



Compass Series Open Cooling Towers

BAC AUSTRALIA

Compass Series Benefits

Baltimore Aircoil Company (BAC) is the world's largest and leading supplier of evaporative heat transfer and thermal energy management equipment. With over 75 years of experience in designing and manufacturing evaporative heat transfer products, BAC is proud to provide the Compass Series Cooling Tower to support a new era of Green Cooling Towers.

> Environmentally Friendly

▶ Environmentally Friendly Materials

- Up to 90% recycled content
- All of structural and cladding components are made from the highest quality materials.
- All materials are designed to meet AU/NZ-WHS requirements

▶ Lower Operating Cost

- Meets or exceeds ASHRAE Standard 90.1 and BCA sect J energy efficiency requirements
- Fullfills increased demand for Water/Energy Conservation requirements.
- BACross® Fill, BAC's patented crossflow hanging fill, is developed to provide the most efficient thermal capacity in the industry.
- Patented non-clog nozzles distribute flow evenly
- Triple-pass integral eliminators limit drift loss to <0.002%

▶ Low Sound Operation

- High efficiency aluminum alloy fans provide a low sound solution
- BAC's industry leading selection program provides accurate sound power and sound pressure data



Environmentally Friendly Sealer



Patented BACross® Fill



Patented 360° Spray Nozzle

> 100% Thermal Performance

- ▶ All Compass Series models are certified by the Cooling Technology Institute (CTI)
- ▶ Strict CTI testing procedures ensure that all Compass Series towers are 100% thermal performance





> Reliable Year-Round Operation

- ▶ Heavy-duty stainless steel frame and FRP pultruded casing panels are designed to withstand up to a S_{ds} of 1.3g and a wind load of 66 psf
- ▶ Waterproof, sealed bearings are ideal for use inside of the moist cooling tower environment
- ▶ Aluminum fans provide trouble free operation
- ▶ Cooling tower duty fan motors, provide reliable performance and longer service life
- ▶ Larger cold water basins provide ample pump draw down at start-up and accommodate all water in suspension at shut-down to ensure no overflow of the tower occurs.
- ▶ Fewer seams in the cold water basin, and steel supports under the seams avoid the potential leakage risk



Heavy-Duty Construction

> Easy Maintenance

- ▶ Crossflow configuration provides direct access for easy maintenance to cold water basin, water distribution system and drive system
- ▶ Split bearings are easy to lubricate and replace
- ▶ Light aluminum driven sheaves with high-quality bushing kits simplify maintenance
- ▶ Snap-rotating nozzles are simple to remove for easy maintenance and recyclable
- ▶ Cold water basin complies with AS/NZS 3666 and sloped to eliminate stagnant water and reduce biological growth
- ▶ Hot water basin covers prevent debris entering the hot water basin to protect the system
- ▶ Fill surface is elevated above the sloped cold water basin floor to facilitate flushing of dirt and debris
- ▶ Hot water basin cover can be directly used as service platform, providing ease for maintenance
- ▶ Standard access door and internal walkway provide easy maintenance access
- ▶ Optional AS/NZS 1657 compliant service platforms provide safe, simple, easy access to mechanical equipment.



High-efficiency Fan System

> Easy Installation

- ▶ Fewer seams with environmentally friendly BUYTL and no hand-laid FRP on-site, reducing the time required to assemble and install the cold water basin (FE Format)
- ▶ All models can be mounted directly on the side panel of the parallel beams which make field assembly much simpler
- ▶ Optional factory-assembled units ensure uniform quality with minimum field assembly.



