Clinical Chemistry

Selectra Mach®5

selectra MACH 5

Make work flow

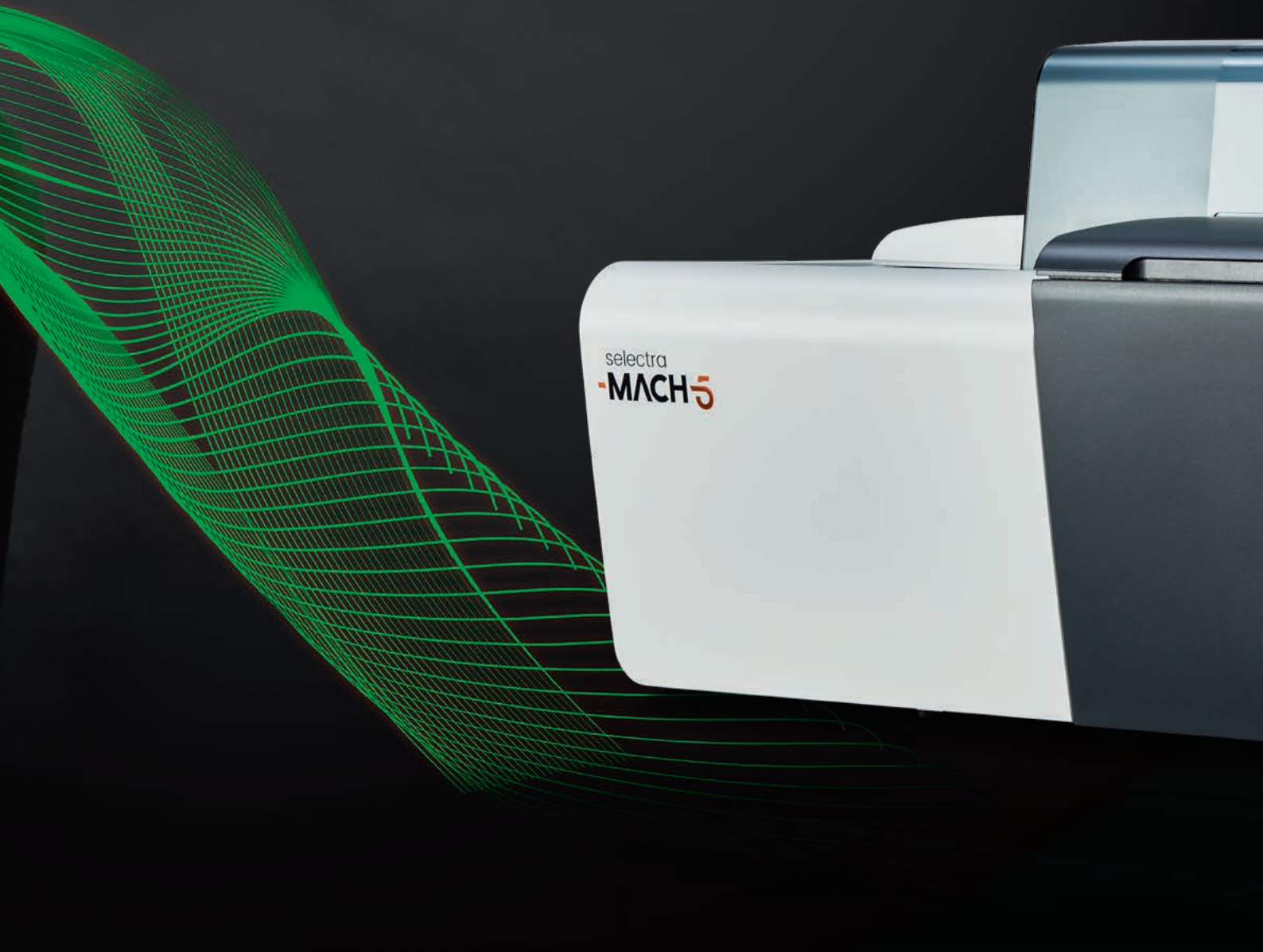
VitalScientific
Diagnostics for Life

Selectra **Mach®5**

An innovative benchtop solution to match your laboratory's needs now and into the future

- Quality and sturdiness – synonymous with the Selectra brand
- Maximum efficiency through consolidation of routine and special testing
- The accuracy required to help clinicians provide the best patient outcomes
- Economical benchtop solution

Now, how can Selectra Mach®5 add additional value for your clinical chemistry laboratory?



Choose your next benchtop system wisely

When choosing the right solution for your clinical chemistry laboratory, features that directly impact your laboratory's productivity will be critically important.

