### Specifications

ECLIPSE L300N/L300ND/L200N/L200ND

#### Main body

- 12V 50W halogen lamp (long life source built in; Power sources for motorized control built in)
- Motorized for focus, fine adjustments, aperture diaphragm control

#### Focusing mechanism

- Cross brass: 29 mm
- Cone: 1.27 mm per rotation (torque adjustable, focusing mechanism provided)
- Focussing: 0.51 mm per rotation (in 1 mm increments)

#### Epi-Diaphram

- Epi-Diaphram
- Epi-Diaphram

#### Episcopic illuminator

- 12V 50W halogen lamp (long life source built in; Fixed diaphragm (with focus target)
- Pelvic stage (optional); Four 25x filters (NCB11, ND16, NE16, Polarizer and Analyzer can be mounted
- Observation methods: Brightfield, Darkfield, Simple polarizing, DIC, Epi-fluorescence

#### Diascopic illuminator

- 12V 50W halogen lamp (long life source built in; Fixed diaphragm (with focus target)
- Pelvic stage (optional); Four 25x filters (NCB11, ND16, NE16, Polarizer and Analyzer can be mounted
- Observation methods: Brightfield, Darkfield, Simple polarizing, DIC, Epi-fluorescence

#### Interface

- USB 1.1, RS232C (the interface location)

#### Eyepieces

- L2 TICA Ultrawidefield erect-image tilting trinocular eyepiece tube (Eye piece: 22/25; Beamsplit ratio 100:0/20:80
- L2-TTA Ultrawidefield erect-image tilting trinocular eyepiece tube (Eye piece: 22/25; Beamsplit ratio 100:0/20:80

#### Eyepiece tubes

- L2-TTI3 Trinocular eyepiece tube (erect image) FOV: 22/25; Beamsplit ratio 100:0/0:100

#### Stages

- 14 x 12 stage, stroke: 346 x 282 mm (Diascopic observation range: 354 x 268 mm)
- Fixed-position X-Y fine-movement controls

#### Eyepiece tubes

- CFI eyepiece lens series
- L2-TT2A Ultrawidefield erect-image tilting trinocular eyepiece tube (tilt angle: 0-30 °) FOV: 22/25; Beamsplit ratio 100:0/20:80

#### Dimensions

- Dimensions Approx. 360 (W) x 951 (D) x 581 (H) mm (at tilt angle 10 °) Approx. 360 (W) x 860 (D) x 580 (H) mm (at tilt angle 10 °)
- Power consumption 1.2 A/90 W
- Coarse/Fine-movement changeover possible
- Coarse: 12.7 mm per rotation (torque adjustable, refocusing mechanism provided)
- Fine: 0.1 mm per rotation (in 1µm increments)

#### Weight

- Approx. 64 kg (When L2-S8A 8 x 8 stage and L2-TTA eyepiece tube are used)
- Approx. 45 kg (When L2-S8A 8 x 8 stage and L2-TTA eyepiece tube are used)

#### Observation methods

- Brightfield, Darkfield, Simple polarizing, DIC, Epi-fluorescence
- Pinhole slider (optional), Four ø25 mm filters (NCB11, ND16, NE16, Polarizer and Analyzer can be mounted

#### Motorized control

- Motorized control for nosepiece, Light intensity control, Aperture diaphragm control
- Nosepiece: Motorized universal sextuple nosepiece

#### Accessories

- LWD condenser built in
- Aperture diaphragm built in

#### ECLIPSE L200N/L200ND

- Dimensional diagrams Unite: mm

### WARNING

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

### N.B.

Export of the products in this brochure is controlled under the Japanese Foreign Exchange and Foreign Trade Law. Applicable export procedure shall be required in case of export from Japan. "Products Hardware and its technical information (including software)" and "Products replaced in the order of manufacture. December 2011 ©2010-2011 NIKON CORPORATION" are subject to change without any notice or obligation on the part of the manufacturer.
With improved observation and operation, and environmentally friendlier, the four ECLIPSE models are ideally suited for inspection of large FPD/LSI.

