



Noz
MULTI DIRECTIONAL UNIT HEATERS

What is Noz?

NOZ is an innovative re-modelling of the traditional unit heater, developed to address the heating and air distribution needs of warehouses and industrial buildings.

As buildings are constructed to ever higher standards, with better insulation, heating demand is falling but the need for good air distribution and increased comfort is becoming paramount.

And with the needs of business changing ever faster it's imperative that products and equipment provide flexible, easy to install, solutions.

Water or Gas / Single or Three Phase

Noz is available in two physical sizes, whether using 1ph or 3ph power:

- LPHW - heat outputs from 17kW to 75kW
- natural or butane or propane gas - heat outputs from 18kW to 60kW



Adjustable Nozzles

Noz's six adjustable nozzles can be moved between 13° and 53° from the horizontal, so that depending on mounting height the nozzles can be individually positioned to provide optimum coverage.

Fan Design

In order to achieve the desired air movement Noz uses an unusual looking fan arrangement. Axial and centrifugal fan technologies have been combined to create a technologically advanced 'mixed-flow' type fan, which makes it possible to control the movement of high volumes of air at high velocity in an energy efficient cone-shaped distribution pattern.

Induction Technology

Air is discharged through each of the six adjustable nozzles, and the central openings, at a velocity of up to 18.2m/s. This induces movement of the surrounding air, (between 2 and 4x the discharge volume), resulting in improved mixing and temperature distribution.

Flexibility in Mounting Height and Coverage

Noz can be installed up to 10mtr high, and adjusting the nozzles near to the vertical ensures effective conditioning of the work area. In lower rooms, with the nozzles nearer the horizontal, an area of up to 700m² can be covered. Of course, with such coverage it's often possible to achieve a high quality solution using fewer Noz than traditional unit heaters.

Recirculation or Ventilation

With comfort in mind it may be desirable to provide a full fresh air facility using the Noz. In such cases, all the accessories required can be supplied by Biddle.



Noz - Water

Noz is painted in an epoxy polyester powder finish, colour code RAL9006 and available to operate with single or three phase power. It is wired to operate as a 5-speed unit using one of Biddle's control boxes which, if required, can be used to control a number of units.

Accessories available on request are:

- filter module
- dampers for either full fresh air or part re-circulation/part fresh air
- low limit (water temperature) thermostat
- room thermostat

Performance Data at 82/71°C & EAT 18°C



NOZ 25-W2-E (230v/1ph/50Hz)	Fan speed				
	1	2	3	4	5
Tapping (V)	95	115	130	155	230
Air volume (m ³ /s) *	0.536	0.699	0.772	0.902	1.016
NR level 5M from unit discharge	41	47	50	53	57
Heating capacity (KW)	17.2	19.6	21.3	23.3	24.9
L.A.T. (°C)	44	42	41	39	38

NOZ 25-W3-E (230v/1ph/50Hz)	Fan speed				
	1	2	3	4	5
Tapping (V)	95	115	130	155	230
Air volume (m ³ /s) *	0.519	0.647	0.747	0.875	0.986
NR level 5M from unit discharge	41	47	50	53	57
Heating capacity (KW)	22.6	26.1	28.6	31.6	34.0
L.A.T. (°C)	54	51	49	48	46

NOZ 25-W2-D (400v/3ph/50Hz)	Low fan speed (Y-connection)					High fan speed (Δ-connection)				
	1	2	3	4	5	1	2	3	4	5
Tapping (V)	155	195	240	300	400	155	195	240	300	400
Air volume (m ³ /s) *	0.319	0.400	0.488	0.613	0.750	0.538	0.666	0.780	0.911	1.022
NR level 5M from unit discharge	28	33	38	44	50	40	45	50	53	56
Heating capacity (KW)	12.3	14.3	16.2	18.6	21.3	17.2	19.6	21.5	23.4	25.0
L.A.T. (°C)	50	47	45	43	41	44	42	41	39	38