Large Access Door



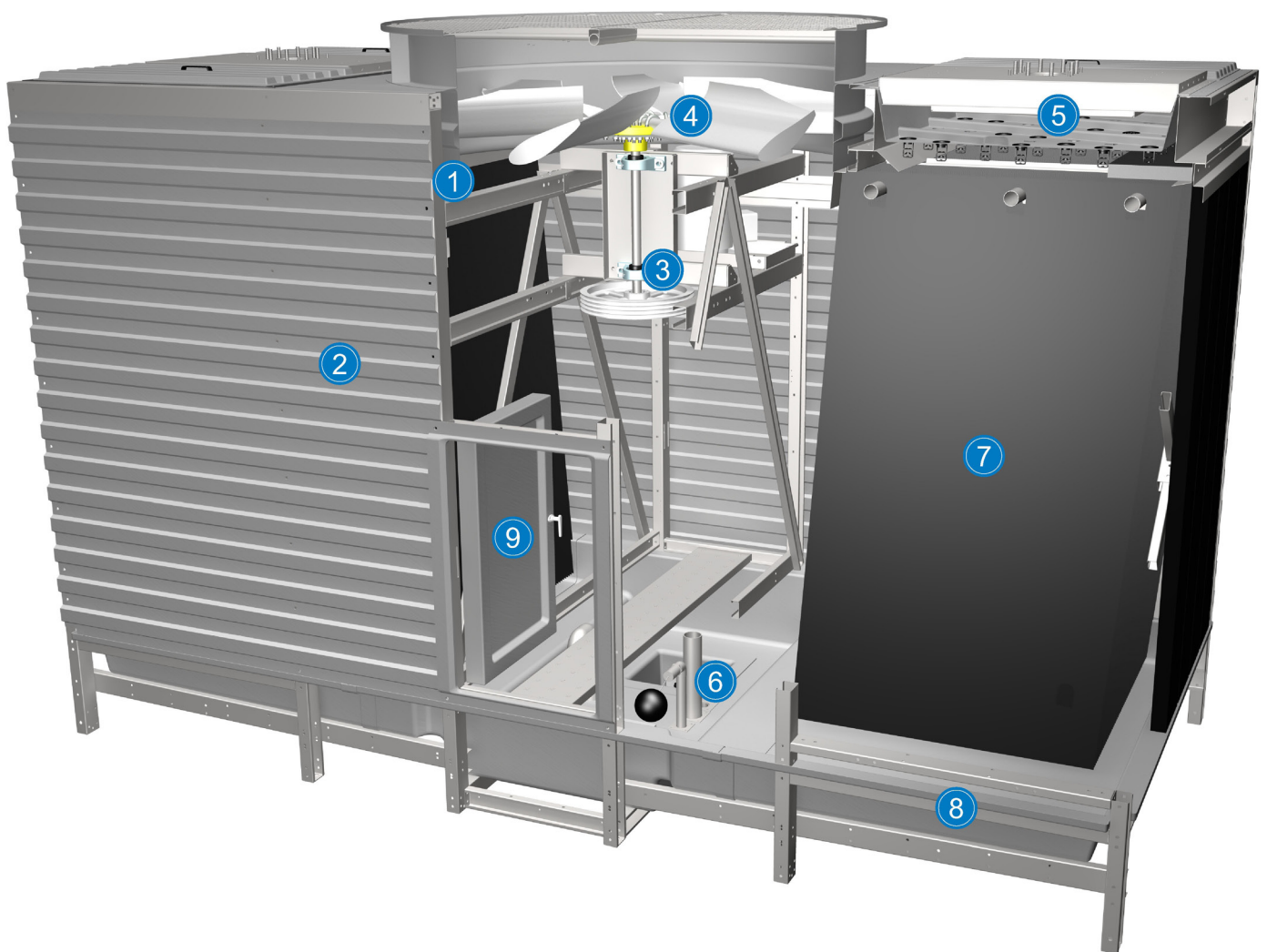
Factory Assembly



Custom Features & Options

- | | |
|------------------------------|--------------------------------------|
| ▶ Low Sound Fan | ▶ Hot Water Basin Cover |
| ▶ Vibration Cutout Switch | ▶ Flume Box / Equalizer |
| ▶ Basin Heaters | ▶ Ladders, Safety Cage and Handrails |
| ▶ Extended Lubrication Lines | ▶ Air Intake Screens |

Compass Series Construction Details





① Heavy-Duty Construction

- ▶ Heavy-gauge stainless steel structural frame
- ▶ Designed to withstand seismic ratings up to a S_{DS} of 1.3g
- ▶ Designed to withstand wind loads of up to 66psf

② Casing Panels

- ▶ Strong, long lasting pultruded panels
- ▶ Excellence appearance and environmental friendly

③ Fan Drive System

- ▶ Split waterproof sealed bearings ensure longer life, easier installation and maintenance
- ▶ Anti-corrosion aluminum alloy fan sheave, easier installation and simplified maintenance
- ▶ Premium quality bushing, reduces the contact corrosion for the shaft

④ Axial Fan

- ▶ Quiet operation
- ▶ High efficiency
- ▶ Corrosion resistant, longer service life
- ▶ Low sound fan option

⑤ Water Distribution System

- ▶ Low pump head gravity distribution basins
- ▶ 360° large orifice, non-clog nozzles
- ▶ Uniquely designed pre-distributor and re-distributor provide more even water distribution

⑥ Water Outlet / Strainer

- ▶ Easy to install, clean and maintain
- ▶ Corrosion resistant 304 stainless steel strainer
- ▶ Anti-vortexing design protects the HVAC system
- ▶ Sump box option for side outlet

⑦ Patented BACross® Fill with Integral Drift Eliminators

- ▶ High efficiency heat transfer surface
- ▶ Polyvinyl chloride (PVC)
- ▶ Impervious to rot, decay and biological attack
- ▶ Fire-resistant materials, oxygen index of 32

⑧ Hygienic Cold Water Basin

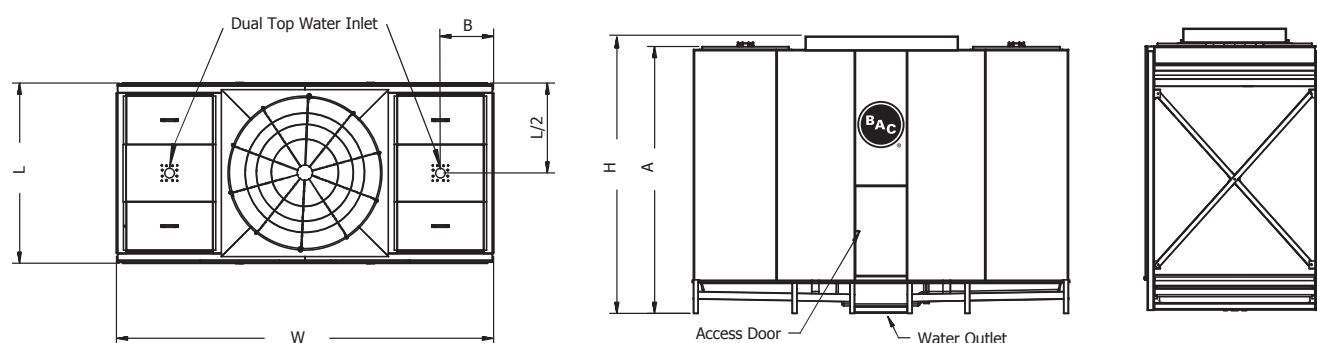
- ▶ Less seams, easy installation
- ▶ Environmentally friendly sealing materials, safe transportation
- ▶ Sloped cold water basin to eliminate stagnant water and reduce biological growth
- ▶ Quickfill Connection

⑨ Access Door

- ▶ Easy safe access to the interior of the unit
- ▶ Large, inward hinged access door on the end wall

