

# EX30 EX30 Biological Microscope

Teaching / Clinical / Laboratory

High resolution High contrast High performance-price ratio



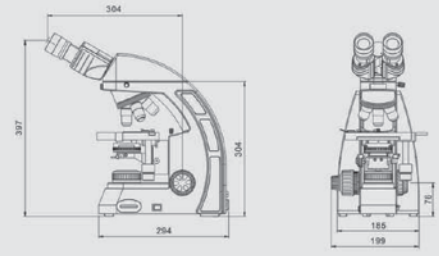
# EX30

## EX30 Biological Microscope

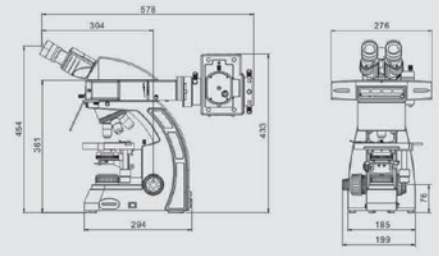
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High resolution  
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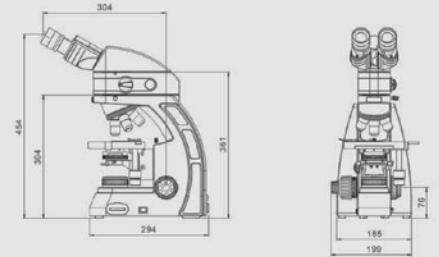
### EX30 normal dimensions: mm



### EX30- fluorescent dimensions: mm



### EX30-LED fluorescent dimensions: mm



	<p>has passed the certificates: ISO 9001 ISO 14001 ISO 13485</p>
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As technology improves, manufacturer has the right to make renovation in design without notice



# EX30 EX30 Biological Microscope

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The new EX30 biological microscope specially designed for universities or laboratories of biomedicine, and other relevant institutions. Train of thought in the design, EX30 made a comprehensive innovation and broke with the traditional design style. Its outstanding functions, excellent cost performance, easy and comfortable operation, presents an over expected splendid micro image.

## EX30 series characteristics

- Infinity color corrected optical system with high quality micro-technique presents superexcellent micro-image at any observation.
- Wide-field high eye-point eyepieces and plan achromatic objectives make the effect of fluorescence observation more perfect.
- Outstanding appearance design and ergonomics structure design, long time use without feeling tired.
- With the design of security lock and safe limits, it is much more secure, stable, and can be kept for long.
- Various microscopic examinations can be fulfilled, such as bright-field, dark-field, phase contrast, fluorescence, simple polarizing and so on.
- LED fluorescence excitation illumination, breading through the traditional type, is more stable, low radiation and over-length working.
- 3 or 5 million pixels digital chip, USB2.0 output, with fast transmission and high SNR, can capture real time image.

Insist on the stable, suitable, safe, efficient principle. EX30 with simple and easy to use structural design presents you a completely new experience of microscopic examinations.

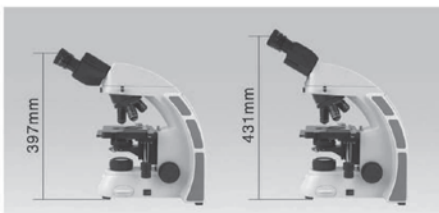
### High-powered single LED cold light illuminator

It maintains constant color temperature and closes to sun light. It can apply bright white back-ground without filter that is the best choice of observation for bright-field and photography by CCD. The illuminator supplies stable brightness and temperature difference never occurred even long time worked. Comparing with halogen lamp, LED has lower power dissipation and plug-type light system in left side to replacing easily. And it needs to turn over the base to replacing bulb for traditional microscope.



### Rotating eyepiece tube design

Interpupillary distance range is 50-75mm and eyepiece tube can be rotated 360°. The eye-point would be 34mm higher through rotating the eyepiece tube when interpupillary distance is 65mm. The traditional technology (using eye-point raiser to heighten observation height) is replaced.

