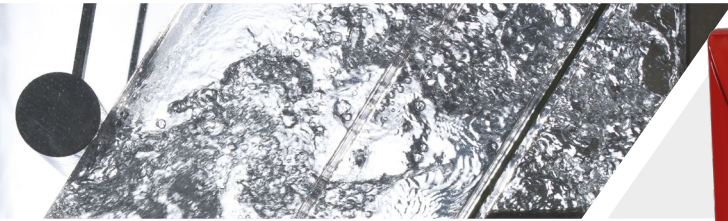




ARCADIA
TUNNEL WASHER



Heavy duty, conveyORIZED, large capacity hydro spray washer designed for the thorough, efficient cleaning and disinfection of cages, cage components and miscellaneous items used in the care of laboratory animals.

STANDARD TECHNICAL FEATURES

► CLEANING EFFICIENCY

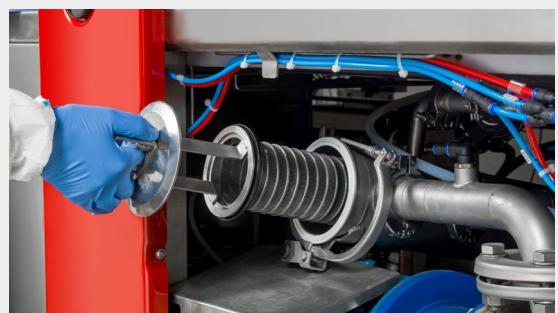
Water flow, pressure and coverage are resulting in outstanding cleaning performance, up to 1500 mice cages per hour, making Arcadia ideal for medium/large scale operations. The wash solution is pressurized by mean of an inverter-controlled pump to ensure perfect washing results, while a pre-rinse and a final fresh rinse are guarantee of completely residues-free items. The water recirculates from rinse to wash module, from hotter to colder process, to refresh and rewarm the related solutions. This ensures not only the best energy efficiency but also the minimum water and detergent consumptions. Arcadia is fully compliant with AK KAB and AAALAC requirements.

► SELF CLEANING FILTRATION SYSTEM

Arcadia is featuring a S/S wedge-wire cartridge filter which is installed inline with the wash solution recirculation system. The intercepted debris are automatically removed thanks to a back-flush feature and the waste is delivered to drain or alternatively, as option, collected in an external canister or extracted via IWT vacuum system. A pressure reader monitor the unlikely clogging of filter or nozzles and the control logic automatically rises a warning message over the operator interface. The filter itself can be easily reached from the side of the unit and removed without the need of any tool.



WASHING PROCESS



SELF-CLEANING FILTER

► DRYING

The drying technology features high speed warm air blown over the load. Two side channel blowers are pushing the air under high pressure through a set of air-knives so that residues of water are scraped off and evaporated in the most effective way in a very short section.





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► **CONVEYOR BELT UNIQUE DESIGN**

The conveyor belt frames, mould-injected with fiberglass filled PPA plastic material, are combining the benefits of weight and noise reduction with high robustness and chemical resistance. The plastic material, moreover, ensure the best care of precious IVC cages and parts minimizing the risk of scratches. The belt unique engineering allows the IVC tops inclined presentation to maximize exposure and to avoid any unpleasant water pooling.



LOADING CONVEYOR

► **COMPACT TECHNICAL COMPARTMENT**

The technical compartment is located entirely on one side of the unit to allow space savings “against the wall” installations without compromises in term of accessibility for maintenance purposes. The automatic sliding up doors gives full access to the chambers for ordinary cleaning operations and they are guarantee of space saving installation when compared to traditional hinged solutions.



MAINTENANCE SIDE ACCESS

► **QUALITY CONSTRUCTION**

Arcadia, with the exclusion of conveyor belt described above, is entirely made of AISI 304 stainless steel, water manifolds are featuring pharma standard tri-clamp connections and orbital weldings. All process tanks are round to ensure the top drainability and cleanability. Non proprietary components are equipped and international brands for local spare parts availability are appointed as partners.