Enhanced observation performance

**Epi-fluorescence observation widens inspection range**—including 365 nm UV excitation (L300N/L300ND/L200ND only)
- Diascopic illumination capability and various observation methods such as brightfield, darkfield, simple polarizing and DIC. Epi-fluorescence observation, including 365 nm UV excitation, is also possible (L300N/L300ND/L200ND only).
- Highly beneficial in inspection of semiconductor resist residues and organic electroluminescence displays.

**Motorized mercury fiber illuminator Intensilight for Epi-fluorescence observation** (L300N/L300ND/L200ND only)
- A motorized mercury precentered fiber illuminator is employed.
- A lamp has an average lifespan of 2000 hours.
- Lamp centering and focus adjustment are not necessary, even after lamp replacement.

**Four times brighter than conventional Diascopic observation (L300ND only)**
- The L300ND employs a new light source and advanced optics to provide four times brighter than conventional Diascopic observation.

**CF60 optics offer long working distance and high NA**
- Nikon’s original CF60 optics offer both image brightness through high NA and wide sample range and access with long WD.
- Provides clear, high-contrast brightfield images by minimizing flare.
- The “fly-eye” lens array, which provides uniform illumination throughout the visual field, is employed for darkfield illumination optics, allowing remarkably bright, high-resolution darkfield images.

Enhanced environmental consideration and operation

**High-intensity 12V-50W halogen illuminator**
- The motorized universal nosepiece is three times more durable than conventional models.
- Allow to select objectives can be mounted.
- Centering mechanism is possible at three nosepiece positions (L300N/L300ND/L200ND only).
- Improved centricity minimizes image shifting when the objective is changed, even with high magnification. This creates stable observations from high to low magnification.
- An anti-flash mechanism engages when the nosepiece is rotated, to protect the operator’s eye.

**Target for easier focusing**
- Inserting a focusing target in the optical path allows easy and accurate focusing on low-contrast samples, such as bare wafers.

**Fixed-position X-Y fine movement control**
- The X-Y fine movement control is positioned close to the operator.
- All controls are located near each other, allowing stage movements and focusing to be carried out with ease.

**Controls located at microscope front**
- The main control knobs and buttons are located at the front of the microscope for easy access.
- Quick and easy microscope operation while viewing samples is possible.
- Minimizes fatigue during lengthy observations.
Improved functionality between the microscope and digital cameras provides ideal imaging.

Camera control unit **DS-U3**
- Operations, from advanced image capture to image processing and analysis, are all controlled from a PC.
- Control of the camera, peripherals, and microscope are all integrated within NIS-Elements imaging software.
- The IEEE 1394b device port enables high-speed live image display and fast response at speeds surpassing the previous model.

Imaging software for high-quality image acquisition, processing, and analysis, **NIS-Elements**

Interactive measurement
NIS-Elements offers diverse measurement parameters, such as distance, area, radius, and angle profile. Results can be saved as an Excel file.

Large image stitching
Composition of large-area images with high magnification is possible by stitching adjacent ultra-high-resolution images.

**EDF (Extended Depth of Focus)**
Images that have been captured at different points along the Z-axis can be combined to create an all-in-focus image and a virtual 3D image.

Automatic measurement
Some 80 different object and field features—length, area, density, RGB values, etc.—can be measured automatically.

**Classifier**
The classifier allows segmentation of the image pixels according to different user-defined conditions and is based on different pixel features such as intensity values, RGB values, HSI values, or HS values.

Camera control unit **DS-L3**
- With a large, built-in, high-definition, 8.4-inch touch panel LCD monitor, the DS-L3 eliminates the necessity for a PC connection.
- At the touch of an icon, Scene mode automatically sets the optimal imaging parameters for the chosen observation method.
- When used with L200N/L300N, the DS-L3 can automatically recall information such as objective magnification.

High-definition touch panel monitor
Large, easy-to-view, easy-to-use touch panel monitor allows camera head setting and operation at the touch of a finger or stylus.

Scene mode provides optimal photography with ease
Optimal imaging parameters are preset for different sample types. Up to seven custom modes can be set.

Various measurement/positioning functions
Calibration of reference length (up to seven can be registered), allows easy measuring and positioning.

