



RYOWO COOLING TOWER

**FWS** SERIES  
Low Noise Cross Flow Type





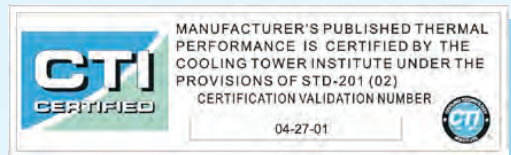
The **ryowo™** Group is the pioneer and manufacturer of fiberglass-reinforced polyester (FRP) cooling towers in Hong Kong.

We offer a full range of product lines in FRP, stainless steel and galvanized steel water-cooling towers. With our vital production station, Shenzhen RYOWO Cooling Tower Company Limited, we manufacture, market and service a full range of water-cooling towers. Over 90% of the cooling tower parts are from our own factory and, as a result, control of cost and quality are ensured.

RYOWO has been a member of the Cooling Technology Institute since 1982. With our own R&D Department and testing facilities, we have four lines of product which are CTI-201 certified.

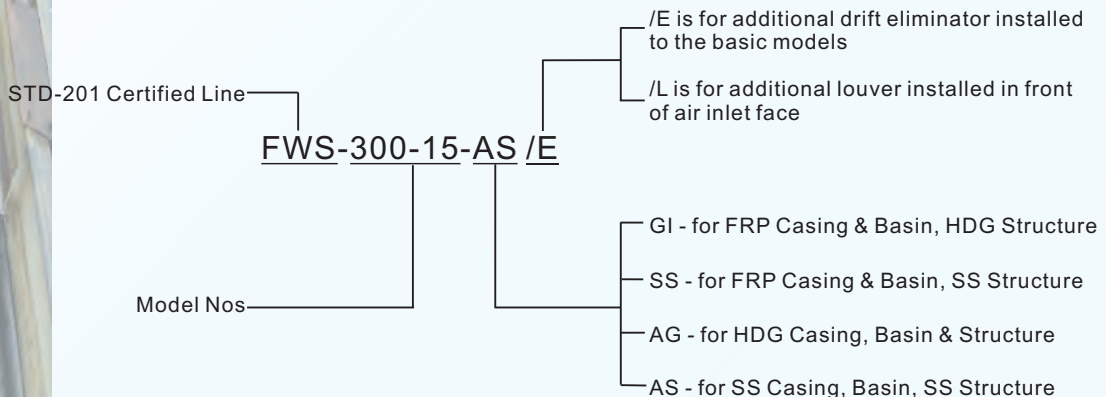
RYOWO has been awarded ISO-9000 International Quality System Certification since 1998. Our strict policy on quality control contributes to the superior product quality and traceability. In 2004, our R & D department successfully developed a CTI STD-201 rated product line, the FWS series, the highest standard of water-cooling towers with guaranteed cooling capacity.

## FWS Low Noise Cross Flow Type



THE COOLING TOWER YOU CAN RELY ON

### MODEL DESIGNATION



There are a total of 63 models for the FWS series with 15 different configurations to meet various requirements and provide a high degree of flexibility.



Factory assembled



Most FWS cooling towers can be factory assembled and delivered to site.



Accessible



High flexible



All FWS models can be fitted with RYOWO special drift eliminators to achieve drift loss less than 0.001% and equipped with OSHA handrail and caged ladder to comply with requirement.



Complied with OSHA requirement



FRP / HDG / SS MATERIAL ARE AVAILABLE

All Hot dip galvanized



All Stainless steel



FRP Casing + SS Basin

The standard FWS cooling towers are made of FRP casing & basin with hot dip galvanized structure. Optional stainless steel casing & basin and structure can also be provided upon request.

