



Original manufactured equipment

Innovation in
Evaporator Design



PS Series

Medium and Low Temperature Evaporators
300mm & 350mm Fans



Superior Quality
Heat Exchange Equipment
packaged with
BITZER Condensing Units



BUFFALO TRIDENT
A DIVISION OF BITZER AUSTRALIA PTY LIMITED



SERIOUSLY RELIABLE



PS*M SERIES EVAPORATORS - MEDIUM TEMPERATURE

Specifications - 300mm Diameter Fan Models Fin Series 6 (236 Fins/m)

CAPACITIES IN ACCORDANCE WITH EUROPEAN DT1± CONDITIONS, AND BASED ON -4°C SATURATED SUCTION TEMPERATURE.

MODEL		PS1M 019	PS1M 030	PS1M 036	PS1M 042	PS1M 050	PS1M 061	PS1M 063	PS1M 077	PS1M 084	PS1M 095	PS1M 102	PS1M 128
R404A	WATTS @ 6KTD	1130	1816	2170	2497	3029	3659	3806	4623	5070	5705	6095	7681
	WATTS @ 1KTD	188	303	362	416	505	610	634	770	845	951	1016	1280
R134a	WATTS @ 6KTD	977	1571	1877	2160	2620	3165	3292	3999	4385	4935	5272	6644
	WATTS @ 1KTD	163	262	313	360	437	527	549	666	731	822	879	1107
R22	WATTS @ 6KTD	1066	1714	2047	2356	2858	3452	3591	4362	4784	5383	5751	7247
	WATTS @ 1KTD	178	286	341	393	476	575	599	727	797	897	959	1208
AIR FLOW	l/sec	427	354	406	854	804	708	1281	1206	1125	1062	1608	1416
	m ³ /Hr	1537	1274	1462	3074	2894	2549	4612	4342	4050	3823	5789	5098
	CFM	905	750	860	1810	1704	1500	2715	2556	2384	2250	3408	3001
AIR THROW - STD FAN (METRES)		8.6	7.9	8.4	10.5	10.3	9.8	12.5	12.3	12.0	11.7	14.0	13.4
NUMBER OF 300mm FANS		1	1	1	2	2	2	3	3	3	3	4	4
FAN	TOTAL WATTS	73	73	73	146	146	146	219	219	219	219	292	292
	TOTAL AMPS	0.3	0.3	0.3	0.6	0.6	0.6	1.0	1.0	1.0	1.0	1.3	1.3
MOTOR(S)*													
MOTOR HEAT / 24hrs WATTS		1752	1752	1752	3504	3504	3504	5256	5256	5256	5256	7008	7008

± = DT1 = (Air on Temp) - (Saturated Suction Temperature).

NOTE: PLEASE SPECIFY REFRIGERANT WHEN ORDERING.

Specifications - 350mm Diameter Fan Models Fin Series 6 (236 Fins/m)

CAPACITIES IN ACCORDANCE WITH EUROPEAN DT1± CONDITIONS, AND BASED ON -4°C SATURATED SUCTION TEMPERATURE.

MODEL		PS2M 108	PS2M 117	PS2M 141	PS2M 162	PS2M 177	PS2M 187	PS2M 217	PS2M 246	PS2M 276	PS2M 309
R404A	WATTS @ 6KTD	6469	6997	8475	9693	10612	11238	13029	14749	16549	18519
	WATTS @ 1KTD	1078	1166	1412	1615	1769	1873	2172	2458	2758	3087
R134a	WATTS @ 6KTD	5596	6052	7331	8384	9179	9721	11270	12758	14315	16019
	WATTS @ 1KTD	933	1009	1222	1397	1530	1620	1878	2126	2386	2670
R22	WATTS @ 6KTD	6104	6602	7997	9146	10013	10603	12294	13916	15615	17474
	WATTS @ 1KTD	1017	1100	1333	1524	1669	1767	2049	2319	2603	2912
AIR FLOW	l/sec	1458	1422	2331	2187	2133	3108	2916	2844	3645	3555
	m ³ /Hr	5249	5119	8392	7873	7679	11189	10498	10238	13122	12798
	CFM	3090	3013	4940	4634	4520	6586	6179	6027	7724	7533
AIR THROW - STD FAN (METRES)		16.9	16.5	18.7	18.4	17.9	21.0	20.8	20.2	21.7	20.6
NUMBER OF 350mm FANS		2	2	3	3	3	4	4	4	5	5
FAN	TOTAL WATTS	260	260	390	390	390	520	520	520	650	650
	TOTAL AMPS	1.2	1.2	1.7	1.7	1.7	2.3	2.3	2.3	2.9	2.9
MOTOR(S)*											
MOTOR HEAT / 24hrs WATTS		6240	6240	9360	9360	9360	12480	12480	12480	15600	15600

± = DT1 = (Air on Temp) - (Saturated Suction Temperature).