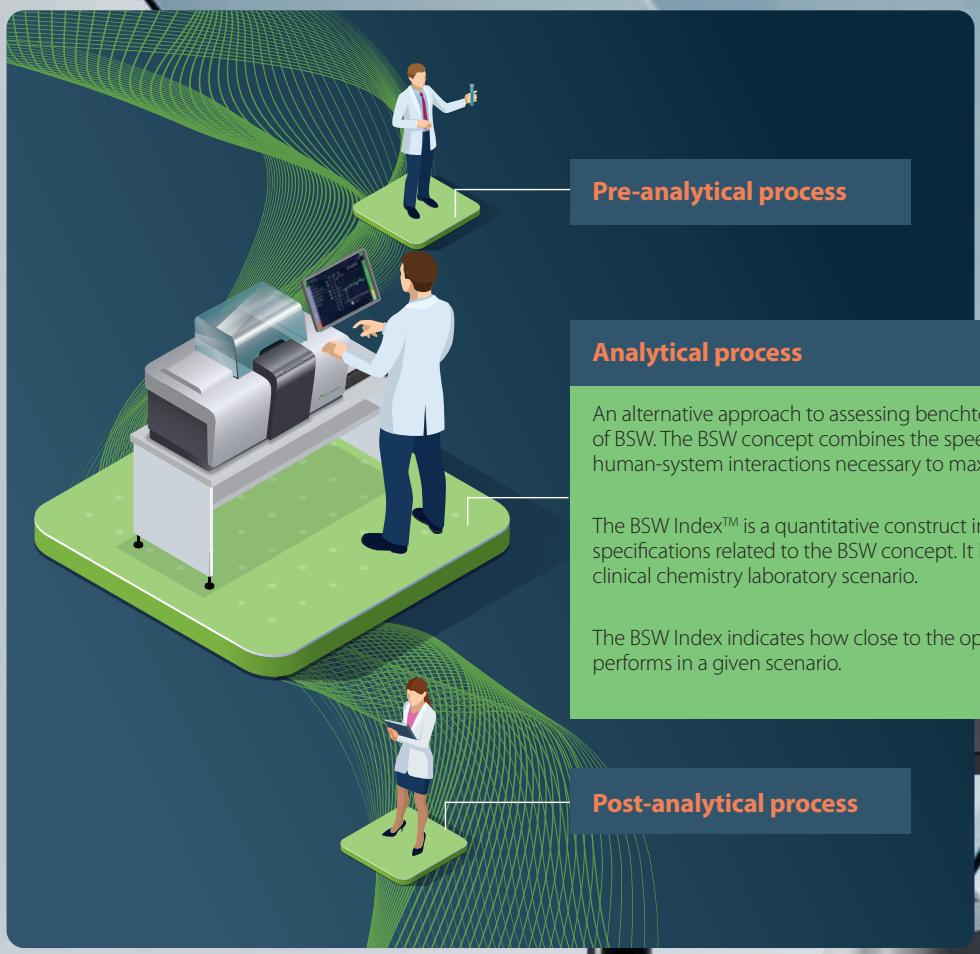
You will look for the best option to complete your workload with the existing or even less resources.

Simply making side by side comparisons of published technical specifications does not provide the critical information for your unique situation.

An integrated approach, that combines the critical productivity elements in a benchtop system, provides the additional insight required to make your work flow.

An integrated approach to benchtop system efficiency: The Benchtop System Workflow Index™

Efficient workflow depends on much more than a system's published specifications



Pre-analytical process

Analytical process

Post-analytical process

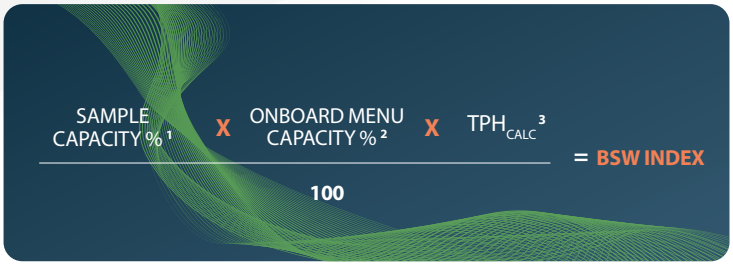
Benchtop System Workflow (BSW) Index is a different way to compare the overall efficiency of benchtop systems using published specifications

An alternative approach to assessing benchtop system efficiency is the concept of BSW. The BSW concept combines the speed of the system, with the level of human-system interactions necessary to maximize operating time.

The BSW Index™ is a quantitative construct incorporating published system specifications related to the BSW concept. It is calculated for a given routine clinical chemistry laboratory scenario.

