BITZER
G·R·O·U·P O·F C·O·M·P·A·N·I·E·S

Original manufactured equipment

VB Series

Air Cooled Condensers

Certified System
Quality ISO 9001
SAI GLOBAL

Superior Quality
Heat Exchange Equipment
packaged with
BITZER Rack Systems

SERIOUSLY RELIABLE

BUFFALO TRIDENT
A DIVISION OF BITZER AUSTRALIA PTY LIMITED

Why “V” Block Condensers?

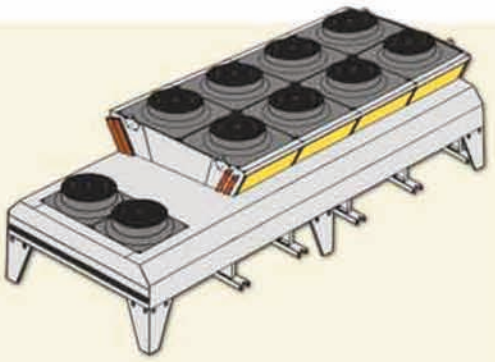
The space saving compact design of the Buffalo Trident “VB Series” minimizes the the required condenser deck footprint. This offers key savings in the construction of condenser platforms. The aluminium light weight durable housing further reduces the roof loading compared to alternative technologies.

Left: 3 x“VB Series” Condensers installed. These are special circuit as DRY COOLERS. (Dry Cooler configuration on request.)

COMPACT DESIGN

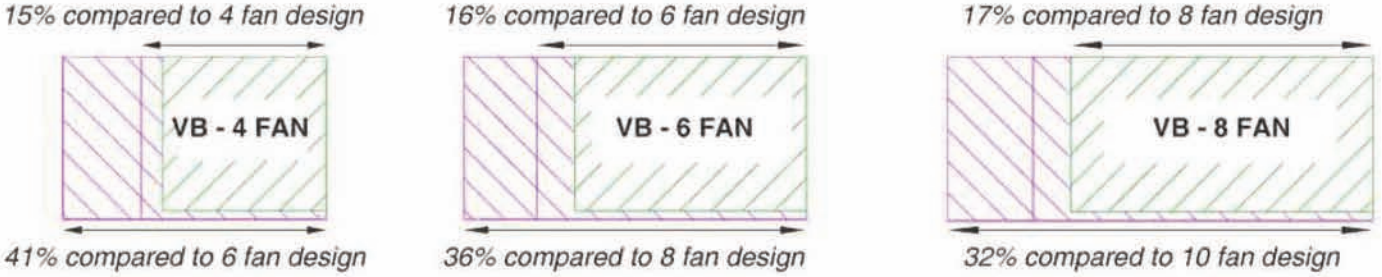
The compact size of the “VB Series” addresses the common demand for increased condenser capacity in retrofit retail modernization projects. Up to 40% more capacity available using the same area constraints.

- Reduction in footprint size between 15%-40%.
- Reduction in space requirements between condenser for free ventilation.
- Larger capacities available as a single model for quicker installations.



Above: Buffalo Trident “VB Series” V-Block Condenser shown superimposed over a similar capacity standard horizontal coil condenser.

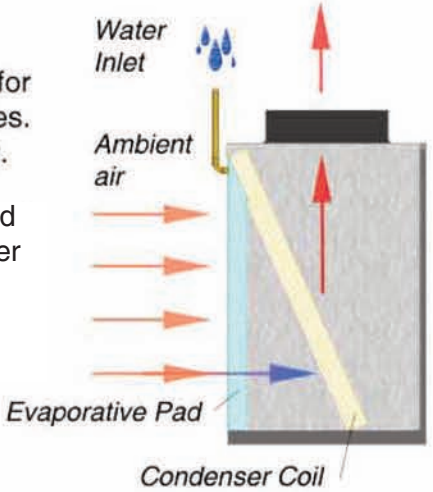
Footprint space saving of the “VB Series” compared to horizontal coil designs of similar capacity



EVAPORATIVE PRE-COOLERS

Evaporative pre-coolers offer solutions for environments with high peak ambient temperatures. This allows for an increase in condenser capacity.

The Buffalo Trident VB Series has been extended to include an integrated pre-cooling system. Refer to your Buffalo Trident representative for further information on Hydro Boost Systems.



Buffalo Trident Technology at its best!

The VB Series combines innovation with the long proven manufacturing techniques developed by Buffalo Trident.

The “VB Series” offers many qualities to satisfy your long term investment.

HOUSING - Strength in material and design

[Marine grade embossed stucco aluminium alloy]

• The marine grade aluminium alloy has proven long term durability against coastal environments and other harsh conditions, full aluminium support rails prevent corrosion between the condenser feet and support structure.

BUFFALO GOLD EPOXY - More than just epoxy fin material

• The base fin stock is a corrosion resistant alloy which is more durable than other standard fin material.

• The epoxy treatment is a European certified bonding process which provides superior resistance to corrosion over alernative coating methods.

• Independently certified salt spray tests confirm superior suitability.

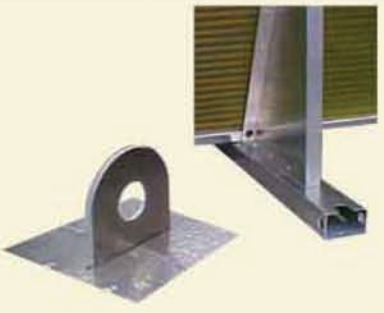
SEMI-FLOATING COIL - Proven reliable design

• The header tube design is semi-floating to reduce the risk of damage from external influences, like compressor gas pulsations.

• The semi-floating header allows for expansion and contraction in the header and entry tubes caused by extreme temperature fluctuations.

HANDLING AND SAFETY

• The condenser is delivered completely assembled reducing on site labour and installation time, including fork lift access and crane lifting lugs.(note: extended fork lift tynes are required)



• The condenser fan deck is only 1.825m high. This enables direct on site fan servicing. Most safety regulations don’t require additional safety rails at this height. (Refer to your Occupational Health and Safety regulations)

FINE DETAILS

- 1/2” rifle bore tubing provides additional heat transfer and better oil return.
- Multiple fan options available to match most performance and noise requirements.
- EC fan technology can be factory fitted. *(optional)*
- A large internal plenum providing even air flow and increased reliability and performance.
- Each fan cell is completely separated to allow for fan cycling. This design increases the efficiency of the system during part load conditions.
- The crated unit fits into standard shipping containers it also fits economically onto road transport vehicles.

