

Supply Air, Permanent Extract with heat Recovery Channel & Tray, Direct Driven Range

SAPER CT/DD

Packaged Air Handling for General Ventilation Applications where Energy Savings and Environmentally Friendly Engineering Combine



- Channel & Tray Construction
- Weatherproof Version Available
- Two EU4 Panel Filters (As Standard)
- 25mm Pyrosorb Thermal Insulation
- Top or Bottom Access Lid
- Vertical or Ceiling Mounting Applications
- Optional Square or Circular Duct Connections
- Optional Electric 'Top Up' Heater
- Unique Plastic Plate Heat Exchangers
- Face & Bypass Damper option available

The basic principle of the SAPER model is to provide Fresh Air whilst recovering the sensible and latent heat from the Extract Room Air by cross flowing the air streams through an 'Air to Air' Plate Heat Exchanger. These well-known Exchangers have earned an excellent reputation as regards to thermal efficiencies, low maintenance and durability.

The Puma SAPER models are fitted with Single or Three phase, double inlet Direct Driven centrifugal fans, Plastic Plate Heat Exchanger and lined with 25mm class 'O' Pyrosorb insulation. EU4 Panel Filter on Supply and Extract side (high efficiency filters available on request).

Fan Controls Package include:- On/Off Isolator, Electrical Termination Enclosure, Fan Fuse or Overload and Contactor, Fan Start Relay and Airflow Indication Switch with Volt Free Contacts.

Heater Controls Package include:- Heater Fuse/s, Heater Relay or Contactor, Element Overheat Thermostat, and Integral Thermostat/s or Electronic Multistage Thermostat & Sensor or Thyristor Controller & Sensor.

Options and Accessories

VCD	Volume Control Damper	ET	Electronic Thermostat & Duct Sensor
PSD	Positive Shutoff Damper	TC	Thyristor Controller & Duct Sensor
FSD	Fire / Smoke Damper	WL	Weather Louvre
LPHW	Low Pressure Hot Water Coil	SC	Internal Speed Controller
HEF	High Efficiency Panel Filters EU6	WMSC	Wall Mounted Speed Controller
FPS	Filter Pressure Switch c/w tappings	SIL	Square or Circular Silencers
MT	Manometer c/w tappings	SQ	Square Spigot Connections
CM	Ceiling Mounted	CS	Circular Spigot Connections
VM	Vertically Mounted	FBD	Face and Bypass Damper & Motor

Improve your Environment with



Performance Data

SAPER Channel & Tray, Direct Driven Range – WITHOUT Face & Bypass Damper

Model Number	Supply & Extract Duty in m ³ /sec @ given External Static Pressure (Pa)							Plate Heat Exchanger Efficiency %	Plate Heat Exchanger Duty (kW)
	0	50	100	150	200	250	300	Figures based upon Equal Airflows with -1°C Ambient and 21°C Room Temperature	
SAPER 250/300	0.1	0.08	0.07	0.05	-	-	-	47 %	1.2 kW
SAPER 250/400	0.15	0.13	0.1	0.07	-	-	-	44 %	1.7 kW
SAPER 300/600	0.22	0.19	0.17	0.15	0.11	-	-	50 %	2.9 kW
SAPER 350/850	0.35	0.31	0.25	0.19	-	-	-	48 %	4.4 kW
SAPER 350/1200	0.43	0.42	0.39	0.31	0.25	-	-	46 %	5.2 kW
SAPER 400/1300	0.55	0.54	0.53	0.52	0.39	-	-	44 %	6.4 kW
SAPER 400/1350	0.6	0.57	0.56	0.55	0.48	0.3	-	44 %	6.9 kW
SAPER 450/1600	0.75	0.73	0.72	0.65	0.59	-	-	48 %	9.1 kW
SAPER 450/2500	0.8	0.78	0.77	0.72	0.64	-	-	48 %	10.1 kW
SAPER 550/3600	1.1	1.1	1.0	0.95	0.82	-	-	47 %	13.7 kW

