

50 years
1960-2010
of excellence in cooling towers

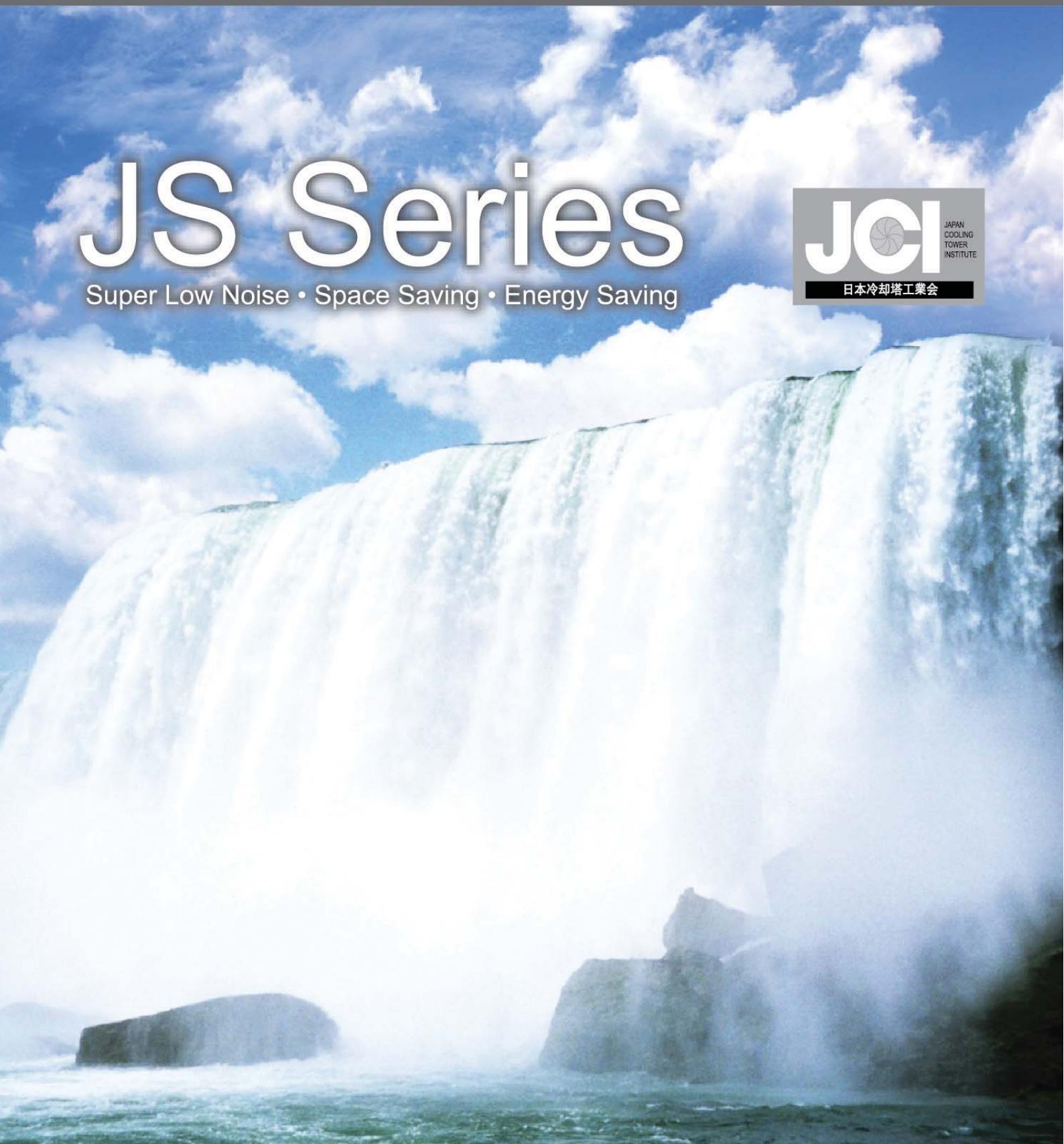
Nihon Spindle

JS Series

Super Low Noise • Space Saving • Energy Saving



日本冷却塔工業会





Nihon Spindle JS Series

Super Low Noise

Our cooling towers are designed in accordance to Japan Cooling Tower Institute (JCI) standard which has very stringent noise level criterias. Our continuous development on super low noise fan further reiterated our commitment towards reducing noise level.

Energy Saving

Our power consumption for the fan meets the international standard and guideline. Our built-in drift eliminators help to reduce drift loss, thus conserving precious water resource. This all translates back to savings in terms of operation costs to the building owner.

Space Saving

Our new cooling tower footprint is further reduced from previous generations.

Our cooling towers are designed for multi-cell construction, thus offering better flexibility in tower selection and operation.

Our Successful History



With over 50 years of experience in the development of cooling towers, Nihon Spindle continues to lead the Asian market today through R&D and innovation. It is an ingrained part of Nihon Spindle's culture to seek continuous improvement in order to supersede existing performances and quantity standards.

Our Japanese team



Manufacturing Control, Engineering Design, Quality Control and R&D led by qualified Japanese team from Nihon Spindle Manufacturing Co., Ltd., Osaka Japan.

Quality Material



Nihon Spindle cooling towers are produced using only the highest quality components and materials. We use hot-dipped galvanised steel for the structure and steel parts. These will ensure longer-lasting product life under exposure to water and heat. Our FRP fan blade is lighter and more durable, and consumes less power to run and start up.

CTI Standard Test Facility



Diesel boilers to simulate heat load.



1100TR cooling tower CTI testing

In order to maintain the highest standards of quality, our products undergo strict annual testing according to world-renowned CTI standards. A test facility was designed and built at our manufacturing plant in Penang, Malaysia, in accordance to the specifications by a qualified and certified CTI tester. This unique CTI test facility has a combined floor space of 15,000 sq ft and is capable of up to 1,000 tonnes heat rejection testing. Testing is accomplished to great accuracy by 4 massive diesel-boilers and numerous sensors embedded around the vicinity of the test platform. In addition, our plant also includes a Static Fan Balancing and Dynamic Fan Testing facility. Witnessed performance test can be arranged with additional cost.

Dynamic & Static Fan Balancing

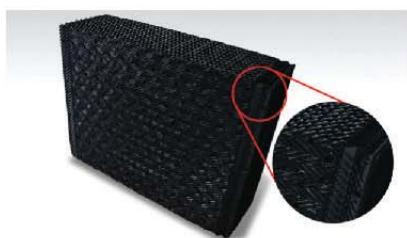


Our cooling towers are manufactured to JIS B8609 standards. This is a renowned high performance standard for cooling towers that is certified by the Japan Cooling Tower Institute. Our performance standard incorporates features such as minimised footprint for the corresponding capacity required, super low noise performance and uncompromised energy efficiencies. Every fan set is subjected to regular static & dynamic balancing tests before delivery.



Hot Water Distribution System

Our crossflow design uses hot water basin as the distribution system which eliminate the use of nozzle spray heads. This will lower the first cost in the pumping system and operating cost in the long run due to lower energy consumption.



High Efficiency Infills

Our high efficiency infills incorporate a drift eliminators which significantly reduces drift loss to save precious water. This design is the result from years of Research & Development, led by Japanese engineers, to continuously improve the infill performance and efficiency.



Cost-Saving Internal Piping

This item is available as an added option to all JS models and features an internal piping design that help to reduce the amount of external piping works. The unique design helps to reduce further component costs as it only uses half the number of valves that are usually required. It also allows for a tidier, less cluttered piping installation. Maintenance us made easier due to the location of the values are installed on the same side.



