# Aptio Automation

Driving one-touch workflow efficiency
in single- and multidiscipline labs

**siemens-healthineers.com/aptio**

**Advanced Partner**

Laboratory Automation

inpeco

SIEMENS Healthineers

# Combining the expertise, flexibility, and innovation needed to deliver workflow excellence

It takes an automation powerhouse to skillfully combine the expertise, flexibility, and innovation needed to design and deliver one-touch workflow efficiency in single- and multidiscipline labs.

**Automation Powerhouse**

# Partnering with you through every phase of your automation journey

Total lab automation is a journey, not a destination. Choosing the right partner to accompany and guide you throughout your automation journey is one of the most important professional decisions you'll make and will be a driving variable in your lab's long-term success and employee satisfaction.

When you partner with Siemens Healthineers, you can be confident that you will receive expert-level professional services before, during, and long after the lab automation solution is deployed. Every automation project—whether 4 meters or 400 meters—is led by a Lean-certified Healthcare Consultant and follows our systematic, proven automation solution lifecycle process.

Design

Implement

Maintain

Optimize

## Healthcare Consulting Solutions

- **Accurately predict performance** of the new laboratory design with the multidimensional SimFlow™ tool.
- **Plan and successfully manage operational change** with our Transformation Program.
- **Optimize performance through continuous analysis** of your lab's constantly evolving environment with semiannual Healthchecks.

