

## FS70 MICROSCOPE

Ergonomic High-Power Microscope for Semiconductor Inspection

OPTICAL MEASURING





FS70Z



FS70L



FS70L4

## SPECIFICATIONS

| Model No.<br>Order No.                  | FS70<br>378-184-1   | FS70-TH<br>378-184-3  | FS70Z<br>378-185-1   | FS70Z-TH<br>378-185-3  | FS70L<br>378-186-1           | FS70L-TH<br>378-186-3  | FS70L4<br>378-187-1                           | FS70L4-TH<br>378-187-3  |
|---|---|-----------------------|----------------------|------------------------|------------------------------|------------------------|---|-------------------------|
| Short base model No.<br>Order No.       | FS70-S<br>378-184-2   | FS70-THS<br>378-184-4 | FS70Z-S<br>378-185-2 | FS70Z-THS<br>378-185-4 | FS70L-S<br>378-186-2         | FS70L-THS<br>378-186-4 | FS70L4-S<br>378-187-2                         | FS70L4-THS<br>378-187-4 |
| Focus adjustment                        | 50mm travel range with concentric coarse (3.8mm/rev) and fine (0.1mm/rev) focusing wheels (right / left)  |                       |                      |                        |                              |                        |   |                         |
| Image                                   | Erect image   |                       |                      |                        |                              |                        |   |                         |
| Pupil distance                          | Siedentopf type, adjustment range: 2 - 3" / 51 - 76mm   |                       |                      |                        |                              |                        |   |                         |
| Field number                            | 24  |                       |                      |                        |                              |                        |   |                         |
| Tilt angle                              | —   | 0° - 20°              | —                    | 0° - 20°               | —                            | 0° - 20°               | —   | 0° - 20°                |
| Optical pass ratio                      | 50/50   | 100/0 or 0/100        | 50/50                | 100/0 or 0/100         | 100/0 or 0/100               |                        | 100/0 or 0/100                                |                         |
| Protective filter                       | —   |                       | —                    |                        | Built-in laser beam filter   |                        | Built-in laser beam filter                    |                         |
| Tube lens                               | 1X  |                       | 1X - 2X zoom         |                        | 1X                           |                        | 1X  |                         |
| Applicable laser                        | —   |                       | —                    |                        | 1064/532/355nm               |                        | 532/266nm                                     |                         |
| Camera mount                            | C-mount (using optional adapter B)  |                       |                      |                        | Use a laser with TV port.    |                        | C-mount receptacle (with green filter switch) |                         |
| Illumination system, optional           | Reflective illumination for bright field (Koehler illumination, with aperture diaphragm)<br>12V 100W fiber optics, non-stepped adjustment, light guide length: 1.5m, power consumption 150W |                       |                      |                        |                              |                        |   |                         |
| Objective, optional (for observation)   | M Plan Apo, M Plan Apo SL, G Plan Apo   |                       |                      |                        |                              |                        |   |                         |
| Objective, optional (for laser-cutting) | —   |                       |                      |                        | MLCD Plan NIR, MLCD Plan NUV |                        | M Plan UV                                     |                         |
| Loading weight*                         | 32lbs/14.5kg  | 30lbs/13.6kg          | 31lbs/14.1kg         | 29lbs/13.2kg           | 31lbs/14.2kg                 | 30lbs/13.5kg           | 31lbs/13.9kg                                  | 29lbs/13.1kg            |
| Mass (main unit)                        | 13lbs/6.1kg   | 15.5lbs/7.1kg         | 14.5lbs/6.6kg        | 16.5lbs/7.5kg          | 14lbs/6.4kg                  | 15.5lbs/7.2kg          | 14.5lbs/6.7kg                                 | 16.5lbs/7.5kg           |

