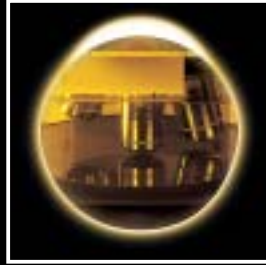


Nikon



Automated IC Inspection Microscope

ECLIPSE

L2000A



CFI60

The next generation in automated IC inspection microscopy

The Eclipse L200A has scored major advances in the standardization of inspection and safeguards against contamination. In a new design that combines motorized control with automated operation, observation conditions can be programmed for each individual objective or for each substrate to be inspected. Focus position, objective magnification, illumination control and other microscope methods are fully programmable and can be recalled instantly. This eliminates deviation in inspection results that might occur due to different settings made by multiple users.

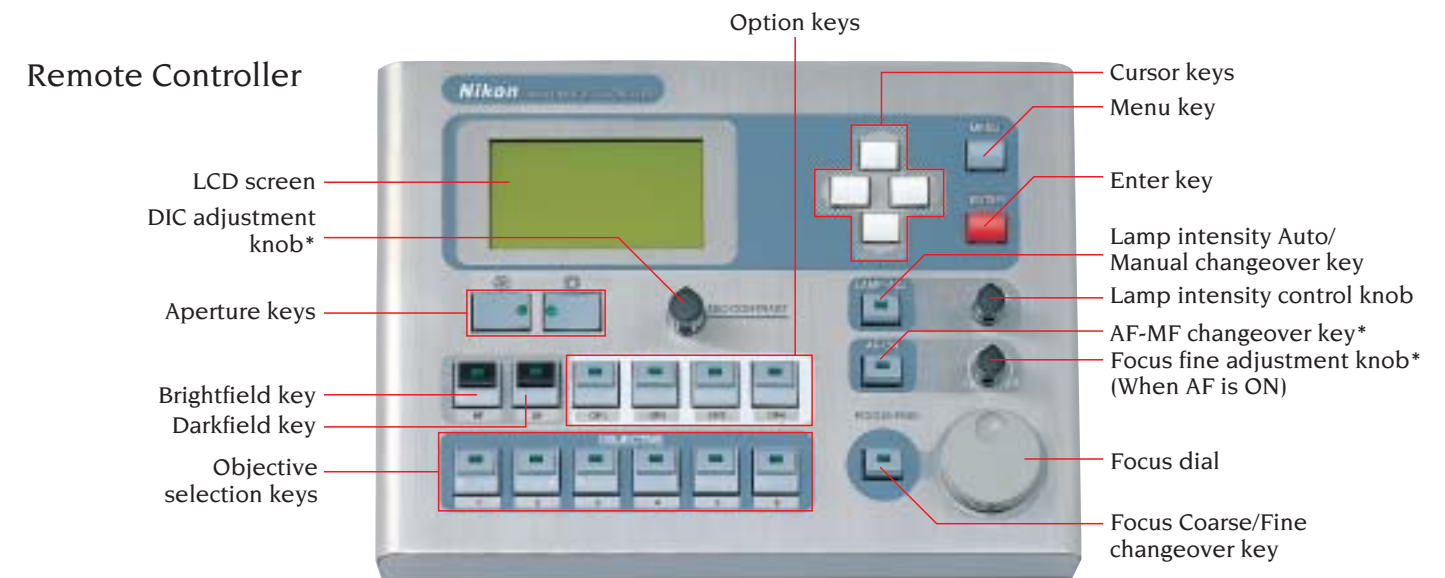


To minimize the chance of contamination, the L200A's aperture control and other major operations are now motorized, enabling remote control for use on unattended IC production lines. Like other Eclipse-series microscopes from Nikon, the

L200A features industry-acclaimed CFI60 infinity optics. Include an ergonomic design for comfortable viewing, a rigid, vibration resistant construction, and you have a microscope unsurpassed to meet the stringent requirements of the latest semiconductor fabs. The L200A is the next step upward in automated IC inspection microscopy.