VB Series Condensers - 4 pole “4P”

Condenser Capacity - Total Heat Rejection (Kilowatts)

R22	VB-4P											
High Speed (Connect in Delta Δ)												
TD/K	VB-4-4R-4P	VB-4-5R-4P	VB-4-6R-4P	VB-6-4R-4P	VB-6-5R-4P	VB-6-6R-4P	VB-8-4R-4P	VB-8-5R-4P	VB-8-6R-4P	VB-10-4R-4P	VB-10-5R-4P	VB-10-6R-4P
1	18.5	20.4	21.6	28.6	30.9	32.4	38.1	41.2	43.2	47.4	51.7	53.9
5	92.3	102.1	107.8	143.1	154.7	161.8	190.3	206.2	216.0	236.8	258.4	269.7
10	184.7	204.3	215.5	286.2	309.4	323.7	380.6	412.4	432.0	473.5	516.7	539.4
15	277.0	306.4	323.3	429.3	464.1	485.5	570.9	618.6	648.0	710.3	775.1	809.1
20	369.4	408.6	431.1	572.3	618.8	647.4	761.2	824.8	864.0	947.0	1033.5	1078.8
Low Speed (Connect in Star ⅄)												
1	15.2	16.5	17.2	23.2	24.8	25.8	31.0	33.1	34.3	38.4	41.4	42.8
5	76.1	82.4	86.0	116.2	123.9	128.9	155.2	165.6	171.7	191.8	206.9	213.9
10	152.1	164.9	171.9	232.5	247.7	257.8	310.4	331.1	343.5	383.7	413.7	427.8
15	228.2	247.3	257.9	348.7	371.6	386.7	465.5	496.7	515.2	575.5	620.6	641.7
20	304.3	329.8	343.9	465.0	495.4	515.6	620.7	662.2	687.0	767.3	827.5	855.7

R404A	VB-4P											
High Speed (Connect in Delta Δ)												
TD/K	VB-4-4R-4P	VB-4-5R-4P	VB-4-6R-4P	VB-6-4R-4P	VB-6-5R-4P	VB-6-6R-4P	VB-8-4R-4P	VB-8-5R-4P	VB-8-6R-4P	VB-10-4R-4P	VB-10-5R-4P	VB-10-6R-4P
1	19.4	21.5	22.6	30.1	32.5	34.0	40.0	43.3	45.4	49.7	54.3	56.7
5	97.0	107.3	113.2	150.3	162.5	170.0	199.9	216.6	226.9	248.7	271.4	283.3
10	194.0	214.6	226.4	300.6	325.0	340.0	399.8	433.2	453.8	497.4	542.8	566.6
15	291.0	321.9	339.6	450.9	487.5	510.0	599.7	649.8	680.7	746.1	814.2	849.9
20	388.0	429.2	452.8	601.2	650.0	680.0	799.6	866.4	907.6	994.8	1085.6	1133.2
Low Speed (Connect in Star ⅄)												
1	16.0	17.3	18.1	24.4	26.0	27.1	32.6	34.8	36.1	40.3	43.5	44.9
5	79.9	86.6	90.3	122.1	130.1	135.4	163.0	173.9	180.4	201.5	217.3	224.7
10	159.8	173.2	180.6	244.2	260.2	270.8	326.0	347.8	360.8	403.0	434.6	449.4
15	239.7	259.8	270.9	366.3	390.3	406.2	489.0	521.7	541.2	604.5	651.9	674.1
20	319.6	346.4	361.2	488.4	520.4	541.6	652.0	695.6	721.6	806.0	869.2	898.8

R407C	VB-4P											
High Speed (Connect in Delta Δ)												
TD/K	VB-4-4R-4P	VB-4-5R-4P	VB-4-6R-4P	VB-6-4R-4P	VB-6-5R-4P	VB-6-6R-4P	VB-8-4R-4P	VB-8-5R-4P	VB-8-6R-4P	VB-10-4R-4P	VB-10-5R-4P	VB-10-6R-4P
1	17.9	19.8	20.9	27.8	30.0	31.4	36.9	40.0	41.9	46.0	50.2	52.4
5	89.6	99.1	104.6	138.9	150.2	157.1	184.7	200.1	209.7	229.8	250.8	261.8
10	179.3	198.3	209.2	277.8	300.3	314.2	369.4	400.3	419.3	459.6	501.5	523.5
15	268.9	297.4	313.8	416.6	450.5	471.2	554.1	600.4	629.0	689.4	752.3	785.3
20	358.5	396.6	418.4	555.5	600.6	628.3	738.8	800.6	838.6	919.2	1003.1	1047.1
Low Speed (Connect in Star ⅄)												
1	14.8	16.0	16.7	22.6	24.0	25.0	30.1	32.1	33.3	37.2	40.2	41.5
5	73.8	80.0	83.4	112.8	120.2	125.1	150.6	160.7	166.7	186.2	200.8	207.6
10	147.7	160.0	166.9	225.6	240.4	250.2	301.2	321.4	333.4	372.4	401.6	415.2
15	221.5	240.1	250.3	338.5	360.6	375.3	451.8	482.1	500.1	558.6	602.4	622.9
20	295.3	320.1	333.7	451.3	480.8	500.4	602.4	642.7	666.8	744.7	803.1	830.5

R134a	VB-4P											
High Speed (Connect in Delta Δ)												
TD/K	VB-4-4R-4P	VB-4-5R-4P	VB-4-6R-4P	VB-6-4R-4P	VB-6-5R-4P	VB-6-6R-4P	VB-8-4R-4P	VB-8-5R-4P	VB-8-6R-4P	VB-10-4R-4P	VB-10-5R-4P	VB-10-6R-4P
1	17.7	19.6	20.7	27.5	29.7	31.1	36.5	39.6	41.5	45.5	49.6	51.8
5	88.7	98.1	103.5	137.4	148.5	155.4	182.7	198.0	207.4	227.3	248.1	258.9
10	177.3	196.1	206.9	274.7	297.1	310.8	365.4	395.9	414.8	454.6	496.1	517.9
15	266.0	294.2	310.4	412.1	445.6	466.1	548.1	593.9	622.2	681.9	744.2	776.8
20	354.6	392.3	413.9	549.5	594.1	621.5	730.8	791.9	829.5	909.2	992.2	1035.7
Low Speed (Connect in Star ⅄)												
1	14.6	15.8	16.5	22.3	23.8	24.8	29.8	31.8	33.0	36.8	39.7	41.1
5	73.0	79.2	82.5	111.6	118.9	123.8	149.0	158.9	164.9	184.2	198.6	205.4
10	146.1	158.3	165.1	223.2	237.8	247.5	298.0	317.9	329.8	368.3	397.2	410.8
15	219.1	237.5	247.6	334.8	356.7	371.3	446.9	476.8	494.7	552.5	595.8	616.1
20	292.1	316.6	330.1	446.4	475.6	495.0	595.9	635.8	659.5	736.7	794.4	821.5

