ENERGY EFFICIENT

temperzone

ISD 125Q / OSA 124

Technical Data

Single Phase Ducted
Split System Air Conditioner

Nominal Cooling Capacity
12.5 kW

JULY 1998

ISD 125Q / OSA 124 SINGLE PHASE DUCTED SPLIT SYSTEM AIR CONDITIONER

GENERAL

ISD 125Q - Indoor unit usable for reverse cycle or cooling only
OSA 124 - A general designation for outdoor unit
OSA 124C - Outdoor unit, cooling only version
OSA 124R - 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 A.R.E.M.A. UEPS(7/84) specified conditions (i.e. guaranteed cooling cycle performance at 46°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.

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.

Convenient. The system requires only a single phase power supply - which is readily available and requires less wiring. A low startup amps facility is also included.

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 150 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 unit's cabinet is constructed from high grade galvanised steel - polyester powder coated for all weather protection. External fasteners are stainless steel.
The indoor unit's cabinet is constructed from high grade galvanised steel and includes a polyester powder coated drain tray. Heat exchange coils comprise aluminium corrugated plate fins on mechanically expanded rifled copper tube.

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

Insulated. Closed cell foam insulation has been used in the indoor unit's cabinet to ensure no particles are introduced into the air stream. The cabinet's exterior has been successfully tested for no condensation at 40°C ambient temp., 80% rel. humidity.

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

STANDARD EQUIPMENT

ISD Indoor Unit:
1. Coil
2. Fan - forward curved centrifugal
3. Fan motor - multi-speed
4. Accurator expansion device
5. Drain tray - powder coated, removable
6. Spigots - supply and return

OSA Outdoor Unit:
1. Compressor
2. Coil
3. Fan motor - multi-speed
4. Propeller fan - direct drive
5. Fan guard
6. High/low pressure switch
7. Circuit breaker control

OSA 124R version also includes:
8. Reversing valve
9. Accurator expansion device
10. Time/temperature electronic de-ice control

OPTIONAL EQUIPMENT

Outdoor Unit:
1. **temperzone** HP Fan Speed Controller (4 amp) - recommended where cooling is required in below 20°C ambient conditions for long periods of time.
2. Epoxy Coated Coils - for protection in corrosive environments.
3. Wall mounting brackets.

Indoor Unit:
1. Filter box - integrated return air spigot and washable filter (rated EU2).
2. Spring Mounting Kit.
3. 3 kW electric booster heater box - complete with heater safety cutout thermostat and air flow switch.

SAFETY FEATURES
1. HP switch (auto reset), LP switch (auto reset) and an anti rapid cycle timer for compressor protection. The compressor also has internal overload protection.
2. Circuit breaker control circuits.
3. Time-and-temperature controlled electronic de-ice switch prevents icing up of the outdoor coil during heating cycle (OSA 124R only).

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 35 m.

Max. height separations between units are :
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 124 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. The matched indoor unit is shipped with a holding charge of nitrogen. Both units have one flare and one brazed pipe connection.

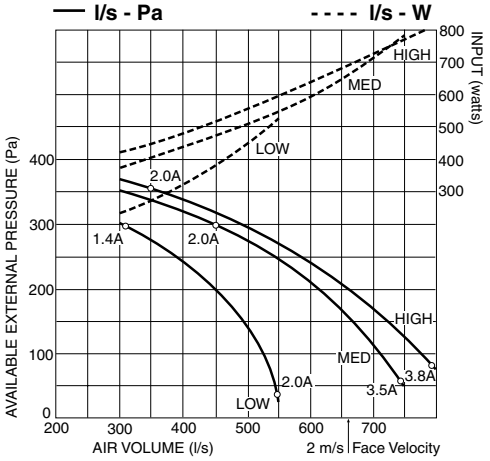
WIRING

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

The manufacturer operates a quality management system that conforms to international standard ISO 9002.

AIR HANDLING

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



ELECTRICAL

E.E.R. / C.O.P. (cooling)	10 / 2.9
Indoor Fan Full Load Amps	5.7 A
Running Amps (Total System)	20 A
Recommended External Fuse	32 A

NOTE

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

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 125Q / OSA 124	HIGH	750	17	23	13.0	9.3	12.6	9.1	12.2	9.0	11.8	8.8	11.4	8.6	11.0	8.5
			19	27	13.7	10.7	13.3	10.5	12.9	10.4	(12.5)	10.2	12.1	10.0	11.7	9.9
			21	31	14.5	12.0	14.1	11.9	13.7	11.7	13.2	11.6	12.8	11.4	12.4	11.3

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

NOTE: An optional Outdoor Unit fan speed controller is available and is recommended where cooling is required in below 20°C ambient conditions for long periods of time.

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	19	1.6 %	3.2 %	4.7 %	-	-
10	22	0.8 %	1.6 %	2.4 %	3.2 %	4.7 %

Additional Pipe Length to allow per Bend		
Suction Pipe Size OD	19 mm	22 mm
Large 90°Radius	0.43 m	0.46 m
Standard 90°Elbow	0.61 m	0.70 m

HEATING CAPACITY (kW)

G = Gross Heating Capacity kW, based on nominal air flow of 750 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. -4 G	-4 N	-2 G	-2 N	0 G	0 N	2 G	2 N	4 G	4 N	6 G	6 N	8 G	8 N	10 G	10 N
ISD 125Q / OSA 124R	15	8.6	7.7	9.2	8.3	9.8	8.8	10.5	9.0	11.1	9.4	11.9	10.8	12.6	12.6	13.0	13.0
	20	8.4	7.6	9.0	8.1	9.6	8.5	10.2	8.8	10.8	9.2	11.6	10.5	(12.2)	12.2	12.7	12.7
	25	8.1	7.3	8.7	7.8	9.3	8.3	9.9	8.5	10.4	8.9	11.2	10.2	11.9	11.9	12.3	12.3