* = Based on Manufacturer's Data (Free Air Test).

NOTE: PLEASE SPECIFY REFRIGERANT WHEN ORDERING.

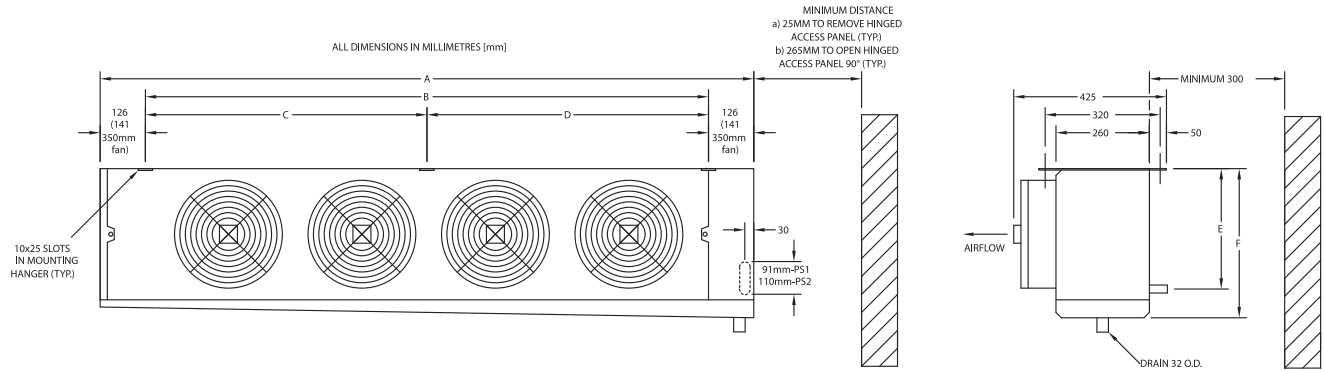
Capacity Correction Factors

FIN SERIES	4	5	6	7	8
CAPACITY MULTIPLIER	0.82	0.91	1.00	1.06	1.12

SUCTION TEMPERATURE °C	-10	-8	-6	-4	-2	0	+2	+4	+6
CAPACITY MULTIPLIER	0.870	0.900	0.950	1.000	1.045	1.170	1.230	1.280	1.350



PS*M SERIES EVAPORATORS - MEDIUM TEMPERATURE



Physical Data - 300mm Diameter Fan Models

MODEL	PS1M 019	PS1M 030	PS1M 036	PS1M 042	PS1M 050	PS1M 061	PS1M 063	PS1M 077	PS1M 084	PS1M 095	PS1M 102	PS1M 128	
Suction Connection (mm)	12.7	12.7	12.7	12.7	12.7	12.7	15.9	15.9	15.9	15.9	22.2	22.2	
Distributor Connection (mm)	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	
Ext. Equaliser (mm)	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	
Operating Refrigerant Charge (kg) based on [R404A]	0.3	0.6	0.8	0.6	0.8	1.2	0.9	1.2	1.4	1.7	1.6	2.3	
Dimensions (mm)													
A	676	676	845	1057	1057	1057	1438	1438	1438	1438	1819	1819	
B	425	425	594	806	806	806	1187	1187	1187	1187	1568	1568	
C & D	NOTE: Not applicable for 300 Diameter Series												
E	345	345	345	345	345	345	345	345	345	345	340	340	
F	425	425	425	425	425	425	425	425	425	425	425	425	
Weight	Unpacked (kg)	15	18	20	23	24	28	31	33	36	39	42	50
	Packed (kg)	21	24	26	30	31	35	39	41	44	47	51	59

