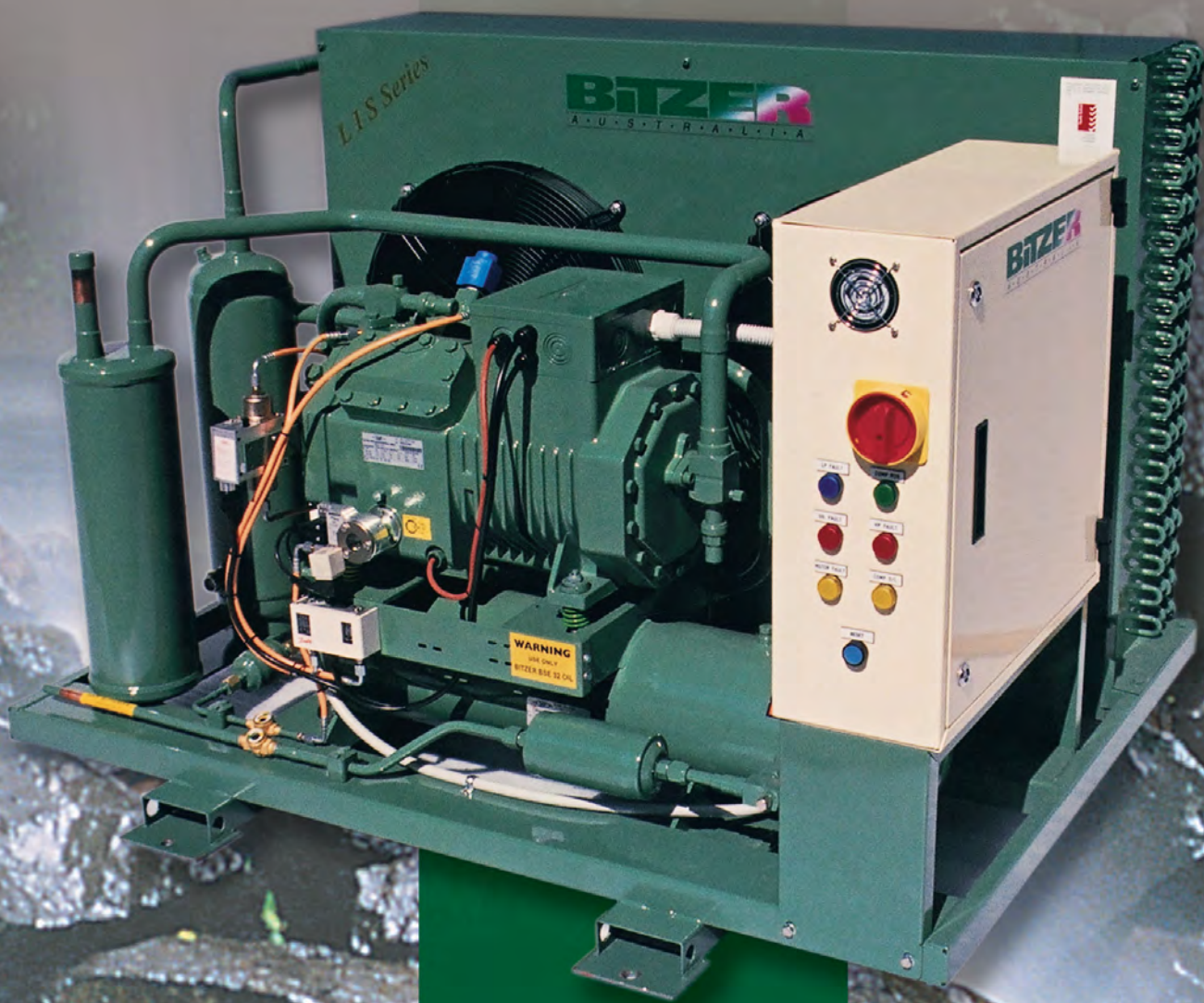


LIS Series

AIR COOLED CONDENSING UNIT



4.5kW to 15kW
(6Hp to 20Hp)



Quality
Endorsed
Company
ISO 9001 LIC5976
Standards Australia

LIS Series

Air Cooled Condensing Units

The new **LIS Series Condensing Units** are now available, ranging from - 4.5 kW to 15 kW (6 Hp to 20 Hp) incorporating the latest **C4 Octagon Compressors**. Standard power requirement is 415 V / 3 Ph / 50Hz.

