Air Conditioning

Y Series Single Fan (12.5-15.5kW)
Mini VRF Heat Pump Outdoor Unit

Making a World of Difference

High Holborn - cooling (Flats); cooling and heating (Retail Unit)
West Central Street - Heating and Cooling (New Oxford Street flats; Retail 10-12)

West Central Street - Heating and Cooling (Retail 16a)

West Central Street - Heating and Cooling (Retail 317 NOS)

OUTDOOR UNITS		PUMY-SP112VKM	PUMY-SP112YKM	PUMY-SP125VKM	PUMY-SP125YKM	PUMY-SP140VKM	PUMY-SP140YKM
CAPACITY (KW)	Heating (nominal)	14.0	14.0	16.0	16.0	16.5	16.5
	Cooling (nominal)	12.5	12.5	14.0	14.0	15.5	15.5
	Heating (UK)	13.9	13.9	15.8	15.8	16.3	16.3
	Cooling (UK)	10.0	10.0	11.2	11.2	12.4	12.4
POWER INPUT (KW)	Heating (nominal)	3.17	3.17	3.90	3.90	4.02	4.02
	Cooling (nominal)	3.10	3.10	3.84	3.84	4.70	4.70
	Heating (UK)	4.18	4.18	5.15	5.15	5.31	5.31
	Cooling (UK)	1.61	1.61	2.00	2.00	2.44	2.44
COP / EER (nominal)		4.42 / 4.03	4.42 / 4.03	4.10 / 3.65	4.10 / 3.65	4.10 / 3.30	4.10 / 3.30
SCOP / SEER		-	-	-	-	-	-
MAX NO. OF CONNECTABLE INDOOR UNITS		9	9	10	10	12	12
MAX CONNECTABLE CAPACITY		50-130% OU Capacity	50-130% OU Capacity	50-130% OU Capacity	50-130% OU Capacity	50-130% OU Capacity	50-130% OU Capacity
AIRFLOW (m^3/min)		77	77	83	83	83	83
PIPE SIZE MM (in)	Gas	15.88 (5/8")	15.88 (5/8")	15.88 (5/8")	15.88 (5/8")	15.88 (5/8")	15.88 (5/8")
	Liquid	9.52 (3/8")	9.52 (3/8")	9.52 (3/8")	9.52 (3/8")	9.52 (3/8")	9.52 (3/8")
SOUND PRESSURE LEVEL (dBA)		52	52	53	53	54	54
SOUND POWER LEVEL (dBA)		72	72	73	73	74	74
WEIGHT (kg)		93	94	93	94	93	94
DIMENSIONS (mm)	Width	1050	1050	1050	1050	1050	1050
	Depth	330+40	330+40	330+40	330+40	330+40	330+40
	Height	981	981	981	981	981	981
ELECTRICAL SUPPLY		220-240v, 50Hz	380-415v, 50Hz	220-240v, 50Hz	380-415v, 50Hz	220-240v, 50Hz	380-415v, 50Hz
PHASE		Single	Three	Single	Three	Single	Three
STARTING CURRENT (A)		14	7	14	7	14	7
NOMINAL SYSTEM RUNNING CURRENT (A)	Heating / Cooling [MAX]	13.48 / 13.18 [30.5]	4.82 / 4.71 [13.0]	16.58 / 16.33 [30.5]	5.93 / 5.83 [13.0]	17.09 / 19.98 [30.5]	6.11 / 7.14 [13.0]
GUARANTEED OPERATING RANGE (°C)	Heating / Cooling	-20~15 / -5~52	-20~15 / -5~52	-20~15 / -5~52	-20~15 / -5~52	-20~15 / -5~52	-20~15 / -5~52
FUSE RATING (BS88) - HRC (A)		1 x 32	1 x 16	1 x 32	1 x 16	1 x 32	1 x 16
MAINS CABLE NO. CORES		3	4 + earth	3	4 + earth	3	4 + earth
CHARGE REFRIGERANT (kg) / CO_2 EQUIVALENT (T) R410A (GWP 2088)		3.5 / 7.31	3.5 / 7.31	3.5 / 7.31	3.5 / 7.31	3.5 / 7.31	3.5 / 7.31
MAX ADDITIONAL REFRIGERANT (kg) / CO_2 EQUIVALENT (T) R410A (GWP 2088)		9.0 / 18.79	9.0 / 18.79	9.0 / 18.79	9.0 / 18.79	9.0 / 18.79	9.0 / 18.79

Three Phase Notes: *SCOP / SEER available separately in the 'CA Multi VRF Seasonal Efficiency' document. Based on Ecodesign Lot 21 / 6 to EN14825 standard.