Physical Data - 350mm Diameter Fan Models

MODEL	PS2M 108	PS2M 117	PS2M 141	PS2M 162	PS2M 177	PS2M 187	PS2M 217	PS2M 246	PS2M 276	PS2M 309	
Suction Connection (mm)	15.9	15.9	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	
Distributor Connection (mm)	15.9	15.9	15.9	15.9	15.9	22.2	22.2	22.2	22.2	22.2	
Ext. Equaliser (mm)	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	
Operating Refrigerant Charge (kg) based on [R404A]	1.7	2.0	2.1	2.7	3.0	2.8	3.5	4.4	4.8	5.9	
Dimensions (mm)											
A	1544	1544	2154	2154	2154	2764	2764	2764	3373	3373	
B	1263	1263	1873	1873	1873	2483	2483	2483	3092	3092	
C	-	-	-	-	-	1263	1263	1263	1873	1873	
D	-	-	-	-	-	1219	1219	1219	1219	1219	
E	345	345	335	335	335	335	335	335	335	335	
F	502	502	502	502	502	502	502	502	502	502	
Weight	Unpacked (kg)	41	45	54	60	63	70	77	84	91	99
	Packed (kg)	49	53	64	70	73	102	109	116	131	140



PS*L SERIES EVAPORATORS - LOW TEMPERATURE

Specifications - 300mm Diameter Fan Models Fin Series 6 (236 Fins/m)

CAPACITIES IN ACCORDANCE WITH EUROPEAN DT1‡ CONDITIONS, AND BASED ON -24°C SATURATED SUCTION TEMPERATURE.

MODEL		PS1L* 016	PS1L* 025	PS1L* 033	PS1L* 041	PS1L* 051	PS1L* 056	PS1L* 069	PS1L* 075	PS1L* 083	PS1L* 099
R404A	WATTS @ 6KTD	981	1486	1991	2441	3047	3358	4130	4482	4984	5952
	WATTS @ 1KTD	163	248	332	407	508	560	688	747	831	992
R507A	WATTS @ 6KTD	999	1513	2027	2485	3102	3419	4204	4562	5074	6060
	WATTS @ 1KTD	166	252	338	414	517	570	701	760	846	1010
R22	WATTS @ 6KTD	926	1402	1879	2303	2875	3169	3897	4229	4703	5617
	WATTS @ 1KTD	154	234	313	384	479	528	649	705	784	936
AIR FLOW	l/sec	418	347	836	788	694	1182	1101	1041	1576	1388
	m ³ /Hr	1505	1249	3010	2837	2498	4255	3964	3748	5674	4997
	CFM	886	735	1772	1670	1471	2505	2333	2206	3340	2941
AIR THROW - STD FAN (METRES)		8.6	7.9	10.5	10.3	9.8	12.5	12.3	12.0	11.7	14.0
NUMBER OF 300mm FANS		1	1	2	2	2	3	3	3	4	4
FAN MOTOR(S)*	TOTAL WATTS	73	73	146	146	146	219	219	219	292	292
	TOTAL AMPS	0.3	0.3	0.6	0.6	0.6	1.0	1.0	1.0	1.3	1.3
MOTOR HEAT / 24hrs WATTS		1752	1752	3504	3504	3504	5256	5256	5256	7008	7008
DEFROST HEATERS	TOTAL WATTS	1060	1060	1960	1960	1960	2700	2700	2700	3580	3580
	TOTAL AMPS	4.4	4.4	8.2	8.2	8.2	11.3	11.3	11.3	14.9	14.9

‡ = DT1 = (Air on Temp) - (Saturated Suction Temperature).

NOTE: PLEASE SPECIFY REFRIGERANT WHEN ORDERING.

Specifications - 350mm Diameter Fan Models Fin Series 6 (236 Fins/m)

CAPACITIES IN ACCORDANCE WITH EUROPEAN DT1‡ CONDITIONS, AND BASED ON -24°C SATURATED SUCTION TEMPERATURE.