Standard Inclusions for all LIS Series Condensing Units



- Bitzer Octagon Semi Hermetic Compressors. with internal muffler heads fitted
- Condensers fitted with dedicated Sub-Cooling Circuit.
- Liquid Receiver, Liquid line Drier, Sight glass.
- Dual Pressure Control, Sump Heater (120watts self limiting)
- Electronic Motor Protection monitoring- INT 69 VS/V7.
- Oil Charge -BSE 32 as standard (B5 Oil on request).
- Powder Coated base frame and panels
- Two high performance fan assemblies (three phase)
- Liquid receiver inlet & outlet service valves

Optional Components – Available on Request

- Fully wired Electrical Panel with Three Phase Isolator. Includes ample space for additional electrical equipment.
- System fault indicator panel.
- Internal or external float Oil Separator fitted. (Centrifugal oil separator now available)
- Oil Level Monitoring Device.(Traxoil)
- Suction Accumulator fitted
- Capacity Control Head.
- Liquid line Solenoid Valve.
- Fan Speed Controller (three phase).
- Head Cooling Fan.
- MP 15 Phase Failure Control.
- Additional pressure controls.
- Liquid line drier shell and charging valve.
- Suction drier shell.

*Optional electrical panel
c/w three phase isolator
and fault indicator panel*



*Shown with optional electrical panel,
oil separator, suction accumulator and
Traxon oil level regulator fitted*

MODEL NOMENCLATURE

4TC-8.2-Y-LIS-2-LS

Number of Cylinders

Displacement Code

Compact (Octagon) Compressor

Nominal Horsepower

Compressor Series Code

Polyol Ester Oil Charge

4EC-6.2-Y-LIS2-HS

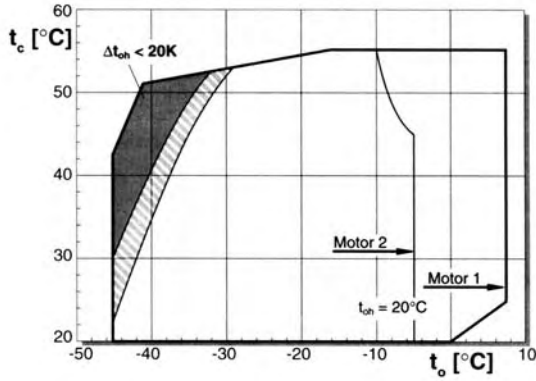
Large Indoor Slimline Design

Condenser / Unit Size

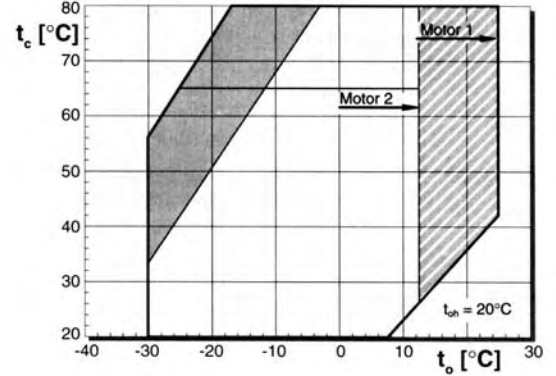
Condenser Fan Motors (high speed)

