### Dimensional Diagram



### E200 Specifications

Optical systemCFI60 (infinity optical system) Parfocal distance: 60mmCFI E Plan Achromat 40X N.A. 0 0.65mm)Magnification40–1500X for observation 0.50W for 25 mm shother intermediate 0.50W for 23 mm)CFI E Plan Achromat 100X Oil N 0.23mm)	.65 (W.D. I.A. 1.25 (W.
Magnification 40–1500X for observation CFI E Plan Achromat 100X Oil N   0.23mm) 0.23mm)	I.A. 1.25 (W.
8-200X for 32mm photomicrography	
Eyepiece tube E2-TB Binocular tube, E2-TF Trinocular tube As an option, CFI Actionat DL   Siedentonf type (Inclination: 30° Interpupillary higher-grade CFI60 objectives c	an be used
distance: 47-75 mm, 360° rotatable) C-TE Ergonomic Binocular Tube (inclination: 10- 30°, extension: 40mm) Condenser	af-type on guide an objective
EyepieceCFI E 10X (F.O.V.: 20mm), CFI E 15X (F.O.V.: 12mm)Optional condensers: E2 Phase condenser N.A. 1.25: I	eaf-type
Photo lens PLI projection lens: 2X, 2.5X, 4X, 5X aperture diaphragm with position	on guide
Nosepiece Quadruple nosepiece, reversed type markings for respective CFI Ach	romat DL
Coarse/fine focusingFine: 0.2mm per rotation, Coarse: 37.7mm per rotation, Minimum reading: 2 microns on left-side fine control knob, Coarse motion torque adjustable, Refocusing system incorporated in stage, Stage handle and focusing knob are at equal distance from the operatorObjectives For microscope without field dia C-C Achromat Condenser Achromat Swing-out Condenser Darkfield Condenser, dry type C-C Phase Contrast Condenser	aphragm: r
Stage Rectangular 216 x 150 mm surface stage mounted Illumination system 6V-20W halogen bulb, 6V-30W h	ialogen bulk
on the main body. Cross travel 78 x 54 mm using low-positioned X/Y coaxial control knob Intermediate attachment* E200 epi-fluorescence attachment head (face-to-face and side-by-special control knob)	ent, Teachin side types),
Objectives CFI E Plan Achromat 4X N.A. 0.10 (W.D. 30mm) Drawing tube, Eye level riser   CFI E Plan Achromat 10X N.A. 0.25 (W.D. 0.7mm) *Maximum intermediate space 50mm	

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

Specifications and equipment are subject to change without any notice or obligation on the part of the manufacturer. October 2008 ©2000-08 NIKON CORPORATION



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En

**Biological Microscope** 



The first microscope in its class to feature CFI60 infinity optics, plus an anti-mold design to ensure years of high-quality use



or the first time, the CFI60 optical system— **I** infinity optics of the world's highest level—has been incorporated into a microscope of this class. The result is stunningly sharp and clear images at any magnification. Of course, the Eclipse E200 maintains the same operational ease and rigidity common to all Nikon microscopes and is compatible with many accessories for higher-grade Eclipse series microscopes.

Is mold a problem? Not any more.

By using anti-mold paint and sealing anti-mold agent inside the microscope at critical places, the Eclipse E200 is designed for use even in hot and humid environments.

Moreover, this instrument packs all of these features into a contemporary design that blends in with the clean interiors of your hospital and examination rooms.

Best of all, the Eclipse E200 is affordable. Once you use it, you'll realize what an outstanding performer it is, despite its modest price.



Eclipse E200

### Superb infinity optics, plus ergonomic touches

# **CF60** optical system





The CFI60 optical system combines Nikon's renowned CF optical design with infinity optics to overcome the limitations of the traditional infinity design. CFI60 optics

provide longer working distances and higher N.A.'s. These new optics deliver startlingly clear images at any magnification because chromatic aberrations and curvature of field are both corrected over the entire field of view when the field number is 20mm. Nikon developed new dedicated CFI E Plan Achromat objectives exclusively for the E200. Also, you can use other higher-grade objectives available for the Eclipse series whenever your laboratory situation calls for it.