MODEL		PS2L* 086	PS2L* 100	PS2L* 105	PS2L* 123	PS2L* 136	PS2L* 158	PS2L* 168	PS2L* 191	PS2L* 203	PS2L* 233
R404A	WATTS @ 6KTD	5151	6003	6300	7410	8138	9462	10079	11469	12187	13963
	WATTS @ 1KTD	858	1001	1050	1235	1356	1577	1680	1912	2031	2327
R507A	WATTS @ 6KTD	5244	6111	6413	7543	8284	9632	10260	11676	12406	14214
	WATTS @ 1KTD	874	1019	1069	1257	1381	1605	1710	1946	2068	2369
R22	WATTS @ 6KTD	4860	5664	5944	6992	7678	8928	9510	10822	11499	13175
	WATTS @ 1KTD	810	944	991	1165	1280	1488	1585	1804	1917	2196
AIR FLOW	l/sec	1428	1393	2283	2142	2090	3044	2856	2786	3570	3483
	m ³ /Hr	5141	5015	8219	7711	7524	10958	10282	10030	12852	12539
	CFM	3026	2952	4838	4539	4429	6451	6052	5904	7565	7381
AIR THROW - STD FAN (METRES)		16.9	16.5	18.7	18.4	17.9	21.0	20.8	20.2	21.7	20.6
NUMBER OF 350mm FANS		2	2	3	3	3	4	4	4	5	5
FAN MOTOR(S)*	TOTAL WATTS	260	260	390	390	390	520	520	520	650	650
	TOTAL AMPS	1.2	1.2	1.7	1.7	1.7	2.3	2.3	2.3	2.9	2.9
MOTOR HEAT / 24hrs WATTS		6240	6240	9360	9360	9360	12480	12480	12480	15600	15600
DEFROST HEATERS	TOTAL WATTS	2880	2880	4300	4300	4300	5720	5720	5720	7160	7160
	TOTAL AMPS	12.0	12.0	17.9	17.9	17.9	23.8	23.8	23.8	29.8	29.8

‡ = DT1 = (Air on Temp) - (Saturated Suction Temperature).

* = Based on Manufacturer's Data (Free Air Test).

NOTE: PLEASE SPECIFY REFRIGERANT WHEN ORDERING.

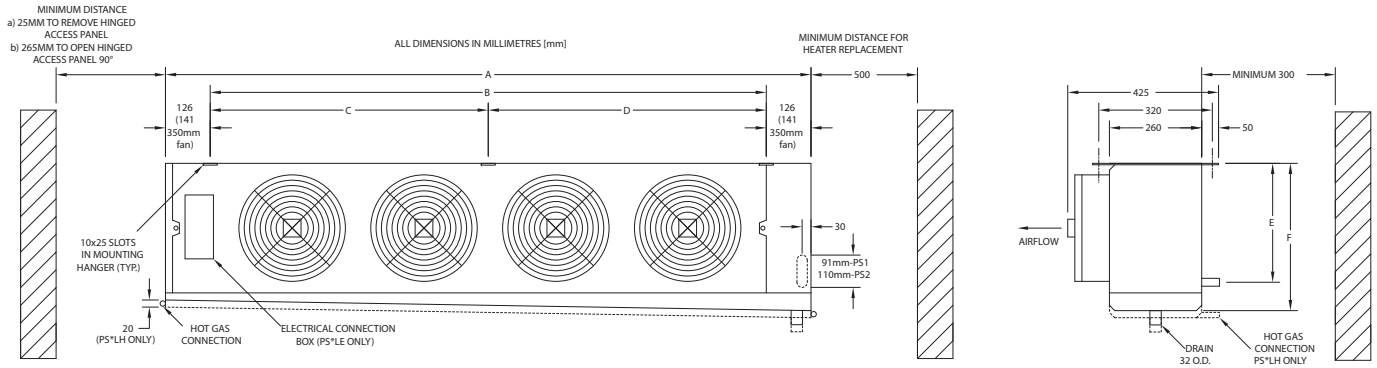
Capacity Correction Factors

FIN SERIES	4	5	6
CAPACITY MULTIPLIER	0.82	0.91	1.00

SUCTION TEMPERATURE °C	-40	-35	-30	-25	-24	-20	-15	-10	-5
CAPACITY MULTIPLIER	0.500	0.710	0.850	0.980	1.000	1.060	1.140	1.230	1.350