PIPING RESTRICTIONS	PUMY-SP112-140V(Y)KM
TOTAL PIPING LENGTH	120m max
FURTHEST PIPING LENGTH	70m max
FURTHEST PIPING LENGTH AFTER 1st BRANCH	50m max
BETWEEN INDOOR AND OUTDOOR UNITS - HEIGHT	50m max (30m max if outdoor installed below)
BETWEEN INDOOR AND INDOOR UNITS - HEIGHT	15m max

R410A Mini VRF Heat Pump - Single Fan

Seasonal Efficiency	Best Possible		Standard		Part L	
	SEER (C)	SCOP	SEER (C)	SCOP	SEER (C)	SCOP
PUMY-SP112V(Y)KM	6.76	3.98			6.66	3.37
PUMY-SP125V(Y)KM	6.74	3.93			6.66	3.53
PUMY-SP140V(Y)KM	6.49	3.90			6.57	3.34

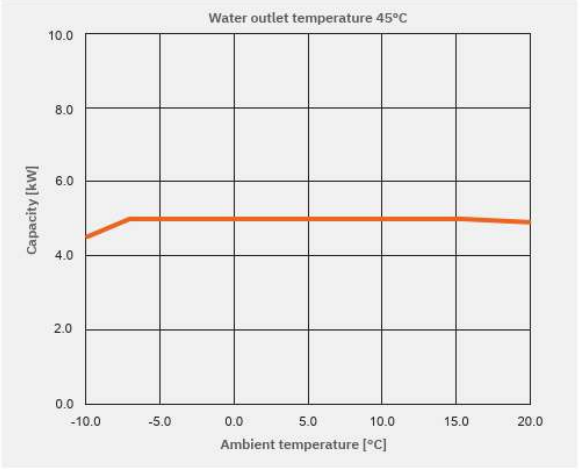
Heating | **Product Information**

PUZ-WM50VHA(-BS)
Ecodan R32
Monobloc Air Source Heat Pump

High Holborn & West Central Street - DHW
16-18 West Central Street, 10-12 Museum Street - heating

OUTDOOR UNIT		PUZ-WM50VHA(-BS)
HEAT PUMP SPACE HEATER - 55°C	ErP Rating	A++
	η_s	129%
	SCOP (MCS)	3.22
HEAT PUMP SPACE HEATER - 35°C	ErP Rating	A+++
	η_s	183%
	SCOP (MCS)	4.57
HEAT PUMP COMBINATION HEATER - Large Profile*1	ErP Rating	A+
	η_{wh}	135%
HEATING*2 (A-7/W35)	Capacity (kW)	5.0
	Power Input (kW)	1.67
	COP	3.00
OPERATING AMBIENT TEMPERATURE (°C DB)		-20 ~ +35
SOUND DATA*3	Pressure Level at 1m (dBA)	52
	Power Level (dBA)*4	61
WATER DATA	Pipework Size (mm)	22
	Flow Rate (l/min)	14
	Water Pressure Drop (kPa)	12.0
DIMENSIONS (mm)	Width	950
	Depth	330+30*7
	Height	943
WEIGHT (kg)		71
ELECTRICAL DATA	Electrical Supply	220-240v, 50Hz
	Phase	Single
	Nominal Running Current [MAX] (A)*5	4.64 [13]
	Fuse Rating - MCB Sizes (A)*6	16
REFRIGERANT CHARGE (kg) / CO_2 EQUIVALENT (t)	R32 (GWP 675)	2.0 / 1.35