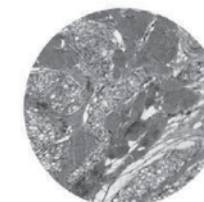


### Broad beam imaging systems

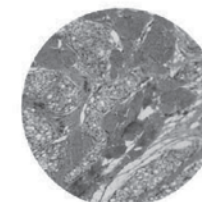
φ 20mm field plan high eye-point eyepieces with adjustable diopter avoid the phenomenon of margin breezing and yellowish green aperture. Wide field eyepieces can help finding object fast and counting conveniently. Eyepieces can be locked by screws to prevent any accidental falls when works or moves the microscope.

### New design objective

In order to get perfect sharp image, Sunny Group makes continuous improvement on optical design. The new infinity achromatic optical system applies semi-apochromatic objective that can improve the quality and contrast ratio of the image. At the same time, The objective made of environment-friendly materials inspecting by CTI. The image is brighter and revert the natural color with the advanced multi-coating.

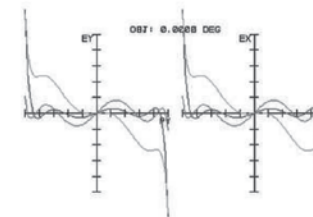


40X objective (new)

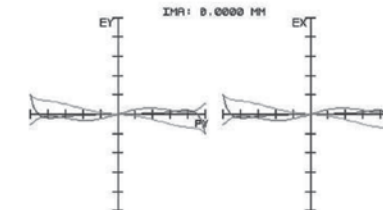


40X objective (traditional)

### 100X objective aberration curve contrast



Plan objective (traditional)



Plan objective (new)

### Stable main body design

It adopts structural finite element analysis as optimum design. The triangular design ensures stability and rigidity. We keep enough space for various parts. And curved profile accord with the demands of aesthetic feeling.



### Safe handle design

The handle on the back of main body guarantees the safety of microscope when move it.

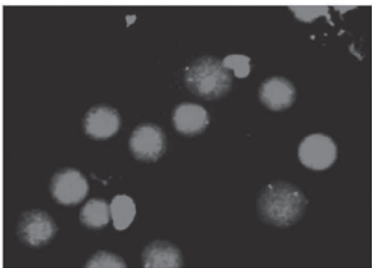
The break through LED fluorescence excitation illumination, stable, low radiation and over-length working life, offer you a fast and professional special diagnostic method.

### Innovative EX30 single-band LED fluorescence microscope

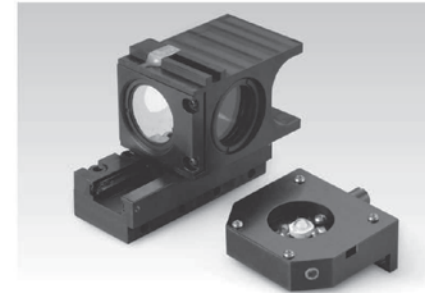
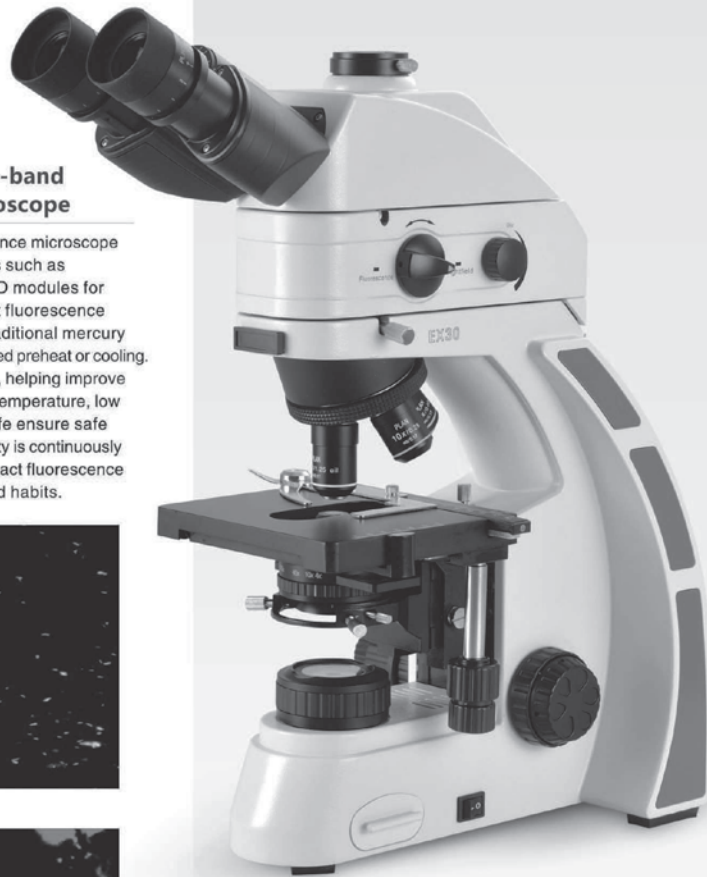
EX30 single-band LED fluorescence microscope is designed for special diagnosis such as Tuberculosis. Different filter-LED modules for choice, help you realize different fluorescence observations. Compared with traditional mercury lamp, LED illumination does not need preheat or cooling. It could be lightened immediately, helping improve work efficiency. Stable light, low temperature, low radiation, over-length working life ensure safe use. No need to adjust, the intensity is continuously adjustable. You can obtain the exact fluorescence light according to your needs and habits.