Special Internal Walkway

The internal chambers of our Nihon Spindle cooling towers can be easily accessed through a special internal walkway that runs along the centre of the tower. This special feature provides better access to internal components and helps to simplify the maintenance process, thus reducing maintenance cost. It also allows internal inspections to be done easily and safely.

JSHN High Performance Design

MODEL	CELL QTY	DRIFT LOSS	OVERALL TOWER DIMENSION			FAN & MOTOR		TOWER WEIGHT		STANDARD PIPING REQUIREMENT				
			Width mm	Length mm	Height mm	Diameter mm x qty	Motor kW x qty	Dry kg	Operating kg	Inlet size x qty	Outlet size x qty	Drain size x qty	Overflow size x qty	Make-Up: A & M * size x qty
JSHN - S0BB1	1	less than 0.005% of circulating water flowrate **	1,850	3,370	2,750	1,500 x 1	2.2 x 1	690	1,890	100A x 2	125A x 1	50A x 1	50A x 1	25A x 2
JSHN - S0CB1			1,850	3,370	2,750	1,500 x 1	3.7 x 1	710	1,910	100A x 2	125A x 1	50A x 1	50A x 1	25A x 2
JSHN - S1CB1			1,850	3,370	3,250	1,600 x 1	3.7 x 1	770	2,100	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSHN - S1DB1			1,850	3,370	3,250	1,600 x 1	5.5 x 1	790	2,120	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSHN - M1DB1			2,050	3,470	3,350	1,850 x 1	5.5 x 1	860	2,320	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSHN - L1DB1			2,350	3,770	3,250	2,000 x 1	5.5 x 1	930	2,690	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSHN - L1EB1			2,350	3,770	3,250	2,000 x 1	7.5 x 1	950	2,710	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSHN - L2EB1			2,350	3,770	3,585	2,000 x 1	7.5 x 1	1,000	2,820	125A x 2	200A x 1	50A x 1	50A x 1	25A x 2
JSHN - L3EB1			2,350	3,770	4,305	2,000 x 1	7.5 x 1	1,180	3,140	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2
JSHN - L4FB1			2,350	3,770	4,615	2,200 x 1	11.0 x 1	1,230	3,190	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2
JSHN - S1CB2	2	less than 0.005% of circulating water flowrate **	3,700	3,370	3,250	1,600 x 2	3.7 x 2	1,480	4,020	125A x 4	200A x 1	80A x 2	80A x 1	40A x 2
JSHN - S1DB2			3,700	3,370	3,250	1,600 x 2	5.5 x 2	1,520	4,060	125A x 4	200A x 1	80A x 2	80A x 1	40A x 2
JSHN - M1DB2			4,100	3,470	3,350	1,850 x 2	5.5 x 2	1,660	4,460	125A x 4	200A x 1	80A x 2	80A x 1	40A x 2
JSHN - L1DB2			4,700	3,770	3,250	2,000 x 2	5.5 x 2	1,790	5,190	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSHN - L1EB2			4,700	3,770	3,250	2,000 x 2	7.5 x 2	1,830	5,230	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSHN - L2EB2			4,700	3,770	3,585	2,000 x 2	7.5 x 2	1,920	5,440	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSHN - L3EB2			4,700	3,770	4,305	2,000 x 2	7.5 x 2	2,240	6,050	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSHN - L4FB2			4,700	3,770	4,615	2,200 x 2	11.0 x 2	2,340	6,150	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSHN - M1DB3	3	less than 0.005% of circulating water flowrate **	6,150	3,470	3,350	1,850 x 3	5.5 x 3	2,490	6,750	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSHN - L1DB3			7,050	3,770	3,250	2,000 x 3	5.5 x 3	2,680	7,840	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSHN - L1EB3			7,050	3,770	3,250	2,000 x 3	7.5 x 3	2,740	7,900	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSHN - L2EB3			7,050	3,770	3,585	2,000 x 3	7.5 x 3	2,870	8,210	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSHN - L3EB3			7,050	3,770	4,305	2,000 x 3	7.5 x 3	3,340	9,110	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSHN - L4FB3			7,050	3,770	4,615	2,200 x 3	11.0 x 3	3,490	9,260	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSHN - M1DB4	4	less than 0.005% of circulating water flowrate **	8,200	3,470	3,350	1,850 x 4	5.5 x 4	3,290	8,890	125A x 8	200A x 2	80A x 4	80A x 2	40A x 4
JSHN - L1DB4			9,400	3,770	3,250	2,000 x 4	5.5 x 4	3,540	10,340	125A x 8	250A x 2	80A x 4	80A x 2	40A x 4
JSHN - L1EB4			9,400	3,770	3,250	2,000 x 4	7.5 x 4	3,620	10,420	125A x 8	250A x 2	80A x 4	80A x 2	40A x 4
JSHN - L2EB4			9,400	3,770	3,585	2,000 x 4	7.5 x 4	3,790	10,830	125A x 8	250A x 2	80A x 4	80A x 2	40A x 4
JSHN - L3EB4			9,400	3,770	4,305	2,000 x 4	7.5 x 4	4,400	12,020	125A x 8	250A x 2	80A x 4	80A x 2	40A x 4
JSHN - L4FB4			9,400	3,770	4,615	2,200 x 4	11.0 x 4	4,600	12,220	125A x 8	250A x 2	80A x 4	80A x 2	40A x 4

* A & M refers to Automatic and Manual

** As stipulated in design conditions during product selection



Axial flow type fan For JSHN Models



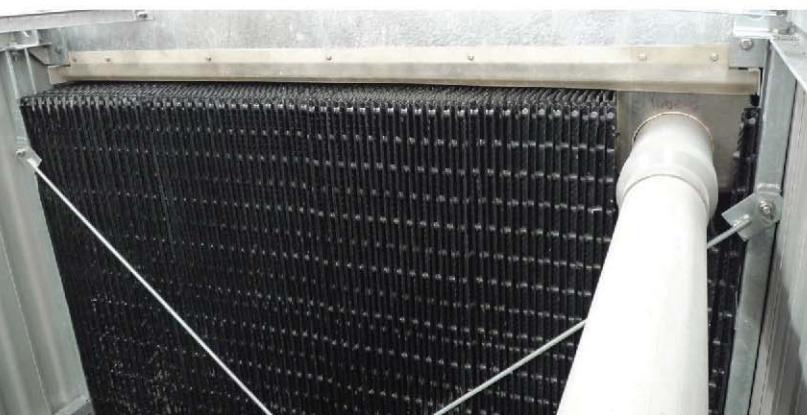
Distribution box for external piping connection to hot water basin.

