 5.9"x3.9" (150x100mm) Tray (4x35 sample combs) 210 for 5.9"x5.9" (150x150mm) Tray (6x35 sample combs)
Buffer Volume	500ml
Construction	Acrylic (Injection molded construction) Durable, leak proof environment for complete safety and long life
Cassette Type Electrode	Inexpensive, easy to replace
Electrical Safety	Lid can only be fastened in one way Upon lid removal, power is disconnected from buffer chamber
Rapid Casting Gel	Use casting dams
Cat. No.	MBE-LID-Y1
Dimension (WxLxH)	Approx. 6.9"x10.6"x1.4" (176x268x35mm)
Filter Type	Amber filter (for dyes selection please refer to comparison table for various nucleic acid stain performance, page 53)
Lid Filter Wiper	Used to remove condensation
Material	Polycarbonate

Ordering Information

Cat. No.	Product Description
MBE-150	SafeBlue Illuminator
MBE-150-PLUS	SafeBlue Electrophoresis System, including SafeBlue Illuminator, electrophoresis gel tank, amber filter lid, image enhancer film and red/black cable
MBE-TLC	Package of MBE-TANK, MBE-LID-Y1, MBE-150-CABLE

Bundle Packages

Cat. No.	Product Description
MBE-CP-01	Complete package of SafeBlue Electrophoresis System and SafeBlue 210 Imager System (MBE-IMG-CA)

*For more information please refer to [Page 54](#)



Accessories

Cat. No.	Product Description
MBE-TANK	ME15 Tank for SafeBlue without Lid and Red/Black Cable
MBE-LID-Y1	MBE-150 Lid,yellow
MBE-150-CABLE	Threaded Black and Red Electrophoresis Cable
MBE-TANK-01	120x155mm, shiny black protective film
MBE-150-02	165x140x19mm, Acrylics, cutting platform
MBE-150-3	Base unit platform protective film
ME15-UV15-TH01	ME15-UV15 Tray Holder, 2 cuts, cut size 109.5x60.5mm(For MJ-105 Trays)
ME15-UV15-TH02	ME15-UV15 Tray Holder, 1 cuts, cut size 130.5x122.5mm
MBE-G-Y1	Amber filter viewing glasses, 560nm
MST-50	Major Blue 50 µl
MST-1000	Major Blue 1000 µl

* For more information of MBE-IMG-CA, please refer to SafeBlue Imager System.



Comparison table for various nucleic acid stain performance

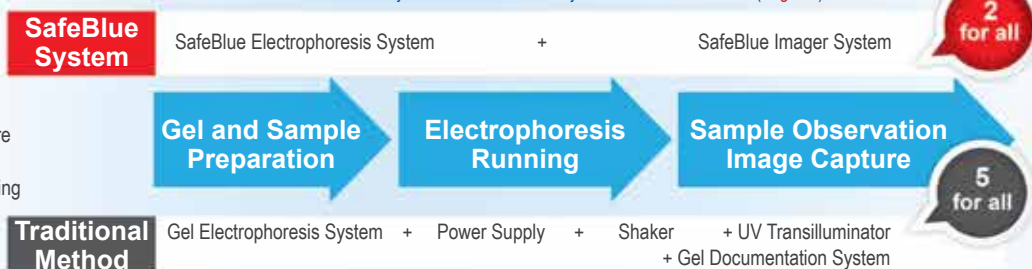
Nucleic Acid Stain	Performance	Experimental Protocol		
		Pre-staining	Post Staining	Sample Staining
Major Blue	Excellent			√
SYBR® Green I (DNA)	Excellent	√	√	√
SYBR® Green II (RNA)	Excellent		√	√
SYBR® Gold	Excellent	√	√	
Midori Green Direct	Excellent			√
Hydra Green™ Safe DNA Dye	Excellent	√	√	
HD Green™ DNA Stain	Excellent	√	√	
Novel Juice	Excellent			√
SafeView DNA Stain	Good	√		
SYBR® Safe	Good	√	√	
Midori Green	Good	√	√	
Midori Green Advanced	Good	√	√	
Serva DNA Stain Clear G	Good	√	√	
GelGreen™	Good	√	√	
GelRed™	NR	√	√	
Ethidium Bromide	NR	√	√	
HealthView™	NR	√		

NR= Not recommended

Note: SafeBlue system is best use with Major Blue nucleic acid stains (Page 55)