► **AUTOMATION INTEGRATION**

Arcadia is pre-arranged for integration, since day one or on a later stage, with automated cage handling and bedding removal/dispensing systems.

► **GREEN POWER MODE**

The machine pauses when items are not loaded, conveyor and pumps goes off while tanks are kept at temperature, after a set time-out also heating is switched off while the unit goes in a stand-by mode. This sequence allows to drastically reduce the energy wasting.

► **POLARIS OPERATOR INTERFACE**

An HMI (Human Machine Interface) where on top of the intuitive graphic and usability is available, as a standard, a comprehensive set of embedded functionalities and features:

- LiteView: smart-phone and tablet app for remote monitoring and setting (cycle parameters and self-start data), inclusive of a “blackboard” to send messages to the screen in the cage wash area
- TeleService: remote connectivity via internet (on customer’s permission) for troubleshooting and software upgrades directly from the factory without stepping in your facility
- eMeter: data collection and statistics on the machine consumptions (electricity, water and detergents)
- USB Port: external access port for cycles, alarms and eMeter data download in digital format
- Self-Start: a weekly programmable functionality to automatically switch on and prepare your unit
- Self-Clean: a dedicated cycle to rinse chambers, flush lines and tanks when a drain process is requested.



OPERATOR INTERFACE

OPTIONS

► PROCESS MANAGEMENT

Second wash module: additional module to run alkaline/acid or Acid/alkaline alternate washes. Suitable also for scenarios where high speed conveyor belt is required;

Thermal disinfection kit: additional heating power to accomplish the thermal disinfection of the load.

► DETERGENT DOSING SYSTEM

As a standard, the machine is equipped with one detergent pump for the wash tank. As an option, additional dosing pumps can be provided:

Neutralizer pump: the chemical is injected into the pre-rinse line;

Rinse aid pump: the chemical is injected in the rinse line;

Second detergent pump: the chemical is injected in the wash tank and it is used to run alkaline and/or acid cycles;

Remote chemical management: provide for each of the selected pumps a remote management solution to work with large chemical drums

The unit can be also equipped with:

Detergent compartment: a dedicated confined area, located under the loading module, permits safe storage of chemical drums and/or day-tanks with no need of extra footprint;

Descaling cycle: a dedicated dosage pump and cycle to automatically perform a periodic descale process

► DRYING SYSTEM

EXTRA HEATING SYSTEM: an additional heat exchanger increases the temperature of blower-driven Air Knife system up to 120°C – 248°F

HOT AIR-DRYING MODULE: an additional oven module recirculates hot airflow (up to 120°C – 248°F) through a heat exchanger using two fans managed by inverter technology for energy efficiency. This allows to achieve optimal drying performance when high speed conveyor belt is required.

► EXHAUST METHOD

alternative systems to the building HVAC integration are available:

EXHAUST FAN: a dedicated fan to extract vapour and condense from the tunnel;

HEAT RECOVERY SYSTEM: the system allows to recovery energy from the hot exhaust air, reusing it to prewarm the incoming water.

► DRAIN MONITORING

If required by local normative the unit can feature:

Temperature water treatment: in order to keep the drained water temperature below 60°C – 140°F, the machine can feature an automatic system to mix cold water with process water. Cold water (max 20°C – 68°F) has to be provided separately;

pH water treatment: the pH of the drained water is neutralized by mixing the proper chemical with the process water, as a result, the final pH is between 6 and 9.

► REALVIEW, REMOTE DATA MANAGEMENT SYSTEM

A web-based tool, accessible via any browser, for:

- Real time supervision;
- Data gathering and exporting;
- Statistics about cycles, alarms, productivity and consumptions;
- Quick consult of machine documentation;
- Alarm notification via email.

