temperzone
QUALITY AIR CONDITIONING

Ducted Single Phase Split System Air Conditioner

Technical Data

ISD 75Q / OSA 73

Optional
HAN-L6 Controller

Extra Long Life
Epoxy Coated Outdoor Coil

Nominal Cooling Capacity
7.5 kW

MARCH 2005

ISD 75Q / OSA 73 DUCTED SINGLE PHASE SPLIT SYSTEM AIR CONDITIONER

GENERAL

ISD 75Q - Indoor unit usable for reverse cycle or cooling only
OSA 73 - A general designation for outdoor unit
OSA 73C - Outdoor unit, cooling only version
OSA 73R - Outdoor unit, reverse cycle version

The ISD indoor unit, together with its associated OSA outdoor unit, provides a single phase split system air conditioner designed and developed to comply with and exceed AS/NZS 3823 specified conditions (i.e. guaranteed cooling cycle performance at 43°C outdoor temperature).

APPLICATIONS

These units have been specifically developed for air conditioning of light commercial and residential premises, e.g. offices, motels, shops and homes.

Air Flow Selection

The nominal indoor air flow and temperature /humidity conditions meet ASHRAE rating standards (incl. 50%RH). If the air returning to the indoor coil is regularly expected to be above 50%RH, then the coil face velocity should be limited to be 2.5 m/s or less (refer Air Flow graph; 2.5 m/s is clearly marked).

High humidity levels can occur in tropical or subtropical conditions, and/or when heavily moisture laden fresh air is introduced. Consideration must always be given to selecting an air flow and face velocity that avoids water carry-over problems.

Applications using full or high proportions of fresh air should be referred to your nearest **temperzone** sales office to establish the correct selection of units.

FEATURES

Efficient. The outdoor unit incorporates a high efficiency scroll compressor. Heat exchange coils incorporate inner grooved (rifled) tube for better heat transfer.

Performance. A dynamically balanced forward curved fan with a multi-speed motor enables fine tuning of the indoor unit to match the supply air requirements. The system includes a temperature sensing head pressure control which enables the system to compensate for outdoor ambient temperatures below 20°C on cooling cycle, and above 15°C on heating cycle.

Quiet. The compressor is isolated in a built-in, insulated compartment to minimise noise. The indoor unit is also insulated for noise attenuation.

Slimline. The compact up-right design of the outdoor unit requires only a 100 mm gap on the coil side where installation is against a wall. Its slimline cabinet is particularly practical where there is restricted space, e.g. side access pathways, balconies, narrow ledges, etc. The unit is free standing, but can be fitted on a wall using the optional wall mounting brackets.

Durable. The outdoor coil fins are epoxy coated for extra protection in corrosive environments, e.g. salt laden sea air. The outdoor unit's cabinet is constructed from high grade galvanised steel - polyester powder coated for all weather protection (IP 45). External fasteners are stainless steel. Heat exchange coils comprise aluminium plate fins on mechanically expanded rifled copper tube. The indoor unit's cabinet is constructed from high grade galvanised steel and also includes a plastic drain tray for complete corrosion resistance.

Service Access. The indoor unit's built-in drain tray can be removed for ease of cleaning and service accessibility.

Insulation. Closed cell foam insulation has been used in the indoor unit's cabinet to ensure no particles are introduced into the air stream. The insulation is foil faced and meets fire test standards AS 1530.3 (1989) and BS 476 parts 6 & 7.

Mounting. The indoor unit can be mounted rigid, or using the optional spring mounting brackets which minimise transfer of vibration.

Self Diagnostics. The Outdoor Unit Controller (OUC) has a display of LEDs to indicate faults and running conditions. A non-specific fault indicator is included for interface to external systems.

OPTIONAL EQUIPMENT

Outdoor Unit:
1. LP switch.
2. Fault indicating auxillary relay board.
3. Wall mounting brackets.
4. Quick Start Soft Starter for lowering starting current.

Indoor Unit:
1. Filter box - integrated return air spigot and washable filter (rated EU2).
2. **temperzone** HAN-L6 Controller.
3. Spring Mounting Kit.
4. 2 kW electric booster heater box - complete with safety cutouts required to meet AS/NZS 3350.2.40 1997.
5. Supply and return air plenums.
6. Safety drain tray.

SAFETY FEATURES

1. HP and loss of refrigerant protection.
2. Anti-rapid cycle timer and internal overload for compressor protection.
3. Circuit breaker control circuits.
4. Time-and-temperature controlled electronic de-ice switch prevents icing up of the outdoor coil during heating cycle (OSA 73R only).
5. Frost protection on cooling cycle.
6. Sensor fault indication.
7. Compressor minimum run time to ensure oil return.

