Objectives

Type	Use	Model	Immersion	NA	W.D. (mm)	Cover glass thickness	Correction ring	Spring loaded	Brightfield	Darkfield	DIC	Phase contrast	Polarizing	Fluorescence		Ti2-E PFS
														Visible light	UV	
Achromat	Brightfield (CFI)	4X		0.10	30.00	—			◎				△	○		
		10X		0.25	7.00	—			◎	△			△	○		
		LWD 20X		0.40	3.90	0.17			◎	○●			△	○		
		40X		0.65	0.65	0.17		✓	◎	○●			△	○		
		LWD 40XC		0.55	2.70-1.70	0-2.00	✓		◎	○●			△	○		
		60X		0.80	0.30	0.17		✓	◎	●			△	○		
		100X Oil	Oil	1.25	0.23	0.17		✓	◎				△	○		
		100XS Oil	Oil	0.50-1.25	0.23	0.17		✓	◎	○●			△	○		
	Polarizing (CFI)	P 4X		0.10	30.00	—			◎				◎	○		
		P 10X		0.25	7.00	—			◎	△			◎	○		
		LWD P 20X		0.40	3.90	0.17			◎	○●			◎	○		
		P 40X		0.65	0.65	0.17		✓	◎	○●			◎	○		
		P 100X Oil	Oil	1.25	0.23	0.17		✓	◎				◎	○		
	Phase contrast (CFI)	DL 10X		0.25	7.00	—			○	△		◎ PH1	△	△		
		LWD DL 20X		0.40	3.90	0.17			○	○●		◎ PH1	△	△		
		LWD DL 20XF		0.40	3.10	1.20			○			◎ PH1	△	△		
		DL 40X		0.65	0.65	0.17		✓	○	○●		◎ PH2	△	△		
		LWD DL 40XC		0.55	2.70-1.70	0-2.00	✓		○	○●		◎ PH2	△	△		
		DL 100X Oil	Oil	1.25	0.23	0.17		✓	○			◎ PH3	△	△		
		BM 10X		0.25	7.00	0.17			○			◎ PH1	△	△		
	Apodized phase contrast (CFI)	ADL 10XF		0.25	6.20	1.20			○			◎ PH1	△	△		
		LWD ADL 20XF		0.40	3.10	1.20			○			◎ PH1	△	△		
		LWD ADL 40XF		0.55	2.10	1.20			○			◎ PH1	△	△		
		LWD ADL 40XC		0.55	2.70-1.70	0-2.00	✓		○	○●		◎ PH2	△	△		
	Advanced modulation contrast (CFI)	NAMC 10XF		0.25	6.20	1.20			○					△		
		LWD NAMC 20XF		0.40	3.10	1.20			○					△		
		LWD NAMC 40XC		0.55	2.70-1.70	0-2.00	✓		○					△		
	Brightfield (CF) For YS100 MV LED	4X		0.10	25.00	-			◎							
		10X		0.25	5.60	-			◎							
		40X		0.65	0.60	0.17		✓	◎							
		60X		0.80	0.24	0.17		✓	◎							
		100X Oil	Oil	1.25	0.14	0.17		✓	◎							
Plan Achromat	Brightfield (CFI Plan)	1X		0.04	3.20	—			◎				△	△		
		2X		0.06	7.50	—			◎				△	△		
		4X		0.10	30.00	—			◎				△	○		
		10X		0.25	10.50	—			◎	△			△	○		
		20X		0.40	1.20	0.17			◎	○●			△	○		
		40X		0.65	0.56	0.17		✓	◎	○●			△	○		
		50X Oil	Oil	0.90	0.35-0.18	0-0.17		✓	◎	●			△	○		
		100X Oil	Oil	1.25	0.20	0.17		✓	◎				△	○		
	Phase contrast (CFI Plan)	DL 10X		0.25	10.50	—			○	△		◎ PH1	△	△		
		DL 20X		0.40	1.20	0.17			○	○●		◎ PH1	△	△		
		DL 40X		0.65	0.56	0.17		✓	○	○●		◎ PH2	△	△		