NOMINAL HEATING CAPACITY



Notes:
*1 Combination with E*PT20X Cylinder
*2 Under normal heating conditions at outdoor temp: -7°CDB / -8°CWB, outlet water temp 35°C, inlet water temp 30°C.
*3 Under normal heating conditions at outdoor temp: 7°CDB / 6°CWB, outlet water temp 55°C, inlet water temp 47°C as tested to BS EN14511.
*4 Sound power level tested to BS EN12102.
*5 Under nominal heating conditions at outdoor temp: 7ºC, outlet water temp: 35ºC.
*6 MCB Sizes BS EN60898-2 & BS EN60947-2.
*7 Grille.
η_s is the seasonal space heating energy efficiency (SSHEE) η_{wh} is the water heating energy efficiency

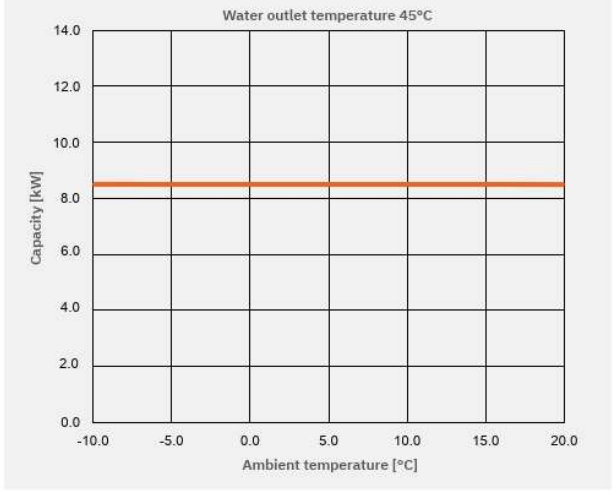
Heating | **Product Information**

PUZ-WM85VAA(-BS)
Ecodan R32
Monobloc Air Source Heat Pump

High Holborn (Duplex) DHW & heating

OUTDOOR UNIT		PUZ-WM85VAA(-BS)
HEAT PUMP SPACE HEATER - 55°C	ErP Rating	A++
	η_s	139%
	SCOP (MCS)	3.47
HEAT PUMP SPACE HEATER - 35°C	ErP Rating	A+++
	η_s	193%
	SCOP (MCS)	4.79
HEAT PUMP COMBINATION HEATER - Large Profile*1	ErP Rating	A+
	η_{wh}	145%
HEATING*2 (A-7/W35)	Capacity (kW)	8.5
	Power Input (kW)	3.27
	COP	2.60
OPERATING AMBIENT TEMPERATURE (°C DB)		-20 ~ +35
SOUND DATA*3	Pressure Level at 1m (dBA)	45
	Power Level (dBA)*4	58
WATER DATA	Pipework Size (mm)	28
	Flow Rate (l/min)	24
	Water Pressure Drop (kPa)	15.0
DIMENSIONS (mm)	Width	1050
	Depth	480
	Height	1020
WEIGHT (kg)		98
ELECTRICAL DATA	Electrical Supply	220-240v, 50Hz
	Phase	Single
	Nominal Running Current [MAX] (A)*5	9.1 [22]
	Fuse Rating - MCB Sizes (A)*6	25
REFRIGERANT CHARGE (kg) / CO_2 EQUIVALENT (t)	R32 (GWP 675)	2.2 / 1.49

NOMINAL HEATING CAPACITY



Notes:
*1 Combination with E*PT20X Cylinder
*2 Under normal heating conditions at outdoor temp: -7°CDB / -8°CWB, outlet water temp 35°C, inlet water temp 30°C.
*3 Under normal heating conditions at outdoor temp: 7°CDB / 6°CWB, outlet water temp 55°C, inlet water temp 47°C as tested to BS EN14511.
*4 Sound power level tested to BS EN12102.
*5 Under nominal heating conditions at outdoor temp: 7°C, outlet water temp: 35°C.
*6 MCB Sizes BS EN60898-2 & BS EN60947-2.
η_s is the seasonal space heating energy efficiency (SSHEE) η_{wh} is the water heating energy efficiency

ecodan

PUHZ-W-VAA

Monobloc Standalone Ultra Quiet Air Source Heat Pumps

Our range of ultra quiet AA chassis Ecodan monobloc air source heat pumps include 8.5 and 11.2kW sizes.

