Bulletin 251-E Metric

evapco® for LIFE

LSWA-H/LRW-H

Hybrid Closed Circuit Coolers

Featuring EVAPCO's NEW ARID *Fin-Pak* Dry Cooling Coil

Low Sound, Forced Draft Closed Circuit Coolers Featuring Water Saving and Plume Reduction Hybrid technology

ENVIRONMENTAL SOLUTIONS... CREATING A BETTER WORLD!

CERTIFIED EN ISO 9001

Mr. GoodTower® evapco®

CE PRESSURE EQUIPMENT DIRECTIVE 97/23/EC ASSESSED BY NOTIFIED BODY

EAC

Since its founding in 1976, EVAPCO Incorporated has become an industry leader in the engineering and manufacturing of quality heat transfer products around the world. EVAPCO's mission is to provide first class service and quality products for the following markets:

- Industrial Refrigeration
- Commercial HVAC
- Industrial Process
- Power

EVAPCO's powerful combination of financial strength and technical expertise has established the company as a recognized manufacturer of market-leading products on a worldwide basis. EVAPCO is also recognized for the superior technology of their environmentally friendly product innovations in sound reduction and water management.

EVAPCO is an employee owned company with a strong emphasis on research & development and modern manufacturing plants. EVAPCO has earned a reputation for technological innovation and superior product quality by featuring products that are designed to offer these operating advantages:

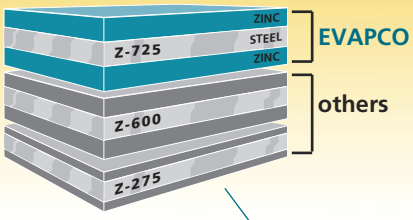
- Higher System Efficiency
- Environmentally Friendly
- Lower Annual Operating Costs
- Reliable, Simple Operation and maintenance

With an ongoing commitment to Research & Development programs, EVAPCO provides the most advanced products in the industry – ***Technology for the Future, Available Today!***

EVAPCO products are manufactured on five continents around the world and distributed through hundreds of factory authorized sales representatives.

Z-725 Heavy Mill-Dip Galvanized Steel Construction

(Stainless steel available as an affordable option)



Drift Eliminators Located in Casing

- Drift eliminators integrate with coil casing section for easy mounting of ductwork, discharge hood and attenuation.

LSWA-H

Easy Field Assembly

- Ensures easy assembly and fewer fasteners.
- Incorporates selfguiding channels to guide the coil casing section into position improving the quality of the field seam.

Small footprint

Exclusive Thermal-Pak® Coil

- Providing Maximum Efficiency

Totally Enclosed Pump Motors

- Helps assure long, trouble-free operation

Clean Pan Design

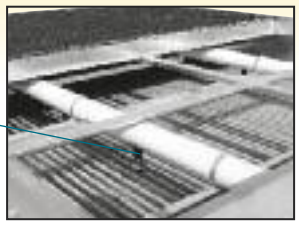
- Sloped design allows water to drain completely from cold water basin.
- Easier Removal of dirt and debris.

Design & Construction Features

The LSWA-H and LRW-H units are a result of EVAPCO's extensive experience in forced draft centrifugal fan designs. Both models are designed for easy maintenance and long, trouble free operation. The LSWA-H are optimized for smaller footprint for a given capacity, while LRW-H units are optimized for reduced height. All features shown are available on all models.

ARID Fin-Pak Dry Cooling

- Copper tube construction with aluminum magnesium fins (tubes available in Stainless steel 304L/316L as an option)
- Saves water and water treatment chemicals
- Eliminates visible plume during dry operation. Reduces or eliminates visible plume during wet operation

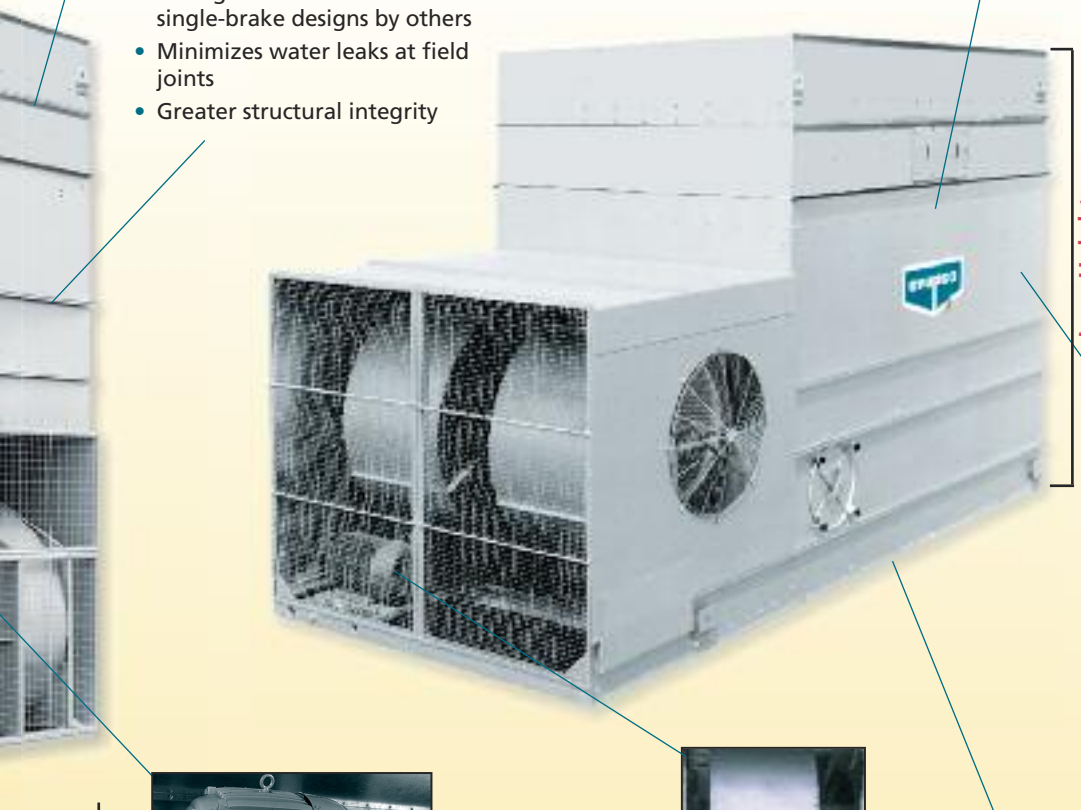


Zero Maintenance PVC Spray Distribution Header with ZM®II Nozzles

- Nozzles are threaded into header at proper orientation
- Fixed position nozzles require zero maintenance
- Large orifice nozzles prevent clogging

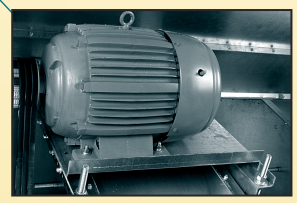
Double-Brake Flange Joints

- Stronger than single-brake designs by others
- Minimizes water leaks at field joints
- Greater structural integrity



Efficient Drift Eliminators

- Advanced design limits maximum drift rate to 0.001% of circulated spray water rate
- Corrosion resistant PVC for long life



Totally Enclosed Fan Motors

- Assures long life
- All normal maintenance can be performed quickly from outside the unit
- If required, motor can be easily removed
- Motors are now located outboard on multi-motor units for even easier drive system access

Standard Stainless Steel Cold Water Basin

- Eliminates the need for unreliable epoxy coatings

Easy to Service Motor & Drive System

- Belt tensioning and bearing lubrication can be performed from outside the unit
- Locking mechanism can also be used as a wrench to adjust the belts (LRW-H only)
- Motor is fully accessible by removing one inlet screen
- Split fan housings allow removal of all mechanical equipment through the end of the unit (LRW-H only)

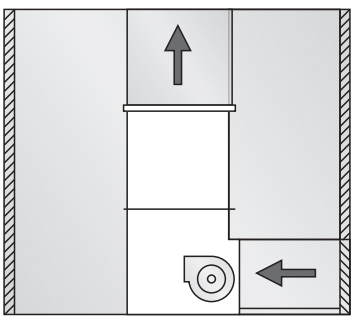
LSWA-H & LRW-H

DESIGN FEATURES

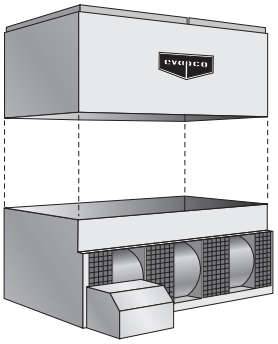
Application Versatility
Centrifugal fan units are recommended for a wide range of installations. They are excellent for larger installations where very quiet operation is a must, such as residential neighborhoods. In addition, centrifugal fan units can operate against the static pressure loss of ductwork and are ideal for indoor installations.

Very Quiet Operation
Centrifugal fan units provide an inherently low noise characteristic which makes this design preferred for most installations that require low sound levels. The sound they produce is predominantly in the high frequencies which is easily attenuated by building walls, windows, and natural barriers. Additionally, since the sound from the fans is directional, single sided air entry models can be turned away from critical areas avoiding a sound problem. When even quieter operation is necessary, centrifugal fan models can be equipped with optional sound attenuation packages.
See the "sound" section for more information.

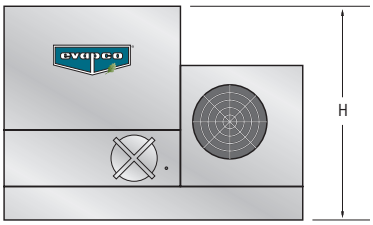
Indoor Installation
Centrifugal cooling towers can be installed indoors when it is desirable to hide the unit or when it is the only space available. In addition to being quiet, they can handle the external static pressure of ductwork by using the next larger size fan motor. Drawings are available showing how to make ductwork connections.



Low Installed Costs
The forced draft closed circuit cooler is designed using a modular concept to minimize rigging, piping and support costs. All major components are factory assembled into complete sections. Fans, shafts, bearings and drives are installed and aligned at the factory as an integral part of the pan section to eliminate the necessity of field rigging these key parts.



Reduced Height and Improved Maintenance Accessibilty



LRW-H units have been designed to satisfy installation requirements where height limits must be observed. The lower profile design of the unit does not, however, sacrifice maintenance accessibilty for reduced height.
LSWA-H units are designed to install high capacities where available footprint is limited.
Its unique casing design allows the water distribution system, cold water basin, fan section and other unit components to be easily maintained. Small, light weight sections of the drift eliminators can be easily removed to access the water distribution system. Large circular access doors are located on both sides of the cold water basin to allow adjustment of the float assembly, removal of the stainless steel strainers and cleaning of the basin. The fan motor and drive system are located at one end of the unit and are completely accessible by removing the inlet screens. Although, routine maintenance can be performed from the exterior of the unit without removing the inlet screens.

DESIGN FEATURES

LSWA-H & LRW-H

Blow-Thru Construction

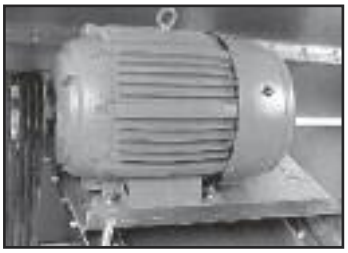
All moving parts of forced draft towers, fans, motors, bearing, drives, and belts, are in the dry entering air stream. This design feature reduces corrosion and maintenance problems in these vital areas.

Fan Motors

All models utilize heavy duty totally enclosed fan motors (T.E.F.C.) designed specifically for cooling tower applications. In addition, EVAPCO offers many optional motors to meet your specific needs.

Fan Motor Location

EVAPCO mounts the fan motor in a convenient open area to make it easy to adjust belt tension, access the motor, electrically connect it, or change the motor if necessary. The fan motor and drive are under a protective cover for safety purposes and to protect them from the elements.



Large Series Motor Mount

Capacity Control

All models come standard with efficient fan motors that can be used with variable frequency drive (VFD) systems for precise capacity control. VFD systems can control the speed of a fan motor by modulating the frequency of the electrical motor input signal. When connected to a building automation system a VFD can receive signals varying fan speeds to meet demand loads. This popular method of capacity control can yield significant energy savings.

Evapco offers two-speed fan motors as an option for alternative capacity control. In periods of lightened loads or reduced wet bulb temperatures the fans can operate at low speed providing about 60% of full speed capacity yet consuming only about 15% of full speed power. These motors do not require the use of VFD systems however they can only operate at two speeds: full or low.

Centrifugal Fan Assembly

Fans on the LSWA-H & LRW-H models are of the forward curved centrifugal type with hot-dip galvanized steel construction. All fans are statically and dynamically balanced and mounted in a hot-dip galvanized steel housing designed and manufactured by EVAPCO.

Centrifugal Wheel

Pressurized Water Distribution System

The water distribution system is made of schedule 40 PVC pipe and ABS plastic water diffusers for corrosion protection in this key area. The piping is easily removable for cleaning. The water diffusers have a large orifice and are practically impossible to clog. They also have an anti-sludge ring extending into the headers to prevent sediment from building up in the diffuser opening.

All units have as per standard the ZM II™ Nozzle to ensure that every square meter of heat transfer surface receives complete and even water coverage, resulting in maximum thermal performance.

ZM II™ Nozzle

LSWA-H & LRW-H

DESIGN FEATURES

Basin Access

The basin/fan section of a centrifugal fan unit is designed for accessibility and ease of maintenance.

Large circular access doors are provided to allow entry into the basin. All float valve and strainer assemblies are located near the door for easy adjustment and cleaning. The sump is designed to catch the dirt accumulated. This can be flushed out simply with a hose. The stainless steel strainers may be easily removed for periodic cleaning.

Stainless Steel Strainers

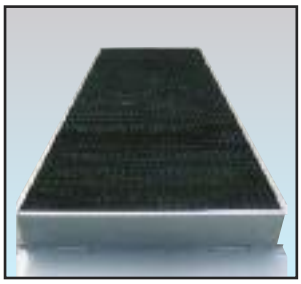
One other component of evaporative cooling equipment which is subject to excessive wear is the suction strainer. **EVAPCO provides a Type 304 stainless steel strainer on all units as standard** (except remote sump applications). Strainers are positioned around a large anti-vortex hood in easily handled sections.

Strainer

Efficient Drift Eliminators*

An extremely efficient drift eliminator system is standard on the LSWA & LRW-H Cooling Towers. The system removes entrained water droplets from the air stream to limit the drift rate to less than 0.001% of the recirculating water rate. With a low drift rate, the Closed Circuit Cooler saves valuable water and water treatment chemicals. The unit can be located in areas where minimum water carryover is critical, such as parking lots.

The drift eliminators are constructed of an inert polyvinyl chloride (PVC) plastic material which effectively eliminates corrosion of these vital components. They are assembled in sections to facilitate easy removal for inspection of the water distribution system. EVAPCO can provide the Eurovent drift rate certificate in accordance with OM-14-2009.



Eliminator

Drift Eliminator Removed for Coil Inspection

*U.S. Patent No. 4,500,330

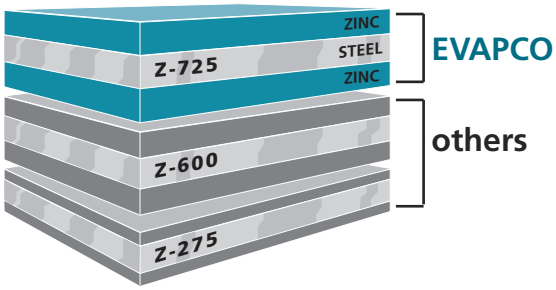
DESIGN FEATURES

LSWA-H & LRW-H

EVAPCOAT:

Z-725 Hot-Dip Galvanized Steel Construction

The Z-725 Mill Hot-Dip Galvanized Steel Construction is the heaviest level of galvanizing available for manufacturing evaporative cooling towers and has more zinc protection than competitive designs using Z-275 and Z-600 steel.



EVAPCO has been a leader in the industry in developing heavier galvanizing, and was the first to standardize on Z-725 mill hot-dip galvanized steel. Z-725 designation means there is a minimum of 725 g/m^2 total zinc present on the steel.

During fabrication, all panel edges are coated with a 95% pure zinc-rich compound for extended corrosion resistance.

The EVAPCOAT Corrosion Protection System is the heaviest galvanization available for extended corrosion protection eliminating the need for costly, unreliable epoxy paint finishes.

Stainless Steel Material Options

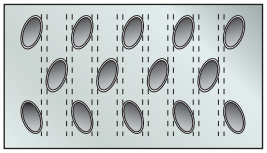
The EVAPCO Corrosion Protection System is satisfactory for most applications. If additional corrosion protection is required the following stainless steel options are available (AISI 304L and 316L). Please contact your local EVAPCO representative for pricing.

- Stainless Steel Cold Water Basins
- Stainless Steel Water Touch Basin
- Stainless Steel Water Touch Units
- All Stainless Steel Units

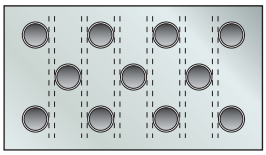
Patented Thermal-Pak II® Coil Design

Only EVAPCO closed circuit coolers offer the patented* Thermal-Pak II® Coil which assures greater operating efficiency in your closed circuit coolers. Its unique elliptical tube design allows for closer tube spacing resulting in more surface area per plan area than traditional round tube designs. The Thermal-Pak II® Coil design, with its new tube circuiting and orientation pattern, has lower resistance to air flow and permits greater water loading, making the Thermal-Pak II® Coil the most efficient design available.

*U.S. Patent No. 4755331



Thermal-Pak® II Coil by EVAPCO



Round Tube Coil by Others

ARID Fin-Pak dry cooling coil

The ARID Fin-Pak Dry Cooling Coil is installed in the air discharge of the closed circuit cooler and it should be piped in series with the wet coil. The ARID Fin-Pak Dry Cooling Coil is constructed of copper tubes with tubular copper headers. The fins have fully drawn collars to maintain consistent fin spacing and continuous surface contact over the entire tube. To maximize heat transfer the fins are made of Aluminum/Magnesium alloy to have a good corrosion resistance. The coils are placed in a heavy-duty galvanized Z-725 frame. The frame has full collars to support the coil correctly and avoid damaging the tubes. The dry coils are pneumatically tested under water at 16 barg. The tubes and frame are available in stainless steel 304L/316L as an option.

LSWA-H & LRW-H

OPTIONAL EQUIPMENT

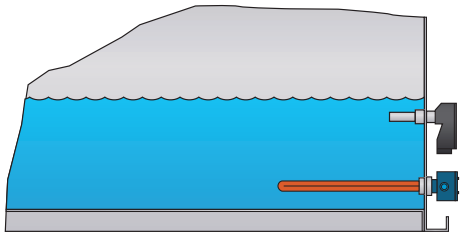
Pan Freeze Protection

Remote Sump

Whenever a closed circuit cooler is idle during sub-freezing weather, the water in the sump must be protected from freezing and damaging the pan. The simplest and most reliable method of accomplishing this is with a remote sump tank located in a heated space in the building under the tower. With this system, the water in the tower drains to the indoor tank whenever the pump is shut-off. When a tower is ordered for remote sump operation, the standard float valve and strainer are omitted, and the unit is provided with an oversized water outlet connection. When a remote sump is not possible, a supplementary means of heating the pan water must be provided.

Electric Heaters

Electric immersion heaters are available factory installed in the basin of the tower. They are sized to maintain a +5°C pan water temperature at -18, -28 and -40°C ambient with the fans off. They are furnished with a combination thermostat/low water protection device to cycle the heater on when required and to prevent the heater elements from energizing unless they are completely submerged. All components are enclosed in rugged, weather proof enclosures for outdoor use. Heater control packages are available as an option.
Contact your EVAPCO representative for further details.



Basin Heater

Electric Water Level Control

EVAPCO LSWA-H & LRW-H closed circuit coolers are available with an optional electric water level control system in place of the standard mechanical makeup valve and float assembly. This package provides accurate control of the pan water level and does not require field adjustment, even under widely variable operating conditions.

The control was designed by EVAPCO and consists of multiple heavy duty stainless steel electrodes. These electrodes are mounted external to the unit in a vertical stand pipe. For winter operation, the stand pipe must be wrapped with electric heating cable and insulated to protect it from freezing. The weather protected slow closing solenoid valve for the makeup water connection is factory supplied and is ready for piping to a water supply with a pressure between 140 kPa (minimum) and 340 kPa (maximum).

Vibration Isolators

The fans on EVAPCO closed circuit coolers are balanced and run virtually vibration free. In addition, the rotating mass is very small in relation to the total mass of the cooling tower, further reducing the possibility of objectionable vibration being transmitted to the building structure. As a result, vibration isolation is generally not required.

In those cases where it is determined that vibration isolation is necessary, spring type vibration isolator rails can be furnished. The rails are constructed of heavy gauge Z-725 hot-dip galvanized steel for superior corrosion resistance. Rails are designed to be mounted between the cooling tower and the supporting steel framework. They are 90% efficient and have approximately 25 mm static deflection. Rails are designed for wind loading up to 80 km/h. It is important to note that vibration isolation must be installed continuously along the full length of the cooling tower on both sides of the unit. Point isolators may be used between the supporting steel and the building framework, but not between the unit and the supporting steel.

IBC Certification cannot be given when vibration isolators are installed.

Other Options Available:

Capacity Dampers and Controls
Pony Motors
Tapered Discharge Hoods
Solid Bottom Panels
Fill Access Door

APPLICATIONS

LSWA-H & LRW-H

EVAPCO LSWA-H and LRW-H closed circuit coolers have heavy-duty construction and are designed for long, trouble-free operation. However, proper equipment selection, installation and maintenance are necessary to insure good unit performance. Some of the major considerations in the application of a cooling tower are presented below. For additional information, contact the factory.

Air Circulation

In reviewing the system design and unit location, it is important that enough fresh air is provided to enable proper unit performance. The best location is on an unobstructed roof top or on ground level away from walls and other barriers. Care must be taken when locating towers in wells or enclosures or next to high walls. The potential for recirculation of the hot, moist discharge air back into the fan intake exists. Recirculation raises the wet bulb temperature of the entering air causing the leaving water temperature to rise above design. For these cases, a discharge hood or ductwork should be provided to raise the overall unit height even with the adjacent wall, thereby reducing the chance of recirculation. For additional information see the EVAPCO Equipment Layout Manual. Engineering assistance is also available from the factory to identify potential recirculation problems and recommend solutions.