JSHL High Performance Design & Low Noise Design

MODEL	CELL QTY	DRIFT LOSS	OVERALL TOWER DIMENSION			FAN & MOTOR		TOWER WEIGHT		STANDARD PIPING REQUIREMENT				
			Width mm	Length mm	Height mm	Diameter mm x qty	Motor kW x qty	Dry kg	Operating kg	Inlet size x qty	Outlet size x qty	Drain size x qty	Overflow size x qty	Make-Up: A & M size x qty
JSHL - S0BN1	1	less than 0.005% of circulating water flowrate **	1,850	3,370	2,750	1,500 x 1	2.2 x 1	710	1,910	100A x 2	125A x 1	50A x 1	50A x 1	25A x 2
JSHL - S0CN1			1,850	3,370	2,750	1,500 x 1	3.7 x 1	730	1,930	100A x 2	125A x 1	50A x 1	50A x 1	25A x 2
JSHL - S1CN1			1,850	3,370	3,250	1,600 x 1	3.7 x 1	800	2,130	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSHL - S1DN1			1,850	3,370	3,250	1,600 x 1	5.5 x 1	820	2,150	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSHL - M1DN1			2,050	3,470	3,350	1,850 x 1	5.5 x 1	890	2,350	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSHL - L1DN1			2,350	3,770	3,250	2,000 x 1	5.5 x 1	960	2,720	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSHL - L1EN1			2,350	3,770	3,250	2,000 x 1	7.5 x 1	980	2,740	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSHL - L2EN1			2,350	3,770	3,585	2,000 x 1	7.5 x 1	1,040	2,860	125A x 2	200A x 1	50A x 1	50A x 1	25A x 2
JSHL - L3EN1			2,350	3,770	4,305	2,000 x 1	7.5 x 1	1,220	3,180	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2
JSHL - L4FN1			2,350	3,770	4,615	2,200 x 1	11.0 x 1	1,270	3,230	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2
JSHL - S1CN2			3,700	3,370	3,250	1,600 x 2	3.7 x 2	1,540	4,080	125A x 4	200A x 4	80A x 2	80A x 1	40A x 2
JSHL - S1DN2			3,700	3,370	3,250	1,600 x 2	5.5 x 2	1,580	4,120	125A x 4	200A x 1	80A x 2	80A x 1	40A x 2
JSHL - M1DN2			4,100	3,470	3,350	1,850 x 2	5.5 x 2	1,720	4,520	125A x 4	200A x 1	80A x 2	80A x 1	40A x 2
JSHL - L1DN2			4,700	3,770	3,250	2,000 x 2	5.5 x 2	1,850	5,250	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSHL - L1EN2			4,700	3,770	3,250	2,000 x 2	7.5 x 2	1,890	5,290	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSHL - L2EN2			4,700	3,770	3,585	2,000 x 2	7.5 x 2	2,000	5,520	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSHL - L3EN2			4,700	3,770	4,305	2,000 x 2	7.5 x 2	2,320	6,130	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSHL - L4FN2			4,700	3,770	4,615	2,200 x 2	11.0 x 2	2,420	6,230	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSHL - M1DN3	3	less than 0.005% of circulating water flowrate **	6,150	3,470	3,350	1,850 x 3	5.5 x 3	2,580	6,840	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSHL - L1DN3			7,050	3,770	3,250	2,000 x 3	5.5 x 3	2,770	7,930	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSHL - L1EN3			7,050	3,770	3,250	2,000 x 3	7.5 x 3	2,830	7,990	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSHL - L2EN3			7,050	3,770	3,585	2,000 x 3	7.5 x 3	2,990	8,330	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSHL - L3EN3			7,050	3,770	4,305	2,000 x 3	7.5 x 3	3,460	9,230	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSHL - L4FN3	4	less than 0.005% of circulating water flowrate **	7,050	3,770	4,615	2,200 x 3	11.0 x 3	3,610	9,380	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSHL - M1DN4			8,200	3,470	3,350	1,850 x 4	5.5 x 4	3,410	9,010	125A x 8	200A x 2	80A x 4	80A x 2	40A x 4
JSHL - L1DN4			9,400	3,770	3,250	2,000 x 4	5.5 x 4	3,660	10,460	125A x 8	250A x 2	80A x 4	80A x 2	40A x 4
JSHL - L1EN4			9,400	3,770	3,250	2,000 x 4	7.5 x 4	3,740	10,540	125A x 8	250A x 2	80A x 4	80A x 2	40A x 4
JSHL - L2EN4			9,400	3,770	3,585	2,000 x 4	7.5 x 4	3,950	10,990	125A x 8	250A x 2	80A x 4	80A x 2	40A x 4
JSHL - L3EN4			9,400	3,770	4,305	2,000 x 4	7.5 x 4	4,560	12,180	125A x 8	250A x 2	80A x 4	80A x 2	40A x 4
JSHL - L4FN4			9,400	3,770	4,615	2,200 x 4	11.0 x 4	4,760	12,380	125A x 8	250A x 2	80A x 4	80A x 2	40A x 4

* A & M refers to Automatic and Manual

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Air seal is installed on top on infill to reovce water carryover.



Axial flow type FPR fan for JSHL Models

JSHS High Performance & Super Low Noise Design

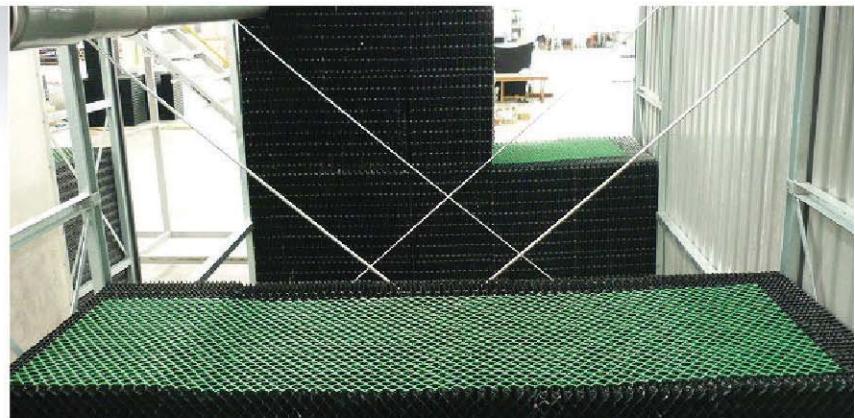
MODEL	CELL QTY	DRIFT LOSS	OVERALL TOWER DIMENSION			FAN & MOTOR		TOWER WEIGHT		STANDARD PIPING REQUIREMENT					
			Width mm	Length mm	Height mm	Diameter mm x qty	Motor kW x qty	Dry kg	Operating kg	Inlet size x qty	Outlet size x qty	Drain size x qty	Overflow size x qty	Make-Up: A & M * size x qty	
JSHS - S0BS1	1	less than 0.005% of circulating water flowrate **	1,850	3,370	2,750	1,500 x 1	2.2 x 1	720	1,920	100A x 2	125A x 1	50A x 1	50A x 1	25A x 2	
JSHS - S0CS1			1,850	3,370	2,750	1,500 x 1	3.7 x 1	740	1,940	100A x 2	125A x 1	50A x 1	50A x 1	25A x 2	
JSHS - S1CS1			1,850	3,370	3,250	1,600 x 1	3.7 x 1	810	2,140	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2	
JSHS - S1DS1			1,850	3,370	3,250	1,600 x 1	5.5 x 1	830	2,160	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2	
JSHS - M1DS1			2,050	3,470	3,480	1,850 x 1	5.5 x 1	910	2,370	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2	
JSHS - L1DS1			2,350	3,770	3,530	2,000 x 1	5.5 x 1	990	2,750	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2	
JSHS - L1ES1			2,350	3,770	3,530	2,000 x 1	7.5 x 1	1,010	2,770	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2	
JSHS - L2ES1			2,350	3,770	3,530	2,000 x 1	7.5 x 1	1,070	2,890	125A x 2	200A x 1	50A x 1	50A x 1	25A x 2	
JSHS - S1CS2	2		3,700	3,370	3,250	1,600 x 2	3.7 x 2	1,560	4,100	125A x 4	200A x 1	80A x 2	80A x 1	40A x 2	
JSHS - S1DS2			3,700	3,370	3,250	1,600 x 2	5.5 x 2	1,600	4,140	125A x 4	200A x 1	80A x 2	80A x 1	40A x 2	
JSHS - M1DS2			4,100	3,470	3,480	1,850 x 2	5.5 x 2	1,760	4,560	125A x 4	200A x 1	80A x 2	80A x 1	40A x 2	
JSHS - L1DS2			4,700	3,770	3,530	2,000 x 2	5.5 x 2	1,910	5,310	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSHS - L1ES2			4,700	3,770	3,530	2,000 x 2	7.5 x 2	1,950	5,350	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSHS - L2ES2	3	less than 0.005% of circulating water flowrate **	4,700	3,770	3,530	2,000 x 2	7.5 x 2	2,060	5,580	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSHS - M1DS3			6,150	3,470	3,480	1,850 x 3	5.5 x 3	2,640	6,900	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4	
JSHS - L1DS3			7,050	3,770	3,530	2,000 x 3	5.5 x 3	2,860	8,020	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4	
JSHS - L1ES3			7,050	3,770	3,530	2,000 x 3	7.5 x 3	2,920	8,080	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4	
JSHS - L2ES3	4		7,050	3,770	3,530	2,000 x 3	7.5 x 3	3,080	8,420	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4	
JSHS - M1DS4			8,200	3,470	3,480	1,850 x 4	5.5 x 4	3,490	9,090	125A x 8	200A x 2	80A x 4	80A x 2	40A x 4	
JSHS - L1DS4			9,400	3,770	3,530	2,000 x 4	5.5 x 4	3,780	10,580	125A x 8	250A x 2	80A x 4	80A x 2	40A x 4	
JSHS - L1ES4			9,400	3,770	3,530	2,000 x 4	7.5 x 4	3,860	10,660	125A x 8	250A x 2	80A x 4	80A x 2	40A x 4	
JSHS - L2ES4			9,400	3,770	3,530	2,000 x 4	7.5 x 4	4,070	11,110	125A x 8	250A x 2	80A x 4	80A x 2	40A x 4	

