e-Readout-001
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e-Readout
HORIBA Technical News Letter

The e-READOUT is a technical newsletter designed to help our readers to understand our proprietary technologies and our products. Our experts in different fields, from all over the world write the content with the spirit of sharing our know-how in developing solution to solve the challenges we face in this rapidly changing world.

Development of the Yumizen C1200 Chemistry System

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HORIBA Medical announces the launch of the Yumizen C1200 clinical chemistry system in North America. The Yumizen C1200 is designed for low- to medium-volume hospital laboratories processing up to 2.0M tests annually. The system analyzes over 70 chemistry tests such as Glucose for diabetes testing, Cholesterol, Triglycerides and Electrolytes for cardiac risk assessment and many more. The Yumizen C1200 is a high throughput analyzer with robust features that provide accurate results, high efficiency and optimal workflow functionality for the laboratory.

Introduction

HORIBA Medical has a long history of providing chemistry systems throughout the world. In North America the Pentra C400 chemistry system is widely used however, it is not able to process high volumes of samples that are analyzed in low- to medium-volume hospital laboratories. Hospital laboratories require analyzers that are easy to use, provide high efficiency and optimal workflow capabilities and can process up to 2.0M tests annually. However, the majority of chemistry platforms available for the low- to medium-volume hospitals are often too large and cumbersome to operate and these systems are quite expensive to maintain. Consequently, the low- to medium-volume segment has been underserved in terms of having big lab automation in a small footprint and, at an affordable price. Therefore, bringing the Yumizen C1200 to the market will give customers the option to have the right size chemistry system with the optimal operational features in their laboratories. In 2020, through the partnership with HORIBA Japan and HORIBA ABX France, HORIBA Medical North America received Health Canada and U.S. Food and Drug Administration (FDA) clearance to commercialize the Yumizen C1200 and corresponding reagents.

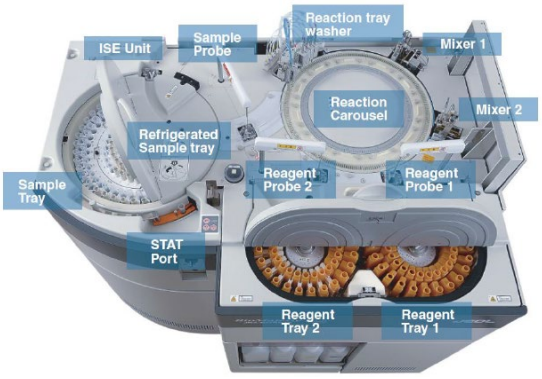
Product overview

The Yumizen C1200 has a throughput of 1200 tests/hour including ISEs, dedicated port for STAT patient samples and a large test

menu including but not limited to comprehensive metabolic profiles, lipid panels, hepatic panels, and specialty tests. The Yumizen C1200 uses micro-sampling technology ensuring minimal sample is used for testing so that pediatric, geriatric and hard-to-draw patients will not have to be redrawn if a repeat test or reflex test is required. The analyzer is equipped with a large capacity reaction carousel, two mixing probes and two reagent probes, which lend to the high throughput of the system. Refrigerated control and reagent carousels ensure reagents remain stable onboard until expiration, and the use of durable ceramic pumps that do not break down frequently, ensures maximum uptime of the analyzer. The Yumizen C1200 system guarantees enhanced flexibility and performance enabling laboratories to meet the demands required for everyday use.