SAPER Channel & Tray, Direct Driven Range – WITH Face & Bypass Damper

SAPER 250/300 - FBD	0.08	0.07	0.05	0.04	-	-	-	45 %	1.0 kW
SAPER 300/400 - FBD	0.15	0.13	0.1	0.07	-	-	-	46 %	1.8 kW
SAPER 350/600 - FBD	0.22	0.19	0.17	0.15	0.11	-	-	46 %	2.7 kW
SAPER 400/850 - FBD	0.35	0.31	0.25	0.19	-	-	-	49 %	4.5 kW
SAPER 400/1200 - FBD	0.43	0.42	0.39	0.31	0.25	-	-	48 %	5.4 kW
SAPER 450/1300 - FBD	0.55	0.54	0.53	0.52	0.39	-	-	52 %	7.6 kW
SAPER 450/1350 - FBD	0.6	0.57	0.56	0.55	0.48	0.3	-	52 %	8.2 kW
SAPER 550/1600 - FBD	0.75	0.73	0.72	0.65	0.59	-	-	52 %	10.4 kW
SAPER 550/2500 - FBD	0.8	0.78	0.77	0.72	0.64	-	-	52 %	11.0 kW

If increased Heat Recovery Efficiency is required, the selected Supply Airflow must be less than the Extract Airflow. To ascertain optimum Efficiency, the Supply Air to Extract Air ratio will be 1:2

i.e. Supply Air = 0.1m³/s

Extract Air = 0.2m³/s

Efficiency = 75%

Typical Part Code:

W SAPER 300 / CT / 600 - 3kW

Weatherproof

Model

Unit Size

Electric 'Top Up' Heater

Fan & Motor Size

Channel & Tray Construction

Electrical and Sound Data

Fan & Motor Size	Motor Running Current (Amps)	Motor Starting Current (Amps)	Motor Power (Watts)	Induct Sound Power Levels dBW @ Octave Band Mid Frequency HZ								Breakout Noise Level dBA* SSK ONLY
				63	125	250	500	1K	2K	4K	8K	
300	0.8	2.0	175	63	57	55	54	54	47	41	32	44
400	0.8	2.0	190	40	44	46	52	52	50	45	41	41
600	1.2	3.0	273	68	62	61	61	59	54	47	37	48
850	1.9	4.75	184	67	69	70	69	66	62	59	54	44
1200	4.3	10.75	373	75	72	67	63	61	60	58	45	50
1300	3.5	8.75	300	81	78	73	69	67	66	64	51	55
1350	3.8	9.5	420	83	80	73	71	68	64	56	48	53
1600	3.6	9.0	420	90	87	79	77	73	70	63	54	58
2500	6.8	17.5	550	80	78	70	68	64	61	53	45	61
3600	4.3**	21.5**	1100	87	84	82	81	79	75	67	55	64

* The dBA quoted is the mean 'A' weighted sound pressure level measured at a distance of 3m. It is included for comparative purposes only and the actual sound level experienced will depend on the acoustic characteristics of the area being served. Ductwork and Silencers also have a major influence on breakout noise and actual noise levels in the system.

** 380/415 V ac Three Phase Motor

Available Electric 'Top Up' Heaters @ 220/240 V ac 1Ph & N, 50 Hz

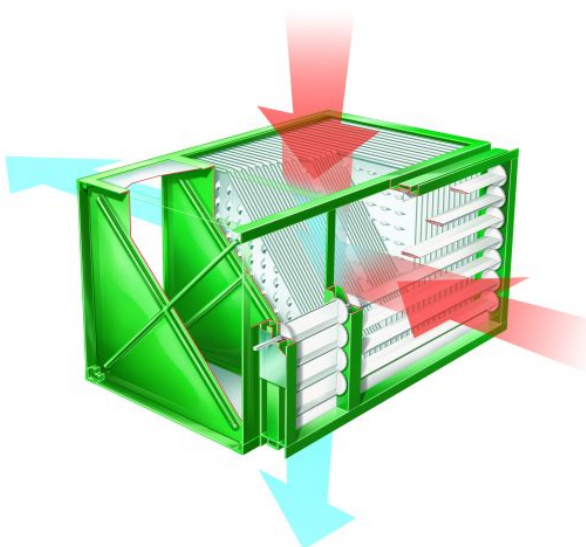
Heater Capacity	1 kW	1.5 kW	2 kW	2.5 kW	3 kW	4 kW	5 kW	6 kW	7.5 kW
Running Current (Amps)	4.3	6.5	8.7	10.9	13	17.4	21.7	26	32.6