Capacity Correction Factors

REFRIG.	R22	R507A	R407B
CAP. MULTI.	1.0	1.045	0.975

VB Series Condensers - 6 pole “Q”

Condenser Capacity - Total Heat Rejection (Kilowatts)

R22	VB-Q											
High Speed (Connect in Delta Δ)												
TD/K	VB-4-4R-Q	VB-4-5R-Q	VB-4-6R-Q	VB-6-4R-Q	VB-6-5R-Q	VB-6-6R-Q	VB-8-4R-Q	VB-8-5R-Q	VB-8-6R-Q	VB-10-4R-Q	VB-10-5R-Q	VB-10-6R-Q
1	19.6	21.3	22.1	30.3	32.3	33.2	40.3	43.0	44.3	50.2	53.9	55.3
5	98.0	106.5	110.5	151.6	161.3	166.0	201.3	214.9	221.4	251.1	269.3	276.4
10	195.9	213.1	221.1	303.1	322.5	332.1	402.5	429.7	442.9	502.3	538.6	552.7
15	293.9	319.6	331.6	454.7	483.8	498.1	603.8	644.6	664.3	753.4	808.0	829.1
20	391.8	426.1	442.1	606.2	645.1	664.1	805.0	859.5	885.7	1004.6	1077.3	1105.5
Low Speed (Connect in Star ⅄)												
1	16.3	17.5	18.0	25.2	26.4	26.9	33.7	35.3	35.9	41.7	44.2	44.9
5	81.5	87.3	89.8	126.2	132.2	134.6	168.3	176.7	179.4	208.6	220.9	224.3
10	163.0	174.6	179.5	252.5	264.5	269.2	336.6	353.4	358.7	417.2	441.7	448.6
15	244.5	261.9	269.3	378.7	396.7	403.8	504.9	530.1	538.1	625.7	662.6	672.9
20	326.0	349.2	359.1	504.9	528.9	538.5	673.3	706.8	717.4	834.3	883.5	897.2

R404A	VB-Q											
High Speed (Connect in Delta Δ)												
TD/K	VB-4-4R-Q	VB-4-5R-Q	VB-4-6R-Q	VB-6-4R-Q	VB-6-5R-Q	VB-6-6R-Q	VB-8-4R-Q	VB-8-5R-Q	VB-8-6R-Q	VB-10-4R-Q	VB-10-5R-Q	VB-10-6R-Q
1	20.6	22.4	23.2	31.8	33.9	34.9	42.3	45.1	46.5	52.8	56.6	58.1
5	102.9	111.9	116.1	159.2	169.4	174.4	211.4	225.7	232.6	263.8	282.9	290.3
10	205.8	223.8	232.2	318.4	338.8	348.8	422.8	451.4	465.2	527.6	565.8	580.6
15	308.7	335.7	348.3	477.6	508.2	523.2	634.2	677.1	697.8	791.4	848.7	870.9
20	411.6	447.6	464.4	636.8	677.6	697.6	845.6	902.8	930.4	1055.2	1131.6	1161.2
Low Speed (Connect in Star ⅄)												
1	17.1	18.3	18.9	26.5	27.8	28.3	35.4	37.1	37.7	43.8	46.4	47.1
5	85.6	91.7	94.3	132.6	138.9	141.4	176.8	185.6	188.4	219.1	232.0	235.6
10	171.2	183.4	188.6	265.2	277.8	282.8	353.6	371.2	376.8	438.2	464.0	471.2
15	256.8	275.1	282.9	397.8	416.7	424.2	530.4	556.8	565.2	657.3	696.0	706.8
20	342.4	366.8	377.2	530.4	555.6	565.6	707.2	742.4	753.6	876.4	928.0	942.4

R407C	VB-Q											
High Speed (Connect in Delta Δ)												
TD/K	VB-4-4R-Q	VB-4-5R-Q	VB-4-6R-Q	VB-6-4R-Q	VB-6-5R-Q	VB-6-6R-Q	VB-8-4R-Q	VB-8-5R-Q	VB-8-6R-Q	VB-10-4R-Q	VB-10-5R-Q	VB-10-6R-Q
1	19.0	20.7	21.5	29.4	31.3	32.2	39.1	41.7	43.0	48.8	52.3	53.6
5	95.1	103.4	107.3	147.1	156.5	161.1	195.3	208.5	214.9	243.8	261.4	268.2
10	190.2	206.8	214.6	294.2	313.1	322.3	390.7	417.1	429.8	487.5	522.8	536.5
15	285.2	310.2	321.8	441.3	469.6	483.4	586.0	625.6	644.8	731.3	784.2	804.7
20	380.3	413.6	429.1	588.4	626.1	644.6	781.3	834.2	859.7	975.0	1045.6	1072.9
Low Speed (Connect in Star ⅄)												
1	15.8	16.9	17.4	24.5	25.7	26.1	32.7	34.3	34.8	40.5	42.9	43.5
5	79.1	84.7	87.1	122.5	128.3	130.7	163.4	171.5	174.1	202.4	214.4	217.7
10	158.2	169.5	174.3	245.0	256.7	261.3	326.7	343.0	348.2	404.9	428.7	435.4
15	237.3	254.2	261.4	367.6	385.0	392.0	490.1	514.5	522.2	607.3	643.1	653.1
20	316.4	338.9	348.5	490.1	513.4	522.6	653.5	686.0	696.3	809.8	857.5	870.8

R134a	VB-Q											
High Speed (Connect in Delta Δ)												
TD/K	VB-4-4R-Q	VB-4-5R-Q	VB-4-6R-Q	VB-6-4R-Q	VB-6-5R-Q	VB-6-6R-Q	VB-8-4R-Q	VB-8-5R-Q	VB-8-6R-Q	VB-10-4R-Q	VB-10-5R-Q	VB-10-6R-Q
1	18.8	20.5	21.2	29.1	31.0	31.9	38.6	41.3	42.5	48.2	51.7	53.1
5	94.1	102.3	106.1	145.5	154.8	159.4	193.2	206.3	212.6	241.1	258.6	265.3
10	188.1	204.6	212.2	291.0	309.7	318.8	386.4	412.6	425.2	482.2	517.1	530.7
15	282.2	306.8	318.3	436.5	464.5	478.2	579.7	618.9	637.8	723.3	775.7	796.0
20	376.2	409.1	424.5	582.0	619.3	637.6	772.9	825.2	850.4	964.5	1034.3	1061.3
Low Speed (Connect in Star ⅄)												
1	15.6	16.8	17.2	24.2	25.4	25.8	32.3	33.9	34.4	40.1	42.4	43.1
5	78.2	83.8	86.2	121.2	127.0	129.2	161.6	169.6	172.2	200.3	212.0	215.3
10	156.5	167.6	172.4	242.4	253.9	258.5	323.2	339.3	344.4	400.5	424.1	430.7
15	234.7	251.4	258.6	363.6	380.9	387.7	484.8	508.9	516.6	600.8	636.1	646.0
20	313.0	335.3	344.8	484.8	507.8	517.0	646.4	678.6	688.8	801.0	848.2	861.4

