



MEASURING MICROSCOPES

MM-SERIES

The lineup provides high accuracy and ease of use and meets a wide range of needs.

Measuring Microscopes

MM-Series

The MM-series are products Nikon is most proud of, with a variety of enhanced features such as higher measurement accuracy and coordination with data processing systems.



MM-200 with E-MAX V2 set



MM-Type
MM-400N/LV



U-Type
MM-800N/U

- In addition to the easy-to-use design, an motorized vertical movement mechanism is available.
- Newly developed transmissive lighting enables to switch white and green LED light (MM-400N, MM-800N)
- Improved body rigidity enables the mounting of a stage with a stroke of 300 x 200 mm (only for the MM-800N)
- Digital image measurement is possible with the E-MAX (V2 set) measurement support system.
- The newly developed DP-E1A data processing unit combine high functionality and ease of use.
- The coarse/fine movement switching lever and RESET/SEND button are near the X/Y axis handle of the stage.
- Aperture diaphragm function for transmitted illuminator is available for both MM-400N and MM-800N, supporting the measurement of cylindrical parts.
- Power consumption has been reduced by 10%*1 compared to the former MM-400/MM-800 series models. The manufacturer provides environmentally friendly products and complies with the RoHS Directive and other laws and regulations*2.

*1. Calculated based on Nikon evaluation values *2. Based on Nikon standards, in consideration of domestic and foreign laws and regulations



X-axis handle (around switch)



Y-axis handle (around switch)

Function Icons

- FA** **Focusing Aid**
The Focusing Aid (FA) ensures accurate Z-axis focusing.
- UFA** **Universal Epi-illuminator Focusing Aid**
A universal epi-illuminator with Focusing Aid (FA) mechanism.
- V** **Variable Magnification**
Two objective lenses can be attached, making magnification changeover easy.
- Z** **Z-axis Motorized Motion**
A dedicated controller provides easy and accurate up/down movements.
- 2** **Dual Side Coarse/Fine Focus Knob**
Coarse/fine focus knobs are on both sides.
- L** **Built-in Z-axis Linear Scale**
Z-axis reading is possible for non-contact height measurement.
- T** **Trinocular Optical Head**
Ideal for configuration with photomicrography equipment.
- M** **Monocular Optical Head**
For applications where cost performance is priority.
- U-EPI** **Universal Epi-illuminator**
Supports a wide range of applications.
- LED** **LED Illuminator**
A high-intensity white LED illuminator for brightfield use.

MM TYPE

Compact	Z Motorized	Variable Magnification	Z-axis Linear Scale	Basic
MM-200	MM-800N/LMT MM-800N/LMFA MM-400N/LMT MM-400N/LMFA	MM-800N/LV MM-800N/LVFA MM-400N/LV MM-400N/LVFA	MM-800N/LT MM-800N/SLT MM-400N/LT MM-400N/SLT MM-800N/LFA MM-400N/LFA	MM-800N/T MM-800N/ST MM-400N/T MM-400N/ST MM-400N/M MM-400N/SM
P5	P6	P6	P7	P7

UNIVERSAL TYPE

Z Motorized	Z-axis Linear Scale	Basic
MM-800N/LMU MM-400N/LMU	MM-800N/LU MM-800N/SLU MM-400N/LU MM-400N/SLU	MM-800N/U MM-800N/SU MM-400N/U MM-400N/SU
P8	P8	P9

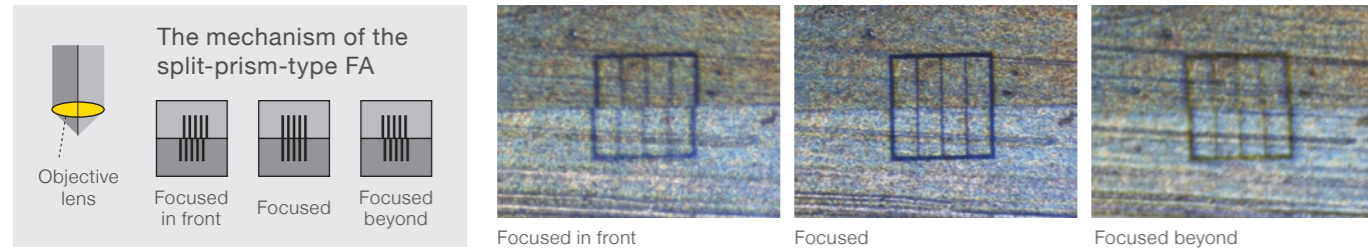
MM TYPE

Highly accurate measurement is achieved with proven optical technology and control functions.

Improved height measurement accuracy

Focusing Aid (FA)

A newly developed split-prism-type FA with a clear pattern makes it possible to accurately focus in the Z-axis and reduces height measurement errors caused by the depth of field of the objective lens. There are two types of patterns, light and dark, and it is possible to switch between them according to the surface properties of the test object.



Improved lighting performance for wide range of needs

LED Illuminator

The newly developed diasopic LED illuminator has now both white and green light sources (excluding MM-200), and the operator can easily switch the light without inserting or removing filters. The high-intensity white LED lighting has a constant color temperature and the light modulator responds quickly, so efficient high-precision measurement is possible. Furthermore, it has low power consumption and long life.



8-segment LED Ring Light CYN-E1 (option for MM-type)

- Highlights the edges of samples that are difficult to see under normal lighting, such as plastic molded products.
- Selectable 8-segment ON/OFF LED with a large amount of light and a 30° angle of incidence.
- Compatible with 1x, 3x, 5x, and 10x measuring microscope objective lenses



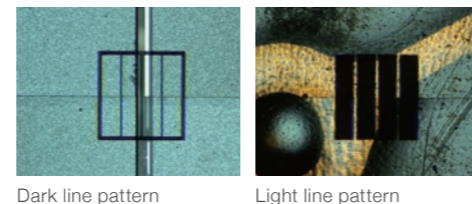
UNIVERSAL TYPE

Enhanced height measurement and a variety of illuminators make possible both an expanded observation area and high-precision measurement

Enhanced height measurement

Focusing Aid (FA)

There is a newly developed split-prism type FA. It enables more accurate focusing and reduces measurement errors caused by the depth of field of the objective lens. (Must be used with the LV-UEPI FA illuminator.)



Lineup of a variety of illuminators

Universal Reflective Illuminator LV-UEPI2

Optimal illumination conditions can be linked to the field of view aperture, aperture diaphragm, and shutter.

Universal Reflective Illuminator LV-UEPI

Automatically opens the field of view aperture and aperture diaphragm when switching between brightfield and darkfield.

FA Reflective Illuminator LV-UEPI FA

Has the FA for more precise height measurement.

MM-200

Compact, light, precise and easy to use measuring microscope for dimensioning and tolerancing



Shortens measurement time with its builtin 50 x 50 mm stage and rotating table.



Built-in light sources are all long-life white LEDs. The optional LED ring light enhances edge observation with the use of an oblique illumination angle.