TB test



Immunofluorescence assay



### Different LED fluorescence modules

Except for TB test module B4, you could select B1, G1 or UV2 fluorescence module according to different usages. You can also choose several modules and replace them when you need.



### Intensity control knob

Rotating the knob, you could adjust fluorescence intensity simply and easily.

### Fluorescence illumination with DC power supply

6V/2A direct-current power supply, external transformer. Easy connection and safe use.

### Effortless switching from bright-field to fluorescence

On the basis of practical application, rotating the FL to BF knob, you can achieve two different observations. Switch to the FL channel, you can do TB test fluorescence observation or immunofluorescence assay. Switch to the BF channel, you can do pathology inspection or experimental observation with transmission light.

Multi-band professional fluorescent illumination system, with its excitation spectrum covering a range from UV-light to visible light, provides you a total solution for observing normal fluorescent and multiple fluorescent staining.



Using EX30RFL fluorescence illuminator and different filters, you can fulfill professional fluorescence observation. Standard B, G wave band are specially applicable to GFP, FITC, CY2, Alexa Fluor 488, Texas Red, Mito Tracker Red and other protein detection, immunofluorescence analysis fluorescent probe. The microscope at most can be mounted on four fluorescent exciter filter.

### Semi-apochromatic fluorescence objectives

A new generation of professional infinity plan semi-apochromatic fluorescence lens with high numerical aperture, which is 25% higher than ordinary plan objective lens, can excite the sample with brighter light and make a substantial increase in image resolution and clarity.

The system uses the high quality environmental protection materials, no auto-fluorescence, high UV through rate. Compared with ordinary bright-field achromatic lens in bandwidth and UV transmittance, the objectives with wideband multi-coating technology have obvious advantages.

