

SMZ-140 Series

1:4 Zoom Ratio Stereomicroscope



SMZ-140 SCHEMATIC DIAGRAMS/SPECIFICATIONS

SMZ-140/143 SCHEMATIC DIAGRAMS

| SMZ-140-N2GG Binocular Stereomicroscope | SMZ-143-N2GG Trinocular Stereomicroscope |
|--|--|
| <p style="text-align: right;">Unit: mm</p> | <p style="text-align: right;">Unit: mm</p> |

| SMZ-140(60)-N2GG Binocular 60° Observation Stereomicroscope |
|---|
| <p style="text-align: right;">Unit: mm</p> |

SMZ-140/143 SPECIFICATIONS

| | |
|-------------------------------------|--|
| Microscope Body - Standard | |
| Optical System | Greenough Stereoscopic |
| Head Observations | Binocular 45° - [SMZ-140] Binocular 60° - [SMZ-140-60°] Trinocular 45° - [SMZ-143] - light distribution 50/50 via right eye tube/trinocular port |
| Interpupillary Adjustment | 54mm - 76mm |
| Diopter Adjustment [on eye tubes] | ± 5° |
| Zoom Ratio | 4 : 1 |
| Magnification Range | 10X - 40X |
| Objective | 1X |
| Working Distance | 80mm |
| Eyepieces | WF 10X/F.N.20 |
| Field of View Range | 20.0mm - 5.0mm |
| Microscope Body - Optional | |
| Magnification Range | 1.75X - 180X |
| Objectives | 0.3%X, 0.5X, 0.63X, 0.75X, 1.5X |
| Working Distance | 33.0mm - 200mm |
| Eyepieces | WF 5X/F.N.22, WF 15X/F.N.13, WF 20X/F.N.10, WF 30X/F.N.8 |
| Field of View Range | 62.9mm - 1.3mm |
| Documentation [SMZ-143 only] | |
| SLR Camera Adapter | 2.0X SLR Projection Lens |
| C-mount camera adapters | 0.4X, 0.5X |

FS01 - N2GG Arm [without illumination]



- Rack and pinion focusing mechanism
- Focus adjustment: 45mm
- Pole mount diameter: Ø 25mm
- Head mount diameter: Ø 74mm

FS02 - N2GG Arm [with illumination]



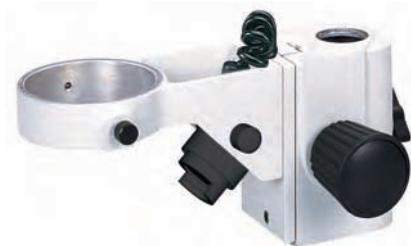
- Rack and pinion focusing mechanism
- Reflected halogen 12V / 15W illumination
- Focus adjustment: 45mm
- Pole mount diameter: Ø 25mm
- Head mount diameter: Ø 74mm

FS03 - FBGG [2111/2112] Arm [without illumination]



- V-frame, ball bearing focusing mechanism
- Focus adjustment: 50mm
- Pole mount diameter: Ø 32mm
- Head mount diameter: Ø 74mm

FS04 - FBGG [2111/2112] Arm [with illumination]

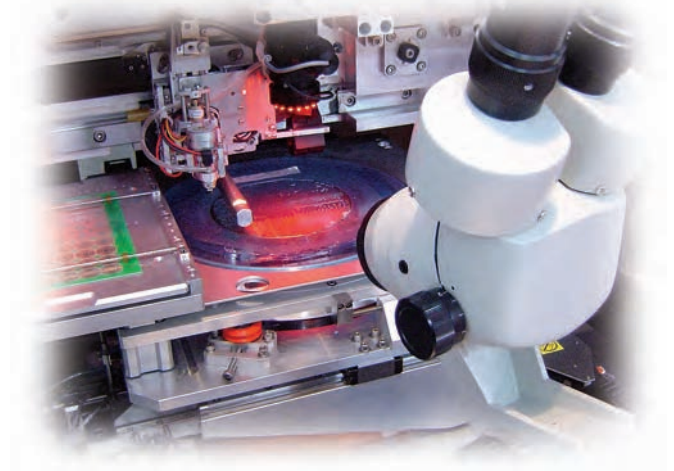


- V-frame, ball bearing focusing mechanism
- Reflected halogen 12V / 10W illumination
- Focus adjustment: 50mm
- Pole mount diameter: Ø 32mm
- Head mount diameter: Ø 74mm