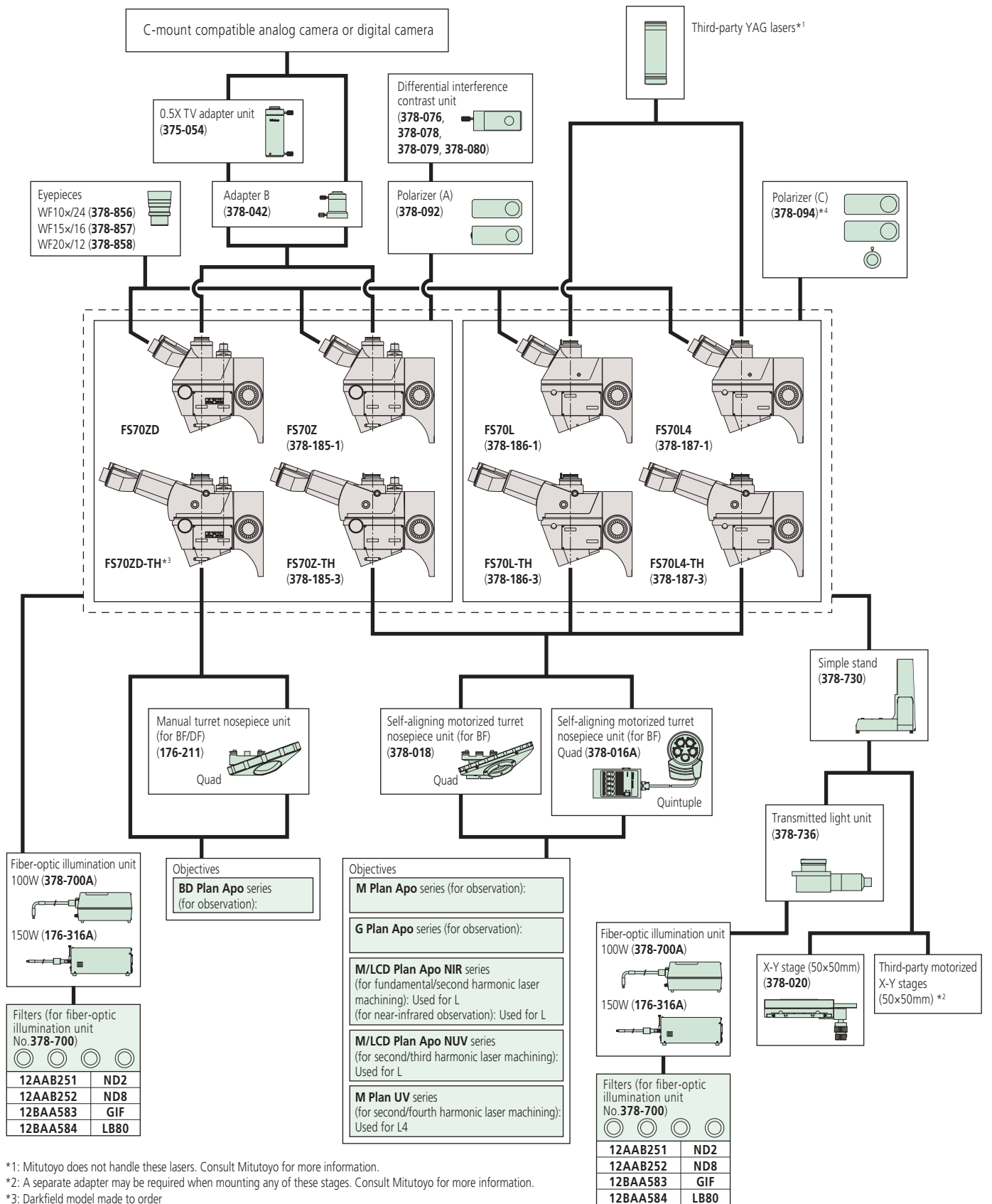
\*Loading weight on optical tube excluding weight of objective lenses and eyepieces.

### FS70 Series Features:

- Erect Image Trinocular (50/50, 100/100), Erect Image Tilting Trinocular (50/50)
- Mitutoyo Infinity Corrected Optics
- Siedentopf Design Trinocular Body Tube
- Widefield (FN=24) 10X Eyepieces
- Four Main Body Types:
  - FS70** - Main Body (Non-Laser) with 1X- tube lens
  - FS70Z** - Main Body (Non-Laser) with 1X-2X Zoom Magnification Changer
  - FS70L** - Main Body 1X for Three YAG Laser Wave lengths 1064/532/355nm\*
  - FS70L4** - Main Body 1X for Two Wave Length Ranges 532/266nm\*
- Brightfield Objective Magnification Selections from 1X to 200X
- Extra Long Working Distance Plan Apochromat Objectives
- Laser Cutting Objectives
- Long Working Distance Plan Objectives for IR, NIR, UV and NUV applications
- Differential Interference Contrast (DIC) Option for Nonlaser Configurations
- Reverse 4X Nosepiece
- Optional Motorized 4X Centerable Nosepiece
- Six-foot Cable Remote Intensity Control for Fiber Optic Illuminator
- Concentric Coarse and Fine Focus -0.1mm Rev /Fine Focus
- Manual Focus Block