MBE-150-PLUS Innovative Electrophoresis System

1. Early detection of running error (run as you see)
2. Prevention for breaking gel- no more gel transferring (no more gloves!!)
3. Time saving gel staining & de-staining
4. Compact in size (no large lab area required)



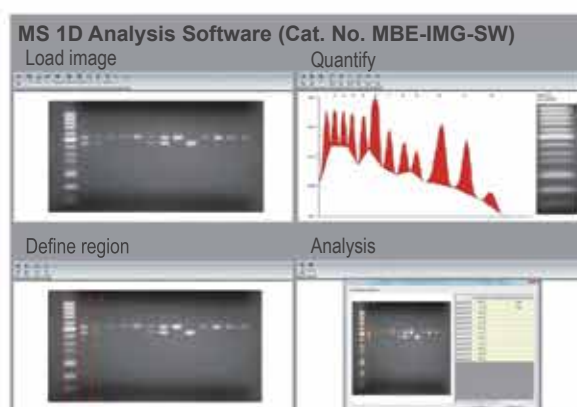
SafeBlue Imager System/ Darkroom Viewer

MBE-IMG-CA

The SafeBlue Imager System offers two selections for your convenience and preference. The compact digital camera allows you to take pictures from the camera and stores in its memory card without any hassle. The portable and light design them makes it easy to be carried. The digital camera provides a superb resolution of 24.2 megapixels. The darkroom viewer provides a darkroom environment for you to easily view the migrating DNA. The SafeBlue Imager System completes the SafeBlue electrophoresis series for all your requirements - from gel casting, gel electrophoresis to gel documentation; all in one system. The complete SafeBlue Imager System not only save your lab bench space, but also provides excellent portability to move from lab to lab.



MBE-IMG-CA



MBE-CP-01

Features

- Light weight and space saving design
- Ready to use out of the box; just connect and capture
- 24.2 megapixel digital camera
- Can be operated PC free
- Designed for SafeBlue Electrophoresis System to complete cast, run, and capture



Easy handling and set up for gel imaging

MBE-IMG-CA-01



DI-EB49



DI-SG49



DI-AM49



MBE-G-Y1

Ordering Information

Cat. No.	Description
MBE-IMG-CA	SafeBlue 210 Imager System with 18.0 megapixel digital camera
MBE-IMG-CA-01	SafeBlue 210 Imager System holder kit, includes hood and camera adapter only

Bundle Packages

Cat. No.	Description
MBE-CP-01	Complete package of MBE-150-PLUS and MBE-IMG-CA

Accessories

Cat. No.	Product Description
MBE-G-Y1	Amber Filter Viewing Glasses, 560 nm
MBE-IMG-SW	MS 1D Analysis Software
DI-CLIQS	DI-CLIQS Gel Analysis Software
Filter (for camera) *ordered separately	
DI-EB49	EtBr filter, 49mm
DI-SG49	SYBR Green filter, 49mm
DI-AM49	Amber filter 580nm, 49mm

Specification

Cat. No.	MBE-IMG-CA
Camera Specification	
Camera Type	24.2MP digital camera, Wi-Fi function
Effective Pixels	Approx. 24.2 megapixels (Total Pixels Approx. 25.8 megapixels)
Sensor	22.3 x 14.9mm CMOS sensor
Max. Aperture	f/3.5-6.3 (IS STM Lens)
Shutter Speed	1/4000 - 30sec. (available range varies by shooting mode)
Storage Media	SD memory card, Wi-Fi to PC, Smartphone or Tablet
Computer Interface	USB 2.0 Hi-speed , AV , HDMI , WiFi connection
Video Out	Full HD / HD / NTSC / PAL
Image Resolution	6000x4000
Lens	35mm film equivalent focal length, approx. 1.6 times the lens focal length
File Format	Designed rule for Camera File system 2.0
Data Type	JPEG, RAW(14-bit, Canon original), RAW+JPEG simultaneous recording possible
Filter (For Camera, Optional)	"EtBr filter / SYBR Green filter / Amber Filter *ordered separately"
Darkroom	
Dimension (WxLxH)	Approx. 13.4"x7.7"x15.8" (340x195x400mm)
Material	Acrylonitrile Butadiene Styrene (ABS)
Weight	Approx. 1.8lb (0.8Kg)
Camera Adapter Material	Aluminum

Major Blue

MST-50 MST-1000

Fluorescence and Loading Dyes in One Vial
2-in-1 Convenience at Your Fingertips

Major Science offers Major Blue stain, the highly sensitive fluorescent nucleic acid gel stains for DNA in electrophoresis. It is much safer than ethidium bromide: non-toxic, non-mutagenic, and non-carcinogenic.

