Nikon Eclipse Ti2E Inverted Deconvolution system

STAND: INTELLIGENT CONTROLS

- Operate via touch buttons, joystick control pad, or software
- "Assistance Guide" available through downloadable app
- High sensitivity motorized stage with 10 nm resolution
- Accepts slides, dishes, and plates, microfluidic devices-complete viewing to edges of 96 well plate
- Incubated stage heater with CO2 available for live cell work
- High speed autofocus over multiple locations and time points

EASY SOFTWARE INTERFACE:

- Single push button controls for each imaging channel
- Quick auto exposure
- MULTI DIMENSIONAL (ND) ACQUISITION: Build experiments with multiple dimensions, with choice of wizard –guided or manual build:
    - o Multichannel
    - o Z-stack
    - o Multiple XY points saved with a click
    - o Large image tile and stitch
    - o Time phase routines
    - o Autofocus routines
    - o Change temperature, gas exchange, or microfluidic drug introductions

2 CAMERAS (Fluorescent and Brightfield)

- <u>Fluorescent: pco.Edge 4.2 bi sCMOS:</u> Ultra high framerate, (95%) QE for ultra high sensitivity and extremely low noise, 40 fps full frame, or up to 300fps sub frame size, huge 18.8 mm FOV
- <u>Colour: 5.9 mpx DS-F13</u>: 30 fps, high speed tiling and stitching

ILLUMINATION Brightfield:

- White light LED for bright field and DIC with fly eye to create even flat field illumination and perfect colour reproduction
- Integrated, error-free DIC with auto component recognition

ILLUMINATION Fluorescence:

- EXCITATION: Lumencore Aura III light engine houses brightest excitation illumination available UV to Cy7-single channel colour excitation with laser-like precision
- EMISSION: Includes pentaband and individual dichroic cubes plus lightning fast emission filter wheel, for flexible imaging setups. Combine different EX/EM choices for other specialty fluorochromes
- Unique Cy7/AF750: plant and insect users can choose to image or avoid autofluorescent signals
- Chlorophyll channels for plant Biologists-choose from chlorophyll A or B

FILTERS:

Standard configurations are shown, however any excitation/emission listed can be combined:

AURAIII Excitation	Pentaband Dichroic			Emission Wheel
	EX	Dichroic	EM	
(DAPI) 375/30	378	409	432	432/36
(GFP/FITC) 475/28	474	493	515	515/30
(dsRed/TRITC) 555/28	554	573	595	595/31
(Cy5/AF647) 635/22	635	652	681	680/42
(Cy7/AF750) 730/40	735-25	759	809-25	600 LP
(Chlorophyll) 375/30	Pentaband	Pentaband	Pentaband	600 LP
REFLECTANCE (for opaque surfaces)	Pentaband	80/20	Reflected	600 LP

OBJECTIVES:

1.5 x magnification changer effectively increases the range of these magnifications x 1.5
Most are designed for coverslip bottoms, not plastics, however 40x dry lens has correction collar and 50x lens can image bare materials surfaces

Mag	N.A.	Type	WD	FOV pcoEdge mono camera	FOV DS-F13 colour camera	Details
5x	0.15	Plan Fluor Epi Dry	23.5 mm	2657.20 x 2662.40 µm	2513.45 x 1787.35 µm	
10x	0.3	Plan Fluor Epi Dry	17.5 mm	1328.60 x 1331.20 µm	1256.08 x 893.67 µm	
20x	0.75	Plan Apochromat Lambda Dry	1.0 mm	664.30 x 665.60 µm	628.36 x 446.84 µm	DIC
40x dry	0.95	Plan Apochromat Lambda Dry	0.25 mm	332.15 x 332.80 µm	314.18 x 223.42 µm	DIC, Coverslip Correction
60x oil	1.4	Plan Apochromat Lambda Oil	0.13 mm	221.43 x 221.87 µm	209.45 x 148.95 µm	DIC
100x oil	1.45	Plan Apochromat Lambda Oil	0.13 mm	132.86 x 133.12 µm	125.67 x 89.37 µm	DIC, ultra high res (195nm lateral, 667nm axial)
50x Bare	0.80	TU Plan Fluor Bare Materials	1.0 mm			Reflectance use with bare materials, and/or fluorescence

DENOISE, DEHAZE & DECONVOLUTION: For confocal-like results with little user knowledge.

- Automatic Deconvolution: 2D and 3D -One touch, user friendly
- Clarity AI, Denoise AI and Restore AI: uses a built in "neural network" of brain like artificial intelligence to remove noise and haze from images without needing in-depth knowledge

INTEGRATED, AUTOMATED 2D, 3D IMAGE ANALYSIS SUITE OFFERS:

- Pre- and Post-processing, morphological Filtering, binary mask/thresholds, automatic cell count, colocalization, batch processing
- 3D/4D Viewer includes: Movie Maker for 3D Animations including 3D/Time Rendering-simple interface uses keyframes and interpolates frames between. Various projections.

DEMONSTRATION OF DECONVOLUTION:

WIDEFIELD	DECONVOLVED