Compass Series Engineering Data

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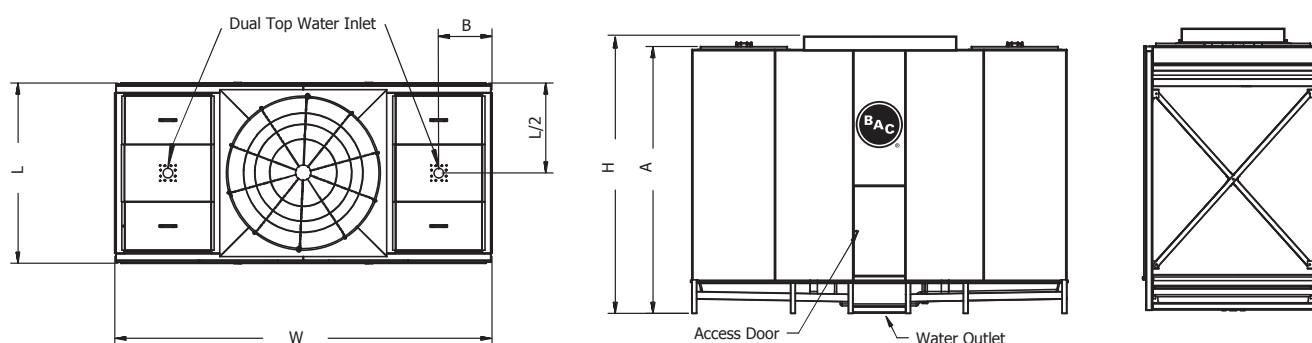
Model Number	Nominal Tonnage	Motor (KW)	Fan (m ³ /h)	Weights (kg)		Dimensions(mm)					Connection Sizes				
				Shipping	Operating	L	W	H	A	B	Make-up (in)	Top Inlet (mm)	Outlet (mm)	Drain (in)	Overflow (in)
CPSC-0716-06G	161	2.2	72848	1999	4742	2393	5005	3472	3133	706	1.5	150	200	2	3
CPSC-0716-06H	192	4	85782	2011	4754										
CPSC-0716-06J	221	5.5	97862	2037	4780										
CPSC-0716-06K	245	7.5	107807	2048	4791										
CPSC-0716-06L	278	11	121735	2094	4837										
CPSC-0716-06M	309	15	134290	2117	4860	2393	5005	3879	3540	706	1.5	150	200	2	3
CPSC-0716-07H	209	4	90908	2132	4875										
CPSC-0716-07J	240	5.5	103707	2158	4901										
CPSC-0716-07K	266	7.5	114232	2169	4912										
CPSC-0716-07L	303	11	128947	2215	4958										
CPSC-0716-07M	336	15	142193	2238	4981										
CPSC-0716-07N	360	18.5	151980	2277	5020										

Notes:

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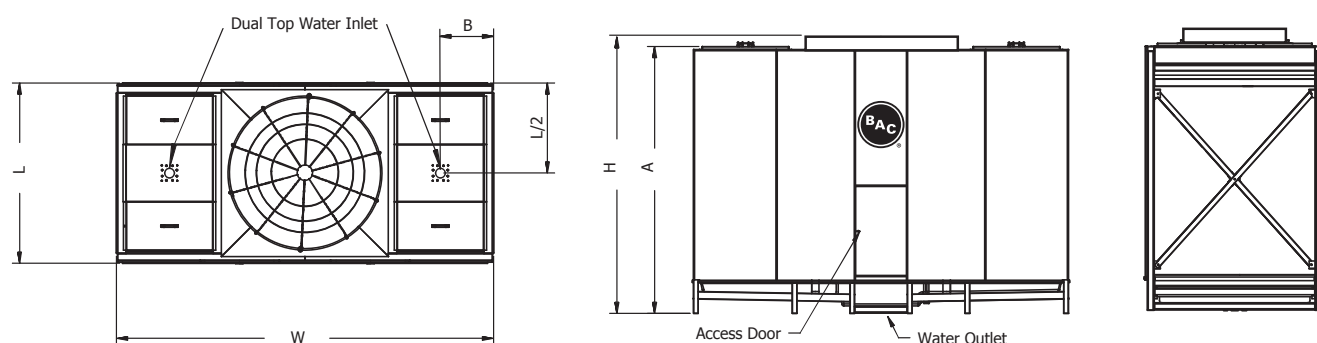
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CPSC-0817-07J	273	5.5	117921	2471	5992	2698	5307	3926	3563	706	1.5	150	250	2	3
CPSC-0817-07K	302	7.5	129763	2482	6004										
CPSC-0817-07L	343	11	146297	2528	6050										
CPSC-0817-07M	380	15	161162	2551	6072										
CPSC-0817-07N	407	18.5	172130	2590	6112										
CPSC-0817-07O	430	22	181450	2615	6137	2698	5307	4333	3966	706	1.5	150	250	2	3
CPSC-0817-08J	290	5.5	124071	2367	5888										
CPSC-0817-08K	322	7.5	136524	2378	5900										
CPSC-0817-08L	365	11	153882	2424	5946										
CPSC-0817-08M	404	15	169470	2447	5968										
CPSC-0817-08N	433	18.5	180962	2486	6008										
CPSC-0817-08O	458	22	190711	2511	6033										
CPSC-0817-08P	505	30	209797	2545	6067										

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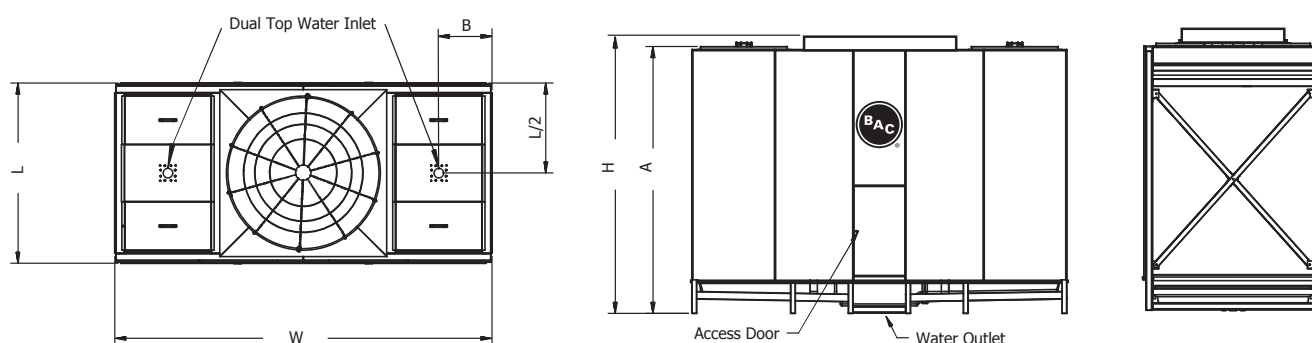
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CPSC-1020-07K	360	7.5	154868	3300	8418	3368	6050	4019	3617	760	1.5	200	300	2	3
CPSC-1020-07L	408	11	174463	3347	8465										
CPSC-1020-07M	451	15	192035	3396	8514										
CPSC-1020-07N	483	18.5	204850	3436	8554										
CPSC-1020-07O	511	22	216024	3437	8555										
CPSC-1020-08K	385	7.5	163889	3164	8282	3368	6050	4426	4024	760	1.5	200	300	2	3
CPSC-1020-08L	437	11	184537	3211	8328										
CPSC-1020-08M	483	15	203038	3260	8378										
CPSC-1020-08N	517	18.5	216498	3300	8418										
CPSC-1020-08O	546	22	228235	3301	8419										
CPSC-1020-08P	603	30	250781	3364	8482	3368	6050	4833	4431	760	1.5	200	300	2	3
CPSC-1020-09K	409	7.5	171360	3350	8468										
CPSC-1020-09L	463	11	192896	3396	8514										
CPSC-1020-09M	513	15	212163	3446	8564										
CPSC-1020-09N	548	18.5	226171	3486	8604										
CPSC-1020-09O	579	22	238377	3487	8604										
CPSC-1020-09P	639	30	261854	3550	8668										
CPSC-1020-09Q	682	37	278691	3653	8771										

