

Zoom 6000

Field of View Matrix

Zoom 6000 Field of View Matrix (in mm at nominal W.D.)

Lens Attachment	Working Distance (mm)	Camera Format/Parameters	.5X Adapter Low - High	.67X Adapter Low - High	1X Adapter Low - High	1.33X Adapter Low - High	2X Adapter Low - High	3.3X Adapter Low - High	5X Adapter Low - High	Resolve Limit (microns) Low-High	Depth of Field (mm) Low-High
0.25X 0.006 - 0.018 1-6044	356 (nominal) 220-390 (1) W.D. range	Mag.	0.09X - 0.56X	0.12X - 0.75X	0.18X - 1.13X	0.24X - 1.5X	0.35X - 2.25X	0.59X - 3.73X	0.88X - 5.62X	55.56 - 18.52	13.89 - 1.54
		Field 1/4"	45.70 - 7.12	34.03 - 5.33	22.85 - 3.56	17.18 - 2.68	11.42 - 1.78	6.92 - 1.08	4.54 - 0.72	55.56 - 18.52	13.89 - 1.54
		Field 1/3"	68.64 - 10.64	51.12 - 8.04	34.32 - 5.32	25.80 - 4.0	17.16 - 2.66	10.4 - 1.61	6.88 - 1.08	55.56 - 18.52	13.89 - 1.54
		Field 1/2"	91.36 - 14.16	68.06 - 10.66	45.68 - 7.08	34.34 - 5.32	22.84 - 3.54	13.84 - 2.14	9.12 - 1.44	55.56 - 18.52	13.89 - 1.54
		Field 2/3"	91.40 - 19.52	93.62 - 14.66	62.84 - 9.76	47.25 - 7.34	31.42 - 4.88	19.04 - 2.96	12.56 - 1.96	55.56 - 18.52	13.89 - 1.54
0.5X 0.011 - 0.035 1-60110	175 (nominal) 143-187 (1) W.D. range	Mag.	0.18X - 1.13X	0.24X - 1.50X	0.35X - 2.25X	0.46X - 2.99X	0.70X - 4.50X	1.16X - 7.4X	1.75X - 11.25X	30.30 - 9.52	4.13 - 0.41
		Field 1/4"	22.85 - 3.56	17.02 - 2.66	11.42 - 1.78	8.59 - 1.34	5.71 - 0.89	3.46 - 0.54	2.28 - 0.36	30.30 - 9.52	4.13 - 0.41
		Field 1/3"	34.32 - 5.32	25.56 - 4.0	17.16 - 2.67	12.90 - 2.01	8.58 - 1.33	5.20 - 0.81	3.43 - 0.53	30.30 - 9.52	4.13 - 0.41
		Field 1/2"	45.68 - 7.08	34.03 - 5.33	22.85 - 3.56	17.18 - 2.68	11.42 - 1.77	6.92 - 1.08	4.57 - 0.71	30.30 - 9.52	4.13 - 0.41
		Field 2/3"	45.70 - 9.76	46.81 - 7.33	31.43 - 4.89	23.63 - 3.68	15.71 - 2.44	9.52 - 1.48	6.29 - 0.98	30.30 - 9.52	4.13 - 0.41
0.75X 0.017 - 0.053 1-60111	113 (nominal) 100-119 (1) W.D. range	Mag.	0.27X - 1.69X	0.35X - 2.25X	0.53X - 3.38X	0.70X - 4.49X	1.05X - 6.75X	1.75X - 11.15X	2.63X - 16.88X	19.60 - 6.28	1.73 - 0.18
		Field 1/4"	15.22 - 2.38	11.34 - 1.78	7.61 - 1.19	5.72 - 0.89	3.81 - 0.59	2.31 - 0.34	1.52 - 0.24	19.60 - 6.28	1.73 - 0.18
		Field 1/3"	22.86 - 3.56	17.04 - 2.67	11.43 - 1.78	8.59 - 1.34	5.72 - 0.89	3.46 - 0.54	2.29 - 0.35	19.60 - 6.28	1.73 - 0.18
		Field 1/2"	30.46 - 4.74	22.69 - 3.56	15.23 - 2.37	11.45 - 1.78	7.62 - 1.19	4.62 - 0.72	3.05 - 0.47	19.60 - 6.28	1.73 - 0.18