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Axial Flow Type FRP Fan for JSHS Models



A layer of PVC wire mesh to support the upper layer infill and to separate it from the bottom layer.

JSEN Energy Saving Design

MODEL	CELL QTY	DRAFT LOSS	OVERALL TOWER DIMENSION			FAN & MOTOR		TOWER WEIGHT		STANDARD PIPING REQUIREMENT				
			Width mm	Length mm	Height mm	Diameter mm x qty	Motor kW x qty	Dry kg	Operating kg	Inlet size x qty	Outlet size x qty	Drain size x qty	Overflow size x qty	Make-Up: A & M * size x qty
JSEN - S1AL1	1	less than 0.005% of circulating water flowrate **	1,850	3,370	3,250	1600 x 1	1.5 x 1	770	2,100	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSEN - S1BL1			1,850	3,370	3,250	1600 x 1	2.2 x 1	790	2,120	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSEN - M1BL1			2,050	3,470	3,350	1850A x 1	2.2 x 1	850	2,320	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSEN - S1CL1			1,850	3,370	3,250	1600 x 1	3.7 x 1	800	2,130	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSEN - L1BL1			2,350	3,770	3,250	2000 x 1	2.2 x 1	920	2,690	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSEN - L2BL1			2,350	3,770	3,585	2000 x 1	2.2 x 1	980	2,810	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSEN - M1CL1			2,050	3,470	3,350	1850A x 1	3.7 x 1	870	2,340	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSEN - L1CL1			2,350	3,770	3,250	2000 x 1	3.7 x 1	930	2,700	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSEN - L2CL1			2,350	3,770	3,585	2000 x 1	3.7 x 1	990	2,820	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSEN - L1DL1			2,350	3,770	3,250	2000 x 1	5.5 x 1	970	2,740	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSEN - L3CL1			2,350	3,770	4,305	2000 x 1	3.7 x 1	1,170	3,130	125A x 2	200 x 1	80A x 1	80A x 1	40A x 2
JSEN - L2DL1			2,350	3,770	3,585	2000 x 1	5.5 x 1	1,010	2,840	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSEN - L4CL1			2,350	3,770	4,615	2200 x 1	3.7 x 1	1,170	3,130	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2
JSEN - L3DL1			2,350	3,770	4,305	2000 x 1	5.5 x 1	1,190	3,150	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2
JSEN - L2EL1			2,350	3,770	3,585	2000 x 1	7.5 x 1	1,060	2,890	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSEN - L4DL1			2,350	3,770	4,615	2200 x 1	5.5 x 1	1,190	3,150	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2
JSEN - L3EL1			2,350	3,770	4,305	2000 x 1	7.5 x 1	1,220	3,180	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2
JSEN - L6DL1			2,350	4,670	4,615	2200 x 1	5.5 x 1	1,490	4,570	150A x 2	200A x 1	80A x 1	80A x 1	40A x 2
JSEN - L4EL1			2,350	3,770	4,615	2200 x 1	7.5 x 1	1,230	3,190	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2
JSEN - L6EL1			2,350	4,670	4,615	2200 x 1	7.5 x 1	1,510	4,590	150A x 2	200A x 1	80A x 1	80A x 1	40A x 2
JSEN - L3FL1			2,350	3,770	4,585	2000 x 1	11.0 x 1	1,280	3,240	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2
JSEN - L4FL1			2,350	3,770	4,615	2200 x 1	11.0 x 1	1,270	3,230	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2
JSEN - L6FL1			2,350	4,670	4,615	2200 x 1	11.0 x 1	1,570	4,650	150A x 2	200A x 1	80A x 1	80A x 1	40A x 2
JSEN - S1AL2	2	less than 0.005% of circulating water flowrate **	3,700	3,370	3,250	1600 x 2	1.5 x 2	1,480	4,010	125A x 4	200A x 1	80A x 2	80A x 1	40A x 2
JSEN - S1BL2			3,700	3,370	3,250	1600 x 2	2.2 x 2	1,520	4,050	125A x 4	200A x 1	80A x 2	80A x 1	40A x 2
JSEN - M1BL2			4,100	3,470	3,350	1850 x 2	2.2 x 2	1,640	4,450	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSEN - S1CL2			3,700	3,370	3,250	1600 x 2	3.7 x 2	1,540	4,070	125A x 4	200A x 1	80A x 2	80A x 1	40A x 2
JSEN - L1BL2			4,700	3,770	3,250	2000 x 2	2.2 x 2	1,770	5,180	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSEN - L2BL2			4,700	3,770	3,585	2000 x 2	2.2 x 2	1,880	5,400	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSEN - M1CL2			4,100	3,470	3,350	1850 x 2	3.7 x 2	1,680	4,490	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSEN - L1CL2			4,700	3,770	3,250	2000 x 2	3.7 x 2	1,790	5,200	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSEN - L2CL2			4,700	3,770	3,585	2000 x 2	3.7 x 2	1,900	5,420	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSEN - L1DL2			4,700	3,770	3,250	2000 x 2	5.5 x 2	1,870	5,280	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSEN - L3CL2			4,700	3,770	4,305	2000 x 2	3.7 x 2	2,220	6,030	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSEN - L2DL2			4,700	3,770	3,585	2000 x 2	5.5 x 2	1,940	5,460	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSEN - L4CL2			4,700	3,770	4,615	2200A x 2	3.7 x 2	2,220	6,030	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSEN - L3DL2			4,700	3,770	4,305	2000 x 2	5.5 x 2	2,260	6,070	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSEN - L2EL2			4,700	3,770	3,585	2000 x 2	7.5 x 2	2,020	5,540	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSEN - L4DL2			4,700	3,770	4,615	2200A x 2	5.5 x 2	2,260	6,070	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSEN - L3EL2			4,700	3,770	4,305	2000 x 2	7.5 x 2	2,320	6,130	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSEN - L6DL2			4,700	4,670	4,615	2200A x 2	5.5 x 2	2,860	8,910	150A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSEN - L4EL2			4,700	3,770	4,615	2200A x 2	7.5 x 2	2,340	6,150	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSEN - L6EL2			4,700	4,670	4,615	2200A x 2	7.5 x 2	2,900	8,950	150A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSEN - L3FL2			4,700	3,770	4,585	2000 x 2	11.0 x 2	2,440	6,250	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSEN - L4FL2			4,700	3,770	4,615	2200A x 2	11.0 x 2	2,420	6,230	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSEN - L6FL2			4,700	4,670	4,615	2200A x 2	11.0 x 2	3,020	9,070	150A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSEN - M1BL3	3	less than 0.005% of circulating water flowrate **	6,150	3,470	3,350	1,850 x 3	2.2 x 3	2,460	6,730	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSEN - L1BL3			7,050	3,770	3,250	2,000 x 3	2.2 x 3	2,590	7,760	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSEN - L2BL3			7,050	3,770	3,585	2,000 x 3	2.2 x 3	2,810	8,150	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSEN - M1CL3			6,150	3,470	3,350	1,850 x 3	3.7 x 3	2,520	6,730	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSEN - L1CL3			7,050	3,770	3,250	2,000 x 3	3.7 x 3	2,620	7,790	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSEN - L2CL3			7,050	3,770	3,585	2,000 x 3	3.7 x 3	2,840	8,180	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSEN - L1DL3			7,050	3,770	3,250	2,000 x 3	5.5 x 3	2,740	7,910	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSEN - L3CL3			7,050	3,770	4,305	2,000 x 3	3.7 x 3	3,310	9,080	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSEN - L2DL3			7,050	3,770	3,585	2,000 x 3	5.5 x 3	2,900	8,240	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSEN - L4CL3			7,050	3,770	4,615	2,200 x 3	3.7 x 3	3,310	9,080	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSEN - L3DL3			7,050	3,770	4,305	2,000 x 3	5.5 x 3	3,370	9,140	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSEN - L2EL3			7,050	3,770	3,585	2,000 x 3	7.5 x 3	3,020	8,360	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSEN - L4DL3			7,050	3,770	4,615	2,200 x 3	5.5 x 3	3,370	9,140	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSEN - L3EL3			7,050	3,770	4,305	2,000 x 3	7.5 x 3	3,460	9,230	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSEN - L6DL3			7,050	4,670	4,615	2,200 x 3	5.5 x 3	4,270	13,400	150A x 6	250A x 2	80A x 3	80A x 2	40A x 4
JSEN - L4EL3			7,050	3,770	4,615	2,200 x 3	7.5 x 3	3,490	9,260	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSEN - L6EL3			7,050	4,670	4,615	2,200 x 3	7.5 x 3	4,330	13,460	150A x 6	250A x 2	80A x 3	80A x 2	40A x 4
JSEN - L3FL3			7,050	3,770	4									