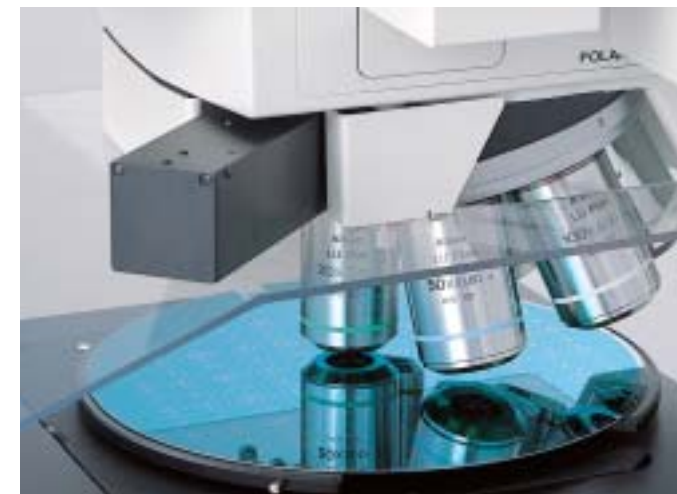
Standardized, contamination-free inspections



*Active when the respective optional module is attached.

Motorized, remote control minimizes the chance of contamination, while enhancing productivity

Frequently used operations such as aperture control, focusing, brightfield-darkfield changeover, nosepiece rotation, lamp intensity control, and DIC setting (option) are all motorized and can be controlled by the remote controller or a PC. In addition, there is virtually no operation that requires manual adjustment above the sample, therefore preventing particle contamination introduced from the operator.



Free from deviations in inspection results, due to human errors and differences in microscope settings

Optimum observation conditions including focus position, aperture, light intensity, as well as DIC prism and polarizer position can be preset objective-by-objective and recalled simply by selecting the objective. This eliminates the need to configure these settings each time the microscope is used, providing standardized observation regardless of who operates the microscope.

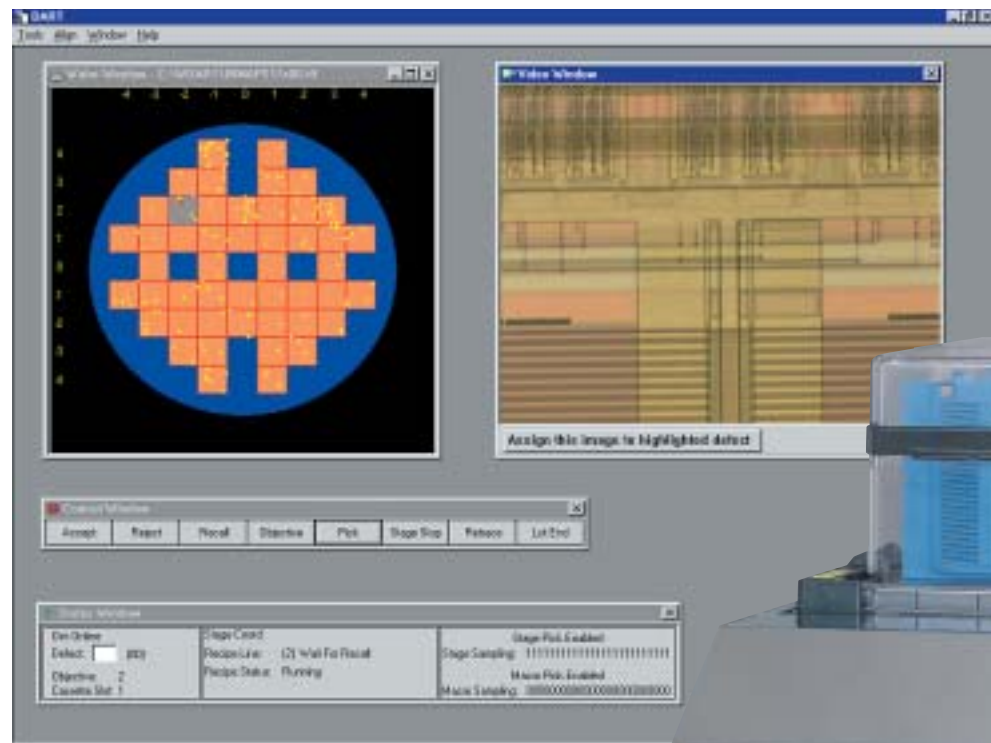
Easy configuration into an automated inspection system