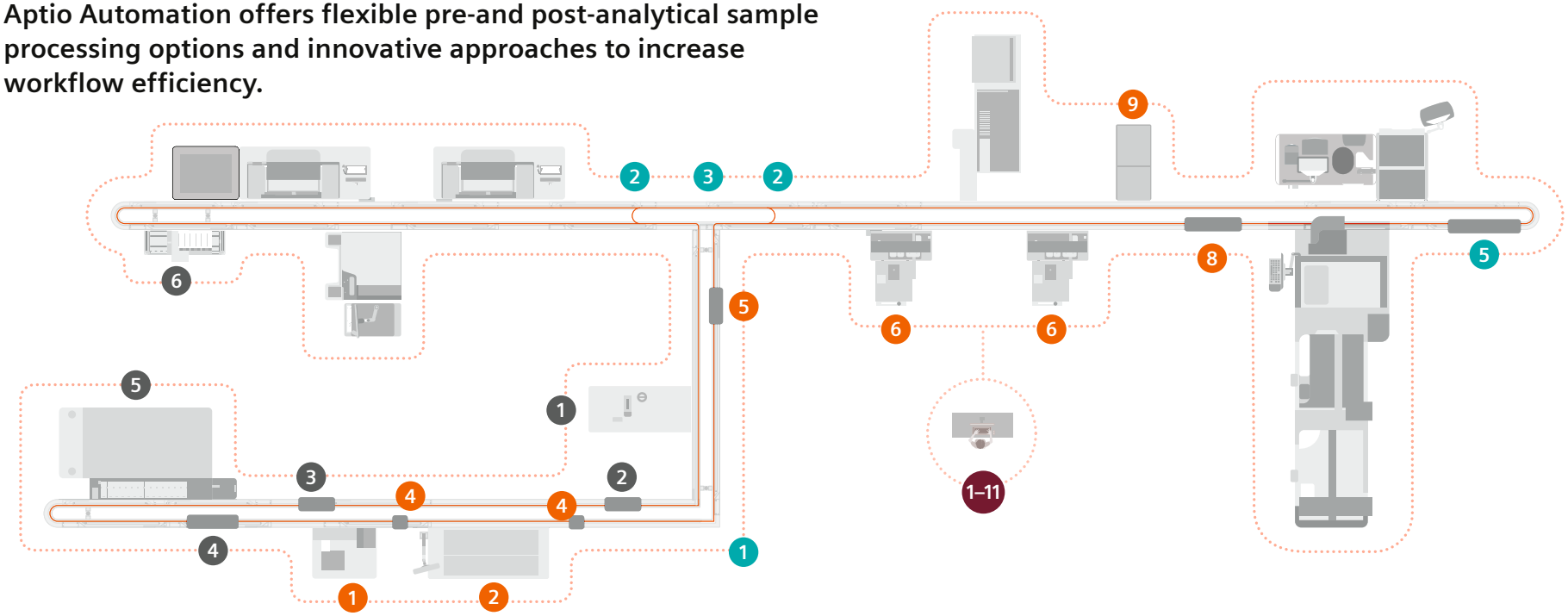
## Project Management

- Conduct **early-stage analysis** of requirements and **project plan development.**
- **Mitigate known risks** with thorough analysis of risk factors and detailed timelines.
- Manage project implementation through a single point of contact to **support a seamless rollout and timely go-live.**
- Validate and stress-test systems after installation to **ensure smooth operation of all hardware and IT infrastructure.**

## Services

- Employ predictive monitoring and remote services to resolve problems quickly and **reduce the risk of downtime.**
- **Receive continuous software/hardware upgrades** to leverage the latest design enhancements.
- Tap into on-demand education solutions to **enhance skills, boost performance, and support new staff.**

## Aptio Automation offers flexible pre-and post-analytical sample processing options and innovative approaches to increase workflow efficiency.




### Pre-analytical Modules

**Choose the modules that make sense for your laboratory's workload, including multiples of individual components.**

1. Bulk Input Module*
2. Input/Output Module
3. Rack Input Module (not shown)
4. Tube Inspection Module† (not shown)
5. Volume Detection Module or Sample Integrity Module
6. Centrifuge Module
7. Sample Mixer Module (not shown)
8. Decapper Module
9. Wide Belt Buffer Module

**Automated tube feed options available.*
*†If selected, a Tube Inspection Module will be required for each Input Module on the track.*

### Post-analytical Modules

**Eliminate labor-intensive, time-consuming work when distributing, storing, and/or disposing of samples.**

1. Aliquotter Module
2. Aliquot Capper Module
3. Sealer Module
4. Desealer Module
5. Refrigerated Storage Module
6. Rack Output Module

### Flexible Track Design Options

**Customize a configuration to help maximize your use of space and staff.**

1. Track L-Turn (right or left)
2. Track U-Turn
3. Track T-Turn
4. Automation Module Divert Lane (not shown)
5. Generic Slot

### Integrated Laboratory Informatics Software

**Apply patient-centric rules to automate workflows for increased productivity and consistent quality.**

1. Intelligent Routing: Test Prioritization, Tube Type, Sorting, Disposal
2. STAT Prioritization
3. Reflex Testing Criteria
4. Integrated QC Management‡
5. Add-on Test Management
6. One-click Sample Retrieval
7. Autoverification‡
8. Algorithm-driven Testing‡
9. Exception Management
10. Instrument Status
11. Module Status, and More

*‡Some advanced functionality may be subject to LIS capabilities or will require Atellica® Data Manager. Labs can also choose to incorporate Atellica® Process Manager to further expand their process-management capabilities.*

# Unrivaled open connectivity to 50+ systems

We understand that your instruments may come from several manufacturers and will change over time. We have an impressive record of open, multidisciplinary connectivity and will strive to maintain our strong leadership in this critical area.

Specialties supported include:

- Allergy
- Chemistry
- Electrophoresis
- ESR
- HbA1c
- Immunoassay
- Hematology
- Hemostasis
- Molecular
- Plasma Proteins
- Urinalysis

On-track connectivity is supported to instruments from the following manufacturers,§ with additional automation software interface options for stand-alone systems:**

- Siemens Healthineers
- Abbott§
- Alifax§
- Arkray§
- Beckman Coulter§
- Bio-Rad§
- Diagnostica Stago§
- DiaSorin§
- DIESSE Diagnostica Senese§
- ERUROIMMUN§
- Fujirebio§
- Grifols§
- Hamilton§
- Helena§
- Hologic§
- IDS§
- JEOL§
- QuidelOrtho§
- Roche§
- RR Mechatronics§
- Sebia§
- Sekisui§
- Snibe§
- Sysmex§
- Thermo Fisher Scientific§
- Theradiag§
- Tosoh§
- Trinity Biotech§
- Werfen§

Since launching our first track-based automation solution in 1998, we have connected more than 14,000 instruments to TLA solutions. Of all these achievements, perhaps most important is our seamless connectivity to Atellica® Solution. As part of an Aptio® Automation solution, Atellica Solution supports high-volume chemistry and immunoassay testing in flexible configurations that make it possible to attach analyzers **without adding additional automation touchpoints**.