The BSW Index indicates how close to the optimal workflow the system performs in a given scenario.

The higher the BSW Index, the more efficient the workflow in your laboratory



1 Sample Tray Capacity divided by the capacity needed to perform your daily workload.

2 Onboard Menu Capacity divided by the capacity needed to load your complete routine test menu.

3 Calculated theoretical Tests Per Hour performing your typical daily workload.

How the BSW Index works

The BSW Index assesses the overall workflow in a lab by incorporating three productivity elements of the benchtop system.

In short, it is a measure of benchtop speed ("calculated Tests Per Hour") combined with measurements of benchtop-staff interactions during instrument operating time.

The higher the BSW Index, the more efficient the workflow in your laboratory

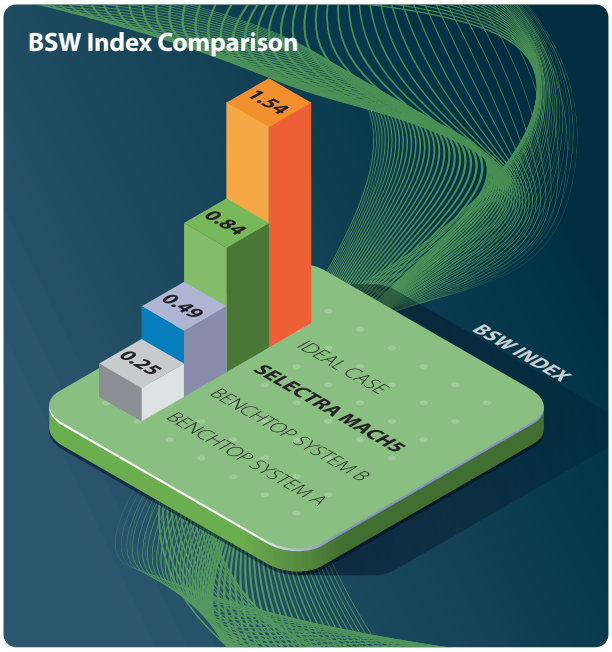
Let's look at the following scenario:

A routine clinical chemistry laboratory needs a new benchtop clinical chemistry system. Demand is expected to grow to 300 samples/day, requiring a menu of 40 parameters[3], with an average of 12 tests/sample. The laboratory is operational 12 hours/day.

A "top 3" of benchtop systems is selected, based on published specifications meeting the current and future productivity needs: Selectra Mach5, Benchtop system A and Benchtop system B.

To determine which system will be most efficient, the BSW Index for all 3 systems is calculated.

Conclusion: for this laboratory, the Selectra Mach®5 would be the best fit.



The values for the Ideal Case and the 3 selected instruments are displayed in the table below:

Top 3 selected Benchtop Systems:	SELECTRA MACH5	SYSTEM A	SYSTEM B	IDEAL CASE[1]
SAMPLE CAPACITY	83	40	50	110 (C[2])
ON BOARD REAGENT CAPACITY[3]	68	50	100	100 (B)
CALCULATED TPH (based on cycle time values)	314	270	216	300
BSW INDEX	0.84	0.25	0.49	1.54

1. The Ideal Case is calculated by selecting the maximum score for each efficiency element, from all the instruments used in the comparison, and the desired throughput (in this case 300 Tests Per Hour).
2. Instrument C has the most optimal sample capacity but, because of insufficient throughput, did not make the short list.
3. Reagent positions required for the selected menu for non-VitalScientific Systems are based on publicly available information. For the Selectra Mach5, 70 reagent positions are required for the selected test menu.

Make work flow with Selectra Mach5. A new approach to benchtop system efficiency

Other key features of the Selectra Mach5

System completeness: Unlike many other systems, Selectra Mach5 has everything included in the system, minimizing footprint. A built-in computer system including touchscreen monitor enabling better cyber security. An integrated supply of system liquid, simplifying system handling for the operator, or, in other words, optimizing human-system interventions.

Water usage: Selectra Mach5 has an onboard water capacity of 10L and typically uses up to 2.5L/h. The system is designed to perform efficiently, therefore both the water and waste containers can be replaced without interrupting the analytical process.

Photometric module: The unique photometers of Selectra Mach5 are LED-based and have a significantly longer life span than the halogen lamp in lamp-based photometers used in many other clinical chemistry systems. Moreover, the LED photometric cartridge technology provides more flexibility and adaptability for future assay developments, as up to 16 individual LED photometer cartridges with a specific wavelength can be accommodated (12 included as standard).