Programmed settings

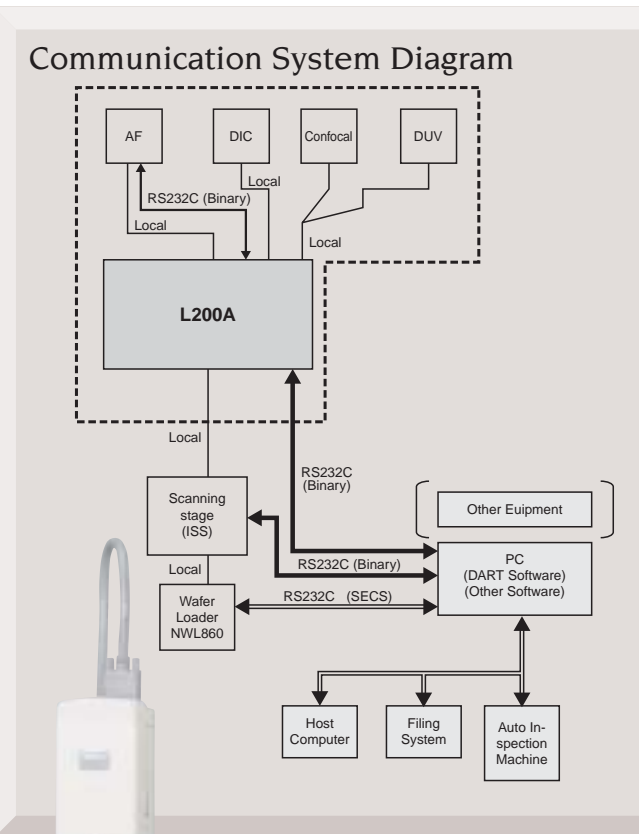
As an inspection process varies depending on substrate, layer, and even the operator, it has been necessary to re-adjust settings for each inspection process. The L200A's programming feature eliminates this process. You just select the settings-such as observation method, objective magnification, point to be checked, focus position, aperture, and light intensity-and save them by attaching appropriate file names. All you need do to begin your inspection is just to specify the file name.



DART software (option)



DART Software is an integrated software package that can fully automate the inspection process. DART combined with an NWL860 wafer loader, ISS200 Motorized Stage and a L200A Auto Focus offers a complete automated wafer inspection station. DART software modules allow further upgrades with options such as image archiving, defect review, post probe review and online communications.



In combination with wafer loaders

Of course, the L200A can be configured with Nikon's NWL-860 series of wafer loaders and manual or motorized scanning stages to create a wafer inspection system at a minimum cost.



L200A configured with NWL-860 INX



Top-notch basic performance facilitates inspections

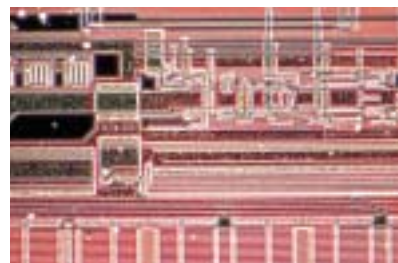
CFI60 Optical System



Nikon's renowned CFI60 optics are the fusion of CF design and infinity optics. These new optics feature longer working distances and high N.A.'s. They also produce brighter images with more contrast and reduced flare.

High-contrast darkfield images

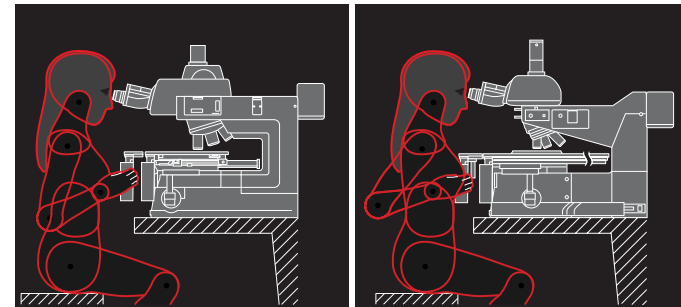
A new illumination system produces a Signal to Background (S/B) ratio that is nearly three times greater than former models. This improves sensitivity during darkfield observations, enabling the detection of minute scratches and surface irregularities within the sample, and provides exceptionally high contrast.