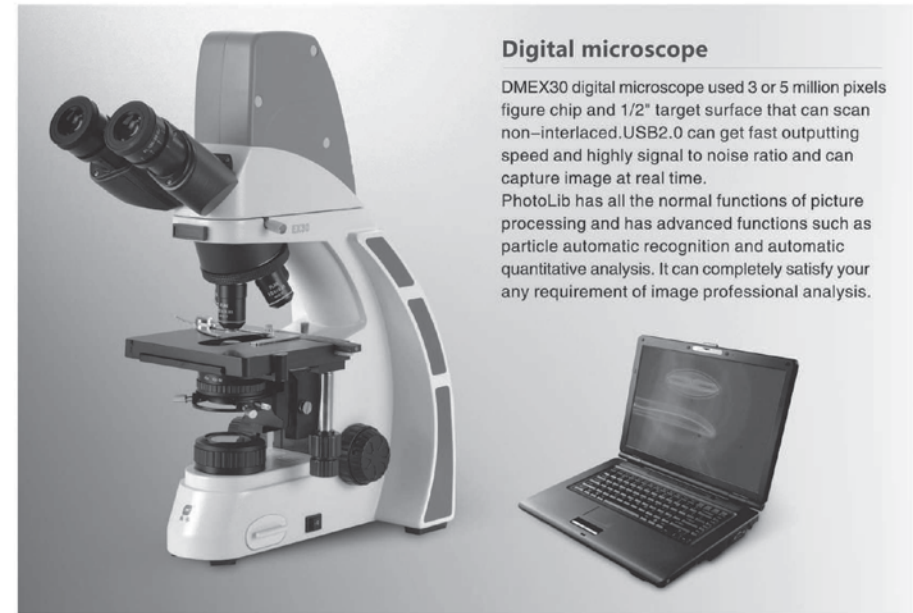
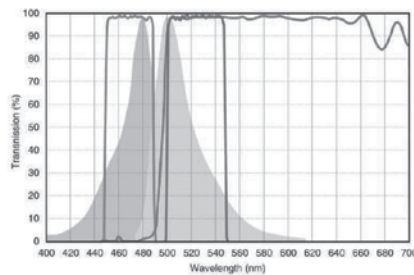


### High-performance fluorescence filters

Our selected high-performance fluorescence filters not only have a high transmittance of the spectrum, but also have good depth and steepness of the cutoff line.

Without a cross color but a high S/N ratio, fluorescence imaging contrast was promoted dramatically.

We choose stray light elimination of the background to the filter blocks. Thus, the background of the image becomes darker, and the fluorescence brighter.

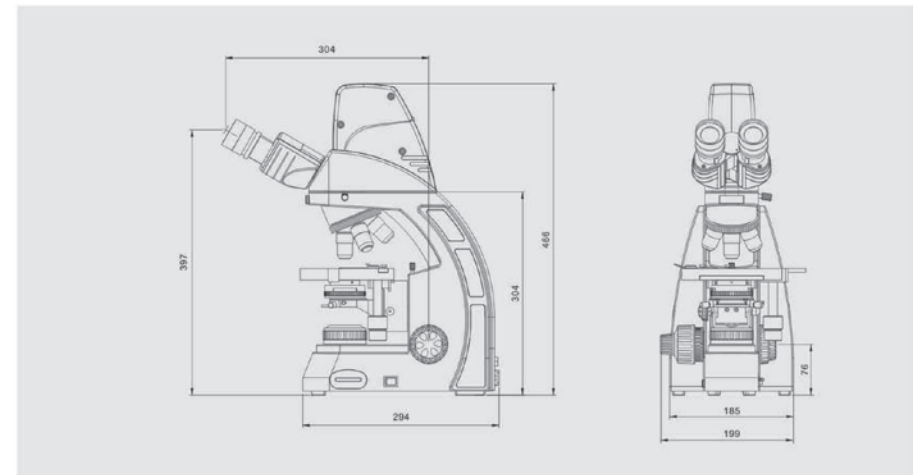


### Digital microscope

DMEX30 digital microscope used 3 or 5 million pixels figure chip and 1/2" target surface that can scan non-interlaced. USB2.0 can get fast outputting speed and highly signal to noise ratio and can capture image at real time.

PhotoLib has all the normal functions of picture processing and has advanced functions such as particle automatic recognition and automatic quantitative analysis. It can completely satisfy your any requirement of image professional analysis.

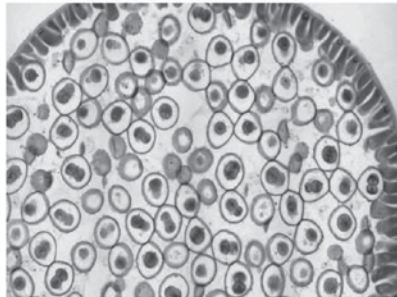
### DMEX30 dimensions: mm



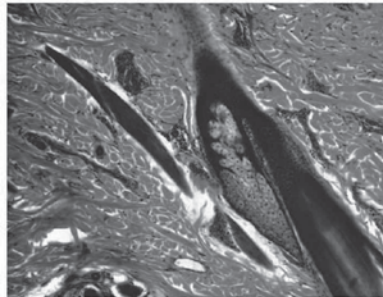
It combines many functions in one, such as bright-field, simply dark-field, simply polarizing, simply phase contrast etc. You can fulfill various tests, analysis. Also it can be used with phase contrast and fluorescence for professional use.