A3 size

Features a space-saving design with a footprint equivalent to an A3 size sheet, or 420 x 297 mm*. *Value does not include handles

Get digital image measurement with a video head, E-MAX, and color camera (optional)

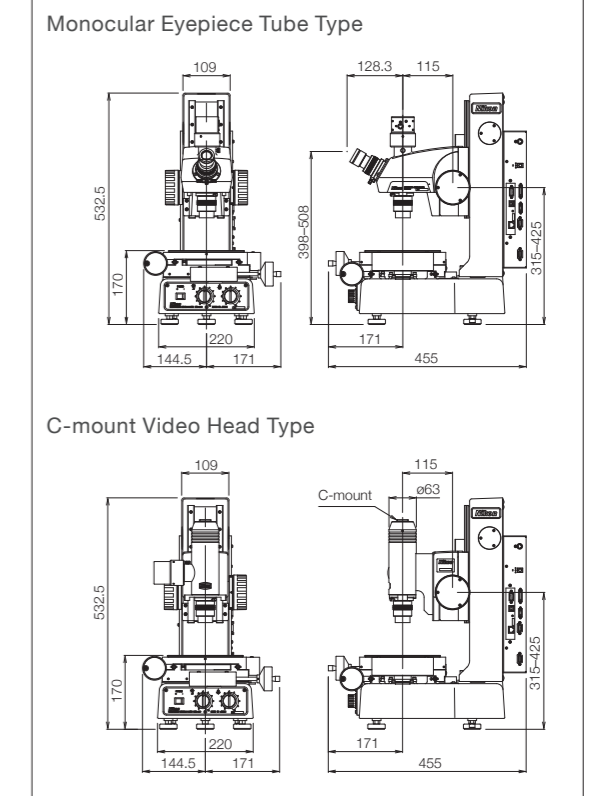
E-MAX set

Combine digital camera with E-MAX software for advanced edge detection.



MM-200 with E-MAX V2 set

Dimensional Diagram (Unit: mm)



Main Specifications

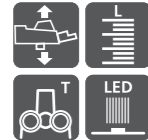
Type	Monocular Eyepiece Tube Type	C-mount Video Head Type
Optical head	MM-200 monocular optical head	C-mount video head for MM-200
XYZ stroke	50 x 50 x 110 mm	
Stage accuracy	2.5 + L/50 μm (with LEC), 3 + L/50 μm (L = measurement length in mm)	
Scale resolution	0.01 / 0.1 (default) / 1 / 10 μm	
Magnification accuracy	0.1 %	
Objective lenses (WD)	Standard: 3x (75.5 mm) Optional: 1x (79 mm), 5x (64 mm), 10x (48 mm)	
Light sources	Standard: diasopic/episcopic (white LED) Optional: 8-segmented ring light (white LED)	
Dimensions & weight	316 x 455 x 533 mm (W x D x H), 40 kg	
Input voltage range	100 - 240 V (Max. 1.8 A)	

MM TYPE

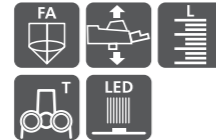
Z Motorized

Vertical movement is motorized so it is easy on the operator, and precise movements are possible. When combined with the FA trinocular observation unit height measurement error can be minimized.

MM-800N/LMT
MM-400N/LMT

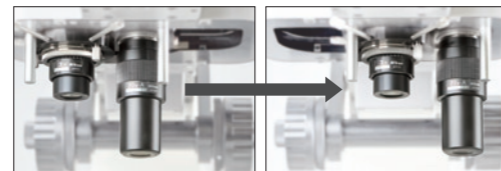


MM-800N/LMFA
MM-400N/LMFA



Variable magnification

Two objective lenses, low magnification and high magnification, can be mounted and it is easy to switch between them. A single microscope can efficiently perform wide-field measurement at low magnification and high-precision height measurement at high magnification.



MM-800N/LV
MM-400N/LV



MM-800N/LVFA
MM-400N/LVFA



Main Specifications

Model	MM-800N/LMT, MM-800N/LMFA	MM-800N/LV, MM-800N/LVFA	MM-400N/LMT, MM-400N/LMFA	MM-400N/LV, MM-400N/LVFA
Z-axis movement	Motorized (max. speed: 10 mm/sec)	Manual (dual side coarse/fine focus knob)	Motorized (max. speed: 10 mm/sec)	Manual (dual side coarse/fine focus knob)
Optical head	Trinocular optical head, Trinocular optical FA head	Variable magnification optical head, Variable magnification optical FA head	Trinocular optical head, Trinocular optical FA head	Variable magnification optical head, Variable magnification optical FA head
Eyeiece inclination angle	25°			
Eyeiece	CFWN10X (Field No. 20)			
Objective lenses (WD)	Measuring microscope objectives 1X (79 mm), 3X (75 mm), 5X (64 mm), 10X (48 mm), 20X (20 mm), 50X (15 mm), 100X (4 mm)	Low magnification: 1X (79 mm), 3X (75 mm), 5X (64 mm), 10X (48 mm), 20X (20 mm), 50X (15 mm), 100X (4 mm) High magnification: 5X (64 mm), 10X (48 mm), 20X (20 mm), 50X (15 mm), 100X (4 mm)	Measuring microscope objectives 1X (79 mm), 3X (75 mm), 5X (64 mm), 10X (48 mm), 20X (20 mm), 50X (15 mm), 100X (4 mm)	Low magnification: 1X (79 mm), 3X (75 mm), 5X (64 mm), 10X (48 mm), 20X (20 mm), 50X (15 mm), 100X (4 mm) High magnification: 5X (64 mm), 10X (48 mm), 20X (20 mm), 50X (15 mm), 100X (4 mm)
Stage*1	MHS 12x8C, MHS 10x6B, MHS 8x6B, MHS 6x4B, MHS 4x4B, MHS 2x2B	MHS 6x4B, MHS 4x4B, MHS 2x2B		
Light Source	Diascopic: White LED (standard), Green LED (standard) / Episcopic: White LED			
Maximum sample height	200 mm		150 mm	
Dimensions (WxDxH), Weight (approx.) ²	380(W)×703(D)×725(H)mm, Approx. 72 kg		300(W)×567(D)×638(H)mm, Approx. 50 kg	

*1: When attaching a MHS 6x4B, MHS 4x4B, or MHS 2x2B stage to MM-800N, a stage adapter is required.

*2: Excludes stage and eyepiece

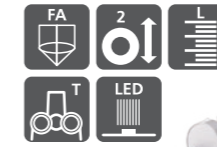
Z-axis linear encoder

Dual-axis handle type with built-in Z-axis scale. An FA trinocular optical head or non-FA trinocular optical head can be selected according to the application.

MM-800N/LT
MM-800N/SLT
MM-400N/LT
MM-400N/SLT



MM-800N/LFA
MM-400N/LFA



Basic

These are basic types for the MM-800N and 400N measuring microscopes with excellent cost performance. The optical head and stage can be selected according to the measurement application. (for XY measurement only)

MM-800N/T
MM-800N/ST
MM-400N/T
MM-400N/ST



MM-400N/M
MM-400N/SM



Main Specifications

Model	MM-800N/L, MM-800N/LFA, MM-800N/SLT	MM-400N/L, MM-400N/LFA, MM-400N/SLT	MM-800N/T, MM-800N/ST	MM-400N/T, MM-400N/ST	MM-400N/M
Z-axis movement	Manual (dual side coarse/fine focus knob)				
Optical head	Trinocular optical head, Trinocular optical FA head			Trinocular optical head	Monocular optical head
Eyeiece inclination angle	25°				30°
Eyeiece	CFWN10X (Field No. 20)				MM Eyeiece 10X (Field No. 20)
Objective lenses (WD)	Measuring microscope objectives 1X (79 mm), 3X (75 mm), 5X (64 mm), 10X (48 mm), 20X (20 mm), 50X (15 mm), 100X (4 mm)				
Stage*1	MHS 12x8C, MHS 10x6B, MHS 8x6B, MHS 6x4B, MHS 4x4B, MHS 2x2B	MHS 6x4B, MHS 4x4B, MHS 2x2B	MHS 12x8C, MHS 10x6B, MHS 8x6B, MHS 6x4B, MHS 4x4B, MHS 2x2B	MHS 6x4B, MHS 4x4B, MHS 2x2B	
Light Source	Diascopic: White LED (standard), Green LED (standard) / Episcopic: White LED				
Maximum sample height	200 mm		150 mm		
Dimensions (WxDxH), Weight (approx.) ²	380(W)×703(D)×725(H)mm, Approx. 72 kg	300(W)×567(D)×638(H)mm, Approx. 50 kg	380(W)×703(D)×725(H)mm, Approx. 72 kg	300(W)×567(D)×638(H)mm, Approx. 50 kg	

*1: When attaching a MHS 6x4B, MHS 4x4B, or MHS 2x2B stage to MM-800N, a stage adapter is required. *2: Excludes stage and eyepiece

*There is no measurement controller on the back side for S/SL type. Connection is made with the DP unit.

