



Accessories

Inverted Research Microscope Accessories

ECLIPSE TE2000



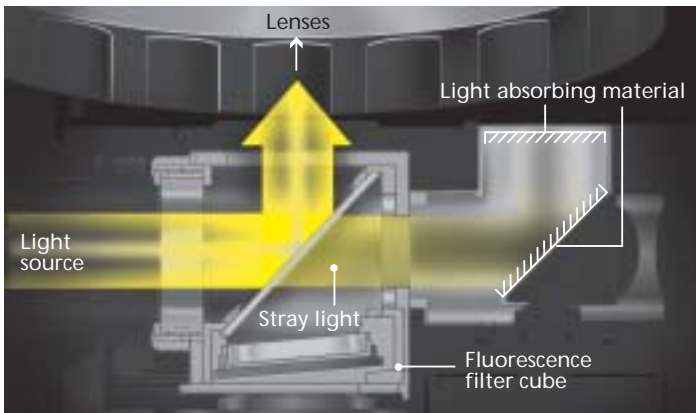
CFI60

Epi-fluorescence

Nikon's exclusive Noise Terminator mechanism thoroughly eliminates the possibility of stray light to produce images of greater S/N ratio when observing weakly fluorescing specimens especially in dynamic live cell imaging experiments.

Noise Terminator

Nikon's innovative two-step process discharges stray light from the filter cube to vastly improve the optical S/N.



Turret-type filter changer

Holds up to six filter cubes. Manual or motorized filter changing is provided as well as the option for an automated internal vibration-free shutter.



Epi-fluorescence set

- | | |
|---|----------------------------------|
| 1 Epi-fl Attachment | 6 Light Shielding Plate |
| 2 Epi-fl Collector Lens | 7 Starter for Mercury Lamp |
| 3 Mercury Lamphouse with Mercury Lamp Socket and Mercury Lamp | 8 Epi-fl Filter Rotating Turret |
| 4 Epi-fl Filter Cubes and Dummy Cassette | 9 ND Filters |
| 5 Centering Tool for Light Source | 10 Hand Switch |
| | 11 FL Zoom Illumination Aperture |



Plan Fluor & S Fluor objectives

The CFI60 Plan Fluor ELWD objective series can be used universally for phase contrast, epi-fluorescence, Nomarski DIC, as well as brightfield observations, with the same, consistently high optical performance.

- | | |
|--------------------------------|-----------------------------|
| 1 CFI Plan Fluor DL 4X | 7 CFI Plan Fluor ELWD 40X C |
| 2 CFI Plan Fluor DL 10X | 8 CFI S Fluor 10X |
| 3 CFI Plan Fluor ELWD DM 20X C | 9 CFI S Fluor 20X |
| 4 CFI Plan Fluor ELWD DM 40XC | 10 CFI S Fluor 40X |
| 5 CFI Plan Fluor 10X | 11 CFI S Fluor 40X oil |
| 6 CFI Plan Fluor ELWD 20X C | |



CF epi-fl collector lens

This collector lens maintains constantly even illumination even when excitation light is being switched from UV to G or vice versa, greatly expediting FISH and other observations of multi-color stained specimens.

Nomarski DIC

By changing the material structure, Nikon developed a standard prism with a perfect balance of contrast and resolution at any magnification. Depending upon the type of specimen, a high-contrast or high-resolution prism is also available.



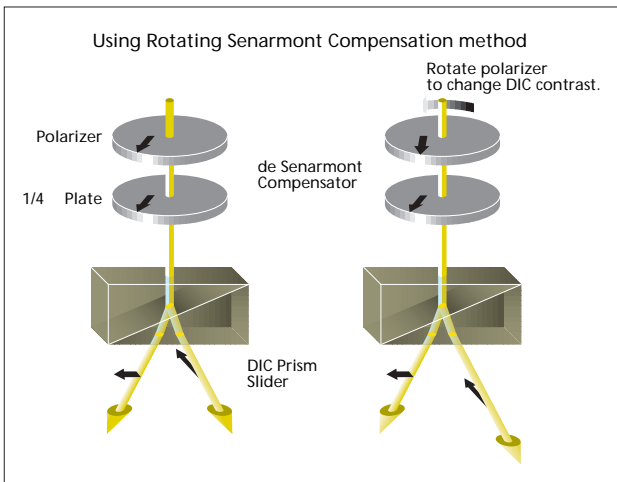
Nomarski DIC set

- ① DIC Polarizer
- ② System Condenser Turret
- ③ DIC Analyzer
- ④ ELWD Condenser Lens
- ⑤ DIC Nosepiece
- ⑥ DIC Modules for System Condenser Turret
- ⑦ DIC Sliders



Plan Fluor objectives

- ① CFI Plan Fluor 10X
- ② CFI Plan Fluor ELWD 20X C
- ③ CFI Plan Fluor ELWD 40X C



Senarmont method

The Senarmont method has been adopted to optimize comfort and performance in DIC microscopy. Contrast adjustment is accomplished by rotating the polarizer; this requires only a slight movement of the polarizer, eliminating the risk of annoying image shifts. In the new DIC system, the revolving nosepiece houses individual prisms for each objective so as to obtain optimal shear to match the N.A. of the condenser top lens and the objective.