Piping

Closed circuit cooler piping should be designed and installed in accordance with generally accepted engineering practices. All piping should be anchored by properly designed hangers and supports with allowance made for possible expansion and contraction. No external loads should be placed upon cooling tower connections, nor should any of the pipe supports be anchored to the unit framework.

Maintaining the Recirculated Water System

The cooling in a closed circuit cooler is accomplished by the evaporation of a portion of the recirculated spray water. As this water evaporates, it leaves behind all of its mineral content and impurities. Therefore, it is important to bleed-off an amount of water to prevent the buildup of impurities. If this is not done, the mineral content and/or the corrosive nature of the water will continue to increase. This will ultimately result in heavy scaling or a corrosive condition.

Water Treatment

In some cases the make-up water will be so high in mineral content that a normal bleed-off will not prevent scaling. In this case, water treatment will be required. If chemical water treatment is utilized, contact reputable water treatment company familiar with the local water conditions. Any chemical water treatment used must be compatible with the stainless or galvanized construction of the unit. The pH of the water should be maintained between 7 and 8,8.
In order to prevent “white rust”, the galvanized steel in the unit may require routine passivation of the steel when operating in higher pH levels. Batch chemical feeding is not recommended because it does not afford the proper degree of control.

If acid cleaning is required, extreme caution must be exercised and only inhibited acids compatible with galvanized steel construction should be used.

Control of Biological Contamination

Water quality should be checked regularly for biological contamination. If biological contamination is detected, a more aggressive water treatment and mechanical cleaning program should be undertaken. The water treatment program should be performed by a qualified water treatment company and in accordance with relevant local legislation. It is important that all internal surfaces be kept clean of accumulated dirt and sludge. In addition, the drift eliminators should be maintained in good operating condition.

Note: The location of the cooling tower must be considered during the equipment layout stages of a project.
It is important to prevent the discharge air (potential of biological contamination) from being introduced into the fresh air intakes of the building.

LSWA-H & LRW-H

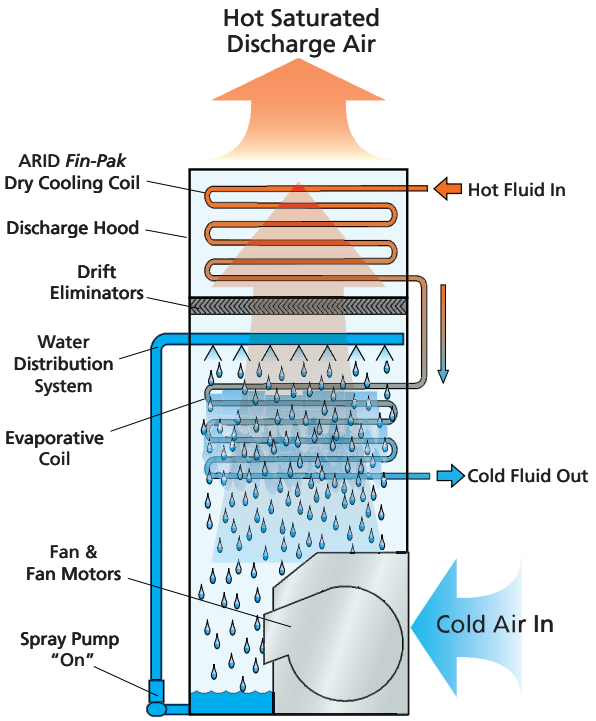
Notes:

Principle of Operation

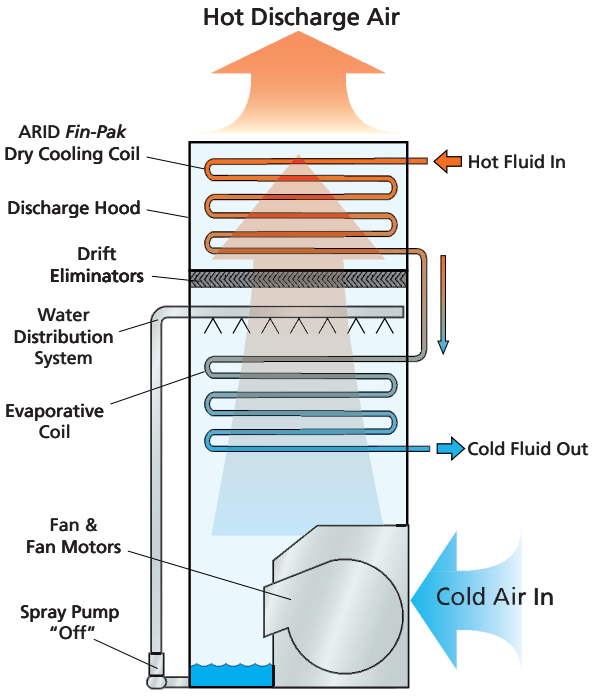
The LSWA-H and LRW-H Closed Circuit Coolers have been designed to save water with improved dry operation and / or reduced or completely eliminated plume.

LSWA-H & LRW-H

PRINCIPLE OF OPERATION



Water Efficient Mode



Dry Mode

Principle of Operation

Water Efficient Mode

(Evaporative and Sensible Heat Transfer)

The joint wet and dry operation mode provides water savings as well as plume reduction. In this joint mode of operation, the fan is on and the process fluid enters the dry coils through the top coil connections in the discharge hood (Fan on, Spray Pump on). The Dry Coil rejects a portion of the heat load to the atmosphere through the tube and fin walls to the air passing over the coils using sensible heat transfer. The spray pump is energized where heat from the process fluid is transferred through the coil tubes to the water cascading downward over the Evaporative Coil. This mode of operation minimizes the amount of water used while maintaining the cooling capacity required. Plume reduction can also be achieved in the mode as the hot saturated discharge air is heated and dried as it passes over the Dry Coil located in the discharge hood.

Dry Mode

(Sensible Heat Transfer)

In the dry mode, the recirculating pump is de-energized (Fan on, Pump off). The process fluid enters the dry coils through the top coil connections in the discharge hood with the Fan on. Heat from the process fluid is dissipated to the atmosphere by sensible heat transfer through the tube walls to the air passing over the Evaporative and Dry Coils. The process fluid then returns to the heat source via the bottom coil connection. This mode of operation eliminates water consumption as well as plume when the dry bulb temperature is favorable.

Ultra Quiet Closed Circuit Coolers

The LSWA-H and LRW-H Closed Circuit Coolers are now available with sound attenuators to reduce the overall sound generated from the side or top of the Closed Circuit Cooler. Each option provides various levels of sound reduction and can be used in combination to provide the lowest sound level.

LSWA-H & LRW-H

SOUND ATTENUATION

Sound Attenuation Packages

The centrifugal fan design of the LSWA-H and LRW-H models operate at lower sound levels which make these units preferable for installations where noise is a concern. For noise-sensitive applications, the LSWA-H and LRW-H centrifugal fan models may be supplied with various stages of intake and/or discharge attenuation packages which greatly reduce sound levels.

Consult the factory for certified sound data for each sound attenuation option.

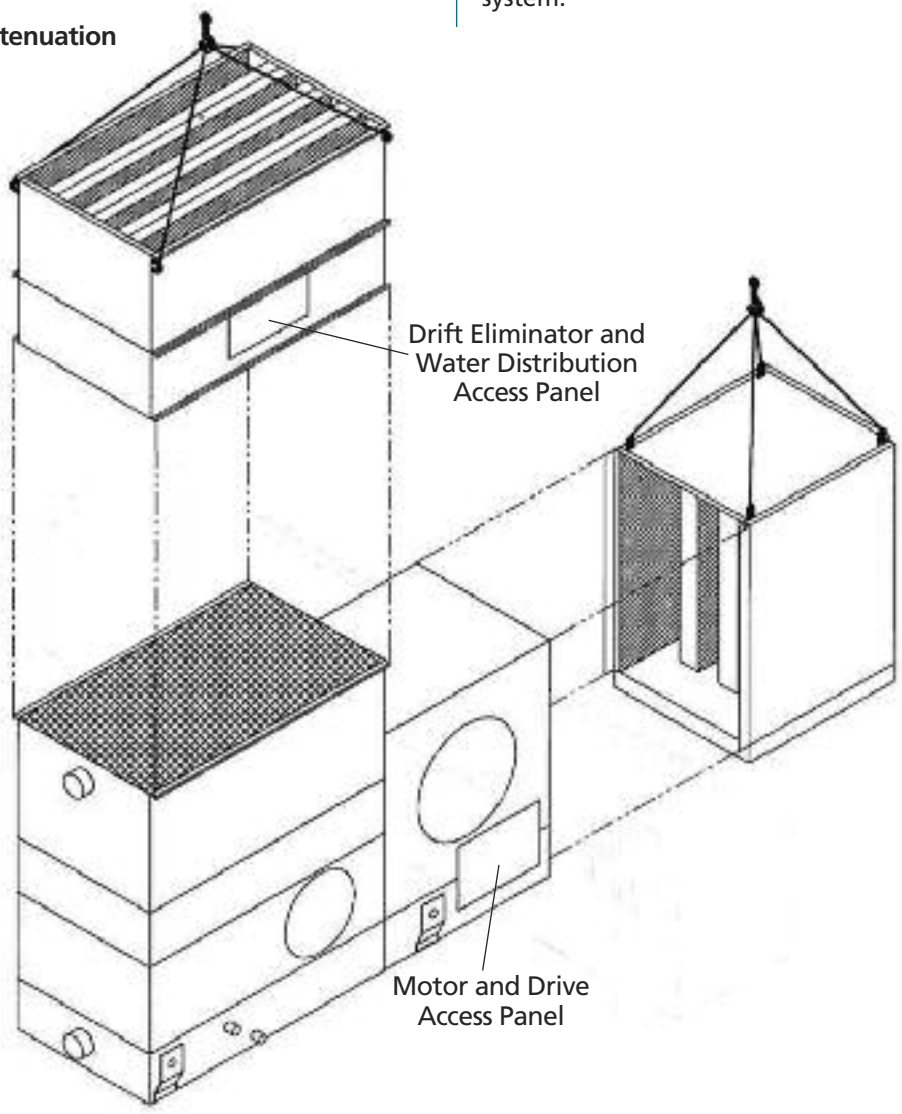
Fan End Inlet Attenuation

Reduces sound radiated through the end air intakes. It consists of baffled panels that change the path of the air entry and capture the radiated noise thus reducing the overall sound levels generated. In addition, the external belt adjustment mechanism is extended through the inlet attenuator to allow for easy adjustment without having to enter the unit. Solid bottom panels are included with this option to force the inlet air through the attenuator.

Discharge Attenuation

The discharge attenuation hood features a straight-sided design with insulated baffles to reduce the overall sound levels of the discharge air. The discharge attenuation incorporates a large access panel to allow entry to the drift eliminators and water distribution system.

Discharge Attenuation



DISCHARGE & INTAKE ATTENUATION DIMENSIONS

LSWA-H & LRW-H

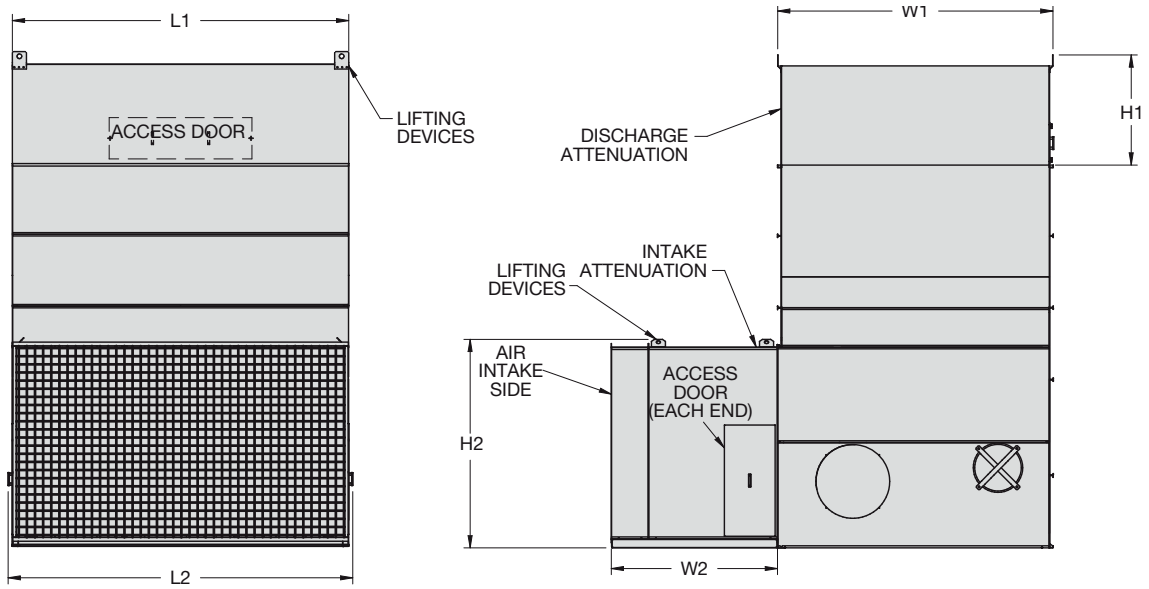
LSWA-H Discharge Attenuation Dimensions*

Box size	H1 (mm)	L1 (mm)	W1 (mm)	Width 1130 mm Compact (kg)	Width 1397 mm Basic (kg)	Width 1797 mm Extended (kg)	Number of attenuat.
4x6	1190	1830	1160	275	345	445	1
4x9	1190	2730	1160	395	485	610	1
4x12	1190	3640	1160	510	615	775	1
4x18	1190	5490	1160	795	935	1145	1
5x12	1190	3640	1570	625	710	840	1
5x18	1190	5490	1570	965	1075	1235	1
8x12	1810	3640	2420	825	965	1175	1
8x18	1810	5490	2420	1255	1440	1715	1
8x24	1810	3640	2420	1650	1920	2320	2
8x36	1810	5490	2420	2545	2880	3395	2
3mx12	1810	3640	3020	915	1055	1260	1
3mx18	1810	5490	3020	1245	1485	1835	1
3mx24	1810	3640	3020	1840	2105	2490	2
3mx36	1810	5490	3020	2850	3165	3640	2

LSWA-H Intake Attenuation Dimensions*

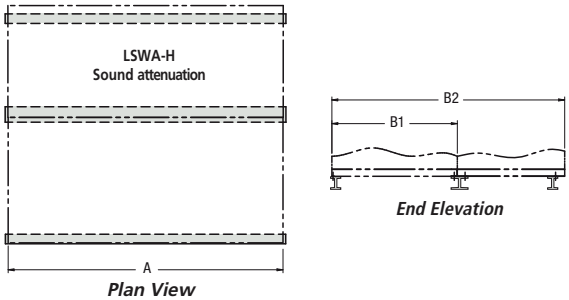
Box size	H2 (mm)	L2 (mm)	W2 (mm)	Width 1130 mm Compact (kg)	Width 1397 mm Basic (kg)	Width 1797 mm Extended (kg)	Number of attenuat.
4x6	1190	1830	1160	275	345	445	1
4x9	1190	2730	1160	395	485	610	1
4x12	1190	3640	1160	510	615	775	1
4x18	1190	5490	1160	795	935	1145	1
5x12	1190	3640	1570	625	710	840	1
5x18	1190	5490	1570	965	1075	1235	1
8x12	1810	3640	2420	825	965	1175	1
8x18	1810	5490	2420	1255	1440	1715	1
8x24	1810	3640	2420	825	960	1160	2
8x36	1810	5490	2420	1270	1440	1695	2
3mx12	1810	3640	3020	915	1055	1260	1
3mx18	1810	5490	3020	1245	1485	1835	1
3mx24	1810	3640	3020	920	1050	1245	2
3mx36	1810	5490	3020	1425	1585	1820	2

* Attenuation dimensions may vary slightly from catalog. See Factory certified prints for exact dimensions.



LSWA-H Attenuation

Note: Intake sound attenuation must be fully supported. If the recommended steel suport is being used a third "I" beam is required for the intake attenuation.



Plan View

End Elevation

LSWA-H & LRW-H

DISCHARGE & INTAKE ATTENUATION DIMENSIONS

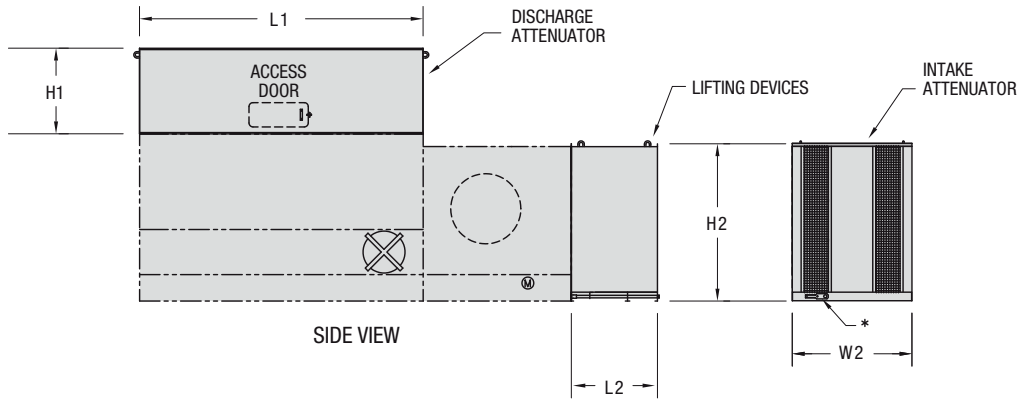
LRW-H Discharge Attenuation Dimensions*

Model No.	H1 (mm)	L1 (mm)	W1 (mm)	Weight per Hood (kg)	Number of Attenuators
3-2E6 to 3-5J6	1100	1910	1030	195	1
5-2G6 to 5-5J6	1100	1910	1540	240	1
5-3I9 to 5-7L9	1100	2800	1540	327	1
5-3K12 to 5-7O12	1100	3730	1540	417	1
8-3K9 to 8-5N9	1100	2800	2390	440	1
8-4L12 to 8-7P12	1100	3730	2390	558	1

LRW-H Fan End Attenuation Dimensions*

Model No.	H2 (mm)	L2 (mm)	W2 (mm)	Weight per Hood (kg)	Number of Attenuators
3-2E6 to 3-5J6	1650	1110	1030	204	1
5-2G6 to 5-5J6	2050	1110	1540	313	1
5-3I9 to 5-7L9	2050	1110	1540	313	1
5-3K12 to 5-7O12	2050	1110	1540	313	1
8-3K9 to 8-5N9	2050	1110	2390	417	1
8-4L12 to 8-7P12	2050	1110	2390	417	1

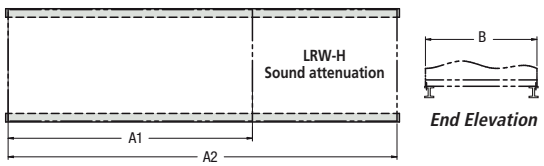
* Attenuation dimensions may vary slightly from catalog. See Factory certified prints for exact dimensions.



LRW-H Attenuation

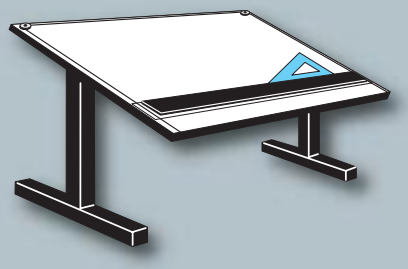
Notes: Intake sound attenuation must be fully supported. If the recommended steel suport is being used, an extended "I" beam is required for the intake attenuation.

*External belt adjustment mechanism.