JSEL Energy Saving And Low Noise Design

MODEL	CELL QTY	DRIFT LOSS	OVERALL TOWER DIMENSION			FAN & MOTOR		TOWER WEIGHT		STANDARD PIPING REQUIREMENT					
			Width mm	Length mm	Height mm	Diameter mm x qty	Motor kW x qty	Dry kg	Operating kg	Inlet size x qty	Outlet size x qty	Drain size x qty	Overflow size x qty	Make-Up: A & M size x qty	
JSEL - S1AL1	1		1,850	3,370	3,250	1600 x 1	1.5 x 1	770	2,100	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2	
JSEL - S1BL1			1,850	3,370	3,250	1600 x 1	2.2 x 1	790	2,120	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2	
JSEL - M1BL1			2,050	3,470	3,350	1850A x 1	2.2 x 1	850	2,320	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2	
JSEL - S1CL1			1,850	3,370	3,250	1600 x 1	3.7 x 1	800	2,130	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2	
JSEL - L1BL1			2,350	3,770	3,250	2000 x 1	2.2 x 1	920	2,690	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2	
JSEL - L2BL1			2,350	3,770	3,585	2000 x 1	2.2 x 1	980	2,810	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2	
JSEL - M1CL1			2,050	3,470	3,350	1850A x 1	3.7 x 1	870	2,340	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2	
JSEL - L1CL1			2,350	3,770	3,250	2000 x 1	3.7 x 1	930	2,700	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2	
JSEL - L2CL1			2,350	3,770	3,585	2000 x 1	3.7 x 1	990	2,820	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2	
JSEL - L1DL1			2,350	3,770	3,250	2000 x 1	5.5 x 1	970	2,740	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2	
JSEL - L3CL1			2,350	3,770	4,305	2000 x 1	3.7 x 1	1,170	3,130	125A x 2	200 x 1	80A x 1	80A x 1	40A x 2	
JSEL - L2DL1			2,350	3,770	3,585	2000 x 1	5.5 x 1	1,010	2,840	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2	
JSEL - L4CL1			2,350	3,770	4,615	2200 x 1	3.7 x 1	1,170	3,130	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2	
JSEL - L3DL1			2,350	3,770	4,305	2000 x 1	5.5 x 1	1,190	3,150	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2	
JSEL - L2EL1			2,350	3,770	3,585	2000 x 1	7.5 x 1	1,060	2,890	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2	
JSEL - L4DL1			2,350	3,770	4,615	2200 x 1	5.5 x 1	1,190	3,150	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2	
JSEL - L3EL1			2,350	3,770	4,305	2000 x 1	7.5 x 1	1,220	3,180	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2	
JSEL - L6DL1			2,350	4,670	4,615	2200 x 1	5.5 x 1	1,490	4,570	150A x 2	200A x 1	80A x 1	80A x 1	40A x 2	
JSEL - L4EL1			2,350	3,770	4,615	2200 x 1	7.5 x 1	1,230	3,190	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2	
JSEL - L6EL1			2,350	4,670	4,615	2200 x 1	7.5 x 1	1,510	4,590	150A x 2	200A x 1	80A x 1	80A x 1	40A x 2	
JSEL - L3FL1			2,350	3,770	4,585	2000 x 1	11.0 x 1	1,280	3,240	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2	
JSEL - L4FL1			2,350	3,770	4,615	2200 x 1	11.0 x 1	1,270	3,230	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2	
JSEL - L6FL1			2,350	4,670	4,615	2200 x 1	11.0 x 1	1,570	4,650	150A x 2	200A x 1	80A x 1	80A x 1	40A x 2	
JSEL - S1AL2	2		3,700	3,370	3,250	1,600 x 2	1.5 x 2	1,480	4,010	125A x 4	200A x 1	80A x 2	80A x 1	40A x 2	
JSEL - S1BL2			3,700	3,370	3,250	1,600 x 2	2.2 x 2	1,520	4,050	125A x 4	200A x 1	80A x 2	80A x 1	40A x 2	
JSEL - M1BL2			4,100	3,470	3,350	1,850 x 2	2.2 x 2	1,640	4,450	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSEL - S1CL2			3,700	3,370	3,250	1,600 x 2	3.7 x 2	1,540	4,070	125A x 4	200A x 1	80A x 2	80A x 1	40A x 2	
JSEL - L1BL2			4,700	3,770	3,250	2,000 x 2	2.2 x 2	1,770	5,180	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSEL - L2BL2			4,700	3,770	3,585	2,000 x 2	2.2 x 2	1,880	5,400	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSEL - M1CL2			4,100	3,470	3,350	1,850 x 2	3.7 x 2	1,680	4,490	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSEL - L1CL2			4,700	3,770	3,250	2,000 x 2	3.7 x 2	1,790	5,200	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSEL - L2CL2			4,700	3,770	3,585	2,000 x 2	3.7 x 2	1,900	5,420	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSEL - L1DL2			4,700	3,770	3,250	2,000 x 2	5.5 x 2	1,870	5,280	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSEL - L3CL2			4,700	3,770	4,305	2,000 x 2	3.7 x 2	2,220	6,030	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSEL - L2DL2			4,700	3,770	3,585	2,000 x 2	5.5 x 2	1,940	5,460	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSEL - L4CL2			4,700	3,770	4,615	2,200A x 2	3.7 x 2	2,220	6,030	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSEL - L3DL2			4,700	3,770	4,305	2,000 x 2	5.5 x 2	2,260	6,070	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSEL - L2EL2			4,700	3,770	3,585	2,000 x 2	7.5 x 2	2,020	5,540	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSEL - L4DL2			4,700	3,770	4,615	2,200A x 2	5.5 x 2	2,260	6,070	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSEL - L3EL2			4,700	3,770	4,305	2,000 x 2	7.5 x 2	2,320	6,130	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSEL - L6DL2			4,700	4,670	4,615	2,200A x 2	5.5 x 2	2,860	8,910	150A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSEL - L4EL2			4,700	3,770	4,615	2,200A x 2	7.5 x 2	2,340	6,150	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSEL - L6EL2			4,700	4,670	4,615	2,200A x 2	7.5 x 2	2,900	8,950	150A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSEL - L3FL2			4,700	3,770	4,585	2,000 x 2	11.0 x 2	2,440	6,250	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSEL - L4FL2			4,700	3,770	4,615	2,200A x 2	11.0 x 2	2,420	6,230	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSEL - L6FL2			4,700	4,670	4,615	2,200A x 2	11.0 x 2	3,020	9,070	150A x 4	250A x 1	80A x 2	80A x 1	40A x 2	
JSEL - M1BL3	3		6,150	3,470	3,350	1,850 x 3	2.2 x 3	2,460	6,730	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4	
JSEL - L1BL3			7,050	3,770	3,250	2,000 x 3	2.2 x 3	2,590	7,760	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4	
JSEL - L2BL3			7,050	3,770	3,585	2,000 x 3	2.2 x 3	2,810	8,150	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4	
JSEL - M1CL3			6,150	3,470	3,350	1,850 x 3	3.7 x 3	2,520	6,730	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4	
JSEL - L1CL3			7,050	3,770	3,250	2,000 x 3	3.7 x 3	2,620	7,790	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4	
JSEL - L2CL3			7,050	3,770	3,585	2,000 x 3	3.7 x 3	2,840	8,180	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4	
JSEL - L1DL3			7,050	3,770	3,250	2,000 x 3	5.5 x 3	2,740	7,910	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4	
JSEL - L3CL3			7,050	3,770	4,305	2,000 x 3	3.7 x 3	3,310	9,080	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4	
JSEL - L2DL3			7,050	3,770	3,585	2,000 x 3	5.5 x 3	2,900	8,240	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4	
JSEL - L4CL3			7,050	3,770	4,615	2,200 x 3	3.7 x 3	3,310	9,080	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4	
JSEL - L3DL3			7,050	3,770	4,305	2,000 x 3	5.5 x 3	3,370	9,140	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4	
JSEL - L2EL3			7,050	3,770	3,585	2,000 x 3	7.5 x 3	3,020	8,360	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4	
JSEL - L4DL3			7,050	3,770	4,615	2,200 x 3	5.5 x 3	3,370	9,140	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4	
JSEL - L3EL3			7,050	3,770	4,305	2,000 x 3	7.5 x 3	3,460	9,230	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4	
JSEL - L6DL3			7,050	4,670	4,615	2,200 x 3	5.5 x 3	4,270	13,400	150A x 6	250A x 2	80A x 3	80A x 2	40A x 4	
JSEL - L4EL3			7,050	3,770	4,615	2,200 x 3	7.5 x 3	3,490	9,260	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4	
JSEL - L6EL3			7,050	4,670	4,615	2,200 x 3	7.5 x 3	4,330	13,460	150A x 6	250A x 2	80A x 3	80A x 2	40A x 4	
JSEL - L3FL3			7,050	3,770	4,585	2,000 x 3	11.0 x 3	3,640	9,410	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4	
JSEL - L4FL3			7,050	3,770	4,615	2,200 x 3	11.0 x 3	3,610	9,380	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4	
JSEL - L6FL3			7,050	4,670	4,615	2,200 x 3	11.0 x 3	4,510	13,						