High Resolution DIC

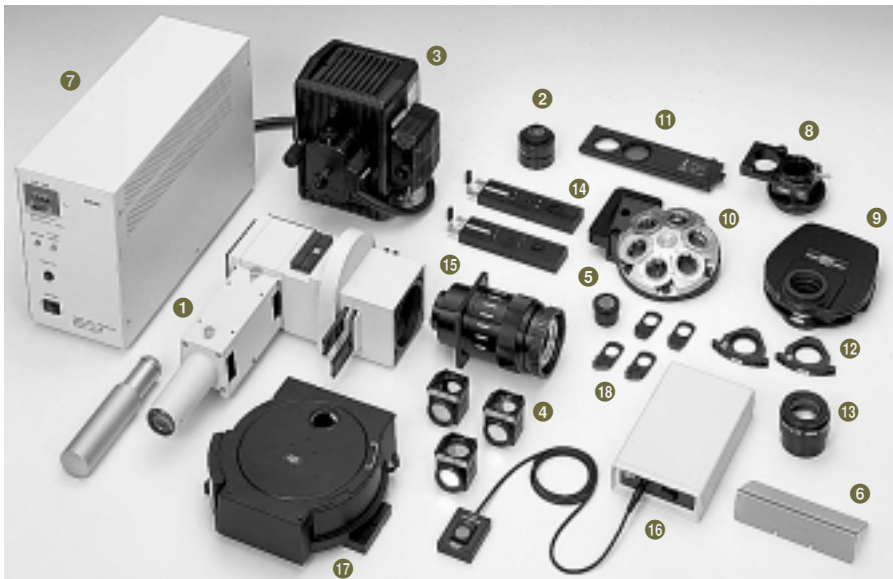


High N.A. condensers (dry, water, oil)

These condensers are essential to match the high numerical apertures of high magnification objectives. Three types of top lenses are available: an oil immersion type (N.A. 1.4), dry type (N.A. 0.85) and a water immersion type (N.A. 0.9). DIC sliders for CFI Plan Apo 100X oil, CFI Plan Apo 60X oil and CFI Plan Apo 60X water immersion objectives are also available.

- 1 High N.A. Condenser Holder
- 2 High N.A. Condenser Unit
- 3 Dry Top Lens
- 4 DIC Modules for Dry Top Lens
- 5 Oil Top Lens
- 6 DIC Module for Oil Top Lens

Epi-fluorescence/DIC



Epi-fluorescence/DIC set

- 1 Epi-fl Attachment
- 2 Epi-fl Collector Lens
- 3 Mercury Lamphouse with Mercury Lamp Socket and Mercury Lamp
- 4 Epi-fl Filter Cubes and a Dummy Cassette
- 5 Centering Tool for Light Source
- 6 Light Shielding Plate
- 7 Starter for Mercury Lamp
- 8 DIC Polarizer
- 9 System Condenser Turret
- 10 DIC Nosepiece
- 11 DIC Analyzer
- 12 DIC Modules for System Condenser Turret
- 13 LWD or ELWD Condenser Lens
- 14 ND Filters
- 15 FL Zoom Illumination Adapter
- 16 Hand Switch
- 17 Epi-fl Filter Rotating Turret
- 18 DIC Sliders

Hoffman Modulation Contrast®

3D-relief-like observation is available with a plastic petri dish.



Hoffman Modulation Contrast® set

- 1 Contrast Control Polarizer
- 2 System Condenser Turret
- 3 HMC Condenser Lens
- 4 HMC Modules for HMC Lens
- 5 LWD Condenser Lens
- 6 HMC Modules for LWD Lens



HMC® condenser lens

A W.D. 44mm condenser lens gives more working distance to make demanding micromanipulation tasks like IVF more manageable.

HMC® with LWD system condenser lens

With W.D. 30mm, this condenser lens is most popular for HMC applications. It is also the same condenser that can be equipped for phase and DIC applications.



HMC® objectives

A modulator inside the objective can change the contrast direction.

- 1 CFI HMC 10X
- 2 CFI LWD HMC 20X F
- 3 CFI LWD HMC 40X C

Phase Contrast

Apodized phase contrast objectives have been newly added to the lineup of conventional phase contrast objectives. With the new objectives, minute structures which were difficult to observe under halo can be clearly observed.