### Bright-field observation

New plan achromatic objective used with Kohler illumination system can supply the sharp image after adjusting aperture diaphragm and field diaphragm. You can get high resolution and contrast ratio image at low or high magnification. 3W single LED illuminator supplies bright background. According to different demands, it also can install 6V30W halogen bulb, then the lighting effect is the same.



Animal cell division  
Bright-field 20X



Hair follicle of human skin  
Bright-field 40X

### Dark-field observation

Insert the dark-field spill into condenser socket and pull dark-field diaphragm in, then it can fulfill simply dark-field observation. You can observe blood, flagellum, Treponema pallidum in dark-field at any times between 4X-40X without special dark-field condenser.



### Simply polarizing observation

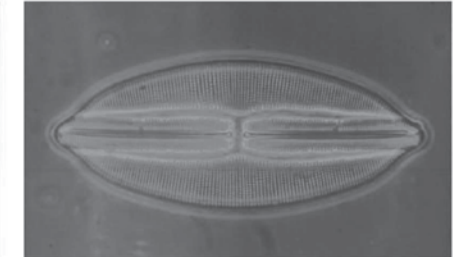


Using simply polarizing device can detecting urine crystal, gout-joint fluid etc. Just putting polarizer on collector and inserting analyzer into the viewing tube socket then we can fulfill simply polarizing observation handily.

### Phase contrast observation

You can fulfill phase contrast observation after inserting simply phase contrast flashboard into condenser socket and replacing phase contrast objectives. There are two kinds of simply dark-field flashboard SL1 ( used with 10X/40X ) and SL2 ( used with 20X/100X ) .

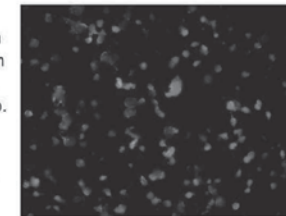
Also you can use disc phase contrast condenser and then to can observe at multi-magnifications continuously. The disc phase contrast condenser has two types Model. No.EX30CDKP which can used with 10X/20X/40X/100X phase contrast objectives, and keep a bright-field position. Model No.EX30CDKPD can used with 10X/40X/100X phase contrast objectives, and it also can fulfill dark-field observation at 4X-40X continuously and keep a bright-field position.



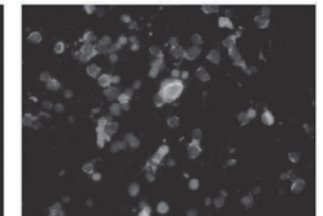
Diatom  
Phase contrast 40X If550

### Single-band LED fluorescence observation

Advanced LED fluorescence excitation technique, conquered problems such as high temperature, high radiation, instability of traditional mercury lamp. Different filters with its own LED module, responds to the needs of all kinds of fluorescence observation.



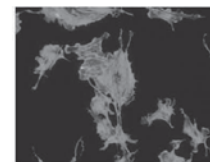
Immunofluorescence FITC 20X



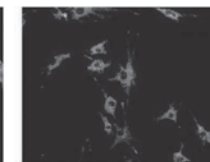
Immunofluorescence FITC 40X

### Multi-band fluorescence observation

Multi-band reflection fluorescence illumination, equipped with three fluorescence channels and a bright-field channel, is possible to install four fluorescent filter blocks at most. Professional used in biomedicine cell detection, immunofluorescence analysis, fluorescence in situ hybridization (FISH), is an important detecting method in biomedicine.