JSES Energy Saving Design

MODEL	CELL QTY	DRIFT LOSS	OVERALL TOWER DIMENSION			FAN & MOTOR		TOWER WEIGHT		STANDARD PIPING REQUIREMENT				
			Width mm	Length mm	Height mm	Diameter mm x qty	Motor kW x qty	Dry kg	Operating kg	Inlet size x qty	Outlet size x qty	Drain size x qty	Overflow size x qty	Make-Up: A & M size x qty
JSES - S1AL1	1	less than 0.005% of circulating water flowrate *	1850	3370	3250	1,600 x 1	1.5 x 1	780	2,110	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSES - S1BL1			1850	3370	3250	1,600 x 1	2.2 x 1	800	2,130	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSES - S1CL1			1850	3370	3250	1,600 x 1	3.7 x 1	820	2,150	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSES - L1BL1			2350	3770	3250	2,000 x 1	2.2 x 1	930	2,700	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSES - L2BL1			2350	3770	3585	2,000 x 1	2.2 x 1	990	2,820	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSES - L1CL1			2350	3770	3250	2,000 x 1	3.7 x 1	960	2,730	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSES - L2CL1			2350	3770	3585	2,000 x 1	3.7 x 1	1,020	2,850	125A x 2	150A x 1	50A x 1	50A x 1	25A x 2
JSES - L3CL1			2350	3770	4305	2,000 x 1	3.7 x 1	1,200	3,160	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2
JSES - L4CL1			2350	3770	4615	2,200A x 1	3.7 x 1	1,220	3,180	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2
JSES - L3DL1			2350	3770	4305	2,000 x 1	5.5 x 1	1,220	3,180	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2
JSES - L4DL1			2350	3770	4615	2,200A x 1	5.5 x 1	1,240	3,200	125A x 2	200A x 1	80A x 1	80A x 1	40A x 2
JSES - L5DL1			2350	4670	4615	2,200A x 1	5.5 x 1	1,520	4,600	150A x 2	200A x 1	80A x 1	80A x 1	40A x 2
JSES - S1AL2	2	less than 0.005% of circulating water flowrate *	3,700	3,370	3,250	1,600 x 2	1.5 x 2	1,500	4,030	125A x 4	200A x 1	80A x 2	80A x 1	40A x 2
JSES - S1BL2			3,700	3,370	3,250	1,600 x 2	2.2 x 2	1,540	4,070	125A x 4	200A x 1	80A x 2	80A x 1	40A x 2
JSES - S1CL2			3,700	3,370	3,250	1,600 x 2	3.7 x 2	1,580	4,110	125A x 4	200A x 1	80A x 2	80A x 1	40A x 2
JSES - L1BL2			4,700	3,770	3,250	2,000 x 2	2.2 x 2	1,790	5,200	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSES - L2BL2			4,700	3,770	3,585	2,000 x 2	2.2 x 2	1,900	5,420	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSES - L1CL2			4,700	3,770	3,250	2,000 x 2	3.7 x 2	1,850	5,260	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSES - L2CL2			4,700	3,770	3,585	2,000 x 2	3.7 x 2	1,960	5,480	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSES - L3CL2			4,700	3,770	4,305	2,000 x 2	3.7 x 2	2,280	6,090	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSES - L4CL2			4,700	3,770	4,615	2,200A x 2	3.7 x 2	2,320	6,130	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSES - L3DL2			4,700	3,770	4,305	2,000 x 2	5.5 x 2	2,320	6,130	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSES - L4DL2			4,700	3,770	4,615	2,200A x 2	5.5 x 2	2,360	6,170	125A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSES - L5DL2			4,700	4,670	4,615	2,200A x 2	5.5 x 2	2,920	8,970	150A x 4	250A x 1	80A x 2	80A x 1	40A x 2
JSES - L1BL3	3	less than 0.005% of circulating water flowrate *	7,050	3,770	3,250	2,000 x 3	2.2 x 3	2,620	7,790	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSES - L2BL3			7,050	3,770	3,585	2,000 x 3	2.2 x 3	2,840	8,180	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSES - L1CL3			7,050	3,770	3,250	2,000 x 3	3.7 x 3	2,710	7,880	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSES - L2CL3			7,050	3,770	3,585	2,000 x 3	3.7 x 3	2,930	8,270	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSES - L3CL3			7,050	3,770	4,305	2,000 x 3	3.7 x 3	3,400	9,170	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSES - L4CL3			7,050	3,770	4,615	2,200 x 3	3.7 x 3	3,460	9,230	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSES - L3DL3			7,050	3,770	4,305	2,000 x 3	5.5 x 3	3,460	9,230	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSES - L4DL3	4	less than 0.005% of circulating water flowrate *	7,050	3,770	4,615	2,200 x 3	5.5 x 3	3,520	9,290	125A x 6	200A x 2	80A x 3	80A x 2	40A x 4
JSES - L5DL3			7,050	4,670	4,615	2,200 x 3	5.5 x 3	4,360	13,490	150A x 6	250A x 2	80A x 3	80A x 2	40A x 4
JSES - L1BL4			9,400	3,770	3,250	2,000 x 4	2.2 x 4	3,560	10,380	125A x 8	200A x 2	80A x 4	80A x 2	40A x 4
JSES - L2BL4			9,400	3,770	3,585	2,000 x 4	2.2 x 4	3,740	10,780	125A x 8	250A x 2	80A x 4	80A x 2	40A x 4
JSES - L1CL4			9,400	3,770	3,250	2,000 x 4	3.7 x 4	3,650	10,470	125A x 8	200A x 2	80A x 4	80A x 2	40A x 4
JSES - L2CL4			9,400	3,770	3,585	2,000 x 4	3.7 x 4	3,860	10,900	125A x 8	250A x 2	80A x 4	80A x 2	40A x 4
JSES - L3CL4			9,400	3,770	4,305	2,000 x 4	3.7 x 4	4,480	12,100	125A x 8	250A x 2	80A x 4	80A x 2	40A x 4
JSES - L4CL4			9,400	3,770	4,615	2,200 x 4	3.7 x 4	4,560	12,180	125A x 8	250A x 2	80A x 4	80A x 2	40A x 4
JSES - L3DL4			9,400	3,770	4,305	2,000 x 4	5.5 x 4	4,560	12,180	125A x 8	250A x 2	80A x 4	80A x 2	40A x 4
JSES - L4DL4			9,400	3,770	4,615	2,200 x 4	5.5 x 4	4,640	12,260	125A x 8	250A x 2	80A x 4	80A x 2	40A x 4
JSES - L5DL4			9,400	4,670	4,615	2,200 x 4	5.5 x 4	5,760	17,860	150A x 8	250A x 2	80A x 4	80A x 2	40A x 4