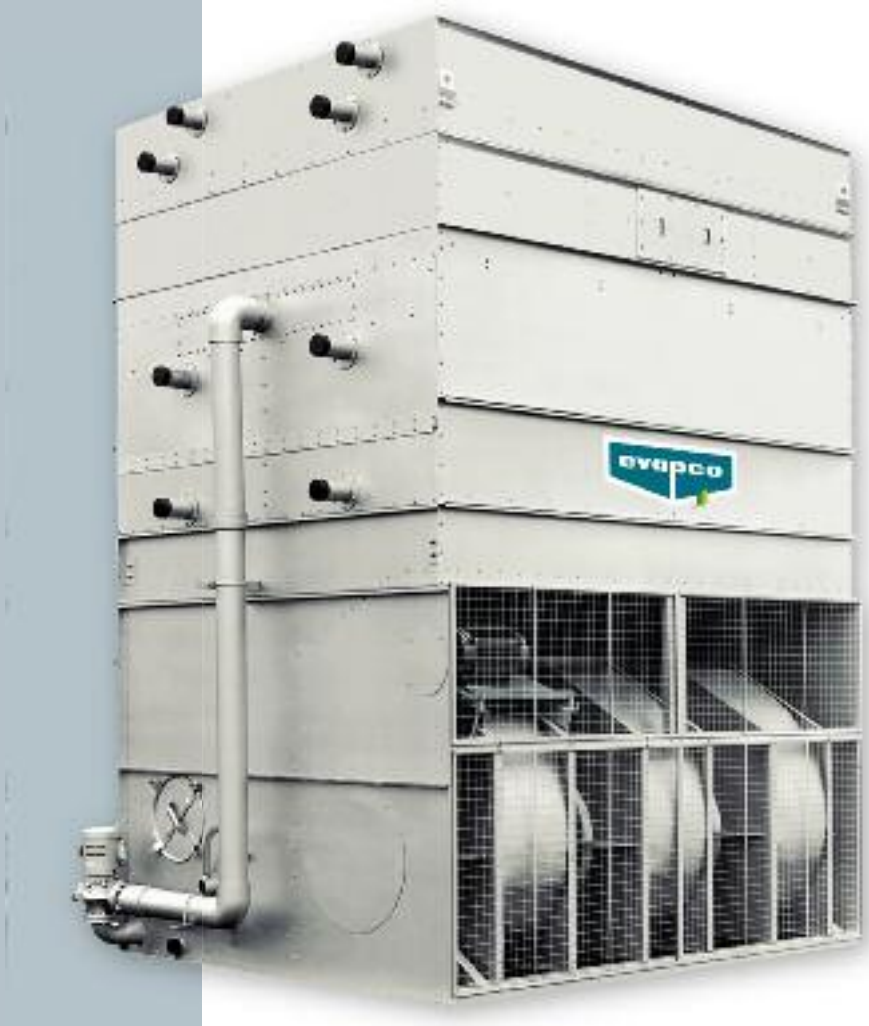


End Elevation

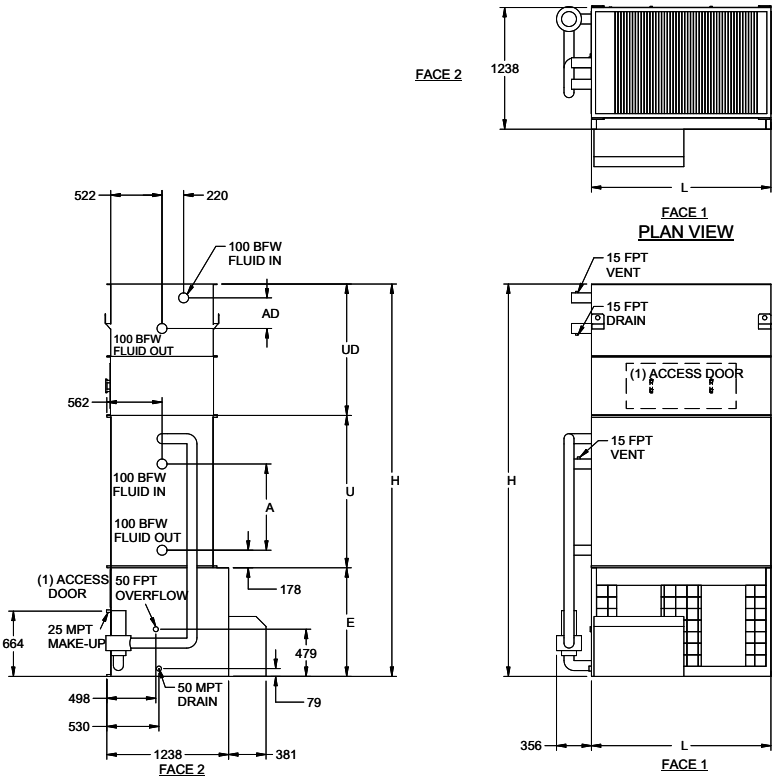
Plan View



Engineering Data & Dimensions



MODELS LSWA-H 4-2G6 THRU LSWA-H 4-5J6



Model No.[1]	Weights (kg)[2]			Fans		Spray Pump	Coil	Remote Sump[5]			Dimensions (mm)[6]					
	Shipping	Heaviest Section[3]	Operating	kW	Air Flow m³/s	kW	Volume (liters)	Liters[4] Required	Conn. Size (mm)	Operating Weight (kg)	Height H	Length L	Lower E	Upper U	Coil A	Upper UD
LSWA-H 4-2G6	1.066	1.066	1.492	4	4,6	0,55	125	254	100	1302	3420	1826	1105	978	305	1337
LSWA-H 4-2H6	1.089	1.089	1.515	5,5	5,5	0,55	125	254	100	1324	3420	1826	1105	978	305	1337
LSWA-H 4-2I6	1.098	1.098	1.520	7,5	6,2	0,55	125	254	100	1329	3420	1826	1105	978	305	1337
LSWA-H 4-3G6	1.234	721	1.710	4	4,5	0,55	178	250	100	1515	3610	1826	1105	1168	495	1337
LSWA-H 4-3H6	1.256	721	1.733	5,5	5,4	0,55	178	250	100	1538	3610	1826	1105	1168	495	1337
LSWA-H 4-3I6	1.266	721	1.737	7,5	6,1	0,55	178	250	100	1542	3610	1826	1105	1168	495	1337
LSWA-H 4-3J6	1.320	721	1.796	11	6,7	0,55	178	250	100	1601	3610	1826	1105	1168	495	1337
LSWA-H 4-4G6	1.388	875	1.919	4	4,4	0,55	227	250	100	1724	3801	1826	1105	1359	686	1337
LSWA-H 4-4H6	1.411	875	1.941	5,5	5,2	0,55	227	250	100	1746	3801	1826	1105	1359	686	1337
LSWA-H 4-4I6	1.420	875	1.946	7,5	6	0,55	227	250	100	1751	3801	1826	1105	1359	686	1337
LSWA-H 4-4J6	1.474	875	2.005	11	6,6	0,55	227	250	100	1810	3801	1826	1105	1359	686	1337
LSWA-H 4-5H6	1.574	1.039	2.155	5,5	5,1	0,55	280	254	100	1964	3991	1826	1105	1549	876	1337
LSWA-H 4-5I6	1.583	1.039	2.159	7,5	5,9	0,55	280	254	100	1969	3991	1826	1105	1549	876	1337
LSWA-H 4-5J6	1.637	1.039	2.218	11	6,5	0,55	280	254	100	2028	3991	1826	1105	1549	876	1337

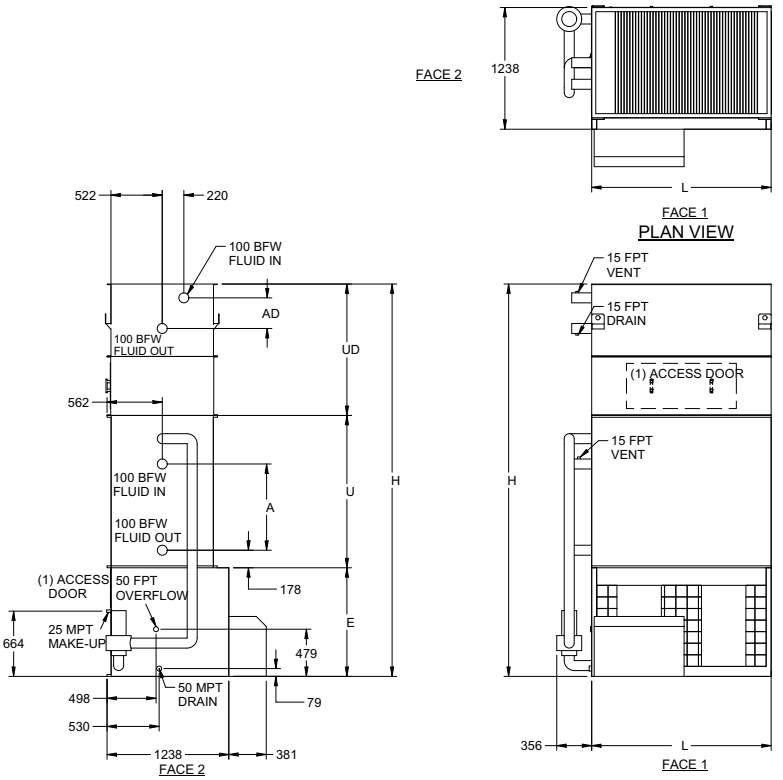
NOTES:
1. Model Numbers end in "-Z" for units with Series Flow piping configuration. Series Flow units may require additional coil connections and will require crossover piping.
2. Weights don't include ARID Fin-Pak Dry Cooling Coil section.
3. Heaviest section is the coil section.
4. Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300mm would normally be sufficient).
5. When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.
6. Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints or dimensions, quantity of coil connections, and piping configuration.

ARID Fin-Pak Coil Rows	AD (mm)	Coil Volume (liters) per unit	Shipping Weight (kg) per section	Operating Weight (kg) per unit
2	140	34	336	292
4	140	45	358	328
6	175	61	386	370
8	241	76	417	414
10	311	87	449	458

Engineering Data and Dimensions

LSWA-H & LRW-H

Models LSWA-H 4-3H9 thru LSWA-H 4-5K9

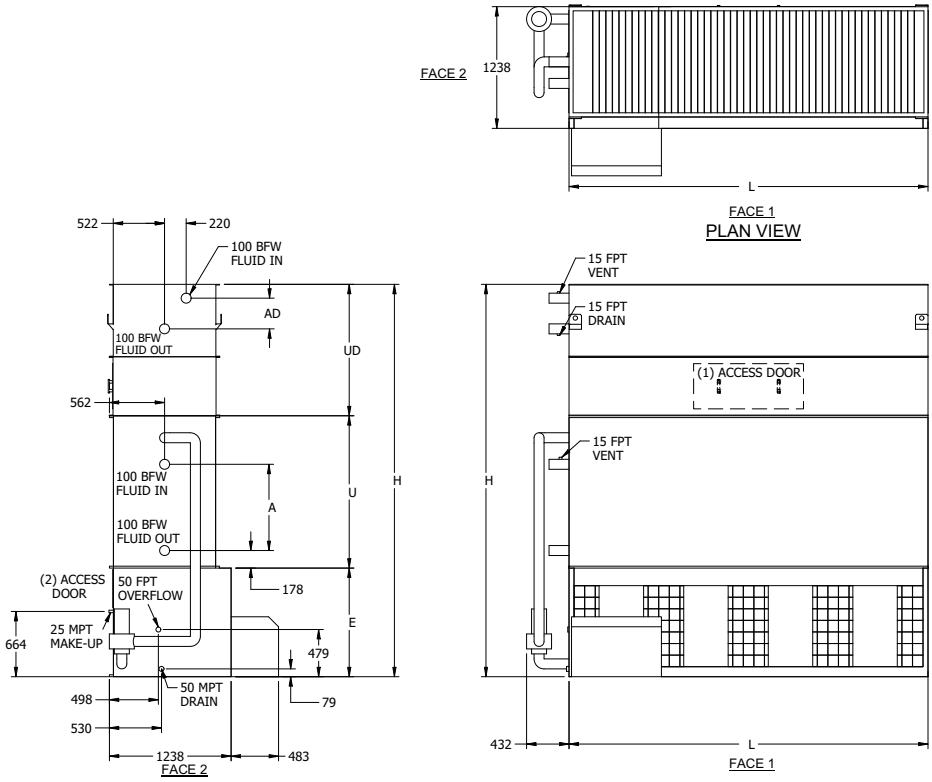


Model No.[1]	Weights (kg)[2]			Fans		Spray Pump	Coil	Remote Sump[5]			Dimensions (mm)[6]					
	Shipping	Heaviest Section[3]	Operating	kW	Air Flow m³/s	kW	Volume (liters)	Liters[4] Required	Conn. Size (mm)	Operating Weight (kg)	Height H	Length L	Lower E	Upper U	Coil A	Upper UD
LSWA-H 4-3H9	1.724	1.025	2.436	5,5	7	0,75	257	390	150	2186	3610	2724	1105	1168	495	1337
LSWA-H 4-3I9	1.728	1.025	2.445	7,5	8	0,75	257	390	150	2195	3610	2724	1105	1168	495	1337
LSWA-H 4-3J9	1.787	1.025	2.499	11	8,8	0,75	257	390	150	2250	3610	2724	1105	1168	495	1337
LSWA-H 4-3K9	1.814	1.025	2.527	15	10,1	0,75	257	390	150	2277	3610	2724	1105	1168	495	1337
LSWA-H 4-4I9	1.955	1.252	2.753	7,5	7,9	0,75	337	390	150	2504	3801	2724	1105	1359	686	1337
LSWA-H 4-4J9	2.014	1.252	2.808	11	8,6	0,75	337	390	150	2558	3801	2724	1105	1359	686	1337
LSWA-H 4-4K9	2.041	1.252	2.835	15	9,9	0,75	337	390	150	2585	3801	2724	1105	1359	686	1337
LSWA-H 4-5I9	2.200	1.497	3.071	7,5	7,7	0,75	413	390	150	2821	3991	2724	1105	1549	876	1337
LSWA-H 4-5J9	2.259	1.497	3.125	11	8,5	0,75	413	390	150	2876	3991	2724	1105	1549	876	1337
LSWA-H 4-5K9	2.286	1.497	3.152	15	9,7	0,75	413	390	150	2903	3991	2724	1105	1549	876	1337

NOTES:
1. Model Numbers end in "-Z" for units with Series Flow piping configuration. Series Flow units may require additional coil connections and will require crossover piping.
2. Weights don't include ARID Fin-Pak Dry Cooling Coil section.
3. Heaviest section is the coil section.
4. Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300mm would normally be sufficient).
5. When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.
6. Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints or dimensions, quantity of coil connections, and piping configuration.

ARID Fin-Pak Coil Rows	AD (mm)	Coil Volume (liters) per unit	Shipping Weight (kg) per section	Operating Weight (kg) per unit
2	140	42	431	369
4	140	61	472	428
6	175	83	513	491
8	241	106	558	560
10	311	125	608	629

MODELS LSWA-H 4-3I12 THRU LSWA-H 4-5L12



Model No.[1]	Weights (kg)[2]			Fans		Spray Pump	Coil	Remote Sump[5]			Dimensions (mm)[6]					
	Shipping	Heaviest Section[3]	Operating	kW	Air Flow m³/s	kW	Volume (liters)	Liters[4] Required	Conn. Size (mm)	Operating Weight (kg)	Height H	Length L	Lower E	Upper U	Coil A	Upper UD
LSWA-H 4-3I12	2.263	1.361	3.180	7,5	9,7	1,1	337	572	150	2903	3610	3651	1105	1168	495	1337
LSWA-H 4-3J12	2.322	1.361	3.234	11	10,7	1,1	337	572	150	2957	3610	3651	1105	1168	495	1337
LSWA-H 4-3K12	2.350	1.361	3.261	15	12,3	1,1	337	572	150	2985	3610	3651	1105	1168	495	1337
LSWA-H 4-3L12	2.359	1.361	3.275	18,5	13,5	1,1	337	572	150	2998	3610	3651	1105	1168	495	1337
LSWA-H 4-4J12	2.635	1.674	3.651	11	10,5	1,1	443	572	150	3375	3801	3651	1105	1359	686	1337
LSWA-H 4-4K12	2.663	1.674	3.679	15	12	1,1	443	572	150	3402	3801	3651	1105	1359	686	1337
LSWA-H 4-4L12	2.672	1.674	3.692	18,5	13,2	1,1	443	572	150	3416	3801	3651	1105	1359	686	1337
LSWA-H 4-5J12	2.930	1.969	4.051	11	10,3	1,1	549	583	150	3783	3991	3651	1105	1549	876	1337
LSWA-H 4-5K12	2.957	1.969	4.078	15	11,8	1,1	549	583	150	3810	3991	3651	1105	1549	876	1337
LSWA-H 4-5L12	2.966	1.969	4.091	18,5	13	1,1	549	583	150	3824	3991	3651	1105	1549	876	1337

NOTES:
1. Model Numbers end in "-Z" for units with Series Flow piping configuration. Series Flow units may require additional coil connections and will require crossover piping.
2. Weights don't include ARID Fin-Pak Dry Cooling Coil section.
3. Heaviest section is the coil section.
4. Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300mm would normally be sufficient).
5. When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.
6. Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints or dimensions, quantity of coil connections, and piping configuration.

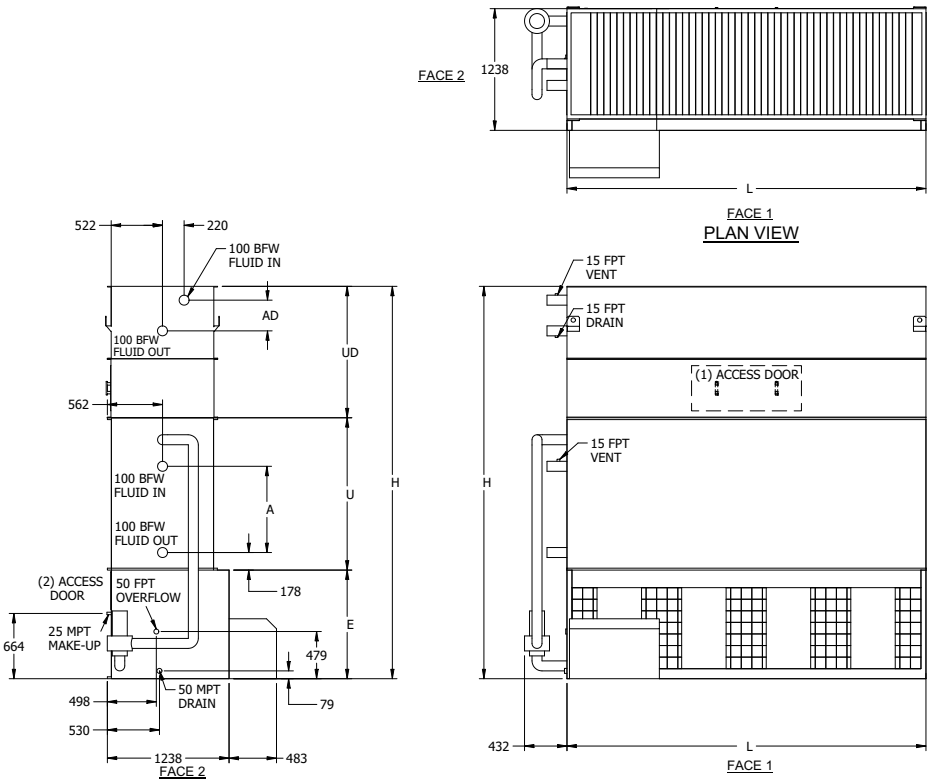
ARID Fin-Pak Cooling Coil Section

ARID Fin-Pak Coil Rows	AD (mm)	Coil Volume (liters) per unit	Shipping Weight (kg) per section	Operating Weight (kg) per unit
2	140	49	549	475
4	140	79	599	556
6	175	110	658	643
8	241	136	721	736
10	311	167	785	829

Engineering Data and Dimensions

LSWA-H & LRW-H

Models LSWA-H 4-3J18 thru LSWA-H 4-5N18



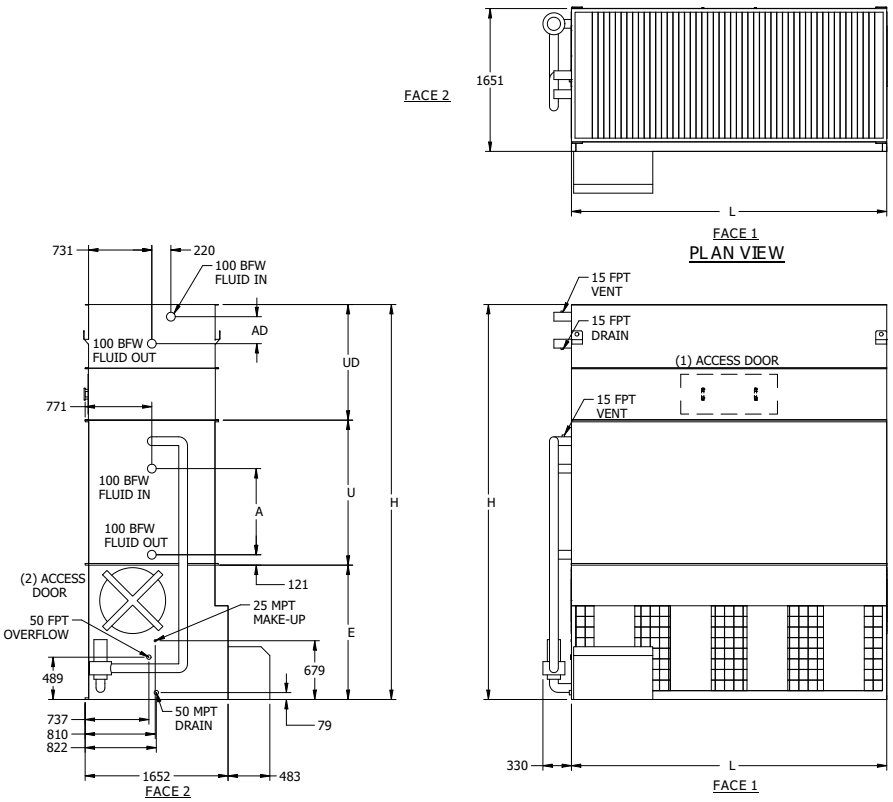
Model No.[1]	Weights (kg)[2]			Fans		Spray Pump	Coil	Remote Sump[5]			Dimensions (mm)[6]					
	Shipping	Heaviest Section[3]	Operating	kW	Air Flow m³/s	kW	Volume (liters)	Liters[4] Required	Conn. Size (mm)	Operating Weight (kg)	Height H	Length L	Lower E	Upper U	Coil A	Upper UD
LSWA-H 4-3J18	3.298	1.996	4.613	11	14,1	1,5	500	731	200	4082	3610	5486	1105	1168	495	1337
LSWA-H 4-3K18	3.325	1.996	4.640	15	16,1	1,5	500	731	200	4110	3610	5486	1105	1168	495	1337
LSWA-H 4-3L18	3.338	1.996	4.654	18,5	17,7	1,5	500	731	200	4123	3610	5486	1105	1168	495	1337
LSWA-H 4-3M18	3.361	1.996	4.677	22	19,1	1,5	500	731	200	4146	3610	5486	1105	1168	495	1337
LSWA-H 4-4K18	3.787	2.458	5.257	15	15,8	1,5	659	734	200	4731	3801	5486	1105	1359	686	1337
LSWA-H 4-4L18	3.801	2.458	5.271	18,5	17,4	1,5	659	734	200	4745	3801	5486	1105	1359	686	1337
LSWA-H 4-4M18	3.824	2.458	5.293	22	18,7	1,5	659	734	200	4767	3801	5486	1105	1359	686	1337
LSWA-H 4-5K18	4.232	2.903	5.865	15	15,5	1,5	814	734	200	5339	3991	5486	1105	1549	876	1337
LSWA-H 4-5L18	4.246	2.903	5.879	18,5	17	1,5	814	734	200	5352	3991	5486	1105	1549	876	1337
LSWA-H 4-5M18	4.268	2.903	5.901	22	18,3	1,5	814	734	200	5375	3991	5486	1105	1549	876	1337
LSWA-H 4-5N18	4.341	2.903	5.974	30	19,5	1,5	814	734	200	5448	3991	5486	1105	1549	876	1337

NOTES:
1. Model Numbers end in "-Z" for units with Series Flow piping configuration. Series Flow units may require additional coil connections and will require crossover piping.
2. Weights don't include ARID Fin-Pak Dry Cooling Coil section.
3. Heaviest section is the coil section.
4. Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300mm would normally be sufficient).
5. When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.
6. Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints or dimensions, quantity of coil connections, and piping configuration.