APPLICATION LIMITS FOR C4 SERIES COMPRESSORS

R404A/R507

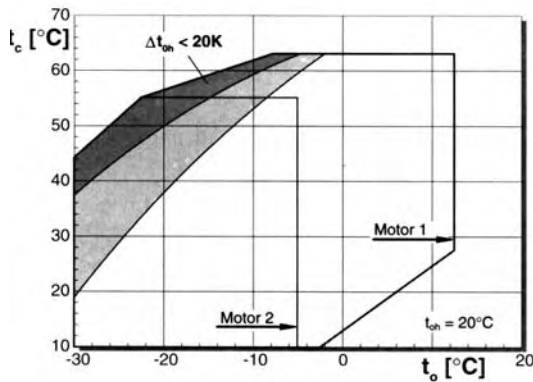


R134a

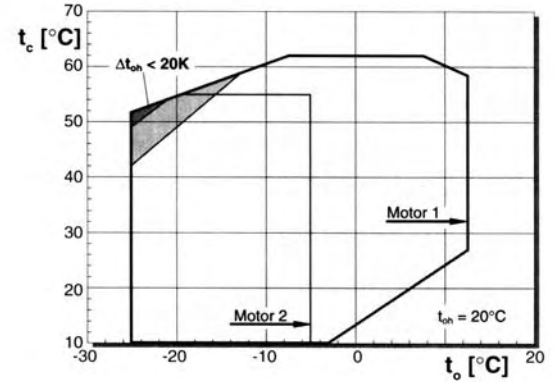


Note: For 134a Condensing Temperatures $\geq 55^\circ\text{C}$ requires the use of BSE-55 oil

R22



R407C

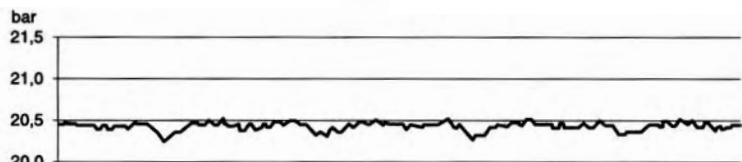


t_o Evaporating temperature ($^\circ\text{C}$)
 t_{sh} Suction gas temperature ($^\circ\text{C}$)
 Δt_{sh} Suction superheat (K)
 t_c Condensing temperature ($^\circ\text{C}$)

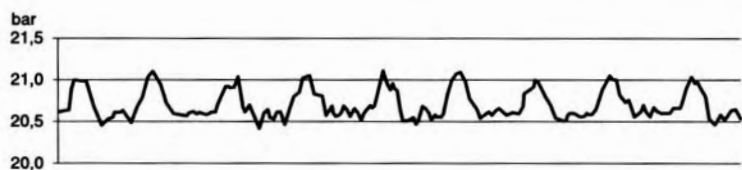
- Additional cooling or max. 0°C suction gas temperature
- Additional cooling
- Additional cooling + suction gas temperature limit
- Suction super heat $> 10\text{K}$

Pulsation in discharge line

Octagon® 4-cylinder with integrated pulsation mufflers



4-Cylinder compressor without pulsation mufflers



The C4 compressor with integrated pulsation muffler delivers a smooth discharge gas stream into the condenser. This makes for a quieter, vibration free package that will not transmit vibration into surrounding structures.

Bitzer LIS Series Condensing Units

Performance data, based on 20°C suction gas temperature; 5K liquid subcooling; 50Hz 35°C ambient

MODEL No.	Ambient Temp. °C		Refrigerating capacity Q_o [Watt]						Power consumption P_e [kW]				
			Evaporation temperature °C										
			7.5	5	0	-5	-10	-15	-20	-25	-30	-35	-40
4VC-6.2Y-LIS 1-LS	35°C	Q				18140	15110	12370	9910	7750	5860	4230	
		P				7.73	6.90	6.09	5.30	4.52	3.75	2.99	
4VC-10.2Y-LIS 1-LS	35°C	Q	32700	29400	25500	22300	18250	15120	12320	9810	7600	5660	3980
		P	9.90	9.70	8.89	8.04	7.38	6.64	5.89	5.13	4.36	3.59	2.81
4TC-8.2Y-LIS 1-LS	35°C	Q				21480	17870	14680	11810	9260	7040	5110	
		P				9.51	8.46	7.46	6.5	5.57	4.66	3.77	
4TC-12.2Y-LIS 1-HS	35°C	Q	37500	35000	30300	25900	21800	18130	14810	11820	9180	6890	4900
		P	12.53	12.01	11.02	9.85	9.12	8.20	7.28	6.36	5.45	4.54	3.64
4PC-10.2Y-LIS 1-LS	35°C	Q				24100	20200	16630	13390	10530	7990	5770	
		P				11.17	9.90	8.68	7.50	6.38	5.31	4.29	
4PC-15.2Y-LIS 2-HS	35°C	Q	45700	42700	36900	31500	26500	21900	17830	14160	10940	8120	5690
		P	14.41	13.75	12.54	11.44	10.38	9.36	8.33	7.30	6.24	5.18	4.12
4NC-12.2Y-LIS 2-LS	35°C	Q				27900	23400	19250	15320	12160	9270	6720	
		P				13.05	11.54	10.10	8.73	7.43	6.19	5.03	
4NC-20.2Y-LIS 2-HS	35°C	Q	50900	47600	41200	35300	29800	24700	20100	16030	12400	9220	6470
		P	17.48	16.68	15.18	13.76	12.39	11.05	9.73	8.44	7.18	5.96	4.79
	35°C	Q											
	35°C	P											
	35°C	Q											
	35°C	P											
	35°C	Q	LARGER MODELS										
	35°C	P	LARGER MODELS										
	35°C	Q	UNDER DEVELOPMENT										
	35°C	P	UNDER DEVELOPMENT										
	35°C	Q											
	35°C	P											
	35°C	Q											
	35°C	P											