Capacity Correction Factors

REFRIG.	R22	R507A	R407B
CAP. MULTI.	1.0	1.045	0.975

VB Series Condensers - 8 pole “NQ”

Condenser Capacity - Total Heat Rejection (Kilowatts)

R22	VB-NQ											
High Speed (Connect in Delta Δ)												
TD/K	VB-4-4R-NQ	VB-4-5R-NQ	VB-4-6R-NQ	VB-6-4R-NQ	VB-6-5R-NQ	VB-6-6R-NQ	VB-8-4R-NQ	VB-8-5R-NQ	VB-8-6R-NQ	VB-10-4R-NQ	VB-10-5R-NQ	VB-10-6R-NQ
1	16.3	17.5	18.0	25.2	26.5	27.1	33.6	35.4	36.0	41.6	44.2	45.0
5	81.6	87.6	90.2	126.0	132.3	135.3	168.0	176.9	180.2	208.1	221.1	225.1
10	163.2	175.2	180.5	252.1	264.7	270.6	336.1	353.8	360.4	416.2	442.1	450.3
15	244.8	262.8	270.7	378.1	397.0	405.8	504.1	530.6	540.6	624.3	663.2	675.4
20	326.3	350.3	361.0	504.2	529.3	541.1	672.1	707.5	720.9	832.4	884.2	900.6
Low Speed (Connect in Star 人)												
1	13.9	14.5	14.7	20.8	21.6	22.0	27.9	28.8	29.3	34.4	36.0	36.3
5	69.3	72.6	73.3	104.2	108.2	110.0	139.4	144.0	146.5	171.8	180.0	181.5
10	138.6	145.3	146.6	208.5	216.5	219.9	278.7	288.1	293.0	343.7	360.0	363.1
15	207.9	217.9	219.9	312.7	324.7	329.9	418.1	432.1	439.5	515.5	540.1	544.6
20	277.2	290.6	293.2	417.0	433.0	439.8	557.5	576.2	586.1	687.3	720.1	726.2

R404A	VB-NQ											
High Speed (Connect in Delta Δ)												
TD/K	VB-4-4R-NQ	VB-4-5R-NQ	VB-4-6R-NQ	VB-6-4R-NQ	VB-6-5R-NQ	VB-6-6R-NQ	VB-8-4R-NQ	VB-8-5R-NQ	VB-8-6R-NQ	VB-10-4R-NQ	VB-10-5R-NQ	VB-10-6R-NQ
1	17.1	18.4	19.0	26.5	27.8	28.4	35.3	37.2	37.9	43.7	46.4	47.3
5	85.7	92.0	94.8	132.4	139.0	142.1	176.5	185.8	189.3	218.6	232.2	236.5
10	171.4	184.0	189.6	264.8	278.0	284.2	353.0	371.6	378.6	437.2	464.4	473.0
15	257.1	276.0	284.4	397.2	417.0	426.3	529.5	557.4	567.9	655.8	696.6	709.5
20	342.8	368.0	379.2	529.6	556.0	568.4	706.0	743.2	757.2	874.4	928.8	946.0
Low Speed (Connect in Star 人)												
1	14.6	15.3	15.4	21.9	22.7	23.1	29.3	30.3	30.8	36.1	37.8	38.1
5	72.8	76.3	77.0	109.5	113.7	115.5	146.4	151.3	153.9	180.5	189.1	190.7
10	145.6	152.6	154.0	219.0	227.4	231.0	292.8	302.6	307.8	361.0	378.2	381.4
15	218.4	228.9	231.0	328.5	341.1	346.5	439.2	453.9	461.7	541.5	567.3	572.1
20	291.2	305.2	308.0	438.0	454.8	462.0	585.6	605.2	615.6	722.0	756.4	762.8

R407C	VB-NQ											
High Speed (Connect in Delta Δ)												
TD/K	VB-4-4R-NQ	VB-4-5R-NQ	VB-4-6R-NQ	VB-6-4R-NQ	VB-6-5R-NQ	VB-6-6R-NQ	VB-8-4R-NQ	VB-8-5R-NQ	VB-8-6R-NQ	VB-10-4R-NQ	VB-10-5R-NQ	VB-10-6R-NQ
1	15.8	17.0	17.5	24.5	25.7	26.3	32.6	34.3	35.0	40.4	42.9	43.7
5	79.2	85.0	87.6	122.3	128.4	131.3	163.1	171.7	174.9	202.0	214.6	218.5
10	158.4	170.0	175.2	244.7	256.9	262.6	326.2	343.4	349.8	404.0	429.1	437.1
15	237.6	255.0	262.8	367.0	385.3	393.9	489.3	515.0	524.7	606.0	643.7	655.6
20	316.7	340.0	350.4	489.4	513.7	525.2	652.3	686.7	699.7	807.9	858.2	874.1
Low Speed (Connect in Star 人)												
1	13.5	14.1	14.2	20.2	21.0	21.3	27.1	28.0	28.4	33.4	34.9	35.2
5	67.3	70.5	71.1	101.2	105.1	106.7	135.3	139.8	142.2	166.8	174.7	176.2
10	134.5	141.0	142.3	202.4	210.1	213.4	270.5	279.6	284.4	333.6	349.5	352.4
15	201.8	211.5	213.4	303.5	315.2	320.2	405.8	419.4	426.6	500.3	524.2	528.6
20	269.1	282.0	284.6	404.7	420.2	426.9	541.1	559.2	568.8	667.1	698.9	704.8

R134a	VB-NQ											
High Speed (Connect in Delta Δ)												
TD/K	VB-4-4R-NQ	VB-4-5R-NQ	VB-4-6R-NQ	VB-6-4R-NQ	VB-6-5R-NQ	VB-6-6R-NQ	VB-8-4R-NQ	VB-8-5R-NQ	VB-8-6R-NQ	VB-10-4R-NQ	VB-10-5R-NQ	VB-10-6R-NQ
1	15.7	16.8	17.3	24.2	25.4	26.0	32.3	34.0	34.6	40.0	42.4	43.2
5	78.3	84.1	86.6	121.0	127.0	129.9	161.3	169.8	173.0	199.8	212.2	216.2
10	156.7	168.2	173.3	242.0	254.1	259.8	322.6	339.6	346.0	399.6	424.5	432.3
15	235.0	252.3	259.9	363.0	381.1	389.6	484.0	509.5	519.1	599.4	636.7	648.5
20	313.3	336.4	346.6	484.1	508.2	519.5	645.3	679.3	692.1	799.2	848.9	864.6
Low Speed (Connect in Star 人)												
1	13.3	13.9	14.1	20.0	20.8	21.1	26.8	27.7	28.1	33.0	34.6	34.9
5	66.5	69.7	70.4	100.1	103.9	105.6	133.8	138.3	140.7	165.0	172.8	174.3
10	133.1	139.5	140.8	200.2	207.8	211.1	267.6	276.6	281.3	330.0	345.7	348.6
15	199.6	209.2	211.1	300.2	311.8	316.7	401.4	414.9	422.0	494.9	518.5	522.9
20	266.2	279.0	281.5	400.3	415.7	422.3	535.2	553.2	562.7	659.9	691.3	697.2