* A & M refers to Automatic and Manual

** As stipulated in design conditions during product selection



Tower structures in HDG on All standard JS Series



The motor unit for every model is strategically placed away from the discharge air stream. The wedge belts driving the fan units are enclosed inside the FRP belt covers for added protection and longer service life.

Cooling Tower Location

During the selection for the location of Cooling Tower, considerations should be given to the following:

1. The area should provide grounded power supply for the cooling tower. Wiring should only be installed by qualified personal. All electrical wiring should comply with your regions electrical codes.
2. Cooling Towers are industrial equipments with rotating parts. Place them in a secured area where unauthorized access is minimized.
3. Place the tower on a level surface. Failure to do so will result in tower and fan damage.
4. Do not place Cooling Tower near exhaust fans. This is to prevent exhaust air from recirculated into the cooling tower therefore
5. Do not place the Cooling Tower near air makeup (ventilation) unit where there is a possibility of the moist Cooling Tower discharge air mixing with the air being drawn into the air makeup (ventilation) unit.
6. Locate the tower where there is safe access for service.
7. It is advisable and preferred to have the top of the Cooling Tower above the roofline of any adjacent building. This will limit the possibility of the moist discharge air recirculation back to Cooling Tower air intake.
8. The height of Cooling Tower must be the same level or higher than perimeter wall to prevent recirculation of discharge hot air. (Figure 6)

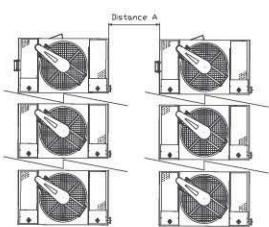


Figure 1

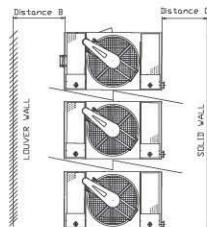


Figure 2

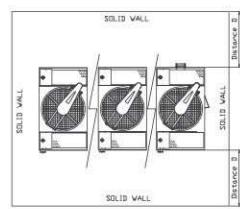


Figure 3

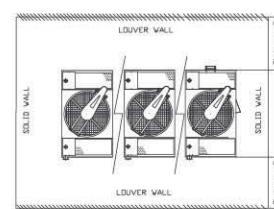


Figure 4

Cell	Figure 1	Figure 2		Figure 3	Figure 4	Figure 5
	Min. Distance Louver To Louver	Min. Distance Air Inlet To Louver Wall	Min. Distance Air Inlet To Solid Wall	Min. Distance For Cooling Tower In Enclosure (Solid Wall)	Min. Distance For Cooling Tower In Enclosure (Louver To Louver Wall)	Min. Distance For Cooling Tower In Enclosure (Louver Wall)
	Distance A	Distance B	Distance C	Distance D	Distance E	Distance F
1 Cell	1.5 Metre	1.5 Metre	1.5 Metre	1.5 Metre	1.5 Metre	1.5 Metre
2 Cells	2.5 Metre	1.5 Metre	2.5 Metre	2.5 Metre	1.5 Metre	1.5 Metre
3 Cells	3.5 Metre	1.5 Metre	3.5 Metre	3.5 Metre	1.5 Metre	1.5 Metre
4 Cells	5.0 Metre	1.5 Metre	5.0 Metre	5.0 Metre	1.5 Metre	1.5 Metre
5 Cells	5.0 Metre	1.5 Metre	5.0 Metre	5.0 Metre	1.5 Metre	1.5 Metre
6 Cells	5.0 Metre	1.5 Metre	5.0 Metre	5.0 Metre	1.5 Metre	1.5 Metre
7 Cells	5.0 Metre	1.5 Metre	5.0 Metre	5.0 Metre	1.5 Metre	1.5 Metre
8 Cells	5.0 Metre	1.5 Metre	5.0 Metre	5.0 Metre	1.5 Metre	1.5 Metre
9 Cells	5.0 Metre	1.5 Metre	5.0 Metre	5.0 Metre	1.5 Metre	1.5 Metre
10 Cells	5.0 Metre	1.5 Metre	5.0 Metre	5.0 Metre	1.5 Metre	1.5 Metre

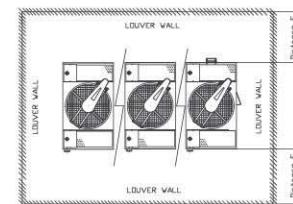


Figure 5

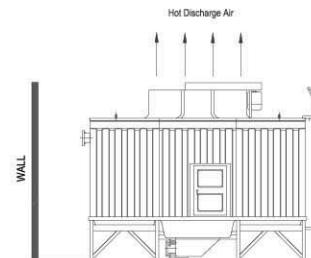


Figure 6

Engineering Specification

Cooling Tower

Each cooling tower is manufactured to cool _____ litres per second of water from _____ °C (HW) entering water temperature to _____ °C (CW) leaving water temperature at _____ °C (WB) entering wet bulb temperature.