**Scan to view complete list of connectable systems.**

*§Connectivity to third-party analyzers may not be available in all countries. Analyzer availability may vary by country, and connectivity will require manufacturer agreement. Please contact your local Siemens Healthineers representative for further information.*

***Data-management interface established for stand-alone instruments only. These instruments cannot be connected to Aptio Automation. For a full list of systems that can be connected to Aptio Automation,* ***click here*** *or scan the QR code.*

**Needs-based flexibility to connect 11 specialties, including molecular**

*"The connection of the PANTHER to the track has impacted our turnaround time, because we can load in the evening when we're not there, so we're now producing results during the night."*

Kelly Mertens
Head of the Molecular Department
Star-shl
Rotterdam, Netherlands

**Innovative solutions to streamline management of pediatric tubes**

*"Aptio Automation and Atellica Solution enable processing of more than 80% of the pediatric micro tubes without manual intervention—and in the near future, we will aim to increase this to >95% by adding a Sample Integrity Module. This is a great step forward as it enables us to guarantee TAT for the children's hospital and a separate specialized children's oncology hospital."*

J.C. den Hartog
Laboratory Manager
Central Diagnostics Laboratory
University Medical Centre
Utrecht, Netherlands

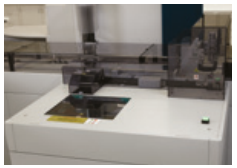


# Pre-analytical Modules

To keep pace with testing demands, preanalytical modules must provide solutions to combat the biggest workflow challenges. Aptio Automation offers innovative modules to reduce manual intervention and increase testing accuracy:

- Sample mixing to support workflows such as whole-blood HbA1c testing on the high-throughput Atellica® CH Analyzer
- Sample volume, level, and integrity checks for hemolysis, icterus, and lipemia for early evaluation before testing
- Integrated testing of small-volume tubes to eliminate manual handling, enabling one-touch pediatric workflow
- 3-minute centrifugation using select BD BARRICOR plasma blood collection tubes to improve turnaround times

*Note: Weight has been measured for all modules with samples or consumables. Some modules are incorporated into the track, and weight may vary by configuration. Maximum physical dimensions have been determined from a combination of 2-D drawings (length and width) and by measuring the actual height. Throughput claims have been obtained during testing, under optimal conditions.*



**Bulk Input Module**
High-speed tube input by bulk tube load

| | |
|---|---|
| **Dimensions (L x H x D, mm)** | 985 x 1235 x 790 |
| **Weight** | 130 kg (286 lb) |
| **Air Consumption (NL/min)** | 33.71 |
| **Power Consumption (VA)** | 253 (TIM configuration) |
| **Heat (BTU/hour)** | 688.2 (TIM configuration) |
| **Throughput (tubes/hour)** | Up to 1000 |
| **Walk-away Capacity (tubes)** | Up to 700 |
| **Sample Type** | Unspun |
| **Cap Type** | Capped |

**Input/Output Module**
Routine and STAT tube input, output, sort, and priority output

| | |
|---|---|
| **Dimensions (L x H x D, mm)** | 2250 x 1500 x 800 |
| **Weight** | 290 kg (639 lb) |
| **Air Consumption (NL/min)** | 10.06 |
| **Power Consumption (VA)** | 805 (TIM configuration) |
| **Heat (BTU/hour)** | 2189.6 (TIM configuration) |
| **Throughput (tubes/hour)** | Up to 750 |
| **Walk-away Capacity (tubes)** | Up to 780 |
| **Sample Type** | Spun and unspun |
| **Cap Type** | Capped, uncapped, and sealed |