ARID Fin-Pak Cooling Coil Section

ARID Fin-Pak Coil Rows	AD (mm)	Coil Volume (liters) per unit	Shipping Weight (kg) per section	Operating Weight (kg) per unit
2	140	64	798	655
4	140	110	880	780
6	175	155	966	915
8	241	201	1066	1059
10	311	246	1166	1202

MODELS LSWA-H 5-3J12 THRU LSWA-H 5-7N12



Model No.[1]	Weights (kg)[2]			Fans		Spray Pump	Coil Volume (liters)	Remote Sump[5]			Dimensions (mm)[6]					
	Shipping	Heaviest Section[3]	Operating	kW	Air Flow m³/s	kW		Liters[4] Required	Conn. Size (mm)	Operating Weight (kg)	Height H	Length L	Lower E	Upper U	Coil A	Upper UD
LSWA-H 5-3J12	3.021	1.801	4.595	11	13,4	1,5	481	591	150	3819	4135	3645	1553	1245	565	1337
LSWA-H 5-3K12	3.048	1.801	4.622	15	15,4	1,5	481	591	150	3846	4135	3645	1553	1245	565	1337
LSWA-H 5-3L12	3.062	1.801	4.636	18,5	16,9	1,5	481	591	150	3856	4135	3645	1553	1245	565	1337
LSWA-H 5-3M12	3.084	1.801	4.658	22	18,3	1,5	481	591	150	3883	4135	3645	1553	1245	565	1337
LSWA-H 5-4J12	3.456	2.236	5.185	11	13,2	1,5	628	598	150	4418	4250	3645	1553	1460	781	1337
LSWA-H 5-4K12	3.484	2.236	5.212	15	15,1	1,5	628	598	150	4445	4250	3645	1553	1460	781	1337
LSWA-H 5-4L12	3.497	2.236	5.225	18,5	16,6	1,5	628	598	150	4454	4250	3645	1553	1460	781	1337
LSWA-H 5-4M12	3.520	2.236	5.248	22	17,9	1,5	628	598	150	4481	4250	3645	1553	1460	781	1337
LSWA-H 5-5K12	3.937	2.690	5.815	15	14,8	1,5	780	606	150	5053	4466	3645	1553	1676	997	1337
LSWA-H 5-5L12	3.951	2.690	5.829	18,5	16,3	1,5	780	606	150	5062	4466	3645	1553	1676	997	1337
LSWA-H 5-5M12	3.973	2.690	5.851	22	17,5	1,5	780	606	150	5089	4466	3645	1553	1676	997	1337
LSWA-H 5-6K12	4.382	3.134	6.405	15	14,5	1,5	927	613	150	5652	4682	3645	1553	1892	1213	1337
LSWA-H 5-6L12	4.395	3.134	6.418	18,5	15,9	1,5	927	613	150	5661	4682	3645	1553	1892	1213	1337
LSWA-H 5-6M12	4.418	3.134	6.441	22	17,2	1,5	927	613	150	5688	4682	3645	1553	1892	1213	1337
LSWA-H 5-6N12	4.491	3.134	6.514	30	18,3	1,5	927	613	150	5761	4682	3645	1553	1892	1213	1337
LSWA-H 5-7K12	4.890	3.642	7.062	15	14,2	1,5	1079	613	150	6305	4682	3645	1553	1892	1213	1337
LSWA-H 5-7L12	4.903	3.642	7.076	18,5	15,6	1,5	1079	613	150	6323	4682	3645	1553	1892	1213	1337
LSWA-H 5-7M12	4.926	3.642	7.099	22	16,8	1,5	1079	613	150	6341	4682	3645	1553	1892	1213	1337
LSWA-H 5-7N12	4.999	3.642	7.171	30	17,9	1,5	1079	613	150	6414	4682	3645	1553	1892	1213	1337

NOTES:
1. Model Numbers end in "-Z" for units with Series Flow piping configuration. Series Flow units may require additional coil connections and will require crossover piping.
2. Weights don't include ARID Fin-Pak Dry Cooling Coil section.
3. Heaviest section is the coil section.
4. Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300mm would normally be sufficient).
5. When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.
6. Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints or dimensions, quantity of coil connections, and piping configuration.

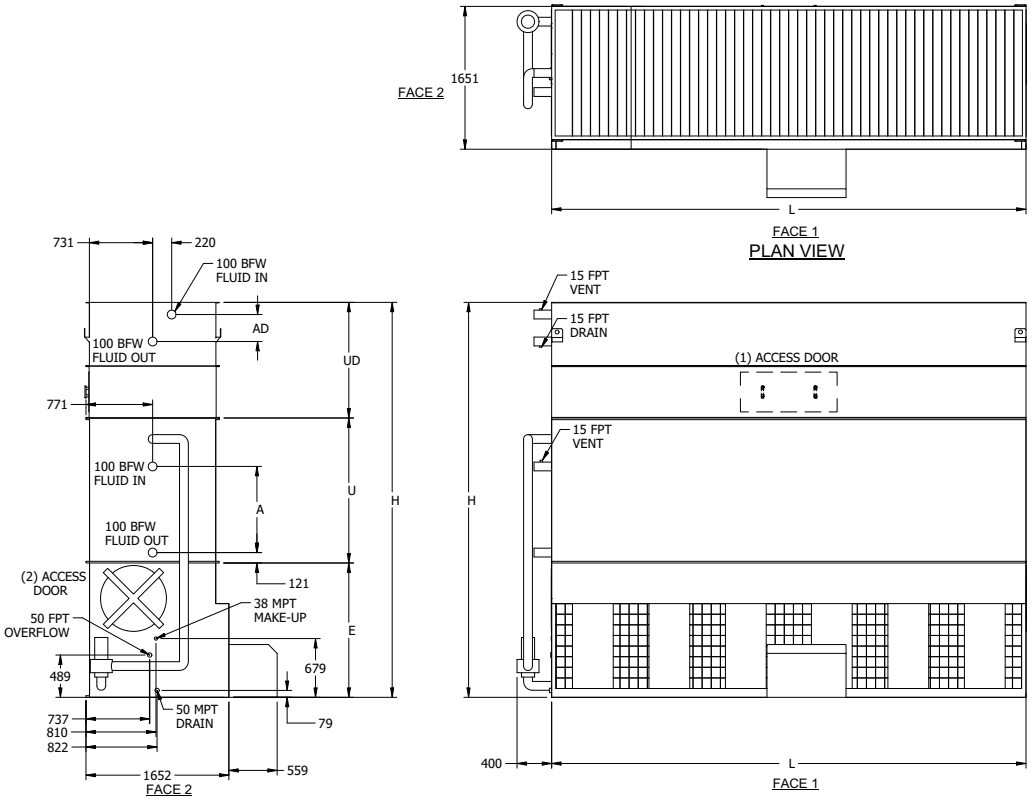
ARID Fin-Pak Cooling Coil Section

ARID Fin-Pak Coil Rows	AD (mm)	Coil Volume (liters) per unit	Shipping Weight (kg) per section	Operating Weight (kg) per unit
2	140	68	653	572
4	140	110	730	688
6	175	151	807	811
8	241	193	898	941
10	311	238	984	1072

Engineering Data and Dimensions

LSWA-H & LRW-H

Models LSWA-H 5-3K18 thru LSWA-H 5-7O18



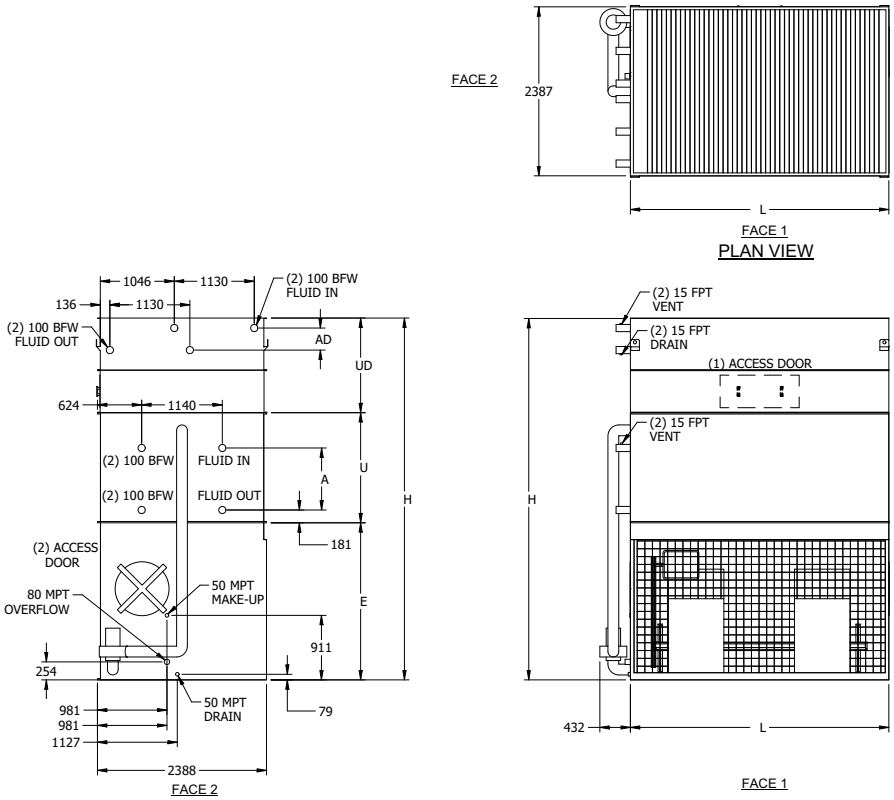
Model No.[1]	Weights (kg) [2]			Fans		Spray Pump	Coil	Remote Sump [5]			Dimensions (mm) [6]					
	Shipping	Heaviest Section [3]	Operating	kW	Air Flow m³/s	kW	Volume (liters)	Liters [4] Required	Conn. Size (mm)	Operating Weight (kg)	Height H	Length L	Lower E	Upper U	Coil A	Upper UD
LSWA-H 5-3K18	4.481	2.694	6.745	15	20,2	2,2	708	689	200	5389	42135	5483	1553	1245	565	1337
LSWA-H 5-3L18	4.495	2.694	6.759	18,5	22,2	2,2	708	689	200	5402	4135	5483	1553	1245	565	1337
LSWA-H 5-3M18	4.518	2.694	6.781	22	24	2,2	708	689	200	5425	4135	5483	1553	1245	565	1337
LSWA-H 5-3N18	4.590	2.694	6.854	30	25,5	2,2	708	689	200	5498	4135	5483	1553	1245	565	1337
LSWA-H 5-4L18	5.148	3.348	7.634	18,5	21,8	2,2	935	697	200	6282	4250	5483	1553	1460	781	1337
LSWA-H 5-4M18	5.171	3.348	7.657	22	23,5	2,2	935	697	200	6305	4250	5483	1553	1460	781	1337
LSWA-H 5-4N18	5.244	3.348	7.729	30	25	2,2	935	697	200	6378	4250	5483	1553	1460	781	1337
LSWA-H 5-4O18	5.248	3.348	7.734	37	27,5	2,2	935	697	200	6382	4250	5483	1553	1460	781	1337
LSWA-H 5-5L18	5.838	4.037	8.546	18,5	21,4	2,2	1158	704	200	7203	4466	5483	1553	1676	997	1337
LSWA-H 5-5M18	5.860	4.037	8.568	22	23	2,2	1158	704	200	7226	4466	5483	1553	1676	997	1337
LSWA-H 5-5N18	5.933	4.037	8.641	30	24,5	2,2	1158	704	200	7298	4466	5483	1553	1676	997	1337
LSWA-H 5-5O18	5.938	4.037	8.645	37	26,9	2,2	1158	704	200	7303	4466	5483	1553	1676	997	1337
LSWA-H 5-6M18	6.527	4.704	9.462	22	22,6	2,2	1385	712	200	8128	4682	5483	1553	1892	1213	1337
LSWA-H 5-6N18	6.600	4.704	9.535	30	24	2,2	1385	712	200	8201	4682	5483	1553	1892	1213	1337
LSWA-H 5-6O18	6.604	4.704	9.539	37	26,4	2,2	1385	712	200	8205	4682	5483	1553	1892	1213	1337
LSWA-H 5-7M18	7.289	5.466	10.451	22	22,1	2,2	1613	712	200	9117	4682	5483	1553	1892	1213	1337
LSWA-H 5-7N18	7.362	5.466	10.523	30	23,5	2,2	1613	712	200	9190	4682	5483	1553	1892	1213	1337
LSWA-H 5-7O18	7.366	5.466	10.528	37	25,8	2,2	1613	712	200	9194	4682	5483	1553	1892	1213	1337

NOTES:
1. Model Numbers end in "-Z" for units with Series Flow piping configuration. Series Flow units may require additional coil connections and will require crossover piping.
2. Weights don't include ARID Fin-Pak Dry Cooling Coil section.
3. Heaviest section is the coil section.
4. Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300mm would normally be sufficient).
5. When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.
6. Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints or dimensions, quantity of coil connections, and piping configuration.

ARID Fin-Pak Cooling Coil Section

ARID Fin-Pak Coil Rows	AD (mm)	Coil Volume (liters) per unit	Shipping Weight (kg) per section	Operating Weight (kg) per unit
2	140	91	903	770
4	140	155	1016	951
6	175	223	1143	1143
8	241	288	1279	1344
10	311	352	1415	1547

MODELS LSWA-H 8P-3L12 THRU LSWA-H 8P-7P12



Model No.[1]	Weights (kg)[2]			Fans		Spray Pump	Coil Volume	Remote Sump[5]			Dimensions (mm)[6]					
	Shipping	Heaviest Section[3]	Operating	kW	Air Flow m³/s	kW	(liters)	Liters[4] Required	Conn. Size (mm)	Operating Weight (kg)	Height H	Length L	Lower E	Upper U	Coil A	Upper UD
LSWA-H 8P-3L12	4.395	2.663	6.677	18,5	21,9	4	757	1049	250	5783	4731	3651	2219	1175	495	1337
LSWA-H 8P-3M12	4.418	2.663	6.695	22	23,5	4	757	1049	250	5806	4731	3651	2219	1175	495	1337
LSWA-H 8P-3N12	4.491	2.663	6.768	30	25	4	757	1049	250	5879	4731	3651	2219	1175	495	1337
LSWA-H 8P-3O12	4.495	2.663	6.777	37	27,5	4	757	1049	250	5883	4731	3651	2219	1175	495	1337
LSWA-H 8P-4M12	5.076	3.320	7.593	22	23,1	4	992	1105	250	6759	4921	3651	2219	1365	686	1337
LSWA-H 8P-4N12	5.148	3.320	7.666	30	24,5	4	992	1105	250	6831	4921	3651	2219	1365	686	1337
LSWA-H 8P-4O12	5.153	3.320	7.675	37	27	4	992	1105	250	6836	4921	3651	2219	1365	686	1337
LSWA-H 8P-4P12	5.244	3.320	7.765	45	29,1	4	992	1105	250	6926	4921	3651	2219	1365	686	1337
LSWA-H 8P-5N12	5.792	3.964	8.546	30	24	4	1226	1151	250	7756	5112	3651	2219	1556	876	1337
LSWA-H 8P-5O12	5.797	3.964	8.555	37	26,5	4	1226	1151	250	7761	5112	3651	2219	1556	876	1337
LSWA-H 8P-5P12	5.888	3.964	8.645	45	28,5	4	1226	1151	250	7852	5112	3651	2219	1556	876	1337
LSWA-H 8P-6N12	6.455	4.627	9.439	30	23,6	4	1461	1204	250	8704	5302	3651	2219	1746	1067	1337
LSWA-H 8P-6O12	6.459	4.627	9.448	37	25,9	4	1461	1204	250	8709	5302	3651	2219	1746	1067	1337
LSWA-H 8P-6P12	6.550	4.627	9.539	45	27,9	4	1461	1204	250	8800	5302	3651	2219	1746	1067	1337
LSWA-H 8P-7N12	7.126	5.298	10.346	30	23,1	4	1696	1204	250	9612	5353	3651	2219	1797	1213	1337
LSWA-H 8P-7O12	7.130	5.298	10.356	37	25,4	4	1696	1204	250	9616	5353	3651	2219	1797	1213	1337
LSWA-H 8P-7P12	7.221	5.298	10.446	45	27,3	4	1696	1204	250	9707	5353	3651	2219	1797	1213	1337

NOTES:
1. Model Numbers end in "-Z" for units with Series Flow piping configuration. Series Flow units may require additional coil connections and will require crossover piping.
2. Weights don't include ARID Fin-Pak Dry Cooling Coil section.
3. Heaviest section is the coil section.
4. Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300mm would normally be sufficient).
5. When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.
6. Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints or dimensions, quantity of coil connections, and piping configuration.

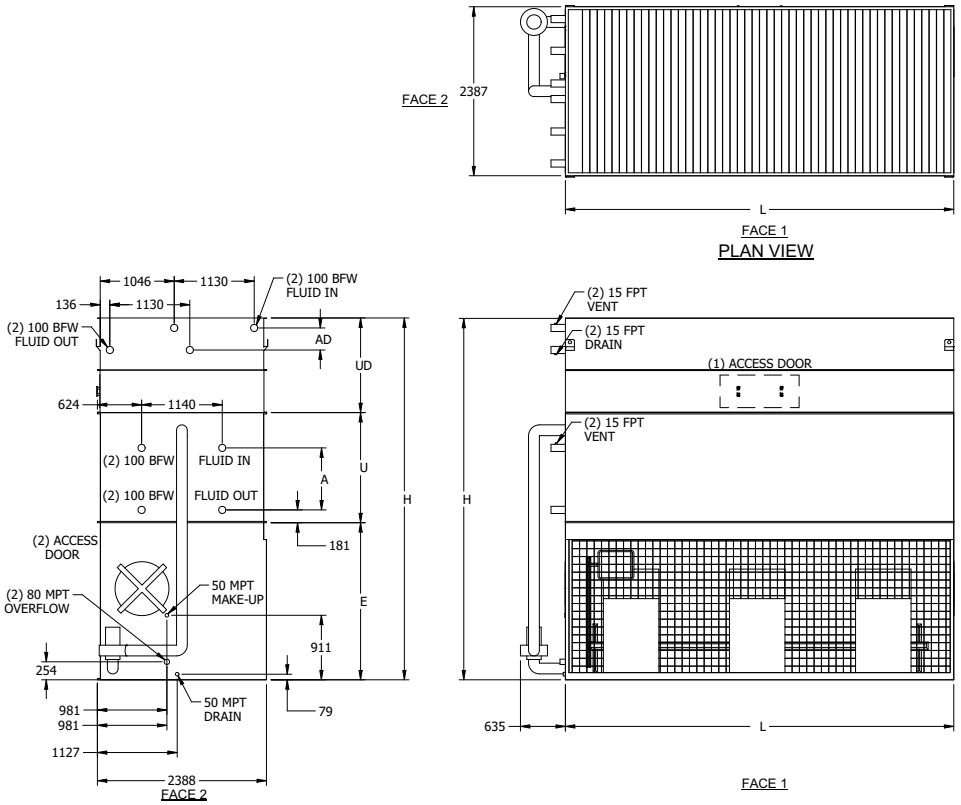
ARID Fin-Pak Cooling Coil Section

ARID Fin-Pak Coil Rows	AD (mm)	Coil Volume (liters) per unit	Shipping Weight (kg) per section	Operating Weight (kg) per unit
2	140	102	848	776
4	140	167	966	959
6	175	235	1093	1152
8	241	299	1225	1353
10	311	363	1361	1554

Engineering Data and Dimensions

LSWA-H & LRW-H

Models LSWA-H 8P-3N18 thru LSWA-H 8P-7Q18



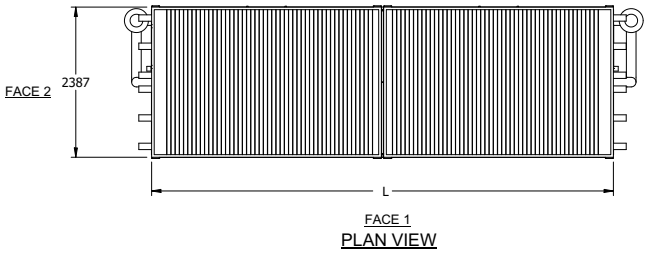
Model No.[1]	Weights (kg)[2]			Fans		Spray Pump	Coil	Remote Sump[5]			Dimensions (mm)[6]					
	Shipping	Heaviest Section[3]	Operating	kW	Air Flow m³/s	kW	Volume (liters)	Liters[4] Required	Conn. Size (mm)	Operating Weight (kg)	Height H	Length L	Lower E	Upper U	Coil A	Upper UD
LSWA-H 8P-3N18	6.391	3.942	9.829	30	32,7	5,5	1117	1567	300	8518	4731	5486	2219	1175	495	1337
LSWA-H 8P-3O18	6.396	3.942	9.838	37	36	5,5	1117	1567	300	8523	4731	5486	2219	1175	495	1337
LSWA-H 8P-3P18	6.486	3.942	9.929	45	38,8	5,5	1117	1567	300	8614	4731	5486	2219	1175	495	1337
LSWA-H 8P-3Q18	6.536	3.942	9.979	55	41,2	5,5	1117	1567	300	8668	4731	5486	2219	1175	495	1337
LSWA-H 8P-4N18	7.384	4.935	11.177	30	32,1	5,5	1473	1650	300	9947	4921	5486	2219	1365	686	1337
LSWA-H 8P-4O18	7.389	4.935	11.186	37	35,3	5,5	1473	1650	300	9952	4921	5486	2219	1365	686	1337
LSWA-H 8P-4P18	7.480	4.935	11.276	45	38	5,5	1473	1650	300	10043	4921	5486	2219	1365	686	1337
LSWA-H 8P-4Q18	7.530	4.935	11.326	55	40,4	5,5	1473	1650	300	10097	4921	5486	2219	1365	686	1337
LSWA-H 8P-5O18	8.337	5.883	12.492	37	34,6	5,5	1828	1726	300	11335	5112	5486	2219	1556	876	1337
LSWA-H 8P-5P18	8.428	5.883	12.583	45	37,3	5,5	1828	1726	300	11426	5112	5486	2219	1556	876	1337
LSWA-H 8P-5Q18	8.478	5.883	12.633	55	39,6	5,5	1828	1726	300	11480	5112	5486	2219	1556	876	1337
LSWA-H 8P-6O18	9.349	6.895	13.857	37	33,9	5,5	2184	1798	300	12773	5302	5486	2219	1746	1067	1337
LSWA-H 8P-6P18	9.439	6.895	13.948	45	36,5	5,5	2184	1798	300	12864	5302	5486	2219	1746	1067	1337
LSWA-H 8P-6Q18	9.489	6.895	13.998	55	38,8	5,5	2184	1798	300	12918	5302	5486	2219	1746	1067	1337
LSWA-H 8P-7O18	10.342	7.888	15.204	37	33,2	5,5	2540	1798	300	14120	5353	5486	2219	1797	1213	1337
LSWA-H 8P-7P18	10.433	7.888	15.295	45	35,8	5,5	2540	1798	300	14211	5353	5486	2219	1797	1213	1337
LSWA-H 8P-7Q18	10.483	7.888	15.345	55	38	5,5	2540	1798	300	14265	5353	5486	2219	1797	1213	1337

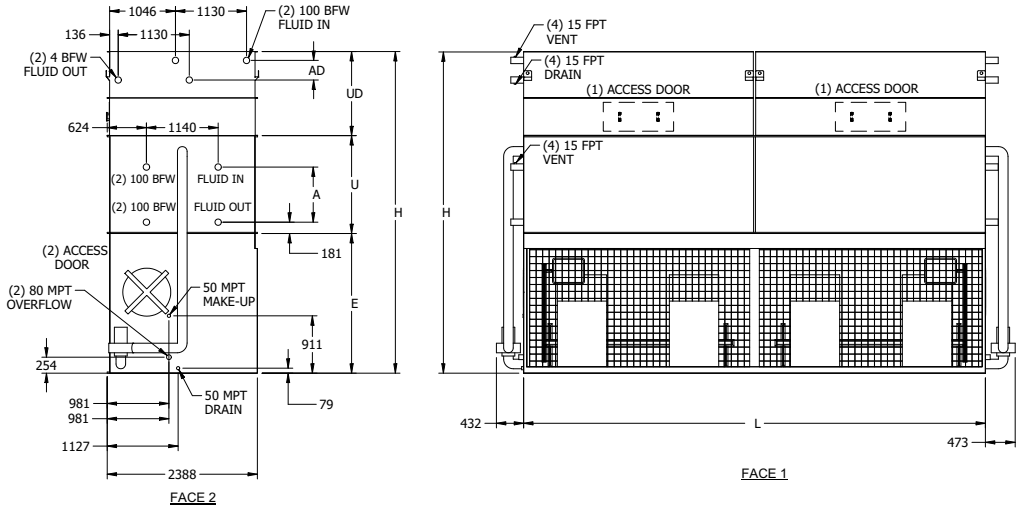
NOTES:
1. Model Numbers end in "-Z" for units with Series Flow piping configuration. Series Flow units may require additional coil connections and will require crossover piping.
2. Weights don't include ARID Fin-Pak Dry Cooling Coil section.
3. Heaviest section is the coil section.
4. Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300mm would normally be sufficient).
5. When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.
6. Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints or dimensions, quantity of coil connections, and piping configuration.