		DL 100X Oil	Oil	1.25	0.20	0.17		✓	○			◎ PH3	△	△		
	No cover glass (CFI Plan)	NCG 40X		0.65	0.48	0		✓	◎	○●			△	○		
		NCG 100X		0.90	1.00	0		✓	◎	●			△	○	△	
	Phase contrast (CFI BE Plan) For E100	DL 10X		0.25	6.70	0.17			○			◎ PH1				
		DL 40X		0.65	0.60	0.17		✓	○			◎ PH2				
		DL 100X Oil	Oil	1.25	0.14	0.17		✓	○			◎ PH3				
	Brightfield (CFI BE Plan) For E100	4X		0.10	25.00	—/0.17			◎							
		10X		0.25	6.70	0.17			◎							
		20X		0.25	6.70	0.17			◎							
		40X		0.65	0.60	0.17		✓	◎							
		60X		0.80	0.25	0.17		✓	◎							
		100X Oil	Oil	1.25	0.14	0.17		✓	◎							
	Brighfield (CFI E Plan) For E200	4X		0.10	30.00	0			◎				△	○		
		10X		0.25	7.00	0			◎	△			△	○		
		40X		0.65	0.65	0.17		✓	◎	○●			△	○		
		100X Oil	Oil	1.25	0.23	0.17		✓	◎				△	○		
	IMSI (CFI Plan)	LWD IMSI 100XC		0.85	1.30-0.95 (1.15 *1)	0.60-1.30	✓		○	●	○		○	○		
S Plan Fluor	Brightfield (CFI S Plan Fluor)	LWD 20XC		0.70	1.30-2.30	0-1.8	✓		◎	○●	○		○	◎	◎	●
		ELWD 20XC		0.45	8.20-6.90 (7.40 *2)	0-2.00	✓		◎	○●	○		○	◎	◎	●
		ELWD 40XC		0.60	3.60-2.80 (3.11 *2)	0-2.00	✓		◎	○●	○		○	◎	◎	●
		ELWD 60XC		0.70	2.60-1.80 (2.19 *3)	0.10-1.30	✓		◎	○●	○		○	◎	◎	
	Apodized phase contrast (CFI S Plan Fluor)	LWD ADM 20XC		0.70	1.30-2.30	0-1.8	✓		○	○●		◎ PH2		○	○	●
		ELWD ADM 20XC		0.45	8.20-6.90 (7.40 *2)	0-2.00	✓		○	○●		◎ PH1		○	○	●
		ELWD ADM 40XC		0.60	3.60-2.80 (3.11 *2)	0-2.00	✓		○	○●		◎ PH2		○	○	●
		ELWD ADL 60XC		0.70	2.60-1.80 (1.85 *2)	0.10-1.30	✓		○	○●		◎ PH2		○	○	
	Advanced modulation contrast (CFI S Plan Fluor)	ELWD NAMC 20XC		0.45	8.20-6.90 (7.40 *2)	0-2.00	✓		○					○	○	
		ELWD NAMC 40XC		0.60	3.60-2.80 (3.10 *2)	0-2.00	✓		○					○	○	
Super Fluor	Brightfield (CFI Super Fluor)	4X		0.20	15.50	—			◎				△	◎	◎ 340	●
		10X		0.50	1.20	0.17		✓	◎	○●	○		△	◎	◎ 340	●
		20X		0.75	1.00	0.17		✓	◎	○●	○		△	◎	◎ 340	●
		40XC		0.90	0.34-0.26 (0.30 *4)	0.11-0.23	✓	✓	◎	●	○		△	◎	◎ 340	
		40X Oil	Oil	1.30	0.22	0.17		✓w/stopper	◎		○	EXT PH3-40X	△	◎	◎ 340	●
		100XS Oil	Oil	0.50-1.30	0.20	0.17		✓	◎	○●			△	◎	◎ 340	
Universal Plan Fluor	No cover glass polarizing (TU Plan Fluor EPI)	P 5X		0.15	23.50	0			◎				◎	◎	◎	
		P 10X		0.30	17.50	0			◎	○			◎	◎	◎	
		P 20X		0.45	4.50	0			◎	○			◎	◎	◎	
		P 50X		0.80	1.00	0		✓	◎				◎	◎	◎	
		P 100X		0.90	1.00	0		✓	◎				◎	◎	◎	