Safeguards against contamination

The body of this microscope is finished with electrostatic discharge (ESD) coatings to prevent foreign particles from adhering to it. Furthermore, the motorized nosepiece uses a shielded center-motor that traps foreign particles inside, preventing them from falling onto the sample.

SEMI S2-93A, S8-95 compliant design



A tilting trinocular eyepiece tube with a lower eyepoint designed to be closer to the operator allows you to sit in a more natural erect position. Microscope controls located comfortably up-front in the microscope base minimize hand movement, allowing you to concentrate on the inspection process.

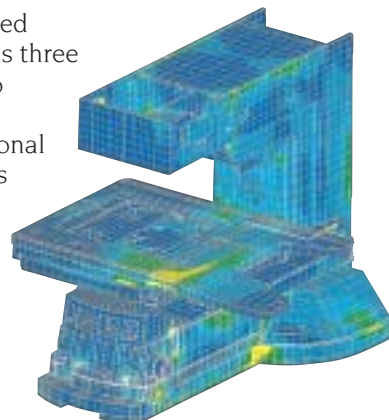
Centerable motorized nosepiece

The sextuple motorized nosepiece not only has the same encoded positioning system offered on the Eclipse L200, but it also offers three adjustable objective positions that improve par-centricity even more.



Vibration-isolation design

Thanks to Computer-Aided Engineering, the L200A is three times less susceptible to floor vibrations when compared with conventional models in this class. This reduces the chance of unwanted blur or image shifts even during high-magnification observations.



Accessories to enhance performance

CFI LU/L Plan series objectives

| Type | Magnification | N.A. | W.D. (mm) |
|------------------------|---------------|-------|-----------|
| CFI L Plan Epi* | 2.5X | 0.075 | 8.80 |
| CFI LU Plan Epi* | 5X | 0.15 | 23.50 |
| | 10X | 0.30 | 17.30 |
| | 20X | 0.45 | 4.50 |
| | 50X | 0.80 | 1.00 |
| | 100X | 0.90 | 1.00 |
| CFI LU Plan Epi ELWD* | 20X | 0.40 | 13.00 |
| | 50X | 0.55 | 10.10 |
| | 100X | 0.80 | 3.50 |
| CFI L Plan Epi SLWD* | 20X | 0.35 | 24.00 |
| | 50X | 0.45 | 17.00 |
| | 100X | 0.70 | 6.50 |
| CFI LU Plan Apo Epi* | 150X | 0.95 | 0.30 |
| CFI L Plan Apo Epi WI* | 150X | 1.25 | 0.25 |
| CFI LU Plan BD | 5X | 0.15 | 18.00 |
| | 10X | 0.30 | 15.00 |
| | 20X | 0.45 | 4.50 |
| | 50X | 0.80 | 1.00 |
| CFI LU Plan BD ELWD | 100X | 0.90 | 1.00 |
| | 20X | 0.40 | 13.00 |
| | 50X | 0.55 | 9.80 |
| CFI LU Plan Apo BD | 100X | 0.80 | 3.50 |
| | 150X | 0.90 | 0.42 |

* A nosepiece adapter is needed to use these objectives.

Illumination systems

- 12V-100W halogen lamphouse
- 100W mercury lamphouse
- 150W metal halide lamphouse
- 75W xenon lamphouse