Major Blue stain contains different tracking dyes, and is easy to detect nucleic acids in gels and monitor the DNA migration during the electrophoresis runs.

Major Blue stain can be excited by blue light transmission, which keeps DNA from damage. It is compatible with our SafeBlue product: SafeBlue System, Blue Light Illuminator.

Features:

- Safety - Absence of mutagenicity
- Sensitivity - High degree of sensitivity as Ethidium Bromide(EtBr).
- Convenience - Ready to Use; Same application procedures as the 6X Loading Dye.
- Economic - Non-hazardous product; No expenses required for the waste management.
- Excitation wavelength - UV 300nm, Blue light 470nm
- Emission wavelength - UV 495/537nm, Blue light 580nm

Ordering Information

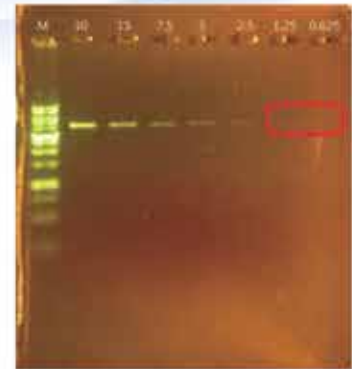
Cat. No.	Product Description
MST-50	Major Blue 50 µl
MST-1000	Major Blue 1000 µl

Ultra-Sensitive DNA Staining Reagent

Sensitivity > 1ng. More sensitive than EtBr(1ng) and Sybr Safe (3ng)



Concentration: ng/µl
Volume: 6µl/lane
LED Wavelength: 470nm
M: 1kb DNA Ladder



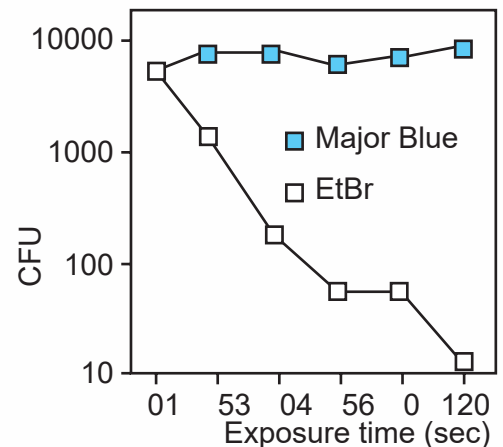
Sensitivity Comparison under the Blue Light Transilluminator: Major Blue (left) and Sybr Safe (right)



Concentration: ng/µl
Volume: 6µl/lane
UV Wavelength: 300nm
Exposure: 1min
M: 1kb DNA Ladder



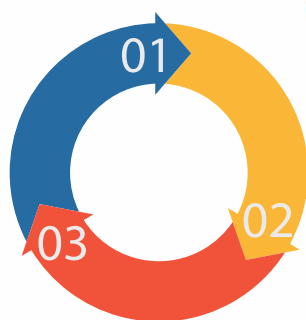
Sensitivity Comparison under the UV Transilluminator: Major Blue (left) and Sybr Safe (right)



Cloning Efficiency
PCR fragments separated on agarose gels containing EtBr or Major Blue were exposed to UV or blue light for specific amounts of time, then used for subcloning. Even brief EtBr/UV treatment yielded significantly fewer CFUs.

5µl PCR Product

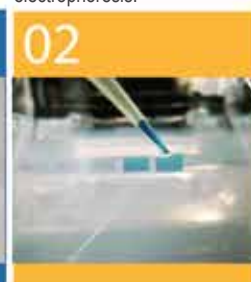
1µl Major Blue



Staining
Mixing Major Blue & PCR product!

Loading
Load 6µl stained PCR product onto agarose gel. Run gel electrophoresis.

Seeing
Imagine gel under UV or Blue Light system.