PS*L SERIES EVAPORATORS - LOW TEMPERATURE



Physical Data - 300mm Diameter Fan Models

MODEL	PS1L* 016	PS1L* 025	PS1L* 033	PS1L* 041	PS1L* 051	PS1L* 056	PS1L* 069	PS1L* 075	PS1L* 083	PS1L* 099
Suction Connection (mm)	12.7	12.7	12.7	12.7	12.7	15.9	15.9	15.9	22.2	22.2
Distributor Connection (mm)	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9
Ext. Equaliser (mm)	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Operating Refrigerant Charge (kg) based on [R404A]	0.2	0.4	0.4	0.6	0.8	0.8	1.0	1.2	1.1	1.6
Dimensions (mm)										
A	676	676	1057	1057	1057	1438	1438	1438	1819	1819
B	425	425	806	806	806	1187	1187	1187	1568	1568
C & D	NOTE: Not applicable for 300 Diameter Series									
**E	345	345	345	345	345	345	345	345	340	340
**F	425	425	425	425	425	425	425	425	425	425
Weight	Unpacked (kg)	15	18	24	25	29	35	38	40	44
	Packed (kg)	21	24	31	33	36	43	46	48	52

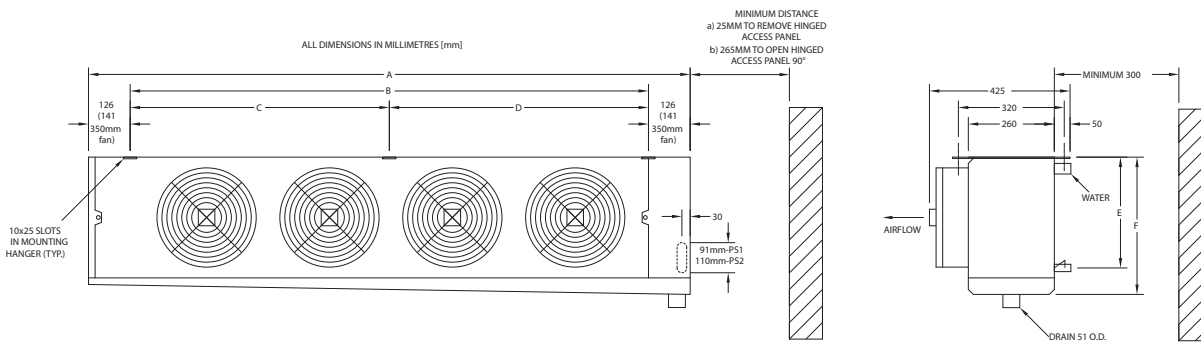
Physical Data - 350mm Diameter Fan Models

MODEL	PS2L*086	PS2L* 100	PS2L* 105	PS2L* 123	PS2L* 136	PS2L* 158	PS2L* 168	PS2L* 191	PS2L* 203	PS2L* 233
Suction Connection (mm)	15.9	15.9	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5
Distributor Connection (mm)	15.9	15.9	15.9	15.9	15.9	22.2	22.2	22.2	22.2	22.2
Ext. Equaliser (mm)	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Operating Refrigerant Charge (kg) based on [R404A]	1.3	1.5	1.5	2.0	2.2	2.0	1.6	3.3	3.6	4.4
Dimensions (mm)										
A	1544	1544	2154	2154	2154	2764	2764	2764	3373	3373
B	1263	1263	1873	1873	1873	2483	2483	2483	3092	3092
C	-	-	-	-	-	1263	1263	1263	1873	1873
D	-	-	-	-	-	1219	1219	1219	1219	1219
**E	345	345	335	335	335	335	335	335	335	335
**F	502	502	502	502	502	502	502	502	502	502
Weight	Unpacked (kg)	43	46	56	62	66	73	80	87	102
	Packed (kg)	51	55	66	72	76	105	112	119	143

** = Only applicable to PS-LE & PS-LH. NOTE: All hot gas connections 22.2mm.



PHYSICAL DATA MODEL PS*LW - WATER DEFROST MODEL



MODEL	300mm			350mm		
	PS1LW 016-051	PS1LW 056-075	PS1LW 083-099	PS2LW 086-100	PS2LW 105-136	PS2LW 158-233
DIMENSIONS						
E	422	422	417	422	412	412
F	540	540	540	617	617	617
DEFROST WATERCONNECTION	1 x 32	1 x 32	1 x 32	1 x 32	1 x 32	2 x 32
DRAIN CONNECTION	51	51	51	51	51	51
MAXIMUM DEFROST WATER L/S*	0.9	1.8	1.8	1.8	1.8	3.6

* = For correct operation, water temperature should be within the following limits,
 Maximum = 30°C
 Minimum = 4°C
 Pitch on drains 45mm/metre as minimum.