NOZ 25-W3-D (400v/3ph/50Hz)	Low fan speed (Y-connection)					High fan speed (Δ-connection)				
	1	2	3	4	5	1	2	3	4	5
Tapping (V)	155	195	240	300	400	155	195	240	300	400
Air volume (m ³ /s) *	0.308	0.386	0.472	0.594	0.744	0.522	0.644	0.755	0.883	0.988
NR level 5M from unit discharge	28	33	38	44	50	40	45	50	53	56
Heating capacity (KW)	15.6	18.4	21.1	24.7	28.5	22.6	26.0	28.8	31.8	34.0
L.A.T. (°C)	60	57	55	52	49	54	51	49	47	46

NOZ 50-W2-D (400v/3ph/50Hz)	Low fan speed (Y-connection)					High fan speed (Δ-connection)				
	1	2	3	4	5	1	2	3	4	5
Tapping (V)	155	195	240	300	400	155	195	240	300	400
Air volume (m ³ /s) *	0.713	0.883	1.108	1.375	1.872	1.263	1.538	1.883	2.161	2.425
NR level 5M from unit discharge	32	39	44	49	55	47	52	56	59	60
Heating capacity (KW)	26.4	30.2	34.8	39.6	47.2	27.6	42.2	47.4	51.1	54.3
L.A.T. (°C)	48	46	44	42	39	42	40	39	37	36

NOZ 50-W3-D (400v/3ph/50Hz)	Low fan speed (Y-connection)					High fan speed (Δ-connection)				
	1	2	3	4	5	1	2	3	4	5
Tapping (V)	155	195	240	300	400	155	195	240	300	400
Air volume (m ³ /s) *	0.691	0.855	1.075	1.333	1.813	1.225	1.491	1.825	2.094	2.350
NR level 5M from unit discharge	32	39	44	49	55	47	52	56	59	60
Heating capacity (KW)	34.0	39.5	46.2	53.2	64.5	50.3	57.1	64.8	70.0	75.0
L.A.T. (°C)	58	56	56	51	47	52	49	47	45	44



*The stated air volumes may be reduced for full or partial fresh air applications

Noz - Gas

Using G20 natural gas, G30 butane gas or G31 propane gas we recommend use with a type C fanned balanced flue system (obtainable from Reznor UK Ltd) although a type B fanned flue can be used with combustion air from within the building providing there is sufficient fresh air supply.

Each unit includes:

- either an Al/Fe heat exchanger (for use with fully re-circulation air only) or a stainless steel heat exchanger (for partial/full fresh air applications)
- an Enercal 2000+ bus controller to provide:
 - set-point temperature adjustment (up to 8 separate set-points)
 - on/off time scheduling
 - frost set-back temperature adjustment
 - summer/winter switching
- a summer/winter test switch on side of unit (not usually used as Enercal 2000+ bus controller provides easier access to this facility)
- a WA100 temperature sensor to provide:
 - burner lock-out indication
 - reset switch
- a gas heater lock-out trip indicator and reset switch on side of unit (not usually used as WA100 temperature sensor provides easier access to this facility)
- an epoxy polyester powder finish, colour code RAL9006
- full compliance with EC Directives:
 - 73/23/EEC Low Voltage Directive
 - 89/336/EEC Electromagnetic Compatibility Directive
 - 89/392/EEC Safety of Machinery Directive
 - 90/396/EEC Gas Appliance Directive



For full fresh air applications there is 1 shut off damper (in winter the damper is open, the burner is on and the fan is on; in summer the damper is open, the burner is off and the fan is on) and an EU3 filter. Heat output is reduced to 24kW (Noz25) and 46.4kW (Noz50).