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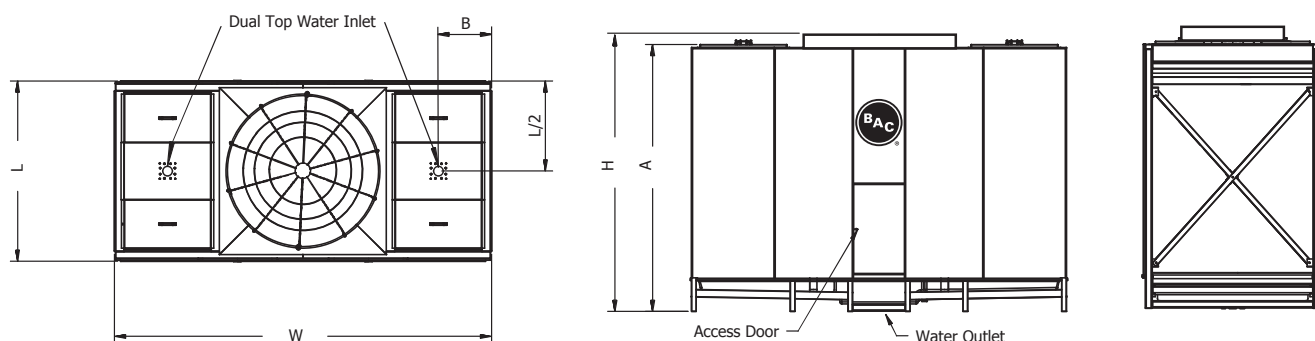
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				Shipping	Operating	L	W	H	H ²	A	B	Make-up (in)	Top Inlet (mm)	Outlet (mm)	Drain (in)	Overflow (in)
CPSC-1222-08K	450	7.5	192100	3991	10688	3978	6750	4527	4677	4068	760	2	250	300	2	3
CPSC-1222-08L	510	11	215971	4038	10734											
CPSC-1222-08M	563	15	237318	4061	10758											
CPSC-1222-08N	602	18.5	252829	4094	10791											
CPSC-1222-08O	636	22	266346	4094	10791											
CPSC-1222-08P	701	30	292329	4162	10859											
CPSC-1222-08Q	747	37	310947	4271	10968	3978	6750	4934	5084	4475	760	2	250	300	2	3
CPSC-1222-09K	482	7.5	202341	4215	10912											
CPSC-1222-09L	545	11	227333	4262	10958											
CPSC-1222-09M	602	15	249638	4285	10982											
CPSC-1222-09N	643	18.5	265832	4318	11015											
CPSC-1222-09O	679	22	279929	4318	11015											
CPSC-1222-09P	748	30	307000	4386	11083											
CPSC-1222-09Q	798	37	326383	4495	11192											
CPSC-1222-09R	846	45	345571	4499	11195											

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CPSC-1222-10L	572	11	237386	4810	13419	3978	6750	5417	5567	4958	760	2	250	300	2	3
CPSC-1222-10M	632	15	260581	4833	13442											
CPSC-1222-10N	675	18.5	277406	4866	13475											
CPSC-1222-10O	713	22	292040	4866	13475											
CPSC-1222-10P	785	30	320124	4934	13543											
CPSC-1222-10Q	836	37	340216	5043	13652											
CPSC-1222-10R	887	45	360096	5047	13656	3978	6750	6230	6380	5771	760	2.5	250	300	2	3
CPSC-1222-12L	618	11	253859	5204	13813											
CPSC-1222-12M	682	15	278554	5227	13836											
CPSC-1222-12N	728	18.5	296439	5260	13869											
CPSC-1222-12O	768	22	311979	5261	13870											
CPSC-1222-12P	846	30	341760	5329	13938											
CPSC-1222-12Q	901	37	363047	5438	14047	3978	6750	7043	7193	6584	760	2.5	250	300	2	3
CPSC-1222-12R	956	45	384071	5441	14050											
CPSC-1222-14M	721	15	292534	5649	14258											
CPSC-1222-14N	771	18.5	311290	5682	14291											
CPSC-1222-14O	813	22	327573	5683	14292											
CPSC-1222-14P	895	30	358737	5751	14360											
CPSC-1222-14Q	954	37	380973	5860	14469	3978	6750	7043	7193	6584	760	2.5	250	300	2	3
CPSC-1222-14R	1011	45	402927	5863	14472											
CPSC-1222-14S	1073	55	426754	5925	14534											