Additional cooling / limit suction gas temperature (refer application limits)

For 32°C ambient multiply above figures by correction factor 1.03

For 38°C ambient multiply above figures by correction factor 0.97

Bitzer LIS Series Condensing Units

Performance data, based on 20°C suction gas temperature; 5K liquid subcooling; 50Hz 35°C ambient

R22	Ambient Temp. °C	Refrigerating capacity Q_e [Watt]						Power consumption P_e [kW]					
			Evaporation temperature °C										
			10	5	0	-5	-10	-15	-20	-25	-30	-35	-40
4VC-6.2-LIS 1-LS	35°C	Q				21300	17750	14580	11770	9010	7080		
		P				7.40	6.67	5.97	5.30	4.69	4.04		
4VC-10.2-LIS 1-LS	35°C	Q	34600	29800	25300	21300	17720	14490	11630	9100			
		P	9.03	8.37	7.73	7.08	6.44	5.79	5.14	4.49			
4TC-8.2-LIS 1-LS	35°C	Q				25100	21100	17360	14050	11140	8470		
		P				9.20	8.26	7.38	6.55	5.75	5.07		
4TC-12.2-LIS 1-HS	35°C	Q	41200	35500	30300	25500	21200	17400	13990	10990			
		P	11.24	10.38	9.55	8.75	7.94	7.14	6.36	5.57			
4PC-10.2-LIS 1-LS	35°C	Q				28500	23900	19700	15980	12670	9690		
		P				10.91	9.74	8.64	7.61	6.63	5.70		
4PC-15.2-LIS 2-HS	35°C	Q	50100	43100	36600	30800	25500	20800	16660	13020			
		P	12.83	11.81	10.88	9.99	9.07	8.17	7.27	6.36			
4NC-12.2-LIS 2-HS	35°C	Q				34700	29000	23800	19290	15230	12000		
		P				12.40	11.15	9.94	8.79	7.68	6.65		
4NC-20.2-LIS 2-HS	35°C	Q	56200	48600	41400	34900	29000	23700	18970	14830			
		P	16.23	14.83	13.54	12.27	11.04	9.84	8.69	7.57			
	35°C	Q											
		P											
	35°C	Q											
		P											
	35°C	Q	LARGER MODELS										
		P	LARGER MODELS										
	35°C	Q	UNDER DEVELOPMENT										
		P	UNDER DEVELOPMENT										
	35°C	Q											
		P											
	35°C	Q											
		P											

 Additional cooling required (refer application limits)
 For 32°C ambient multiply above figures by correction factor **1.03**
 For 38°C ambient multiply above figures by correction factor **0.97**

Bitzer LIS Series Condensing Units

Performance data, based on 20°C suction gas temperature; 5K liquid subcooling; 50Hz 35°C ambient