**Rack Input Module**
High-speed tube input by rack

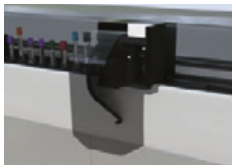
| | |
|---|---|
| **Dimensions (L x H x D, mm)** | 1225 x 1530 x 480 |
| **Weight** | 115 kg (254 lb) |
| **Air Consumption (NL/min)** | 14.23 |
| **Power Consumption (VA)** | 690 (TIM configuration) |
| **Heat (BTU/hour)** | 1876.8 (TIM configuration) |
| **Throughput (tubes/hour)** | Up to 800 |
| **Walk-away Capacity (tubes)** | Up to 288 |
| **Sample Type** | Spun and unspun |
| **Cap Type** | Capped and uncapped |

**Tube Inspection Module**
Detects and manages mismatches between tube type and test request

| | |
|---|---|
| **Dimensions (L x H x D, mm)** | Incorporated in the track |
| **Weight** | Incorporated in the track |
| **Air Consumption (NL/min)** | Not required |
| **Power Consumption (VA)** | 149.7 |
| **Heat (BTU/hour)** | 378.1 |
| **Throughput (tubes/hour)** | Up to 1800 |
| **Sample Type** | Spun and unspun |
| **Cap Type** | Capped and uncapped |

### Centrifuge Module

| | |
|---|---|
| **Dimensions (L x H x D, mm)** | 945 x 1510 x 1155 |
| **Weight** | 385 kg (849 lb) |
| **Air Consumption (NL/min)** | 4.59 |
| **Power Consumption (VA)** | 598 |
| **Heat (BTU/hour)** | 1626.6 |
| **Throughput (tubes/hour)** | Up to 300 with 10-minute spin |
| **Sample Type** | Unspun |
| **Cap Type** | Capped |



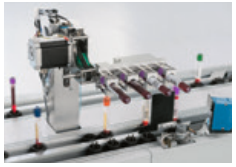
### Sample Integrity Module

Detects sample volume and serum indices

| | |
|---|---|
| **Dimensions (L x H x D, mm)** | 170 x 0 x 140 |
| **Weight** | 25 kg (55 lb) |
| **Air Consumption (NL/min)** | 3.02 |
| **Power Consumption (VA)** | 230 |
| **Heat (BTU/hour)** | 625.6 |
| **Throughput (tubes/hour)** | Up to 500 |
| **Sample Type** | Spun |
| **Cap Type** | Capped and uncapped |

### Sample Volume Detection Module

| | |
|---|---|
| **Dimensions (L x H x D, mm)** | Incorporated in the track |
| **Weight** | 10 kg (22 lb) |
| **Air Consumption (NL/min)** | 5.6 |
| **Power Consumption (VA)** | 156.7 |
| **Heat (BTU/hour)** | 391.1 |
| **Throughput (tubes/hour)** | Up to 700 |
| **Sample Type** | Spun |
| **Cap Type** | Capped and uncapped |



### Sample Mixer Module

| | |
|---|---|
| **Dimensions (L x H x D, mm)** | Incorporated in the track |
| **Weight** | 10 kg (22 lb) |
| **Air Consumption (NL/min)** | 6.1 |
| **Power Consumption (VA)** | 253 |
| **Heat (BTU/hour)** | 688.2 |
| **Throughput (tubes/hour)** | Up to 700†† |
| **Sample Type** | Unspun |
| **Cap Type** | Capped |

### Decapper Module (external)

| | |
|---|---|
| **Dimensions (L x H x D, mm)** | 455 x 1240 x 135 |
| **Weight** | 40 kg (88 lb) |
| **Air Consumption (NL/min)** | 14.52 |
| **Power Consumption (VA)** | 260.9 |
| **Heat (BTU/hour)** | 489.6 |
| **Throughput (tubes/hour)** | Up to 800 |
| **Sample Type** | Spun |
| **Cap Type** | Capped |

### Wide Belt Buffer Module (240)

Sample/sample carrier buffer for managing workload peaks and valleys

| | |
|---|---|
| **Dimensions (L x H x D, mm)** | 535 x 1045 x 1200 |
| **Weight** | 100 kg (220 lb) |
| **Air Consumption (NL/min)** | 3.9 |
| **Power Consumption (VA)** | 230 |
| **Heat (BTU/hour)** | 625.6 |
| **Throughput (tubes/hour)** | Up to 800 |
| **Sample Type** | Spun and unspun |
| **Cap Type** | Capped and uncapped |