Function Icons

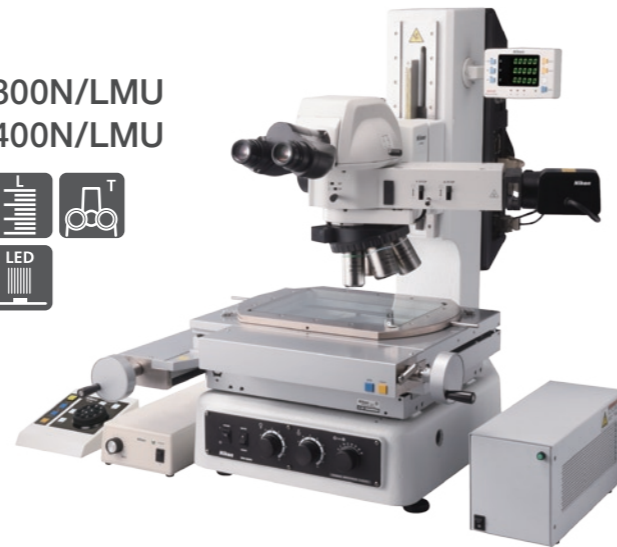
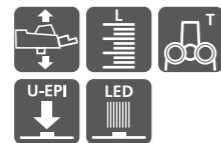
- Focusing Aid**
The Focusing Aid (FA) ensures accurate Z-axis focusing.
- Universal Epi-illuminator Focusing Aid**
A universal epi-illuminator with Focusing Aid (FA) mechanism.
- Variable Magnification**
Two objective lenses can be attached, making magnification changeover easy.
- Z-axis Motorized Motion**
A dedicated controller provides easy and accurate up/down movements.
- Dual Side Coarse/Fine Focus Knob**
Coarse/fine focus knobs are on both sides.
- Built-in Z-axis Linear Scale**
Z-axis reading is possible for non-contact height measurement.
- Trinocular Optical Head**
Ideal for configuration with photomicrography equipment.
- Monocular Optical Head**
For applications where cost performance is priority.
- Universal Epi-illuminator**
Supports a wide range of applications.
- LED Illuminator**
A high-intensity white LED illuminator for brightfield use.

UNIVERSAL TYPE

Z Motorized

Universal-type with motorized vertical movement with universal reflective illuminator capable of brightfield, darkfield, simple polarization, and differential interference observation.

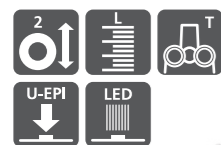
MM-800N/LMU
MM-400N/LMU



Z-axis linear encoder

Dual-axis handle type with built-in Z-axis scale. Combining with the LV-UEPI FA reflective illuminator, high-precision height measurements can be made.

MM-800N/LU
MM-800N/SLU



MM-400N/LU
MM-400N/SLU



■ Main Specifications

Model	MM-800N/LMU	MM-400N/LMU	MM-800N/LU, MM-800N/SLU	MM-400N/LU, MM-400N/SLU
Z-axis movement	Motorized (max. speed: 10 mm/sec)		Manual (dual side coarse/fine focus knob)	
Optical head	C-TB binocular tube, LV-TI3 trinocular eyepiece tube, LV-TT2 tilting trinocular eyepiece tube (with built-in reticle)			
Eyepiece	CFI10X (Field No. 22), CFI10XCM (Field No. 22)			
Objective lenses	TU Plan FLUOR EPI series, TU Plan FLUOR BD series, CFI L Plan EPI CR series			
Stage ^{*1}	MHS 12x8C, MHS 10x6B, MHS 8x6B, MHS 6x4B, MHS 4x4B, MHS 2x2B	MHS 6x4B, MHS 4x4B, MHS 2x2B	MHS 12x8C, MHS 10x6B, MHS 8x6B, MHS 6x4B, MHS 4x4B, MHS 2x2B	MHS 6x4B, MHS 4x4B, MHS 2x2B
Light Source	Diascopic: White LED (standard), Green LED (standard) Episcopic: Universal epi-illuminator with Focusing Aid LV-U EPI FA, Universal epi-illuminator LV-U EPI ^{*2} , Universal epi-illuminator U-EPI ^{*2} , MM-LL LED Lamphouse (option for LV-U EPI and LV-U EPI ^{*2})			
Maximum sample height	200 mm	150 mm	200 mm	150 mm
Dimensions (WxDxH), Weight (approx.) ^{*3}	380(W)×703(D)×725(H)mm, Approx. 72 kg	300(W)×567(D)×638(H)mm, Approx. 50 kg	380(W)×703(D)×725(H)mm, Approx. 72 kg	300(W)×567(D)×638(H)mm, Approx. 50 kg

*1: When attaching a MHS 6x4B, MHS 4x4B, or MHS 2x2B stage to MM-800N, a stage adapter is required.

*2: Used with TI-PS100W power supply + MM-LH60PC *3: Excludes stage and eyepiece

*There is no measurement controller on the back side for S/SL type. Connection is made with the DP unit.

Basic

Basic universal-type with universal reflective illuminator capable of brightfield, darkfield, simple polarization, and differential interference observation. (for XY measurement only)