MODEL No.	Ambient Temp. °C	Refrigerating capacity Q_0 [Watt]						Power consumption P_e [kW]				
		Evaporation temperature °C										
		10	5	0	-5	-10	-15	-20	-25	-30	-35	-40
4VC-6.2Y-LIS 1-LS	35°C	Q	24200	20400	16900	13840	11160	8820	6810	5090	3630	
		P	6.03	5.49	4.99	4.51	4.03	3.56	3.10	2.64	2.18	
4TC-8.2Y-LIS 1-LS	35°C	Q	28500	24100	20100	16530	13360	10600	8200	6150	4420	
		P	7.54	6.88	6.24	5.61	5.01	4.41	3.83	3.27	2.73	
4PC-10.2Y-LIS 1-LS	35°C	Q	32200	27300	22900	18840	15270	12090	9330	6960	4930	
		P	8.97	8.16	7.38	6.63	5.88	5.14	4.41	3.71	3.04	
4NC-12.2Y-LIS 1-HS	35°C	Q	37300	31600	26400	21070	17620	13990	10830	8120	5810	
		P	10.61	9.59	8.61	7.68	6.80	5.97	5.17	4.40	3.65	
4J-13.2Y-LIS 2 -LS	35°C	Q	44200	37100	30800	25200	19520	15460	11940	9150	6550	
		P	11.66	10.35	9.19	8.14	7.32	6.37	5.48	4.60	3.78	
4H-15.2Y-LIS 2 -HS	35°C	Q	61100	42000	35000	28700	23100	18240	14070	10520	7540	
		P	13.84	12.18	10.74	9.48	8.35	7.31	6.33	5.38	4.44	

Additional cooling / limit suction gas temperature (refer application limits)

For 32°C ambient multiply above figures by correction factor 1.03

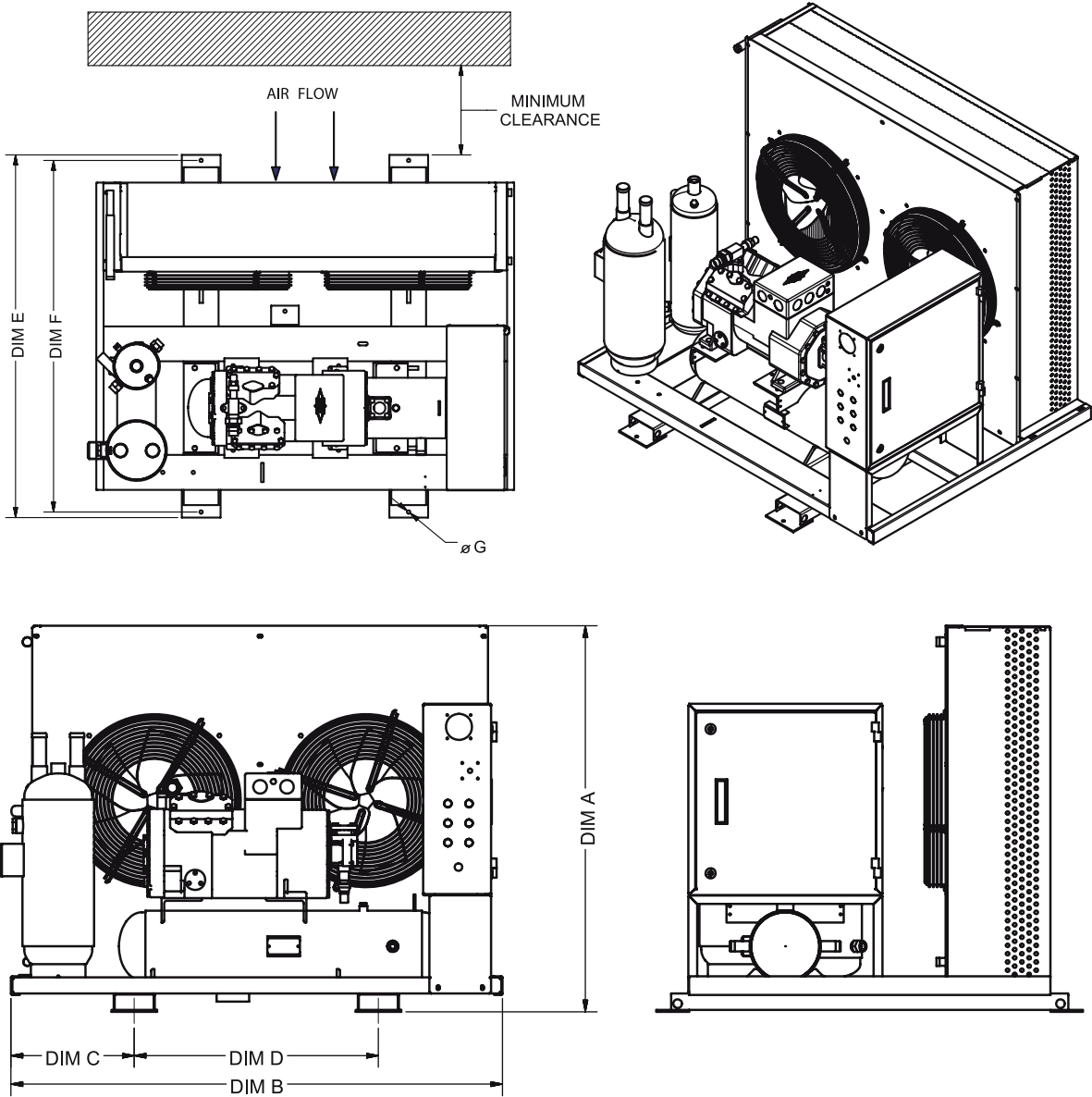
For 38°C ambient multiply above figures by correction factor 0.97