### Wide Belt Buffer Module (600)

Sample/sample carrier buffer for managing workload peaks and valleys

| | |
|---|---|
| **Dimensions (L x H x D, mm)** | 1230 x 1045 x 1075 |
| **Weight** | 130 kg (287 lb) |
| **Air Consumption (NL/min)** | 3.8 |
| **Power Consumption (VA)** | 230 |
| **Heat (BTU/hour)** | 625.6 |
| **Throughput (tubes/hour)** | Up to 800 |
| **Sample Type** | Spun and unspun |
| **Cap Type** | Capped and uncapped |

*††Throughput based on four cycles with wait time for upright position set at 300 ms.*

## Integrated, space-saving solutions to optimize high-volume HbA1c workflows

*"Adding Hba1c testing to our Atellica Chemistry analyzer test menu made much more sense than making room for a dedicated one-test instrument on the track. This allows us to be as flexible as we can with the smallest possible footprint in our laboratory. This allows us more room to expand for the future."*

Justin Schellekens
Head of the Clinical Chemistry Department
Star-shl
Rotterdam, Netherlands

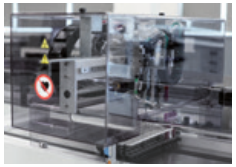
# Post-analytical Modules

**Sealer Module (external)**
(mandatory with RSM)

| | |
|---|---|
| **Dimensions (L x H x D, mm)** | 860 x 1240 x 135 |
| **Weight** | 42 kg (93 lb) |
| **Air Consumption (NL/min)** | 21.15 |
| **Power Consumption (VA)** | 713 |
| **Heat (BTU/hour)** | 1939.4 |
| **Throughput (tubes/hour)** | Up to 800 |
| **Walk-away Capacity (tubes)** | Up to 19,000 (cartridge capacity) |
| **Sample Type** | Spun and unspun |
| **Cap Type** | Uncapped |

**Desealer Module (external)**
Automatic tube desealing for rerun, reflex, and add-on testing

| | |
|---|---|
| **Dimensions (L x H x D, mm)** | 455 x 1240 x 135 |
| **Weight** | 40 kg (88 lb) |
| **Air Consumption (NL/min)** | 4.17 |
| **Power Consumption (VA)** | 34.8 |
| **Heat (BTU/hour)** | 65.3 |
| **Throughput (tubes/hour)** | Up to 200 |
| **Walk-away Capacity (tubes)** | Up to 10,000 (waste container capacity) |
| **Sample Type** | Spun and unspun |
| **Cap Type** | Sealed |



**Rack Output Module**
High-speed tube output by rack

| | |
|---|---|
| **Dimensions (L x H x D, mm)** | 1225 x 1530 x 480 |
| **Weight** | 115 kg (254 lb) |
| **Air Consumption (NL/min)** | 10.05 |
| **Power Consumption (VA)** | 621 |
| **Heat (BTU/hour)** | 1689.1 |
| **Throughput (tubes/hour)** | Up to 800 |
| **Walk-away Capacity (tubes)** | Up to 288 |
| **Sample Type** | Spun and unspun |
| **Cap Type** | Capped, uncapped, and sealed |

**Refrigerated Storage Module (15,000)**
Automatic storage, retrieval, and disposal of sealed tubes

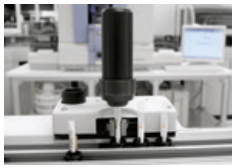
| | |
|---|---|
| **Dimensions (L x H x D, mm)** | 2450 x 2500‡‡ x 1450 |
| **Weight** | 1355 kg (2987 lb) |
| **Air Consumption (NL/min)** | 9.53 |
| **Power Consumption (VA)** | 3680 |
| **Heat (BTU/hour):** | 10,009.6 |
| **Throughput (tubes/hour)** | Up to 800 |
| **Walk-away Capacity (tubes)** | Up to 1000 (waste capacity) |
| **Sample Type** | Spun and unspun |
| **Cap Type** | Capped and sealed |