FI01 - Industrial Arm



- V-frame, ball bearing focusing mechanism
- Illuminator port
- Focus Adjustment: 50mm
- Head mount diameter: Ø 74mm
- Nipple diameter: Ø 15.8mm
- Adjustment range: ± 90°



■ SMZ-140 and FS01: N2GG Arm on Die Bonder. Image courtesy of Lexus Automation.

2112 Large Working Area Incident Illumination Stand



- Width of surface: 330mm
- Length of surface: 280mm
- Height of pole: 291mm
- Mounting Diameter: Ø32mm

Manual Movement Stand



- Width of surface: 450mm
- Length of surface: 350mm
- X movement: 400mm
- Y movement: 210mm
- Lockable Movements

1105 Universal Stand



- Diameter of base: 200mm
- Height of pole: 350mm
- Horizontal movement: 260mm
- Mounting Diameter: Ø25mm

1105S Special Universal Stand



- Width of base: 250mm
- Length of base: 250mm
- Height of pole: 350mm
- Horizontal movement: 410mm
- Mounting Diameter: Ø25mm

1107 Articulating Arm Boom Stand



- Width of base: 300mm
- Length of base: 300mm
- Height of pole: 600mm
- Optical Centre Max: 780mm
- Mounting Diameter: Ø25mm

1108 Ball Bearing Boom Stand



- Width of base: 300mm
- Length of base: 300mm
- Height of pole: 600mm
- Optical Centre Max: 638mm
- Mounting Diameter: Ø25mm

1109 Articulating Arm Boom Stand



- Table Clamp Type
- Height of pole: 600mm
- Optical Centre Max: 780mm
- Mounting Diameter: Ø25mm

1110 Ball Bearing Boom Stand



- Table Clamp Type
- Height of pole: 600mm
- Optical Centre Max: 638mm
- Mounting Diameter: Ø25mm

2105I Industrial Arm Boom Stand



- Width of base: 250mm
- Length of base: 250mm
- Height of pole: 330mm
- Horizontal movement: 400mm
- Nipple Mount Diameter: Ø15.8mm

□ Some stands may not be available in your area. Please check with your local sales office.

SMZ-140/143 STANDS / ILLUMINATIONS

1104S Incident Illumination



- Length of base: 280mm
- Width of base: 220mm
- Height of pole: 245mm
- Mounting Diameter: Ø 25mm

FBGG Stand



- Large working area
- Mounting Diameter: Ø 32mm
- 12V / 10W halogen transmitted light [intensity control]
- Universal power input 110V - 220V

Fixed Mount Stand



- V-frame, ball bearing focusing mechanism
- Precentred optical center
- Length of base: 280mm
- Width of base: 330mm
- Head mount diameter: Ø 74mm
- Focus adjustment: 137mm

SMZ-140/143 AUXILIARY ILLUMINATION

K2401 FLUORESCENT RING ILLUMINATOR

- Colour Temperature: 6400K
- Even white light
- 12W power consumption
- 3 screw ring mount



MLC-150 COLD LIGHT SOURCE

- Colour Temperature Indication
- Colour Temperature Range: 2500K - 3200K
 - Above 5600K with blue filter
- Remote or local intensity control
- 21V / 150W switching power
- Filter holder
- 220(H) x 193(W) x 112(D) mm

LIGHT GUIDE OPTIONS

FLEXIBLE RING LIGHT GUIDE

- Length: 1,000mm
- Distal End Diameter: Ø 61mm



1-ARM GOOSENECK LIGHT GUIDE

- Length: 500mm
- Distal End Diameter: Ø 13mm



BIFURCATED GOOSENECK LIGHT GUIDE

- Length: 500mm [each arm]
- Distal End Diameter: Ø 9mm



□ Some illuminators and stands may not be available in your area. Please check with your local sales office.