Available Electric 'Top Up' Heaters @ 380/415 V ac 3Ph & N, 50 Hz

Heater Capacity	9 kW			12 kW			15 kW			18 kW			21 kW		
	R	S	T	R	S	T	R	S	T	R	S	T	R	S	T
Running Current (Amps)	13	13	13	17.4	17.4	17.4	21.7	21.7	21.7	26	26	26	30.4	30.4	30.4

Heater Capacity	24 kW			27 kW			30 kW			36 kW		
	R	S	T	R	S	T	R	S	T	R	S	T
Running Current (Amps)	34.8	34.8	34.8	39.1	39.1	39.1	43.5	43.5	43.5	52.2	52.2	52.2

Plastic Plate Heat Exchangers

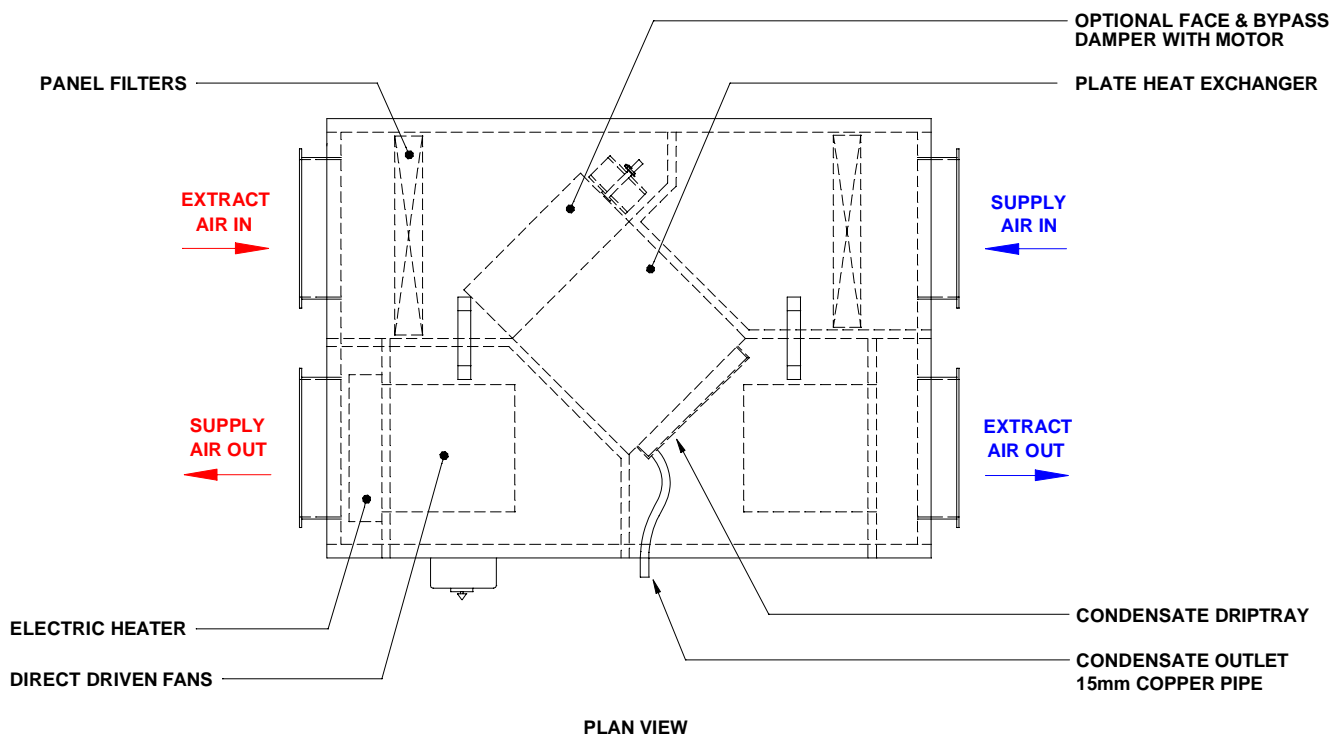
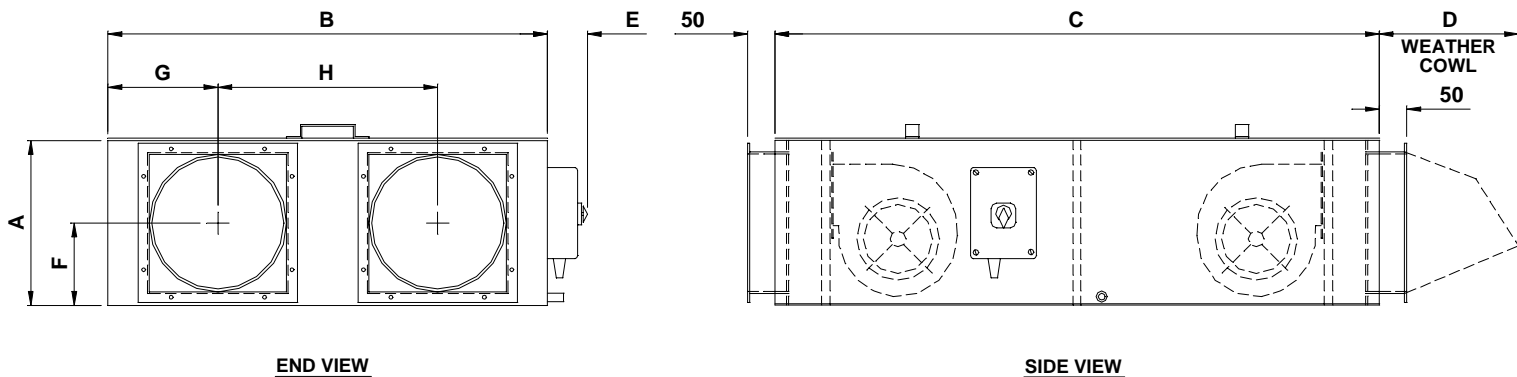


