

# Nikon Eclipse Specs

## Objective Properties

Objective	NA	WD (mm)	Resolution ( $\mu\text{m}$ )	Depth of Field (mm)	Brightness	Pixel Size ( $\mu\text{m}/\text{pixel}$ )	
						DS-Ri2	Hamamatsu
4x PlanApo	0.20		1.53	25.0	1.0	1.833	1.625
10x PlanFluor (DIC/Phase)	0.30	15.20	1.02	11.1	0.8	0.733	0.650
20x PlanApo (DIC)	0.75	1.00	0.41	1.8	7.9	0.368	0.324
40x PlanFluor, oil (DIC)	1.30	0.2	0.23	0.9	17.9	0.183	0.163
60x PlanApo, oil (DIC)	1.40	0.13	0.22	0.8	10.7	0.123	0.108
100x PlanApo, oil (DIC)	1.45	0.13	0.21	0.7	4.4	0.073	0.065

**NA (numerical aperture):** affects nearly everything about your image; report this along with the magnification when you publish

**WD (working distance):** how deep you can image; e.g. to image all the way through a 0.2 mm object, you need a WD > 0.2

**Resolution:** the smallest distance or size that can be measured; e.g. you can't measure the size of objects < 200 nm

**Depth of Field:** the thickness of the sample that appears in focus at the same time

**Brightness:** relative measure of how much light is collected by the objective

**Pixel size:** the size of each pixel in microns; assumes no camera binning; divide by 1.5 if the 1.5x insert is engaged

## Fluorescence Filter Properties

Fluor. Filter Set/Cube	"color"	Ex. (nm)	Em. (nm)	Example Fluorophores
#2 "DAPI"	blue	381-403	417-477	DAPI, Hoechst
#3 "GFP"	green	446-486	500-550	Fluorescein, GFP
#4 "TRITC"	red	542-566	582-636	Rhodamine, propidium iodide, DsRed
#5 "mCherry"	red LP	542-582	604-678	mCherry (don't use if sample has a far red dye)
#6 "Cy5"	far red	593-643	663-733	Alexa 647, Cy5 (infrared emission; not visible to eyes - only camera)

(Filter position #1 contains the DIC analyzer.)