Capacity Correction Factors

REFRIG.	R22	R507A	R407B
CAP. MULTI.	1.0	1.045	0.975

VB Series Condensers - 8 pole “SQ”

Condenser Capacity - Total Heat Rejection (Kilowatts)

R22	VB-SQ			High Speed (Connect in Delta Δ)								
TD/K	VB-4-4R-SQ	VB-4-5R-SQ	VB-4-6R-SQ	VB-6-4R-SQ	VB-6-5R-SQ	VB-6-6R-SQ	VB-8-4R-SQ	VB-8-5R-SQ	VB-8-6R-SQ	VB-10-4R-SQ	VB-10-5R-SQ	VB-10-6R-SQ
1	15.7	16.7	17.1	24.0	25.1	25.6	32.0	33.5	34.2	39.6	41.9	42.5
5	78.3	83.5	85.5	120.0	125.4	128.2	160.2	167.6	170.9	198.1	209.3	212.4
10	156.7	167.0	171.0	240.1	250.8	256.5	320.4	335.1	341.8	396.2	418.7	424.8
15	235.0	250.5	256.5	360.1	376.1	384.7	480.7	502.7	512.7	594.3	628.0	637.2
20	313.4	334.0	342.0	480.2	501.5	512.9	640.9	670.2	683.5	792.4	837.4	849.6
				Low Speed (Connect in Star 人)								
1	11.5	11.7	11.7	17.0	17.5	17.5	22.6	23.2	23.3	28.4	29.2	28.9
5	57.3	58.7	58.3	85.0	87.6	87.3	113.2	116.1	116.4	142.2	145.8	144.4
10	114.6	117.5	116.5	170.0	175.2	174.6	226.4	232.3	232.9	284.5	291.7	288.8
15	171.9	176.2	174.8	255.0	262.8	261.9	339.6	348.4	349.3	426.7	437.5	433.3
20	229.2	235.0	233.0	340.1	350.3	349.2	452.8	464.6	465.7	568.9	583.4	577.7

R404A	VB-SQ			High Speed (Connect in Delta Δ)								
TD/K	VB-4-4R-SQ	VB-4-5R-SQ	VB-4-6R-SQ	VB-6-4R-SQ	VB-6-5R-SQ	VB-6-6R-SQ	VB-8-4R-SQ	VB-8-5R-SQ	VB-8-6R-SQ	VB-10-4R-SQ	VB-10-5R-SQ	VB-10-6R-SQ
1	16.5	17.5	18.0	25.2	26.3	26.9	33.7	35.2	35.9	41.6	44.0	44.6
5	82.3	87.7	89.8	126.1	131.7	134.7	168.3	176.0	179.5	208.1	219.9	223.1
10	164.6	175.4	179.6	252.2	263.4	269.4	336.6	352.0	359.0	416.2	439.8	446.2
15	246.9	263.1	269.4	378.3	395.1	404.1	504.9	528.0	538.5	624.3	659.7	669.3
20	329.2	350.8	359.2	504.4	526.8	538.8	673.2	704.0	718.0	832.4	879.6	892.4
				Low Speed (Connect in Star 人)								
1	12.0	12.3	12.2	17.9	18.4	18.3	23.8	24.4	24.5	29.9	30.6	30.3
5	60.2	61.7	61.2	89.3	92.0	91.7	118.9	122.0	122.3	149.4	153.2	151.7
10	120.4	123.4	122.4	178.6	184.0	183.4	237.8	244.0	244.6	298.8	306.4	303.4
15	180.6	185.1	183.6	267.9	276.0	275.1	356.7	366.0	366.9	448.2	459.6	455.1
20	240.8	246.8	244.8	357.2	368.0	366.8	475.6	488.0	489.2	597.6	612.8	606.8

R407C	VB-SQ			High Speed (Connect in Delta Δ)								
TD/K	VB-4-4R-SQ	VB-4-5R-SQ	VB-4-6R-SQ	VB-6-4R-SQ	VB-6-5R-SQ	VB-6-6R-SQ	VB-8-4R-SQ	VB-8-5R-SQ	VB-8-6R-SQ	VB-10-4R-SQ	VB-10-5R-SQ	VB-10-6R-SQ
1	15.2	16.2	16.6	23.3	24.3	24.9	31.1	32.5	33.2	38.5	40.6	41.2
5	76.0	81.0	83.0	116.5	121.7	124.5	155.5	162.6	165.9	192.3	203.2	206.1
10	152.1	162.1	166.0	233.0	243.4	248.9	311.0	325.2	331.7	384.6	406.4	412.3
15	228.1	243.1	248.9	349.5	365.1	373.4	466.5	487.9	497.6	576.9	609.6	618.4
20	304.2	324.1	331.9	466.1	486.8	497.9	622.0	650.5	663.4	769.1	812.8	824.6
				Low Speed (Connect in Star 人)								
1	11.1	11.4	11.3	16.5	17.0	16.9	22.0	22.5	22.6	27.6	28.3	28.0
5	55.6	57.0	56.5	82.5	85.0	84.7	109.9	112.7	113.0	138.0	141.6	140.2
10	111.2	114.0	113.1	165.0	170.0	169.5	219.7	225.5	226.0	276.1	283.1	280.3
15	166.9	171.0	169.6	247.5	255.0	254.2	329.6	338.2	339.0	414.1	424.7	420.5
20	222.5	228.0	226.2	330.1	340.0	338.9	439.5	450.9	452.0	552.2	566.2	560.7