		Field 2/3"	30.50 - 6.52	31.21 - 4.89	20.95 - 3.26	15.75 - 2.45	10.48 - 1.63	6.35 - 0.99	4.19 - 0.65	19.60 - 6.28	1.73-0.18
None 0.023 - 0.071	92 (nominal) 81-93 (1) W.D. range	Mag.	0.35X - 2.25X	0.47X - 3.00X	0.70X - 4.50X	0.93X - 5.89X	1.40X - 9.00X	2.31X - 14.85X	3.50X - 22.50X	14.50 - 4.70	0.95 - 0.10
		Field 1/4"	11.42 - 1.78	8.51 - 1.33	5.71 - 0.89	4.29 - 0.67	2.86 - 0.45	1.73 - 0.27	1.14 - 0.18	14.50 - 4.70	0.95 - 0.10
		Field 1/3"	17.16 - 2.67	12.77 - 2.01	8.58 - 1.33	6.45 - 1.0	4.29 - 0.67	2.60 - 0.40	1.72 - 0.27	14.50 - 4.70	0.95 - 0.10
		Field 1/2"	22.85 - 3.56	17.01 - 2.67	11.42 - 1.77	8.59 - 1.33	5.71 - 0.89	3.46 - 0.54	2.28 - 0.36	14.50 - 4.70	0.95 - 0.10
		Field 2/3"	22.90 - 4.89	23.40 - 3.65	15.71 - 2.44	11.81 - 1.83	7.86 - 1.22	4.76 - 0.74	3.14 - 0.49	14.50 - 4.70	0.95 - 0.10
1.5X 0.034 - 0.106 1-60112	51 (nominal) 48-52 (1) W.D. range	Mag.	0.53X - 3.38X	0.71X - 4.50X	1.05X - 6.75X	1.40 - 8.98	2.10X - 13.50X	3.47X - 22.28X	5.25X - 33.75X	9.80 - 3.14	0.43 - 0.04
		Field 1/4"	7.61 - 1.19	5.67 - 0.89	3.81 - 0.59	2.86 - 0.44	1.91 - 0.30	1.15 - 0.18	0.76 - 0.12	9.80 - 3.14	0.43 - 0.04
		Field 1/3"	11.43 - 1.78	8.52 - 1.33	5.72 - 0.89	4.3 - 0.67	2.86 - 0.44	1.73 - 0.27	1.14 - 0.18	9.80 - 3.14	0.43 - 0.04
		Field 1/2"	15.23 - 2.37	11.34 - 1.77	7.62 - 1.19	5.73 - 0.89	3.81 - 0.59	2.31 - 0.36	1.52 - 0.24	9.80 - 3.14	0.43 - 0.04
		Field 2/3"	15.00 - 3.26	15.60 - 2.44	10.48 - 1.63	7.88 - 1.22	5.24 - 0.81	3.18 - 0.49	2.10 - 0.33	9.80 - 3.14	0.43 - 0.04
2.0X 0.040 - 0.142 1-60113	36 (nominal) 34-37 (1) W.D. range	Mag.	0.70X - 4.50X	0.94X - 6.00X	1.40X - 9.00X	1.86X - 11.97X	2.80X - 18.00X	4.62X - 29.7X	7.00X - 45.00X	7.24 - 2.34	0.24 - 0.02
		Field 1/4"	5.71 - 0.89	4.26 - 0.67	2.86 - 0.45	2.15 - 0.34	1.43 - 0.23	0.87 - 0.14	0.57 - 0.09	7.24 - 2.34	0.24 - 0.02
		Field 1/3"	8.58 - 1.33	6.39 - 1.00	4.29 - 0.67	3.22 - 0.50	2.15 - 0.33	1.30 - 0.14	0.86 - 0.13	7.24 - 2.34	0.24 - 0.02
		Field 1/2"	11.42 - 1.77	8.51 - 1.33	5.71 - 0.89	4.29 - 0.67	2.86 - 0.44	1.73 - 0.27	1.14 - 0.18	7.24 - 2.34	0.24 - 0.02
		Field 2/3"	11.40 - 2.44	11.70 - 1.83	7.86 - 1.22	5.91 - 0.92	3.93 - 0.61	2.38 - 0.37	1.57 - 0.24	7.24 - 2.34	0.24 - 0.02

The above fields of view are measured diagonally in millimeters (Horizontal = Diagonal x 0.8 and Vertical = Diagonal x 0.6).
 (1) Working distance range when using 12 mm fine focus. Field of view will change with shorter or longer working distances.
 N.A. varies depending in system magnification.