HORIBA

Designed for maximum operational efficiencies

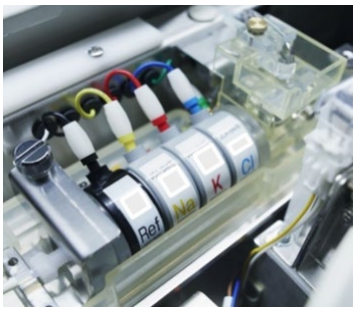


With the smallest footprint in its class of analyzers, the Yumizen C1200 analyzer is 48” W x 33” D x 43” H (122 W x 85 D x 110.8 H cm) and has five main sections; the sample carousel, ISE module, reagent carousel, reaction carousel and bulk solutions storage. Each section contributes to workflow efficiencies the lab requires to handle high volumes of samples during peak hours of operation. The following components provide key functionality that maximize efficiencies and ensure workflow optimization:

Sample Carousel

- The sample carousel is random continuous access and holds up to 84 samples providing optimum throughput
- The sample probe provides several sample integrity checks including liquid level sensing, cap/crash detection and clot detection
- The lab can program the analyzer to detect hemolysis, icterus and lipemia in a sample, which can lead to erroneous patient results

ISE Module



- Indirect measurement of ISEs using a 1:37 dilution ratio helps to eliminate interferences during testing ensuring high quality results
- Indirect measurement also reduces the need for repeat testing, which lowers the total cost of testing
- Electrodes are color-coded and can only fit one way into the ISE port, which reduces waste associated with incorrectly positioned electrodes

Reaction Carousel

- 231 high quality semi-permanent reaction wells and two mixers help to enhance throughput; wells are checked before each dispense to ensure optimal reading for high quality results
- The use of an immersion-type oil in the reaction carousel aids in enhancing the read quality of results, and eliminates contamination issues from bacterial growth, bubbles and water stains that are associated with the use of water baths, which are costly to resolve
- The oil bath also reduces the potential for floods in the lab if a water hose becomes detached

Reagent Tray

- Two refrigerated reagent carousels hold up to 41 tests, and the analyzer’s software can be programmed with up to 100 applications providing

- flexibility to meet the test menu requirements of most laboratories.
- Two liquid level sensing reagent probes are used to keep tract of reagent volume ensuring labs do not run out of key reagents during peak hours of operation.

Bulk Solutions Storage

- Bulk solutions are stored in the front of the analyzer and are used for the ISE, reaction carousel and cuvette washing.
- Daily maintenance consists of a 30 minute automatic shutdown and startup procedure and system checks that take approximately five minutes to complete ensuring optimal performance and minimal downtime.

Reagent Management

- Reagents are liquid ready-to-use, barcoded and available in various sizes giving the lab flexibility to have more.
- reagent volume onboard for high-volume tests.
- System software monitors expiration dating, onboard reagent stability and number of tests remaining in the vial ensuring optimal reagent performance while in use.
- Measurement principles include endpoint, rate reaction, 2 point rate and immunoassay, and the optical system uses a halogen lamp.

Conclusion

Hospital laboratories are tasked with choosing chemistry systems that provide the highest quality of results, improved efficiencies and optimal workflow capabilities to ensure the volume of work that comes into the laboratory during peak hours of operation is processed in a timely manner. Laboratory managers must also choose analyzers that do not frequently break down; down analyzers delay sending information to physicians who are waiting for chemistry results to implement or modify treatment plans. Lab managers are also tasked with ensuring expenditures to operate their laboratory analyzers remain low and within budget. The Yumizen C1200 is a robust analyzer designed to provide the highest quality results, and highest throughput with the smallest footprint in its class. As a result of the key analyzer features, minimal sample and reagent is used for analysis, and fewer repeats are required to produce results thus lowering the cost of operation. HORIBA Medical is committed to improving outcomes by providing all-round safety to patients, clinicians and the environment through high quality results. We believe this is an attractive and robust chemistry analyzer that offers an excellent combination of sampling speed, precision, reliability, and ease of use.

Learn more about HORIBA's other products. Attend HORIBA's Yumizen H2500 Hematology System Poster Sessions during 2020 AACC:

Comprehensive Process to evaluate high range hematology analyzers with robust indicators like efficiency, slide review rate, flags, sensitivity and flags specificity.

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AACC

Session Dates/Times:

Tuesday, 15 December 2020 | 12:30 – 13:30 PM CST
Wednesday, 16 December 2020 | 12:30 – 13:30 PM CST

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