Phase Contrast system condenser (ELWD, LWD)

- 1 System Condenser Turret
- 2 ELWD Condenser Lens
- 3 PhL for ELWD Lens
- 4 Ph1 for ELWD Lens
- 5 Ph1 for ELWD Lens
- 6 LWD Condenser Lens
- 7 PhL for LWD Lens
- 8 Ph1 for LWD Lens
- 9 Ph2 for LWD Lens
- 10 Ph3 for LWD Lens



ADL objectives

- 1 CFI Achromat ADL 10X (N.A. 0.25, W.D. 5.2mm) Ph1
- 2 CFI Achromat LWD ADL20XF (N.A. 0.4, W.D. 3.0mm) Ph1
- 3 CFI Achromat LWD ADL40XF (N.A. 0.55, W.D. 2.1mm) Ph1
- 4 CFI Achromat LWD ADL 40XC (N.A. 0.55, W.D. 2.7-1.7mm) Ph2
- 5 CFI Plan Fluor ELWD ADL 20XC
- 6 CFI Plan Fluor ELWD ADL 40XC



ELWD condenser

Excellent for phase contrast microscopy with 4X to 40X phase objectives. Its 65mm working distance and a 0.3 N.A. is sufficient for most applications and can be used with both the 100W and 30W illumination pillars.



SLWD condenser

(for use only with the 30W illumination pillar)

Its long 190mm working distance permits observation through roller bottles or large flasks. A PhL phase ring is available for the 4X phase objective and a Ph1 phase ring for the 10X and 20X phase objectives.

Objectives List

Application	Type	N.A.	W.D. (mm)	Cover glass thickness (mm)	Phase contrast ring
General-use Objectives for Phase Contrast Observations					
Achromat	CFI Achromat DL 10X	0.25	7.0	0.17	Ph1
Achromat Long Working Distance	CFI Achromat LWD DL 20X F	0.4	3.1	1.2	Ph1
	CFI Achromat LWD DL 40X C	0.55	2.7-1.7	0-2.0	Ph2
	CFI Achromat ADL10X	0.25	6.2	1.2	Ph1
	CFI Achromat LWD ADL20X F	0.4	3.1	1.2	Ph1
	CFI Achromat LWD ADL40X F	0.55	2.1	1.2	Ph1
	CFI Achromat LWD ADL40X C	0.55	2.7-1.7	0-2.0	Ph2
Plan Fluor	CFI Plan Fluor DL 4X	0.13	16.4	1.2	PhL
	CFI Plan Fluor DL 10X	0.3	15.2	1.2	Ph1
	CFI Plan Fluor ELWD ADL 20X C	0.45	8.1-7.0	0-2.0	Ph1
	CFI Plan Fluor ELWD ADL 40X C	0.6	3.7-2.7	0-2.0	Ph2
Plan Fluor Long Working Distance	CFI Plan Fluor ELWD DM 20X C	0.45	8.1-7.0	0-2.0	Ph1
	CFI Plan Fluor ELWD DM 40X C	0.6	3.7-2.7	0-2.0	Ph2
	CFI Plan Fluor ELWD DLL 60X C	0.7	2.1-1.5	0.5-1.5	Ph2
Plan Fluor Oil	CFI Plan Fluor DLL 100X oil	1.3	0.2	0.17	Ph3
Plan Apochromat Oil	CFI Plan Apochromat DM40X oil*	1.0	0.16	0.17	Ph3
	CFI Plan Apochromat DM60X oil	1.4	0.13	0.17	Ph3
	CFI Plan Apochromat DM100X oil	1.4	0.13	0.17	Ph3
High-performance Objectives for Fluorescence or DIC Observations					
Plan Fluor	CFI Plan Fluor 4X	0.13	17.1	0.17	
	CFI Plan Fluor 10X	0.3	16.0	0.17	
	CFI Plan Fluor 20X	0.5	2.1	0.17	
	CFI Plan Fluor 40X	0.75	0.72	0.17	
	CFI Plan Fluor 60X C	0.85	0.3	0.11-0.23	
S Fluor	CFI S Fluor 4X	0.2	15.5	0.17	
	CFI S Fluor 10X	0.5	1.2	0.17	
	CFI S Fluor 20X	0.75	1.0	0.17	
	CFI S Fluor 40X C	0.9	0.3	0.11-0.23	
Plan Fluor Long Working Distance	CFI Plan Fluor ELWD 20X C	0.45	8.1-7.0	0-2.0	
	CFI Plan Fluor ELWD 40X C	0.6	3.7-2.7	0-2.0	
	CFI Plan Fluor ELWD 60X C	0.7	2.1-1.5	0.5-1.5	
Plan Fluor Oil	CFI Plan Fluor 40X oil	1.3	0.2	0.17	
	CFI Plan Fluor 100X oil	1.3	0.2	0.17	
	CFI Plan Fluor 100X oil with iris	0.5-1.3	0.2	0.17	
S Fluor Oil	CFI S Fluor 40X oil	1.3	0.22	0.17	
	CFI S Fluor 100X oil, iris	0.5-1.3	0.2	0.17	
Plan Apochromat Water	CFI Plan Apochromat 60X WI	1.2	0.22	0.15-0.18	
Plan Fluor Multi-immersion	CFI Plan Fluor 20X MI	0.75	0.35 (oil) 0.34 (glycerin) 0.33 (water)	0.17	
Plan Apochromat VC	CFI Plan Apochromat VC 60X oil	1.4	0.13	0.17	
	CFI Plan Apochromat VC 100X oil	1.4	0.13	0.17	
	CFI Plan Apochromat VC 60X WI	1.2	0.27	0.15-0.18	
Plan Apochromat TIRF	CFI Plan Apochromat TIRF 60X oil	1.45	0.13	0.10-0.22	
	CFI Plan Apochromat TIRF 100X oil	1.45	0.13	0.17	
Hoffman Modulation Contrast® Objectives					
HMC	CFI HMC 10X	0.25	6.2	1.2	
HMC LWD	CFI HMC LWD 20X F	0.4	3.1	1.2	
	CFI HMC LWD 40X C	0.55	2.7-1.7	0-2.0	

Note: * C* denotes types with correction ring.