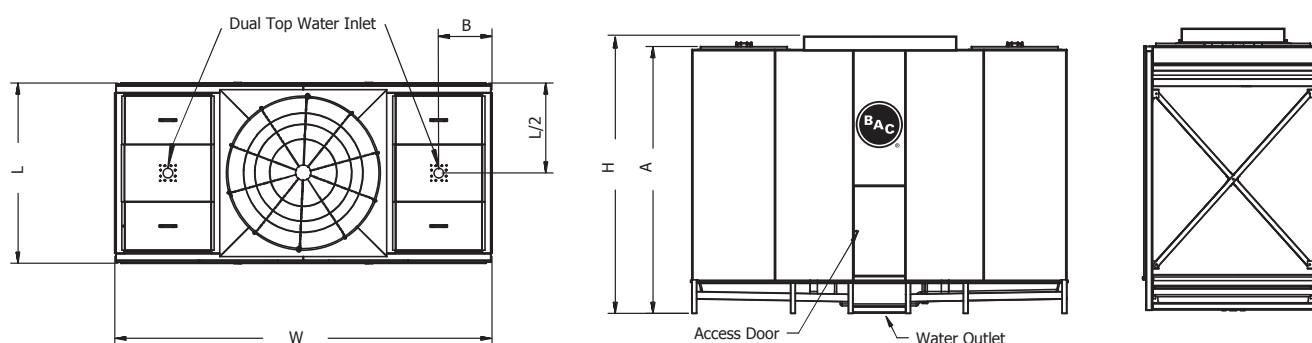
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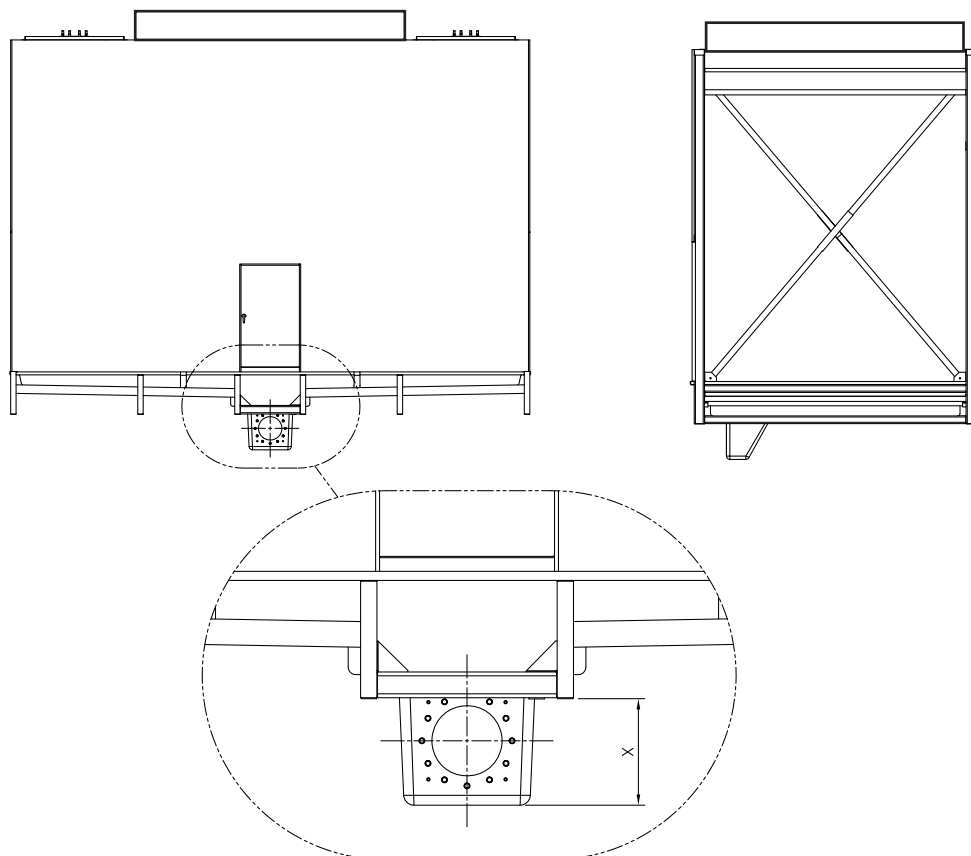


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				Shipping	Operating	L	W	H	H²	A	B	Make-up (in)	Top Inlet (mm)	Outlet (mm)	Drain (in)	Overflow (in)
CPSC-1424-12N	834	18.5	340131	6341	16703	4587	7606	6462	6582	5789	760	2.5	250	350	2	3
CPSC-1424-12O	880	22	357631	6342	16703											
CPSC-1424-12P	967	30	391136	6440	16802											
CPSC-1424-12Q	1029	37	415035	6543	16905											
CPSC-1424-12R	1090	45	438637	6545	16906											
CPSC-1424-12S	1169	55	469294	6607	16968											
CPSC-1424-14N	890	18.5	359647	6799	17160	4587	7606	7275	7395	6602	760	2.5	250	350	2	3
CPSC-1424-14O	938	22	378029	6799	17161											
CPSC-1424-14P	1030	30	413171	6897	17259											
CPSC-1424-14Q	1096	37	438189	7000	17362											
CPSC-1424-14R	1160	45	462878	7002	17363											
CPSC-1424-14S	1249	55	496934	7064	17426											
CPSC-1424-14T	1339	75	531338	7280	17641											

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Compass Series Side Entry Drop Sump



Sump Box Dimensions

The Compass side entry drop sump is configurable in 90 degree increments with outlet flange parallel to side and end faces A table E flange pattern is provided equivalent to the bottom entry dimensions.

	X (mm)
CPSC-0716	409
CPSC-0817	389
CPSC-1020	534
CPSC-1222 Unstacked Unit	493
CPSC-1222 Stacked Unit	473
CPSC-1424	543

Compass Series Structural Support



The recommended support arrangement for the Compass Series Cooling Tower consists of parallel I-beams, or alternate cross beams positioned as shown on the drawings. Besides providing adequate support, the supports also serve to raise the unit above any solid foundation to assure access to the bottom of the tower. High strength, low weight, anti corrosive, pultruded fibre reinforced support structure and access solutions are available, consult your local BAC representative.