R134a	VB-SQ			High Speed (Connect in Delta Δ)								
TD/K	VB-4-4R-SQ	VB-4-5R-SQ	VB-4-6R-SQ	VB-6-4R-SQ	VB-6-5R-SQ	VB-6-6R-SQ	VB-8-4R-SQ	VB-8-5R-SQ	VB-8-6R-SQ	VB-10-4R-SQ	VB-10-5R-SQ	VB-10-6R-SQ
1	15.0	16.0	16.4	23.1	24.1	24.6	30.8	32.2	32.8	38.0	40.2	40.8
5	75.2	80.2	82.1	115.3	120.4	123.1	153.8	160.9	164.1	190.2	201.0	203.9
10	150.4	160.3	164.2	230.5	240.7	246.2	307.7	321.7	328.1	380.4	402.0	407.8
15	225.7	240.5	246.2	345.8	361.1	369.3	461.5	482.6	492.2	570.6	603.0	611.7
20	300.9	320.6	328.3	461.0	481.5	492.5	615.3	643.5	656.3	760.8	804.0	815.7
				Low Speed (Connect in Star 人)								
1	11.0	11.3	11.2	16.3	16.8	16.8	21.7	22.3	22.4	27.3	28.0	27.7
5	55.0	56.4	55.9	81.6	84.1	83.8	108.7	111.5	111.8	136.6	140.0	138.7
10	110.0	112.8	111.9	163.2	168.2	167.6	217.3	223.0	223.6	273.1	280.0	277.3
15	165.1	169.2	167.8	244.9	252.3	251.4	326.0	334.5	335.3	409.7	420.1	416.0
20	220.1	225.6	223.7	326.5	336.4	335.3	434.7	446.0	447.1	546.2	560.1	554.6

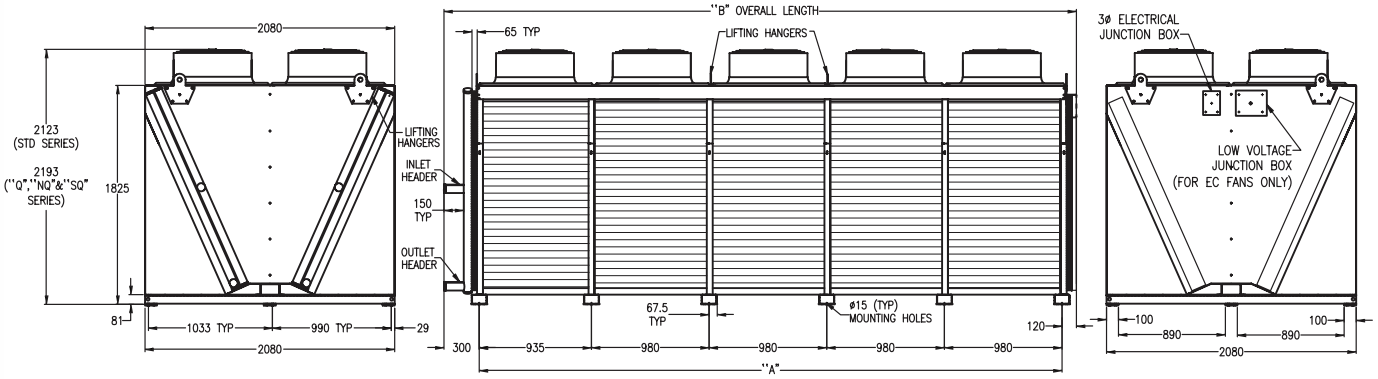
Capacity Correction Factors

REFRIG.	R22	R507A	R407B
CAP. MULTI.	1.0	1.045	0.975

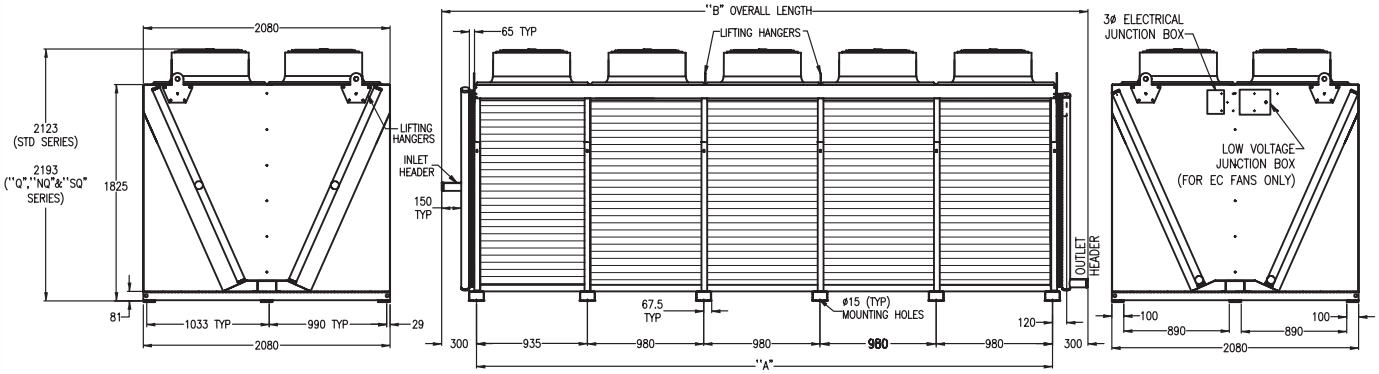
VB Series Condensers - Dimensions

Note: All models have been reduced in O/All width for ease of transport.

Models VB-4-4R to VB-6 6R, VB-8-6R, VB-10-4R, VB-10-6R



Models VB-8-4R, VB-8 5R, VB-10-5R



VB - 4 - 4R - 4P

- Model Series
- No. of Motors
- No. of Rows
- Motor Series

Note:
- **Must be installed level**
- **Must be fully supported on each mounting foot**

Physical Data (All Series)

MODEL:		VB-4-4R	VB-4-5R	VB-4-6R	VB-6-4R	VB-6-5R	VB-6-6R	VB-8-4R	VB-8-5R	VB-8-6R	VB-10-4R	VB-10-5R	VB-10-6R
No. of Rows		4	5	6	4	5	6	4	5	6	4	5	6
Tubes Wide		112	112	112	112	112	112	112	112	112	112	112	112
Inlet Connections	mm	54	54	54	54	66.7	66.7	66.7	66.7	76.2	76.2	76.2	76.2
Outlet Connections	mm	54	54	54	54	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7
*Operating Charge R22	(kg)	34	41	48.5	50	61	72	64.5	79	94	79	97	115
**Pump Down Capacity	(kg)	110.0	135.0	160.5	173.0	210.5	248.0	221.5	271.0	320.0	269.5	331.0	401.0
Dimensions (mm):	A	1915	1915	1915	2895	2895	2895	3875	3875	3875	4855	4855	4855
	B	2335	2335	2335	3315	3315	3315	4475	4475	4295	5275	5455	5275
Crated Dimmensions (mm):	L	2535	2535	2535	3515	3515	3515	4675	4675	4675	5655	5655	5655
	W	2375	2375	2375	2375	2375	2375	2375	2375	2375	2375	2375	2375
	H	2475	2475	2475	2475	2475	2475	2475	2475	2475	2475	2475	2475
Crated Volume	m^3	15.06	15.06	15.06	20.88	20.88	20.88	27.77	27.77	27.77	33.59	33.59	33.59

*Based on -4°C SST, +25°C Suction gas temperature, 40°C Condensing and 2°C Sub cooling.
**Pump down capacity based on 80% of total volume - Refrigerant R22.