► VALIDATION AND QUALIFICATION

A set of tests and protocols are available to verify machine performance:

FACTORY ACCEPTANCE TEST (FAT);

SITE ACCEPTANCE TEST (SAT) - inclusive of IQ, OQ, PQ;

FACTORY MICROBIOLOGICAL CHALLENGE TEST.

EQUIPMENT CONFIGURATION

▶ WORKING FLOW

Left-to-Right
Right-to-Left

▶ HEATING METHOD

Steam (only cold water supply required)
Electric (hot water supply required)

▶ SELF-CLEANING FILTER DEBRIS EXTRACTION SYSTEM

Waste removal via drain line
Waste collection in an external canister
Waste removal via IWT vacuum system

▶ POWER REQUIREMENTS

400V-50Hz (three-phases + neutral + earth)
480V-60Hz (three-phases + earth)
380V-60Hz (three-phases + neutral + earth)
Others

COMPLIANCE TO DIRECTIVE AND STANDARDS

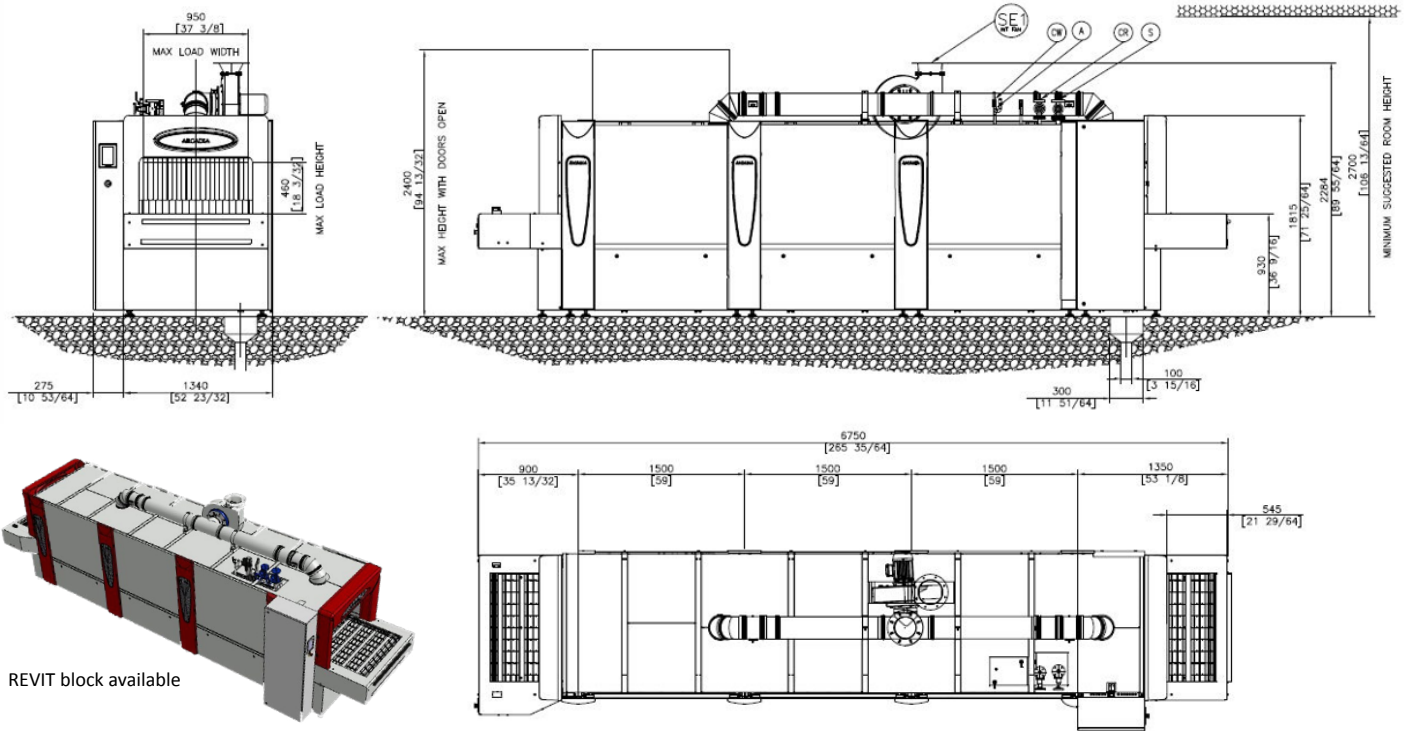
2006/42/EC	Directive 2006/42/EC of the European Parliament and of the Council on machinery
2014/35/UE	Directive 2014/35/EU of the European Parliament and of the Council on the harmonisation on the market of electrical equipment designed for use within certain voltage limits
2014/30/UE	Directive 2014/30/EU of the European Parliament and of the Council on the harmonisation of electromagnetic compatibility
UNI EN ISO 12100:2010	Safety of machinery. General principles for design. Risk assessment and risk reduction.
CEI EN 60204-1:2006	Safety of machinery. Electrical equipment of machines. General requirements
UNI EN ISO 13849-1:2016	Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design (ISO 13849-1:2015)
UNI EN ISO 13732-1:2009	Ergonomics of the thermal environment - Methods for the assessment of human responses to contact with surfaces - Part 1: Hot surfaces (ISO 13732-1:2006)