*No objective lens slider is available with this objective.



Plan Apochromat VC



Plan Apochromat TIRF



CFI Plan Apochromat 60X WI,
CFI Plan Fluor 20X MI



CFI S Fluor



Plan Fluor phase contrast



CFI Plan Fluor ADL



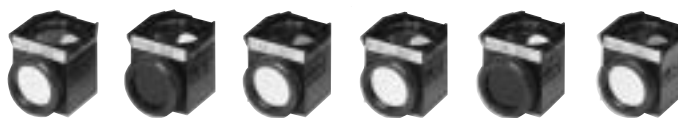
Hoffman Modulation Contrast®

New DIC Combinations for Inverted Microscopes

		System Condenser LWD Dry Motorized System Condenser LWD Dry				High NA Condenser Lens, Dry		High NA Condenser Lens, Oil							
		Standard		High Contrast		Standard		Standard		High Resolution					
		Condenser Module	DIC Prism	Condenser Module	DIC Prism	Condenser Module	DIC Prism	Condenser Module	DIC Prism	Condenser Module	DIC Prism				
ELWD	PF ELWD 20X C	LWD N1 Dry	T-C 20X I <small>(PF ELWD 20XC)</small>												
	PF ELWD 40X C		T-C 40X IV <small>(PF ELWD 40XC)</small>												
	PF ELWD 60X C		T-C 60X III <small>(PF ELWD 60XC)</small>												
10X	Plan Fluor 10X	LWD N1 Dry	10X												
	S Fluor 10X														
	Fluor 10X W														
20X	Plan Fluor 20X	LWD N2 Dry	20X	LWD N1 Dry	20X-C	HNA N2 Dry	20X	HNA N2 Oil	20X						
	Plan Apo 20X														
	S Fluor 20X														
	Plan Fluor 20X MI														
	Fluor 20X W														
40X	Plan Fluor 40X	LWD N2 Dry	40X I	LWD N1 Dry	40X I-C	HNA N2 Dry	40X I	HNA N2 Oil	40X I	40X I					
	Plan Apo 40X														
	S Fluor 40X														
	Plan Fluor 40X Oil									40X II		40X II	40X II		
	S Fluor 40X Oil														
	Fluor 40X W									40X III		40X III	40X III		
	Plan Apo 40X Oil														
60X	Plan Apo 60X Oil A	LWD N2 Dry	60X I	LWD N1 Dry	60X I-C	HNA N2 Dry	60X I	HNA N2 Oil	60X I	HNA NR Oil <small>(2004.12)</small>	60X I-R				
	Plan Apo 60X														
	Fluor 60X W														
	Plan Apo VC 60X Oil														
	Plan Fluor 60X Oil										60X II		60X II	60X II	60X II-R
	Plan Apo TIRF 60X Oil														
	Plan Apo 60X W														
	Plan Apo VC 60X W														
Plan Fluor 60X A															
100X	Plan Apo VC 100X Oil	LWD N2 Dry	100X I	LWD N1 Dry	100X I-C	HNA N2 Dry	100X I	HNA N2 Oil	100X I	HNA NR Oil <small>(2004.12)</small>	100X I-R				
	Plan Fluor 100X Oil														
	Plan Fluor 100X Oil, iris										100X II		100X II	100X II	100X II-R
	Plan Apo TIRF 100X														
	Plan Apo 100X NCG Oil														
	Plan Apo 100X Oil														