Zoom 6000 UltraZoom

Field of View Matrix

Zoom 6000 UltraZoom Field of View Matrix
(for part number's 1-60190, 1-60191, 1-60349 and 1-60350 in mm)

Objective Lens (Mitutoyo) Long WD	Working Distance	Camera Format/ Parameters	1X Adapter Low - High	1.33X Adapter Low - High	2X Adapter Low - High	3.3X Adapter Low - High
5X 0.14 NA* 1-60226	34	Mag.	1.74X - 11.43X	2.3X - 15.0X	3.48X - 22.86X	5.74X - 37.72X
		Field 1/4"	2.30 - 0.35	1.74 - 0.26	1.15 - 0.17	0.70 - 0.11
		Field 1/3"	3.45 - 0.52	2.61 - 0.40	1.72 - 0.26	1.05 - 0.16
		Field 1/2"	(1) 4.05 - 0.70	3.48 - 0.54	2.30 - 0.35	1.38 - 0.21
		Field 2/3"	(1) 4.02 - 0.96	4.0 - 0.74	3.16 - 0.48	1.91 - 0.29
10X 0.28 NA* 1-60227	33	Mag.	3.48X - 22.86X	4.63X - 29.9X	6.96X - 45.72X	11.48X - 75.44X
		Field 1/4"	1.15 - 0.17	0.86 - 0.13	0.57 - 0.09	0.35 - 0.05
		Field 1/3"	1.72 - 0.26	1.30 - 0.20	0.86 - 0.13	0.52 - 0.08
		Field 1/2"	(1) 2.10 - 0.35	1.73 - 0.27	1.15 - 0.17	0.70 - 0.11
		Field 2/3"	(1) 2.10 - 0.48	2.10 - 0.37	1.58 - 0.24	0.95 - 0.15
20X 0.42 NA* 1-60228	20	Mag.	6.96X - 45.72X	9.3X - 59.9X	13.92X - 91.40X	22.97X - 150.88X
		Field 1/4"	0.57 - 0.09	0.43 - 0.07	0.29 - 0.04	0.17 - 0.03
		Field 1/3"	0.86 - 0.13	0.65 - 0.10	0.43 - 0.07	0.26 - 0.04
		Field 1/2"	(1) 1.0 - 0.17	0.86 - 0.14	0.57 - 0.09	0.35 - 0.05
		Field 2/3"	(1) 1.03 - 0.24	1.0 - 0.19	0.79 - 0.12	0.47 - 0.07
50X 0.55 NA* 1-60229	13	Mag.	17.40X - 114.30X	23X-150X	34.80X - 228.60X	57.42X - 377.19X
		Field 1/4"	0.23 - 0.03	0.17 - 0.03	0.11 - 0.02	0.07 - 0.01
		Field 1/3"	0.30 - 0.05	0.26 - 0.04	0.17 - 0.03	0.09 - 0.015
		Field 1/2"	(1) 0.31 - 0.07	0.30 - 0.05	0.23 - 0.04	0.13 - 0.02
		Field 2/3"	(1) 0.30 - 0.10	0.30 - 0.07	(1) 0.30 - 0.05	0.18 - 0.03

(1) Entire zoom range is not used.
*N.A. at full zoom. N.A. varies with zoom settings.