TECHNICAL DATA

Compressor Model	Nominal Motor HP / kW	Max Current Amps	Max Power Consumption kW	Starting current (Locked rota)	Electrical supply (Part winding)	Motor Version	Capacity control steps	Oil charge Litres	Heater Watts 240/1/50
4VC-6.2	6 / 4.5	14	8.1	39 / 68	380..420 YY	2	optional 50%	2.6	120
4VC-10.2	10 / 7.5	21	11.3	59 / 99	3phase 50Hz	1	"	2.6	120
4TC-8.2	8 / 6	17	9.4	49 / 81	"	2	"	2.6	120
4TC-12.2	12 / 9	24	13.8	69 / 113	"	1	"	2.6	120
4PC-10.2	10 / 7.5	21	11.7	59 / 99	"	2	"	2.6	120
4PC-15.2	15 / 11	31	16.3	81 / 132	"	1	"	2.6	120
4NC-12.2	12 / 9	24	14.1	69 / 113	"	2	"	2.6	120
4NC-20.2	20 / 15	37	19.5	97 / 158	"	1	"	2.6	120
4J-13.2	13 / 9.75	27	15.7	81 / 132	"	2	"	4	140
4H-15.2	15 / 11	31	18.1	81 / 132	"	2	"	4	140
Condenser Unit Model	Fan Voltage	Fan Total Amps	Fan Total kW	Condenser Air flow L / S	Number of Fans	Liquid Line Size	Suction Line Size	Unit Weight Kg	Receiver Pump Down R404A / R22
LIS 1 - LS	415 / 3 / 50	1.88	1.10	4900	2 x 500mm	5/8"	1-1/8"	385	30 / 33.5
LIS 1 - HS	415 / 3 / 50	2.7	1.56	6100	2 x 500mm	5/8"	1-3/8"	385	30 / 33.5
LIS 2 - LS	415 / 3 / 50	1.88	1.10	4050	2 x 500mm	7/8"	1-3/8"	410	30 / 33.5
LIS 2 - HS	415 / 3 / 50	2.7	1.56	5200	2 x 500mm	7/8"	1-5/8"	410	30 / 33.5

Note: For total unit power consumption, add compressor and condenser values together

Drawings and Dimensions



Dimensions								Sound Pressure *dB(A)			
MODE	A	B	C	D	E	F	GØ	Minimum * Clearance	Speed Controlled	Low Speed	High Speed
LIS 1 - L/S	1190 mm	1510 mm	378.5 mm	750 mm	1310 mm	1270 mm	12 mm	400 mm		65	-
LIS 1 - H/S	1190 mm	1510 mm	378.5 mm	750 mm	1310 mm	1270 mm	12 mm	400 mm	63	-	72
LIS 2 - L/S	1190 mm	1510 mm	378.5 mm	750 mm	1310 mm	1270 mm	12 mm	400 mm		65	-
LIS 2 - H/S	1190 mm	1510 mm	378.5 mm	750 mm	1310 mm	1270 mm	12 mm	400 mm	63	-	72

Sound power levels tested in accordance with Australian Standard AS 1217.5 -1985.
 Sound pressure levels dB(A) are calculated with typical 17.5 dB deduction for 3 metre distance.
 *Speed control ratings based on operation at 25°C Ambient.



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