 On sale from 2004.11

Epi-fluorescence Filters



Filter Characteristics

Filters	Wavelengths	Characteristics	Applications	
UV	UV-2A	EX 330-380 DM 400 BA 420	•Standard filter block for UV	<ul style="list-style-type: none"> •DAPI •Hoechst 33258/33342 •AMCA •Cascade Blue® •Autofluorescence
	UV-2E/C (DAPI)	EX 340-380 DM 400 BA 435-485	<ul style="list-style-type: none"> •For DAPI, cutting off FITC (green) and TRITC (red) •Soft-coated type for high signal/noise •Band-Pass Barrier Filter used to cut off green and red 	
	UV-1A	EX 365/10 DM 400 BA 400	<ul style="list-style-type: none"> •Narrow band pass – only 365nm (i line) of Mercury spectrum used •Narrow band pass minimizes auto-fluorescence and photo-bleaching 	
	UV-2B	EX 330-380 DM 400 BA 435	•Darker background than UV-2A	
V	V-2A	EX 380-420 DM 430 BA 450	•Standard filter block for V	<ul style="list-style-type: none"> •Catecholamine •Serotonin •Tetracycline
BV	BV-2A	EX 400-440 DM 455 BA 470	•Standard filter block for BV	<ul style="list-style-type: none"> •Quinacrine •Quinacrine Mustard (QM) •Thioflavine S •Acridine
	BV-1A	EX 435/10 EM 455 BA 470	<ul style="list-style-type: none"> •Narrow band pass – only 435nm (g line) of Mercury spectrum used •Narrow band pass minimizes auto-fluorescence and photo-bleaching 	
B	B-3A	EX 420-490 DM 505 BA 520	•Wide band pass – recommended for halogen illumination only	<ul style="list-style-type: none"> •FITC •Acridine Orange •Auramine O •Coriphosphine O •Bodipy® •Fluo-3 •DIO
	B-2A	EX 450-490 DM 505 BA 520	<ul style="list-style-type: none"> •Standard filter block for B •For FITC + Counter-stain (TRITC, PI) 	
	B-2E/C (FITC)	EX 465-495 DM 505 BA 515-555	<ul style="list-style-type: none"> •Soft coated type for high signal/noise •For FITC (green), cutting off Rhodamine red •Band-pass Barrier Filter used to cut off red 	
	B-1A	EX 470-490 DM 505 BA 520	<ul style="list-style-type: none"> •Narrower excitation range than B-2A •FITC+Counter-stain (TRITC, PI) 	
	B-1E	EX 470-490 DM 505 BA 520-560	<ul style="list-style-type: none"> •For FITC (green), cutting off Rhodamine red •Band-Pass Barrier Filter used to cut off red 	
G	G-2A	EX 510-560 DM 575 BA 590	•Standard filter block for G	<ul style="list-style-type: none"> •TRITC •Rhodamine B200 •Propidium iodide •R-Phycoerythrin •B-Phycoerythrin •Dil •Ethidium Bromide
	G-2E/C (TRITC)	EX 540/25 DM 565 BA 605/55	<ul style="list-style-type: none"> •For TRITC (Rhodamine) •Soft coated type for high signal/noise •Band-Pass Barrier Filter used to cut off reds above 643nm 	
	G-1B	EX 546/10 DM 575 BA 590	<ul style="list-style-type: none"> •Narrow band pass – only 546nm (e line) of Mercury spectrum used •Narrow band pass minimizes auto-fluorescence and photo-bleaching 	
	G-2B	EX 510-560 DM 575 BA 610	•610nm barrier provides darker background and deep red emission	
Y	Y-2E/C (Texas Red)	EX 540-580 DM 595 BA 600-660	<ul style="list-style-type: none"> •For Texas Red® •Soft coated type for high signal/noise •Band-Pass Barrier Filter used to cut off reds above 660nm 	•Texas Red®

Multi-Band Filters

Filters	Abbreviations	Applications
Dual	F-R	FITC/Rhodamine
	F-T	FITC/Texas Red
	D-F	DAPI/FITC
Triple	D-F-R	DAPI/FITC/Rhodamine
	D-F-T	DAPI/FITC/Texas Red

Filters for Fluorescent Protein

Models	Wavelengths	Characteristics	Applications
GFP-L	EX480/40, DM505, BA510	GFP long-pass type	GFP
GFP-B	EX480/40, DM505, BA535/50	GFP band-pass type	GFP
High-quality Fluorescence Filters			
CFP-HQ	EX420-445, DM450, BA460-510	CFP narrow band-pass, high transmission	CFP
GFP-HQ	EX455-485, DM495, BA500-545	GFP narrow band-pass, high transmission	GFP
YFP-HQ	EX490-500, DM510, BA520-560	YFP narrow band-pass, high transmission	YFP

Note:

The lineup is constantly updated. For the latest information, please contact your local Nikon representative. The excitation filters or barrier filters in each filter cube are interchangeable. For custom setup, blank cubes without filters are also available. Please consult with your local Nikon distributor for a complete list of filters locally available or inquire about special custom filter combinations.

Accessories

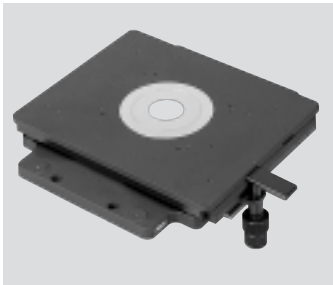
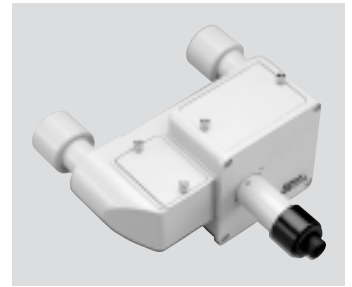


Double lamphouse adapter

This adapter allows two different light sources to be attached to a single microscope. This eliminates the need to change the lamphouse and the troublesome centering procedures that are necessary. Switching between two lamphouses is possible even while they are turned on.