COMPRESSOR

Each high efficiency scroll type compressor is hermetically sealed, quiet running and supported on rubber mounts to minimise vibration.

REFRIGERATION PIPING

The standard unit allows for a line length of up to 30 m.

Max. height separations between units are :
Reverse Cycle systems:
Outdoor unit above indoor unit : 12 m
Outdoor unit below indoor unit : 12 m.
Cooling Only systems:
Outdoor unit above indoor unit : 18 m
Outdoor unit below indoor unit : 12 m.

For extended line lengths contact your nearest **temperzone** sales office for additional details on piping requirements. The OSA 73 is shipped from the factory with a charge of HCFC-22 (R22) refrigerant sufficient for a 10 m line length. Liquid and suction service valves are provided. Accurator expansion devices control the flow of refrigerant. The matched indoor unit is shipped with a holding charge of nitrogen. Both units have flared pipe connections.

WIRING

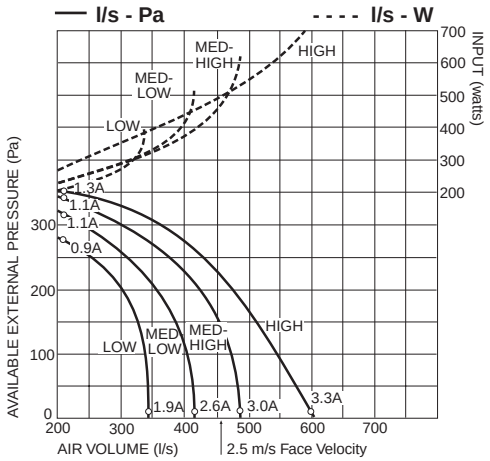
The electrical supply required (including voltage fluctuation limits) is:
1 phase 200-252 V a.c. 50 Hz with neutral and earth. The compressor crankcase heater requires a 24 hour power supply.
A control panel, located in the outdoor unit, is fully wired ready to accept the main power supply.

AIR HANDLING

Note: In a free blow application, beware of exceeding indoor fan motor's full load amp limit.

As filters are optional, the fan air flows given are for units installed without filters.

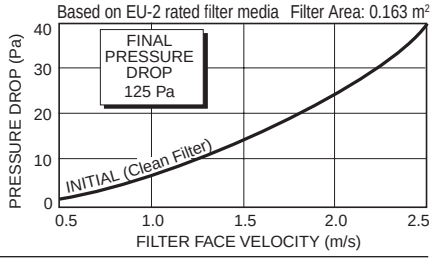
The manufacturer operates a quality management system that conforms to AS/NZS **ISO 9001**:2000.



ELECTRICAL

E.E.R. (cooling)	2.62
Indoor Fan Full Load Amps	3.5 A
Running Amps (Total System)	12.2 A
Recommended External Fuse	25 A

FILTER PRESSURE DROP



PERFORMANCE DATA

COOLING CAPACITY (kW)

Total = Total Capacity (kW) Sens. = Sensible Capacity (kW)
E.A.T. = Entering Air Temperature ◯ = Nominal Capacity (kW)

Note: Capacities are **gross** and do not include allowance for fan motor heat loss. Capacities are for close coupled systems. Interconnecting pipework will reduce capacity.

MODELS Indoor Unit / Outdoor Unit	INDOOR FAN SPEED	INDOOR FAN AIR l/s	INDOOR COIL E.A.T. W.B. °C	INDOOR COIL E.A.T. D.B. °C	OUTDOOR COIL ENTERING AIR TEMPERATURE °C D.B. 23 Total	23 Sens.	27 Total	27 Sens.	31 Total	31 Sens.	35 Total	35 Sens.	39 Total	39 Sens.	43 Total	43 Sens.
ISD 75Q / OSA 73	MED-HIGH	450	15	21	7.3	5.5	7.1	5.4	6.9	5.3	6.6	5.2	6.3	5.1	6.1	4.9
			17	23	7.6	5.5	7.4	5.4	7.2	5.3	7.0	5.2	6.8	5.1	6.5	5.0
			19	27	8.1	6.3	7.9	6.2	7.7	6.1	◯7.5	6.0	7.2	5.9	7.0	5.8
			21	31	8.6	7.1	8.4	7.0	8.1	6.9	7.9	6.8	7.7	6.8	7.4	6.7

Indoor Air Flow Correction Factors @ nominal conditions

	Indoor Air Flow (%) -20%	-10%	Rated	+10%
Total Capacity	0.95	0.975	1.0	1.025
Sensible Capacity	0.89	0.950	1.0	1.050

PIPE LENGTH CAPACITY LOSS

ON COOLING CYCLE DUE TO PRESSURE DROP
Note: Loss percentage is approximate only.
No allowance made for vertical piping.