ARID Fin-Pak Cooling Coil Section

ARID Fin-Pak Coil Rows	AD (mm)	Coil Volume (liters) per unit	Shipping Weight (kg) per section	Operating Weight (kg) per unit
2	140	136	1143	1020
4	140	238	1324	1305
6	175	341	1520	1604
8	241	443	1728	1915
10	311	545	1937	2226

MODELS LSWA-H 8P-3L24 THRU LSWA-H 8P-7P24





Model No.[1]	Weights (kg)[2]			Fans		Spray Pump	Coil Volume (liters)	Remote Sump[5]			Dimensions (mm)[6]					
	Shipping	Heaviest Section[3]	Operating	kW	Air Flow m³/s	kW		Liters[4] Required	Conn. Size (mm)	Operating Weight (kg)	Height H	Length L	Lower E	Upper U	Coil A	Upper UD
LSWA-H 8P-3L24	8.473	3.157	13.073	(2)18.5	43,7	(2) 4	1514	2139	(2) 250	11326	4731	7341	2219	1175	495	1337
LSWA-H 8P-3M24	8.518	3.202	13.118	(2) 22	47,1	(2) 4	1514	2139	(2) 250	11372	4731	7341	2219	1175	495	1337
LSWA-H 8P-3N24	8.664	3.348	13.263	(2) 30	50,1	(2) 4	1514	2139	(2) 250	11517	4731	7341	2219	1175	495	1337
LSWA-H 8P-3O24	8.673	3.357	13.272	(2) 37	55,1	(2) 4	1514	2139	(2) 250	11526	4731	7341	2219	1175	495	1337
LSWA-H 8P-4M24	9.843	3.320	14.914	(2) 22	46,2	(2) 4	1984	2252	(2) 250	13281	4921	7341	2219	1365	686	1337
LSWA-H 8P-4N24	9.988	3.348	15.059	(2) 30	49,1	(2) 4	1984	2252	(2) 250	13426	4921	7341	2219	1365	686	1337
LSWA-H 8P-4O24	9.997	3.357	15.068	(2) 37	54	(2) 4	1984	2252	(2) 250	13435	4921	7341	2219	1365	686	1337
LSWA-H 8P-4P24	10.179	3.538	15.250	(2) 45	58,2	(2) 4	1984	2252	(2) 250	13617	4921	7341	2219	1365	686	1337
LSWA-H 8P-5N24	11.276	3.964	16.810	(2) 30	48,1	(2) 4	2453	2351	(2) 250	15272	5112	7341	2219	1556	876	1337
LSWA-H 8P-5O24	11.285	3.964	16.819	(2) 37	52,9	(2) 4	2453	2351	(2) 250	15282	5112	7341	2219	1556	876	1337
LSWA-H 8P-5P24	11.467	3.964	17.001	(2) 45	57	(2) 4	2453	2351	(2) 250	15463	5112	7341	2219	1556	876	1337
LSWA-H 8P-6N24	12.601	4.627	18.606	(2) 30	47,1	(2) 4	2922	2464	(2) 250	17182	5302	7341	2219	1746	1067	1337
LSWA-H 8P-6O24	12.610	4.627	18.615	(2) 37	51,8	(2) 4	2922	2464	(2) 250	17191	5302	7341	2219	1746	1067	1337
LSWA-H 8P-6P24	12.791	4.627	18.797	(2) 45	55,8	(2) 4	2922	2464	(2) 250	17373	5302	7341	2219	1746	1067	1337
LSWA-H 8P-7N24	13.943	5.298	20.421	(2) 30	46,1	(2) 4	3396	2468	(2) 250	19001	5353	7341	2219	1797	1213	1337
LSWA-H 8P-7O24	13.952	5.298	20.430	(2) 37	50,8	(2) 4	3396	2468	(2) 250	19010	5353	7341	2219	1797	1213	1337
LSWA-H 8P-7P24	14.134	5.298	20.611	(2) 45	54,7	(2) 4	3396	2468	(2) 250	19191	5353	7341	2219	1797	1213	1337

NOTES:
1. Model Numbers end in "-Z" for units with Series Flow piping configuration. Series Flow units may require additional coil connections and will require crossover piping.
2. Weights don't include ARID Fin-Pak Dry Cooling Coil section.
3. Heaviest section is the coil section.
4. Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300mm would normally be sufficient).
5. When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.
6. Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints or dimensions, quantity of coil connections, and piping configuration.

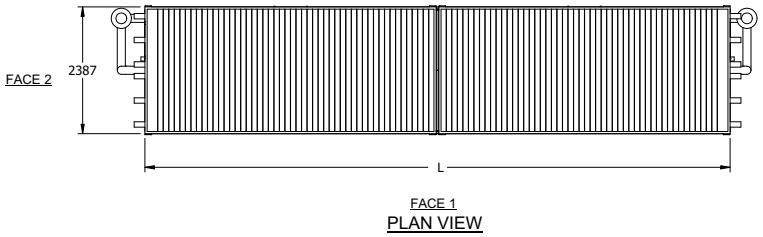
ARID Fin-Pak Cooling Coil Section

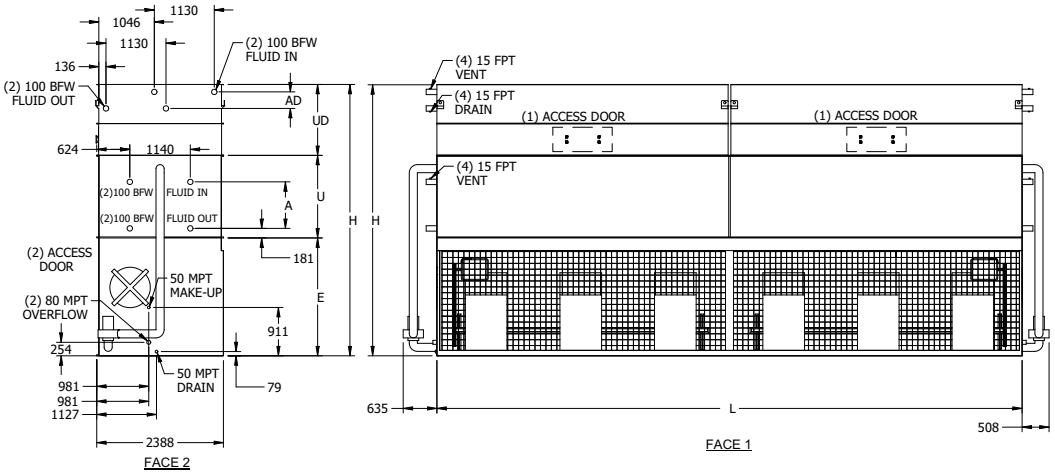
ARID Fin-Pak Coil Rows	AD (mm)	Coil Volume (liters) per unit	Shipping Weight (kg) per section	Operating Weight (kg) per unit
2	140	201	848	1552
4	140	333	966	1918
6	175	466	1093	2304
8	241	598	1225	2706
10	311	731	1361	3108

Engineering Data and Dimensions

LSWA-H & LRW-H

Models LSWA-H 8P-3N36 thru LSWA-H 8P-7Q36





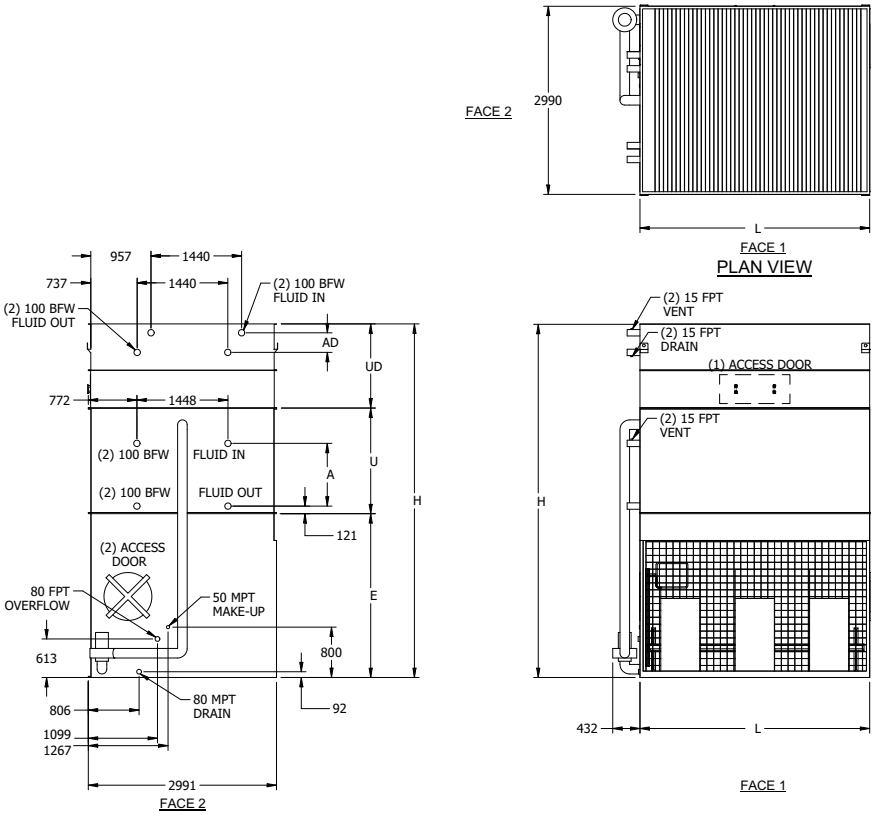
Model No.[1]	Weights (kg) [2]			Fans		Spray Pump	Coil	Remote Sump [5]			Dimensions (mm) [6]					
	Shipping	Heaviest Section [3]	Operating	kW	Air Flow m³/s	kW	Volume (liters)	Liters [4] Required	Conn. Size (mm)	Operating Weight (kg)	Height H	Length L	Lower E	Upper U	Coil A	Upper UD
LSWA-H 8P-3N36	12.447	4.563	19.377	(2) 30	65,4	(2) 5.5	2233	3187	(2) 300	16806	4731	11024	2219	1175	495	1337
LSWA-H 8P-3O36	12.456	4.572	19.387	(2) 37	72	(2) 5.5	2233	3187	(2) 300	16815	4731	11024	2219	1175	495	1337
LSWA-H 8P-3P36	12.637	4.754	19.568	(2) 45	77,6	(2) 5.5	2233	3187	(2) 300	16996	4731	11024	2219	1175	495	1337
LSWA-H 8P-3Q36	12.741	4.858	19.672	(2) 55	82,5	(2) 5.5	2233	3187	(2) 300	17100	4731	11024	2219	1175	495	1337
LSWA-H 8P-4N36	14.442	4.940	22.081	(2) 30	64,2	(2) 5.5	2945	3339	(2) 300	19663	4921	11024	2219	1365	686	1337
LSWA-H 8P-4O36	14.451	4.940	22.090	(2) 37	70,6	(2) 5.5	2945	3339	(2) 300	19672	4921	11024	2219	1365	686	1337
LSWA-H 8P-4P36	14.633	4.940	22.271	(2) 45	76,1	(2) 5.5	2945	3339	(2) 300	19854	4921	11024	2219	1365	686	1337
LSWA-H 8P-4Q36	14.737	4.940	22.376	(2) 55	80,8	(2) 5.5	2945	3339	(2) 300	19958	4921	11024	2219	1365	686	1337
LSWA-H 8P-5O36	16.357	5.892	24.712	(2) 37	69,2	(2) 5.5	3657	3505	(2) 300	22457	5112	11024	2219	1556	876	1337
LSWA-H 8P-5P36	16.538	5.892	24.893	(2) 45	74,6	(2) 5.5	3657	3505	(2) 300	22639	5112	11024	2219	1556	876	1337
LSWA-H 8P-5Q36	16.642	5.892	24.997	(2) 55	79,2	(2) 5.5	3657	3505	(2) 300	22743	5112	11024	2219	1556	876	1337
LSWA-H 8P-6O36	18.361	6.895	27.415	(2) 37	67,8	(2) 5.5	4365	3653	(2) 300	25310	5302	11024	2219	1746	1067	1337
LSWA-H 8P-6P36	18.543	6.895	27.597	(2) 45	73	(2) 5.5	4365	3653	(2) 300	25492	5302	11024	2219	1746	1067	1337
LSWA-H 8P-6Q36	18.647	6.895	27.701	(2) 55	77,6	(2) 5.5	4365	3653	(2) 300	25596	5302	11024	2219	1746	1067	1337
LSWA-H 8P-7O36	20.348	7.888	30.119	(2) 37	66,4	(2) 5.5	5076	3657	(2) 300	28018	5353	11024	2219	1797	1213	1337
LSWA-H 8P-7P36	20.530	7.888	30.300	(2) 45	71,5	(2) 5.5	5076	3657	(2) 300	28200	5353	11024	2219	1797	1213	1337
LSWA-H 8P-7Q36	20.634	7.888	30.404	(2) 55	76	(2) 5.5	5076	3657	(2) 300	28304	5353	11024	2219	1797	1213	1337

NOTES:
1. Model Numbers end in "-Z" for units with Series Flow piping configuration. Series Flow units may require additional coil connections and will require crossover piping.
2. Weights don't include ARID Fin-Pak Dry Cooling Coil section.
3. Heaviest section is the coil section.
4. Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300mm would normally be sufficient).
5. When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.
6. Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints or dimensions, quantity of coil connections, and piping configuration.

ARID Fin-Pak Cooling Coil Section

ARID Fin-Pak Coil Rows	AD (mm)	Coil Volume (liters) per unit	Shipping Weight (kg) per section	Operating Weight (kg) per unit
2	140	273	1143	2040
4	140	477	1324	2610
6	175	685	1520	3208
8	241	890	1728	3830
10	311	1090	1937	4452

MODELS LSWA-H 10-3N12 THRU LSWA-H 10-7Q12



Model No.[1]	Weights (kg)[2]			Fans		Spray Pump	Coil Volume (liters)	Remote Sump[5]			Dimensions (mm)[6]					
	Shipping	Heaviest Section[3]	Operating	kW	Air Flow m³/s	kW		Liters[4] Required	Conn. Size (mm)	Operating Weight (kg)	Height H	Length L	Lower E	Upper U	Coil A	Upper UD
LSWA-H 10-3N12	5.865	3.574	8.795	30	30,7	4	958	1503	250	7775	5189	3651	2604	1248	565	1337
LSWA-H 10-3O12	5.869	3.574	8.800	37	33,8	4	958	1503	250	7779	5189	3651	2604	1248	565	1337
LSWA-H 10-3P12	5.960	3.574	8.890	45	36,4	4	958	1503	250	7870	5189	3651	2604	1248	565	1337
LSWA-H 10-4N12	6.736	4.445	9.965	30	30,1	4	1257	1586	250	9026	5405	3651	2604	1464	781	1337
LSWA-H 10-4O12	6.740	4.445	9.970	37	33,2	4	1257	1586	250	9031	5405	3651	2604	1464	781	1337
LSWA-H 10-4P12	6.831	4.445	10.061	45	35,7	4	1257	1586	250	9122	5405	3651	2604	1464	781	1337
LSWA-H 10-5N12	7.557	5.266	11.086	30	29,5	4	1556	1662	250	10224	5621	3651	2604	1680	997	1337
LSWA-H 10-5O12	7.561	5.266	11.090	37	32,5	4	1556	1662	250	10228	5621	3651	2604	1680	997	1337
LSWA-H 10-5P12	7.652	5.266	11.181	45	35	4	1556	1662	250	10319	5621	3651	2604	1680	997	1337
LSWA-H 10-6N12	8.419	6.128	12.247	30	28,9	4	1855	1745	250	11467	5836	3651	2604	1895	1213	1337
LSWA-H 10-6O12	8.423	6.128	12.252	37	31,8	4	1855	1745	250	11471	5836	3651	2604	1895	1213	1337
LSWA-H 10-6P12	8.514	6.128	12.342	45	34,3	4	1855	1745	250	11562	5836	3651	2604	1895	1213	1337
LSWA-H 10-6Q12	8.564	6.128	12.392	55	36,5	4	1855	1745	250	11612	5836	3651	2604	1895	1213	1337
LSWA-H 10-7N12	9.435	7.144	13.562	30	28,3	4	2154	1745	250	12782	5836	3651	2604	1895	1213	1337
LSWA-H 10-7O12	9.439	7.144	13.567	37	31,2	4	2154	1745	250	12787	5836	3651	2604	1895	1213	1337
LSWA-H 10-7P12	9.530	7.144	13.658	45	33,6	4	2154	1745	250	12877	5836	3651	2604	1895	1213	1337
LSWA-H 10-7Q12	9.580	7.144	13.708	55	35,7	4	2154	1745	250	12927	5836	3651	2604	1895	1213	1337

NOTES:

1. Model Numbers end in "-Z" for units with Series Flow piping configuration. Series Flow units may require additional coil connections and will require crossover piping.
2. Weights don't include ARID Fin-Pak Dry Cooling Coil section.
3. Heaviest section is the coil section.
4. Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300mm would normally be sufficient).
5. When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.
6. Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints or dimensions, quantity of coil connections, and piping configuration.