Multi-image module

Two accessories such as a video camera and a photomicrography system can be mounted simultaneously by means of this module.



Short vertical handle stage

This stage facilitates steady operation without contact to the handles when a camera is attached to the right-side port.

FX-III series photomicrographic equipment

The FX-III series utilizes a direct-projection system with a swing-out prism for fast exposure setting and accurate metering.

U-III: 0.1% and 1% spot exposure, and 35% integrated-average measurement modes

H-III: 1% spot and 35% integrated-average measurement modes

P-III: Manual exposure model



Teaching head

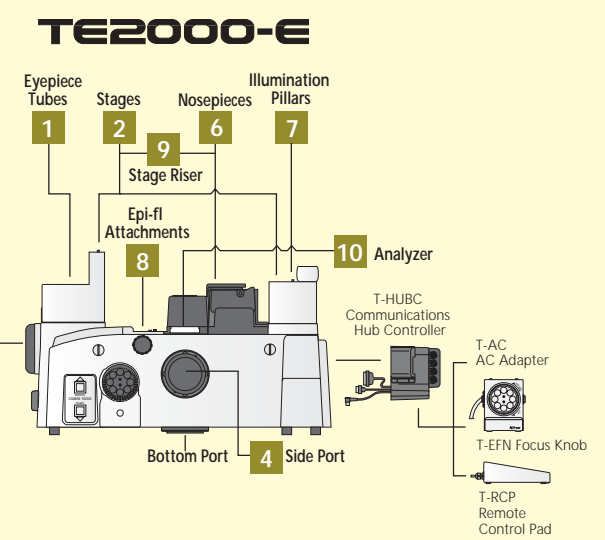
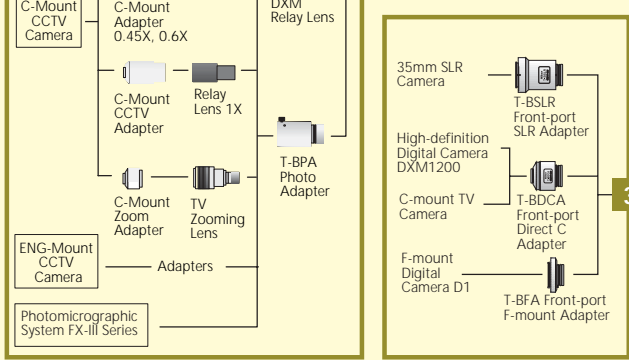
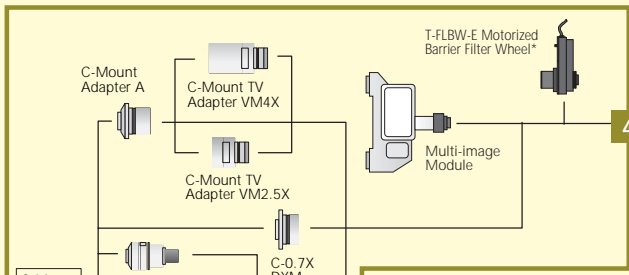
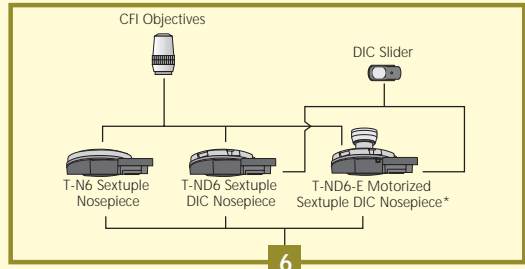
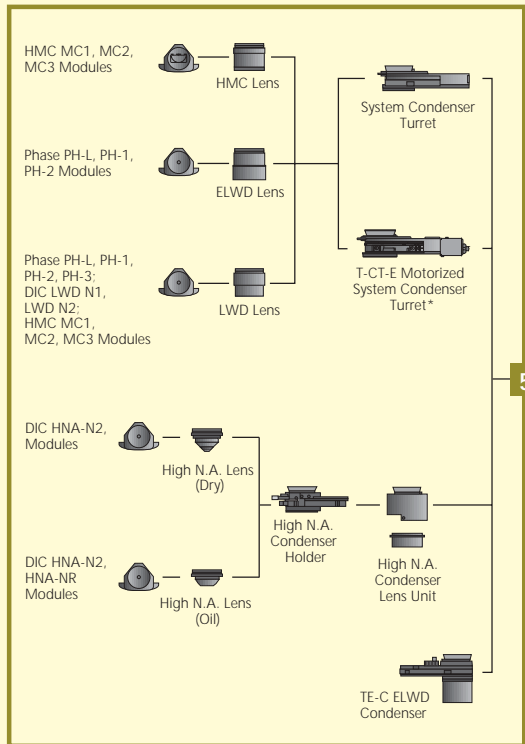
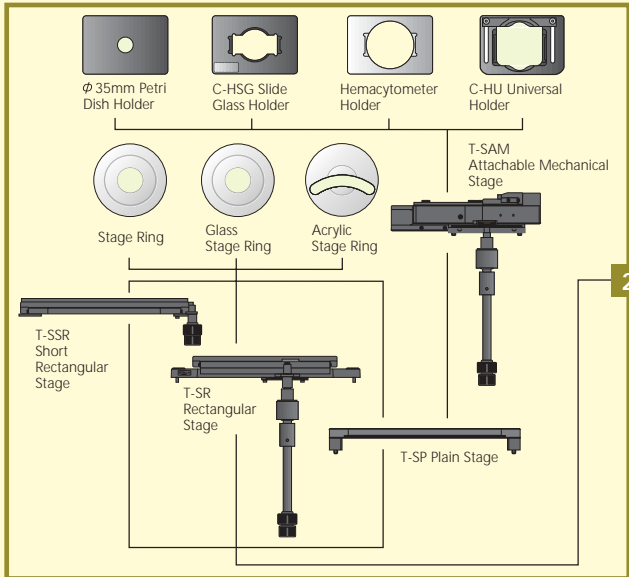
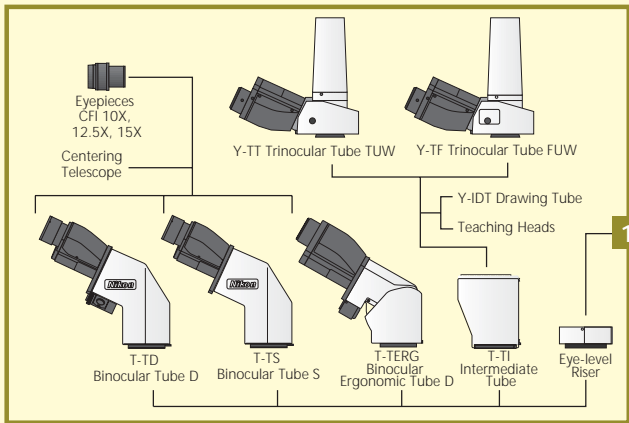
This option permits simultaneous observations of the same specimen by several persons, while delivering a constant degree of brightness. Ideal for education and training.

