12X Zoom Performance Specifications

12X Zoom Combinations Lens Attachment, Prime Lens & Adapter	Working Distance (mm)	System Mag. Low-High	NA Objective Low-High	Resolve Limit Low-High (µm)	Matching Pixel Size Low-High (µm)	Depth of Field Low-High (mm)
0.25x + 12X Zoom + 0.5x	341	0.07 - 0.87	0.005 - 0.025	66.66 - 13.34	2.33 - 5.8	20.00 - 0.80
0.25x + 12X Zoom + 0.67x	341	0.10 - 1.17	0.005 - 0.025	66.66 - 13.34	3.33 - 7.80	20.00 - 0.80
0.25x + 12X Zoom + 1.0x	341	0.15 - 1.75	0.005 - 0.025	66.66 - 13.34	5.00 - 11.67	20.00 - 0.80
0.25x + 12X Zoom + 1.33x	341	0.19 - 2.33	0.005 - 0.025	66.66 - 13.34	6.33 - 15.54	20.00 - 0.80
0.25x + 12X Zoom + 2.0x	341	0.29 - 3.50	0.005 - 0.025	66.66 - 13.34	9.67 - 23.34	20.00 - 0.80
0.25x + 12X Zoom + 3.3x	341	0.48 - 5.78	0.005 - 0.025	66.66 - 13.34	16.59 - 40.53	20.00 - 0.80
0.5x + 12X Zoom + 0.5x	165	0.14 - 1.75	0.009 - 0.051	37.04 - 6.66	2.59 - 5.82	6.17 - 0.19
0.5x + 12X Zoom + 0.67x	165	0.19 - 2.35	0.009 - 0.051	37.04 - 6.66	3.60 - 7.68	6.17 - 0.19
0.5x + 12X Zoom + 1.0x	165	0.29 - 3.50	0.009 - 0.051	37.04 - 6.66	5.38 - 11.45	6.17 - 0.19
0.5x + 12X Zoom + 1.33x	165	0.39 - 4.66	0.009 - 0.051	37.04 - 6.66	7.22 - 15.51	6.17 - 0.19
0.5x + 12X Zoom + 2.0x	165	0.58 - 7.00	0.009 - 0.051	37.04 - 6.66	10.74 - 22.89	6.17 - 0.19
0.5x + 12X Zoom + 3.3x	165	0.96 - 11.55	0.009 - 0.051	37.04 - 6.66	16.64 - 50.60	6.17 - 0.19
0.75x + 12X Zoom + 0.5x	108	0.22 - 2.62	0.014 - 0.076	23.80 - 4.44	2.61 - 5.81	2.55 - 0.09
0.75x + 12X Zoom + 0.67x	108	0.29 - 3.52	0.014 - 0.076	23.80 - 4.44	3.45 - 7.73	2.55 - 0.09
0.75x + 12X Zoom + 1.0x	108	0.44 - 5.25	0.014 - 0.076	23.80 - 4.44	5.24 - 11.52	2.55 - 0.09
0.75x + 12X Zoom + 1.33x	108	0.58 - 6.98	0.014 - 0.076	23.80 - 4.44	6.90 - 15.49	2.55 - 0.09
0.75x + 12X Zoom + 2.0x	108	0.87 - 10.50	0.014 - 0.076	23.80 - 4.44	10.35 - 23.05	2.55 - 0.09
0.75x + 12X Zoom + 3.3x	108	1.44 - 17.33	0.014 - 0.076	23.80 - 4.44	16.62 - 46.34	2.55 - 0.09
None + 12X Zoom + 0.5x	86	0.29 - 3.49	0.019 - 0.101	18.52 - 3.34	2.68 - 5.82	1.39 - 0.05
None + 12X Zoom + 0.67x	86	0.39 - 4.69	0.019 - 0.101	18.52 - 3.34	3.42 - 7.74	1.39 - 0.05
None + 12X Zoom + 1.0x	86	0.58 - 7.00	0.019 - 0.101	18.52 - 3.34	5.09 - 11.55	1.39 - 0.05
None + 12X Zoom + 1.33x	86	0.77 - 9.31	0.019 - 0.101	18.52 - 3.34	7.13 - 15.54	1.39 - 0.05
None + 12X Zoom + 2.0x	86	1.16 - 14.00	0.019 - 0.101	18.52 - 3.34	10.17 - 23.10	1.39 - 0.05
None + 12X Zoom + 3.3x	86	1.91 - 23.10	0.019 - 0.101	18.52 - 3.34	16.60 - 40.54	1.39 - 0.05
1.5x + 12X Zoom + 0.5x	50	0.43 - 5.23	0.028 - 0.151	12.34 - 2.24	2.65 - 5.85	0.64 - 0.02
1.5x + 12X Zoom + 0.67x	50	0.58 - 7.04	0.028 - 0.151	12.34 - 2.24	3.45 - 7.78	0.64 - 0.02
1.5x + 12X Zoom + 1.0x	50	0.87 - 10.50	0.028 - 0.151	12.34 - 2.24	5.18 - 11.60	0.64 - 0.02
1.5x + 12X Zoom + 1.33x	50	1.16 - 14.00	0.028 - 0.151	12.34 - 2.24	7.15 - 15.68	0.64 - 0.02
1.5x + 12X Zoom + 2.0x	50	1.74 - 21.00	0.028 - 0.151	12.34 - 2.24	10.74 - 23.34	0.64 - 0.02
1.5x + 12X Zoom + 3.3x	50	2.87 - 34.65	0.028 - 0.151	12.34 - 2.24	16.62 - 40.77	0.64 - 0.02
2.0x + 12X Zoom + 0.5x	37	0.58 - 6.98	0.038 - 0.202	9.00 - 1.66	2.61 - 5.79	0.35 - 0.01
2.0x + 12X Zoom + 0.67x	37	0.78 - 9.38	0.038 - 0.202	9.00 - 1.66	3.42 - 7.79	0.35 - 0.01
2.0x + 12X Zoom + 1.0x	37	1.16- 14.00	0.038 - 0.202	9.00 - 1.66	5.09 - 11.62	0.35 - 0.01
2.0x + 12X Zoom + 1.33x	37	1.54 - 18.60	0.038 - 0.202	9.00 - 1.66	6.93 - 15.43	0.35 - 0.01
2.0x + 12X Zoom + 2.0x	37	2.32 - 28.00	0.038 - 0.202	9.00 - 1.66	10.17 - 23.24	0.35 - 0.01
2.0x + 12X Zoom + 3.3x	37	3.83 - 46.20	0.038 - 0.202	9.00 - 1.66	16.56 - 36.04	0.35 - 0.01

Assumptions:
1. Minimum resolvable feature size is half of the threshold line pair limit. Calculation = 1/(3000 x Lens NA)
2. Matching pixel size is that which will permit the minimum feature size to overlap two pixels. Calculation = 1/2(Feature Size x System Magnification)
3. If the matching pixel size is greater than the camera pixel size, the system is "lens limited.", if less than the camera pixel size, the system is "camera limited."