The cooling towers are guaranteed to perform in accordance with the conditions specified without any modifications.

Infill

Infill shall be of UV ray treated PVC (Polyvinyl Chloride). The PVC infill shall be vacuum-formed with patented intricate design to facilitate a good spread of water over the surface area of crossflow induced draft of air. It also incorporate a built-in drift eliminator.

Motor

The fan motor(s) shall be to IP55 standard with Class F insulation, specifically designed for cooling tower service. The motor shall be located adjacent to the fan cylinder for ease of maintenance and increased motor life expectancy. The motor shall be fully outside of the moist discharge air stream.

Structure

The cooling tower structure shall be constructed from HDG Steel. All HDG (Hot Dipped Galvanized) are carried out in accordance to ISO 1461:1999. The cooling tower casing shall be constructed from FRP (Fibreglass Reinforced Polyester).

Water Distribution System

The hot water distribution shall be of open gravity type basin. It shall be constructed of HDG Steel designed with multiple array of turret-punched holes to facilitate even distribution of stable water sprinkling effect.

Mechanical Support

The mechanical support shall be of HDG Steel and bolted to the top of fan cylinder. HDG Steel fan guard shall be bolted to the top of mechanical support for safety measure. Extended lubrication lines shall be provided to the bearings with grease nipples located outside for ease of schedule maintenance.

Cold Water Basin With Integrated Sump

The basin sump shall be constructed from FRP. The basin shall be made of FRP and equipped with drain outlet for ease of cleaning.

Mechanical Equipment (Fan Section)

Fans shall be axial flow type with FRP blades. The fans shall be designed to provide necessary air flow for heat transfer. Fan blades shall be assembled, balanced and pitched. The fan shall operate within a FRP fan cylinder, which provides a streamlined air entry and minimum tip clearance for maximum fan efficiency.

Wedge-Belt Drive System

The wedge-belt shall be fabric impregnated type. Belt tensioning adjustment shall be provided. Entire drive arrangement shall be protected by a FRP cover.

Bolts & Nuts

HDG (Hot-Dipped Galvanized) Bolts & Nuts shall be provided. Stainless Steel Bolts & Nuts available at additional cost upon request.

Access

A FRP inspection door shall be provided to facilitate entry into the cooling tower for inspection and maintenance. A HDG Steel access ladder shall be installed on the cooling tower.

Specification & Data are correct at the time of publication; validation should be made at the time of purchase.

The MANUFACTURER reserves the right to change without prior notice.

SAFETY PRECAUTION SHOULD BE ABIDE AT ALL TIME TO PREVENT ACCIDENT.

Operation, Maintenance and Repair of this equipment should only be carried out by qualified personal.

WARRANTIES: Please refer to the Limitation of Warranties applicable to and in effect at the time of purchase.

Optional Accessories

Vibration Isolators



Mounted at the feet of the cooling tower, vibration isolators provide an effective way of isolating any vibration from the tower to the concrete floors.

Single-spring and double-spring design are generally sufficient to meet the requirements of the range of Nihon Spindle cooling towers. Selection of the right sizes depending on rated load and rated deflection.

Vibration Switch



Vibration switch is mounted on the cooling tower fan deck where if there is any excessive vibration, it will cut off power supply to fan motor.

Extended Discharge Hood (Angle/ Straight)



Wherever the discharge of air is necessary to be diverted towards a certain direction, FRP extended discharge hood can be easily installed onto the standard fan cylinder.

Aluminium Alloy Blade



Aluminium alloy blades are available as an optional item to our standard FRP blades. These blades are recommended for use in highly corrosive environments.

Gear Reducer



As an alternative to wedge belt drive system, gear reducer option is available. The motor is located outside the air stream.

Handrail & Caged Ladder



Handrail and caged ladder can be supplied as an optional item for added safety when the fan deck is relatively high above ground.

Additional Drift Eliminators



Additional drift eliminators can be supplied when very low drift loss is to be achieved. Additional drift eliminators can further reduce drift loss to as low as 0.001% of the circulating water flowrate.

Epoxy Fusion Coating



Wherever extra corrosion protection is needed over the standard hot dipped galvanized steel parts, epoxy fusion coating is available as option.

Hot Water Basin Cover



The hot water basin cover is available as an added protection to the hot water basin from gathering dirt, foreign particles and objects that can clog the basin.

Cooling Tower Water Treatment

Water Quality

The open recirculating cooling tower system has the greatest potential for problems associated with fouling, corrosion and microbiological organisms. Even the highest quality water contains some amount of dissolved solids that become concentrated over time, posing potential threat to corrosion and fouling. This is further enhanced by the effects of air pollution and make-up water contamination.

The degree to which dissolved solids and other impurities build up in recirculating water may be defined as the cycles of

concentration which is the ratio of dissolved solids in the circulating water to dissolved solids in the make-up water. This should be determined and monitored frequently through water treatment.

The annexed table lists the water quality standards for use with refrigeration and air-conditioning equipment. For maximum heat transfer efficiency and maximum equipment life, these guidelines should be followed.

Item	Control Value
pH	6.8 - 9.0
Total Dissolved Solids (TDS)	< 800 ppm
Total Hardness	< 250 ppm
Total Alkalinity	< 200 ppm
Chloride	< 120 ppm

Water Treatment

As a cooling tower manufacturer, we strive to offer a complete solution to condenser water issues with water treatment program.

The water treatment system should minimally consist of chemicals and dosing equipments. Chemicals can be dosed in automatically at a predetermined amount and duration. Alternatively, we can offer conductivity control system that has a pre-set range, whereby upon reaching its limit, blowdown will automatically take place and stop when its lower limit is reached.

The blowdown conducted is to control scale build-up and corrosion. All in all, the water treatment program should be able to control or minimise scale, corrosion, algae and microorganisms including the possible outbreak of Legionnaire Disease.

Last but not least, the chemicals must be compatible with the materials of construction of all cooling tower parts in contact with the recirculating water.

We now offer
water treatment
solution within
Klang Valley area



Fully automatic chemical dosing system with conductivity controller and pumps.

Overview of the installation at site.

Our Past Project Portfolio



Giant Hypermarkets in Malaysia



Jusco Shopping Malls in Malaysia



Econsave Hypermarkets in Malaysia



Carrefour Hypermarkets in Malaysia



Westin Langkawi, Malaysia



Damai Beach Resort, Kuching,
Malaysia



Capital Square Phase 2, Kuala Lumpur,
Malaysia



Sunway Giza, Kota Damansara,
Malaysia



Bangsar Shopping Centre, Malaysia



Surian Tower, Mutiara Damansara
Malaysia



Menara UOA Bangsar, Malaysia



Yayasan Selangor, Kuala Lumpur,
Malaysia



New National Palace, Malaysia



Rapid KL LRT Station - Masjid Jamek, Dang Wangi, KLCC, Kampung Baru & Ampang Park, Malaysia



UiTM Puncak Alam Campus, Malaysia



Sony Bangi Factory, Malaysia



ASE Electronics, Penang Malaysia



AMD Factory Penang, Malaysia



Borneo Convention Centre, Kuching, Malaysia



Meritus Mandarin Hotel, Singapore



Hotel Grand Central, Singapore



NUS Business School, Singapore



National Parks Board Headquarters, Singapore



Emirate Glass Factory, Dubai

www.spindle.com.my

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