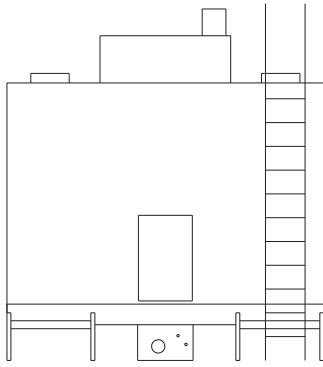


# 3 SPECIFICATION

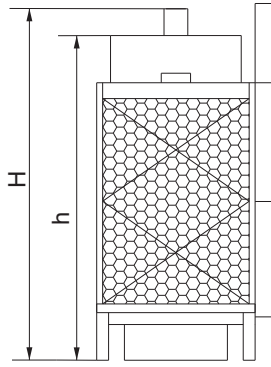
Model	Nominal Water Flow M <sup>3</sup> /hr	Dimension				Fan Motor kW	Fan Dia mm	Piping					Sound Power Level	Weight	
		L mm	W mm	h mm	H mm			In mm	Out mm	Fv mm	Of mm	Dr mm		Dry kgs	Wet kgs
FWS-94-3.7	94	4000	2000	4125	4625	3.7	1600	100x2	150	25	50	50	88	1335	2300
FWS-94-5.5	107				4705	5.5							91	1385	2350
FWS-94-7.5	119				4745	7.5							93	1400	2365
FWS-127-5.5	127	4400	2300	4125	4705	5.5	1800	100x2	150	25	50	50	90	1570	3000
FWS-127-7.5	141				4745	7.5							92	1585	3015
FWS-127-11	160				4825	11							94	1650	3080
FWS-169-7.5	169	4400	2600	4125	4745	7.5	2000	125x2	200	25	50	50	92	1690	3700
FWS-169-11	192				4825	11							94	1760	3770
FWS-169-15	213				4870	15							95	1770	3780
FWS-200-7.5	190	4600	2600	4145	4785	7.5	2200	125x2	200	40	80	50	91	2195	4000
FWS-200-11	215				4865	11							93	2250	4055
FWS-200-15	235				4910	15							95	2255	4060
FWS-250-7.5	210	4800	3200	4345	4985	7.5	2400	125x2	200	40	80	50	90	2890	5000
FWS-250-11	240				5065	11							93	2945	5055
FWS-250-15	265				5110	15							94	2950	5060
FWS-275-7.5	225	5200	3200	4345	4985	7.5	2800	150x2	200	40	80	50	89	3050	5160
FWS-275-11	255				5065	11							92	3105	5215
FWS-275-15	285				5110	15							94	3110	5220
FWS-300-7.5	235	6000	3200	4345	4895	7.5	2400	150x2	200	40	80	50	89	3310	6500
FWS-300-11	270				5065	11							91	3365	6555
FWS-300-15	300				5110	15							93	3370	6560
FWS-330-7.5	260	6300	3200	4345	4895	7.5	2800	150x2	250	50	80	50	88	3405	6595
FWS-330-11	300				5065	11							91	3460	6650
FWS-330-15	330				5110	15							93	3465	6655
FWS-350-7.5	275	5400	3600	5425	6065	7.5	3000	150x2	250	50	80	50	89	3580	6770
FWS-350-11	315				6145	11							91	3635	6825
FWS-350-15	350				6190	15							93	3640	6830
FWS-350-18.5	375				6255	18.5							94	3680	6870
FWS-350-22	400				6295	22							95	3740	6930
FWS-400-7.5	285	6600	3600	4345	4985	7.5	3000	125x4	250	50	80	50	87	3630	7000
FWS-400-11	325				5065	11							89	3685	7055
FWS-400-15	360				5110	15							91	3690	7060
FWS-400-18.5	385				5135	18.5							92	3730	7100
FWS-400-22	410				5195	22							93	3790	7160
FWS-500-7.5	305	6000	4200	5355	5990	7.5	3400	125x4	250	50	80	50	87	4230	8000
FWS-500-11	345				6070	11							90	4285	8055
FWS-500-15	385				6115	15							91	4290	8060
FWS-500-18.5	410				6180	18.5							93	4325	8100
FWS-500-22	435				6220	22							94	4390	8120
FWS-550-7.5	315	6600	3600	5355	5990	7.5	3000	125x4	250	50	80	50	87	4350	8080
FWS-550-11	360				6070	11							89	4405	8135
FWS-550-15	400				6115	15							91	4410	8140
FWS-550-18.5	430				6180	18.5							92	4450	8180
FWS-550-22	455				6220	22							94	4510	8240
FWS-600-11	435	7000	4200	5500	6255	11	3700	150x4	300	50	80	50	89	5015	9000
FWS-600-15	485				6300	15							91	5020	9005
FWS-600-18.5	520				6365	18.5							92	5060	9045
FWS-600-22	550				6405	22							94	5120	9085
FWS-600-30	610				6465	30							95	5140	9110
FWS-700-11	515	7000	5000	5500	6255	11	3700	150x4	300	50	80	50	89	5650	12000
FWS-700-15	570				6300	15							91	5655	12005
FWS-700-18.5	610				6365	18.5							92	5690	12055
FWS-700-22	645				6405	22							93	5755	12120
FWS-700-30	720				6465	30							95	5780	12145
FWS-700-37	765	6485	37	96	5970	12335									
FWS-800-11	555	7000	5000	6400	7155	11	4200	150x4	300	50	80	50	88	6780	14480
FWS-800-15	615				7200	15							90	6785	14485
FWS-800-18.5	655				7265	18.5							91	6820	14520
FWS-800-22	695				7305	22							93	6885	14585
FWS-800-30	760				7365	30							95	6910	14610
FWS-800-37	820				7385	37							98	7100	14800
FWS-800-45	880				7405	45							99	7130	14830
FWS-800-55	940				7495	55							100	7240	14940