SMZ-140/143 ACCESSORIES

AUXILIARY EYEPIECES

| | | | | | |
|--|---|---|---|-------------|-------------|
|  |  |  |  | Mag. | F.N. |
| | | | | WF 5X | 22 |
| | | | | WF 15X | 13 |
| | | | | WF 20X | 10 |
| | | | | WF 30X | 8 |

Mag. - Magnification, F.N. - Field Number

MICROMETER EYEPIECES

| | Description | Mag. | F.N. |
|---|---|--------|------|
|  | Graduated linear line and plain cross hair, point = 0.1mm/14mm | WF 10X | 20 |
|  | Graduated linear line, Point=0.2mm/14mm | WF 10X | 20 |
|  | 360° Protractor, 30° Increments | WF 10X | 20 |
|  | Graduated linear line and double cross hair, point = 0.1mm/10mm | WF 20X | 10 |

Mag. - Magnification, F.N. - Field Number

AUXILIARY OBJECTIVES

| | Mag. | W.D.(mm) |
|---|-------|----------|
|  | 0.35X | 200 |
|  | 0.5X | 133 |
|  | 0.63X | 110 |
|  | 0.75X | 89 |
|  | 1.5X | 33 |


Mag. - Magnification, W.D.- Working Distance

CAMERA ADAPTERS


| | | |
|---|---|---|
|  |  |  |
| 2X SLR Projection Lens [for 35mm SLR cameras] | 0.4X C-mount camera adapter [for 1/3" chip sensors] | 0.5X C-mount camera adapter [for 1/2" chip sensors] |

□ Some accessories may not be available in your area. Please check with your local sales office.


POLARISING EQUIPMENT

| | |
|--|---|
| <ul style="list-style-type: none"> ■ Base stand mountable 1-piece set ■ 360° independently rotary polariser [top] ■ 360° independently rotary analyser [bottom] |  |
|--|---|


POLARISING SET

| | |
|--|---|
| <ul style="list-style-type: none"> ■ Zoom body screw mount polariser ■ Base stand mountable 360° rotary analyser |  |
|--|---|

DARKFIELD ATTACHMENT

| | |
|---|--|
| <ul style="list-style-type: none"> ■ Conical glossy central stop for diffracted light observation ■ Iris diaphragm for controlling the shape of light ■ Base stand mountable |  |
|---|--|

GLIDING STAGE

| | |
|---|---|
| <ul style="list-style-type: none"> ■ Base stand mountable ■ Manual manipulation ■ 360° rotary for various observations |  |
|---|---|

MECHANICAL STAGE

| | |
|--|---|
| <ul style="list-style-type: none"> ■ Base stand mountable ■ Max. X distance: 75mm ■ Max. Y distance: 50mm ■ Dimension in mm: 222.8(W) x 170(L) x 29.5(H) |  |
|--|---|

JEWELLERY CLIP

| | |
|---|--|
| <ul style="list-style-type: none"> ■ Easily attachable for jewellery or mineral observation ■ Movable upon attachment |  |
|---|--|