MM-800N/U
MM-800N/SU



MM-400N/U
MM-400N/SU



■ Main Specifications

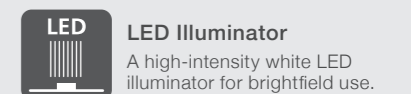
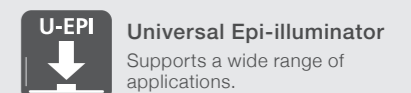
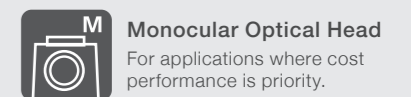
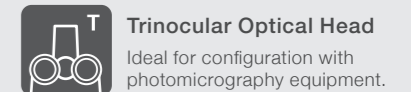
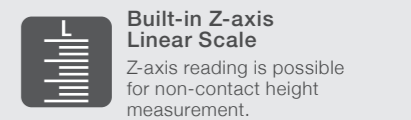
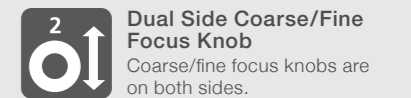
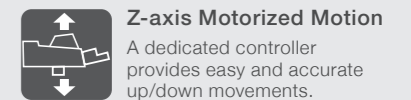
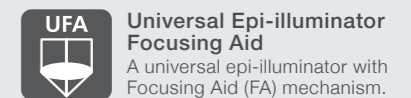
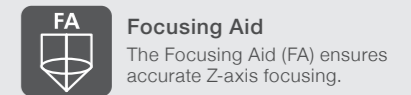
Model	MM-800N/U, MM-800N/SU	MM-400N/U, MM-400N/SU
Z-axis movement	Manual (dual side coarse/fine focus knob)	
Eyepiece Tube	C-TB binocular tube, LV-TI3 trinocular eyepiece tube, LV-TT2 tilting trinocular eyepiece tube (with built-in reticle)	
Eyepiece	CFI10X (Field No. 22), CFI10XCM (Field No. 22)	
Objective lenses	TU Plan FLUOR EPI series, TU Plan FLUOR BD series, CFI L Plan EPI CR series	
Stage ^{*1}	MHS 12x8C, MHS 10x6B, MHS 8x6B, MHS 6x4B, MHS 4x4B, MHS 2x2B	MHS 6x4B, MHS 4x4B, MHS 2x2B
Light Source	Diascopic: White LED (standard), Green LED (standard) Episcopic: Universal epi-illuminator with Focusing Aid LV-U EPI FA, Universal epi-illuminator LV-U EPI ^{*2} , Universal epi-illuminator U-EPI ^{*2} , MM-LL LED Lamphouse (option for LV-U EPI and LV-U EPI ^{*2})	
Maximum sample height	200 mm	150 mm
Dimensions (WxDxH), Weight (approx.) ^{*3}	380(W)×703(D)×725(H)mm, Approx. 72 kg	300(W)×567(D)×638(H)mm, Approx. 50 kg

*1: When attaching a MHS 6x4B, MHS 4x4B, or MHS 2x2B stage to MM-800N, a stage adapter is required.

*2: Used with TI-PS100W power supply + MM-LH60PC *3: Excludes stage and eyepiece

*There is no measurement controller on the back side for S/SL type. Connection is made with the DP unit.

■ Function Icons

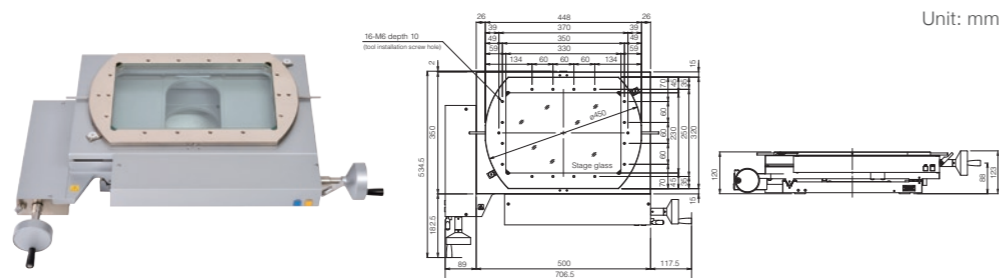


ACCESSORIES

Stages

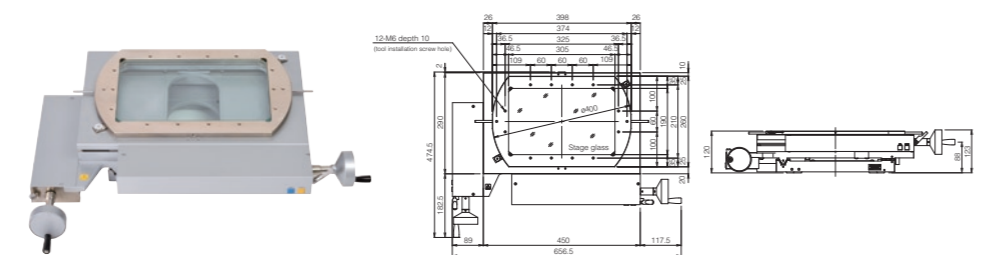
Stages for MM-800N series

PS 12x8C Stage

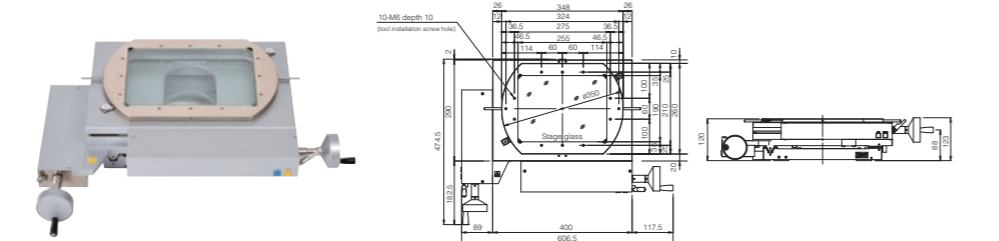


Unit: mm

PS 10x6B Stage

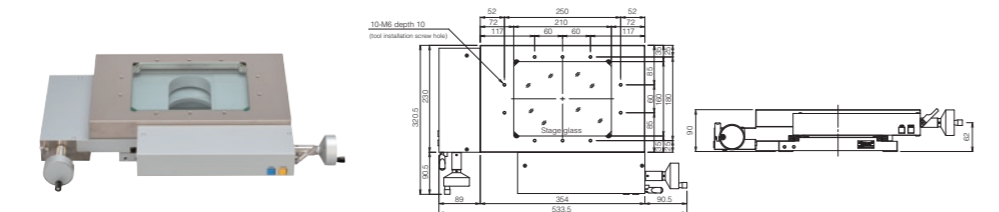


PS 8x6B Stage

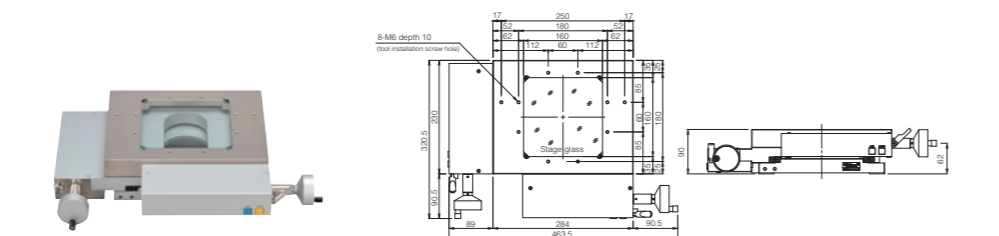


Stages for MM-400N series

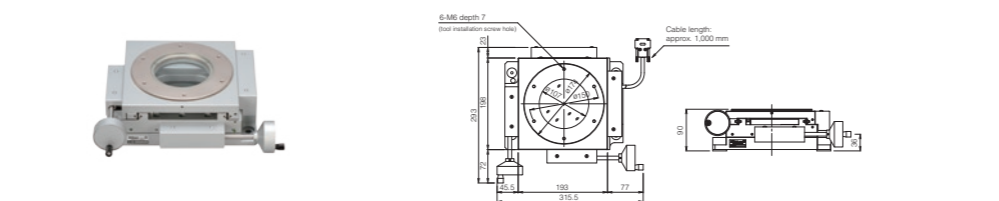
PS 6x4B Stage



PS 4x4B Stage



PS 2x2B Stage



Stage specifications

Type	Surface area (mm)	Stage glass dimensions (mm)	Stroke (mm)	Reading method	Min. reading (μm)	Rotation range	Tool installation screw hole	Loading capacity (kg)	Weight (approx.)(kg)
PS 12x8C	448×320	330×230	300×200	Linear encoder	0.01	±3° (Swivel plate)	16-M6 depth 10	20	67
PS 10x6B	398×260	305×190	250×150				12-M6 depth 10		51.5
PS 8x6B	348×260	255×190	200×150				10-M6 depth 10		48.5
PS 6x4B	354×230	210×160	150×100			10-M6 depth 10	27.5		
PS 4x4B	284×230	160×160	100×100			8-M6 depth 10	23.5		
PS 2x2B	Ø174	Ø107	50×50	360° (Rotating table)	6-M6 depth 7	5	15.5		