\* Mitutoyo assumes no responsibility for the performance and/or safety of the laser system used with Mitutoyo microscopes.

# System diagram



\*1: Mitutoyo does not handle these lasers. Consult Mitutoyo for more information.

\*2: A separate adapter may be required when mounting any of these stages. Consult Mitutoyo for more information.

\*3: Darkfield model made to order

\*4: 378-093 for FS70-L

\*See Finescope Price List for complete list of accessories

# Optional Accessories for FS70

## Manual turret



| Order No.               | 378-018   | 378-211           |
|-------------------------|---|-------------------|
| Observation method      | Bright field  | Bright/dark field |
| No. of objective mounts | 4, with centering and parfocal adjustment (378-018) |                   |
| View field adjustment   | ±0.5mm  | —                 |
| Parfocal adjustment     | ±0.5mm  | —                 |
| Mass                    | 1.9kg   | 1.2kg             |

## Polarizer and analyzer

For simplified polarized-light observation. Also suitable for enhancing contrast of low-magnification objectives.



For FS70Z  
378-092

For FS70L4  
378-094

## DIC unit

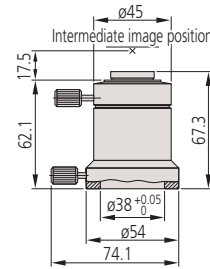
Used for differential interference contrast observation in conjunction with the polarizer.



| Order No. | Magnification      |
|-----------|--------------------|
| 378-076   | 100X, SL80X, SL50X |
| 378-078   | 50X, SL20X         |
| 378-079   | 20X                |
| 378-080   | 10X, 5X            |

## Adapter B

Used for mounting a C-mount camera.

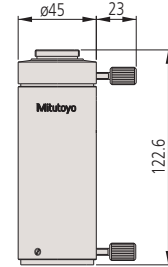


378-042 Mass: 170g

## 0.5X TV adapter unit

Allows observation over a wide field of view on the monitor (2X wide) due to the 0.5X relay optics.

It is used in conjunction with the optional adapter B.