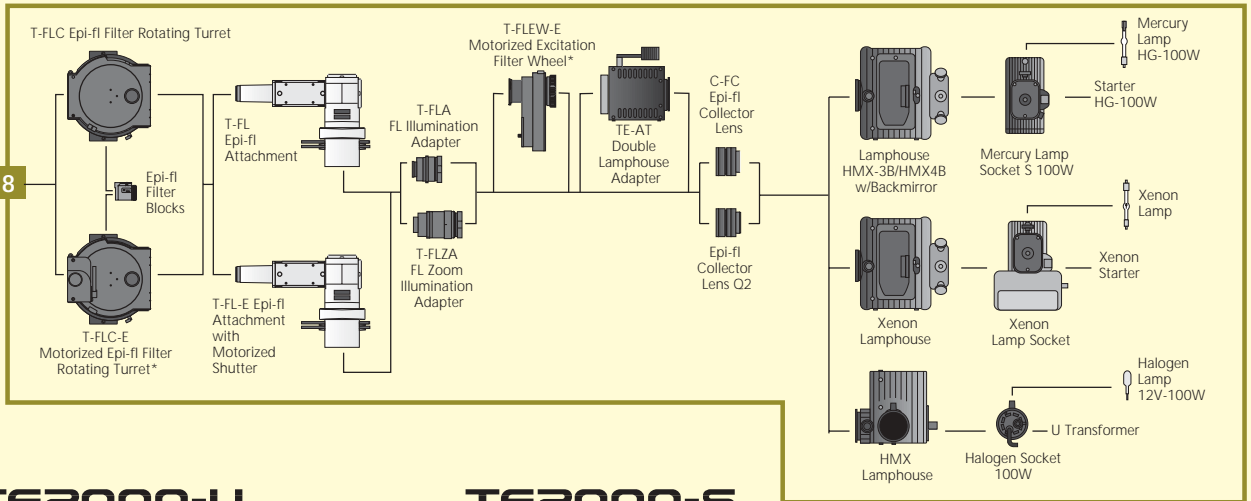
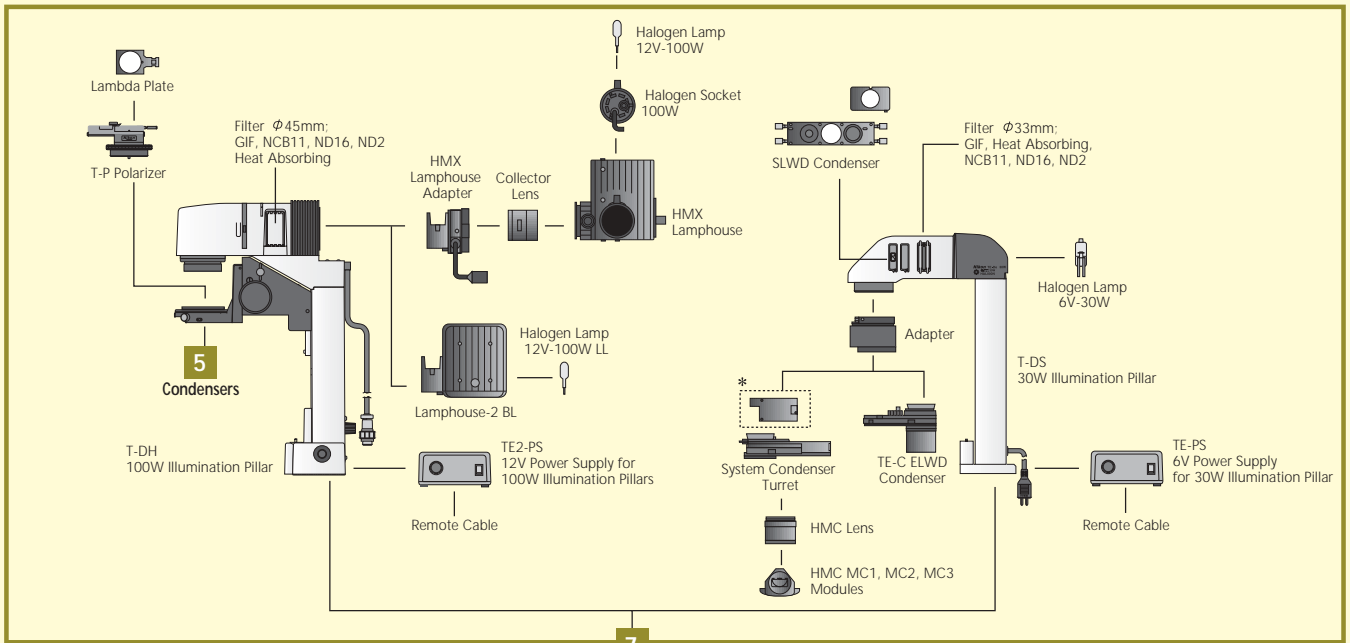