PS Series

The PS1 & 2 Series Low Line Evaporators are an innovative and modern design to meet the changing requirements of our progressive customers. The design is ideally suited for walk in medium temperature cool rooms and low temperature display freezer rooms where the crisp white finish compliments the quality installation on display.

The easy clean, hygienic appearance is most suited for retail applications where consumers enter or view the cold storage area. At the heart of the PS Series is a totally new coil design providing optimum performance through a wide application range.

Modification of the primary to secondary surface ratio provides a reduction in the moisture collection on the coil surface. This technology improves the product storage quality in medium temperature applications while reducing ice build up on the coils during low temperature application. The previously used high quality 300mm and 350mm sickle blade fans are continued through the PS Series delivering reliable and energy efficient air distribution.

Features:

- Crisp, White Powder Coated evaporator panels.
- Absolute Flush Mounting.
- Stainless Steel Fastenings.
- Innovative design in Coil Geometry
- Performance optimised circuitry and distributor system with Venturi-Effect Technology.
- Standard Coils Circuited for Multiple Refrigerants. (No orifice change required).
- Internal Ripple Finned Tube for higher heat-transfer performance and improved oil return.
- Hinged Access Door both ends - easily removable, where coil is installed close to adjacent walls.
- Hinged & Fully Reversible Drip Tray (PS*M and PS*LE only).
- Double Annealed Defrost Elements fitted to coil block for improved heat dissipation (PS*LE only).
- Heater Safety Thermostat (PS*LE only).
- Electrical Components pre-wired to common IP66-rated connection box fitted with screw type terminals. (PS*LE only).
- 4 Defrost Types: Air, Electric, Hot Gas and Water Defrost.
- Fan speed: 300mm = 1250rpm
350mm = 1400rpm.

Options

- Epoxy Coated Fins (Not available with electric defrost)
- Air Straightening Guides. (PS2 – 350mm fans only)
- Factory fitted Defrost Termination & Fan Delay,
- Other Fin Series: 4, 5, 7, 8 FPI.
- Factory Fitted TX Valves on multiple orders.
- Special Application Designs.

Type designation

PS2LE136

Fan Series, PS1 = 300mm dia, PS2 = 350mm dia

PS2LE136

Application Range, M = Medium Temperature,
L = Low Temperature

PS2LE136

Defrost Version, “ “ = Air, E = Electric
H = Hot Gas
W = Water

PS2LE136

Nominal Refrigeration Capacity,
136 = 1.36k/W@1KTD on R404A



Product Selection

Selection PS*M Series

Models overlap in capacities where fan motor change occurs. This permits an alternative selection (where space may be limited) without loss of airflow volume. Capacity correction for suction temperatures, other than -4°C can be calculated from correction table, however where operating suction temperature selection varies more than $\pm 5^{\circ}\text{C}$ from standard (-4°C), please nominate condition at time of order so that correction distributor is fitted. Selection for expansion valves for models fitted with refrigerant distributors should be sized for a pressure drop of 400kPa for R134a and 700kPa for R22

Selection PS*L Series

Capacity correction for suction temperature other than -24°C can be calculated from correction table. However where operating suction temperature varies more than $\pm 5^{\circ}\text{C}$ from standard (-24°C), please nominate condition at time of order so that correct distributor is fitted. Selection of expansion valves for models fitted with refrigerant distributors should be sized for a pressure drop of 900kPa for R404A and 700kPa for R22. All fans are supplied with low temperature grease permissible for air temperatures of -50°C to $+70^{\circ}\text{C}$ for 300mm diameter fan models and -40°C to $+55^{\circ}\text{C}$ for 350mm diameter fan models.