MODEL	W	L for KD unit	L for FA/FKD unit	A	A1	A2	A3	C	D	E	F
CPSC-0716-06G	5005	2393	2417	4910	1309	764	764	50	2225	3233	2275
CPSC-0716-06H	5005	2393	2417	4910	1309	764	764	50	2225	3233	2275
CPSC-0716-06J	5005	2393	2417	4910	1309	764	764	50	2225	3233	2275
CPSC-0716-06K	5005	2393	2417	4910	1309	764	764	50	2225	3233	2275
CPSC-0716-06L	5005	2393	2417	4910	1309	764	764	50	2225	3233	2275
CPSC-0716-06M	5005	2393	2417	4910	1309	764	764	50	2225	3233	2275
CPSC-0716-07H	5005	2393	2417	4910	1309	764	764	50	2225	3233	2275
CPSC-0716-07J	5005	2393	2417	4910	1309	764	764	50	2225	3233	2275
CPSC-0716-07K	5005	2393	2417	4910	1309	764	764	50	2225	3233	2275
CPSC-0716-07L	5005	2393	2417	4910	1309	764	764	50	2225	3233	2275
CPSC-0716-07M	5005	2393	2417	4910	1309	764	764	50	2225	3233	2275
CPSC-0716-07N	5005	2393	2417	4910	1309	764	764	50	2225	3233	2275
CPSC-0817-07J	5307	2698	2722	5214	1310	915	764	50	2530	3537	2580
CPSC-0817-07K	5307	2698	2722	5214	1310	915	764	50	2530	3537	2580
CPSC-0817-07L	5307	2698	2722	5214	1310	915	764	50	2530	3537	2580
CPSC-0817-07M	5307	2698	2722	5214	1310	915	764	50	2530	3537	2580
CPSC-0817-07N	5307	2698	2722	5214	1310	915	764	50	2530	3537	2580
CPSC-0817-07O	5307	2698	2722	5214	1310	915	764	50	2530	3537	2580
CPSC-0817-08J	5307	2698	2722	5214	1310	915	764	50	2530	3537	2580
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CPSC-0817-08L	5307	2698	2722	5214	1310	915	764	50	2530	3537	2580
CPSC-0817-08M	5307	2698	2722	5214	1310	915	764	50	2530	3537	2580
CPSC-0817-08N	5307	2698	2722	5214	1310	915	764	50	2530	3537	2580
CPSC-0817-08O	5307	2698	2722	5214	1310	915	764	50	2530	3537	2580
CPSC-0817-08P	5307	2698	2722	5214	1310	915	764	50	2530	3537	2580
CPSC-1020-07K	6050	3368	3388	5988	1482	1130	764	60	3168	4096	3246
CPSC-1020-07L	6050	3368	3388	5988	1482	1130	764	60	3168	4096	3246
CPSC-1020-07M	6050	3368	3388	5988	1482	1130	764	60	3168	4096	3246
CPSC-1020-07N	6050	3368	3388	5988	1482	1130	764	60	3168	4096	3246
CPSC-1020-07O	6050	3368	3388	5988	1482	1130	764	60	3168	4096	3246

Compass Series Structural Support

MODEL	W	L for KD unit	L for FA/FKD unit	A	A1	A2	A3	C	D	E	F
CPSC-1020-08K	6050	3368	3388	5988	1482	1130	764	60	3168	4096	3246
CPSC-1020-08L	6050	3368	3388	5988	1482	1130	764	60	3168	4096	3246
CPSC-1020-08M	6050	3368	3388	5988	1482	1130	764	60	3168	4096	3246
CPSC-1020-08N	6050	3368	3388	5988	1482	1130	764	60	3168	4096	3246
CPSC-1020-08O	6050	3368	3388	5988	1482	1130	764	60	3168	4096	3246
CPSC-1020-08P	6050	3368	3388	5988	1482	1130	764	60	3168	4096	3246
CPSC-1020-09K	6050	3368	3388	5988	1482	1130	764	60	3168	4096	3246
CPSC-1020-09L	6050	3368	3388	5988	1482	1130	764	60	3168	4096	3246
CPSC-1020-09M	6050	3368	3388	5988	1482	1130	764	60	3168	4096	3246
CPSC-1020-09N	6050	3368	3388	5988	1482	1130	764	60	3168	4096	3246
CPSC-1020-09O	6050	3368	3388	5988	1482	1130	764	60	3168	4096	3246
CPSC-1020-09P	6050	3368	3388	5988	1482	1130	764	60	3168	4096	3246
CPSC-1020-09Q	6050	3368	3388	5988	1482	1130	764	60	3168	4096	3246
CPSC-1222-08K	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-08L	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-08M	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-08N	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-08O	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-08P	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-08Q	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-09K	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-09L	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-09M	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-09N	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-09O	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-09P	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-09Q	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-09R	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-10L	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-10M	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-10N	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-10O	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-10P	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-10Q	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-10R	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-12L	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-12M	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-12N	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA

Compass Series Structural Support



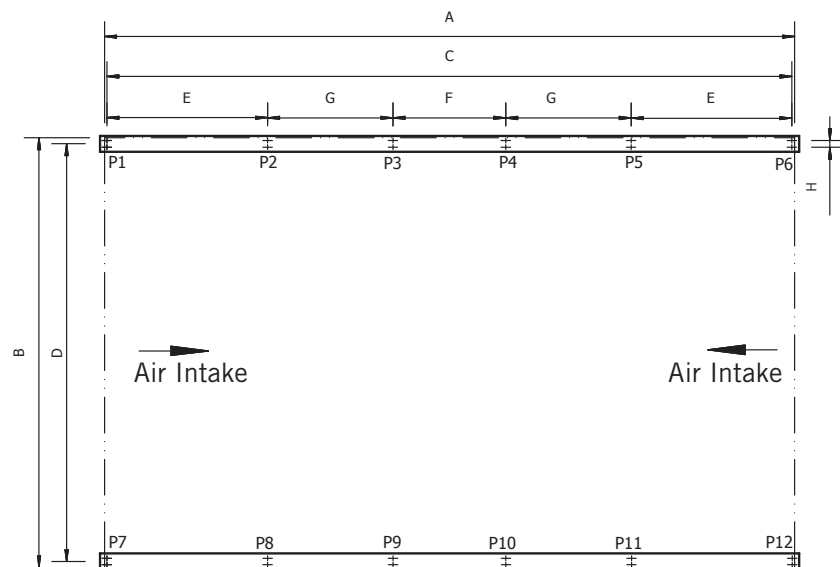
MODEL	W	L for KD unit	L for FA/FKD unit	A	A1	A2	A3	C	D	E	F
CPSC-1222-120	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-12P	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-12Q	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-12R	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-14M	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-14N	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-14O	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-14P	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-14Q	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-14R	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1222-14S	6750	3978	NA	6658	1891	881	1114	60	3778	NA	NA
CPSC-1424-12N	7606	4587	NA	7514	1891	1309	1114	60	4387	NA	NA
CPSC-1424-12O	7606	4587	NA	7514	1891	1309	1114	60	4387	NA	NA
CPSC-1424-12P	7606	4587	NA	7514	1891	1309	1114	60	4387	NA	NA
CPSC-1424-12Q	7606	4587	NA	7514	1891	1309	1114	60	4387	NA	NA
CPSC-1424-12R	7606	4587	NA	7514	1891	1309	1114	60	4387	NA	NA
CPSC-1424-12S	7606	4587	NA	7514	1891	1309	1114	60	4387	NA	NA
CPSC-1424-14N	7606	4587	NA	7514	1891	1309	1114	60	4387	NA	NA
CPSC-1424-14O	7606	4587	NA	7514	1891	1309	1114	60	4387	NA	NA
CPSC-1424-14P	7606	4587	NA	7514	1891	1309	1114	60	4387	NA	NA
CPSC-1424-14Q	7606	4587	NA	7514	1891	1309	1114	60	4387	NA	NA
CPSC-1424-14R	7606	4587	NA	7514	1891	1309	1114	60	4387	NA	NA
CPSC-1424-14S	7606	4587	NA	7514	1891	1309	1114	60	4387	NA	NA
CPSC-1424-14T	7606	4587	NA	7514	1891	1309	1114	60	4387	NA	NA