Note 1. Model name
The below letters, when included in the model names, indicate the respective features.
F: for use with 1.2mm-thick cover glass
C: with correction ring
AC: with correction ring compatible with Auto Correction Collar
NCG: for use without cover glass
S: with iris
WI: water immersion type
W: water dipping type
Mi: multi immersion (oil, water, glycerin) type
IMSI: compatible with IMSI only
DS: compatible with dispersion staining microscopy

Note 2. Cover glass thickness
— : can be used without cover glass
0: use without cover glass

Note 3. Darkfield microscopy
Possible with the following
△ : universal condenser (dry) and darkfield ring
○ : above and darkfield condenser (dry)
● : darkfield condenser (oil)

Note 4. Phase rings are classified by objective NA
PHL, PH1, PH2, PH3: condenser cassette modules.
EXT PH3, EXT PH4: external phase contrast modules for Ti2-E.

Note 5. Fluorescence microscopy (UV)
△ : possible with visible light that has a longer wavelength than the excitation light used for DAPI
○ : suitable
◎ : recommended for best results
340: high transmittance with an ultraviolet wavelength range of up to 340nm

Type	Use	Model	Immersion	NA	W.D. (mm)	Cover glass thickness	Correction ring	Spring loaded	Brightfield	Darkfield	DIC	Phase contrast	Polarizing	Fluorescence			Ti2-E PFS
														Visible light	UV	NIR	
Plan Fluor	Brightfield (CFI Plan Fluor)	4X		0.13	17.20	—			◎				△	◎	◎		
		10X		0.30	16.00	0.17			◎	△	○		○	◎	◎		●
		20X		0.50	2.10	0.17			◎	○●	○		○	◎	◎		
		20XC MI	Water, Glycerin, Oil	0.75	0.49-0.33 0.51-0.34 0.51-0.35	0-0.17	✓	✓	◎	○●	○		○	◎	◎		
		40X		0.75	0.66	0.17		✓	◎	○●	○		○	◎	◎		●
		40X Oil	Oil	1.30	0.24	0.17		✓w/stopper	◎		○	EXT PH3-40X	○	◎	◎		●
		60XC		0.85	0.40-0.31 (0.35 *4)	0.11-0.23	✓	✓	◎	●	○		○	◎	◎		
		60XS Oil	Oil	0.50-1.25	0.22	0.17		✓	◎	○●	○	EXT PH3-60X	○	◎	◎		
		100X Oil	Oil	1.30	0.16	0.17		✓w/stopper	◎		○		○	◎	◎		●
		100XS Oil	Oil	0.50-1.30	0.16	0.17		✓	◎	○●	○		○	◎	◎		
	Phase contrast (CFI Plan Fluor)	DL 4XF		0.13	16.50	1.20			○			◎ PHL		○	○		
		DLL 10X		0.30	16.00	0.17			○	△		◎ PH1		○	○		●
		DL 10XF		0.30	15.20	1.20			○	△		◎ PH1		○	○		●
		DLL 20X		0.50	2.10	0.17			○	○●		◎ PH1		○	○		●
		DLL 40X		0.75	0.66	0.17		✓	○	○●		◎ PH2		○	○		●
		DLL 100X Oil	Oil	1.30	0.16	0.17		✓w/stopper	○			◎ PH3		○	○		●
		DM 40X		0.75	0.66	0.17		✓	○	○●		◎ PH2		○	○		
		BM 40X		0.75	0.66	0.17		✓	○	○●		◎ PH2		○	○		
	Apodized phase contrast (CFI Plan Fluor)	ADH 100X Oil	Oil	1.30	0.16	0.17		✓w/stopper	○			◎ PH3		○	○		●
Apochromat	Brightfield (CFI Plan Apo)	Lambda 2X		0.10	8.50	—			◎				○	◎	△	◎	
