![Nikon]

High Content Imaging

Slide*Express* 2

Microscope Automated
Slide Imaging System

MÄRZHÄUSER WETZLAR

The Perfect Platform
for High Content Slide Imaging

An Ni-E motorized upright microscope platform with several choices for high performance optics and a wide range of available detectors means the highest quality results.

Using the Marzhauser Slide Express 2 automated slide loader, stability and repeatability is maintained by a solid platform with precision connection to the microscope body, resulting in flawless loading and unloading of samples.

With a unified software package across all microscope platforms, data can be easily shared and visualized as well as learning time reduced.

STABLE AND RELIABLE

Slides are inserted into the cassette using two-slide holders, which insure the slides are flat and oriented properly for imaging.

Cassettes are loaded into a motorized enclosure with space for up to 3 cassettes, or a total of 120 slides.

To place slides on the imaging area. the two slide holders are extracted from the cassettes by magnetic attachment. Because the stage is integrated and attached to the loading mechanism, a stable and reliable transfer of slides results.

NIS-Elements Software

NIS-Elements reads and catalogs the cassettes, and automates the delivery of specimens to the microscope. An indicator shows which cassette location is currently loaded onto the microscope stage.

Slide scanning can be in a defined area and/or pattern, or specimen boundaries can be detected and the area within used as a tiling, fixed, or random pattern.
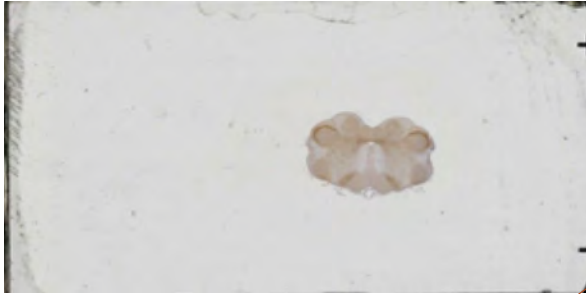
These areas can be defined at the time each slide is loaded, or a predefined area used for all slides. Users can select specific slides to acquire, or choose to scan all slides in all cassettes in one run.
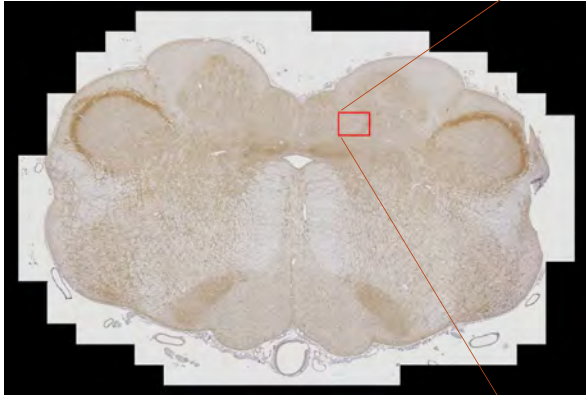
Imaging can be performed in brightfield and/or epifluorescence modalities, with results tiled or presented as image stacks.
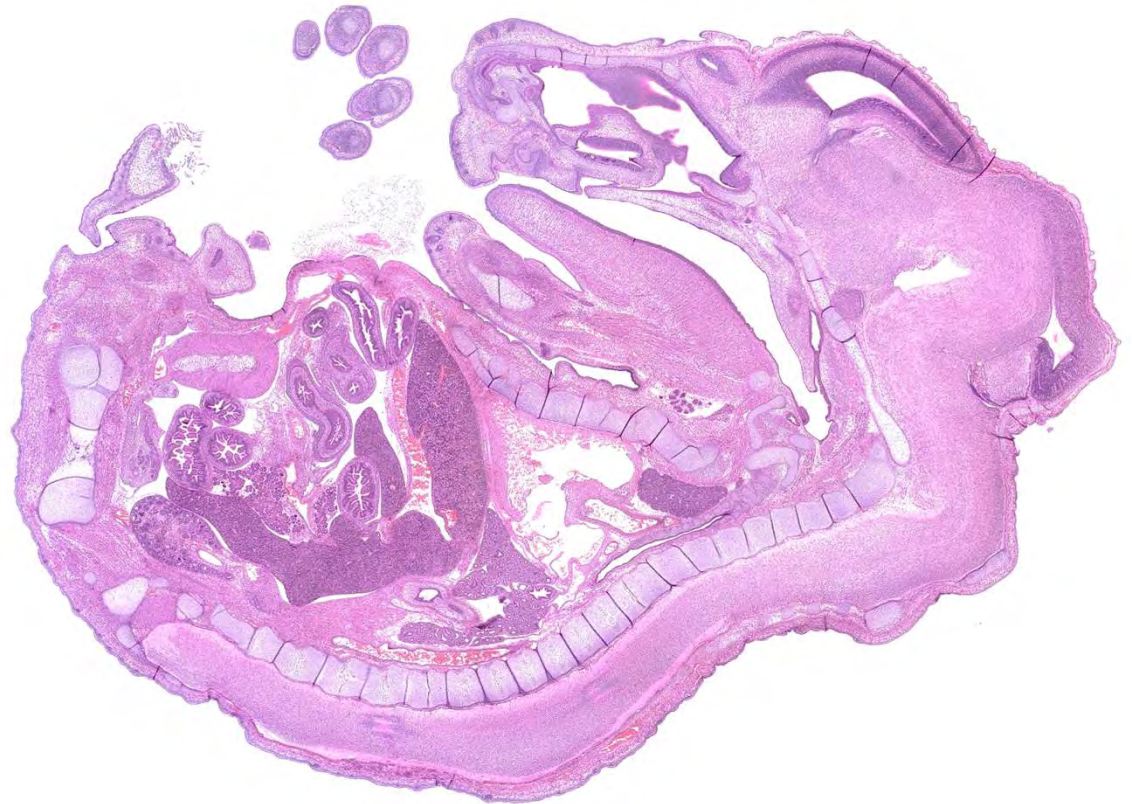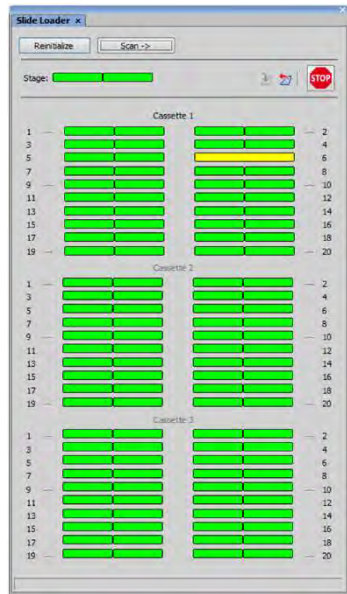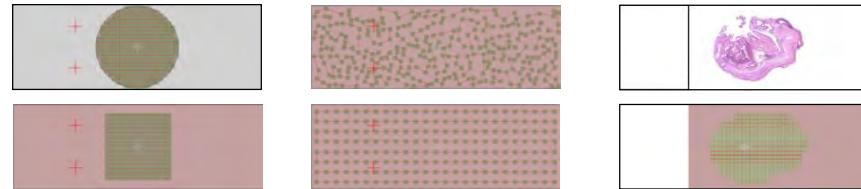
Acquisition