The innovative, stylish and compact single fan outdoor unit utilises advanced technologies to deliver improved efficiencies. Designed to satisfy current domestic premises permitted development standards (MCS020), the market leading low noise levels virtually eliminate the need for planning permission and maximises installation options.

Key Features

- Self-contained unit, only requiring water and electric connections
- No need for gas supply, flues or ventilation
- Low maintenance and ultra quiet operation
- Operates with outside temperatures as low as -20°C
- Optimised low ambient defrost control and operation
- Hybrid function, for use with conventional boilers
- Energy monitoring as standard

West Central street (Duplex) - DHW & heating

OUTDOOR UNIT		PUHZ-W85VAA(-BS)	PUHZ-W112VAA(-BS)
HEAT PUMP SPACE HEATER - 55°C	ErP Rating	A++	A++
	η_s	137%	133%
	SCOP	3.60	3.40
HEAT PUMP SPACE HEATER - 35°C	ErP Rating	A++	A++
	η_s	171%	170%
	SCOP	4.36	4.34
HEAT PUMP COMBINATION HEATER - Large Profile*1	ErP Rating	A	A
	η_{wh}	104%	100%
HEATING*2 (A-3/W36)	Capacity (kW)	8.3	11.0
	Power Input (kW)	2.86	3.73
	COP	2.90	2.95
OPERATING AMBIENT TEMPERATURE (°C DB)		-20 ~ +35°C	-20 ~ +35°C
SOUND DATA*3	Pressure Level at 1m (dBA)	45	47
	Power Level (dBA)*4	58	60
WATER DATA	Pipework Size (mm)	28	28
	Flow Rate (l/min)	25.8	32.1
	Water Pressure Drop (kPa)	16.1	24.4
DIMENSIONS (mm)*7	Width	1050	1050
	Depth	480	480
	Height	1020	1020
WEIGHT (kg)		97	118
ELECTRICAL DATA	Electrical Supply	220-240v, 50Hz	220-240v, 50Hz
	Phase	Single	Single
	Nominal Running Current [MAX] (A)	9.1 [22.0]	10.9 [28.0]
	Fuse Rating - MCB Sizes (A)*6	25	32
REFRIGERANT CHARGE (kg) / CO_2 EQUIVALENT (t)	R410A (GWP 2088)	2.4/6.01	3.3/6.89

*1 Combination with EHPT20X-MHDW Cylinder
*2 Under normal heating conditions at outdoor temp: -3°CDB / -4°CWB, outlet water temp 35°C, inlet water temp 30°C.
*3 Under normal heating conditions at outdoor temp: 7°CDB / 6°CWB, outlet water temp 55°C, inlet water temp 47°C as tested to BS EN14511.
*4 Sound power level tested to BS EN12102.
*5 MCB Sizes BS EN60898-2 & BS EN60947-2.
*6 Flow Temperature Controller (FTC) for standalone systems PAC-FGSB-E Dimensions WxDxH (mm) - 520x150x450

η_s is the seasonal space heating energy efficiency (SSHEE) η_{wh} is the water heating energy efficiency

West Central Street *– Heating and Cooling (Retail Unit 218)*

2-1 Technical Specifications				RXYSQ4T8Y	RXYSQ5T8Y	RXYSQ6T8Y	RXYSQ8TY1	RXYSQ10TY1	RXYSQ12TY1
Space heating (Average climate)	TBivalent	COPd (declared COP)		2.4		2.5	2.4	2.2	
		Pdh (declared heating cap)	kW	8.0	9.2	10.2	14.9	19.6	23.5
		Tbiv (bivalent temperature)	°C	-10					
	TOL	COPd (declared COP)		2.4		2.5	2.4	2.2	
		Pdh (declared heating cap)	kW	8.0	9.2	10.2	14.9	19.6	23.5
		Tol (temperature operating limit)	°C	-10					
	A Condition (-7°C)	COPd (declared COP)		2.7	2.8	2.9	2.6	2.4	
		Pdh (declared heating cap)	kW	7.0	8.1	9.0	13.2	17.4	20.8
	B Condition (2°C)	COPd (declared COP)		3.6	3.8	4.0		4.1	4.3
		Pdh (declared heating cap)	kW	4.3	5.0	5.5	8.0	10.6	12.7
	C Condition (7°C)	COPd (declared COP)		5.7	6.1	6.5	5.9		6.3
		Pdh (declared heating cap)	kW	3.4	3.5	3.6	5.0	6.8	8.1
	D Condition (12°C)	COPd (declared COP)		7.0	7.6	8.1	7.8	6.3	6.7
		Pdh (declared heating cap)	kW	4.1		4.3	5.8	6.4	6.6