- Up to 95% recycled PVC material used
- Virtually maintenance free
- Efficiencies up to 75%
- Corrosion resistant
- No cross contamination of air streams
- Face and Bypass Damper option available

Although plastic is a poor conductor of heat, this has very little influence on the heat transfer performance due to two main factors:

1. The separating plate material is very thin.
2. The thin film of air (boundary layer) which is formed on each side of the wall during operation is far more resistant to heat transfer than the actual material itself.

Dimensional Data



Dimensions In Millimetres											
Model Number	A	B	C	D	E	F	G	H	SQUARE SPIGOT SIZE	CIRCULAR SPIGOT SIZE Ø	WEIGHT
SAPER 250 CT	250	800	1000	-	75	125	200	400	200x200	200	60 Kg
SAPER 300 CT	300	800	1100	-	75	150	200	400	250x250	250	70 Kg
SAPER 350 CT	350	1000	1450	-	150	175	250	500	300x300	300	85 Kg
SAPER 400 CT	440	1300	1450	-	150	232.5	325	650	350x350	350	110 Kg
SAPER 450 CT	475	1400	1600	-	150	250	350	700	400x400	400	140 Kg
SAPER 550 CT	575	1600	2000	-	150	300	425	750	500x500	500	170 Kg
W SAPER 250 CT	320	800	1000	200	75	175	200	400	200x200	200	75 Kg
W SAPER 300 CT	370	800	1100	250	75	200	200	400	250x250	250	85 Kg
W SAPER 350 CT	455	1000	1450	250	150	250	250	500	300x300	300	110 Kg
W SAPER 400 CT	545	1300	1450	350	150	282.5	325	650	350x350	350	140 Kg
W SAPER 450 CT	580	1400	1600	325	150	325	350	700	400x400	400	170 Kg
W SAPER 550 CT	680	1600	2000	400	150	350	425	750	500x500	500	320 Kg

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