SMZ-140/143 OPTICAL DATA

| Eyepiece | Mag. (X) | Standard Objectives | | Auxiliary Objectives | | | | | | | | | | | |
|----------|----------|---------------------|---------|----------------------|---------|----------|---------|----------|---------|---------|---------|---------|---------|--|--|
| | | | | 0.35X | | 0.5X | | 0.63X | | 0.75X | | 1.5X | | | |
| | | WD 80mm | | WD 200mm | | WD 133mm | | WD 110mm | | WD 89mm | | WD 33mm | | | |
| Mag. | FD (mm) | Mag. | FD (mm) | Mag. | FD (mm) | Mag. | FD (mm) | Mag. | FD (mm) | Mag. | FD (mm) | Mag. | FD (mm) | | |
| 5X/22 | 1 | 5.0 | 22.0 | 1.8 | 62.9 | 2.5 | 44.0 | 3.2 | 34.9 | 3.8 | 29.3 | 7.5 | 14.7 | | |
| | 2 | 10.0 | 11.0 | 3.5 | 31.4 | 5.0 | 22.0 | 6.3 | 17.5 | 7.5 | 14.7 | 15.0 | 7.3 | | |
| | 3 | 15.0 | 7.3 | 5.3 | 21.0 | 7.5 | 14.7 | 9.5 | 11.6 | 11.3 | 9.8 | 22.5 | 4.9 | | |
| | 4 | 20.0 | 5.5 | 7.0 | 15.7 | 10.0 | 11.0 | 12.6 | 8.7 | 15.0 | 7.3 | 30.0 | 3.7 | | |
| 10X/20 | 1 | 10.0 | 20.0 | 3.5 | 57.1 | 5.0 | 40.0 | 6.3 | 31.7 | 7.5 | 26.7 | 15.0 | 13.3 | | |
| | 2 | 20.0 | 12.0 | 7.0 | 28.6 | 10.0 | 20.0 | 12.6 | 15.9 | 15.0 | 13.3 | 30.0 | 6.7 | | |
| | 3 | 30.0 | 6.7 | 10.5 | 19.0 | 15.0 | 13.3 | 18.9 | 10.6 | 22.5 | 8.9 | 45.0 | 4.4 | | |
| | 4 | 40.0 | 5.0 | 14.0 | 14.3 | 20.0 | 10.0 | 25.2 | 7.9 | 30.0 | 6.7 | 60.0 | 3.3 | | |
| 15X/13 | 1 | 15.0 | 13.0 | 5.3 | 37.1 | 7.5 | 26.0 | 9.5 | 20.6 | 11.3 | 17.3 | 22.5 | 8.7 | | |
| | 2 | 30.0 | 6.5 | 10.5 | 18.6 | 15.0 | 13.0 | 18.9 | 10.3 | 22.5 | 8.7 | 45.0 | 4.3 | | |
| | 3 | 45.0 | 4.3 | 15.8 | 12.4 | 22.5 | 8.7 | 28.4 | 6.9 | 33.8 | 5.8 | 67.5 | 2.9 | | |
| | 4 | 60.0 | 3.3 | 21.0 | 9.3 | 30.0 | 6.5 | 37.8 | 5.2 | 45.0 | 4.3 | 90.0 | 2.2 | | |
| 20X/10 | 1 | 20.0 | 10.0 | 7.0 | 28.6 | 10.0 | 20.0 | 12.6 | 15.9 | 15.0 | 13.3 | 30.0 | 6.7 | | |
| | 2 | 40.0 | 5.0 | 14.0 | 14.3 | 20.0 | 10.0 | 25.2 | 7.9 | 30.0 | 6.7 | 60.0 | 3.3 | | |
| | 3 | 60.0 | 3.3 | 21.0 | 9.5 | 30.0 | 6.7 | 37.8 | 5.3 | 45.0 | 4.4 | 90.0 | 2.2 | | |
| | 4 | 80.0 | 2.5 | 28.0 | 7.1 | 40.0 | 5.0 | 50.4 | 4.0 | 60.0 | 3.3 | 120.0 | 1.7 | | |
| 30X/8 | 1 | 30.0 | 8.0 | 10.5 | 22.9 | 15.0 | 16.0 | 18.9 | 12.7 | 22.5 | 10.7 | 45.0 | 5.3 | | |
| | 2 | 60.0 | 4.0 | 21.0 | 11.4 | 30.0 | 8.0 | 37.8 | 6.3 | 45.0 | 5.3 | 90.0 | 2.7 | | |
| | 3 | 90.0 | 2.7 | 31.5 | 7.6 | 45.0 | 5.3 | 56.7 | 4.2 | 67.5 | 3.6 | 135.0 | 1.8 | | |
| | 4 | 120.0 | 2.0 | 42.0 | 5.7 | 60.0 | 4.0 | 75.6 | 3.2 | 90.0 | 2.7 | 180.0 | 1.3 | | |