#### Improved

### Ergonomic design equals comfortable operation

Comfort is ensured allowing long hours of use, thanks to Nikon's thoughtful ergonomic design. This is the same design incorporated into A

Nikon's other laboratory and research-grade Eclipse series microscopes.

For example, the focus knob and the stage handle are located equidistant from the operator, permitting one-handed operation in a natural posture without twisting the shoulders. Because these controls are low positioned, you can operate the microscope while resting your arms comfortably on the desk. Moreover, the low-profile stage makes exchange of specimen slides easy, while the low inclination angle eyepiece tube provides comfortable viewing.

### Ergonomic binocular tube

With this option, users can adjust not only the eyepiece tube tilt angle, but the eyepiece length to suit their build, eliminating discomfort and strain during long hours of observation.

- \* Use of this accessory in combination with other equipment may produce darker images around the periphery.
- \* Must be attached directly to the main body.

### Anti-mold design

Mold is a formidable enemy of microscopes. Before you know it, it can begin growing on the interior optical surfaces of the microscope and ruin performance. Using anti-mold paint, plus anti-mold agent sealed at critical places inside the microscope, the Eclipse E200 is designed to resist mold growth. In tests, an anti-mold treated unit was able to resist the growth of mold for three consecutive years at an average temperature of 30° C (86° F) and 80% humidity.



### Eye-level riser

Up to two eye-level risers can be mounted to raise the height of the eyepoint—25mm each for a total of 50mm.

### Robust, vibration resistant construction

One-piece construction from arm to base, a stage design where its up/down mechanism is located in the base, plus a wide footprint of 188.5mm across the back all provide





Comparison of the positions of the stage handle and focus control knob





Eyepiece length can be extended by up to 40mm.



E200 configured with an ergonomic binocular tube



greater rigidity and resistance to vibrations, contributing to superior images.

## Design ideas that ensure superb optical quality and increased ease of use

### **CFI60** objectives

Nikon's exclusive CFI60 objectives provide numerous benefits: longer working distances, high numerical apertures, flat images over the entire field of view with virtually no curvature of field when the field number is 20mm. To match your laboratory requirements, the E200 provides a wide selection of objectives to choose from. These include the new CFI E Plan Achromat objectives developed for the E200 or other higher-grade Eclipse series objectives.



CFI E Plan Achromat objectives

### Improved

### Eyepiece tube

The Siedentopf-type evepiece tube is inclined at 30 degrees to ensure comfortable viewing in a natural posture. Designed for use by operators with different builds, this eyepiece tube has a narrow minimum interpupillary distance of 47mm, while the evepoint height can be raised 34mm when interpupillary distance is 64mm by simply swinging the front part of the eyepiece tube up 180°. For extremely tall users, eyelevel risers are available to customize the microscope.



Low position



High position



E2-TB binocular tube \* Evepiece lens is optional

E2-TF trinocular tube

### Eyepieces

The E200's new eyepieces feature a wider field of view for a microscope of this class and are available in 10X (F.O.V. 20) and 15X (F.O.V. 12) types. These evepieces also feature built-in diopter adjustment that allows the operator to adjust diopters separately for the right and left easily. In addition, these eyepieces accept measuring reticles that will always be in sharp focus with the specimen. Moreover, they can be locked, preventing theft and eliminating the possibility of damage during transit.







F.O.V. 18 (conventional model)



Nikon has created a unique innovation. The Refocusing Stage eliminates the need to refocus the image manually, making specimen handling safer and easier. In this unique design, the stage can be instantly dropped by pushing it down to exchange specimens or oil the slide, then returns to the original position as soon as the hand is removed. The wide stage surface can accommodate two slide glasses at the same time.