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	STATIC PRESSURE Pa	SWL dB(A)	OCTAVE BAND FREQUENCY Hz 125	250	500	1 k	2 k	4 k
				SOUND POWER LEVELS (SWL) dB					
LOW	535	57	68	62	64	66	62	59	58
MED	715	85	75	68	71	71	71	67	66
HIGH	785	100	77	70	74	73	74	69	68

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 124	MED	68	76	68	66	62	57	51
	HIGH	69	76	70	66	63	57	52

SPL @ 3 m dB(A)	OCTAVE BAND FREQ. Hz 125	250	500	1 k	2 k	4 k
	SOUND PRESSURE LEVELS dB					
52	60	52	50	46	41	35
53	60	54	50	47	42	36

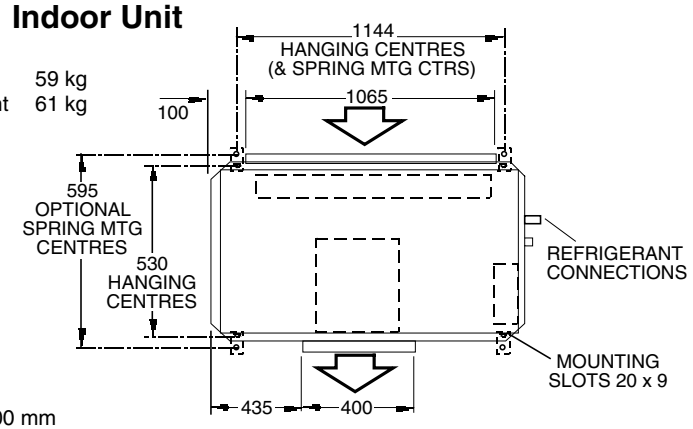
Sound Pressure Level (SPL) in decibels re 20 µPa.

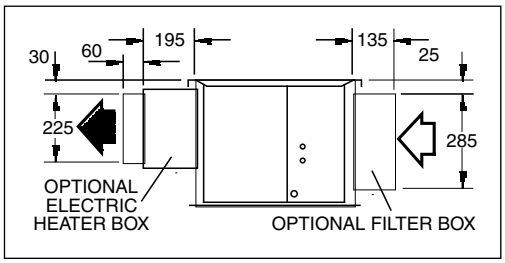
DIMENSIONS (mm)

Not to Scale

ISD 125Q Indoor Unit

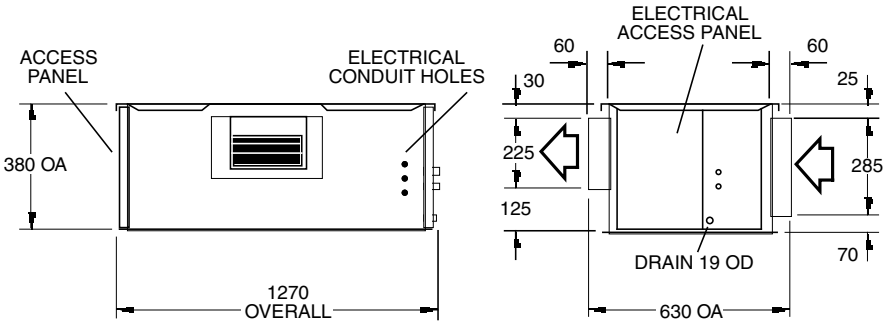
Net Weight 59 kg
Shipping Weight 61 kg





FAN ACCESS VIA
REMOVEABLE BASE
& DRAIN TRAY

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



OSA 124 Outdoor Unit

	OSA 124C	OSA 124R
Net Weight	97 kg	101 kg
Shipping Weight	104 kg	108 kg

Note
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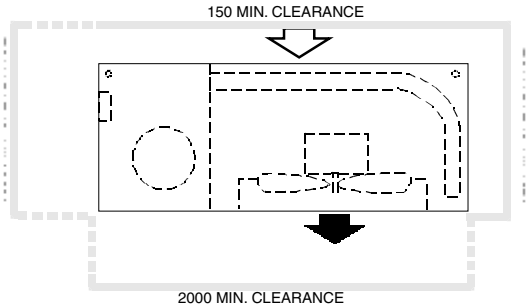

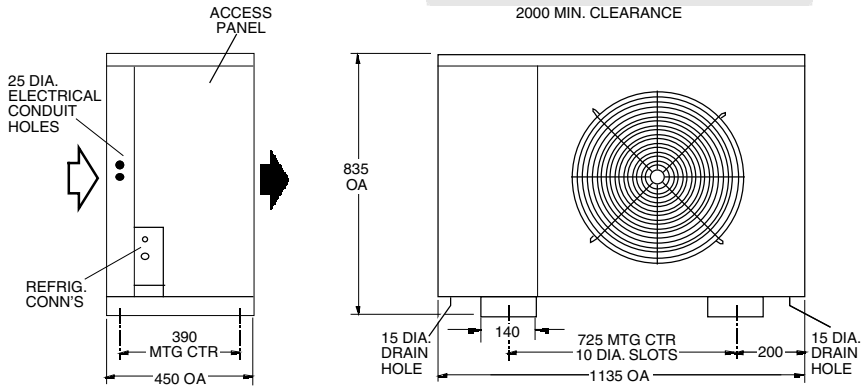

Recommended Pipe Sizes

Suction: 19 mm OD
Liquid: 10 mm OD

PROJECTION

ISO 9002
CERTIFIED

Available from:

temperzone

AUCKLAND
Phone
0-9-275 0735
Fax
0-9-275 5637

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