Slides can be quickly scanned at low magnification to locate items of interest, including several separate items per slide…

…then rescanned at high resolution and high magnification, so that only the areas of the slide with useful data are acquired and tiled.

High resolution images make up the tiled scan. Not acquiring blank areas results it much faster scanning and less storage space required per slide.
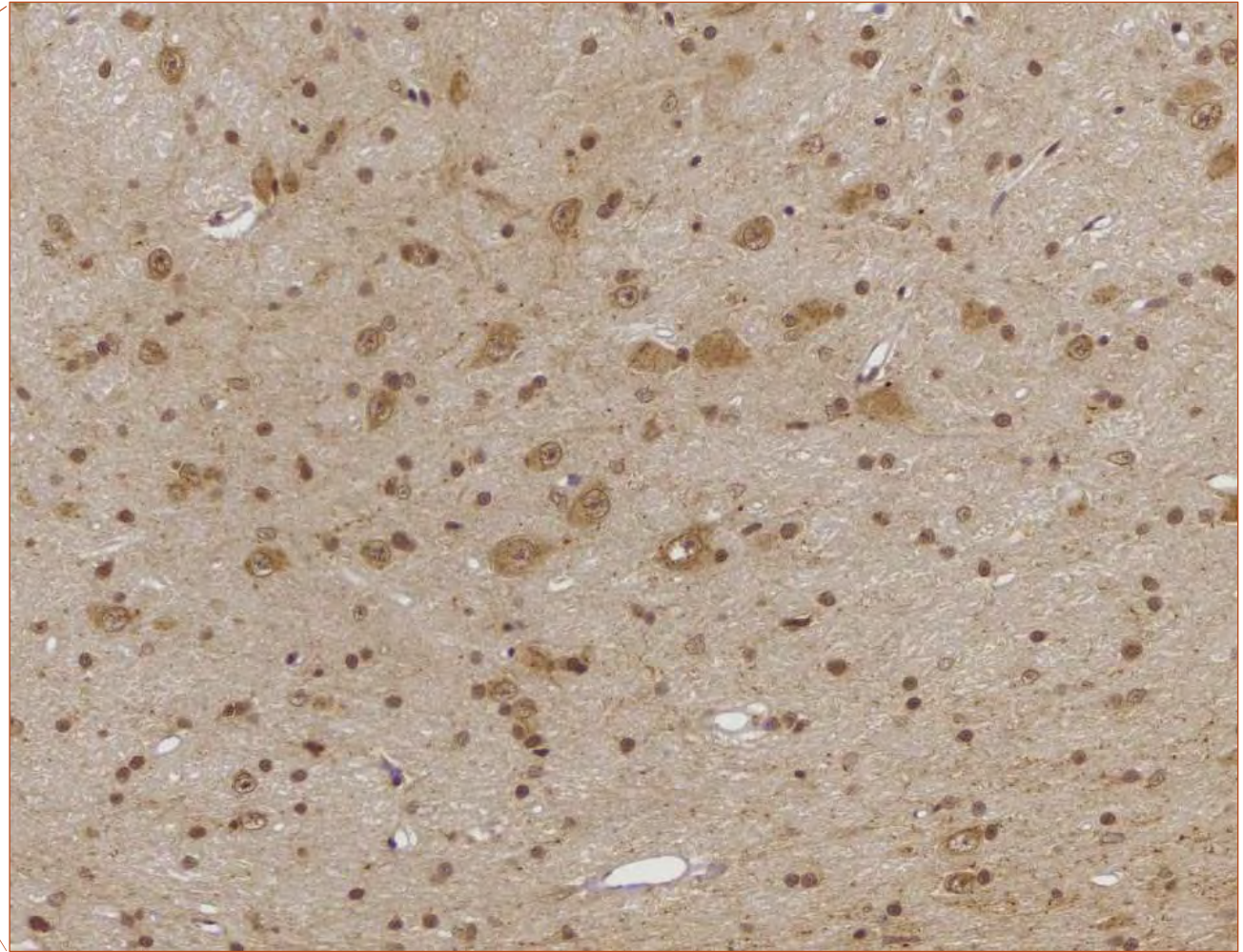
Image Analysis

NIS-Elements' General Analysis engine employs a powerful processing and analysis toolbox for users.

Dedicated turnkey assays can be applied to image data as well as user-customized assays for specific applications.

All routines can be executed during acquisition, for example: to modify the course of an experiment, or post-acquisition on the dedicated server.

Assay results can be collated and statistical information displayed, or be exported.

Some examples are shown here.
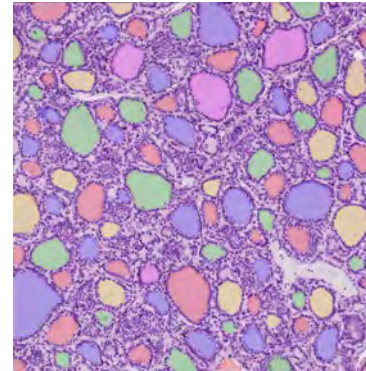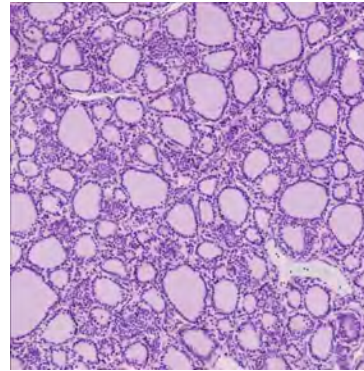
There are many tools which can be customized to detect and automatically segment and classify objects. In this example, pituitary gland sections were imaged over a large field of view, tiled, and colloids were auto-detected and measured.
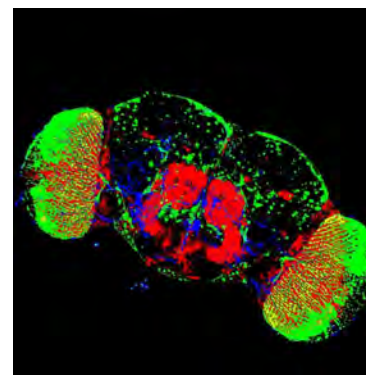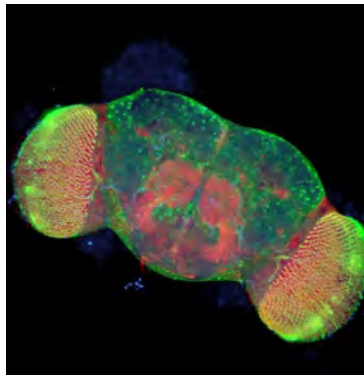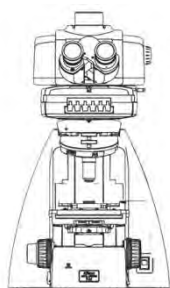

