

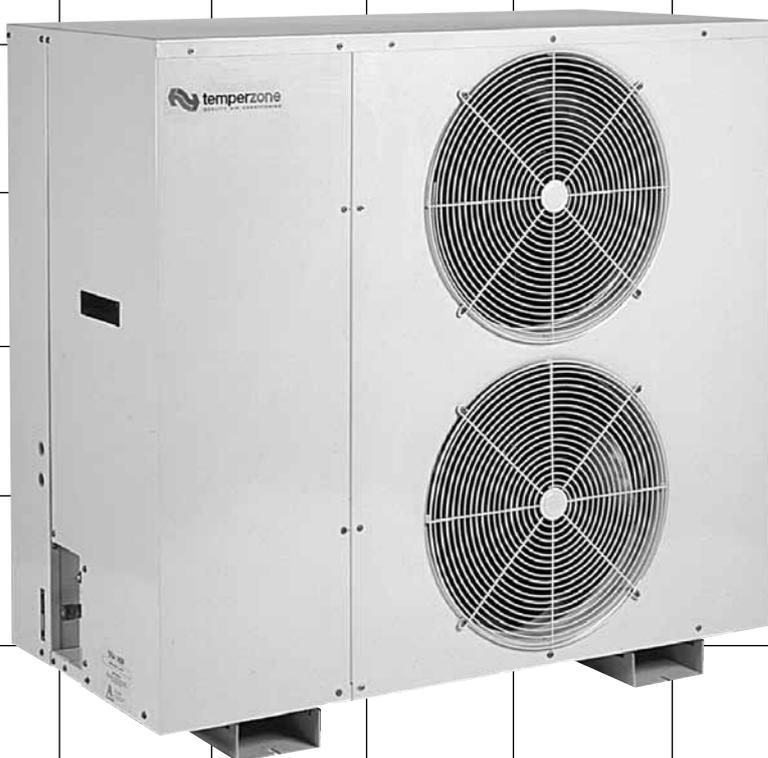
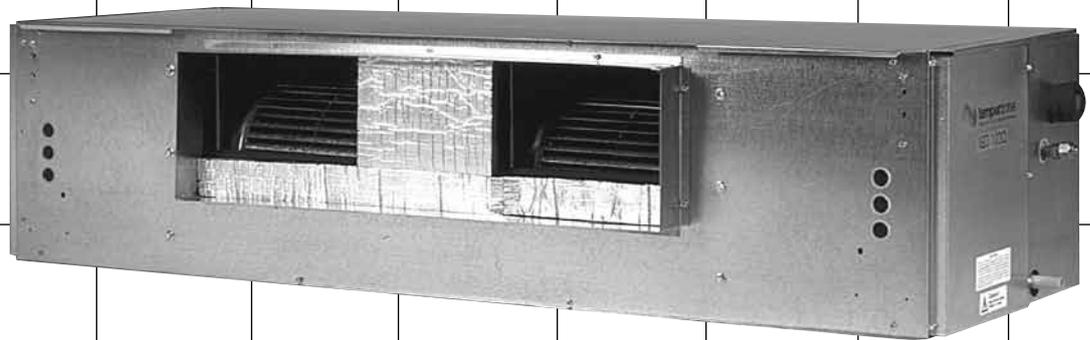
ENERGY
EFFICIENT



ISD 180Q / OSA 180

Technical Data

**Ducted
Split System Air Conditioner**



Nominal Cooling Capacity
18.0 kW

ISD 180Q / OSA 180 DUCTED SPLIT SYSTEM AIR CONDITIONER

GENERAL

ISD 180Q - Indoor unit usable for reverse cycle or cooling only

OSA 180 - A general designation for outdoor unit

OSA 180C - Outdoor unit, cooling only version

OSA 180R - Outdoor unit, reverse cycle version

The ISD indoor unit, together with its associated OSA outdoor unit, provides a three 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.

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.

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 - duplex 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 (x2) - direct drive
5. Fan guard
6. High/low pressure switch
7. Circuit breaker control

OSA 180R 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. 4.5 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 180R 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 :

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 180 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.