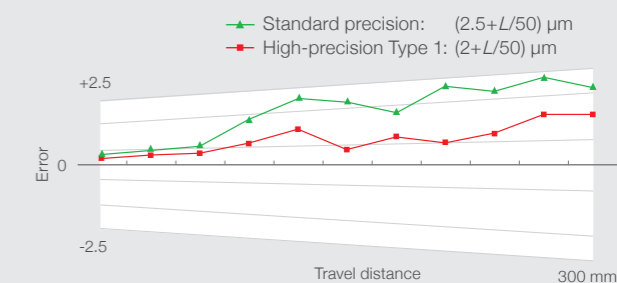
MM Series High-Precision Type

Nikon offers high-precision type measuring microscopes for customers who need higher precision. Type 1 is calibrated by a certified engineer for customer site.

Accuracy (with MM main body)	Stage
2.0 + L/50 μm (Type 1)*	MHS 12x8C, MHS 10x6B,
2.5 + L/50 μm (Standard Type; calibration data included)*	MHS 8x6B, MHS 6x4B,
	MHS 4x4B, MHS 2x2B

To ensure accuracy, both types require a temperature controlled room.
*Please contact Nikon for details regarding Type 1.

Combination precision (example)



Stage Accessories

Stage Adapter

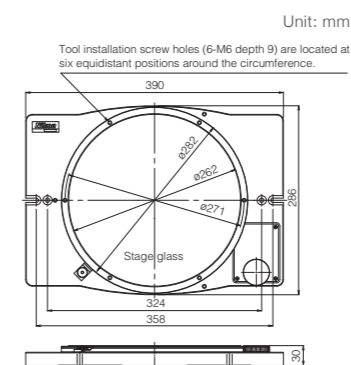
Used to mount PS 6x4B, PS 4x4B, or PS 2x2B stages to MM-800N.



Rotating Tables

Rotating Table Type 4

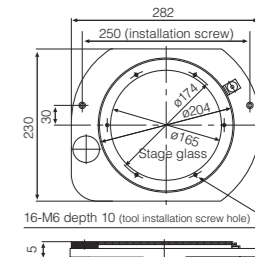
For PS 12x8C*, PS 10x6B, PS 8x6B



*When using rotating table type 4, stage stroke is limited for X and Y axis.

Rotating Table Type 3

For PS 6x4B, PS 4x4B



Rotating table specifications

Table	Table size(mm)	Glass insert size (mm)	Rotation range	Tool installation screw hole	Weight (kg)
Type 4	ø282	ø262	360° (uncalibrated)	6-M6 depth 9	Approx. 8
Type 3	ø204	ø165	360° (uncalibrated)	6-M6 depth 10	Approx. 5

Tilting Center Fixture A

Used to hold machined samples for MM-200, PS 2x2B, and Rotating Table Type 3.



Max. sample diameter and length when held level (mm)	Center height (mm)	Tilting angle	Weight (kg)
ø68×120	45	10°(in 1° increment)	Approx. 2.2

Large Stage Adjustment Knob

Enables fine adjustment of swivel plate rotation for PS 12x8C, PS 10x6B and PS 8x6B.



ACCESSORIES

Objectives 1x, 3x, 5x, 10x, 20x, 50x, 100x

These compact objectives feature long working distance and excellent resolution. Almost all have the same parfocal distances and come with lens adapters for quick and easy replacement.

- 3x objective is included with the measuring microscope



Magnification	1x	3x	5x	10x	20x	50x	100x
WD (mm)	79	75	64	48	20	15	4
NA	0.03	0.09	0.13	0.2	0.4	0.55	0.75

Illuminators

8-Segment LED Ring Light

Enables illumination from eight directions.

- Can be used with MM-400N/800N and E-MAX
- RS-232C cable comes standard
- E-BUS cable is required to control with E-MAX



Ring Illuminator Adapter

Can be used to mount fiber-optic, fluorescent lamp, and LED ring illuminator.

- Cannot be mounted with 8-segment LED Ring Light



Fiber-optics Illuminator Set

Offers easily adjustable brightness. The ring fiber illuminator minimizes shadows caused by any unevenness on the sample surface. The bifurcated fiber enables illumination from two directions.

- Cannot be used with metallurgical microscope objectives
- Cannot be mounted when using 20x, 50x and 100x measuring microscope objectives



LED Ring Illuminator

Ideal for use in a production environment as LEDs have long product life. Uses white LEDs with a variable intensity control and constant color temperature.

- Cannot be used with metallurgical microscope objectives
- Cannot be mounted when 20x, 50x and 100x measuring microscope objectives are used

Protractor Eyepieces (for MM Type only)

Note: Monocular adapter is required when using these eyepieces with trinocular tubes

Digital Protractor Eyepiece*

Rotate crosshairs in the viewfield to measure angles.

Display unit: 1 minute, 10 minutes

*Not available for S and SL models



1-Minute Reading Eyepiece

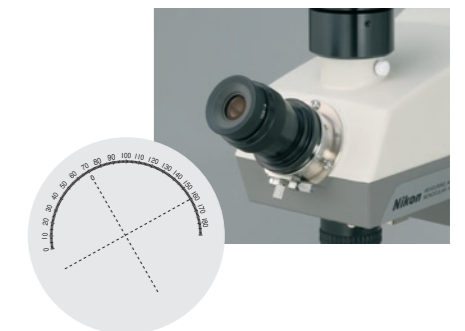
Viewfield includes crosshairs and 60° lines. Angle indexes are read by appropriate microscopes.

Measuring range: 360°



10-Minute Reading Eyepiece

Viewfield includes crosshairs and angle indexes. When the knurled ring at the lower section of the eyepiece tube is turned, the crosshairs and the vernier both rotate 180°.



Direct C-mount Adapter

Used to install C-mount camera on the measuring microscope.

- LV-TV tube is required

ACCESSORIES

The use of the CFI60-2 series of high-performance objective lenses is possible, further improving optical performance

The TU Plan Fluor series of standard objective lenses with both excellent chromatic aberration correction and long working distances

This is a universal-type standard objective lens that make possible all observation methods with a single objective lens: brightfield, darkfield, simple polarization, differential interference, and epifluorescence using not only the visible region but also the UV region.

This new optical system combines excellent chromatic aberration correction and long working distances. The edge detection for the location being measured and operability have been improved, and a wider variety of samples can be handled.



TU Plan Fluor series

• Brightfield

Type	Magnification	NA	W.D.(mm)
TU Plan Fluor EPI	5x	0.15	23.5
	10x	0.30	17.5
TU Plan EPI ELWD	20x	0.40	19.0
	50x	0.60	11.0
	100x	0.80	4.5

• Brightfield/Darkfield

Type	Magnification	NA	W.D.(mm)
TU Plan Fluor BD	5x	0.15	18.0
	10x	0.30	15.0
TU Plan BD ELWD	20x	0.40	19.0
	50x	0.60	11.0
	100x	0.80	4.5

Objective lenses with cover glass thickness correction rings
The CFI L Plan EPI CR Series

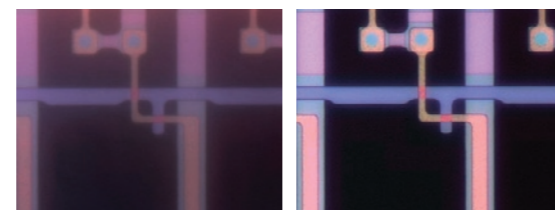
These are objective lenses with correction rings. High-contrast observation of cells and patterns is possible without being affected by the cover glass.