## Notes:

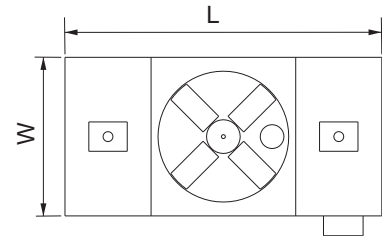
- 1/CTI Certification applies to the operation with the Wet Bulb Temp. between 12.8°C and 32.2°C, Max. Entering Water Temp. 51.6°C, Min. Range of 2.8°C and Min. Approach of 2.8°C.
- 2/The nominal water flows are based upon 37°C HWT, 32°C CWT, 28°C WBT, 32°C DBT and 101.3 kPa Barometric pressure.
- 3/Sound Power Level is in dBA re 10<sup>-12</sup> Watt.
- 4/Data and specifications are subjected to change without prior notice.



Casing Panel

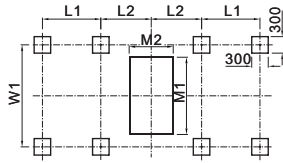


Air Intake

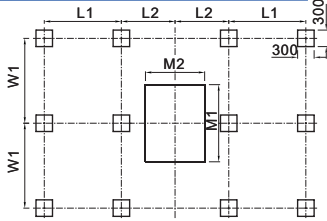


Top view

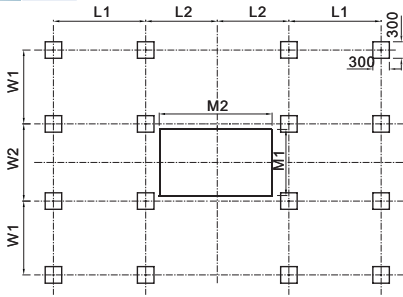
**FWS** 94 / 127 / 169 / 200



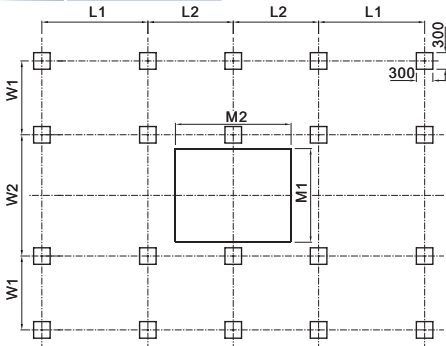
**FWS** 250 / 275 / 300 / 330 / 350 / 400 / 550