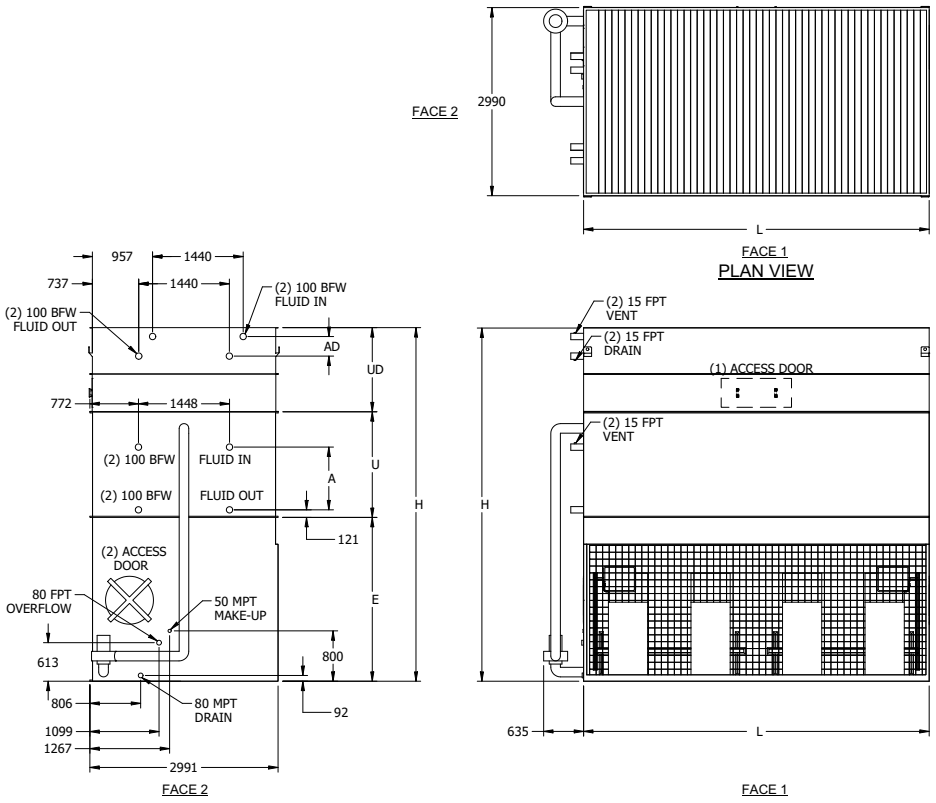
ARID Fin-Pak Cooling Coil Section

ARID Fin-Pak Coil Rows	AD (mm)	Coil Volume (liters) per unit	Shipping Weight (kg) per section	Operating Weight (kg) per unit
2	140	132	1043	961
4	140	220	1193	1195
6	175	303	1356	1441
8	241	386	1533	1701
10	311	473	1706	1963

Engineering Data and Dimensions

LSWA-H & LRW-H

Models LSWA-H 10-3L18 thru LSWA-H 10-7O18



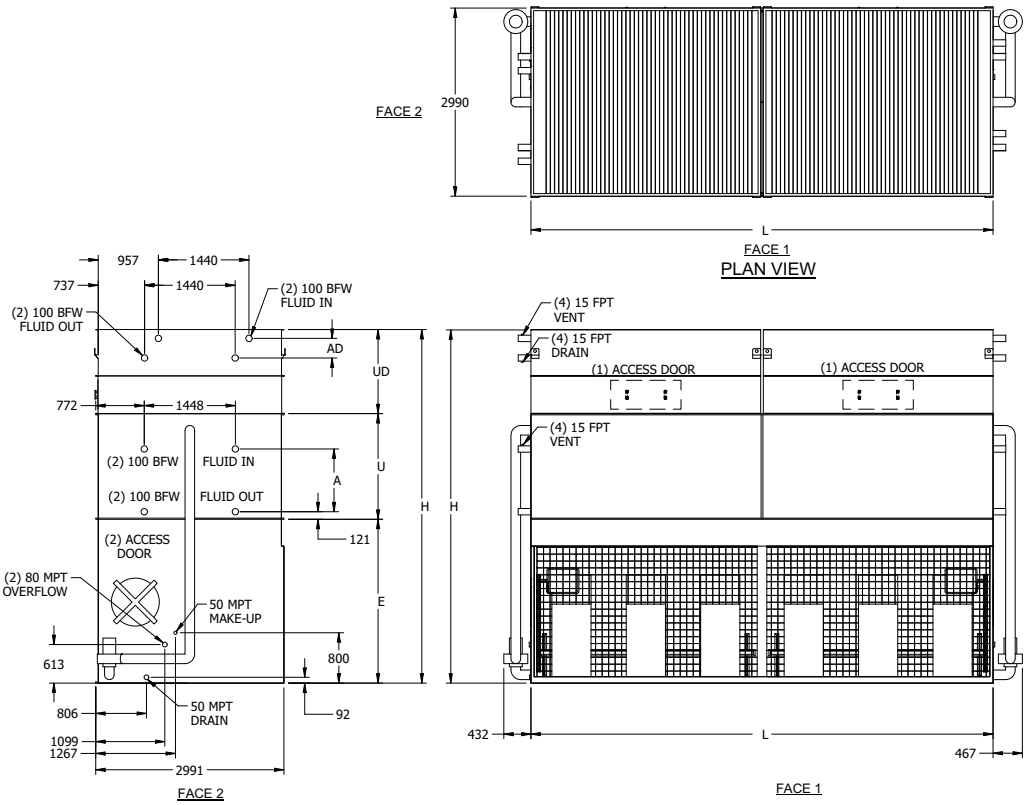
Model No.[1]	Weights (kg) [2]			Fans		Spray Pump	Coil	Remote Sump [5]			Dimensions (mm) [6]					
	Shipping	Heaviest Section [3]	Operating	kW	Air Flow m³/s	kW	Volume (liters)	Liters [4] Required	Conn. Size (mm)	Operating Weight (kg)	Height H	Length L	Lower E	Upper U	Coil A	Upper UD
LSWA-H 10-3L18	8.491	5.230	12.909	(2)18.5	44,4	5,5	1416	2150	300	11313	5189	5493	2604	1248	565	1337
LSWA-H 10-3M18	8.537	5.230	12.955	(2) 22	47,9	5,5	1416	2150	300	11358	5189	5493	2604	1248	565	1337
LSWA-H 10-3N18	8.682	5.230	13.100	(2) 30	50,9	5,5	1416	2150	300	11503	5189	5493	2604	1248	565	1337
LSWA-H 10-3O18	8.691	5.230	13.109	(2) 37	56	5,5	1416	2150	300	11512	5189	5493	2604	1248	565	1337
LSWA-H 10-4M18	9.811	6.505	14.683	(2) 22	46,9	5,5	1870	2252	300	13190	5405	5493	2604	1464	781	1337
LSWA-H 10-4N18	9.956	6.505	14.828	(2) 30	49,9	5,5	1870	2252	300	13336	5405	5493	2604	1464	781	1337
LSWA-H 10-4O18	9.965	6.505	14.837	(2) 37	54,9	5,5	1870	2252	300	13345	5405	5493	2604	1464	781	1337
LSWA-H 10-5M18	11.040	7.734	16.361	(2) 22	46	5,5	2320	2366	300	14982	5621	5493	2604	1680	997	1337
LSWA-H 10-5N18	11.186	7.734	16.506	(2) 30	48,9	5,5	2320	2366	300	15127	5621	5493	2604	1680	997	1337
LSWA-H 10-5O18	11.195	7.734	16.515	(2) 37	53,8	5,5	2320	2366	300	15136	5621	5493	2604	1680	997	1337
LSWA-H 10-6M18	12.315	9.008	18.089	(2) 22	45	5,5	2771	2487	300	16828	5836	5493	2604	1895	1213	1337
LSWA-H 10-6N18	12.460	9.008	18.234	(2) 30	47,9	5,5	2771	2487	300	16973	5836	5493	2604	1895	1213	1337
LSWA-H 10-6O18	12.469	9.008	18.243	(2) 37	52,7	5,5	2771	2487	300	16982	5836	5493	2604	1895	1213	1337
LSWA-H 10-7M18	13.839	10.532	20.067	(2) 22	44,1	5,5	3221	2487	300	18806	5836	5493	2604	1895	1213	1337
LSWA-H 10-7N18	13.984	10.532	20.212	(2) 30	46,9	5,5	3221	2487	300	18951	5836	5493	2604	1895	1213	1337
LSWA-H 10-7O18	13.993	10.532	20.221	(2) 37	51,6	5,5	3221	2487	300	18960	5836	5493	2604	1895	1213	1337

NOTES:
1. Model Numbers end in "-Z" for units with Series Flow piping configuration. Series Flow units may require additional coil connections and will require crossover piping.
2. Weights don't include ARID Fin-Pak Dry Cooling Coil section.
3. Heaviest section is the coil section.
4. Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300mm would normally be sufficient).
5. When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.
6. Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints or dimensions, quantity of coil connections, and piping configuration.

ARID Fin-Pak Cooling Coil Section

ARID Fin-Pak Coil Rows	AD (mm)	Coil Volume (liters) per unit	Shipping Weight (kg) per section	Operating Weight (kg) per unit
2	140	182	1406	1259
4	140	310	1637	1621
6	175	443	1887	2005
8	241	575	2159	2407
10	311	708	2436	2813

MODELS LSWA-H 10-3N24 THRU LSWA-H 10-7Q24



Model No.[1]	Weights (kg)[2]			Fans		Spray Pump	Coil Volume (liters)	Remote Sump[5]			Dimensions (mm)[6]					
	Shipping	Heaviest Section[3]	Operating	kW	Air Flow m³/s	kW		Liters[4] Required	Conn. Size (mm)	Operating Weight (kg)	Height H	Length L	Lower E	Upper U	Coil A	Upper UD
LSWA-H 10-3N24	11.467	4.318	17.395	(2) 30	61,5	(2) 4	1919	2869	250	15218	5189	7347	2604	1248	565	1337
LSWA-H 10-3O24	11.476	4.327	17.404	(2) 37	67,7	(2) 4	1919	2869	250	15227	5189	7347	2604	1248	565	1337
LSWA-H 10-3P24	11.657	4.509	17.586	(2) 45	72,9	(2) 4	1919	2869	250	15409	5189	7347	2604	1248	565	1337
LSWA-H 10-4N24	13.200	4.441	19.727	(2) 30	60,3	(2) 4	2514	3013	250	17695	5405	7347	2604	1464	781	1337
LSWA-H 10-4O24	13.209	4.441	19.736	(2) 37	66,3	(2) 4	2514	3013	250	17704	5405	7347	2604	1464	781	1337
LSWA-H 10-4P24	13.390	4.509	19.917	(2) 45	71,5	(2) 4	2514	3013	250	17885	5405	7347	2604	1464	781	1337
LSWA-H 10-5N24	14.851	5.266	21.977	(2) 30	59,1	(2) 4	3112	3157	250	20090	5621	7347	2604	1680	997	1337
LSWA-H 10-5O24	14.860	5.266	21.986	(2) 37	65	(2) 4	3112	3157	250	20099	5621	7347	2604	1680	997	1337
LSWA-H 10-5P24	15.041	5.266	22.167	(2) 45	70	(2) 4	3112	3157	250	20280	5621	7347	2604	1680	997	1337
LSWA-H 10-6N24	16.574	6.128	24.299	(2) 30	57,9	(2) 4	3710	3312	250	22566	5836	7347	2604	1895	1213	1337
LSWA-H 10-6O24	16.583	6.128	24.308	(2) 37	63,7	(2) 4	3710	3312	250	22575	5836	7347	2604	1895	1213	1337
LSWA-H 10-6P24	16.765	6.128	24.489	(2) 45	68,6	(2) 4	3710	3312	250	22757	5836	7347	2604	1895	1213	1337
LSWA-H 10-6Q24	16.865	6.128	24.594	(2) 55	72,9	(2) 4	3710	3312	250	22861	5836	7347	2604	1895	1213	1337
LSWA-H 10-7N24	18.606	7.144	26.930	(2) 30	56,7	(2) 4	4308	3312	250	25197	5836	7347	2604	1895	1213	1337
LSWA-H 10-7O24	18.615	7.144	26.939	(2) 37	62,4	(2) 4	4308	3312	250	25206	5836	7347	2604	1895	1213	1337
LSWA-H 10-7P24	18.797	7.144	27.120	(2) 45	67,2	(2) 4	4308	3312	250	25388	5836	7347	2604	1895	1213	1337
LSWA-H 10-7Q24	18.897	7.144	27.225	(2) 55	71,4	(2) 4	4308	3312	250	25492	5836	7347	2604	1895	1213	1337

NOTES:
1. Model Numbers end in "-Z" for units with Series Flow piping configuration. Series Flow units may require additional coil connections and will require crossover piping.
2. Weights don't include ARID Fin-Pak Dry Cooling Coil section.
3. Heaviest section is the coil section.
4. Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300mm would normally be sufficient).
5. When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.
6. Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints or dimensions, quantity of coil connections, and piping configuration.

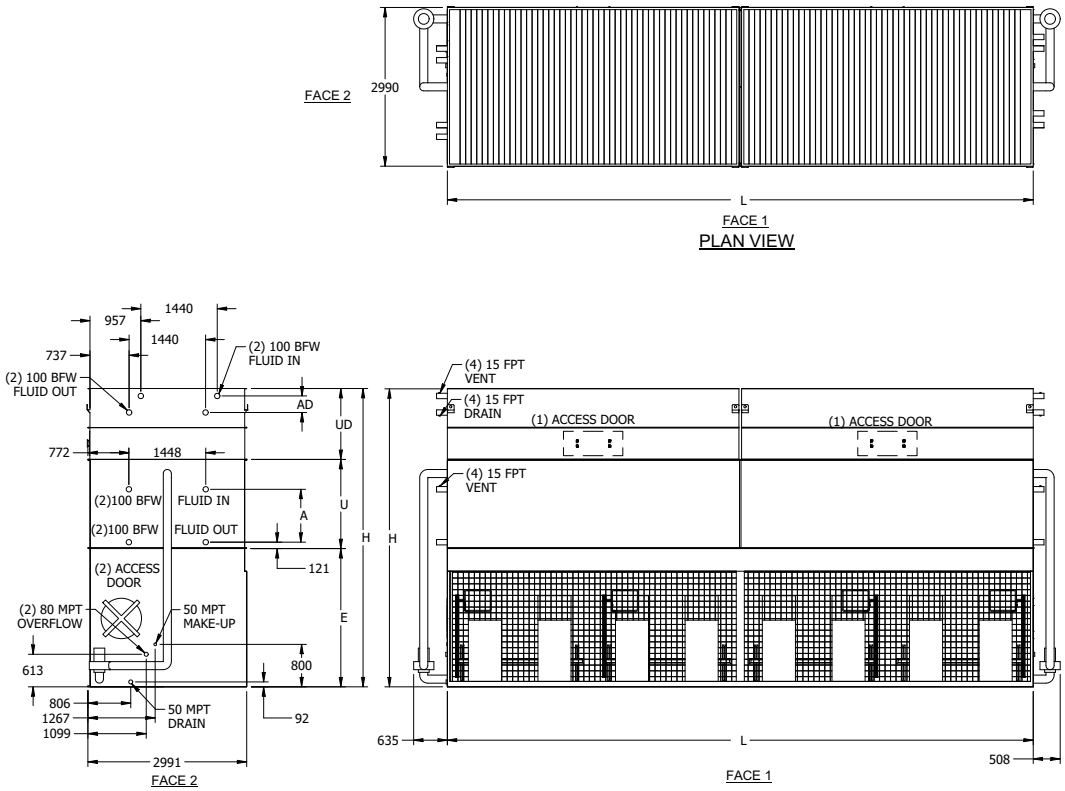
ARID Fin-Pak Cooling Coil Section

ARID Fin-Pak Coil Rows	AD (mm)	Coil Volume (liters) per unit	Shipping Weight (kg) per section	Operating Weight (kg) per unit
2	140	269	1043	1922
4	140	439	1193	2390
6	175	609	1356	2882
8	241	776	1533	3402
10	311	946	1706	3926

Engineering Data and Dimensions

LSWA-H & LRW-H

Models LSWA-H 10-3L36 thru LSWA-H 10-7O36



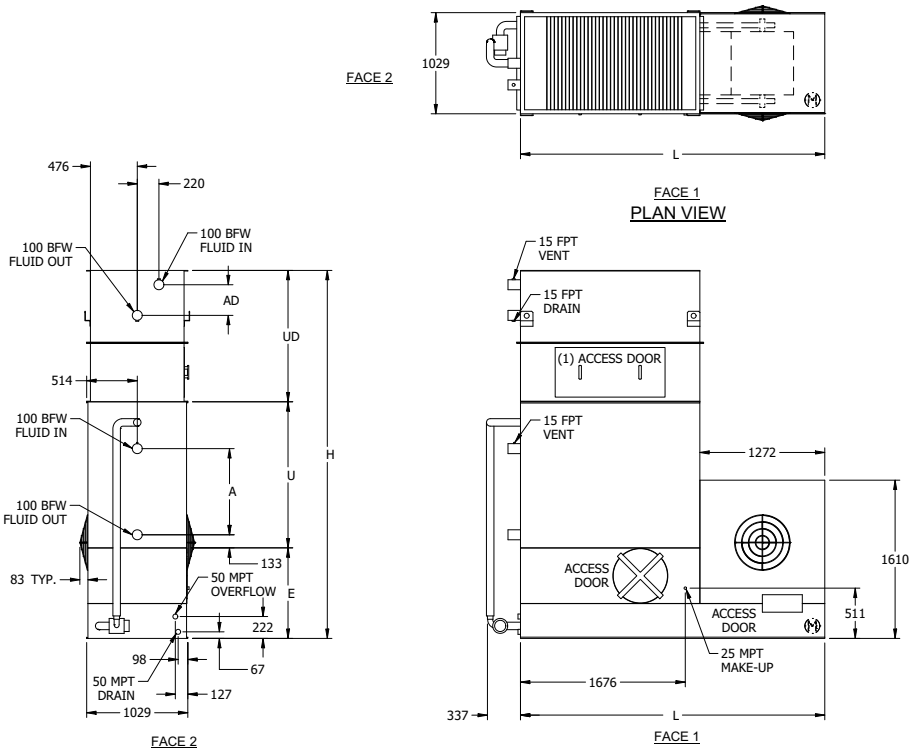
Model No.[1]	Weights (kg)[2]			Fans		Spray Pump	Coil Volume (liters)	Remote Sump[5]			Dimensions (mm)[6]					
	Shipping	Heaviest Section[3]	Operating	kW	Air Flow m³/s	kW		Liters[4] Required	Conn. Size (mm)	Operating Weight (kg)	Height H	Length L	Lower E	Upper U	Coil A	Upper UD
LSWA-H 10-3L36	16.946	6.495	25.796	(4) 18.5	88,9	(2)5.5	2831	4361	300	22661	5189	11036	2604	1248	565	1337
LSWA-H 10-3M36	17.037	6.586	25.886	(4) 22	95,7	(2)5.5	2831	4361	300	22752	5189	11036	2604	1248	565	1337
LSWA-H 10-3N36	17.327	6.876	26.177	(4) 30	101,7	(2)5.5	2831	4361	300	23042	5189	11036	2604	1248	565	1337
LSWA-H 10-3O36	17.345	6.895	26.195	(4) 37	112	(2)5.5	2831	4361	300	23061	5189	11036	2604	1248	565	1337
LSWA-H 10-4M36	19.586	6.586	29.334	(4) 22	93,8	(2)5.5	3736	4561	300	26399	5405	11036	2604	1464	781	1337
LSWA-H 10-4N36	19.876	6.876	29.624	(4) 30	99,7	(2)5.5	3736	4561	300	26689	5405	11036	2604	1464	781	1337
LSWA-H 10-4O36	19.895	6.895	29.642	(4) 37	109,8	(2)5.5	3736	4561	300	26707	5405	11036	2604	1464	781	1337
LSWA-H 10-5M36	22.054	7.734	32.699	(4) 22	92	(2)5.5	4641	4796	300	30001	5621	11036	2604	1680	997	1337
LSWA-H 10-5N36	22.344	7.734	32.990	(4) 30	97,7	(2)5.5	4641	4796	300	30291	5621	11036	2604	1680	997	1337
LSWA-H 10-5O36	22.362	7.734	33.008	(4) 37	107,6	(2)5.5	4641	4796	300	30309	5621	11036	2604	1680	997	1337
LSWA-H 10-6M36	24.603	9.008	36.156	(4) 22	90,1	(2)5.5	5542	5027	300	33684	5836	11036	2604	1895	1213	1337
LSWA-H 10-6N36	24.893	9.008	36.446	(4) 30	95,7	(2)5.5	5542	5027	300	33974	5836	11036	2604	1895	1213	1337
LSWA-H 10-6O36	24.911	9.008	36.464	(4) 37	105,4	(2)5.5	5542	5027	300	33992	5836	11036	2604	1895	1213	1337
LSWA-H 10-7M36	27.651	10.532	40.111	(4) 22	88,2	(2)5.5	6447	5027	300	37639	5836	11036	2604	1895	1213	1337
LSWA-H 10-7N36	27.941	10.532	40.401	(4) 30	93,7	(2)5.5	6447	5027	300	37929	5836	11036	2604	1895	1213	1337
LSWA-H 10-7O36	27.959	10.532	40.420	(4) 37	103,2	(2)5.5	6447	5027	300	37948	5836	11036	2604	1895	1213	1337

NOTES:
1. Model Numbers end in "-Z" for units with Series Flow piping configuration. Series Flow units may require additional coil connections and will require crossover piping.
2. Weights don't include ARID Fin-Pak Dry Cooling Coil section.
3. Heaviest section is the coil section.
4. Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300mm would normally be sufficient).
5. When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.
6. Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints or dimensions, quantity of coil connections, and piping configuration.

ARID Fin-Pak Cooling Coil Section

ARID Fin-Pak Coil Rows	AD (mm)	Coil Volume (liters) per unit	Shipping Weight (kg) per section	Operating Weight (kg) per unit
2	140	360	1406	2518
4	140	625	1637	3242
6	175	890	1887	4010
8	241	1147	2159	4814
10	311	1412	2436	5625

MODELS LRW-H 3-2E6 THRU LRW-H 3-5J6



Model No.[1]	Weights (kg) [2]		Fans		Spray Pump	Coil Volume (liters)	Remote Sump [4]			Dimensions (mm) [5]					
	Shipping	Operating	kW	Air Flow m³/s	kW		Liters [3] Required	Conn. Size (mm)	Operating Weight (kg)	Height H	Length L	Lower E	Upper U	Coil A	Upper UD
LRW-H 3-2E6	984	1.538	1,5	3,4	0,4	114	167	100	1134	3127	3096	921	914	305	1337
LRW-H 3-2F6	998	1.551	2,2	3,8	0,4	114	167	100	1148	3127	3096	921	914	305	1337
LRW-H 3-2G6	1.002	1.556	4	4,3	0,4	114	167	100	1152	3127	3096	921	914	305	1337
LRW-H 3-2H6	1.025	1.579	5,5	5,1	0,4	114	167	100	1175	3127	3096	921	914	305	1337
LRW-H 3-2I6	1.030	1.588	7,5	5,8	0,4	114	167	100	1179	3127	3096	921	914	305	1337
LRW-H 3-3F6	1.129	1.728	2,2	3,7	0,4	163	167	100	1324	3363	3096	921	1105	495	1337
LRW-H 3-3G6	1.134	1.733	4	4,2	0,4	163	167	100	1329	3363	3096	921	1105	495	1337
LRW-H 3-3H6	1.157	1.755	5,5	5	0,4	163	167	100	1352	3363	3096	921	1105	495	1337
LRW-H 3-3I6	1.161	1.764	7,5	5,7	0,4	163	167	100	1361	3363	3096	921	1105	495	1337
LRW-H 3-4F6	1.270	1.919	2,2	3,6	0,4	208	167	100	1515	3553	3096	921	1295	686	1337
LRW-H 3-4G6	1.275	1.923	4	4,1	0,4	208	167	100	1520	3553	3096	921	1295	686	1337
LRW-H 3-4H6	1.297	1.946	5,5	4,9	0,4	208	167	100	1542	3553	3096	921	1295	686	1337
LRW-H 3-4I6	1.302	1.955	7,5	5,6	0,4	208	167	100	1551	3553	3096	921	1295	686	1337
LRW-H 3-5G6	1.433	2.127	4	4	0,4	254	167	100	1724	3744	3096	921	1486	876	1337
LRW-H 3-5H6	1.456	2.150	5,5	4,8	0,4	254	167	100	1746	3744	3096	921	1486	876	1337
LRW-H 3-5I6	1.461	2.159	7,5	5,5	0,4	254	167	100	1751	3744	3096	921	1486	876	1337
LRW-H 3-5J6	1.520	2.214	11	6	0,4	254	167	100	1810	3744	3096	921	1486	876	1337

NOTES:
1. Model Numbers end in "-Z" for units with Series Flow piping configuration. Series Flow units may require additional coil connections and will require crossover piping.
2. Weights don't include ARID Fin-Pak Dry Cooling Coil section.
3. Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300mm would normally be sufficient).
4. When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.
5. Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints or dimensions, quantity of coil connections, and piping configuration.