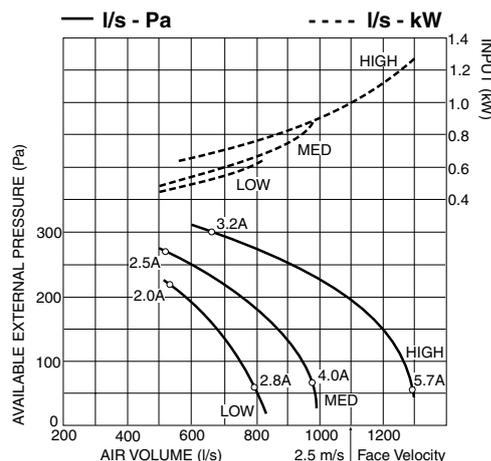
WIRING

The electrical supply required (including voltage fluctuation limits) is: 3 phase 342-436 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)	9.9 / 2.9
Indoor Fan Full Load Amps	6.3 A
Running Amps (Total System)	14 / 8 / 9
Recommended External Fuse	25 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 / Outdoor Unit	INDOOR FAN		INDOOR COIL E.A.T.		OUTDOOR COIL ENTERING AIR TEMPERATURE °C D.B.											
	SPEED	AIR l/s	W.B. °C	D.B. °C	23		27		31		35		39		43	
					Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.
ISD 180Q / OSA 180	HIGH	1045	17	23	18.5	13.4	18.0	13.1	17.5	12.9	17.0	12.7	16.5	12.5	16.0	12.3
			19	27	19.6	15.3	19.0	15.1	18.5	14.9	18.0	14.8	17.5	14.6	16.9	14.4
			21	31	20.7	17.3	20.1	17.1	19.6	16.9	19.1	16.8	18.5	16.6	17.9	16.4

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)		Equivalent Line Pipe Length (m)					Additional Pipe Length to allow per Bend		
Liquid	Suction	5	10	15	20	30	Suction Pipe Size OD	22 mm	28 mm
13	22	2.25 %	4.0 %	5.6 %	7.3 %	10.7 %	Large 90°Radius	0.46 m	0.61 m
13	28	1.2 %	1.7 %	2.25 %	2.7 %	4.0 %	Standard 90°Elbow	0.70 m	0.91 m

HEATING CAPACITY (kW)

G = Gross Heating Capacity kW, based on nominal air flow of 1045 l/s.
 N = Net Heating Capacity kW allowing for average defrost.

○ = Nominal Capacity (kW)

Reverse Cycle Systems

MODELS Indoor / Outdoor Unit	INDOOR ENTERING AIR TEMP. °C D.B.	OUTDOOR COIL ENTERING AIR TEMPERATURE (E.A.T.) °C D.B.															
		-4		-2		0		2		4		6		8		10	
		G	N	G	N	G	N	G	N	G	N	G	N	G	N	G	N
ISD 180Q / OSA 180R	15	12.6	11.3	13.5	12.1	14.3	12.8	15.2	13.1	16.1	13.7	17.3	15.8	18.4	18.4	19.0	19.0
	20	12.3	11.0	13.1	11.8	14.0	12.5	14.9	12.8	15.8	13.4	16.9	15.4	17.9	17.9	18.5	18.5
	25	11.8	10.7	12.7	11.4	13.5	12.0	14.4	12.4	15.2	12.9	16.3	14.9	17.3	17.3	17.9	17.9

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	800	48	65	61	63	63	60	56	53
MED	970	70	70	66	68	67	66	62	59
HIGH	1260	110	77	71	74	72	73	69	66

Outdoor Unit

MODEL	FAN SPEED	SWL dB(A)	OCTAVE BAND FREQ. Hz						SPL @ 3 m dB(A)	OCTAVE BAND FREQ. Hz					
			125	250	500	1 k	2 k	4 k		125	250	500	1 k	2 k	4 k
			SOUND POWER LEVELS dB							SOUND PRESSURE LEVELS dB					
OSA 180	MED	65	71	67	62	64	56	49	49	55	51	46	48	40	33
	HIGH	69	74	72	66	60	58	53	53	58	56	50	44	42	37