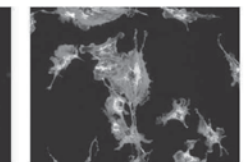
Alexa Fluor 488  
Cytoplasm



Mito Tracker Red



DAPI  
Nucleus



Artery endothelium cell of OX lung  
20X UV/B/G

**Trinocular viewing head**

The trinocular head microscope can be used with photography device and videography device. The image is output to monitor or computer and then can be analysed, processed, saved and transmitted.



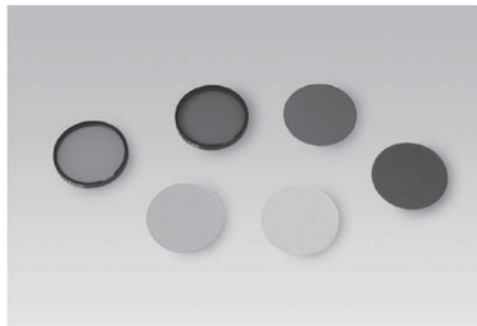
**Photographic device**



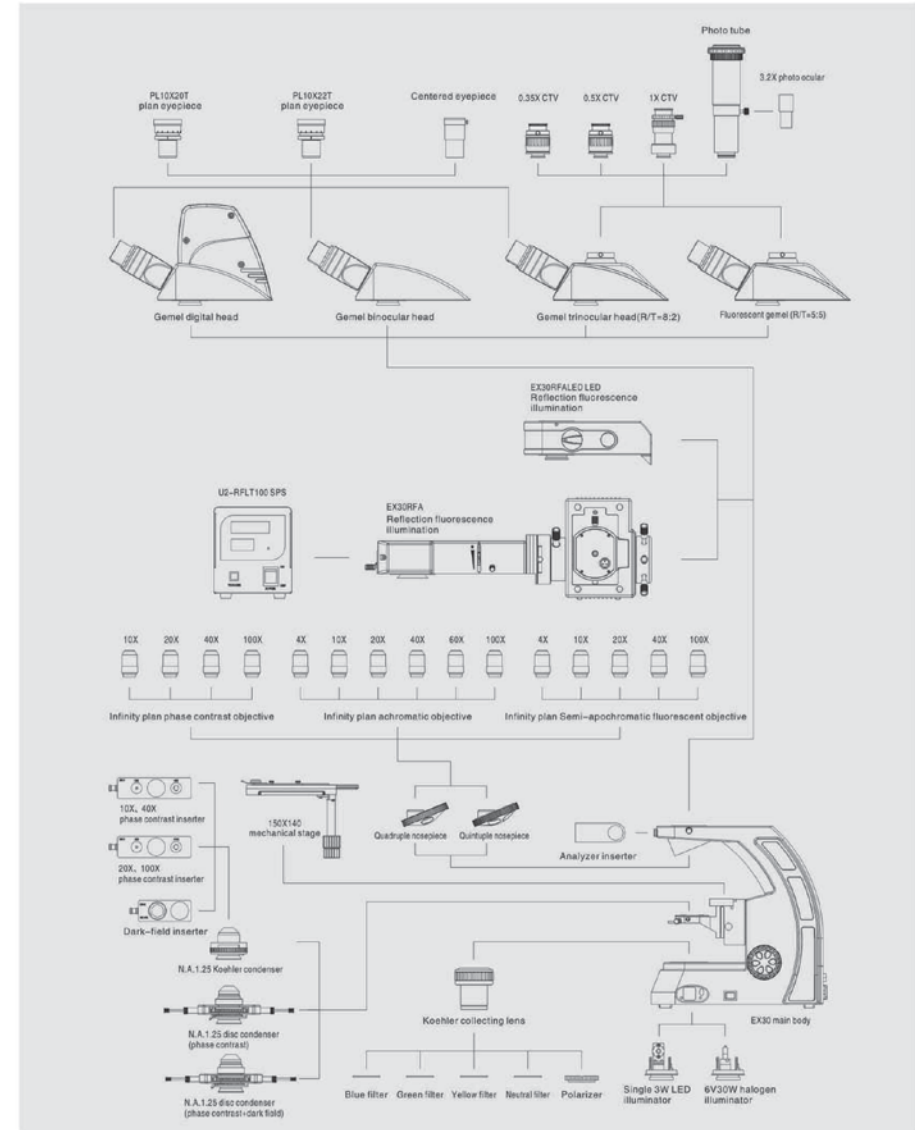
If used with C-mount and relay lens tube, it can be used with digital camera then get image fast.