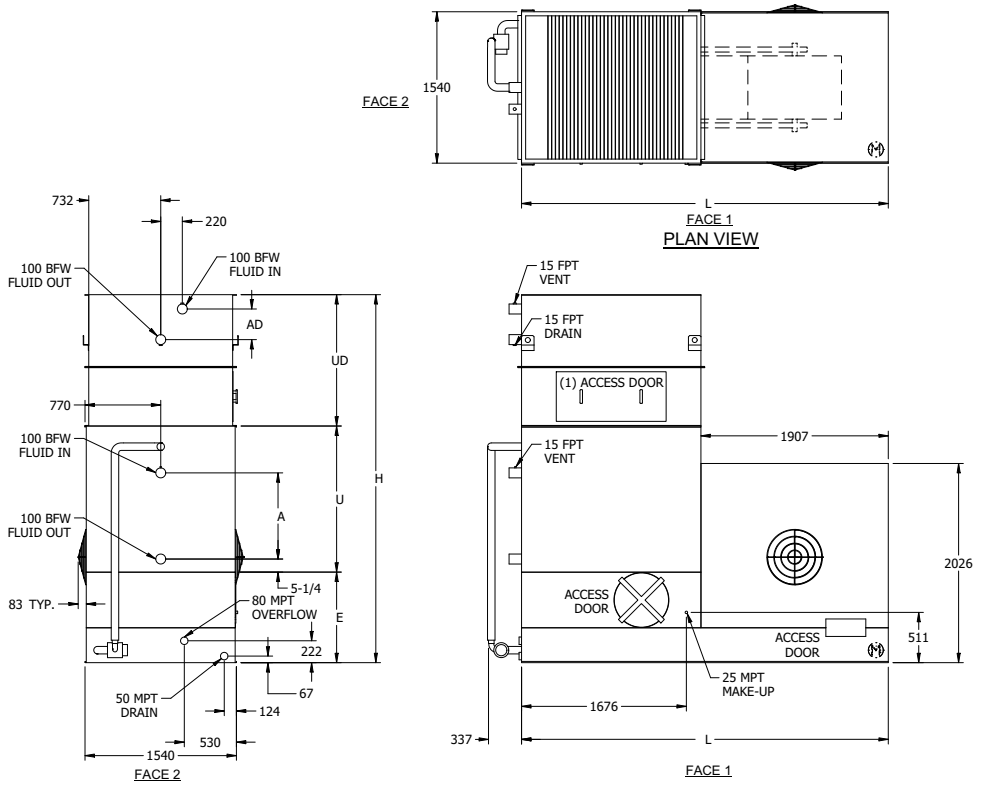
ARID Fin-Pak Cooling Coil Section

ARID Fin-Pak Coil Rows	AD (mm)	Coil Volume (liters) per unit	Shipping Weight (kg) per section	Operating Weight (kg) per unit
2	140	30	358	273
4	140	42	381	307
6	175	57	408	345
8	241	68	435	385
10	311	79	463	426

Engineering Data and Dimensions

LSWA-H & LRW-H

Models LRW-H 5-2G6 thru LRW-H 5-5J6



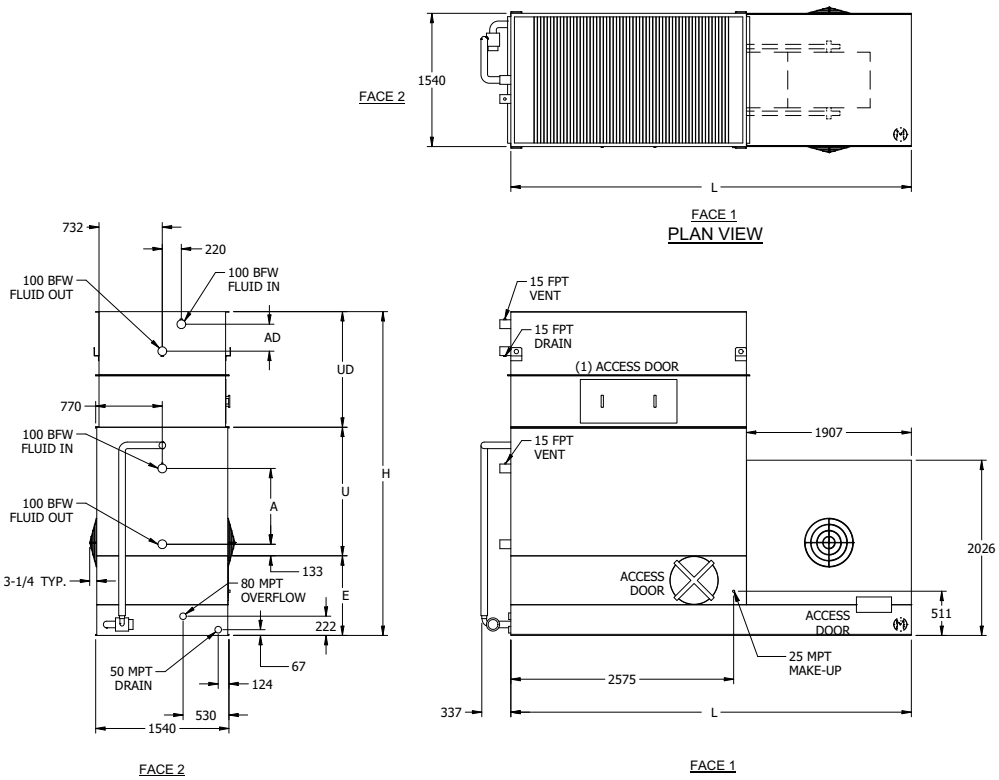
Model No.[1]	Weights (kg) [2]		Fans		Spray Pump	Coil	Remote Sump [4]			Dimensions (mm) [5]					
	Shipping	Operating	kW	Air Flow m³/s	kW	Volume (liters)	Liters [3] Required	Conn. Size (mm)	Operating Weight (kg)	Height H	Length L	Lower E	Upper U	Coil A	Upper UD
LRW-H 5-2G6	1.488	2.445	4	6,2	0,75	178	257	150	1755	3127	3731	921	914	305	1337
LRW-H 5-2H6	1.510	2.468	5,5	7,4	0,75	178	257	150	1778	3127	3731	921	914	305	1337
LRW-H 5-2I6	1.520	2.477	7,5	8,4	0,75	178	257	150	1787	3127	3731	921	914	305	1337
LRW-H 5-2J6	1.574	2.531	11	9,3	0,75	178	257	150	1842	3127	3731	921	914	305	1337
LRW-H 5-3G6	1.692	2.726	4	6,1	0,75	250	257	150	2037	3363	3731	921	1105	495	1337
LRW-H 5-3H6	1.715	2.749	5,5	7,2	0,75	250	257	150	2059	3363	3731	921	1105	495	1337
LRW-H 5-3I6	1.724	2.758	7,5	8,3	0,75	250	257	150	2068	3363	3731	921	1105	495	1337
LRW-H 5-3J6	1.778	2.812	11	9,1	0,75	250	257	150	2123	3363	3731	921	1105	495	1337
LRW-H 5-4H6	1.928	3.035	5,5	7,1	0,75	322	257	150	2345	3553	3731	921	1295	686	1337
LRW-H 5-4I6	1.937	3.044	7,5	8,1	0,75	322	257	150	2354	3553	3731	921	1295	686	1337
LRW-H 5-4J6	1.991	3.098	11	8,9	0,75	322	257	150	2409	3553	3731	921	1295	686	1337
LRW-H 5-5H6	2.164	3.338	5,5	6,9	0,75	397	257	150	2649	3744	3731	921	1486	876	1337
LRW-H 5-5I6	2.173	3.348	7,5	7,9	0,75	397	257	150	2658	3744	3731	921	1486	876	1337
LRW-H 5-5J6	2.227	3.402	11	8,7	0,75	397	257	150	2712	3744	3731	921	1486	876	1337

NOTES:
1. Model Numbers end in "-Z" for units with Series Flow piping configuration. Series Flow units may require additional coil connections and will require crossover piping.
2. Weights don't include ARID Fin-Pak Dry Cooling Coil section.
3. Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300mm would normally be sufficient).
4. When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.
5. Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints or dimensions, quantity of coil connections, and piping configuration.

ARID Fin-Pak Cooling Coil Section

ARID Fin-Pak Coil Rows	AD (mm)	Coil Volume (liters) per unit	Shipping Weight (kg) per section	Operating Weight (kg) per unit
2	140	45	517	348
4	140	64	549	402
6	175	83	590	460
8	241	102	630	522
10	311	121	676	583

MODELS LRW-H 5-3I9 THRU LRW-H 5-7L9



Model No.[1]	Weights (kg) [2]		Fans		Spray Pump	Coil	Remote Sump [4]			Dimensions (mm) [5]					
	Shipping	Operating	kW	Air Flow m³/s	kW	Volume (liters)	Liters [3] Required	Conn. Size (mm)	Operating Weight (kg)	Height H	Length L	Lower E	Upper U	Coil A	Upper UD
LRW-H 5-3I9	2.209	3.742	7,5	10,1	1,1	363	390	150	2744	3363	4629	921	1105	495	1337
LRW-H 5-3J9	2.263	3.797	11	11,1	1,1	363	390	150	2799	3363	4629	921	1105	495	1337
LRW-H 5-3K9	2.291	3.824	15	12,7	1,1	363	390	150	2826	3363	4629	921	1105	495	1337
LRW-H 5-3L9	2.304	3.837	18,5	14	1,1	363	390	150	2839	3363	4629	921	1105	495	1337
LRW-H 5-4J9	2.590	4.237	11	10,9	1,1	477	390	150	3239	3553	4629	921	1295	686	1337
LRW-H 5-4K9	2.617	4.264	15	12,5	1,1	477	390	150	3266	3553	4629	921	1295	686	1337
LRW-H 5-4L9	2.631	4.277	18,5	13,7	1,1	477	390	150	3279	3553	4629	921	1295	686	1337
LRW-H 5-5J9	2.930	4.690	11	10,7	1,1	587	390	150	3692	3744	4629	921	1486	876	1337
LRW-H 5-5K9	2.957	4.717	15	12,2	1,1	587	390	150	3719	3744	4629	921	1486	876	1337
LRW-H 5-5L9	2.971	4.731	18,5	13,5	1,1	587	390	150	3733	3744	4629	921	1486	876	1337
LRW-H 5-6J9	3.225	5.094	11	10,5	1,1	700	390	150	4096	3934	4629	921	1676	1067	1337
LRW-H 5-6K9	3.252	5.121	15	12	1,1	700	390	150	4123	3934	4629	921	1676	1067	1337
LRW-H 5-6L9	3.266	5.135	18,5	13,2	1,1	700	390	150	4137	3934	4629	921	1676	1067	1337
LRW-H 5-7J9	3.592	5.570	11	10,2	1,1	810	390	150	4572	4080	4629	921	1822	1213	1337
LRW-H 5-7K9	3.620	5.597	15	11,7	1,1	810	390	150	4599	4080	4629	921	1822	1213	1337
LRW-H 5-7L9	3.633	5.611	18,5	12,9	1,1	810	390	150	4613	4080	4629	921	1822	1213	1337

NOTES:
1. Model Numbers end in "-Z" for units with Series Flow piping configuration. Series Flow units may require additional coil connections and will require crossover piping.
2. Weights don't include ARID Fin-Pak Dry Cooling Coil section.
3. Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300mm would normally be sufficient).
4. When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.
5. Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints or dimensions, quantity of coil connections, and piping configuration.

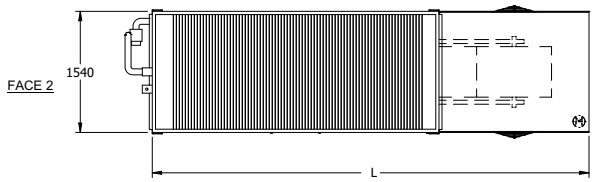
ARID Fin-Pak Cooling Coil Section

ARID Fin-Pak Coil Rows	AD (mm)	Coil Volume (liters) per unit	Shipping Weight (kg) per section	Operating Weight (kg) per unit
2	140	57	630	442
4	140	87	685	526
6	175	117	744	617
8	241	148	812	714
10	311	178	875	811

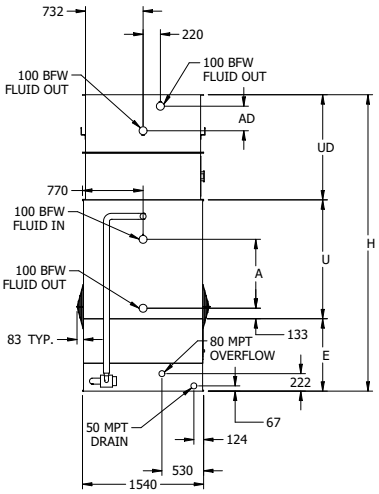
Engineering Data and Dimensions

LSWA-H & LRW-H

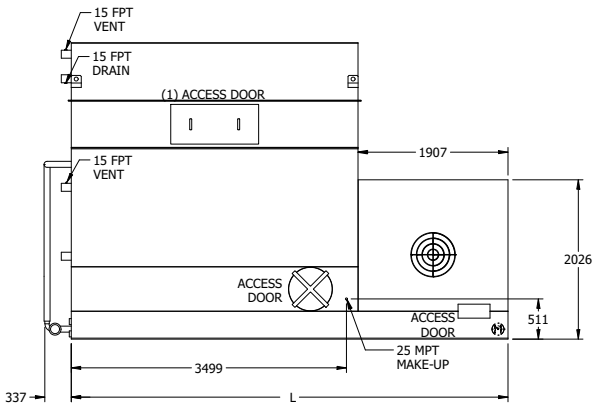
Models LRW-H 5-3K12 thru LRW-H 5-7O12



FACE 1
PLAN VIEW



FACE 2



FACE 1

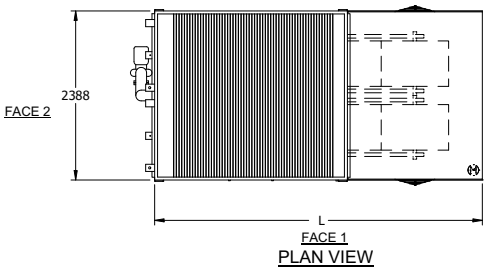
Model No.[1]	Weights (kg)[2]		Fans		Spray Pump	Coil Volume (liters)	Remote Sump[4]			Dimensions (mm)[5]					
	Shipping	Operating	kW	Air Flow m³/s	kW		Liters[3] Required	Conn. Size (mm)	Operating Weight (kg)	Height H	Length L	Lower E	Upper U	Coil A	Upper UD
LRW-H 5-3K12	2.744	4.813	15	14,3	1,5	481	530	200	3497	3388	5553	921	1130	565	1337
LRW-H 5-3L12	2.758	4.826	18,5	15,7	1,5	481	530	200	3511	3388	5553	921	1130	565	1337
LRW-H 5-3M12	2.781	4.849	22	16,9	1,5	481	530	200	3533	3388	5553	921	1130	565	1337
LRW-H 5-3N12	2.853	4.921	30	18	1,5	481	530	200	3606	3388	5553	921	1130	565	1337
LRW-H 5-4K12	3.184	5.402	15	14	1,5	628	530	200	4087	3579	5553	921	1321	781	1337
LRW-H 5-4L12	3.198	5.416	18,5	15,4	1,5	628	530	200	4100	3579	5553	921	1321	781	1337
LRW-H 5-4M12	3.221	5.439	22	16,6	1,5	628	530	200	4123	3579	5553	921	1321	781	1337
LRW-H 5-4N12	3.293	5.511	30	17,6	1,5	628	530	200	4196	3579	5553	921	1321	781	1337
LRW-H 5-5L12	3.624	5.996	18,5	15,1	1,5	780	530	200	4681	3769	5553	921	1511	997	1337
LRW-H 5-5M12	3.647	6.019	22	16,2	1,5	780	530	200	4704	3769	5553	921	1511	997	1337
LRW-H 5-5N12	3.719	6.092	30	17,3	1,5	780	530	200	4776	3769	5553	921	1511	997	1337
LRW-H 5-5O12	3.724	6.096	37	19	1,5	780	530	200	4781	3769	5553	921	1511	997	1337
LRW-H 5-6M12	4.046	6.568	22	15,9	1,5	927	530	200	5253	3960	5553	921	1702	1213	1337
LRW-H 5-6N12	4.119	6.641	30	16,9	1,5	927	530	200	5325	3960	5553	921	1702	1213	1337
LRW-H 5-6O12	4.123	6.645	37	18,6	1,5	927	530	200	5330	3960	5553	921	1702	1213	1337
LRW-H 5-7M12	4.618	7.285	22	15,6	1,5	1079	530	200	5969	4106	5553	921	1848	1213	1337
LRW-H 5-7N12	4.690	7.357	30	16,6	1,5	1079	530	200	6042	4106	5553	921	1848	1213	1337
LRW-H 5-7O12	4.695	7.362	37	18,2	1,5	1079	530	200	6046	4106	5553	921	1848	1213	1337

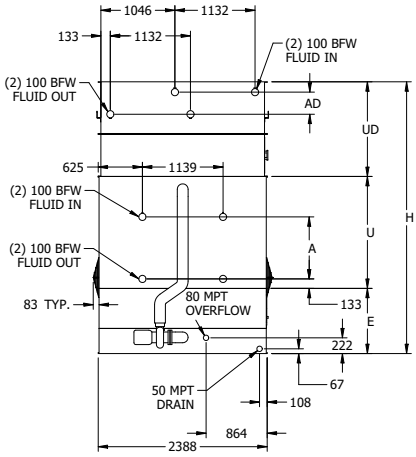
NOTES:
1. Model Numbers end in "-Z" for units with Series Flow piping configuration. Series Flow units may require additional coil connections and will require crossover piping.
2. Weights don't include ARID Fin-Pak Dry Cooling Coil section.
3. Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300mm would normally be sufficient).
4. When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.
5. Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints or dimensions, quantity of coil connections, and piping configuration.

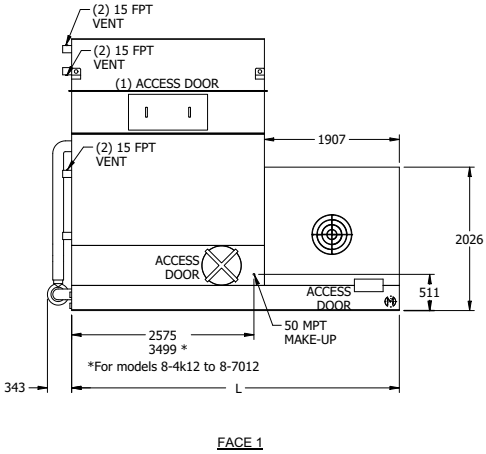
ARID Fin-Pak Cooling Coil Section

ARID Fin-Pak Coil Rows	AD (mm)	Coil Volume (liters) per unit	Shipping Weight (kg) per section	Operating Weight (kg) per unit
2	140	68	798	572
4	140	110	875	688
6	175	151	953	811
8	241	193	1043	941
10	311	238	1129	1072

MODELS LRW-H 8-3K9 THRU LRW-H 8-5N9







Model No.[1]	Weights (kg)[2]		Fans		Spray Pump	Coil Volume (liters)	Remote Sump[4]			Dimensions (mm)[5]					
	Shipping	Operating	kW	Air Flow m³/s	kW		Liters[3] Required	Conn. Size (mm)	Operating Weight (kg)	Height H	Length L	Lower E	Upper U	Coil A	Upper UD
LRW-H 8-3K9	3.393	5.502	15	17,1	1,5	575	344	200	4051	3458	4629	921	1200	495	1337
LRW-H 8-3L9	3.406	5.516	18,5	18,8	1,5	575	344	200	4064	3458	4629	921	1200	495	1337
LRW-H 8-3M9	3.429	5.538	22	20,3	1,5	575	344	200	4087	3458	4629	921	1200	495	1337
LRW-H 8-3N9	3.502	5.611	30	21,5	1,5	575	344	200	4159	3458	4629	921	1200	495	1337
LRW-H 8-4K9	3.883	6.164	15	16,8	1,5	750	344	200	4713	3649	4629	921	1391	686	1337
LRW-H 8-4L9	3.896	6.178	18,5	18,4	1,5	750	344	200	4726	3649	4629	921	1391	686	1337
LRW-H 8-4M9	3.919	6.201	22	19,9	1,5	750	344	200	4749	3649	4629	921	1391	686	1337
LRW-H 8-4N9	3.992	6.273	30	21,1	1,5	750	344	200	4822	3649	4629	921	1391	686	1337
LRW-H 8-5L9	4.509	6.972	18,5	18,1	1,5	927	344	200	5520	3839	4629	921	1581	876	1337
LRW-H 8-5M9	4.531	6.994	22	19,5	1,5	927	344	200	5543	3839	4629	921	1581	876	1337
LRW-H 8-5N9	4.604	7.067	30	20,7	1,5	927	344	200	5615	3839	4629	921	1581	876	1337

NOTES:
1. Model Numbers end in "-Z" for units with Series Flow piping configuration. Series Flow units may require additional coil connections and will require crossover piping.
2. Weights don't include ARID Fin-Pak Dry Cooling Coil section.
3. Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300mm would normally be sufficient).
4. When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.
5. Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints or dimensions, quantity of coil connections, and piping configuration.