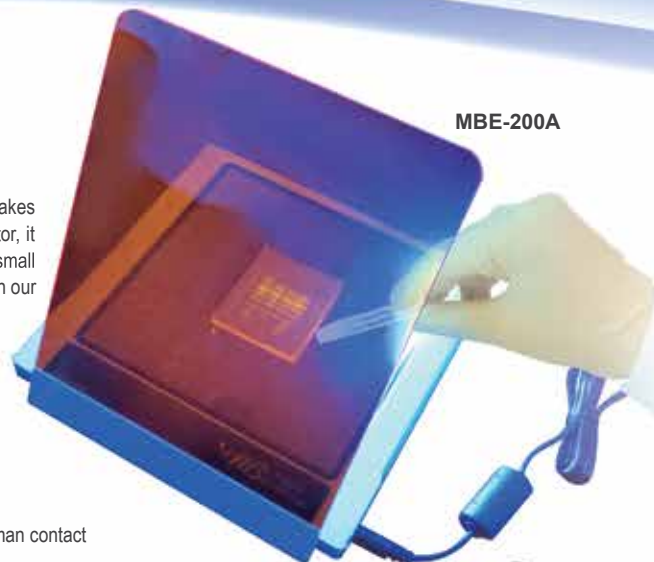
BluView Transilluminator

MBE-200A

The advanced BluView Transilluminator separates its 580nm amber lid from the body, and makes the illuminator thinner and more lightweight. Like the last generation of BluView Transilluminator, it is packed with safe 470nm blue LED light. With imaging size of 153x153mm, you could fit any small midi size gel on top of the transilluminator. The BluView Transilluminator is also compatible with our imaging system such as Digimage System and Smartview Simple System.

Features

- Thinner and more lightweight body
- Easy to carry in between labs
- Aluminum alloy casing design
- Low heat dispersion
- Energy saving product
- 470nm harmless blue light for direct human contact



BluView Transilluminator

MBE-300

Major Science BluView Transilluminator uses the harmless blue LED instead of aggressive UV lights, and allows you to directly view the experiment result without wearing any UV protection equipment. With its compact size and light weight, the transilluminator occupies little of your lab bench and is easy to be moved from lab to lab.

Package with our Mini Horizontal Gel Electrophoresis System is available to perform real time observation and early mistake detection.

Features

- Portable size and light weight
- Safe 470nm blue light wavelength
- Slim design fits in most of electrophoresis tanks
- Real time observation
- Efficient and early mistake detection
- Ultra high light uniformity



CE



Specification

Cat. No.	MBE-200A	MBE-300
Dimension (WxLxH)	Approx. 7.9"x7.9"x0.6" (200x200x13.9mm)	Approx. 3.4"x6.7"x1" (86x170x25mm)
Viewing Area (WxL)	6"x6" (153x153mm)	Approx. 4.4"x2.9" (112x74.6mm)
Blue Light Source	15W	20W
Illuminator Base Design	Flat Bed	
Blue Light Wavelength	470nm	
Automatic Shutdown	Approx. 6 min	
Material	Aluminum Alloy	
Power	DC 12V, 2A	
Weight	Approx. 1.68lb (760g)	Approx. 0.75lb (338g)

Ordering Information

Cat. No.	Product Description
MBE-200A	Advanced BluView Transilluminator, 470nm, viewing area 153x153 mm, amber filter(MBE-LID-AM580), synthetic paper hood are included
MBE-300	BluView Transilluminator, 470nm, viewing area 112x74.6 mm, amber filter(MBE-LID-AM580) is included

Bundle Packages

Cat. No.	Product Description
MJA-MBEP	Package of MJ-105A and MBE-300; amber filter lid with fan, synthetic paper hood are included
MJAE-100P	Package of MJ-105A, MP-100, and MBE-300; amber filter lid with fan, synthetic paper hood are included
MJAE-Mini300	Package of MJ-105A, MINI-300, and MBE-300; amber filter lid with fan, synthetic paper hood are included



MJAE-100P



MJAE-Mini300



MJA-MBEP

Accessories

Cat. No.	Product Description
MJ-105A	Transparent Mini Horizontal Electrophoresis System
MBE-102	Lid with 580nm amber filter and evaporation fan for ME10-7-10
MBE-103	Lid with 580nm amber filter and evaporation fan for ME7-7-10
MBE7-TANK	ME7-7-10 Electrophoresis tank only, without Lid and Red / Black Cable
MBE10-TANK	ME10-7-10 Electrophoresis tank only, without Lid and Red / Black Cable
MBE-150-CABLE	Threaded Black and Red Electrophoresis Cable
MJ-LID-AM580	580nm amber filter lid with fan, suitable for MJ-105A
MBE-LID-AM580	An inclined 580nm amber filter, suitable for MBE-200A and MBE-300
MBE-HOOD	Synthetic paper hood



MJ-105A



MJ-LID-AM580



MBE-102



MBE-103



MBE7-TANK



MBE10-TANK



MBE-150-CABLE



MBE-LID-AM580



MBE-HOOD

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