



Dynamic Auto-Focus Unit for Microscope System Integration

ECLIPSE LV-DAF

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LV-DAF



The Hybrid Auto-Focus has large focus range and fast tracking ability

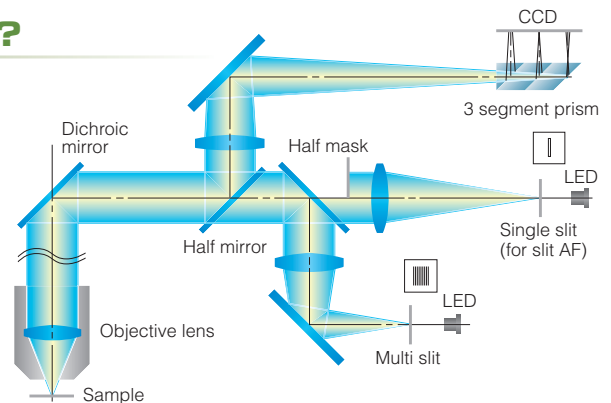
What is Hybrid Auto-Focus (AF)?

There are two common types of auto-focus systems for microscopes:

Slit projection system: projects a slit image and detects the shift in the reflected light. Useful when a large focal range is necessary.

Contrast detection system: projects a slit pattern and detects the contrast of the reflected light. Useful when focus accuracy is needed. Higher accuracy is possible because this system is less affected by sample surface variation.

By combining the advantages of both systems, the **Hybrid Auto-Focus** makes the most of the paired potential.



Features

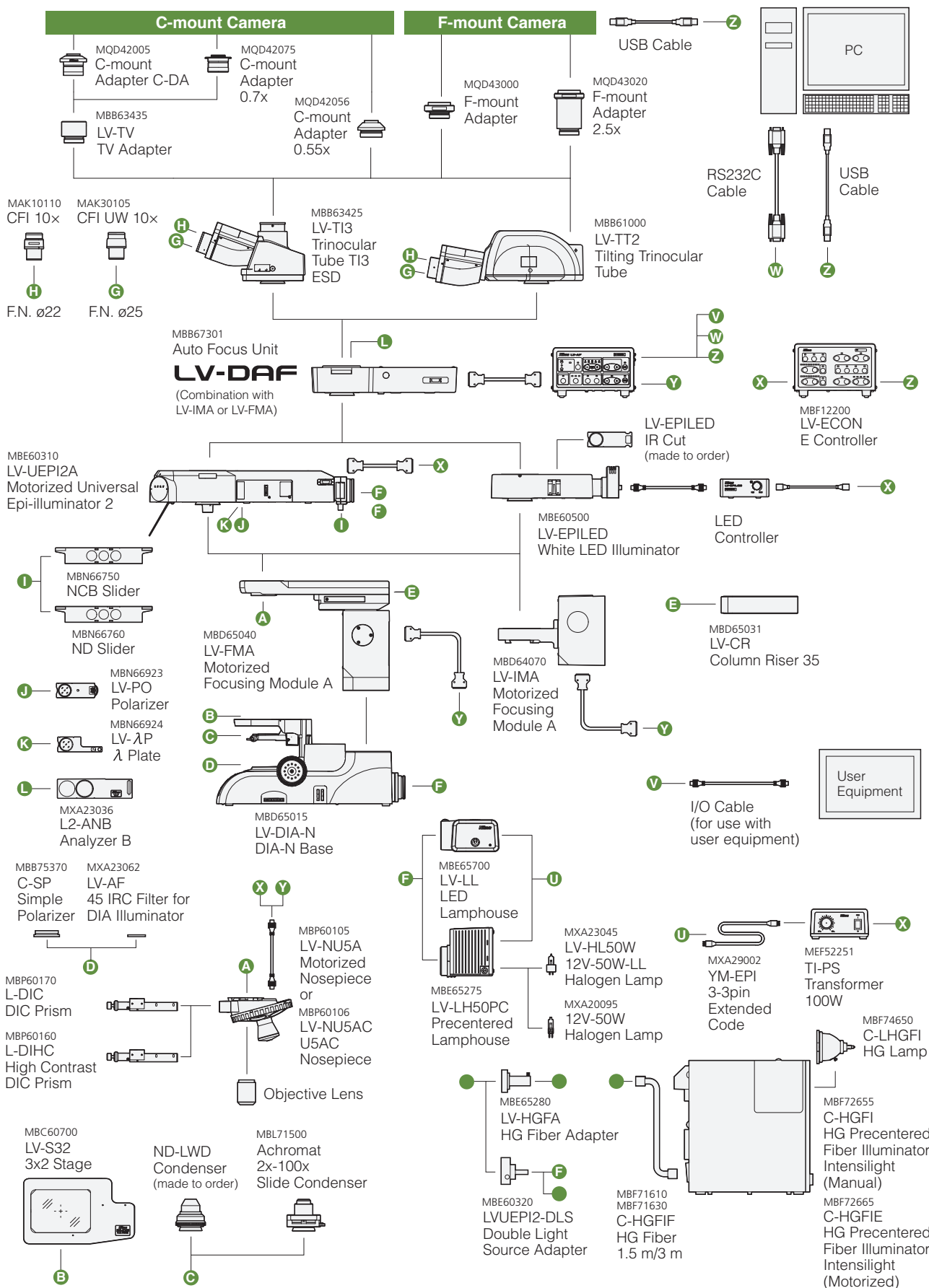
- 1 Focal range is remarkably larger than with contrast detection alone. Samples with distortions on their surface, such as a liquid crystal substrate, can be rapidly tracked, enabling speedy focusing.
- 2 Uses a bright LED for the auto-focus light source and can automatically adjust the light volume. This enables support for samples ranging from low to high reflectivity.
- 3 A wide range of observation methods is supported, including brightfield, darkfield, and DIC. Reflective samples and transparent samples are also both supported.
- 4 The Auto-Adjustment Program enables simple and speedy system setup with immediate auto-adjustment after the user focuses the system and starts setup. The program also automatically sets and registers optimal parameters for each type of sample and recalls them in accordance to the sample being photographed.
- 5 Can be controlled from a PC via USB or RS232C cables.
- 6 Can be combined with other LV series products. When combined with the LV-ECON, it enables observation under the optimal conditions for each particular sample.
- 7 The controller features the same hardware design as the LV-ECON and has a compact footprint that allows them to be stacked on each other and used anywhere.
- 8 Nikon provides a software development kit (SDK) for integrating the LV-DAF into a variety of systems. (Compatibility is only guaranteed for Nikon products.)