		Lambda 4X		0.20	20.00	—			◎				○	◎	△	◎	●
		Lambda 10X		0.45	4.00	0.17		✓	◎	△	○		○	◎	△	◎	●
		Lambda 20X		0.75	1.00	0.17		✓	◎	○●	○		○	◎	△	◎	●
		VC 20X		0.75	1.00	0.17		✓	◎	○●	○		○	◎	○		●
		Lambda 40XC		0.95	0.25-0.16 (0.21 *4)	0.11-0.23	✓	✓	◎	●	○		○	◎	△	◎	●
		Lambda 60XC		0.95	0.21-0.11 (0.15 *4)	0.11-0.23	✓	✓	◎	●	○		○	◎	△	◎	
		Lambda 60X Oil	Oil	1.40	0.13	0.17		✓	◎		○	EXT PH3-60X	○	◎	△	◎	●
		VC 60XC WI	Water	1.20	0.31-0.28 (0.29 *4)	0.15-0.18	✓	✓	◎		○	EXT PH3-60X	○	◎	◎		●
		IR 60XC WI	Water	1.27	0.18-0.16 (0.17 *4)	0.15-0.19	✓	✓	◎		○	EXT PH3-60X	○	○	△	◎	●
		Lambda 100X Oil	Oil	1.45	0.13	0.17		✓	◎		○	EXT PH3-100X EXT PH4-100X	○	◎	△	◎	●
		VC 100X Oil	Oil	1.40	0.13	0.17		✓	◎		○	EXT PH3-100X	○	◎	△		●
		NCG 100X Oil	Oil	1.40	0.16	0		✓	◎		○		○	◎	△		
	Phase contrast (CFI Plan Apo)	DM Lambda 20X		0.75	1.00	0.17		✓	○	○●		◎PH2		○	△	○	●
		DM Lambda 40XC		0.95	0.25-0.16 (0.21 *4)	0.11-0.23	✓	✓	○	●		◎PH2		○	△	○	●
		DM Lambda 60XC		0.95	0.21-0.11 (0.15 *4)	0.11-0.23	✓	✓	○	●		◎PH2		○	△	○	
		DM Lambda 60X Oil	Oil	1.40	0.13	0.17		✓	○	●		◎PH3		○	△	○	●
		DM Lambda 100X Oil	Oil	1.45	0.13	0.17		✓	○			◎PH3		○	△	○	●
	Super-resolution (CFI SR Plan Apo)	IR 60XC WI	Water	1.27	0.18-0.16 (0.17 *4)	0.15-0.19	✓		◎		○	EXT PH3-60X	○	◎	○	◎	●
		IR 60XAC WI	Water	1.27	0.18-0.16 (0.17 *4)	0.15-0.19	✓		◎		○	EXT PH3-60X	○	◎	○	◎	●
	Super-resolution (CFI HP Plan Apo)	VC 100X Oil	Oil	1.40	0.13	0.17		✓	◎		○	EXT PH3-100X	○	◎	△		●
	Super-resolution (CFI SR HP Plan Apo)	Lambda S 100XC Sil	Silicone Oil	1.35	0.31-0.29 (0.30 *4) (23℃) 0.30-0.28 (0.29 *4) (37℃)	0.15-0.19 (23-37℃)	✓		◎		○		○	◎	◎		●
	Confocal (CFI Apo)	LWD Lambda S 20XC WI	Water	0.95	0.99-0.90 (0.95 *4)	0.11-0.23	✓		◎	●	○		○	○		○	●
		Lambda S 40XC WI	Water	1.25	0.20-0.16 (0.18 *4)	0.15-0.19	✓	✓	◎		○	EXT PH3-40X	○	◎	◎		●
		LWD Lambda S 40XC WI	Water	1.15	0.61-0.59 (0.60 *4)	0.15-0.19	✓		◎	●	○	EXT PH3-40X	○	◎	◎		●
		Lambda S 60X Oil	Oil	1.40	0.14	0.17		✓	◎		○	EXT PH3-60X	○	◎	◎		●
	Evanescent (CFI Apo)	TIRF 60XC Oil	Oil	1.49	0.16-0.10 (0.12 *4) (23℃) 0.13-0.07 (0.11 *4) (37℃)	0.13-0.19 (23℃) 0.15-0.21 (37℃)	✓		◎		○	EXT PH4-60X	○	◎	△		●
		TIRF 100XC Oil	Oil	1.49	0.16-0.10 (0.12 *4) (23℃) 0.15-0.09 (0.12 *4) (37℃)	0.13-0.19 (23℃) 0.14-0.20 (37℃)	✓		◎		○	EXT PH4-100X	○	◎	△		●
	Super-resolution (CFI SR HP Apo)	TIRF 100XC Oil	Oil	1.49	0.16-0.10 (0.12 *4) (23℃) 0.15-0.09 (0.12 *4) (37℃)	0.13-0.19 (23℃) 0.14-0.20 (37℃)	✓		◎		○	EXT PH4-100X	○	◎	△		●
		TIRF 100XAC Oil	Oil	1.49	0.16-0.10 (0.12 *4) (23℃) 0.15-0.09 (0.12 *4) (37℃)	0.13-0.19 (23℃) 0.14-0.20 (37℃)	✓		◎		○	EXT PH4-100X	○	◎	△		●

