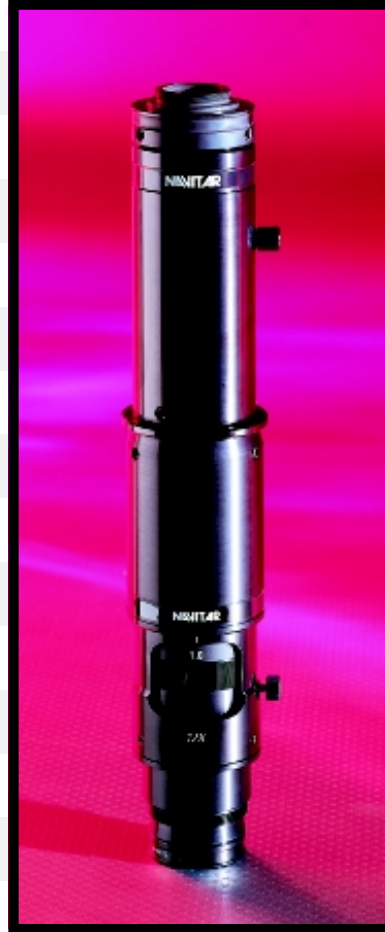


- Incredible 12X (0.58-7X) magnification for inspection of a wider range of parts.
- Telecentric attachment gives you the world's first parfocal telecentric zoom lens with field coverage up to 50 mm.
- Increased resolution with 0.018-0.1 N.A.
- Variable working distance from 37 to 334 mm.
- Field of view from 0.01 mm to 83 mm with attachments.
- Unmatched edge flatness and clarity.
- Works with 1/4", 1/3", 1/2" and 2/3" format cameras.
- The 12X Zoom System utilizes existing Zoom 6000 adapter tubes.



12X Zoom



12X Zoom

12X Zoom Field of View Matrix (in mm)