Notes:

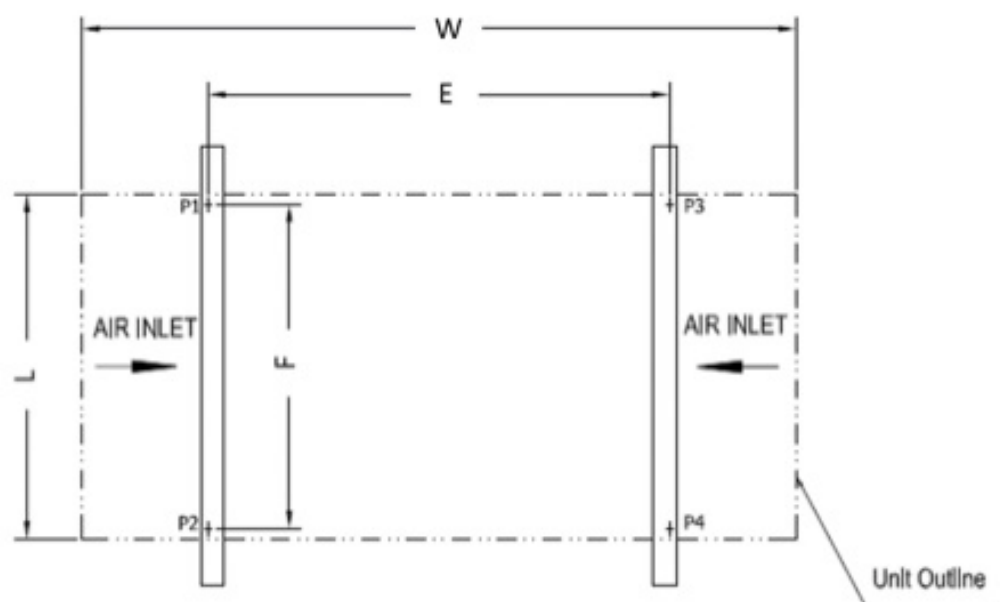
1. Steel support beams and anchor bolts to be selected and installed by others.
2. All support steel must be level at the top.
3. Beams must be selected in accordance with accepted structural practice. Maximum deflection of beam under unit to be 1/360 of span, not to exceed 12mm.
4. If point vibration isolation is used with multi-cell towers, the isolators must be located under the support steel, not between the support steel and the cooling towers.
5. Transverse supports are only available on CPSC-0716-06, CPSC-0716-07, CPSC-0817-07, CPSC-1020-07 factory assembled units
6. For factory assembled units, consult your local BAC representative.

Compass Series Structural Support

Structural Support Diagrams
Longitudinal, parallel I-beams



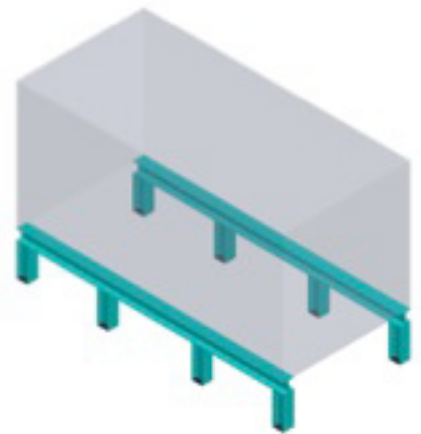
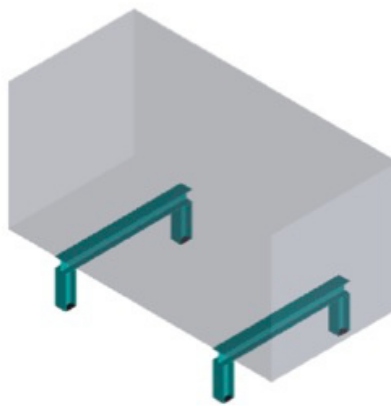
Transverse, parallel I-beams



Compass Series Structural Pultruded Foundation and Access Solutions

Baltimore Aircoil provide a wide array of modular / custom pultruded glass fibre foundation and access solutions to ensure the long term success and safety of your project.

Pultruded glass fibre structural elements provide superior strength, weight and corrosion resistance benefits. Talk to a BAC Representative about your AS/NZS1657 compliant support and access solutions for your next project.



