








Selected Objective	Standard Magnification Colour	Refractive index (n) of immersion medium in front of objective	Lateral resolution (μm) $d = 0.61 \lambda / \text{NA}$	Axial resolution (μm) $(z_{\text{min}}) = 2n\lambda / \text{NA}^2$	Visual depth of field, DoF (μm) object side = $(\lambda n / 2\text{NA}_{\text{obj}}^2 + n \cdot 75 / \text{Mag}_{\text{TOT}} \cdot \text{NA}_{\text{obj}})$	Approximate depth of field, DoF (μm) $(= n\lambda / 2\text{NA}^2)$	Approximate depth of focus (mm) image side = $([\lambda n / \text{NA}_{\text{obj}}^2] \times \text{Mag}_{\text{TOT}}^2)$	Brightness factor $(\text{NA}^4 / \text{M}_{\text{obj}}^2) \times 10^4$	Optical Index $\text{NA} \times 1000 / \text{Mag}_{\text{obj}}$	Example Working Distance (mm)
40x / NA 1.30 oil		n = 1.518 (oil)	0.23	0.88	0.4	0.2	70	17.9	32.5	Plan-neofluar = 0.16 mm Plan-apochromat = 0.21 mm
40x / NA 1.40 oil		n = 1.518 (oil)	0.21	0.76	0.4	0.2	60	24.0	35	Plan-apochromat = 0.13 mm
63x / NA 1.2 W water		n = 1.333 (water)	0.25	0.90	0.3	0.2	179	5.2	19	UPL-S apochromat = 0.28 mm
60x / NA 1.30 silicone		n = 1.406 (silicone)	0.23	0.81	0.3	0.2	146	7.9	20.6	UPL-S apochromat = 0.30 mm
63x / NA 1.40 oil		n = 1.518 (oil)	0.21	0.76	0.3	0.2	150	9.7	22.2	Plan-apochromat 1 = 0.19 mm Plan-apochromat 2 = 0.14 mm
100x / NA 1.30 oil		n = 1.518 (oil)	0.23	0.88	0.3	0.2	438	2.9	13	Epiplan-neofluar = 0.31 mm Plan-apochromat = 0.20 mm
100x / NA 1.40 oil		n = 1.518 (oil)	0.21	0.76	0.3	0.2	378	3.8	14	Plan-apochromat 1 = 0.17 mm Plan-apochromat 2 = 0.13 mm Plan-apochromat 2 = 0.09 mm