Heat Rejection Factors

Total Heat Rejection (Kilowatts)

Condenser Load = Compressor Capacity x Factor

Open Compressors Tables No.1 **Suction Cooled Hermetic CompressorsTable No.2**

Condensing Temperature °C							Evap. Temp. °C	Condensing Temperature °C						
30	35	40	45	50	55	60		30	35	40	45	50	55	60
1.41	1.45	1.50	1.56	*	*	*	-40	1.63	1.67	1.74	1.80	*	*	*
1.37	1.40	1.45	1.50	1.56	*	*	-35	1.56	1.59	1.65	1.71	1.77	*	*
1.33	1.36	1.40	1.45	1.50	1.50	*	-30	1.50	1.53	1.58	1.63	1.69	1.75	*
1.28	1.31	1.35	1.39	1.44	1.49	1.55	-25	1.43	1.46	1.50	1.55	1.61	1.66	1.73
1.25	1.28	1.31	1.35	1.40	1.44	1.49	-20	1.38	1.41	1.45	1.49	1.55	1.59	1.65
1.21	1.24	1.28	1.31	1.35	1.39	1.44	-15	1.32	1.35	1.40	1.43	1.47	1.52	1.57
1.18	1.21	1.24	1.27	1.31	1.35	1.39	-10	1.28	1.31	1.35	1.38	1.42	1.46	1.51
1.15	1.18	1.21	1.24	1.27	1.31	1.35	-5	1.24	1.27	1.30	1.34	1.37	1.41	1.45
1.12	1.15	1.18	1.20	1.24	1.27	1.31	0	1.20	1.23	1.26	1.29	1.33	1.36	1.40
1.10	1.12	1.15	1.17	1.20	1.24	1.27	5	1.16	1.18	1.21	1.23	1.26	1.31	1.34
1.07	1.10	1.13	0.07	1.17	1.21	1.24	10	1.12	1.15	1.18	1.20	1.22	1.27	1.30

* Outside Limits of Normal Single Stage Compression Application.

Selection Example

Compressor Capacity (Hermetic Compressor)	480kW
Refrigerant	R404A
Suction Temperature	+5°C
Air Temp. on entering condenser	+35°C
Required condensing temp.	+50°C (High speed fan)
Temp. difference (TDK)	= 15K TD
Heat rejection factor (Table 1)	= 1.26
Total heat rejection required	= 480 x 1.26
	= 604.8
Selected model VB-8-5R-4P which has a capacity of 623.9kW at 15K TD	
Actual TD	= 604.8
	÷ 41.6
	= 14.54K TD

The heat load on a compressor always exceeds that of the evaporator by an amount equal to the heat of compression. Since the work (heat) of compression per unit of refrigeration capacity changes depending upon the compression ratio, the heat load on the condenser varies with the operating conditions of the system and compressor design or type - that is, open or suction cooled hermetics.

For this reason, whenever possible the selection of an air cooled condenser should be based on the compressor manufacturers published heat rejection ratings and operating limitations applicable to that particular machine. In the absence of manufacturers data, the condenser heat rejection factor tables listed may be used to obtain an approximate heat of rejection.

Standard Features

- All fans statically and dynamically balanced, aerodynamically constructed for economical and quiet operation.
- Sickle Blade Fans.
- Dual speed motors standard on 3 Phase
  - 1310/1000 R.P.M (VB-4P)
  - 880/660 R.P.M (VB-Q)
  - 680/530 R.P.M (VB-NQ)
  - 630/400 R.P.M (VB-SQ)
- Motors to be wired to common junction box (High Speed).
- 12.7mm diameter copper tube expanded into ripple aluminium coil blocks (472 Fins/m)
- Internal ripple finned copper tube.
- All 1.6mm Marine Grade (5251) aluminium casing.
- Positive air seal between all fans.

Optional extra's

- Epoxy coated or Copper fins
- Single circuits
- Stainless case
- Special application hazardous motors (Flame proof)
- DRY Cooler circuits
- OIL Cooler circuits

Technical Data

MODEL: VB - 4P		VB-4-4R-4P	VB-4-5R-4P	VB-4-6R-4P	VB-6-4R-4P	VB-6-5R-4P	VB-6-6R-4P	VB-8-4R-4P	VB-8-5R-4P	VB-8-6R-4P	VB-10-4R-4P	VB-10-5R-4P	VB-10-6R-4P
Air Flow High	l/sec	20408	19958	19508	30610	29936	29260	40814	39914	39014	51018	49894	48768
Air Flow Low	l/sec	15756	15370	14982	23634	23056	22474	31514	30742	29964	39392	38426	37456
No. of Motors (630mm)		4	4	4	6	6	6	8	8	8	10	10	10
Motor Power: High Speed													
Total Watts - 3 Phase		10400	10400	10400	15600	15600	15600	20800	20800	20800	26000	26000	26000
Total Amps - 3 Phase*		19.2	19.2	19.2	28.8	28.8	28.8	38.4	38.4	38.4	48	48	48
Motor Power: Low Speed													
Total Watts - 3 Phase		6400	6400	6400	9600	9600	9600	12800	12800	12800	16000	16000	16000
Total Amps - 3 Phase*		10.8	10.8	10.8	16.2	16.2	16.2	21.6	21.6	21.6	27	27	27
Weight Unpacked (kg)		527	650	697	768	964	1034	1022	1267	1357	1264	1568	1680

MODEL: VB - Q		VB-4-4R-Q	VB-4-5R-Q	VB-4-6R-Q	VB-6-4R-Q	VB-6-5R-Q	VB-6-6R-Q	VB-8-4R-Q	VB-8-5R-Q	VB-8-6R-Q	VB-10-4R-Q	VB-10-5R-Q	VB-10-6R-Q
Air Flow High	l/sec	22126	21072	20122	33188	31610	30182	44252	42146	40244	55314	52682	50304
Air Flow Low	l/sec	17586	16676	15860	26380	25014	23788	35174	33352	31718	43966	41690	39648
No. of Motors (800mm)		4	4	4	6	6	6	8	8	8	10	10	10
Motor Power: High Speed													
Total Watts - 3 Phase		8000	8000	8000	12000	12000	12000	16000	16000	16000	20000	20000	20000
Total Amps - 3 Phase*		16	16	16	24	24	24	32	32	32	40	40	40
Motor Power: Low Speed													
Total Watts - 3 Phase		5000	5000	5000	7500	7500	7500	10000	10000	10000	12500	12500	12500
Total Amps - 3 Phase*		9.2	9.2	9.2	13.8	13.8	13.8	18.4	18.4	18.4	23	23	23
Weight Unpacked (kg)		569	692	740	831	1028	1097	1107	1351	1441	1369	1673	1785