Product specifications

Detection system	Hybrid system combining slit projection with contrast detection
AF light source	Near-IR LED ($\lambda = 770 \text{ nm}$)
Objective lens	CFI60/CFI60-2 objective lens 2.5x-100x (includes extra-long working distance (ELWD), super-long working distance (SLWD), and CR for LCD substrate inspection)* ¹
AF modes	Continuous mode and search mode (single, continuous)
Focal range	Focal range without searching (brightfield)* ² 2.5x: 5.5 mm or more, 5x: 4.5 mm or more, 10x: 1.3 mm or more, 20x: 320 μm or more, 50x: 50 μm or more, 100x: 10 μm or more
Focal time	0.7 seconds or less (20x: 200 μm with no search)* ² * ³
Focal precision (repeated reproducibility)	1/2 or less of focal depth* ² * ³
AF offset feature	Enables observation with precise adjustment of focal position while applying auto-focus
Minimum drive resolution	0.05 μm * ¹
External communication	RS232C, USB, and parallel I/O cables
Power source	100-240 V AC, 1.0 A, 50/60 Hz

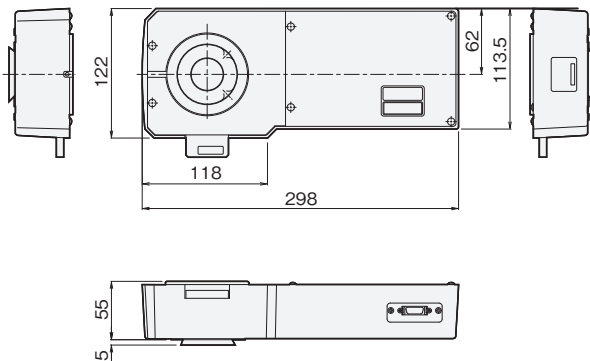
*¹. Some limitations for 2.5x and 100x. *². Using Nikon's standard Cr vapor deposition sample. *³. Using the LV-IMA or LV-FMA.
Note: The LV-ECON Controller (available separately) is required when using a motorized nosepiece.