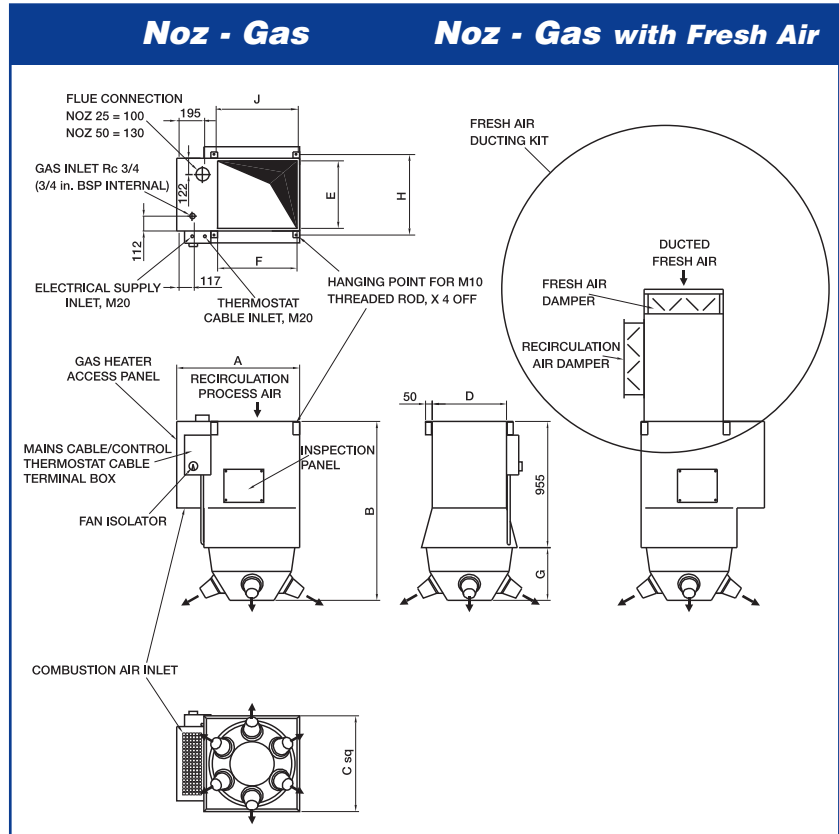
For part re-circulation/part fresh air applications there are 2 dampers (in winter the fresh air damper is closed, the recirc damper is open, the burner is on and the fan is on; in summer the fresh air damper is open, the recirc damper is closed, the burner is off and the fan is on) and an EU3 filter. Heat output is reduced to 24kW (Noz25) and 46.4kW (Noz50).

Performance Data with EAT 18°C

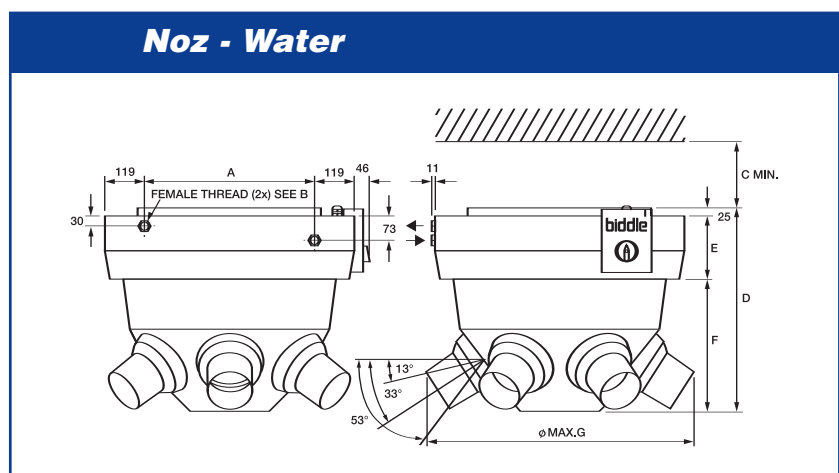
		NOZ 25-G	NOZ 50-G
Air volume flow rate (m ³ /s)	Recirc	1.02	2.35
	Vent	0.9	1.93
Discharge air temperature (°C)	Recirc	42.4	39.3
	Fresh Air	40.2	38.0
Gas Heater		Model 4030	Model 4060
Gross heat input (kW)	Recirc	36.6	73.3
	Fresh Air	29.3	56.6
Heat output (kW)		29.8	60.0
Gas rate-G20 Natural Gas (m ³ /h)	Recirc	3.49	6.70
	Fresh Air	2.79	5.40
G30 Butane Gas (kg/h)	Recirc	2.67	5.35
	Fresh Air	2.14	4.13
G31 Propane Gas (kg/h)	Recirc	2.61	5.23
	Fresh Air	2.10	4.04
Gas connection		Rc3/4 (3/4in. BSP internal)	Rc3/4 (3/4in. BSP internal)
Nom. flue pipe dia. (mm)		100	130
Electrical power consumption (W)		1 ph = 640; 3 ph = 690	3 ph = 1500
Electrical current max. per phase(A)		1 ph = 2.7; 3 ph = 1.6	3 ph = 2.8
Electrical supply		230v/1ph/50Hz or 400v/3ph/50Hz	400v/3ph/50Hz
Weight (kg)	Recirc	NOZ 25 = 28 (excl. coil) Gas Heater = 79 (incl. case) Combination Total = 107	NOZ 50 = 45 (excl. coil) Gas Heater = 136 (incl. case) Combination Total = 181
	Fresh Air	1 Damper: 28+92 = 120 2 Damper: 28+130 = 158	1 Damper: 45+185 = 230 2 Damper: 45+220 = 265