Zoom 6000 Internal Co-axial Zoom

Field of View Matrix

Field of View Matrix for Internal Co-axial Zoom 1-60123 (in mm)

Lens Attachment	Working Distance (mm)	Camera Format/Parameters	.5X Adapter Low - High	.67X Adapter Low - High	1X Adapter Low - High	1.33X Adapter Low - High	2X Adapter Low - High	3.3X Adapter Low - High	5X Adapter Low - High	Resolve Limit (microns) Low-High	Depth of Field (mm) Low-High
None 0.023 - 0.071	92 (nominal)	Mag.	0.35X - 2.25X	0.47X - 3.00X	0.70X - 4.50X	0.93X - 5.89X	1.40X - 9.00X	2.31X - 15.75X	3.50X - 22.50X	14.50 - 4.70	0.95 - 0.10
		Field 1/4"	11.42 - 1.78	8.51 - 1.33	5.71 - 0.89	4.29 - 0.67	2.86 - 0.45	1.73 - 0.27	1.14 - 0.18	14.50 - 4.70	0.95 - 0.10
	81-93 (1) W.D. range	Field 1/3"	17.16 - 2.67	12.77 - 2.01	8.58 - 1.33	6.45 - 1.0	4.29 - 0.67	2.60 - 0.40	1.72 - 0.27	14.50 - 4.70	0.95 - 0.10
		Field 1/2"	22.85 - 3.56	17.01 - 2.67	11.42 - 1.77	8.59 - 1.33	5.71 - 0.89	3.46 - 0.54	2.28 - 0.36	14.50 - 4.70	0.95 - 0.10
		Field 2/3"	22.90 - 4.89	23.40 - 3.65	15.71 - 2.44	11.81 - 1.83	7.86 - 1.22	4.76 - 0.74	3.14 - 0.49	14.50 - 4.70	0.95 - 0.10
1.5X 0.034 - 0.106 1-60112	51 (nominal)	Mag.	0.53X - 3.38X	0.71X - 4.50X	1.05X - 6.75X	1.40 - 8.98	2.10X - 13.50X	3.46X - 22.28X	5.25X - 33.75X	9.80 - 3.14	0.43 - 0.04
		Field 1/4"	7.61 - 1.19	5.67 - 0.89	3.81 - 0.59	2.86 - 0.44	1.91 - 0.30	1.15 - 0.18	0.76 - 0.12	9.80 - 3.14	0.43 - 0.04
	48-52 (1) W.D. range	Field 1/3"	11.43 - 1.78	8.52 - 1.33	5.72 - 0.89	4.3 - 0.67	2.86 - 0.44	1.73 - 0.27	1.14 - 0.18	9.80 - 3.14	0.43 - 0.04
		Field 1/2"	15.23 - 2.37	11.34 - 1.77	7.62 - 1.19	5.73 - 0.89	3.81 - 0.59	2.29 - 0.36	1.52 - 0.24	9.80 - 3.14	0.43 - 0.04
		Field 2/3"	15.00 - 3.26	15.60 - 2.44	10.48 - 1.63	7.88 - 1.22	5.24 - 0.81	3.15 - 0.49	2.10 - 0.33	9.80 - 3.14	0.43 - 0.04
2.0X 0.040 - 0.142 1-60113	36 (nominal)	Mag.	0.70X - 4.50X	0.94X - 6.00X	1.40X - 9.00X	1.86X - 11.97X	2.80X - 18.00X	4.62X - 29.7X	7.00X - 45.00X	7.24 - 2.34	0.24 - 0.02
		Field 1/4"	5.71 - 0.89	4.26 - 0.67	2.86 - 0.45	2.15 - 0.34	1.43 - 0.23	0.87 - 0.14	0.57 - 0.09	7.24 - 2.34	0.24 - 0.02
	34-37 (1) W.D. range	Field 1/3"	8.58 - 1.33	6.39 - 1.00	4.29 - 0.67	3.22 - 0.50	2.15 - 0.33	1.30 - 0.20	0.86 - 0.13	7.24 - 2.34	0.24 - 0.02
		Field 1/2"	11.42 - 1.77	8.51 - 1.33	5.71 - 0.89	4.29 - 0.67	2.86 - 0.44	1.73 - 0.27	1.14 - 0.18	7.24 - 2.34	0.24 - 0.02
		Field 2/3"	11.40 - 2.44	11.70 - 1.83	7.86 - 1.22	5.91 - 0.92	3.93 - 0.61	2.38 - 0.37	1.57 - 0.24	7.24 - 2.34	0.24 - 0.02

IMPORTANT NOTE: The internal coax will illuminate a circular area of about 11 mm in diameter. Any field of view larger than 11 mm will have darkened corners.
(1) Working distance range when using 3 mm fine focus.
(2) Entire zoom range is not used.