TECHNICAL FEATURES Zenit-PRO

SLIDE PROCESSING

Pumps	1 peristaltic pump, 1 oscillating pump. 2 x 1,25mL Hamilton syringes
Samples/Reagents/Controls Barcode reader	1D, Automatic focal adjustment
Slide Barcode reader	2D
N. Slides	18
N. Samples	160 (8 racks, 10mm-16mm Ø, Height up to 100mm)
N. Controls	Up to 20 vials (14 mm Ø, 1 rack)
N. Reagents	Up to 9 vials (25mm Ø)
N. coverslips	Slot for up to 20 coverslips (24x60 mm)
Dilution cuvettes	288 (3x 96-wells consumable blocks)
Sample dilution capacity	From 1:2,5 to 1:10240 (max 3 steps)
Liquid handling (needles)	3 (2 precision needles and 1 for aspiration)
Liquid detection	Capacitive level sensor; 15kHz Frequency Resolution; Detection Error Rate 1/40000
Volumes	10-1000 ul
Accuracy	<2% at 100uL , <1% at 50uL
Slide washing	Continuous flow or multi drop
Slide preservation system	18 slide lids and sorbent packets compartments
Slide storage	Slide parking for up to 18 slides
Buffers	3x5L bottles for washing, 1x5L bottle for waste
Accessories	Bottles with full/empty sensor, Tray for caps
Incubation time	By protocol, controlled by scheduler

SLIDE READING

Vibration	Passive anti-vibration system (Misumi)
Microscope	Epi-fluorescent microscope. Excitation 450-490 nm; Fluorescence 520 nm
Objectives	4x for pre-focus, 20x for acquisition (10x, 40x optional); resolution 0.50 micron per pixel at 20x
Optical source	Blue high power LED 480 nm
Positioning system	Motorized slide tray, 3 axes system controlled by stepper motor and linear encoders
CCD camera	CCD progressive camera, 5 Megapixels resolution, 2/3 inch optical format
Image compression	JPEG-2000
Compression level	ANA, DNA, ANCA: 5 - 20 MB per well KSL: 100 - 150 MB per well
Scanning speed	ANA, DNA, ANCA: < 30 sec. per well KSL: < 2,5 min. per well
TAT: from sample to virtual microscope	*to be determined*

IMAGE AND DATA PROCESSING

Tests	ANA, ANCA, nDNA (*Crithidia l.*), Tissues (EMA, KSL, others..)
Positive/Negative determination	ANA, ANCA, nDNA, EMA
Pattern recognition *(on going validation)*	*ANA HEp-2: Homogeneous, Fine speckled, Coarse speckled, Nucleolar Centromere, Few nuclear dots, Multiple nuclear dots, Ribosomal, Mitochondrial.* ANCA: c-ANCA, p-ANCA
Atlas	Reference images and user-defined atlas. ICAP nomenclature included
Mitoses recognition	ANA Hep-2, on recognized pattern (mitoses gallery)
Multiple sample view	Multi well and multi-analyte view of the same patient
Counterstainer	Evans Blue (facultative)
Integrated Visual display unit on board	Monitor: Touch Screen (Full HD) Screen size: 15''
Integrated Elaboration unit on board	Operating system: Windows 10, 64 bit Hard Disk: 2TB
Ports	2 LAN, 4 USB 3.0, 2 USB, 1 DVI, 2 serials, 1 display
LIS connection	Bi-directional. HL7 / XML
Remote access	The system allow remote access to archive and validation environments

Environmental setting - Work session

Temperature	20-35 °C
Humidity	10% - 60% non condensing
Power supply, Entry level	AC 110-120 V or 220-240V 50-50 Hz

Transport/storage

Size	Width 116 cm x Height 65 cm x Depth 87 cm
Weight	tbd (<170 Kg)
Temperature	from -20 to 60 °C
Humidity	90% RH max. (non condensing)