**Refrigerated Storage Module (9000)**
Automatic storage, retrieval, and disposal of sealed tubes

| | |
|---|---|
| **Dimensions (L x H x D, mm)** | 2450 x 2200‡‡ x 1450 |
| **Weight** | 990 kg (2183 lb) |
| **Air Consumption (NL/min)** | 9.53 |
| **Power Consumption (VA)** | 3680 |
| **Heat (BTU/hour)** | 10,009.6 |
| **Throughput (tubes/hour)** | Up to 800 |
| **Walk-away Capacity (tubes)** | Up to 1000 (waste capacity) |
| **Sample Type** | Spun and unspun |
| **Cap Type** | Capped and sealed |

**Aliquotter Module**

| | |
|---|---|
| **Dimensions (L x H x D, mm)** | 720 x 1610 x 1590 |
| **Weight** | 170 kg (375 lb) |
| **Air Consumption (NL/min)** | 19.0 |
| **Power Consumption (VA)** | 437 |
| **Heat (BTU/hour)** | 1188.6 |
| **Throughput (tubes/hour)** | Up to 400§§ |
| **Walk-away Capacity (tubes)** | Up to 500 (secondary tube container capacity) |
| **Sample Type** | Spun*** |
| **Cap Type** | Uncapped |

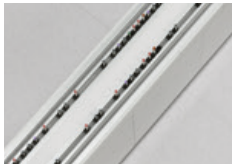


**Aliquot Capper Module (external)**
Screw-type recapper for daughter aliquot tubes

| | |
|---|---|
| **Dimensions (L x H x D, mm)** | 810 x 1240 x 135 |
| **Weight** | 35 kg (77 lb) |
| **Air Consumption (NL/min)** | 10.83 |
| **Power Consumption (VA)** | 45.2 |
| **Heat (BTU/hour)** | 84.9 |
| **Throughput (tubes/hour)** | Up to 400 |
| **Walk-away Capacity (tubes)** | Up to 1000 (cap container capacity) |
| **Sample Type** | Spun |
| **Cap Type** | Uncapped |

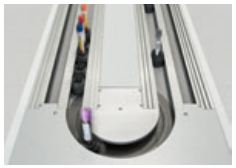
*‡‡An additional space of 300 mm must be allowed for service clearance.*
*§§Based on 80 primary tubes, 4 secondary tubes per primary tube, dispensing 200 µL in each secondary tube.*
*Secondary tube: 93 * 13 mm, 3 mL max. fill.*
****Only serum, plasma, and urine samples*

# Flexible track design options



**Track**

| | |
|---|---|
| **Dimensions (L x H x D, mm)** | From 800 to 2300 x 1045 x 435 |
| **Weight** | 50 kg (110 lb) |
| **Air Consumption (NL/min)** | Not required |
| **Power Consumption (VA)** | 0 |
| **Heat (BTU/hour)** | 0 |
| **Throughput (tubes/hour)** | Up to 3600 |



**Track Head**

| | |
|---|---|
| **Dimensions (L x H x D, mm)** | 200 x 1045 x 435 |
| **Weight** | 15 kg (33 lb) |
| **Air Consumption (NL/min)** | Not required |
| **Power Consumption (VA)** | 62.6 |
| **Heat (BTU/hour)** | 117.5 |
| **Throughput (tubes/hour)** | Up to 3600 |

**Track T-Turn**
Enables spur configurations

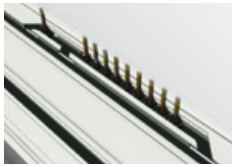
| | |
|---|---|
| **Dimensions (L x H x D, mm)** | 975 x 1045 x 350 |
| **Weight** | 35 kg (77 lb) |
| **Air Consumption (NL/min)** | 5.5 |
| **Power Consumption (VA)** | 93.9 |
| **Heat (BTU/hour)** | 176.3 |
| **Throughput (tubes/hour)** | Up to 3600 |

**Track L-Turn**

| | |
|---|---|
| **Dimensions (L x H x D, mm)** | 855 x 1045 x 875 |
| **Weight** | 20 kg (44 lb) |
| **Air Consumption (NL/min)** | Not required |
| **Power Consumption (VA)** | 121.7 |
| **Heat (BTU/hour)** | 228.5 |
| **Throughput (tubes/hour)** | Up to 3600 |

