12X Zoom
Performance Specifications

12X Zoom Combinations Lens Attach. + Prime Lens + Adapter	Working Distance	System Mag.		N.A. Objective		Resolve Limit micron		Matching Pixel Size microns		Depth of Field	
		Low Mag.	High Mag.	Low Mag.	High Mag.	Low Mag.	High Mag.	Low Mag.	High Mag.	Low Mag.	High Mag.
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 + 3.5x	341	0.51	6.13	0.005	0.025	66.66	13.34	16.99	40.88	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 + 3.5x	165	1.02	12.30	0.009	0.051	37.04	6.66	18.89	40.95	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 + 3.5x	108	1.53	18.40	0.014	0.076	23.80	4.44	18.20	40.84	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 + 3.5x	86	2.03	24.50	0.019	0.101	18.52	3.34	18.79	40.91	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 + 3.5x	50	3.05	36.80	0.028	0.151	12.34	2.24	18.81	41.21	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 + 3.5x	37	4.06	49.00	0.038	0.202	9.00	1.66	18.27	40.67	0.35	0.01

Assumptions:

1. Minimum resolvable feature size is half of the threshold line pair limit. Calculation = 1/(3000 x Lens N.A.)

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."

4. If the matching pixel size is less than the camera pixel size, the system is "camera limited."