CCTV adapters

2.5X, 4X relay lenses are ideal for video enhanced contrast (VEC applications). Use 0.35X, 0.45X and 0.7X relay lenses for 1/3-, 1/2-, 2/3-inch CCD cameras, respectively. 0.9 to 2.2X zoom relay lenses are also available.

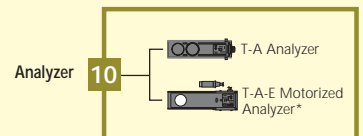
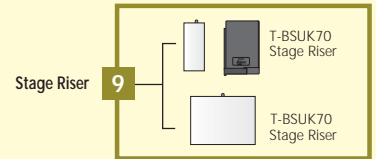
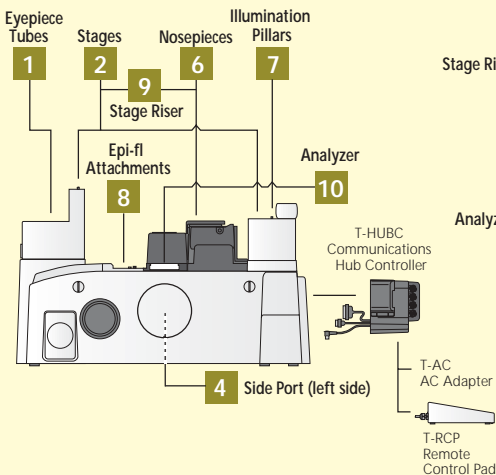
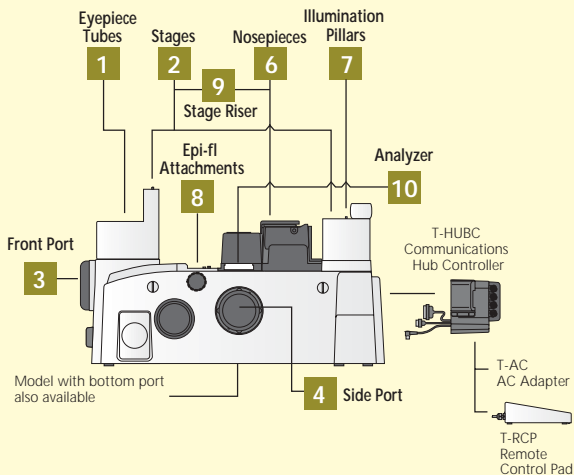
System Diagram





TE2000-U

TE2000-S



* Requires a communications hub controller.

Please contact Nikon for a handy pamphlet listing compatible accessories, including objectives and epi-fluorescence filters.

Specifications and equipment are subject to change without any notice or obligation on the part of the manufacturer. November 2004. ©2004 NIKON CORPORATION

WARNING TO ENSURE CORRECT USAGE, READ THE CORRESPONDING MANUALS CAREFULLY BEFORE USING YOUR EQUIPMENT.

* Monitor images are simulated.
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Instruments Company



ISO 14001 Certified
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Yokohama Plant

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