**Track U-Turn**
Provides shortcuts for improved workflow

| | |
|---|---|
| **Dimensions (L x H x D, mm)** | Incorporated in the track |
| **Weight** | 10 kg (22 lb) |
| **Air Consumption (NL/min)** | 2.8 |
| **Power Consumption (VA)** | 48.6 |
| **Heat (BTU/hour)** | 91.4 |
| **Throughput (tubes/hour)** | Up to 3600 |



**Automation Module Divert Lane**
Routes samples to task-oriented modules without traffic jams

| | |
|---|---|
| **Dimensions (L x H x D, mm)** | From 1000 to 2300 x 1045 x 435 |
| **Weight** | Variable |

## Integrated IT drives intelligent automation

*"Thinking about automation as simple mechanization ignores the importance of data integration."*

Dr. Nimmi Kansal
Technical Director for Clinical Chemistry and Biochemical Genetics
Dr. Lal Pathlabs
Dehli, India

# Amplify the power of total lab automation with Atellica Diagnostics IT

Atellica® Diagnostics IT unifies data from your instrument and automation systems, combining sample, process, result, QC, and inventory data for increased productivity and greater insights.

- Reduce manual tasks and simplify processes.
- Centralize management across multiple labs for a wide variety of tasks.
- Implement user-customized dashboards and alerts to focus staff's attention where it's needed most.
- Simplify data collection and processing activities and automate the reporting of key performance indicators.

# Environmental and built-in IT specifications

## Transport and Storage Environment

**Temperature**
Range: –20 to 60°C (–4 to 140°F)

**Humidity**
Range: 5–90%

**Altitude**
Up to 12,000 m above sea level

## Operating Environment

**Room Temperature**
Range: 5–40°C (41–104°F)

**Relative Humidity**
Maximum: 80% for temperatures up to 31°C (88°F)

**Average Thermal Output**
The average thermal output is calculated when the final configuration is determined.

**Altitude**
Up to 2000 m above sea level

## Installation

Aptio Automation installation is managed by a Siemens Healthineers project manager and installation team. The team determines the specific system requirements based on the laboratory needs. The final configuration is fully tested to ensure functionality.

## Preventive Maintenance Frequency

There are four Siemens Healthineers preventive maintenance visits per year for Aptio Automation; multiple pieces of equipment can be serviced during each visit.

## Electrical Requirements

Aptio Automation, including its modules, has a single dedicated power connection. This connection must be hardwired with a main disconnect device convenient to the system. Each analyzer connected to Aptio Automation requires a separate power supply; refer to each analyzer's specifications for power requirements.

### Operating Power Requirements

| Main Line Requirements | | Value |
|---|---|---|
| Frequency | | 50/60 Hz |
| Voltage Fluctuations | | Up to ±10% |
| **Main Line Voltages** | **System Size** | **VA** |
| Single Phase 230 V Nominal | Small | 3000 |
| Single Phase 230 V Nominal | Medium | 8800 |
| Three Phase 400 V Nominal | Large | 26500 |

## Compressed Air

Aptio Automation requires an external source of compressed air. The flow rate requirement is calculated based on the final configuration. A shutoff valve and pressure gauge must be installed near Aptio Automation.

## Code Compliance

**Electromechanical Safety**
The automation system shall comply with North America standards as follows:

- CAN/CSA-C22.2 No. 61010-1 (3rd Edition)
- UL 61010-1 (3rd Edition)
- CAN/CSA-C22.2 No. 61010-2-101
- CAN/CSA-C22.2 No. 61010-2-051
- CAN/CSA-C22.2 No. 61010-2-011
- CAN/CSA-C22.2 No. 61010-2-020

The automation system shall comply with following international standards as follows:

- IEC/EN 61010-1:2010 (3rd Edition)
- IEC/EN 61010-2-101
- IEC/EN 61010-2-051
- IEC/EN 61010-2-011
- IEC/EN 61010-2-020

**Electromagnetic Compatibility (EMC)**
The system complies with the emission and immunity requirements of EN 55011, EN 61000-4-2, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11, EN 61000-3-2, and EN 61000-3-3.