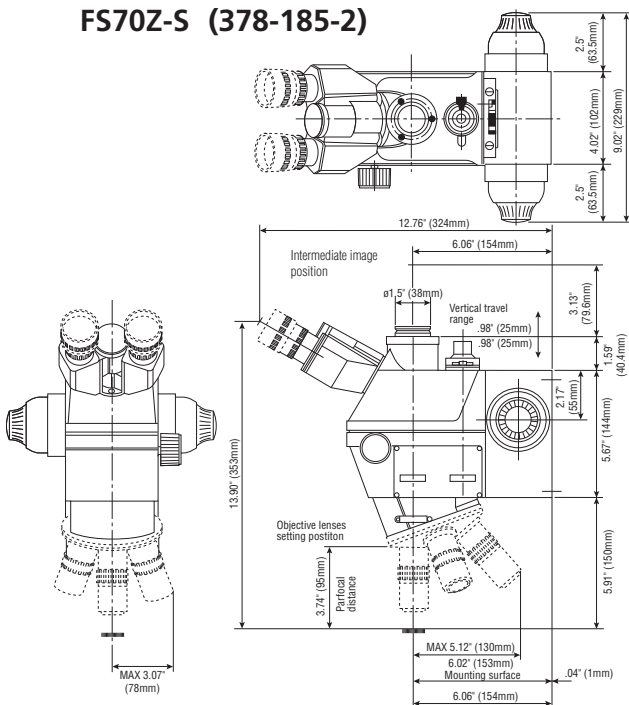


378-054  
View field of image: ø11mm  
Mass: 300g

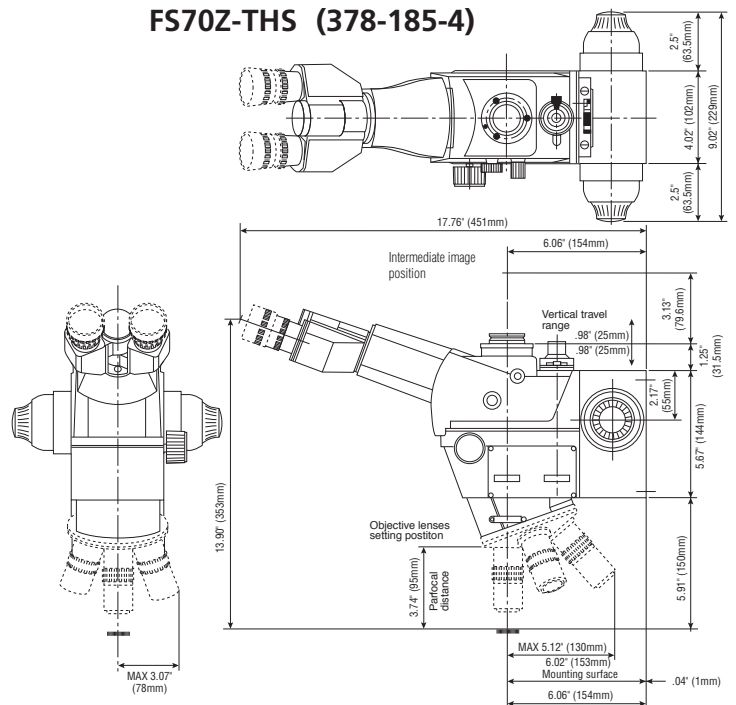
# Dimensions

## Finescope FS70 Zoom Models

### FS70Z-S (378-185-2)



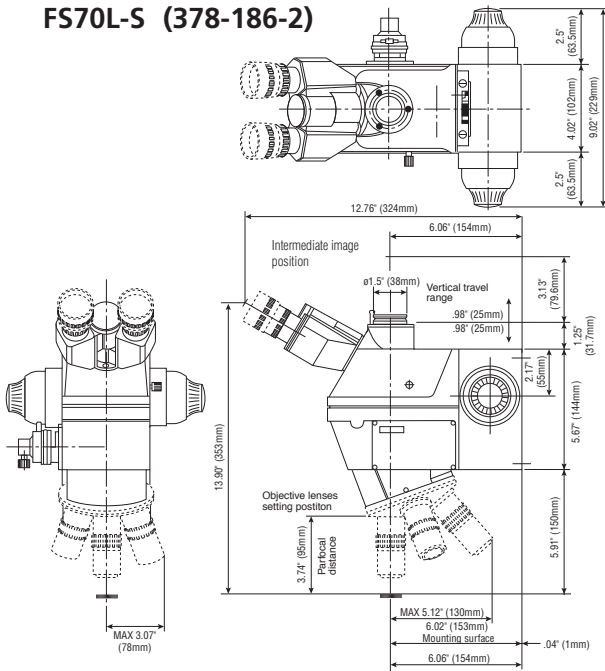
### FS70Z-THS (378-185-4)



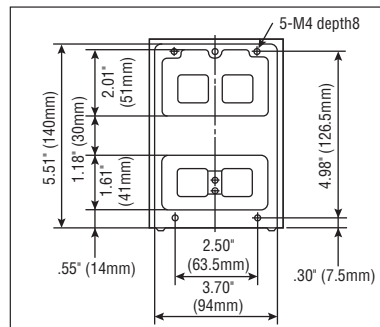
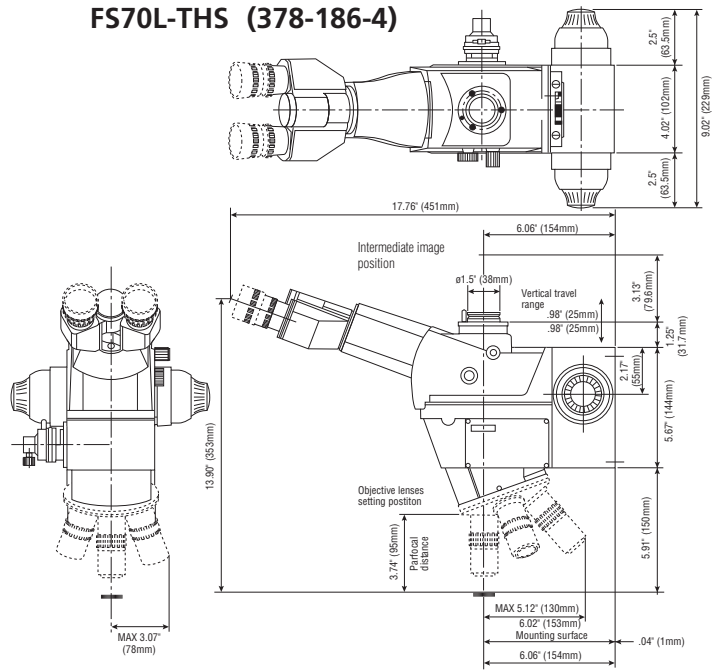