Stages and wafer holders

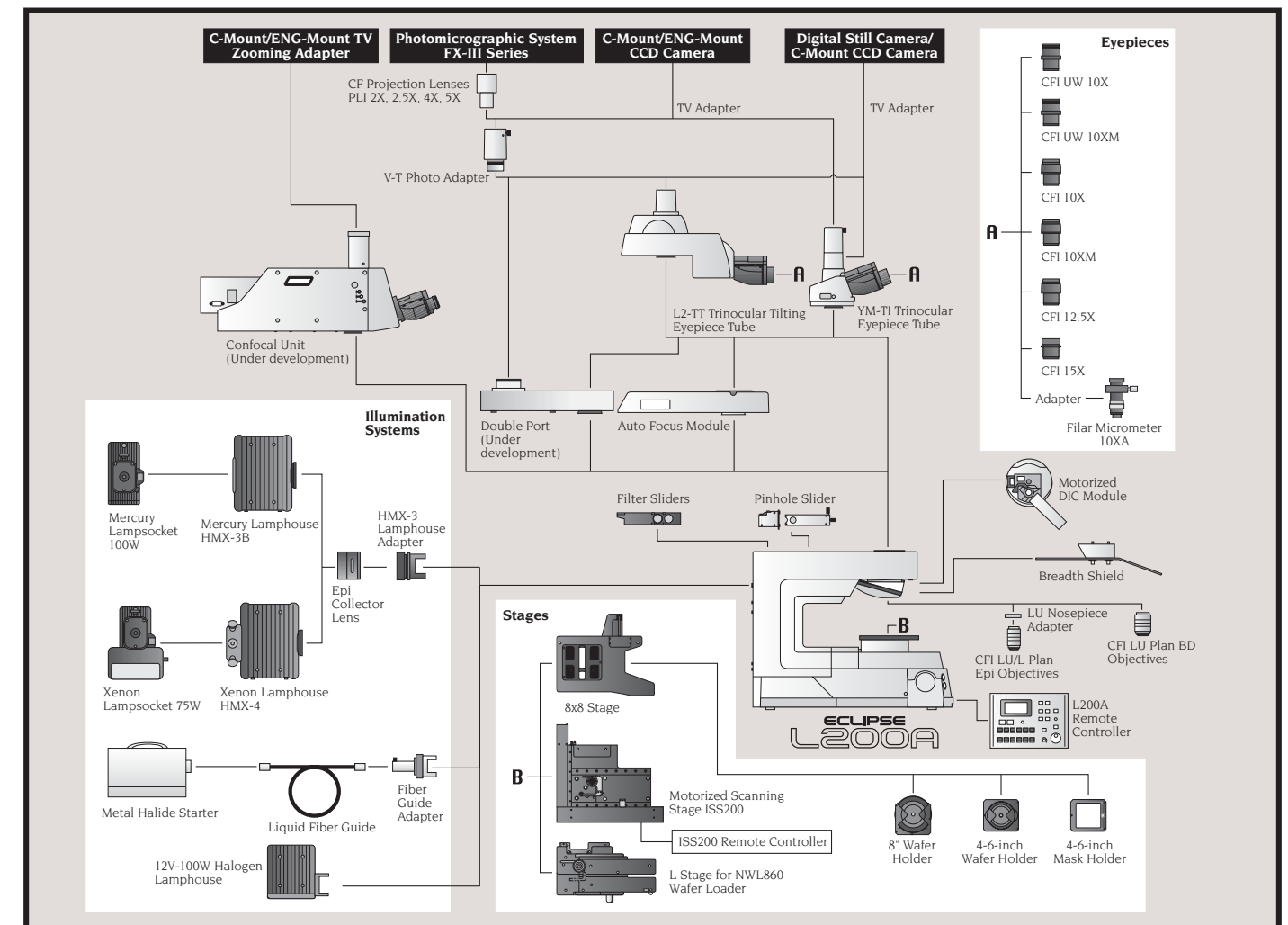
- 8x8 Stage
- 8-inch (200mm) wafer holder
- 6-inch (150mm) wafer holder
- 6-inch (150mm) mask holder
- 5-inch (125mm) mask holder
- 4-inch (100mm) mask holder