**Intentional Radiator**
The system contains a radio frequency identification system for tracking sample carriers, which is an intentional radiator. The system has been tested, meets the requirements, and is licensed according to the requirements of Part 15 of the U.S. Federal Communication Commission (FCC) regulations. The system has been tested and meets the applicable requirements of ETSI EN 301 489-1 V2.2.3:2019, ETSI EN 301 489-3 V2.1.1:2019 and ETSI EN 300 330 V2.1.1:2017.

**Laser Radiation**
Some modules contain Class 1 and Class 2 laser devices. The bar-code readers inside of automation modules meet the requirements of IEC 60825-1 and U.S. Food and Drug Administration regulations 21 CFR 1040. Opaque barriers prevent Class 2 laser radiation from leaving the system. The system is appropriately labeled and includes the following warning in required areas: Do not stare into beam.

## Acceptable Tube Types

The following is a list of the most common tube types compatible with Aptio Automation. Please consult Siemens Healthineers for a complete list of compatible tube types:

- VACUETTE, Greiner Bio-One: 13 x 100, 16 x 100, 13 x 75
- VACUTAINER HEMOGARD Tube Closure, BD (Becton, Dickinson and Company): 13 x 100, 16 x 100, 13 x 75
- S-MONOVETTE, Sarstedt: 13 x 100, 13 x 75, 16 x 100, 16 x 75
- VENOSAFE, Terumo: 13 x 100, 16 x 100, 13 x 75
- VACUTEST KIMA: 13 x 100, 16 x 100, 13 x 75

(Nominal measurements D x H, mm)

## IT Specifications

### Operating System

Red Hat Enterprise LINUX for data-management system and WINDOWS Server 2019 for sample-management system

### Hardware

Dell server with hardware RAID controller in one of four sizes (see table). The server's RAID disk controller must be a hardware controller, not a software controller. Do not install data-management software on a server equipped with anything other than a hardware RAID controller.

### Firewall

Cisco IR1101 Integrated Service Router in hardened factor form

### Serial Device Server

Moxa NPORT 5110 (serial-to-Ethernet converter, one device for each instrument serial port to be configured as communication channel)

### Server Details†††

| Product Features | From 1 to 14 Analyzers | From 15 to 20 Analyzers | From 21 to 30 Analyzers |
|---|---|---|---|
| **Type** | Rack | | |
| **Manufacturer** | Dell | | |
| **Model** | OEM POWEREDGE R640 XL | | |
| **Processor** | INTEL XEON Silver 4110<br>8 Core @ 2.1 GHz | INTEL XEON Silver 4110<br>8 Core @ 2.1 GHz | INTEL XEON Silver 4116<br>12 Core @ 2.1 GHz |
| **Number of Processors** | 1 | 2 | 2 |
| **Memory** | 64 GB DDR4 | 96 GB DDR4 | 128 GB DDR4 |
| **Internal Storage** | 6 x 300 GB SAS HDDs | 8 x 300 GB SAS HDDs | 8 x 600 GB SAS HDDs |
| **Network Interfaces** | 4 x 1 Gigabit Ethernet Ports | | |
| **RAID Controller** | HW RAID<br>2 GB NV Cache<br>(RAID 0, RAID 1, RAID 5, RAID 6, RAID 10, RAID 50, RAID 60) | | |
| **Power Supply** | Dual Redundant 495 W | | |
| **Optical Drive** | DVD-ROM SATA | | |
| **Ports** | USB (2 Front, 2 Rear, 1 Internal), 1 Serial and Video | | |
| **Remote Management** | iDRAC9 Enterprise | | |
| **Support** | 3 Years Dell ProSupport<br>4 Hours ProSupport Mission Critical On-site | | |

*†††Please consult Siemens Healthineers for IT requirements needed to support Aptio Automation solutions that connect more than 30 analyzers.*

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Product availability may vary from country to country and is subject to varying regulatory requirements. Please contact your local representative for availability.

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**Published by**
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511 Benedict Avenue
Tarrytown, NY 10591-5005
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*Published by Siemens Healthcare Diagnostics Inc. · CLS-23-2777-76 · HOOD05162003367155 · 07-2023 · ©Siemens Healthcare Diagnostics Inc., 2023*