**FWS** 500



**FWS** 600 / 700 / 800



Model	L1	L2	W1	W2	M1	M2
FWS-94-3.7	1060	915	1850		1400	800
FWS-94-5.5	1060	915	1850		1400	800
FWS-94-7.5	1060	915	1850		1400	800
FWS-127-5.5	1060	1115	2150		1400	800
FWS-127-7.5	1060	1115	2150		1400	800
FWS-127-11	1060	1115	2150		1400	800
FWS-169-7.5	1060	1115	2450		1400	800
FWS-169-11	1060	1115	2450		1400	800
FWS-169-15	1060	1115	2450		1400	800
FWS-200-7.5	1400	875	2450		1400	1100
FWS-200-11	1400	875	2450		1400	1100
FWS-200-15	1400	875	2450		1400	1100
FWS-250-7.5	1400	975	1540		1400	1100
FWS-250-11	1400	975	1540		1400	1100
FWS-250-15	1400	975	1540		1400	1100
FWS-275-7.5	1400	1175	1540		1400	1100
FWS-275-11	1400	1175	1540		1400	1100
FWS-275-15	1400	1175	1540		1400	1100
FWS-300-7.5	1848	1127	1540		1400	1100
FWS-300-11	1848	1127	1540		1400	1100
FWS-300-15	1848	1127	1540		1400	1100
FWS-330-7.5	1848	1277	1540		1400	1100
FWS-330-11	1848	1277	1540		1400	1100
FWS-330-15	1848	1277	1540		1400	1100
FWS-350-7.5	1675	1000	1740		2100	1200
FWS-350-11	1675	1000	1740		2100	1200
FWS-350-15	1675	1000	1740		2100	1200
FWS-350-18.5	1675	1000	1740		2100	1200
FWS-350-22	1675	1000	1740		2100	1200
FWS-400-7.5	1925	1350	1740		1400	1100
FWS-400-11	1925	1350	1740		1400	1100
FWS-400-15	1925	1350	1740		1400	1100
FWS-400-18.5	1925	1350	1740		1400	1100
FWS-400-22	1925	1350	1740		1400	1100
FWS-500-7.5	1675	1300	1340	1400	1200	2100
FWS-500-11	1675	1300	1340	1400	1200	2100
FWS-500-15	1675	1300	1340	1400	1200	2100
FWS-500-18.5	1675	1300	1340	1400	1200	2100
FWS-500-22	1675	1300	1340	1400	1200	2100
FWS-550-7.5	1925	1350	1740		2100	1200
FWS-550-11	1925	1350	1740		2100	1200
FWS-550-15	1925	1350	1740		2100	1200
FWS-550-18.5	1925	1350	1740		2100	1200
FWS-550-22	1925	1350	1740		2100	1200
FWS-600-11	1925	1550	1340	1400	1200	2100
FWS-600-15	1925	1550	1340	1400	1200	2100
FWS-600-18.5	1925	1550	1340	1400	1200	2100
FWS-600-22	1925	1550	1340	1400	1200	2100
FWS-600-30	1925	1550	1340	1400	1200	2100
FWS-700-11	1925	1550	1340	2200	1200	2100
FWS-700-15	1925	1550	1340	2200	1200	2100
FWS-700-18.5	1925	1550	1340	2200	1200	2100
FWS-700-22	1925	1550	1340	2200	1200	2100
FWS-700-30	1925	1550	1340	2200	1200	2100
FWS-700-37	1925	1550	1340	2200	1200	2100
FWS-800-11	1925	1550	1340	2200	1200	2100
FWS-800-15	1925	1550	1340	2200	1200	2100
FWS-800-18.5	1925	1550	1340	2200	1200	2100
FWS-800-22	1925	1550	1340	2200	1200	2100
FWS-800-30	1925	1550	1340	2200	1200	2100
FWS-800-37	1925	1550	1340	2200	1200	2100
FWS-800-45	1925	1550	1340	2200	1200	2100
FWS-800-55	1925	1550	1340	2200	1200	2100

**Notes:**

- 1/The footing dimensions are for preliminary layout only. For detail footing drawing, please consult RYOWO engineers.
- 2/Dimensions are in mm.

