

3D Optical Profilers

Objective Lenses Specifications



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The S neox and S neox Five Axis systems use premium CF60-2 Nikon objectives lenses that have been designed to correct chromatic aberrations and produce sharp, flat and clear images with high contrast and high resolution. Phase Fresnel lenses improve the operability and the working distance, meaning that S line objectives provide the largest available working distance for each NA.

The S line also uses interferometric objectives. The TI series are based on Michelson interferometer. They have an external reference mirror mounted on two tip-tilt screws. The DI series are Mirau objectives that creates the interference internally by dividing the wavefront with a beamsplitter. The TI series are used for low magnification and numerical aperture, being ideal objectives for the measurement of very flat at and thin samples. The DI series can have up to 0.55NA.

Bright field objective lenses

Magnification	NA	WD (mm)	FOV (μm)	Spatial Sampling (μm)	Optical Resolution Green (μm)	Optical Resolution Blue (μm)	Optical Resolution Red (μm)	Optical Resolution White (μm)	Maximum Slope ($^{\circ}$)	System Noise (nm)
1X EPI	0.03	3.80	16891 x 14131	6,90	5,41	4,68	6,43	5,85	2	-
2.5X EPI	0.075	6.50	6756 x 5652	2,76	2,16	1,87	2,57	2,34	4	300
5X EPI	0.15	23.50	3378 x 2826	1,38	1,08	0,94	1,29	1,17	9	100
10X EPI	0.30	17.50	1689 x 1413	0,69	0,54	0,47	0,64	0,58	17	30
20X EPI	0.45	4.50	845 x 707	0,34	0,36	0,31	0,43	0,39	27	8
50X EPI	0.80	1.00	338 x 283	0,13	0,20	0,18	0,24	0,22	53	4
50X EPI	0.80	2.00	338 x 283	0,13	0,20	0,18	0,24	0,22	53	4
50X EPI	0.95	0.35	338 x 283	0,13	0,17	0,15	0,20	0,18	72	3
100X EPI	0.90	1.00	169 x 141	0,07	0,18	0,16	0,21	0,19	64	3
100X EPI	0.90	2.00	169 x 141	0,07	0,18	0,16	0,21	0,19	64	3
100X EPI	0.95	0.32	169 x 141	0,07	0,17	0,15	0,20	0,18	72	2
150X EPI	0.90	1.50	113 x 94	0,05	0,18	0,156	0,21	0,19	64	2
150X EPI	0.95	0.20	113 x 94	0,05	0,17	0,148	0,20	0,18	72	1
20X ELWD	0.40	19.00	845 x 707	0,34	0,41	0,35	0,48	0,44	24	10
50X ELWD	0.60	11.00	338 x 283	0,13	0,27	0,23	0,32	0,29	37	5
100X ELWD	0.80	4.50	169 x 141	0,07	0,20	0,18	0,24	0,22	53	3
10X SLWD	0.20	37.00	1689 x 1413	0,69	0,81	0,70	0,96	0,88	12	50
20X SLWD	0.30	30.00	845 x 707	0,35	0,54	0,47	0,64	0,58	17	20
50X SLWD	0.40	22.00	338 x 283	0,13	0,41	0,35	0,48	0,44	24	15
100X SLWD	0.60	10.00	169 x 141	0,07	0,27	0,23	0,32	0,29	37	10

The highest quality objective lenses, the highest quality performance

Water immersion objective lenses

Magnification	NA	WD (mm)	FOV (µm)	Spatial Sampling (µm)	Optical Resolution Green (µm)	Optical Resolution Blue (µm)	Optical Resolution Red (µm)	Optical Resolution White (µm)	Maximum Slope (°)
10X WI	0.30	3.50	1689 x 1413	0,69	0,54	0,47	0,64	0,58	17
20X WI	0.50	2.00	845 x 707	0,35	0,32	0,28	0,39	0,35	30
63X WI	1.00	2.00	268 x 224	0,11	0,16	0,14	0,19	0,18	90

Collar ring depth focusing correction objective lenses

Magnification	NA	WD (mm)	FOV (µm)	Spatial Sampling (µm)	Optical Resolution Green (µm)	Optical Resolution Blue (µm)	Optical Resolution Red (µm)	Optical Resolution White (µm)	Maximum Slope (°)
20X EPI CR	0.45	10.9 – 10.0	845 x 707	0,35	0,36	0,31	0,43	0,39	27
50X EPI CR	0.70	3.9 – 3.0	338 x 283	0,138	0,23	0,20	0,28	0,25	44
100X EPI CRA	0.85	1.2 – 0.85	169 x 141	0,07	0,19	0,17	0,23	0,21	58
100X EPI CRB	0.85	1.3 – 0.95	169 x 141	0,07	0,19	0,17	0,23	0,21	58

Interferometry objective lenses

Magnification	NA	WD (mm)	FOV (µm)	Spatial Sampling (µm)	Optical Resolution Green (µm)	Optical Resolution Blue (µm)	Optical Resolution Red (µm)	Optical Resolution White (µm)	Maximum Slope (°)
2.5X TI *	0.075	10.30	6756 x 5652	2,76	2,16	1,87	2,57	2,34	4
5X TI	0.13	9.30	3378 x 2826	1,38	1,25	1,08	1,48	1,35	7
10X DI	0.30	7.40	1689 x 1413	0,69	0,54	0,47	0,64	0,58	17
20X DI	0.40	4.70	845 x 707	0,35	0,41	0,35	0,48	0,44	24
50X DI	0.55	3.40	338 x 283	0,13	0,30	0,26	0,35	0,32	33
100X DI	0.70	2.00	169 x 141	0,07	0,23	0,20	0,28	0,25	44

Vertical resolution

PSI/ePSI 0.1 nm (0.01 nm with PZT *)

VSI 1 nm



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