Compass Series Engineering Specifications

1.0 Cooling Tower

- 1.1 General: Furnish and install____, induced draft, crossflow cooling tower(s) with vertical air discharge, conforming in all aspects to the specifications, schedules and as shown on the plans. Overall dimensions shall not exceed approximately _____ ft (mm) long X _____ ft (mm) wide X _____ ft (mm) high. The total connected fan horsepower shall not exceed _____ HP (KW). The cooling tower(s) shall be Baltimore Aircoil Company Model _____.
- 1.2 Thermal Capacity: The cooling tower(s) shall be warranted by the manufacturer to cool _____ l/s of water from _____°C to _____ °C at _____ °C entering wet bulb temperature. Additionally, the thermal performance shall be certified by the Cooling Technology Institute in accordance with CTI Certification Standard STD-201. Lacking such certification, a field acceptance test shall be conducted within the warranty period in accordance with CTI Acceptance Test Code ATC-105, by the Cooling Technology Institute or other qualified independent third party testing agency. Manufacturers' performance guarantees or performance bonds without CTI Certification or independent field thermal performance test shall not be accepted. The cooling tower(s) shall comply with the energy efficiency requirements of ASHRAE Standard 90.1/BCA Section J.
- 1.3 Wind and Seismic Forces: When supported as recommended, the unit shall be suitable for applications requiring equipment anchorage to withstand wind loads up to _____ psf and verified with seismic ratings up to a S_{DS} of _____ g, per the IBC 2009 and ASCE/SEI F05.
- 1.4 Quality Assurance: The cooling tower manufacturer shall have a Management System certified by an accredited registrar as complying with the requirements of ISO-9001:2000 to ensure consistent quality of products and services.

2.0 Construction Details

- 2.1 Corrosion Resistant Construction: All steel structural members shall be constructed of heavy-gauge stainless-steel.
- 2.2 Structure: The cooling tower shall be constructed with a sturdy structural frame designed to transmit all wind, seismic and mechanical loads to the equipment anchorage.
- 2.3 Casing Panels: Casing panels shall be constructed of corrugated, pultruded panel to minimize maintenance requirements and prolong equipment life.
- 2.4 Cold Water Basin: The cold water basin shall be constructed of fiberglass reinforced polyester (FRP). The basin area under the fill shall be sloped toward the depressed center section to facilitate cleaning. Standard basin accessories shall include a bronze make-up valve with large diameter plastic float for easy adjustment of the operating water level.
- 2.5 Water Outlet: The outlet shall be provided with large-area lift out strainers constructed of SST 304, with perforated openings sized smaller than the water distribution nozzles and an anti-vortexing device to prevent air entrainment.
- 2.6 Water Distribution System: The hot water distribution basins shall be the open gravity type for easy cleaning, and constructed of galvanized steel. The basins must be accessible from outside the unit and serviceable during tower operation. Lift-off distribution covers shall be designed to withstand a 90.7 kg concentrated load.

Compass Series Engineering Specifications



3.0 Mechanical Equipment

- 3.1 Fan(s): Fan(s) shall be heavy-duty, axial flow with blades selected to provide optimum cooling tower thermal performance with minimal sound levels. The top of the fan cylinder shall be equipped with a, non-sagging removable fan guard complying to AS/NZS4024.
- 3.2 Bearings: Fan (s) and shaft (s) shall be supported by heavy-duty, self-aligning, grease-packed ball bearings with moisture proof seals and integral slinger collars, designed for a minimum L_{10} life of 30,000 hours.
- 3.3 Fan Drive: The belt is designed for 150% of the motor nameplate power, and be specifically designed for cooling tower service.
- 3.4 Sheaves: Fan sheave shall be fabricated from aluminum to minimize corrosion and maintenance and ensure maximum belt operating life.
- 3.5 Fan Motor: Fan motor(s) shall be totally enclosed air over (TEAO), reversible, squirrel cage, ball bearing type designed specifically for cooling tower service. The motor shall be furnished with special moisture protection on windings, shafts and bearings.

4.0 Fill and Drift Eliminators

- 4.1 Fill and Drift Eliminators shall be formed from self-extinguishing (per ASTM-568) polyvinyl chloride (PVC) of 13mil thickness having a flame spread rating of 5 per ASTM E84 and shall be impervious to rot, decay, fungus and biological attack. The fill shall be suitable for entering water temperatures up to and including 54.4°C. The fill shall be manufactured, tested and rated by the cooling tower manufacturer and shall be elevated above the cold water basin floor to facilitate cleaning.

5.0 Access

- 5.1 Access Door: One access door should be provided as standard for access into the plenum section.
- 5.2 Internal Walkway: A 600mm wide internal walkway is provided as standard in the plenum section for inspection and maintenance. All working surfaces shall be able to withstand 50 psf (244 kg/m²) live load or 90.7 kg concentrated load. Other components of the cooling tower, i.e. basin floor and fill/drift eliminators, shall not be considered as internal working surface.

Compass Series Engineering Specifications

6.0 Sound

6.1 Sound Level: To maintain the quality of the local environment, the maximum sound pressure levels (dB) measured 1.5 m from the cooling tower operating at full fan speed shall not exceed the sound levels detailed below.

Location	63	125	250	500	1000	2000	4000	8000	dBA
Discharge									
Air Inlet									
Cased Face									

6.1 Sound Level (Optional): To maintain the quality of the local environment, the cooling tower shall be furnished with a low sound fan. The thermal performance of the cooling tower when furnished with the low sound fan shall be certified by the Cooling Technology Institute in accordance with paragraph 1.2 of this specification. The maximum sound pressure levels (dB) measured 1.5 m from the cooling tower operating at full fan speed shall not exceed the sound levels detailed below.

Location	63	125	250	500	1000	2000	4000	8000	dBA
Discharge									
Air Inlet									
Cased Face									

7.0 Accessories

- 7.1 Basin Heater(s): The cooling tower cold water basin shall be provided with electric heater(s) to prevent freezing in low ambient conditions. The heater(s) shall be selected to maintain 4.44°C basin water temperatures at ____°C ambient. The heater(s) shall be ____V/____phase/____Hz electric and shall be provided with low water cutout and thermostat.
- 7.2 Vibration Cutout Switch: Provide a mechanical local reset vibration switch. The mechanical vibration cutout switch will be guaranteed to trip at a point so as not to cause damage to the cooling tower.
- 7.3 Ladder, Safety Cage and Handrails: A hot-dip galvanized steel ladder and safety cage shall be provided for access to the fan deck. The handrails shall also be provided around the perimeter of the cooling tower cells. All components are designed to meet OSHA requirements.





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