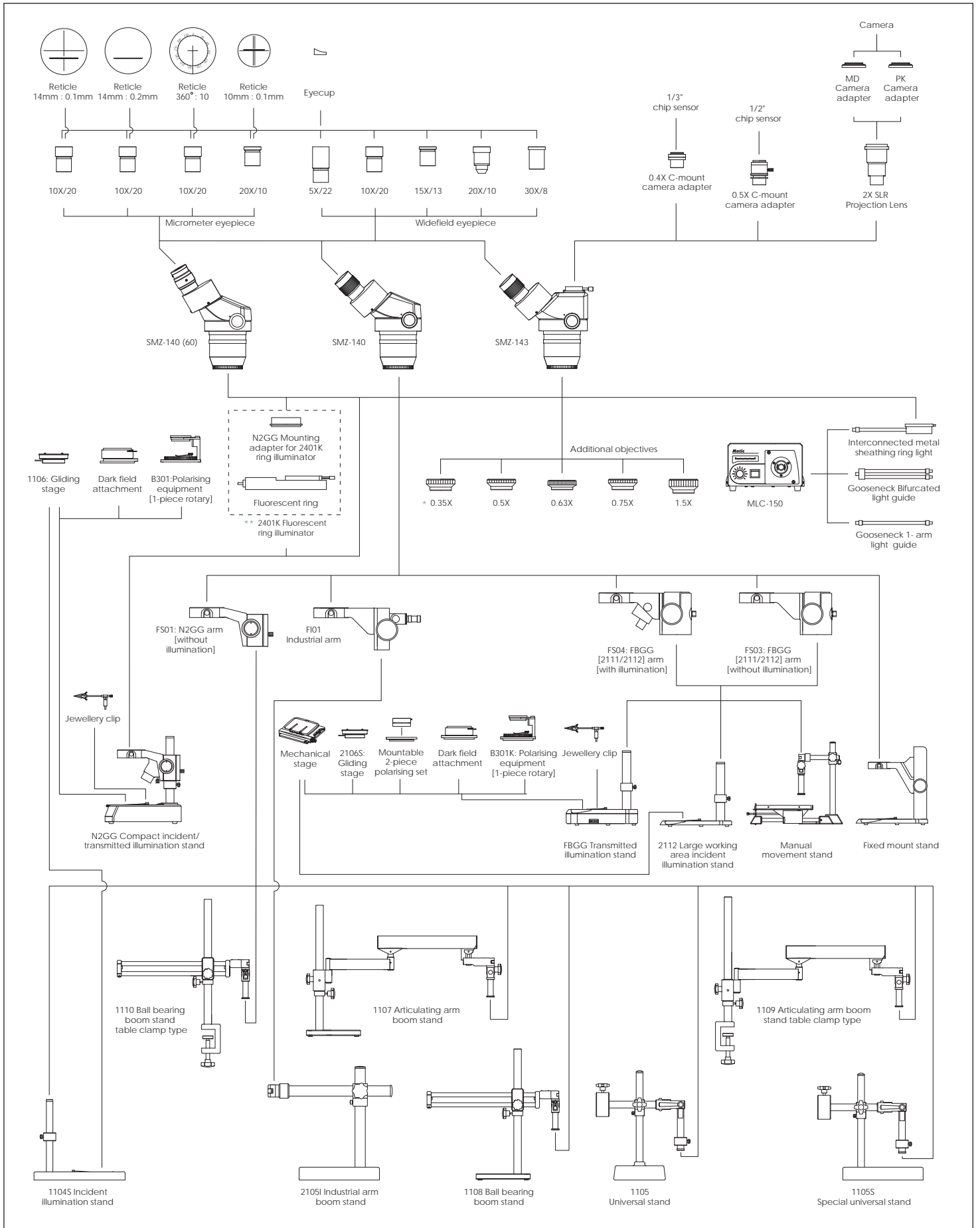
Note : "WD" represents Working Distance, "Mag." represents Magnification, "FD" represents Field Diameter.



□ SMZ-140/143 Digital Option

Available in two digital options for either simultaneous three visual outputs [DMW-143] or two megapixel USB 2.0 output [DM-143-B]. Please refer to our DMW-143 and DM-143-B brochures for further information.

SMZ-140/143 SYSTEM DIAGRAM



* Usage of 0.35X auxiliary objective requires a pole exceeding 250mm in height.
 ** When selecting the fluorescent ring illuminator, please note the country plug and voltage required.