Energy Efficiency

System Name	Cooling Condition	Heating Condition	EER	CoP	ESEER	SEER	ESCoP	SCoP
1. CON/ 6	VRT Cooling	VRT Heating	5.78	3.76	6.73	5.13	4.8	4.56

These efficiency calculations are calculated according to the part load presets of Part L. As such, the efficiency calculation is based on the chiller/office application example in the Building Services Non Domestic Compliance guide and are based on performance testing according to EN14511 for cooling and EN14825 in Heating.
In the future, SEER figures will be provided according to test standard EN14825 when Lot 21 comes into force.
Please note that systems containing AHU's do not contain any elements of the AHU efficiency, please consult the technical data from the AHU to determine the specific fan power.

1 Museum Street and Grape Street buildings *are proposed to be served by a cascade type system with ASHP connected to a condenser loop system, also called 'Ambient loop'. A separate spreadsheets '1MS & VL SEER SCOP Calc' details how overall SEER and SCOP for this system were calculated.*

Water Source Heat Pump - PQHY-P450YLM-A (due to the size of the manufacturer's data sheet only extract below is shown)

1. SPECIFICATIONS

DATA G11

Model			PQHY-P450YLM-A
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1	kW	50.0
		kcal/h	45,000
	*1	BTU/h	170,600
	Power input	kW	9.29
	Current input	A	15.6-14.8-14.3
	EER	kW/kW	5.38
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Circulating water	°C	10.0~45.0°C (50~113°F)
Heating capacity (Nominal)	*2	kW	56.0
		kcal/h	50,000
	*2	BTU/h	191,100
	Power input	kW	9.79
	Current input	A	16.5-15.7-15.1
	COP	kW/kW	5.72
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Circulating water	°C	10.0~45.0°C (50~113°F)
Indoor unit connectable	Total capacity		50~130% of heat source unit capacity
	Model/Quantity		P15~P250/1~39
Sound pressure level (measured in anechoic room)		dB <A>	54
Sound power level (measured in anechoic room)		dB <A>	70
Refrigerant piping diameter	Liquid pipe	mm (in.)	15.88 (5/8) Brazed
	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed
Circulating water	Water flow rate	m^3/h	7.20
		L/min	120
		cfm	4.2
	Pressure drop	kPa	44
	Operating volume range	m^3/h	4.5 ~ 11.6

Air Source Heat Pump - EAHV-M1800YCL(-N)(-BS) (due to the size of the manufacturer's data sheet only extract below is shown)

1. Product Specifications

Model			EAHV-M1800YCL(-N)(-BS)
Power source			3-phase 4-wire 380-400-415V 50/60Hz
Cooling capacity *1		kW	180.00
		kcal/h	154,800
		BTU/h	614,160
	Power input	kW	57.02
	EER		3.16
	IPLV *6		6.31
	Water flow rate	m^3/h	31.0
Cooling capacity (EN14511) *2		kW	178.80
		kcal/h	153,768
		BTU/h	610,066
	Power input	kW	58.22
	EER		3.07
	Eurovent efficiency class		B
	SEER		5.36
	Water flow rate	m^3/h	31.0
Heating capacity *3		kW	180.00
		kcal/h	154,800
		BTU/h	614,160
	Power input	kW	53.09
	COP		3.39
	Water flow rate	m^3/h	31.0
Heating capacity (EN14511) *4		kW	181.20
		kcal/h	155,832
		BTU/h	618,254
	Power input	kW	54.29
	COP		3.34
	SCOP Low/Medium		3.31/2.88
	Water flow rate	m^3/h	31.0
Current input	Cooling current 380-400-415V *1	A	96 - 91 - 88
	Heating current 380-400-415V *3	A	90 - 85 - 82
	Maximum current	A	120
Water pressure drop *1		kPa	78