# 5 MODEL SELECTION

Model	Temp.	Water flow rate at indicated HWT, CWT & WBT ( M <sup>3</sup> /Hr )											
	HWT°C	33	32	37	33	32	37	35	34	33	37	36	35
	CWT°C	28	27	32	28	27	32	30	29	28	32	31	30
	WBT°C	23	23	24	24	24	25	25	25	25	26	26	26
FWS-94-3.7		89	75	143	78	63	132	98	82	66	120	102	86
FWS-94-5.5		102	86	163	89	72	151	112	94	75	137	116	98
FWS-94-7.5		113	95	181	99	80	167	124	104	84	152	129	109
FWS-127-5.5		120	101	194	105	85	178	132	110	89	162	138	116
FWS-127-7.5		133	112	215	116	94	197	146	122	99	180	153	129
FWS-127-11		151	127	244	132	107	224	166	139	112	204	174	146
FWS-169-7.5		160	134	259	140	113	238	176	147	119	216	184	154
FWS-169-11		182	152	294	159	128	270	200	167	135	245	209	175
FWS-169-15		202	169	326	176	142	300	222	185	150	272	232	194
FWS-200-7.5		178	147	296	155	123	272	197	163	130	246	208	171
FWS-200-11		202	166	335	175	139	307	223	184	147	278	235	194
FWS-200-15		220	182	367	191	152	336	244	201	160	304	257	212
FWS-250-7.5		197	163	326	171	136	299	218	180	144	271	229	189
FWS-250-11		225	186	373	195	156	342	249	206	164	310	262	216
FWS-250-15		248	205	412	216	172	378	275	227	181	342	289	239
FWS-275-7.5		211	174	349	183	146	321	233	193	154	290	246	203
FWS-275-11		239	197	396	208	166	363	264	218	174	329	278	230
FWS-275-15		267	221	443	232	185	406	296	244	195	368	311	257
FWS-300-7.5		220	183	359	192	154	330	243	202	162	300	255	212
FWS-300-11		252	210	412	221	177	379	279	232	186	345	293	244
FWS-300-15		280	233	458	245	197	421	310	258	207	383	326	271
FWS-330-7.5		243	202	397	212	171	365	268	223	180	332	282	235
FWS-330-11		280	233	458	245	197	421	310	258	207	383	326	271
FWS-330-15		308	256	503	270	217	463	341	283	228	421	358	298
FWS-350-7.5		257	214	421	224	180	388	284	236	189	352	299	248
FWS-350-11		295	245	483	257	206	444	326	270	217	403	343	284
FWS-350-15		327	272	536	286	229	493	362	300	241	448	381	316
FWS-350-18.5		351	291	575	306	246	529	388	322	258	480	408	339
FWS-350-22		374	311	613	326	262	564	413	343	276	512	435	361
FWS-400-7.5		266	221	435	233	187	400	294	245	197	364	310	257
FWS-400-11		304	253	496	265	213	456	336	279	224	415	353	293
FWS-400-15		337	280	549	294	236	506	372	309	249	460	391	325
FWS-400-18.5		360	299	587	314	253	541	398	331	266	492	418	348
FWS-400-22		383	319	626	335	269	576	423	352	283	524	445	370
FWS-500-7.5		285	237	467	249	200	430	315	262	210	390	332	275
FWS-500-11		323	268	529	282	226	486	357	296	238	442	375	311
FWS-500-15		360	299	590	314	252	543	398	330	265	493	419	348
FWS-500-18.5		384	318	628	335	269	578	424	352	282	525	446	370
FWS-500-22		407	338	667	355	285	613	450	373	300	557	473	393
FWS-550-7.5		294	245	475	258	208	438	324	271	219	400	341	285
FWS-550-11		336	280	543	295	238	501	371	310	250	457	390	325
FWS-550-15		373	312	603	327	265	557	412	344	278	507	433	362
FWS-550-18.5		401	335	649	352	285	598	443	370	299	545	466	389
FWS-550-22		425	354	686	372	301	633	469	391	316	577	493	411
FWS-600-11		406	339	656	356	288	605	448	374	302	552	471	393
FWS-600-15		453	378	732	397	321	675	499	417	337	615	525	438
FWS-600-18.5		485	405	784	426	344	724	536	447	362	660	563	470
FWS-600-22		513	429	830	450	364	765	566	473	382	698	595	497
FWS-600-30		569	475	920	499	404	849	628	525	424	774	660	551
FWS-700-11		481	401	777	421	341	717	530	443	358	653	558	466
FWS-700-15		532	444	860	466	377	793	587	490	396	723	617	515
FWS-700-18.5		569	475	920	499	404	849	628	525	424	774	660	551
FWS-700-22		602	503	973	528	427	898	664	555	448	818	698	583
FWS-700-30		672	561	1086	589	476	1002	742	619	501	913	779	651
FWS-700-37		714	596	1154	626	506	1065	788	658	532	970	828	692
FWS-800-11		517	432	832	454	367	769	570	477	386	702	600	501
FWS-800-15		572	479	922	503	407	852	632	528	428	777	664	556
FWS-800-18.5		610	510	982	536	434	907	673	563	456	828	708	592
FWS-800-22		647	541	1042	568	460	963	714	597	484	879	751	628
FWS-800-30		707	591	1140	621	503	1053	781	653	529	961	821	687
FWS-800-37		763	638	1230	670	543	1136	843	705	571	1037	886	741
FWS-800-45		819	685	1320	719	582	1219	904	756	612	1113	951	795
FWS-800-55		875	731	1410	769	622	1302	966	808	654	1188	1016	849