**Various filter optionals**

Under phase contrast observation, green filter or IF550 phase contrast interference filter can help to get the best image effectiveness. Under halogen lamp using, blue filter can help to get the best image contrast. Different filters can fulfill different backgrounds. The users can make different choices according to actual requirements.

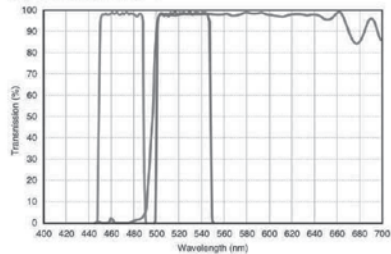


**EX30 series system diagram**



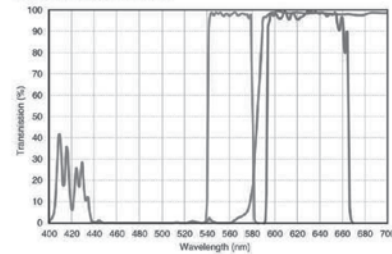
Common parameters of fluorescent filter module, substantially meet the needs of conventional scientific research. In order to the special requirements of specific analysis, we also could provide special filter module corresponding to fluorescent probes.

**B1:** EGFP/GFP/FITC /Alexa Fluor@488  
Cy2@/DIO/Fluo-4



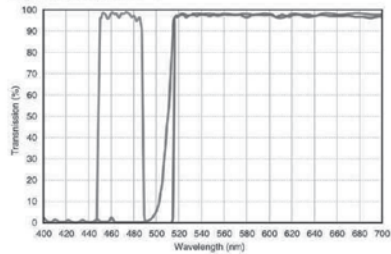
— EX470/40 — DI495LP — EM525/50

**G1:** TexasRED@/TexasRed@-X/Cy3.5  
Mito Tracker@Red



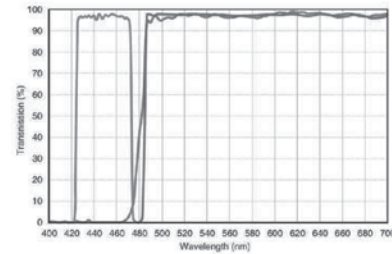
— EX560/40 — DI585LP — EM645/75

**B2:** EGFP/GFP/FITC /Alexa Fluor@488  
Cy2@/DIO/Fluo-4



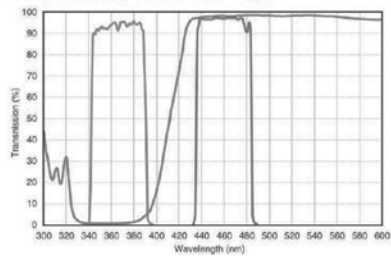
— EX470/40 — DI510LP — EM515LP

**B4:** Auramine O/wtGFP



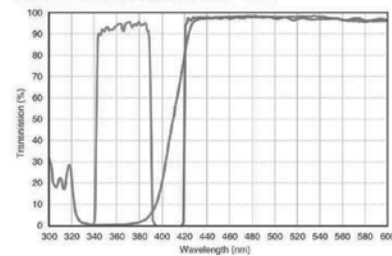
— EX450/50 — DI480LP — EM485LP

**UV1:** DAPI/Hoechst 33342/33258 AMCA/  
AMCA-X Blue/ Alexa Fluor® 350



— EX365/50 — DI400LP — EM460/50

**UV2:** DAPI/Hoechst 33342/33258 AMCA/  
AMCA-X Blue/ Alexa Fluor® 350



— EX365/50 — DI400LP — EM420LP

### EX30 specifications

Model	EX30
Optical system	Infinity corrected Achromatic optical system
Eyepiece	PL10X/20T plan eyepiece 10X with diopter ±5 adjustable, field scope 20mm
	PL10X/22T plan eyepiece 10X with diopter ±5 adjustable, field scope 22mm
Objective	OIP infinity plan achromatic objective 4x, 10x, 20x, 40x, 100x
	Infinity phase contrast objectives 10X, 20X, 40X, 100X
Viewing head	30° gemel bionocular, Eyepiece tube can rotate 360°, interpupillary distance range: 50-75mm
	30° gemel trinocular, Eyepiece tube can rotate 360°, interpupillary distance range: 50-75mm, fixed spectroscopical ratio R:T=8:2
	30° gemel fluorescent trinocular head, Eyepiece tube can rotate 360°, interpupillary distance range: 50-75mm, fixed spectroscopical ratio R:T=5:5
	30° gemel digital head (three / five megapixels)
Filter	Fluorescence filter: B1/B4/G1/V1/UV1/UV2
Nosepiece	Reversed quintuple nosepiece
	Reversed quadruple nosepiece
Stage	150x140mm mechanical stage with underhand, 76X50mm moving range, precision 0.1mm, damping clips