GENERAL SPECIFICATIONS

INSTRUMENTS	
SYSTEM	Fully automated, random access, benchtop clinical chemistry system with STAT capability
COUNTRY OF ORIGIN	Netherlands
DIMENSIONS	105 cm (w) x 70 cm (d) x 65 cm (h)
WEIGHT	110 Kg
OPERATING ENVIRONMENT	Between 15-32 °C; 30-85 % relative humidity (non condensing); and up to 3,000 m above sea level
INTEGRATED PLATFORM	Instrument with inbuilt PC, software, reagents, calibrators, controls and consumables
ANALYSIS MODES	Quantitative, Semi-Quantitative and Qualitative
ASSAY TYPES	Quantitative Kinetic Rate, Fixed Point Rate, End Point; Semi-quantitative; and Qualitative (cut-off)
ASSAY TECHNOLOGIES	Colorimetric (UV-Visible spectra), Turbidimetric

TEST MENU	
PROGRAMMABLE TESTS	1,000
ON BOARD REAGENT CAPACITY	Up to 65 Bar Code Readable (BCR) positions, cooled at 7 ± 3 °C
ON BOARD TEST CAPACITY	At least 39 Parameters when using VitalScientific system reagents
SYSTEM REAGENT MENU	At least 40 CE marked system reagents
USE OF THIRD PARTY REAGENTS	Yes, capability of running third party assays not available from VitalScientific

WORK FLOW	
PRIMARY TUBE SAMPLING	Primary- tube diameter ranging from 12 to 16 mm and a height ranging from 75 to 100 mm
CONTINUOUS REAGENT AND SAMPLE LOADING	Yes, samples and reagents, via dedicated sample and reagent access covers (maximum pause time for sample of 2 minutes)
ON BOARD SAMPLE CAPACITY	85 sample positions. 65 BCR and 20 auxiliary positions (inner ring)
THROUGHPUT RANGE (PHOTOMETRICS)	250 to 500 photometric TPH
THROUGHPUT /M²	340 to 680 photometric TPH/m^2
TIME TO FIRST RESULT (PHOTOMETRICS)	< 5 minutes when using VitalScientific system reagents (assay dependent)
STAT LOADING	Utilising pause function, so no interruption to tests already in progress
AUTOMATIC REPEAT TESTING	Yes, automatic onboard dilution of out of range results
WALK AWAY TIME	Up to 4 hours using VitalScientific system reagents
VALIDATED SAMPLE TYPES	Serum, Plasma, Whole Blood and Urine (assay dependent)
SAMPLE INTEGRITY	Sample clot detection
SAMPLE AND REAGENT IDENTIFICATION	Inbuilt BCR for risk free loading of samples and reagents

SYSTEM CONTROL	
OPERATING SYSTEM	Windows 10 based operating system
USER COMMANDS	15.6 inch capacitance Touch and Swipe screen, resolution 1366 x 768 pixels and widescreen (16:9) aspect ratio
APPLICATIONS	Automatically downloaded from 2D barcode on IFU with handheld BCR
CONTROL AND CALIBRATOR DATA	Automatically downloaded from 2D barcode on IFU with handheld BCR
STATUS DISPLAY	Instrument status, time for completion are displayed in real time
START UP PROCEDURE	System can be programmed for automated start up outside routine hours to prevent interruptions to workflow
SHUT DOWN PROCEDURE	System can be programmed for automated shut down outside routine hours to prevent interruptions to workflow
STORAGE CAPACITY	256 GB solid state hard disk

OPERATOR SAFETY	
ACCESS WHEN OPERATING	Cover open /closed detection. Transparent instrument cover, so moveable parts are visible during operation
MAIN COVER	Open/Closed detection
SAMPLE COVER	Open/Closed detection
REAGENT COVER	Open/Closed detection
CUVETTE ROTOR COVER	Open/Closed detection
NOISE EMISSION	Balanced noise criterium at NCB-58; Sound pressure 58 dB(A)max. when in use

REGULATORY COMPLIANCE	
IVD MEDICAL DEVICES	CE-marked in accordance with EU IVD Regulation 2017/746
ROHS	CE-marked in accordance with EU Directive 2011/65/EU
SAFETY	Tested and certified according to: IEC 61010-1:2010 (incl. AMD1:2016), IEC 61010-2-010:2014, IEC 61010-2-051:2015, IEC 61010-2-101:2015
ELECTROMAGNETIC COMPATIBILITY	Tested and certified by DEKRA according to: IEC 61326-1:2012, IEC 61326-2-6:2012

CE

Cresce cum fide

Selectra **Solutions**

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6004-301-490-04-EN APRIL 2024