12X Zoom

| Lens Attachment | Working Distance | Camera Formats/ Parameters | .67X Adapter Low - High | 1X Adapter Low - High | 2X Adapter Low - High | Resolvable Features (microns) Low - High | Depth of Field (mm) Low - High |
|-----------------|------------------|----------------------------|-------------------------|-----------------------|-----------------------|--|--------------------------------|
| 0.25X | — | Mag. | 0.10X - 1.20X | 0.15X - 1.80X | 0.29X - 3.50X | 36 - 7 | 47.84 - 1.61 |
| | 334 | Field 1/4" | 41.16 - 3.40 | 27.60 - 2.28 | 13.79 - 1.14 | 36 - 7 | 47.84 - 1.61 |
| | 334 | Field 1/3" | 61.73 - 5.10 | 41.38 - 3.42 | 20.69 - 1.71 | 36 - 7 | 47.84 - 1.61 |
| | 334 | Field 1/2" | 82.32 - 6.80 | 55.16 - 4.56 | 27.58 - 2.28 | 36 - 7 | 47.84 - 1.61 |
| | 334 | Field 2/3" | (1) 72.00 - 9.35 | 75.88 - 6.28 | 37.94 - 3.14 | 36 - 7 | 47.84 - 1.61 |
| | 334 | O-I | 608 | 640 | 668 | 36 - 7 | 47.84 - 1.61 |
| 0.5X | — | Mag. | 0.20X - 2.40X | 0.29X - 3.50X | 0.58X - 7.00X | 18 - 3 | 11.93 - 0.40 |
| | 160 | Field 1/4" | 20.58 - 1.70 | 13.79 - 1.14 | 6.90 - 0.76 | 18 - 3 | 11.93 - 0.40 |
| | 160 | Field 1/3" | 30.87 - 2.55 | 20.69 - 1.71 | 10.34 - 0.86 | 18 - 3 | 11.93 - 0.40 |
| | 160 | Field 1/2" | 41.16 - 3.40 | 27.58 - 2.28 | 13.79 - 1.14 | 18 - 3 | 11.93 - 0.40 |
| | 160 | Field 2/3" | (1) 36.0 - 4.68 | 37.94 - 3.14 | 18.97 - 1.57 | 18 - 3 | 11.93 - 0.40 |
| | 160 | O-I | 428 | 460 | 488 | 18 - 3 | 11.93 - 0.40 |
| 0.75X | — | Mag. | 0.29X - 3.50X | 0.44X - 5.30X | 0.87X - 10.50X | 12 - 2 | 5.32 - 0.18 |
| | 107 | Field 1/4" | 13.72 - 1.14 | 9.19 - 0.76 | 4.60 - 0.38 | 12 - 2 | 5.32 - 0.18 |
| | 107 | Field 1/3" | 20.58 - 1.70 | 13.79 - 1.14 | 6.89 - 0.57 | 12 - 2 | 5.32 - 0.18 |
| | 107 | Field 1/2" | 27.44 - 2.27 | 18.34 - 1.52 | 9.19 - 0.76 | 12 - 2 | 5.32 - 0.18 |
| | 107 | Field 2/3" | (1) 24.30 - 3.12 | 25.30 - 2.09 | 12.64 - 1.05 | 12 - 2 | 5.32 - 0.18 |
| | 107 | O-I | 373 | 404 | 433 | 12 - 2 | 5.32 - 0.18 |
| None | — | Mag. | 0.39X - 4.70X | 0.58X - 7.00X | 1.16X - 14.00X | 9 - 2 | 2.98 - 0.10 |
| | 86 | Field 1/4" | 10.29 - 0.85 | 6.90 - 0.57 | 3.45 - 0.29 | 9 - 2 | 2.98 - 0.10 |
| | 86 | Field 1/3" | 15.44 - 1.28 | 10.34 - 0.86 | 5.18 - 0.43 | 9 - 2 | 2.98 - 0.10 |
| | 86 | Field 1/2" | 20.58 - 1.70 | 13.79 - 1.14 | 6.90 - 0.57 | 9 - 2 | 2.98 - 0.10 |
| | 86 | Field 2/3" | (1) 18.20 - 2.34 | 18.97 - 1.57 | 9.49 - 0.78 | 9 - 2 | 2.98 - 0.10 |
| | 86 | O-I | 344 | 376 | 404 | 9 - 2 | 2.98 - 0.10 |
| 1.5X | — | Mag. | 0.58X - 7.00X | 0.87X - 10.50X | 1.74X - 21.00X | 6 - 1 | 1.35 - 0.05 |
| | 50 | Field 1/4" | 6.86 - 0.57 | 4.60 - 0.38 | 2.30 - 0.19 | 6 - 1 | 1.35 - 0.05 |
| | 50 | Field 1/3" | 10.29 - 0.85 | 6.89 - 0.57 | 3.45 - 0.29 | 6 - 1 | 1.35 - 0.05 |
| | 50 | Field 1/2" | 13.72 - 1.13 | 9.19 - 0.76 | 4.60 - 0.38 | 6 - 1 | 1.35 - 0.05 |
| | 50 | Field 2/3" | (1) 12.20 - 1.55 | 12.64 - 1.05 | 6.33 - 0.52 | 6 - 1 | 1.35 - 0.05 |
| | 50 | O-I | 317 | 349 | 377 | 6 - 1 | 1.35 - 0.05 |
| 2.0X | — | Mag. | 0.78X - 9.40X | 1.16X - 14.00X | 2.32X - 28.00X | 5 - 1 | 0.75 - 0.03 |
| | 37 | Field 1/4" | 5.14 - 0.43 | 3.45 - 0.29 | 1.73 - 0.15 | 5 - 1 | 0.75 - 0.03 |
| | 37 | Field 1/3" | 7.72 - 0.64 | 5.18 - 0.43 | 2.59 - 0.22 | 5 - 1 | 0.75 - 0.03 |
| | 37 | Field 1/2" | 10.29 - 0.85 | 6.90 - 0.57 | 3.45 - 0.29 | 5 - 1 | 0.75 - 0.03 |
| | 37 | Field 2/3" | (1) 9.10 - 1.17 | 9.49 - 0.78 | 4.75 - 0.40 | 5 - 1 | 0.75 - 0.03 |
| | 37 | O-I | 304 | 335 | 364 | 5 - 1 | 0.75 - 0.03 |

(1) Zoom Setting at 0.9X.