Use: Clearing	Model	Immersion	NA	W.D. (mm)	Cover glass thickness	Correction ring	Spring loaded	Brightfield	Darkfield	DIC	Phase contrast	Polarizing	Fluorescence			Ti2-E PFS
													Visible light	UV	NIR	
Multiphoton confocal (CFI Plan Apo)	10XC Glyc	Water, Glycerin, Oil,	0.50	Upright: 5.50 Inverted: 2.00	0-0.17	✓*5		◎	○●				◎		◎	
Multiphoton (CFI90)	20XC Glyc *7	Glycerin	1.00	8.20	0	✓*6		△ *8							◎	

Use: Asbestos	Model	Immersion	NA	W.D. (mm)	Cover glass thickness	Correction ring	Spring loaded	Brightfield	Darkfield	DIC	Phase contrast	Polarizing	Fluorescence			Ti2-E PFS
													Visible light	UV	NIR	
Dispersion staining (CFI)	R-DS 10X		0.25	7.00	0.17						◎PH1					
Dispersion staining (CFI Plan)	C-DS 10X		0.25	13.00	0.17											
Dispersion staining (CFI Plan Fluor)	R-DS 40X		0.75	0.66	0.17		✓				◎PH2					

Use: Water dipping	Model	Immersion	NA	W.D. (mm)	Cover glass thickness	Correction ring	Spring loaded	Brightfield	Darkfield	DIC	Phase contrast	Polarizing	Fluorescence		Near- infrared DIC
													Visible light	UV	
Multiphoton confocal (CFI75 Apo)	25XC W *7	Water	1.10	2.00	0	✓		◎	●	○		○	◎	○	○
	25XC W 1300 *7	Water	1.10	2.00	0	✓		◎	●	○		○	◎	○	○
DIC (CFI Plan Fluor)	10X W	Water	0.30	3.50	0			◎	△	○		○	◎	◎	○
IR-DIC (CFI Apo)	NIR 40X W	Water	0.80	3.50	0			◎	●	○		○	◎	△	◎
	NIR 60X W	Water	1.00	2.80	0			◎	●	○		○	◎		◎
DIC (CFI Plan)	100XC W	Water	1.10	2.50	0	✓		◎	●	○		○	◎		○
DIC (CFI75)	LWD 16X W *7	Water	0.80	3.00	0			◎	●	○		○	◎	○	○

Note 6.
Brightfield/DIC/Fluorescence (visible light) microscopy
△ : possible but not recommended
○ : suitable
◎ : recommended for best results

Note 7. Polarizing
△ : possible but not recommended
○ : suitable
◎ : retardation measurement is possible with a polarizing microscope

Note 8. Ti2-E PFS
● : compatible with PFS

*1 With cover glass thickness of 0.9 mm
*2 With cover glass thickness of 1.2 mm
*3 With cover glass thickness of 0.7 mm
*4 With cover glass thickness of 0.17 mm
*5 With correction for refractive index of immersion medium (1.33-1.51)
*6 With correction for refractive index of immersion medium (1.44-1.50)
*7 Dedicated for FN1 and Ni-E focusing nosepiece type
*8 Correction wavelength range: from 587nm, can be used as a finder