Dimensions



Size	A	B	C	D	E	F	G	H	J
NOZ 25	930	1355	728	563	520	600	400	620	620
NOZ 50	1260	1455	953	843	800	930	500	900	950



Size	A	B	C	D	E	F	G
NOZ 25	512	G 3/4"	200	615	190	400	810
NOZ 50	738	G 1"	300	771	246	500	1015

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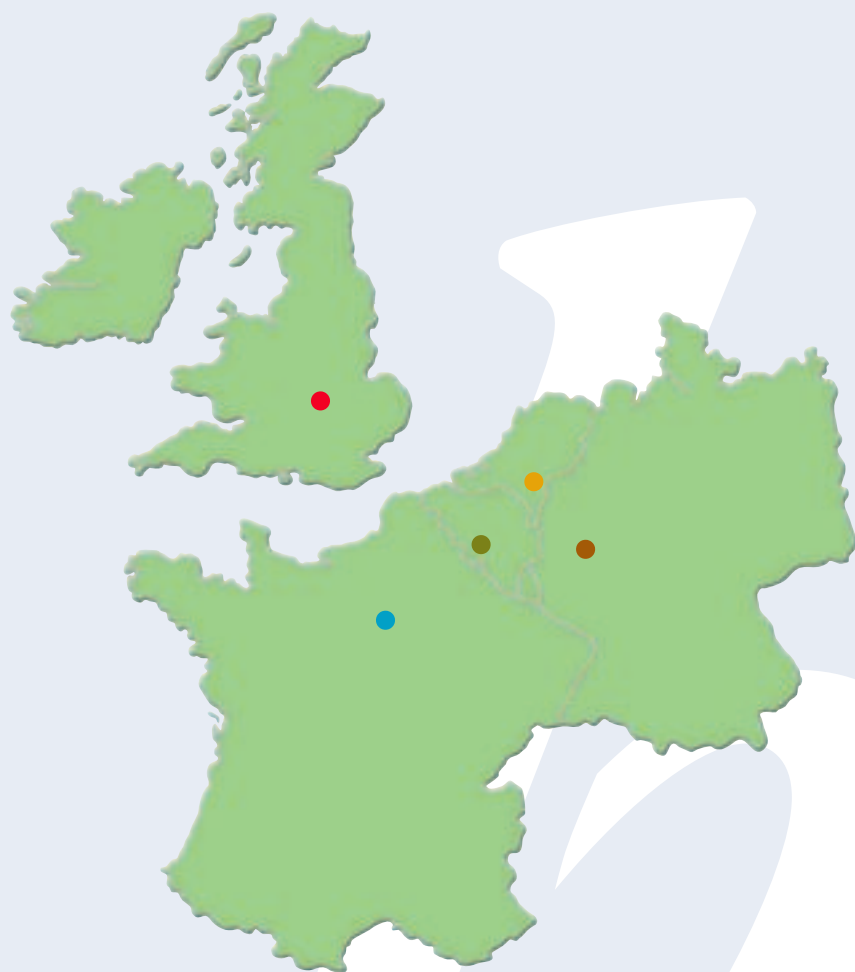
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