Scale display/positioning functions:
- Measurement functions:
  - Distance
  - Perpendicular
  - Angle
  - Circle
  - Diameter
- Area
- Distance between circle centers

Optimized workflow observation, image capture and analysis
- Nikon’s simultaneous development of microscopes, digital cameras, and imaging software has enabled it to develop a highly functional easy-to-use digital imaging microscopy system.
- All aspects of image flow are supported, including setup for best viewing conditions, digital image capturing, processing and analysis.

High-definition touch panel monitor
- Large, easy-to-view, easy-to-use touch panel monitor allows camera head setting and operation at the touch of a finger or stylus.

- Objective configuration/motorized nosepiece control
  - Objective magnifications, which provide the most important information in measurement, can be saved, along with calibration configurations.
  - When the objective magnification is changed, the appropriate spatial calibration data is automatically set. This prevents errors when changing scale size and configuration for measurement, and maximizes the digital camera’s measurement performance.

- Diascopic/Episcopic illumination switch, brightness control
  - Illumination voltage, an important factor in observation, can be quantitatively configured.

- Aperture diaphragm control
  - Aperture diaphragm can be controlled from a PC.

High-definition cooled color camera head
- 1/1.8-inch 2.0-megapixel color CCD

High-definition color camera head
- 2/3-inch 5.0-megapixel color CCD

High-speed color camera head
- 2/3-inch 12.7-megapixel CCD

Camera Heads can be selected depending on use

<table>
<thead>
<tr>
<th>Camera Heads</th>
<th>Objective Configuration/Motorized Nosepiece Control</th>
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NIS-Elements operational panel
(Images are simulated.)

Interactive measurement tool:
- NIS-Elements allows the user to view images captured by the camera and to conduct interactive measurements and image analysis on these images.

Large image stitching:
- Composition of large-area images with high magnification is possible by stitching adjacent ultra-high-resolution images.

**EDF (Extended Depth of Focus)** tool:
- Images that have been captured at different points along the Z-axis can be combined to create an all-in-focus image and a virtual 3D image.

Automatic measurement:
- Some 80 different object and field features—length, area, density, RGB values, etc.—can be measured automatically.

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For LSI inspection

Wafer loaders NWL200 series

In combination with the ECLIPSE L200N, the NWL200 meets the requirements for inspection of the latest wafers. Nikon’s outstanding proprietary technology ensures reliable loading of ultra-thin 100 µm wafers.

Support for ultra-thin 100 µm wafers
- Nikon’s new chuck system allows reliable loading of ultra-thin 100 µm wafers.
- In combination with the ECLIPSE L200N, the NWL200 series provides levels of safety and reliability that meet all requirements for inspection of the latest wafers.

Improved wafer-sensing functions
- With optimal arrangement of the wafer sensor beams, accurate detection of wafer distortion is possible.
- The wafer-slot buttons offer improved operability
- The exceptionally fast elevator, the quick and accurate alignment by non-contact precision by the multi-arm system all contribute to an efficient wafer transfer and exchange.
- Cycle time has been dramatically reduced, enabling a higher throughput than the previous model.

Remote access tool
- Because the loader is equipped with a Web server function, connecting a PC to a LAN makes it easy to create inspection recipes and backup data from a PC.
- Inspection recipes can be easily backed up and restored.

Fluorescence filter blocks (L300N/L300ND/L200ND only)

<table>
<thead>
<tr>
<th>Filter Blocks</th>
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<tr>
<td>C-FL UV-2A</td>
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Objectives

- Equipment maintenance
- Recipe preparation support functions
- Recipe preparation support functions
- Equipment maintenance
- Inspection recipes can be easily backed up and restored.

System diagram

**ECLIPSE L300N/L300ND**

- Remote access tool
- With the loader is equipped with a Web-server function, connecting a PC to a LAN makes it easy to create inspection recipes and backup data from a PC.
- Inspection recipes can be easily backed up and restored.

**ECLIPSE L200N/L200ND**

- Remote access tool
- With the loader is equipped with a Web-server function, connecting a PC to a LAN makes it easy to create inspection recipes and backup data from a PC.
- Inspection recipes can be easily backed up and restored.