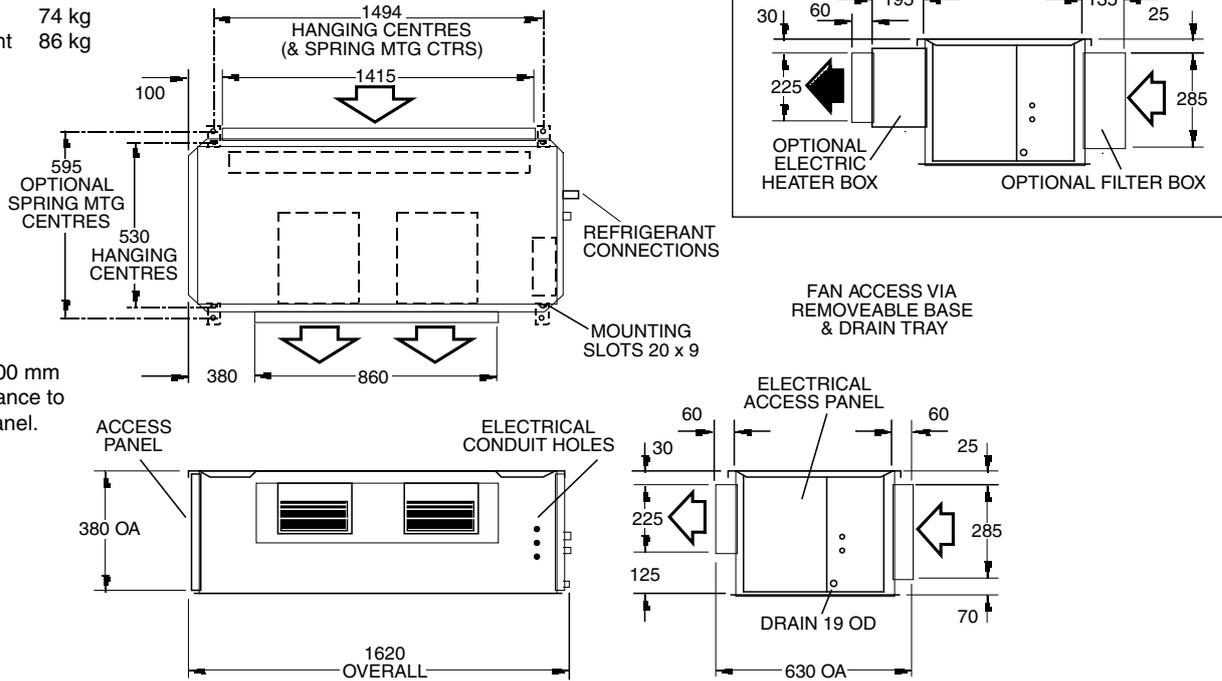
Sound Pressure Level (SPL) in decibels re 20 µPa.

DIMENSIONS (mm)

Not to Scale

ISD 180Q Indoor Unit

Net Weight 74 kg
Shipping Weight 86 kg

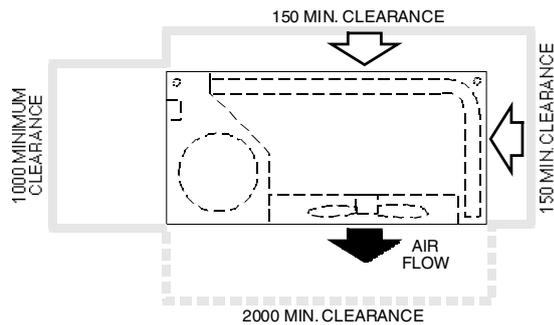


Note : Allow 500 mm minimum clearance to each access panel.

OSA 180 Outdoor Unit

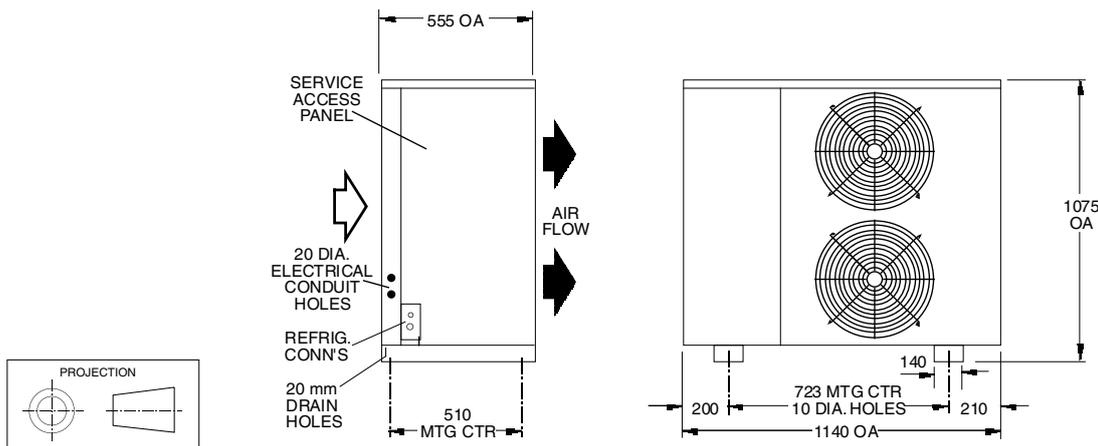
	OSA 180C	OSA 180R
Net Weight	137 kg	139 kg
Shipping Weight	151 kg	153 kg

Note
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Recommended Pipe Sizes

Suction: 28 mm OD
Liquid: 13 mm OD



**ISO 9002
CERTIFIED**

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