Condenser	N.A.1.25 Köhler illuminator condenser group (with socket for phase contrast, dark-field device)
Focus adjustment	Coarse focusing scope is 30mm, with tightness adjustment and place limit set, fine adjustment precision: 0.002mm
Reflection illumination system	LED reflection illumination, single-band filter with corresponding LED module inside, intensity adjust knob, BF/FL switching knob
Transmission illumination system	Mercury lamp reflection illumination, 100W DC mercury bulb (OSRAM/domestic)
	100V-240V fluctuate of voltage, Single high brightness 3W LED (predetermine filament center), adjustment of brightness
	100V-240V fluctuate of voltage, Philips 6V/30W halogen lamp (pre-set filament center), adjustment of brightness
CCD Adapter	1xCTV, 0.5xCTV, 0.35xCTV, 3.2x photo ocular, photo tube (with PK mount or MD mount), C-mount, relay lens
Other accessories	Dark-field accessories, phase contrast accessories, polarizer/analyzer

### EX30 objectives

Series	Magnification	N.A.	W.D.	F.N.	Cover glass thickness	Immersion	Spring
Plan series	Plan4X	0.10	11.9	22	0.17	/	/
	Plan10X	0.25	12.1	22	0.17	/	/
	Plan20X	0.45	1.5	22	0.17	/	/
	Plan40X	0.65	0.36	22	0.17	/	Yes
	Plan60X	0.85	0.3	22	0.17	/	Yes
Plan PH series	Plan100X	1.25	0.18	22	0.17	Oil	Yes
	Plan PH10X	0.25	12.1	22	0.17	/	/
	Plan PH20X	0.45	1.5	22	0.17	/	/
	Plan PH40X	0.65	0.36	22	0.17	/	Yes
	Plan PH100X	1.25	0.18	22	0.17	Oil	Yes
Plan Fluor series	Plan Fluor4X	0.13	18.5	25	0.17	/	/
	Plan Fluor10X	0.30	10.6	25	0.17	/	/
	Plan Fluor20X	0.50	2.33	25	0.17	/	/
	Plan Fluor40X	0.75	0.6	25	0.17	/	/
	Plan Fluor100X	1.28	0.21	25	0.17	Oil	/



LPLAN plan infinity achromatic objectives, designed for laboratory pathology and observation of biological cells slices, clear image, good contrast, and good performance under fluorescence observation.



PLAN-PH series infinity phase contrast objectives. In addition to the realization of the bright field observation, the phase contrast observation function has been developed. they especially suit colorless or undertone cells.



PLAN-FLUOR plan semi-achromatic fluorescence objectives. Adopting crystal optics materials, various types of chromatic aberration corrected perfectly and large numerical aperture design, provide you high-resolution, high-contrast microscopic images. While doing Fluorescence observation, the images is clear and bright, the background is pure black. In the aspect of UV fluorescence, which has more prominent performance, is the best choice for your fluorescence observation on all kinds of cells and pathological sections.