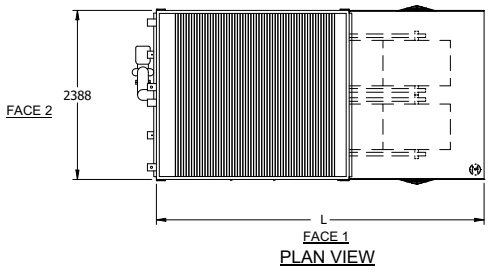
ARID Fin-Pak Cooling Coil Section

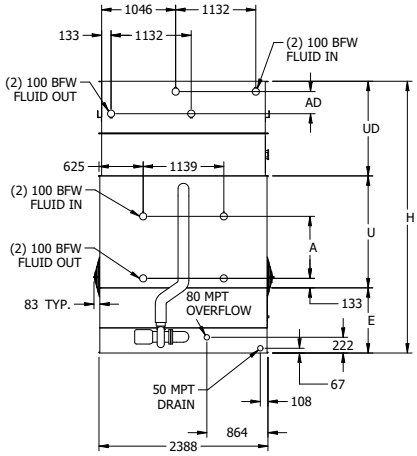
ARID Fin-Pak Coil Rows	AD (mm)	Coil Volume (liters) per unit	Shipping Weight (kg) per section	Operating Weight (kg) per unit
2	140	83	789	584
4	140	132	875	717
6	175	178	971	858
8	241	227	1070	1007
10	311	276	1170	1156

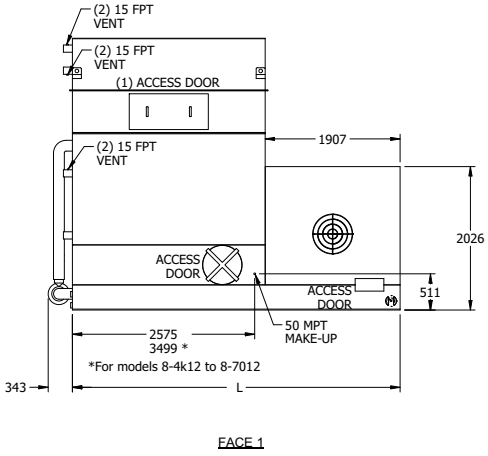
Engineering Data and Dimensions

LSWA-H & LRW-H

Models LRW-H 8-4L12 thru LRW-H 8-7P12







Model No.[1]	Weights (kg) [2]		Fans		Spray Pump	Coil Volume (liters)	Remote Sump [4]			Dimensions (mm) [5]					
	Shipping	Operating	kW	Air Flow m³/s	kW		Liters [3] Required	Conn. Size (mm)	Operating Weight (kg)	Height H	Length L	Lower E	Upper U	Coil A	Upper UD
LRW-H 8-4L12	4.645	7.756	18,5	21,5	1,5	992	466	250	5815	3649	5553	921	1391	686	1337
LRW-H 8-4M12	4.667	7.779	22	23,2	1,5	992	466	250	5838	3649	5553	921	1391	686	1337
LRW-H 8-4N12	4.740	7.852	30	24,6	1,5	992	466	250	5910	3649	5553	921	1391	686	1337
LRW-H 8-4O12	4.745	7.856	37	27,1	1,5	992	466	250	5915	3649	5553	921	1391	686	1337
LRW-H 8-4P12	4.835	7.947	45	29,2	1,5	992	466	250	6006	3649	5553	921	1391	686	1337
LRW-H 8-5M12	5.330	8.677	22	22,7	1,5	1226	466	250	6736	3839	5553	921	1581	876	1337
LRW-H 8-5N12	5.402	8.750	30	24,2	1,5	1226	466	250	6808	3839	5553	921	1581	876	1337
LRW-H 8-5O12	5.407	8.754	37	26,6	1,5	1226	466	250	6813	3839	5553	921	1581	876	1337
LRW-H 8-5P12	5.498	8.845	45	28,6	1,5	1226	466	250	6904	3839	5553	921	1581	876	1337
LRW-H 8-6N12	6.028	9.612	30	23,7	1,5	1461	466	250	7670	4030	5553	921	1772	1067	1337
LRW-H 8-6O12	6.033	9.616	37	26	1,5	1461	466	250	7675	4030	5553	921	1772	1067	1337
LRW-H 8-6P12	6.123	9.707	45	28	1,5	1461	466	250	7765	4030	5553	921	1772	1067	1337
LRW-H 8-7N12	6.772	10.591	30	23,2	1,5	1696	466	250	8650	4176	5553	921	1918	1213	1337
LRW-H 8-7O12	6.777	10.596	37	25,5	1,5	1696	466	250	8655	4176	5553	921	1918	1213	1337
LRW-H 8-7P12	6.867	10.687	45	27,5	1,5	1696	466	250	8745	4176	5553	921	1918	1213	1337

NOTES:
1. Model Numbers end in "-Z" for units with Series Flow piping configuration. Series Flow units may require additional coil connections and will require crossover piping.
2. Weights don't include ARID Fin-Pak Dry Cooling Coil section.
3. Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300mm would normally be sufficient).
4. When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.
5. Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints or dimensions, quantity of coil connections, and piping configuration.

ARID Fin-Pak Cooling Coil Section

ARID Fin-Pak Coil Rows	AD (mm)	Coil Volume (liters) per unit	Shipping Weight (kg) per section	Operating Weight (kg) per unit
2	140	102	998	744
4	140	167	1116	928
6	175	235	1243	1120
8	241	299	1374	1321
10	311	363	1510	1522

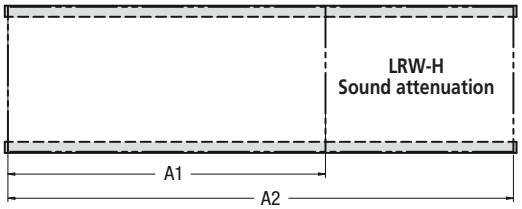
LSWA-H & LRW-H

STRUCTURAL STEEL SUPPORT

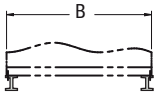
Structural Steel Support

The recommended method of support for the LSWA-H & LRW-H closed evaporative coolers is two structural "I" beams located under the outer flanges and running the entire length of the unit. Intake sound attenuation must be fully supported. An extended "I" beam is required for the intake attenuation of LRW-H units. A third "I" beam is required for the intake attenuation of LSWA-H units.

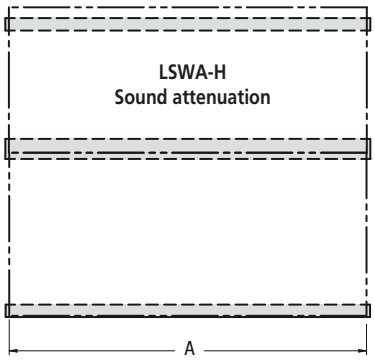
Mounting holes 19 mm in diameter, are located at the bottom channels of the pan section to provide for bolting to the structural steel. Refer to certified drawings from the factory for bolt hole locations. See the drawing and chart below for unit dimensions.



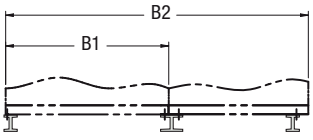
Plan View



End Elevation



Plan View



End Elevation

LRW-H Dimensions			
Model No.	A1	A2	B
3-2E6 to 3-5J6	3097	4205	1034
5-2G6 to 5-5J6	3734	4842	1544
5-3I9 to 5-7L9	4632	5740	1544
5-3K12 to 5-7O12	5556	6664	1544
8-3K9 to 8-5N9	4632	5740	2391
8-4L12 to 8-7P12	5556	6664	2391

LSWA Dimensions					
			Compact	Basic	Extended
Box size	A	B1	B2	B2	B2
4x6	1826	1235	2378	2648	3048
4x9	2724	1235	2378	2648	3048
4x12	3645	1235	2378	2648	3048
4x18	5486	1235	2378	2648	3048
5x12	3645	1651	2794	3064	3453
5x18	5483	1651	2794	3064	3453
8x12	3651	2388	3531	3800	4188
8x18	5486	2388	3531	3800	4188
8x24	7341	2388	3531	3800	4188
8x36	11011	2388	3531	3800	4188
10x12	3651	2991	4134	4404	4791
10x18	5493	2991	4134	4404	4791
10x24	7344	2991	4134	4404	4791
10x36	11027	2991	4134	4404	4791

Note:

1) Beams should be level to within 1/360 of unit length, not to exceed 13 mm before setting the unit in place.
2) Do not level the unit by shimming between it and the "I" beams as this will not provide proper longitudinal support.
3) Beams should be sized in accordance with accepted structural practices. Support beams and anchor bolts are to be furnished by others.

SPECIFICATIONS

LSWA-H & LRW-H

1.0 FORCED DRAFT CLOSED CIRCUIT COOLER

1.1 General – LSWA-H

Furnish and install factory assembled closed circuit cooler of blow through, counterflow design with a horizontal single air side entry and a vertical air discharge. The unit shall be completely factory assembled and be conform to the specifications and schedules.

The total fan power should not exceed _____ kW and the total overall unit dimensions should not exceed the following:
Length: mm
Width: mm
Height: mm

The unit will be delivered in three parts: the bottom section (pan-fan), the middle section (heat transfer - wet coil and spray system) and the top section (heat transfer – dry coil). The unit (top, middle and bottom section) shall be joined together with elastic sealer and bolted together with corrosion resistance fasteners.

Approved manufacturer: Evapco – LSWA-H_____

General – LRW-H

Furnish and install factory assembled closed circuit cooler of blow through, counterflow design with a horizontal single air side entry and a vertical air discharge. The unit shall be completely factory assembled and be conform to the specifications and schedules.

The total fan power should not exceed _____ kW and the total overall unit dimensions should not exceed the following:
Length: mm
Width: mm
Height: mm

The unit will be delivered in two parts: the bottom section (pan, fan, wet coil and spray system) and the top section (heat transfer - wet coil and spray section). The unit (top, middle and bottom section) shall be joined together with elastic sealer and bolted together with corrosion resistance fasteners.

Approved manufacturer: Evapco – LRW-H_____

1.2 Thermal Performance – Performance Warranty

The tower shall be capable of performing the thermal duties as shown in the schedule and on drawings and its design, thermal rating shall be guaranteed by the manufacturer.

1.3 Applicable Standards

CTI ATC 128 Test Code for Measurement of Sound from Water Cooling Towers.

1.4 Submittals

a) The manufacturer shall submit a five year history of the proposed type of closed circuit cooler with a minimum of 10 installations for similar sized equipment.
b) Shop drawings: submit shop drawings indicating dimensions, weight loadings and required clearances.
c) Product data: submit manufacturer's technical product data, original selection printouts and clearance requirements.
d) Complete noise data sheet for the selected closed circuit cooler.
e) Maintenance data for the closed circuit cooler and accessories.
f) The closed circuit cooler manufacturer shall provide factory test run certificates of the fans and fan motor.

1.5 Product Delivery – Storage and Handling

a) The contractor shall make the provisions for proper storage at site before installation and handle the product per the instructions of the manufacturer.
b) Once installed provide the necessary measures that the units remain clean and protected from any dust and mechanical damage.

1.6 Quality Assurance

a) The manufacturer shall have a quality assurance system in place which is certified by an accredited registrar and complying with the requirements of ISO 9001:2008. This is to guarantee a consistent level of product and service quality.
b) Manufacturers without ISO 9001:2008 certification are not acceptable.

1.7 Warranty

a) The products will be warranted for a period of minimum two years from the date of shipment.

2.0 PRODUCT

2.1 Construction – Corrosion Resistance

STANDARD EXECUTION – GALVANIZED STEEL Z-725

a) The structure and all steel elements of the pan and casing shall be constructed of Z-725 hot dip galvanized steel for long life and durability. Alternatives with lower zinc layer thickness and external paint or coating are not accepted as equal.
b) The strainer shall be made of stainless steel type 304L.
c) During fabrication all panel edges shall be coated with a 95 % pure zinc compound.
d) Casing materials shall be of non flammable construction.

OPTIONAL EXECUTION – BASIN IN SST 304L

a) The structure and all steel elements of the pan up to the water level shall be made of SST 304L.
b) Alternatives with hot dip galvanized steel and epoxy coatings in lieu of the SST 304L are not considered equal and will not be accepted.
c) All other steel components and the casing shall be constructed of Z-725 hot dip galvanized steel for long life and durability. Alternatives with lower zinc layer thickness and external paint or coating are not accepted as equal.
d) The strainer shall be made of stainless steel type 304L.
e) During fabrication all galvanized steel panel edges shall be coated with a 95 % pure zinc compound.
f) Casing materials shall be of non flammable construction.

OPTIONAL EXECUTION – COMPLETE UNIT IN STAINLESS STEEL SST 304L (except moving parts)

a) The structure and all steel elements shall be made of SST 304L.
b) Alternatives with hot dip galvanized steel and epoxy coatings to replace the SST 304L are not considered equal and accepted.
c) Casing materials shall be of non flammable construction.

2.2 Pan / Fan section

a) The heat transfer section shall be removable from the pan to provide easy handling and rigging.
b) The pan – fan section shall include fans and drives mounted and aligned in the factory. These items shall be located in the dry air stream.
c) Standard pan accessories shall included circular access doors, strainer(s) of anti vortex design, brass make up valve with unsinkable, foam filled plastic float arranged for easy adjustment.
d) The basin bottom shall be sloped to provide drainage of the complete basin section.

2.3 Mechanical Equipment

2.3.1 Fan(s)

a) Fans shall be dynamically balanced forwardly curved centrifugal type fans.

b) Fan housings shall have curved inlet rings for efficient air entry and rectangular discharge cowls which extend into the basin to increase fan efficiency and to prevent water from splashing into the fans.
c) Curved inlet rings shall be made of the same material as the closed circuit cooler.
d) All fans will undergo a dry running test in the factory after being installed in the closed circuit cooler basin.
e) The fans will be mounted on either a solid shaft with forged bearing journals.
f) Easy to remove fan screens shall be provided to avoid direct contact with the moving parts.

2.3.2 Bearings and Drive

a) The fan shaft(s) shall be supported by heavy duty, self aligning pillow block bearings with cast iron housings and lubrication fittings for maintenance.
b) The fan drives shall be V belt type with taper lock sheaves designed for 150 % of the motor nameplate horsepower.
c) The bearings shall be rated for an L-10 life of 40.000 hours.

2.3.3 Motor

a) The fan motor shall be Totally Enclosed, Fan Cooled (TEFC), squirrel cage, ball bearing type motor.
b) The motor shall be minimum IP 55 degree of protection, Class F insulation, Service Factor 1 and selected for the appropriate closed circuit cooler duty and the correct ambient temperature but minimum 40°C.
c) Motor bearings shall be greased for life or external grease lines shall be provided.
d) The motor shall be mounted on an adjustable heavy duty steel motor base.
e) The motor selection shall be selected for the appropriate external static pressure.
f) The motor power supply shall be ___ volts, ___ Hertz and ___ Phase.

2.4. Casing Section

2.4.1 Latent Heat Transfer Coil

a) The closed circuit cooler shall use heat exchange coils of an elliptical tube design to obtain lower air flow resistance and allow higher water loadings around the tubes.
b) The heat transfer coil(s) shall be made of all prime surface, encased in a steel framework and hot dip galvanized after fabrication as a complete assembly.
c) The tubes shall be arranged in a self spacing, staggered pattern in the direction of air flow for maximum heat transfer efficiency and minimum pressure drop.
d) The heat exchange coils shall be air pressure tested under water.
e) The design and manufacturing process shall be approved and in accordance with the "Pressure Equipment Directive" – PED 97 / 23 EC.
f) The manufacturer shall be responsible for the manufacturing and performance testing of the entire heat transfer coil. This is to assure single source responsibility.
g) The casing shall totally encase the complete coil section to protect the complete coil from direct atmospheric contact.
h) The pressure drop of the process fluid through the coil shall not exceed ___kPa.

OPTIONAL – Latent Heat Transfer Coil in SST 304L

a) The closed circuit cooler shall use heat exchange coils of an elliptical tube design to obtain lower air flow resistance and allow higher water loadings around the tubes.
b) The heat transfer coil(s) shall be made of SST 304L encased in an SST 304L framework and passivated after fabrication as a complete assembly.
c) The tubes shall be arranged in a self spacing, staggered pattern in the direction of air flow for maximum heat transfer efficiency and minimum pressure drop.
d) The heat exchange coils shall be air pressure tested under water.
e) The design and manufacturing process shall be approved and in accordance with the "Pressure Equipment Directive" – PED 97 / 23 EC.
f) The manufacturer shall be responsible for the manufacturing and performance testing of the entire heat transfer coil. This is to assure single source responsibility.
g) The casing shall totally encase the complete coil section to protect the complete coil from direct atmospheric contact.
h) The pressure drop of the process fluid through the coil shall not exceed ___kPa.

2.4.2 Sensible Heat Transfer Coil

a) The sensible heat transfer coil is installed in the air discharge of the closed circuit cooler and should be piped in series with the wet coil.
b) The sensible heat transfer coil shall be constructed of copper tubes with tubular copper headers.
c) To maximize heat transfer, tubes shall be arranged in a staggered design and be equipped with fins.
d) The fins should have fully drawn collars to maintain consistent fin spacing and continuous surface contact over the entire tube.
e) The fins should be made of Aluminum Magnesium of at least 0.7% to have good corrosion resistance and the distance between the fins should be 3 mm to avoid clogging.
f) The coils should be placed in a heavy-duty galvanized Z-725 frame. The frame should have full collars to support the coil correctly and avoid damaging the tubes.
g) The dry coil shall be pneumatically tested under water at 16 barg.

OPTIONAL – Sensible Heat Transfer Coil in SST 304L

a) The sensible heat transfer coil is installed in the air discharge of the closed circuit cooler and should be piped in series with the wet coil.
b) The sensible heat transfer coil shall be constructed of SST 304L tubes with tubular SST 304L headers.
c) To maximize heat transfer, tubes shall be arranged in a staggered design and be equipped with fins.
d) The fins should have fully drawn collars to maintain consistent fin spacing and continuous surface contact over the entire tube.
e) The fins should be made of Aluminum Magnesium of at least 0.7% to have good corrosion resistance and the distance between the fins should be 3 mm to avoid clogging.
f) The coils should be placed in a heavy-duty SST 304L frame. The frame should have full collars to support the coil correctly and avoid damaging the tubes.
g) The dry coil shall be pneumatically tested under water at 16 barg.

2.4.3 Water Distribution

a) The spray header and branches shall be constructed of Schedule 40, Polyvinyl Chloride (PVC) pipe for corrosion resistance and shall have a steel connection to attach the external piping.
b) The internal tower water distribution piping shall be easily removable for cleaning purposes.
c) The water shall be distributed over the fill by precision molded ABS spray nozzles with large minimum 25 mm orifice openings and integral sludge ring to eliminate clogging.
d) The nozzles shall be threaded into the water distribution piping to assure positive positioning.
e) Each cell shall have only one hot water return inlet, otherwise the closed circuit cooler manufacturer shall provide the necessary extra provisions (piping, balancing valves, …) to achieve the same at no extra cost.

2.4.4 Drift Eliminators

a) The drift eliminators shall be constructed entirely inert polyvinyl (PVC) that has been specially treated to resist ultra violet light. external piping.

2.5 Sound Levels

The maximum sound pressure levels (dB) measured 15m from

the closed circuit cooler operating at full fan speed shall not exceed the sound levels detailed below.

Location	63Hz	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz	dB(A)
Discharge									
Air inlet									

3.0 ACCESSORIES (optional)

3.1 Electric Heaters

a) The closed circuit cooler cold water basin shall be provided with a electric heater package to prevent freezing of the water in the cold water basin.

b) The electric heater package includes: electric heater elements and a combination of thermostat and low water level cutoff.

c) The heaters shall be selected to maintain 4°C basin water temperature at ___C ambient

d) The heater(s) shall be ___V / ___ phase / ___ Hz electric power supply.

3.2 Three Probe Electric Water Level Control Package

a) The closed circuit cooler manufacturer shall provide an electric water level control package instead of the mechanical float valve arrangement.

b) The package consist of the following elements:

- Multiple heavy duty stainless steel SST-316 static sensors mounted in a stilling chamber outside the unit. Electrodes or sensors mounted inside the unit are not accepted as their operation will be disturbed by the moving water in the basin.
- An ABS, IP 56 case contains all the contactors for the different level probes and will provide a output signal of a relay for automatic filling and one relay for alarm level.
- The power supply to the control package is 24 Vac / 230 Vac - ___ Hz.
- A weather protected solenoid valve for the water make up ready for piping to a water supply with pressure between 140 kPa and 340 kPa.

3.3 Intake Sound Attenuation

a) The unit will be equipped with intake sound attenuation consisting of a hot dip galvanized steel housing of the same quality of the unit and completed with acoustical baffles made of fiberglass material which is suitable for use in closed circuit coolers.

b) The intake sound attenuator is provided with large access doors which allow access to maintain the fans and bearings.

c) The closed circuit cooler motor size must be adjusted for the additional static pressure drop caused by the sound attenuator.

3.4 Discharge Sound Attenuation

a) The unit will be equipped with discharge sound attenuation consisting of a hot dip galvanized steel housing of the same quality of the unit and completed with acoustical baffles made of fiberglass material which is suitable for use in closed circuit coolers.

b) The discharge sound attenuator is provided with large access doors which allow access to maintain the water distribution system and the drift eliminators without removing the baffles.

c) The closed circuit cooler motor size must be adjusted for the additional static pressure drop caused by the sound attenuator.

3.5 Vibration Switch

a) A vibration limit switch shall be installed on the mechanical equipment support and wired into the control panel. The purpose of this switch will be to interrupt power the motor in the event of excessive vibration.

b) The switch shall be adjustable for sensitivity, and shall require manual reset.

LSWA-H & LRW-H

Notes:

Notes:

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