DOCUMENTATION

The Arcadia Tunnel washer comes with the following standard documentation:

- User and Maintenance Manual
- P&ID
- Wiring diagram
- Pneumatic diagram
- Spare part list
- EC conformity declaration – UL/CSA listing

TECHNICAL DATA AND SERVICE REQUIREMENTS



REVIT block available

	SERVICE	CONNECTION	SERVICE REQUIREMENTS	
			METRIC UNIT	US IMPERIAL UNIT
E	Electrical supply	Electrical cabinet	Voltage and frequency: Type: Power required: Circuit Breaker: Line fuse:	400V 50Hz 3phases+neutral+earth 22.5 kW 80 A 100 A
CW	Cold Softened Water	½" G [½" NPT]	Dynamic pressure: Supply temperature: Supply flow rate:	2-4 bar 15°C<T<85°C 3600 l/h
D	Floor Drain		Max flow rate:	2 l/s 0.5 gal/s
A	Compressed air	½" G [½" NPT]	Dynamic pressure: Quality: Min flow rate:	6 bar filtered, dry and oil free 15 l/min @ 6bar 4 gal/min @ 87 psi
SE	Exhaust	See drawing	Min flow:	2500m³/h 1470 CFM
S	Steam	DN 25	Dynamic pressure: Quality: Min flow rate:	4-6 bar filtered and dry 250 kg/h
CR	Condense return	DN 20	Same data of S field	
DA	Data management	RJ45 Ethernet socket		
WEIGHT				
	Empty		2450 kg	5390 lbs
	Operating		2850 kg	6270 lbs
NOISE LEVEL				
	At 1 meter – 3ft		< 79 dBA	
APPROXIMATE HEAT LOSS				
			15 kWh – 12900 kcal/h – 51200 BTU/h	
PACKAGING				
	#1 crate		3000 x 1500 x 2000 mm – 450 kg	118" x 59" x 79" – 990 lbs
	#3 crates		1700 x 1500 x 2000 mm – 450 kg	67" x 59" x 79" – 990 lbs
	#2 crates		1400 x 1000 x 800 mm – 150 kg / 80 kg	55" x 40" x 32" – 330 lbs / 180 lbs
	#1 crate		2000 x 1400 x 1000 mm – 350 kg	79" x 55" x 40" – 770 lbs
	#1 crate		2000 x 800 x 600 mm – 250 kg	79" x 32" x 24" – 550 lbs

* Machine configuration: steam heated, right-to-left, waste removal via drain line, exhaust fan.
Utility requirements may change depending on final product configuration. Please consult with your local representatives for further details