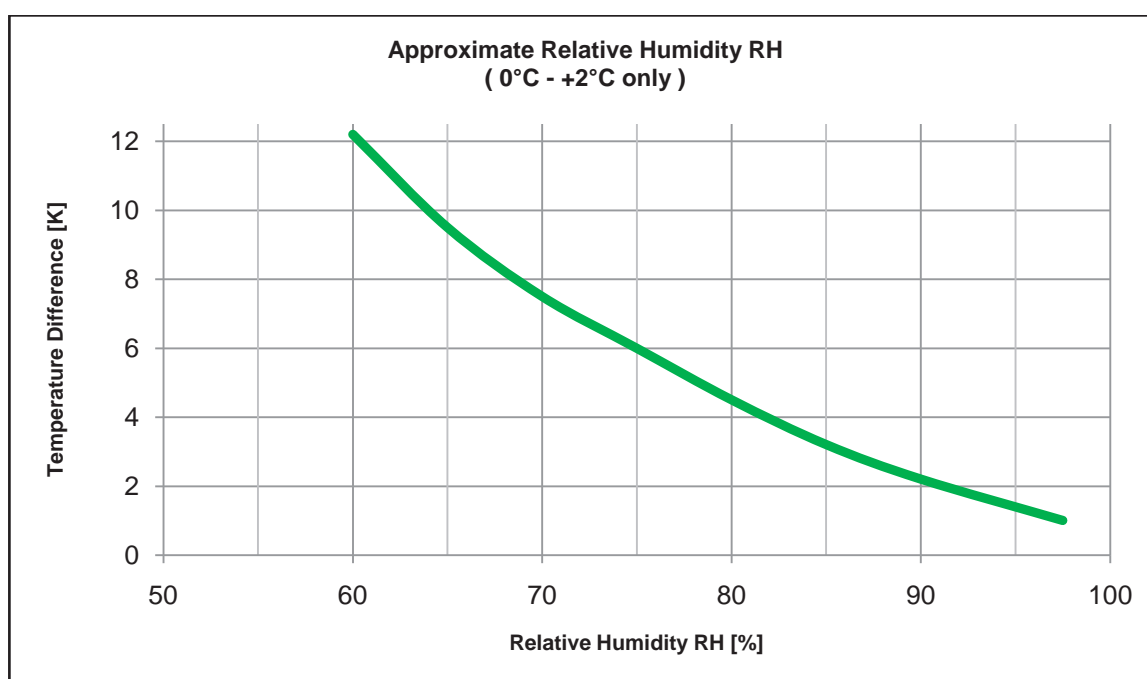
Relative Humidity Selection

The relative humidity of an air-water mixture is defined as the ratio of the partial pressure of water vapour in the mixture to the saturated vapour pressure of water at a given temperature. As the air volume and capacity ratio will vary from model to model in any range, the relative humidity graph reading can only be regarded as an approximate value. The operating humidity of a room (once product is down to the desired room temperature) can be predicted quite accurately (within 5%) by applying the following abbreviated formula to a proposed evaporator which has specific capacity and air flow listed in the specification tables.

$$\%RH = \frac{Ps \text{ TEMP AIR OFF COIL}}{Ps \text{ TEMP AIR ON COIL}} \cdot 100$$

$$AIR \text{ OFF}(^{\circ}\text{C}) = AIR \text{ ON}(^{\circ}\text{C}) - \frac{COIL \text{ CAPACITY [WATTS]}}{AIR \text{ FLOW} \left[\frac{l}{s} \right] \cdot 1.298}$$

Where P_s = Air pressure at saturation (steam table)
1.298 = [Air density at 0°C] · [Specific heat of air at 0°C]





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www.buffalotrident.com

Other Products Available



IS Condensing Unit

Compact design
Bitzer Octagon Compressor
1 Ph and 3 Ph Models
Fan speed control and
full electrical panel available.



CS Outdoor Condensing Unit

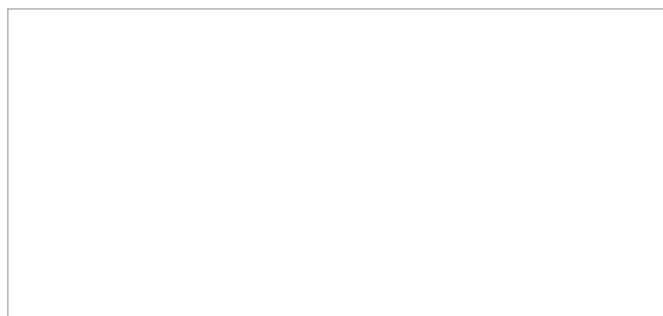
Compact slim line design
Bitzer Octagon Compressor
1 Ph and 3 Ph Models
Powder-coated casing
Standard version features
fully wired panel,
oil separator and
liquid receiver.



LCS Large Outdoor Condensing Unit

V-shape condenser set
Bitzer Octagon and
B5-Compressor Series
Standard version features
fully wired electrical panel

Distributed By:



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ISSUE: APRIL 2008