- In addition, this stage has an array of features including:
- Increased resistance to vibrations due to the design of the inbase focus mechanism.
- Low-profile design that creates more space around the objective for increased freedom in specimen handling and easier operation.
- A belt-drive mechanism to eliminate the projection of the rack at the edge of the stage for better ergonomics and smoother movement.
- Removable specimen holder for fast hand scanning of slides.
- Improved XY cross travel, providing the comfort and feel similar to Nikon's higher grade Eclipse series microscopes

### New Upper limit stopper

When using short-working-distance objectives such as 40X or greater, you can set the upper limit of the stage movement, so that the objective doesn't hit the specimen slide, protecting both from damage. Thanks to this feature, even novices or operators who need to change slides often can perform their job easily and quickly. The limit height can be set in two levels using a stopper bolt—either at the standard position or 2mm lower. This feature is very useful except when extraordinarily thick specimens are used.

### **Revolving nosepiece**

A reversed-type nosepiece creates more space at the front of the stage, making handling of specimen slides fast and easy. In addition, the CFI60 optical design eliminates extra optical elements in the nosepiece for enhanced image sharpness. Another advantage of CFI60 objectives is that their increased objective lengths and longer working distances provide more working space around the nosepiece.





Wide stage surface with no rack sticking out of the stage

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## A wealth of accessories to broaden the range of microscopic applications

### Condenser

Although the stage is low-positioned for comfort, there is ample space around the condenser for easy access. The condenser also features an aperture diaphragm that comes complete with position guide markings for respective E Plan objectives to make operation guick and easy



### Improved Replacing the lamp is safe and easy

Turning the microscope upside down to replace the lamp is no longer necessary. Simply open the lens unit cover to make replacement.



### Model with field diaphragm available.

A model with a built-in field diaphragm allows the use of Koehler illumination. It features:

- A field lens unit with a field diaphragm that has position-guide markings for respective objectives.
- Easy and safe lamp replacement procedure.



Field diaphragm with position-guide markings



### Wide variety of condensers

Abbe, Phase, and other Eclipse series condensers, except the universal type, can be used with the E200.



condenser

### Phase contrast

Simple phase contrast observation at 10X. 20X and 40X is possible with a single phase annulus slider. The aperture diaphragm automatically opens when the slider is inserted into the condenser. Phase contrast 100X slider and darkfield slider up to 40X objectives are available as options.



CFL Achromat DL objectives for phase contrast

### **Epi-fluorescence**

The E200-dedicated epi-fluorescence attachment is available for users who want to begin fluorescence observation. Although affordably priced, this attachment allows comprehensive epi-fluorescence as well as UV excitation observations.



Filters are optional.

### Simple polarizing

This method is ideal for observing amyloid and crystals. To set up, install the polarizer over the field lens and the analyzer.

E2 Abbe condenser (left) and E2 phase



eclipse









Simple polarizing set C

### Accessories (cont'd.)

### System Diagram

### Ergonomic binocular tube



Both evepiece length and tilt angle are adjustable.

### Eye-level riser

Two risers can be inserted to increase the evepoint height— 25mm per riser for a total of 50mm.



### **Teaching heads**

Face-to-face\* and side-by-side teaching heads are available. ction with a photomicrographic system, because it makes the microscope top-heavy



### **Object** marker

Allows the point of interest within a specimen to be marked with ink.



### Drawing tube

Allows accurate sketching of the image being observed.



### Digital Sight series digital camera system

When the trinocular eyepiece tube is used, a digital camera can be attached.\* The DS-Fi1-L2, a color camera head combined with a standalone control unit, enables focusing and viewing of images on the built-in 8.4-in. LCD monitor without



the need for a PC. The optimum imaging conditions that match the observation technique in use can be automatically set by clicking on the appropriate "scene mode." Storing optimal images is easy.

> \*With a 4x objective lens, the image may show nation depending on the ca

### Plastic storage case

The rugged, lightweight storage case is handy for transporting and storing the E200.



### ND filter for objective lenses (ND3)

When this filter is used in combination with a 4x or 10x objective lens, image brightness can be adjusted to nearly equal to that of a 40x objective lens.



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