This example tool computes areas occupied by different fluorescence markers in tiled brain images.
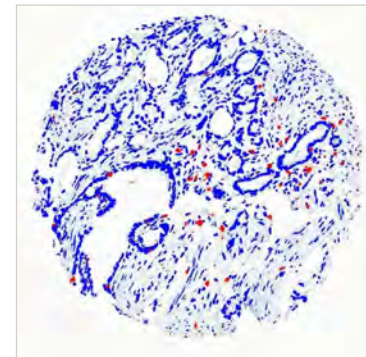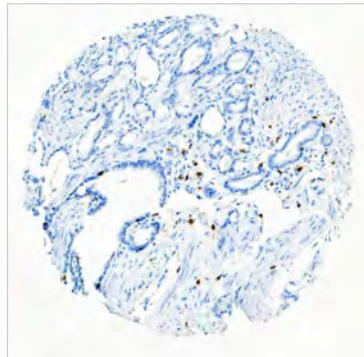
This tissue microarray punch was segmented using an IHC detection tool which automatically finds hematoxylin and diamino-benzadine (DAB) colors.
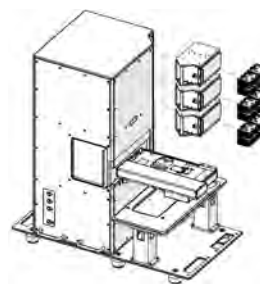
Specifications

Microscope Specifications

Imaging Modalities	Transmitted Light Brightfield Widefield Epifluorescence Point Scanning confocal (option with C2)
Illumination	8 channel Epifluorescence LED LED transmitted Light Laser illumination for confocal sources (option)
Objectives	All air objectives lenses can be used for high content
Imaging Methods	Multidimensional XY, Z, wavelength, multi-stage position including tiling
Autofocus	Software contrast-based autofocus
Hardware Triggering	Supports direct hardware triggering of light sources and shutters
Antivibration Table	Included 30x48" x 6" table with full system
Dimensions (without detector*)	32cm x 60cm x 510cm typical (height increases 70mm with additional EPI port)
Power Consumption	

see detector brochures for detector specification details

Slide Loader Specifications

Device	Marzhauser Wetzlar SlideExpress2
Application	Slide loading
Capacity	3 Cassettes each holding up to 40 1x3 inch glass slides: total of 120 slides
Robotics	Internal elevator robot and picker robot
Communication	USB through Tango controller
Power Requirements	100V / 50Hz 115V / 60Hz / 240V / 50Hz ; switchable
Stage Specifications	Accuracy +/- 1um; repeatability <1um bidirectional; resolution 0.05um step; max speed 100mm/s
Power Consumption	<100W
Dimensions	108 x 75 x 108.5cm

Specifications and equipment are subject to change without any notice or obligation on the part of the manufacturer. April 2020 ©2020 Nikon Instruments B.V.

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WARNING-LASER RADIATION AVOID EXPOSURE TO BEAM CLASS 3B LASER PRODUCT
Total Power 500mW MAX.
CW 400~700nm
IEC/EN60825-1 : 2007, 2014

Complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007

DANGER-VISIBLE AND INVISIBLE LASER RADIATION AVOID EYE OR SIKN EXPOSURE TO DIRECT OR SCATTERED RADIATION CLASS 4 LASER PRODUCT
Total Power 1500mW MAX.
CW 370~790nm
IEC/EN60825-1 : 2007, 2014

Complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No.50 dated June 24, 2007.

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