## Notes:

1/CTI Certification applies to the operation with the Wet Bulb Temp. between 12.8°C and 32.2°C, Max. Entering Water Temp. 51.6°C, Min. Range of 2.8°C and Min. Approach of 2.8°C.

2/This table is for quick selection only. For more precise selection, please consult RYOWO engineers.

Model	Temp.	Water flow rate at indicated HWT, CWT & WBT ( M <sup>3</sup> /Hr )											
	HWT°C	34	38	37	36	35	39	38	37	36	39	38	37
	CWT°C	29	33	32	31	30	34	33	32	31	34	33	32
	WBT°C	26	27	27	27	27	28	28	28	28	29	29	29
FWS-94-3.7		69	126	107	90	73	132	113	94	76	118	99	80
FWS-94-5.5		79	144	122	103	83	151	129	108	87	135	113	91
FWS-94-7.5		87	159	135	114	92	167	143	119	96	149	125	101
FWS-127-5.5		93	170	145	121	98	178	152	127	103	160	133	108
FWS-127-7.5		103	189	161	134	109	197	169	141	114	177	147	120
FWS-127-11		117	214	183	152	123	224	192	160	130	202	168	136
FWS-169-7.5		124	227	193	161	130	238	203	169	136	213	177	143
FWS-169-11		141	258	219	183	148	270	231	192	155	242	201	162
FWS-169-15		156	286	243	203	164	300	256	213	171	268	223	180
FWS-200-7.5		136	259	219	180	144	273	230	190	151	243	200	159
FWS-200-11		154	293	247	204	163	309	261	215	171	275	227	180
FWS-200-15		169	320	270	223	178	337	285	235	187	300	248	197
FWS-250-7.5		151	285	241	199	159	301	254	210	168	268	221	177
FWS-250-11		173	326	276	228	182	344	291	240	192	306	253	202
FWS-250-15		191	360	305	252	201	379	321	265	211	338	279	223
FWS-275-7.5		162	306	259	214	170	322	272	225	180	287	237	189
FWS-275-11		183	347	293	242	193	365	309	255	203	325	269	214
FWS-275-15		205	387	328	271	216	408	345	285	227	364	300	240
FWS-300-7.5		171	316	269	223	180	332	283	235	189	298	247	199
FWS-300-11		196	363	308	257	206	382	325	270	217	342	284	229
FWS-300-15		218	403	343	285	229	424	361	300	241	380	316	254
FWS-330-7.5		189	349	297	247	199	368	313	260	209	329	274	220
FWS-330-11		218	403	343	285	229	424	361	300	241	380	316	254
FWS-330-15		240	443	377	314	252	467	397	330	266	418	347	280
FWS-350-7.5		199	370	315	261	210	390	331	275	221	349	290	233
FWS-350-11		228	424	360	299	240	447	379	315	253	400	332	266
FWS-350-15		254	471	400	333	267	496	422	350	281	444	369	296
FWS-350-18.5		272	505	429	356	286	532	452	375	301	476	395	317
FWS-350-22		290	539	458	380	305	567	482	400	321	507	421	338
FWS-400-7.5		207	383	326	271	218	403	343	285	229	361	300	241
FWS-400-11		236	437	371	309	248	460	391	325	261	411	342	275
FWS-400-15		262	484	411	342	275	509	433	360	290	456	379	305
FWS-400-18.5		280	517	440	366	294	544	463	385	310	487	405	326
FWS-400-22		298	551	468	390	313	580	493	410	330	519	432	347
FWS-500-7.5		221	411	349	290	233	432	367	305	245	387	321	258
FWS-500-11		250	465	395	328	263	489	416	345	277	438	363	292
FWS-500-15		279	519	441	366	294	546	464	385	309	488	405	326
FWS-500-18.5		297	552	469	390	313	581	494	410	329	520	432	347
FWS-500-22		315	586	498	413	332	617	524	435	349	552	458	368
FWS-550-7.5		230	420	359	299	242	442	377	315	255	397	332	268
FWS-550-11		263	480	410	342	277	505	431	360	291	454	379	307
FWS-550-15		292	534	455	380	308	561	479	400	324	504	421	341
FWS-550-18.5		314	574	489	409	331	603	515	430	348	542	453	366
FWS-550-22		333	607	518	433	350	638	545	455	368	573	479	387
FWS-600-11		318	580	495	414	334	610	521	435	352	548	458	370
FWS-600-15		355	647	552	461	373	680	581	485	392	611	510	413
FWS-600-18.5		380	694	592	494	400	730	623	520	421	655	547	443
FWS-600-22		402	734	626	523	423	772	659	550	445	693	579	468
FWS-600-30		446	814	694	580	469	856	730	610	493	769	642	519
FWS-700-11		376	687	586	490	396	723	617	515	417	649	542	438
FWS-700-15		417	760	649	542	438	800	683	570	461	718	600	485
FWS-700-18.5		446	814	694	580	469	856	730	610	493	769	642	519
FWS-700-22		472	860	734	613	496	905	772	645	522	813	679	549
FWS-700-30		526	960	820	684	554	1010	862	720	582	907	758	613
FWS-700-37		559	1020	871	727	588	1073	916	765	619	964	805	651
FWS-800-11		406	738	631	527	427	776	663	555	450	698	584	473
FWS-800-15		450	818	699	584	473	860	735	615	498	774	647	525
FWS-800-18.5		479	871	744	622	504	916	783	655	531	824	689	559
FWS-800-22		509	924	790	660	535	972	831	695	563	874	732	593
FWS-800-30		556	1010	864	722	585	1063	909	760	616	956	800	648
FWS-800-37		600	1090	932	779	631	1147	980	820	664	1032	863	700
FWS-800-45		644	1170	1000	836	678	1231	1052	880	713	1107	926	751
FWS-800-55		688	1250	1068	893	724	1315	1124	940	762	1183	989	802