SYSTEM DIAGRAM

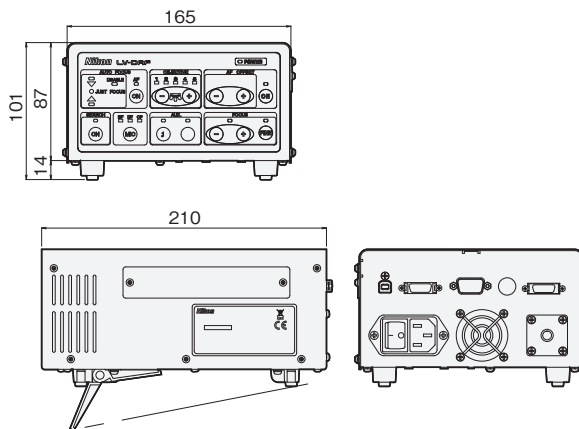


DIMENSIONS

LV-DAF (Unit)



LV-DAF (Controller)



Unit: mm

Specifications and equipment are subject to change without any notice or obligation on the part of the manufacturer. December 2019 ©2006-2019 NIKON CORPORATION

N.B. Export of the products* in this catalog is controlled under the Japanese Foreign Exchange and Foreign Trade Law. Appropriate export procedures shall be required in case of export from Japan.

*Products: Hardware and its technical information (including software)



WARNING

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



NIKON CORPORATION

Shinagawa Intercity Tower C, 2-15-3, Konan, Minato-ku, Tokyo 108-6290, Japan
 phone: +81-3-6433-3701 fax: +81-3-6433-3784
<https://www.nikon.com/products/industrial-metrology/>

ISO 14001 Certified
for NIKON CORPORATION

ISO 9001 Certified
for NIKON CORPORATION
Industrial Metrology Business Unit

NIKON METROLOGY EUROPE NV

Geldenaaksebaan 329, 3001 Leuven, Belgium
 phone: +32-16-74-01-00 fax: +32-16-74-01-03
 E-mail: Sales.Europe.NM@nikon.com
<http://www.nikonmetrology.com/en-gb>

NIKON METROLOGY UK LTD.

UNITED KINGDOM phone: +44-1332-811-349 fax: +44-1332-639-881
 E-mail: Sales.UK.NM@nikon.com

NIKON METROLOGY SARL

FRANCE phone: +33-1-60-86-09-76 fax: +33-1-60-86-57-35
 E-mail: Sales.France.NM@nikon.com

NIKON METROLOGY GMBH

GERMANY phone: +49-6023-91733-0 fax: +49-6023-91733-229
 E-mail: Sales.Germany.NM@nikon.com

NIKON INSTRUMENTS S.p.A.

ITALY phone: +39-055-300-96-01 fax: +39-055-30-09-93

NIKON METROLOGY, INC.

12701 Grand River Avenue, Brighton, MI 48116 U.S.A.
 phone: +1-810-220-4360 fax: +1-810-220-4300
 E-mail: Sales.NM-US@nikon.com
<http://www.nikonmetrology.com/en-us>

NIKON CANADA INC.

CANADA phone: +1-905-602-9676 fax: +1-905-602-9953

NIKON MEXICO- Metrology Showroom

MEXICO phone: +52 (442) 688 5067
 E-mail: Sales.NM-MX@nikon.com

NIKON INSTRUMENTS (SHANGHAI) CO., LTD.

CHINA (Shanghai branch) phone: +86-21-6841-2050 fax: +86-21-6841-2060
 (Beijing branch) phone: +86-10-5831-2028 fax: +86-10-5831-2026
 (Guangzhou branch) phone: +86-20-3882-0551 fax: +86-20-3882-0580

NIKON INSTRUMENTS KOREA CO., LTD.

KOREA phone: +82-2-2186-8400 fax: +82-2-555-4415

NIKON SINGAPORE PTE LTD.

SINGAPORE phone: +65-6559-3651 fax: +65-6559-3668
 E-mail: NSG.Industrial-sales@nikon.com

NIKON MALAYSIA SDN BHD

MALAYSIA phone: +60-3-7809-3688 fax: +60-3-7809-3633

PT. NIKON INDONESIA

INDONESIA phone: +62-267-864-3949 fax: +62-267-864-3950
 E-mail: PTN.Instruments@nikon.com

NIKON SALES (THAILAND) CO., LTD.

THAILAND phone: +66-2633-5100 fax: 66-2633-5191

NIKON INDIA PRIVATE LIMITED

INDIA phone: +91-124-4688500 fax: +91-124-4688527