12X UltraZoom

Combine Infinity-Corrected Objectives for Maximum Resolution and Magnification

The 12X UltraZoom (1-50502) is a high performance system ideal for semiconductor inspection or other high magnification applications. Its advanced design offers high resolution and outstanding contrast. This system incorporates infinity corrected objectives to provide long working distances and excellent edge flatness and clarity. The system's resolution exceeds 1,650 lines per mm, depending on the objective used. The UltraZoom is also available with fine focus (1-50504) or with fine focus and co-axial illumination (1-50503).

12X UltraZoom Field of View Matrix for 1-50502, 1-50503 and 1-50504 (mm)

| Objective Lens (Mitutoyo) Ultra Long W.D. | Working Distance | Camera Formats/ Parameters | 1X Adapter Low - High | 2X Adapter Low - High |
|---|---------------------|-------------------------------|--------------------------|--------------------------|
| 2X 0.055 NA 1-60758 | — | Mag. | 0.52X - 6.40X | 1.04X - 12.80X |
| | 34 | Field 1/4" | 7.69 - 0.63 | 3.85 - 0.31 |
| | 34 | Field 1/3" | 11.54 - 0.94 | 5.77 - 0.47 |
| | 34 | Field 1/2" | 15.38 - 1.25 | 7.69 - 0.63 |
| | 34 | Field 2/3" | 21.15 - 1.72 | 10.58 - 0.86 |
| 5X 0.14 NA 1-60226 | — | Mag. | 1.30X - 16.00X | 2.60X - 32.00X |
| | 34 | Field 1/4" | 3.08 - 0.25 | 1.54 - 0.13 |
| | 34 | Field 1/3" | 4.62 - 0.38 | 2.31 - 0.19 |
| | 34 | Field 1/2" | 6.15 - 0.50 | 3.08 - 0.25 |
| | 34 | Field 2/3" | 8.46 - 0.69 | 4.23 - 0.34 |
| 10X 0.28 NA 1-60227 | — | Mag. | 2.60X - 32.00X | 5.20X - 64.00X |
| | 33 | Field 1/4" | 1.54 - 0.13 | 0.77 - 0.06 |
| | 33 | Field 1/3" | 2.31 - 0.19 | 1.15 - 0.09 |
| | 33 | Field 1/2" | 3.08 - 0.25 | 1.54 - 0.13 |
| | 33 | Field 2/3" | 4.23 - 0.34 | 2.12 - 0.17 |
| 20X 0.42 NA 1-60228 | — | Mag. | 5.20X - 64.00X | 10.40X - 128.00X |
| | 20 | Field 1/4" | 0.77 - 0.06 | 0.38 - 0.03 |
| | 20 | Field 1/3" | 1.15 - 0.09 | 0.58 - 0.05 |
| | 20 | Field 1/2" | 1.54 - 0.13 | 0.77 - 0.06 |
| | 20 | Field 2/3" | 2.12 - 0.17 | 1.06 - 0.09 |
| 50X 0.55 NA 1-60229 | — | Mag. | 13.00X - 160.00X | 26.00X - 320.00X |
| | 13 | Field 1/4" | 0.31 - 0.03 | 0.15 - 0.01 |
| | 13 | Field 1/3" | 0.46 - 0.04 | 0.23 - 0.02 |
| | 13 | Field 1/2" | 0.62 - 0.05 | 0.31 - 0.03 |
| | 13 | Field 2/3" | 0.85 - 0.07 | 0.42 - 0.04 |