Pipe Size (mm) Liquid	Suction	Equivalent Line Pipe Length (m) 5	10	15	20	30
10	16	2 %	4 %	6.5 %	9 %	13 %
10	19	-	-	3 %	4 %	6 %

Additional Pipe Length to allow per Bend		
Suction Pipe Size OD	16 mm	19 mm
Long 90° Radius (2 x pipe dia.)	0.3 m	0.4 m

HEATING CAPACITY (kW)

G = Gross Heating Capacity kW, based on nominal air flow of 450 l/s.
N = Net Heating Capacity kW allowing for average defrost.
◯ = Nominal Capacity (kW)

Reverse Cycle Systems

MODELS Indoor Unit / Outdoor Unit	INDOOR ENTERING AIR TEMP. °C D.B.	OUTDOOR COIL ENTERING AIR TEMPERATURE (E.A.T.) °C D.B. – 5 G	– 5 N	– 3 G	– 3 N	– 1 G	– 1 N	1 G	1 N	3 G	3 N	5 G	5 N	7 G	7 N	9 G	9 N
ISD 75Q / OSA 73R	15	4.9	4.4	5.3	4.8	5.7	5.1	6.1	5.3	6.4	5.4	6.9	6.2	7.3	7.3	7.7	7.7
	20	4.8	4.3	5.2	4.7	5.6	5.0	5.9	5.2	6.3	5.3	6.8	6.1	◯7.2	7.1	7.6	7.6
	25	4.7	4.2	5.0	4.5	5.4	4.8	5.7	5.0	6.1	5.1	6.5	5.9	6.9	6.9	7.3	7.3

SOUND LEVELS

Sound Power Levels (SWL)

Test Conditions: BS 848 PT2 1985. Installation Type A (free inlet and outlet). Direct method of measurement (reverberant room). Measured in decibels re 1 picowatt.

Indoor Unit - Supply Air Outlet

FAN SPEED	AIR FLOW l/s	SWL dB(A)	OCTAVE BAND FREQUENCY Hz 125	250	500	1 k	2 k	4 k
			SOUND POWER LEVELS (SWL) dB					
LOW	320	63	62	60	60	59	55	53
MED-LOW	400	68	65	66	64	64	60	59
MED-HIGH	450	71	70	70	67	67	63	62
HIGH	540	73	72	72	68	69	66	64

Supply Air Outlet + Insulated Duct *

FAN SPEED	AIR FLOW l/s	SWL dB(A)	OCTAVE BAND FREQUENCY Hz 125	250	500	1 k	2 k	4 k
			SOUND POWER LEVELS (SWL) dB					
HIGH	540	60	61	61	58	55	50	47

* 1 metre of 25 mm insulated duct

Outdoor Unit

MODEL	FAN SPEED	SWL dB(A)	OCTAVE BAND FREQ. Hz 125	250	500	1 k	2 k	4 k
			SOUND POWER LEVELS dB					
OSA 73	LOW	61	66	63	58	56	51	45
	MED	63	70	65	60	58	52	47

SPL @ 3 m dB(A)	OCTAVE BAND FREQ. Hz 125	250	500	1 k	2 k	4 k
	SOUND PRESSURE LEVELS dB					
45	50	47	42	40	35	29
47	54	49	44	42	36	31

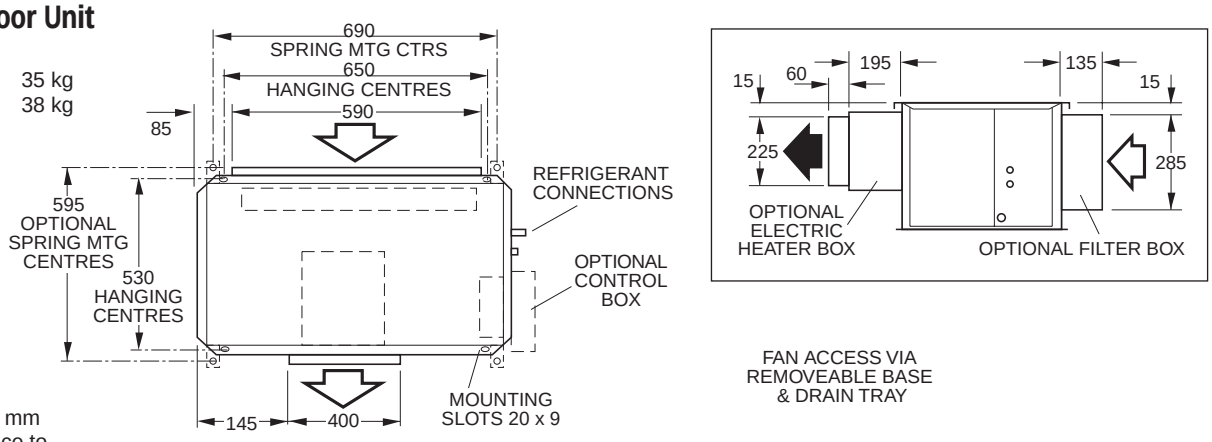
Sound Pressure Level (SPL) in decibels re 20 µPa.