MODEL: VB - NQ		VB-4-4R-NQ	VB-4-5R-NQ	VB-4-6R-NQ	VB-6-4R-NQ	VB-6-5R-NQ	VB-6-6R-NQ	VB-8-4R-NQ	VB-8-5R-NQ	VB-8-6R-NQ	VB-10-4R-NQ	VB-10-5R-NQ	VB-10-6R-NQ
Air Flow High	l/sec	17164	16362	15624	25746	24544	23436	34326	32726	31248	42908	40908	39058
Air Flow Low	l/sec	13682	12946	12278	20522	19418	18418	27362	25892	24556	34202	32364	30696
No. of Motors (800mm)		4	4	4	6	6	6	8	8	8	10	10	10
Motor Power: High Speed													
Total Watts - 3 Phase		4200	4200	4200	6300	6300	6300	8400	8400	8400	10500	10500	10500
Total Amps - 3 Phase*		9.6	9.6	9.6	14.4	14.4	14.4	19.2	19.2	19.2	24	24	24
Motor Power: Low Speed													
Total Watts - 3 Phase		3080	3080	3080	4620	4620	4620	6160	6160	6160	7700	7700	7700
Total Amps - 3 Phase*		6	6	6	9	9	9	12	12	12	15	15	15
Weight Unpacked (kg)		569	692	740	831	1028	1097	1107	1351	1441	1369	1673	1785

MODEL: VB - SQ		VB-4-4R-SQ	VB-4-5R-SQ	VB-4-6R-SQ	VB-6-4R-SQ	VB-6-5R-SQ	VB-6-6R-SQ	VB-8-4R-SQ	VB-8-5R-SQ	VB-8-6R-SQ	VB-10-4R-SQ	VB-10-5R-SQ	VB-10-6R-SQ
Air Flow High	l/sec	16090	15292	14574	24134	22938	21860	32178	30584	29146	40224	38230	36434
Air Flow Low	l/sec	10960	10300	9726	16440	15450	14588	21920	20600	19452	27400	25750	24314
No. of Motors (800mm)		4	4	4	6	6	6	8	8	8	10	10	10
Motor Power: High Speed													
Total Watts - 3 Phase		3720	3720	3720	5580	5580	5580	7440	7440	7440	9300	9300	9300
Total Amps - 3 Phase*		8	8	8	12	12	12	16	16	16	20	20	20
Motor Power: Low Speed													
Total Watts - 3 Phase		1880	1880	1880	2820	2820	2820	3760	3760	3760	4700	4700	4700
Total Amps - 3 Phase*		4	4	4	6	6	6	8	8	8	10	10	10
Weight Unpacked (kg)		556	676	727	812	1009	1078	1081	1326	1416	1338	1642	1753

*Based on Manufacturer's Nominal data, actual Amps may vary.

Sound Data

Sound Data

Model	No. of fans	Speed	Sound Power Level, dB (re 1pW) Octave Band Centre Frequency (Hz)							Noise Rating NR	Sound Pressure dB(A)
			125	250	500	1000	2000	4000	8000		
VB (4P Series)	4	High	98	94	90	88	86	83	77	70	75
		Low	92	88	83	82	80	76	69	64	69
	6	High	100	96	92	90	88	85	79	72	77
		Low	94	90	85	84	82	78	71	66	71
	8	High	101	97	93	91	89	86	80	73	78
		Low	95	91	86	85	83	79	72	67	72
	10	High	102	98	94	92	90	87	81	74	79
		Low	96	92	87	86	84	80	73	68	73
VB (Q Series)	4	High	98	91	87	86	86	79	70	68	72
		Low	90	84	84	84	80	72	62	64	68
	6	High	100	93	89	88	88	81	72	70	74
		Low	92	86	86	86	82	74	64	66	70
	8	High	101	94	90	89	89	82	73	71	75
		Low	93	87	87	87	83	75	65	67	71
	10	High	102	95	91	90	90	83	74	72	76
		Low	94	88	88	88	84	76	66	68	72
VB (NQ Series)	4	High	86	81	79	79	74	67	64	61	65
		Low	79	77	78	76	69	61	55	58	62
	6	High	88	83	81	81	76	69	66	63	67
		Low	81	79	80	78	71	63	57	60	64
	8	High	89	84	82	82	77	70	67	64	68
		Low	82	80	81	79	72	64	58	61	65
	10	High	90	85	83	83	78	71	68	65	69
		Low	83	81	82	80	73	65	59	62	66
VB (SQ Series)	4	High	83	83	80	81	77	71	65	61	65
		Low	76	76	72	72	66	60	52	52	56
	6	High	85	85	82	83	79	73	67	63	67
		Low	78	78	74	74	68	62	54	54	58
	8	High	86	86	83	84	80	74	68	64	68
		Low	79	79	75	75	69	63	55	55	59
	10	High	87	87	84	85	81	75	69	65	69
		Low	80	80	76	76	70	64	56	56	60

Sound Pressure Levels dB(A) re 20 µPa and Noise Rating calculated @3m distance, free field.
Sound Power Levels Testing in accordance with Australian Standards AS1217.5-1985.

BITZER
G·R·O·U·P O·F C·O·M·P·A·N·I·E·S

Contact Information

Bitzer Australia
134 Dunheved Circuit,
St Marys, NSW 2760
Australia
tel +61 (2) 8801 9300
fax +61 (2) 9673 4698
info@bitzer.com.au

Victoria
tel +61 (3) 8326 8200
fax +61 (3) 9310 2520

Queensland
tel +61 (7) 3274 3620
fax +61 (7) 3274 3621

South Australia
tel +61 (8) 8268 4500
fax +61 (8) 8268 4555

Western Australia
tel +61 (8) 9359 2066
fax +61 (8) 9359 2077

Bitzer New Zealand
Bitzer Australia Pty Ltd
13b Airborne Rd
Albany 0632
North Shore City
New Zealand
tel +64 (9) 9415 2030
fax +64 (9) 9415 2031

Bitzer Refrigeration Asia Limited
200 Cantonment Road #06-02A,
Southpoint, Singapore 089763
tel +65 6220 4942
fax +65 6220 4794
systems@bitzer.com.sg
www.bitzer.com.sg

Bitzer India
618 6th Floor, Nimal Lifestyle
Corporate Office Building
Maharashtra
India
tel +91 22 25 67 60 06-9
tax +91 22 25 67 60 11
customercare@bitzer.in

www.bitzer.com.au
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