The CFI L Plan EPI CR series with correction rings

• With correction mechanism

Type	Magnification	NA	W.D.(mm)	Glass thickness correction range (mm)
CFI L Plan EPI CR	20x	0.45	10.9–10.0	0–1.2
CFI L Plan EPI CR	50x	0.7	3.9–3.0	0–1.2
CFI L Plan EPI CRA	100x	0.85	1.2–0.85	0–0.7
CFI L Plan EPI CRB	100x	0.85	1.3–0.95	0.6–1.3



No correction for cover glass thickness (with 50x objective lens)

Corrected for cover glass thickness of 0.7 mm (with 50x objective lens)

Environmental Considerations

The TU Plan Fluor and CFI L Plan EPI CR series use eco-friendly glass that does not contain lead, arsenic, or toxic substances, making them meet the environmental needs of the times.

Tilting trinocular eyepiece tube

Tilting trinocular eyepiece tube

The LV-TT2 tilting trinocular eyepiece tube with built-in reticle offers comfort to all users, regardless of their viewing positions. The optical path changeover of 100:0/20:80 allows simultaneous use of a monitor.



Manual nosepieces

A variety of manual control nosepieces are available to suit all needs.

	Brightfield	Darkfield	DIC
C-N6	○	—	—
L-NBD5	○	○	—
L-NU5	○	○	○

○ : Supported — : Not supported

New light source for EPI illuminators

A newly designed compact LED EPI lamphouse for brightfield, darkfield, and DIC observations has been added to the existing lineup.

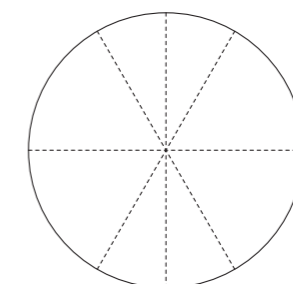


Templates

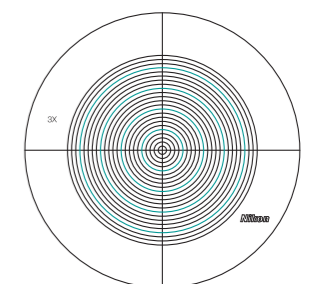
The following dedicated templates are available to facilitate profile comparison and measurements. Templates are designed for 3x objectives.

- Standard angle templates (standard)
- Concentric (diameter 0.2–4.6)*

*Cannot be attached to monocular type



Standard



Concentric

ACCESSORIES

E-Max Series

FOV Measurement with advanced digital image processing technology

Combined with the V2 digital camera, E-MAX series software provides various advanced measurements and processing functions, ranging from 2D data processing and image measurement, to data storage. Automated edge detection with sub-pixel processing enables more precise and repeatable measurement.



E-MAX V2 set

DP-E1A

Data Processor with improved accuracy and ease of use

Effectively used in combination with a measuring microscope/profile projector, the DP-E1A quickly calculates geometrical features with simple and interactive operations. Measurement results are automatically memorized as teaching steps and can be easily used as a measurement routine.

Simple & interactive operation

Feature Oriented Operation allows the user to conduct measurements by following the graphics, providing a seamless measuring environment. Measurement results are automatically memorized as teaching steps and can be easily used as a measurement routine.

GD&T compliance

Geometric Dimensioning & Tolerancing defined by the ANSI Y 14.5M Specification is supported. In addition to Location Tolerancing such as True Position, MMC and LMC, determination of Form, Orientation and Runout can be conducted interactively.

Multi-language support

English, German, Japanese and various other Asian and European languages are supported.

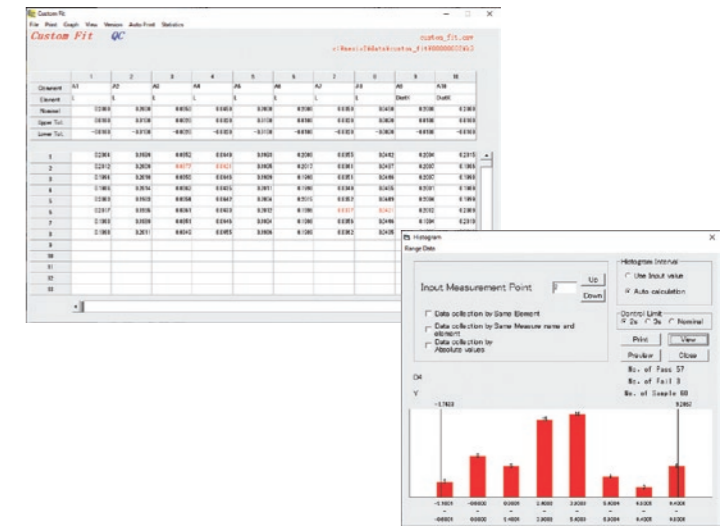


Application Software for Measurement Support/Data Processing System

Custom Fit QC: Report and chart generating

Suitable for lot control of inspection data such as maximum value, minimum value, range, standard deviation, and process capability index.

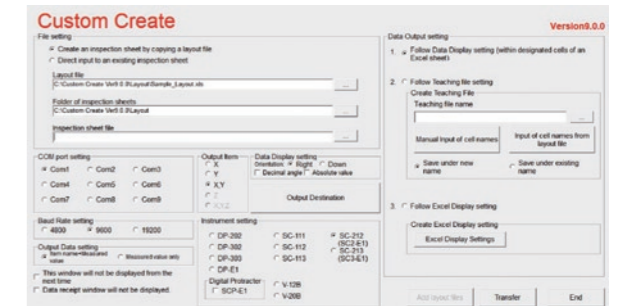
- Customization of inspection result sheets are possible, in addition to the 10 standard sheets
- BMP and JPEG files can be pasted onto the inspection result sheets
- Graphs can be automatically generated
- Displays are adjustable between degree/minute/second
- Easy to generate histograms, X-R control charts, and scatter diagrams



Custom Create: Direct link to Excel worksheets

Measurement data from counters and/or data processors can be transferred directly to Excel sheets. Multiple worksheets can be transferred at once, achieving efficient measurements.

- Compatible measuring instruments: MM-400/800 series, DP-E1A, V-20B, V-12B
- Allows data transfer to customized inspection-result sheet forms
- 3 standard inspection result sheets are available



Operating environment:

- Windows®7 or Windows®10
- Microsoft Excel® 2003 or later
- Required memory: 512MB (min)
- Codevelopment: Aria Co., Ltd.

ACCESSORIES

Counters

3-Axis/2-Axis Counters

The display unit can be mounted on either side of the main body. Counters can be connected with data processors and digital printers via the RS-232C port.



3-axis counter

2-axis counter

XY Reset Switch

Can be attached to the main body to easily reset values while using the stage.



X/Y-axis

Counter Remote Switch

Enables remote control of the counter's RESET and SEND.



Digital Thermal Printer TSP743II

Connect to the MM-400N/800N control box to print out values from the counter.



TSP743II

Foot Switch

Used to send load command to DP-E1A. Frees both hands to enhance measurement efficiency.