DIMENSIONS (mm)

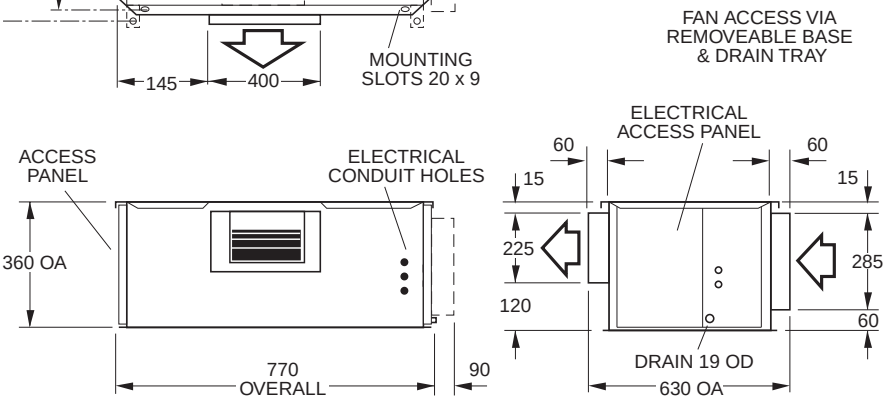
Not to Scale

ISD 75Q Indoor Unit

Net Weight	35 kg
Shipping Weight	38 kg



Note : Allow 500 mm minimum clearance to each access panel.

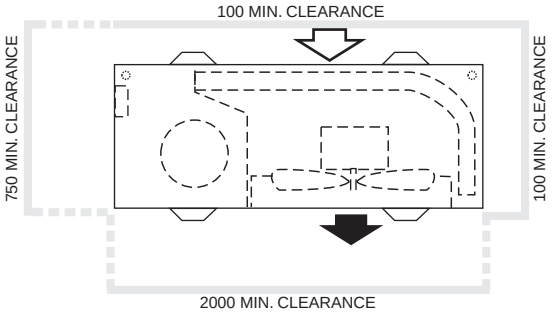


OSA 73 Outdoor Unit

	OSA 73C	OSA 73R
Net Weight	70 kg	72 kg
Shipping Weight	73 kg	77 kg

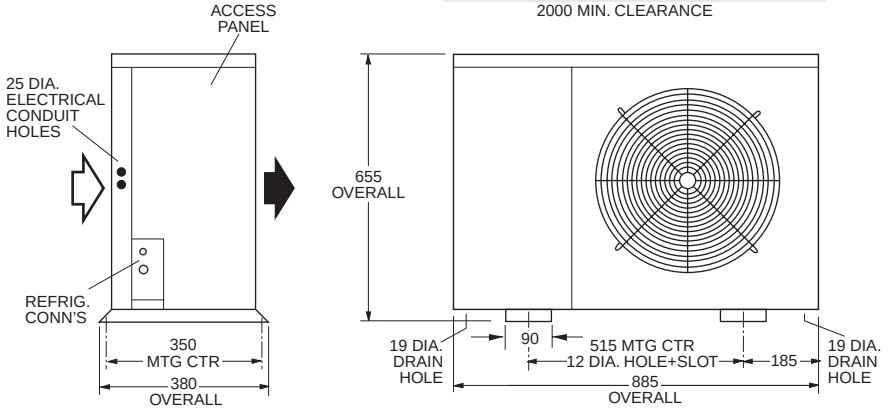
Note

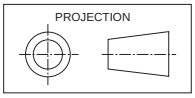
Materials and specifications are subject to change without notice due to the manufacturer's ongoing research and development



Recommended Pipe Line Sizes

Liquid:	10 mm OD
Suction:	16 mm OD





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