DXM1200 digital camera

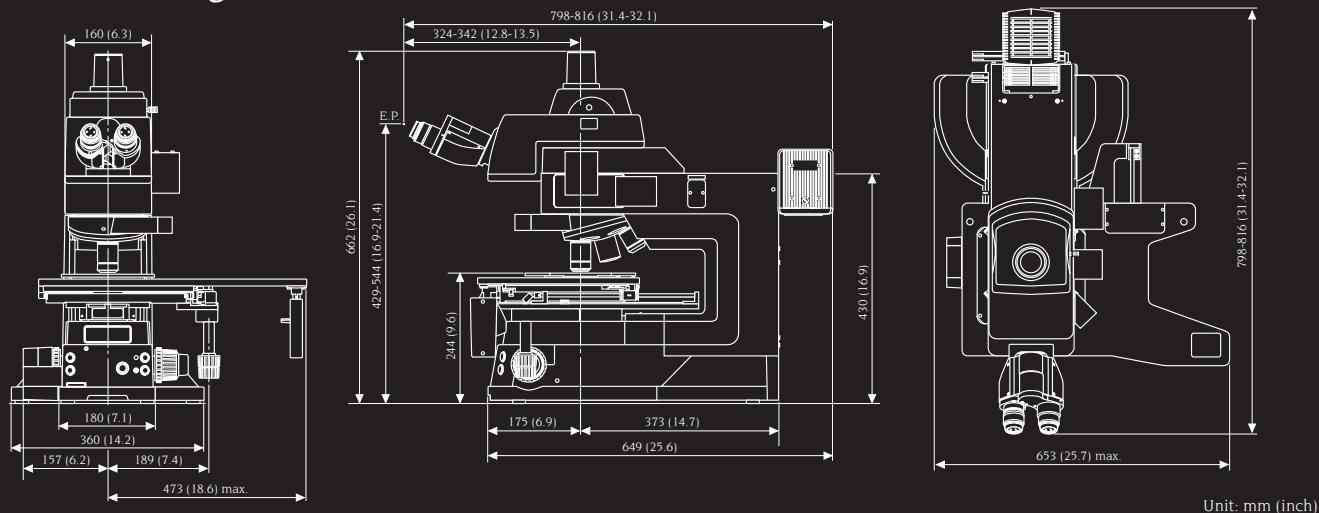
The DXM1200 Digital Camera achieves ultra-high-quality digital images equivalent to approximately 12 million output pixels, plus has a low-noise design for clear, low-light image capture. The camera's software can be set to automatically categorize the images taken, sort them and save them, all automatically—a powerful feature when you take a large number of photomicrographs.



System Diagram



Dimensional diagram (When AF Module is mounted)




Specifications

| | |
|------------------------------|--|
| Observation method | Brightfield, darkfield, DIC, simple polarizing |
| Main body | Episcopic stand, Power supply built-in |
| Focusing mechanism | Stroke: 29mm, Coarse: 12.7mm per rotation (torque adjustable, focusing stop mechanism provided), Fine: 0.1mm per rotation (in 1µm increments), Guide: 4-guide (two roller-race, torque adjustable) |
| Episcopic illuminator | Motorized aperture diaphragm (centerable, pinhole slider incorporated) Fixed field diaphragm (with focus target), Four ø25mm filters (NCB11/ND4,16) can be mounted, Polarizer, Analyzer |
| Light sources | 100W halogen, 150W metal halide, 100W mercury, 75W Xenon |
| Eyepiece tube | UW tilting trinocular eyepiece tube (tilt angle: 0°-30°, erect images), F.O.V.: 25mm, Optical path changeover: 2-way (Bino: Photo 100:0/0:100) |
| Nosepiece | Fixed-motorized sextuple universal nosepiece (centerable), Highly durable |

| | |
|---------------------------|---|
| Stage | 8x8 Stage, Cross travel: 205 x 205 mm, Coarse/fine-movement changeover: manual, Wafer holders: 4-8 in., Mask holders: 4-6 in. |
| Control | Front panel: Nosepiece rotation buttons, Episcopic aperture diaphragm stop buttons, Light intensity control knob Remote control: LCD panel, Magnification changeover, Motorized Z-axis, Episcopic aperture diaphragm stop buttons, Light intensity control knob, Motorized bright/darkfield changeover key, DIC adjustment knob, Option keys |
| Eyepieces | CFI eyepiece lens series |
| Objectives | CFI LU/L Plan series |
| Auto focus unit | Optional (LED) |
| Automated function | Recipe Programming |
| Communication | RS-232C |
| Weight | Approx. 45kg (when 8x8 Stage and UW eyepiece tube are used.) |

Specifications and equipment are subject to change without any notice or obligation on the part of the manufacturer. September 2002.
DART software is developed by Nikon Inc.

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



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