Calibration Scale 300 mm

Used to calibrate feeding accuracy of stage up to 300 mm. The scale is made of low expansion glass to minimize thermal error. Both 10 mm-interval sensor patterns and calibrations are provided.

Accuracy: Within 1 μm against compensation values.



Vibration Isolation Table

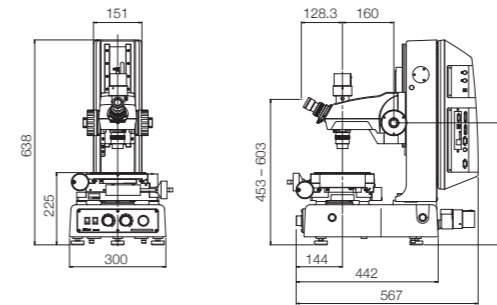
Provides a stable, even surface by reducing floor vibrations. Compatible with measuring microscopes, data processing systems, external light modulators, and computers.

	MM-400N/800N
Installation part (WxD)	450(W)×689(D)mm
Dimensions (WxDxH)	1058(W)×689(D)×751(H)mm

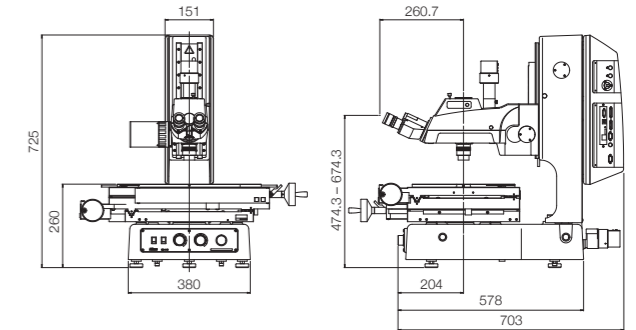


Dimensional Diagram

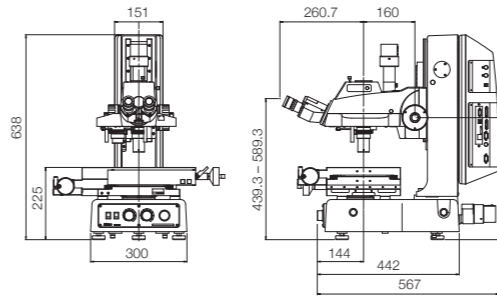
MM-400N/M
PS 2x2B Stage



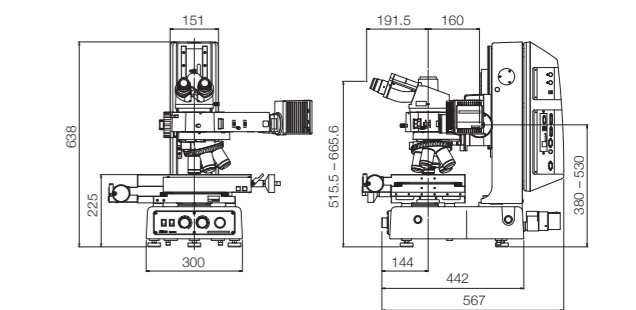
MM-800N/LM
PS 12x8C Stage



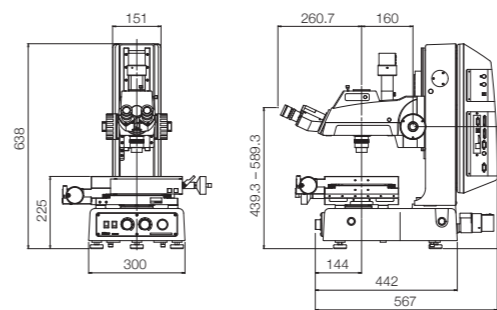
MM-400N/LV
PS 6x4B Stage



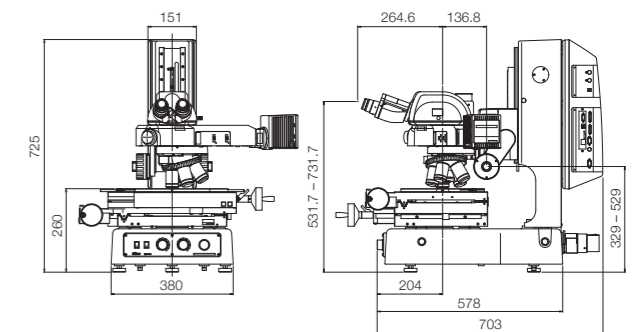
MM-400N/LUFA
PS 6x4B Stage



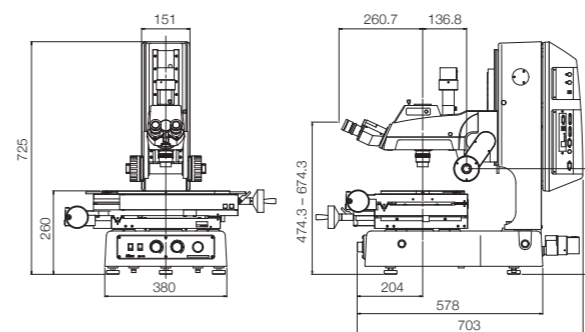
MM-400N/L
PS 4x4B Stage



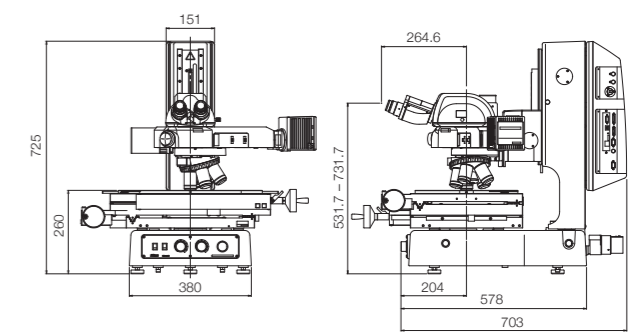
MM-800N/LU
PS 8x6B Stage



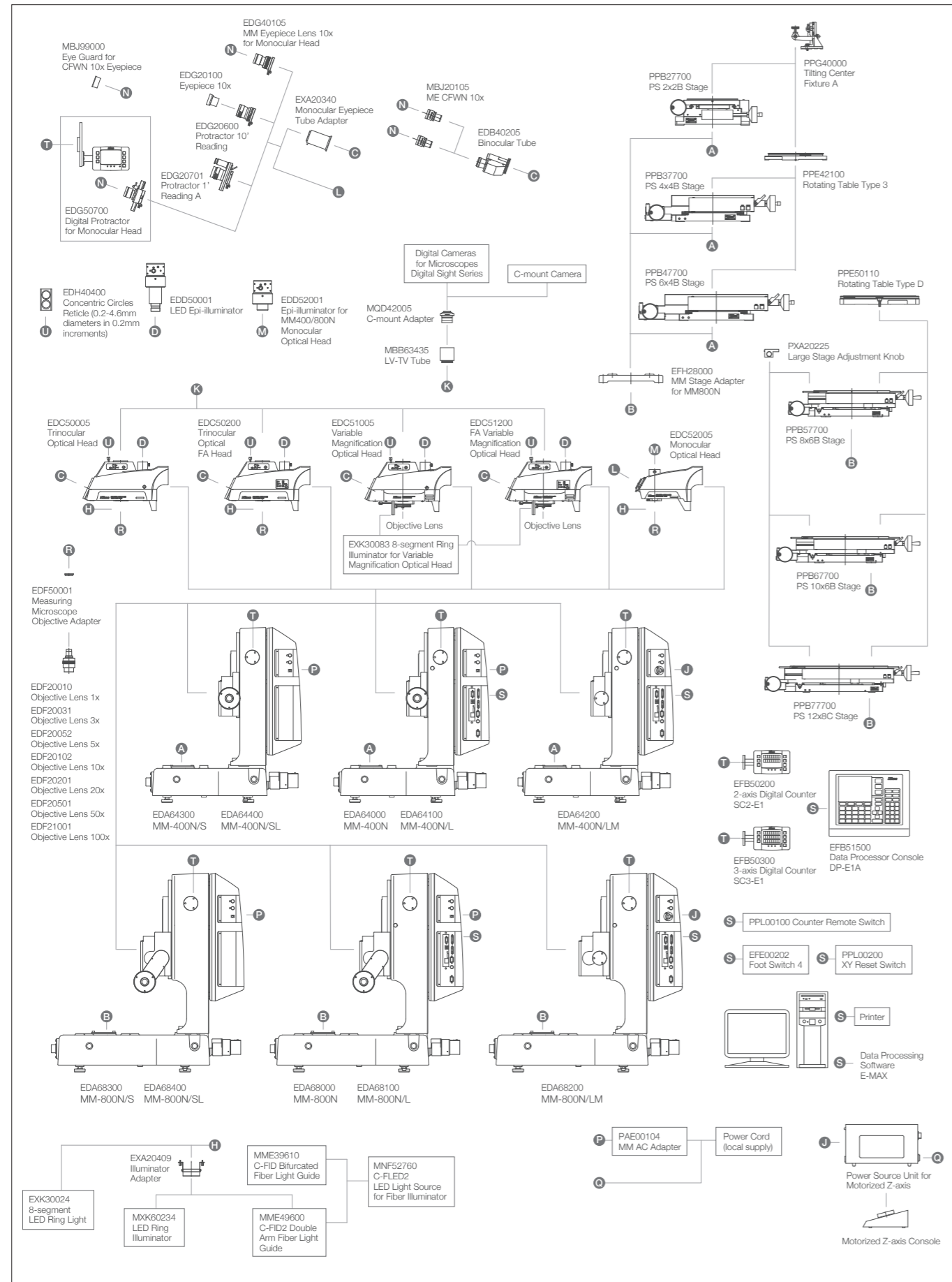
MM-800N/L
PS 10x6B Stage



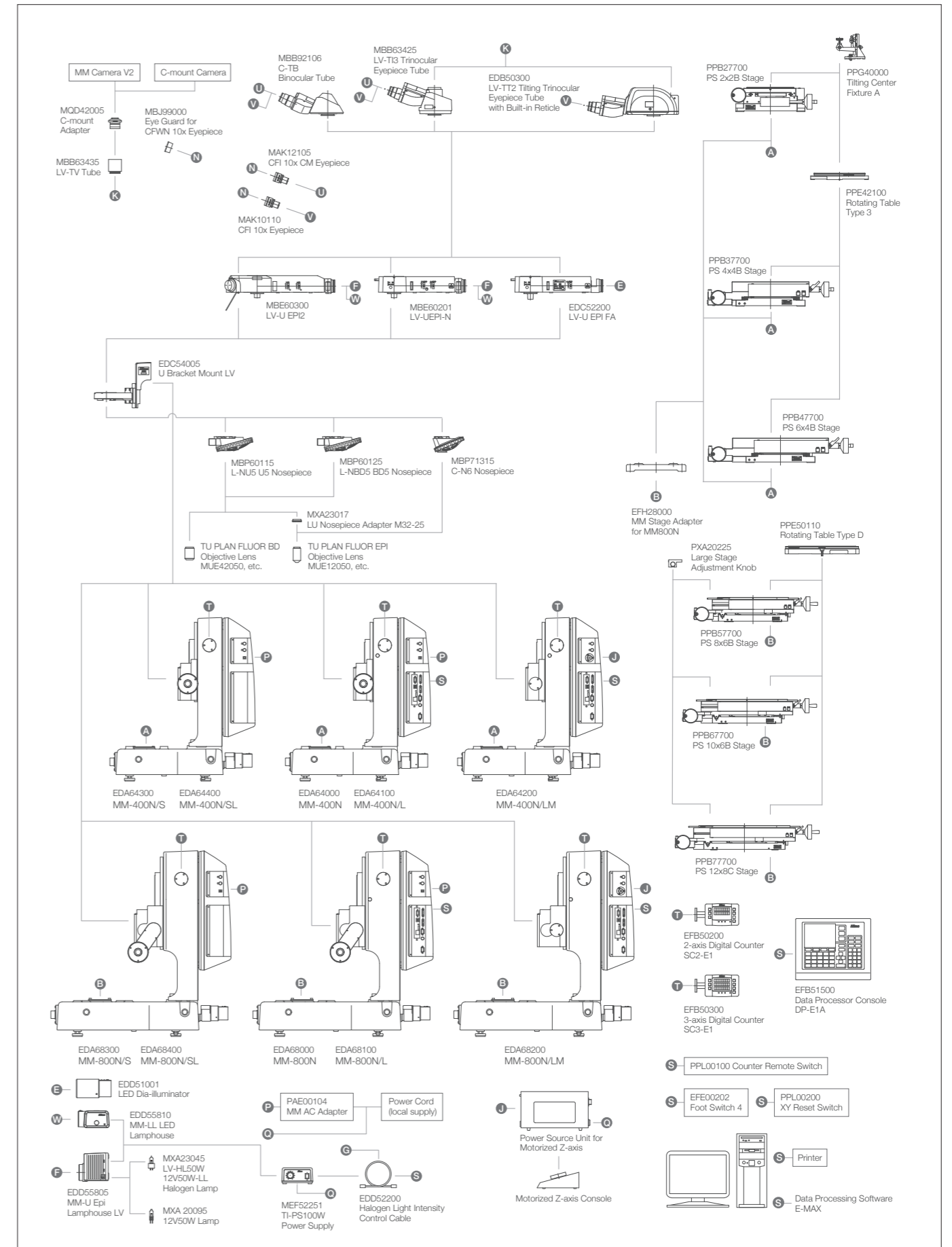
MM-800N/LMU
PS 12x8C Stage



System Diagram (MM-Type)



System Diagram (U-Type)



*Please contact Nikon sales for the combination of S/SL stand and DP-E1A.