# Finescope FS70L & FS70L4 for laser applications

### FS70L-S (378-186-2)

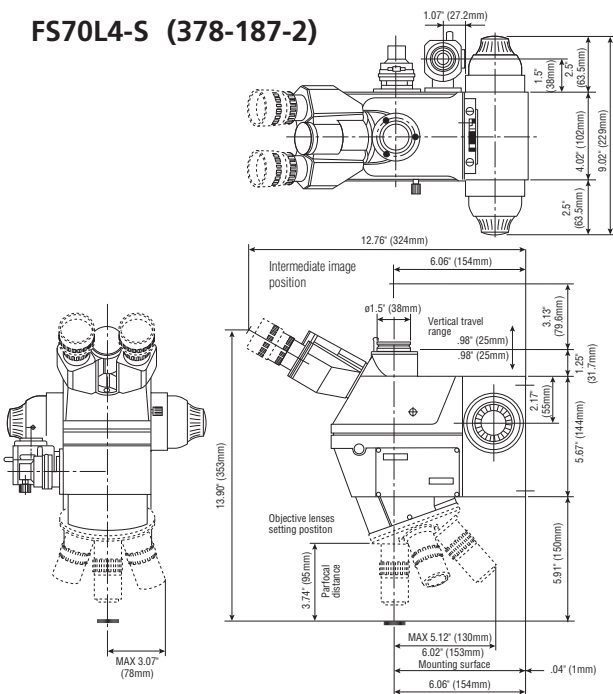


### FS70L-THS (378-186-4)

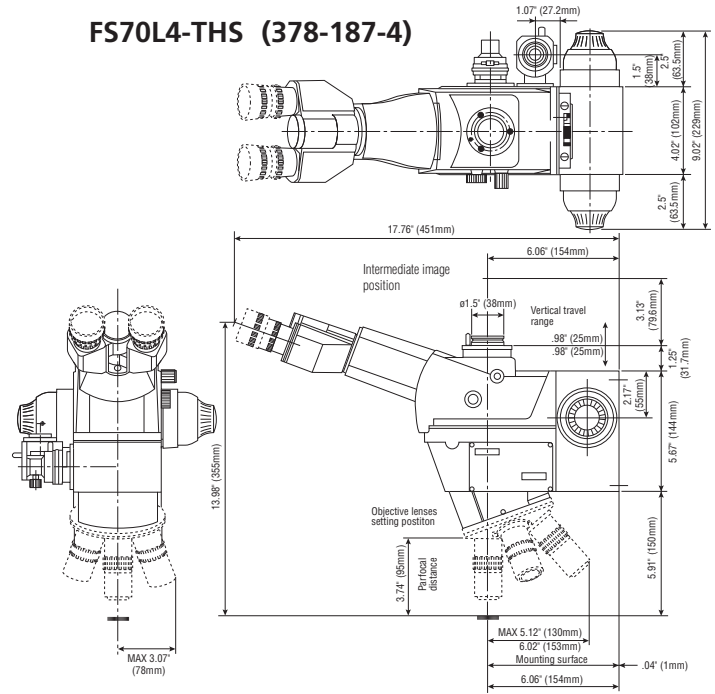


All models

### FS70L4-S (378-187-2)



### FS70L4-THS (378-187-4)





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