**Notes:**

1/CTI Certification applies to the operation with the Wet Bulb Temp. between 12.8°C and 32.2°C, Max. Entering Water Temp.51.6°C, Min. Range of 2.8°C and Min. Approach of 2.8°C.

2/This table is for quick selection only. For more precise selection, please consult RYOWO engineers.



**City University of  
Hong Kong**



**The Hong Kong  
Polytechnic University**



**The University of  
Hong Kong**



**World Trade Centre**

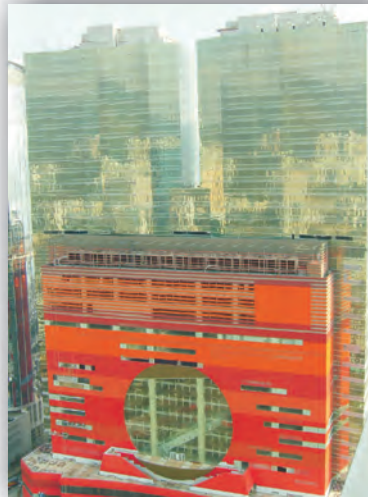
■ **FWS series** ■



**Citylink Plaza, Shatin Station**



**Castle Peak Hospital**



**Mega Box**



**Galaxy Casino & Resort, Macau**

**RYOWO (HOLDING) CO., LTD.**

**Head Office:**

Rm. 1218, Argyle Centre 1,688 Nathan Rd. MongKok,Kowloon,  
Hong Kong.

Tel : (852) 23918381

Web site: <http://www.ryowo.com>

Fax: (852) 27893802

E-mail : [ryinfo@ryowo.com](mailto:ryinfo@ryowo.com)

**Factory:**

4/F., Flat A, Tuen Mun Ind. Ctr.,TMTL 76, NT., Hong Kong

**SHENZHEN RYOWO COOLING TOWER CO., LTD.**

Shapu Industrial Zone, Songgang, Baoan, Guangdong, PRC

Tel : (86)-755 27050346

Postal Code: 518105

Fax: (86)-755 27050376



**COOLING TOWER MANUFACTURER SINCE 1978**

© 2011 RYOWO (Holding) Co., Ltd.

All rights reserved.

CAT-FWS-EN-(08)-2011