LED Episcopic & Diascopic Illuminator is a Class 1 LED Product

CLASS 1 LED PRODUCT

8-segment LED Ring Light is a Class 2 LED Product

**CAUTION – CLASS 2 LED RADIATION
DO NOT STARE INTO THE BEAM**

ISO/IEC 17025 Certified

Nikon Corporation Industrial Metrology Business Unit is certified as an ISO/IEC 17025 accredited calibration laboratory for measuring microscopes and measuring projectors (profile projectors) by the Japan Accreditation Board for Conformity Assessment.

(ISO/IEC 17025: International standard, which specifies the general requirements to ensure that a laboratory is competent to carry out specific tests and/or calibrations)

Date of Initial accreditation:	September 8, 2006
Scope of accreditation:	Measuring microscopes
Accredited section:	Industrial Metrology Business Unit
Calibration site:	Customer's laboratory (field service)
Expanded Uncertainty:	X/Y-axis indication accuracy of measuring microscopes Linear scale up to 300 mm: $(0.70 + 5.0 \times 10^{-3} \times L) \mu\text{m}$

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*Products: Hardware and its technical information (including software)



WARNING TO ENSURE CORRECT USAGE, READ THE CORRESPONDING MANUALS CAREFULLY BEFORE USING THE EQUIPMENT.



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