

# HEM NVx

Natural Gas & LPG Fired Options  
Industrial & commercial heating systems



## Overview

Powrmatic's ErP compliant HEMNVx range of heat exchange modules combine installation versatility with a range of Kw outputs to match the most stringent applications. The compact design and flexible configuration combine to provide designers with efficient and cost effective solutions for a wide variety of air heating and drying applications including new and refurbished air handling units, inline duct or input systems.

## Output

9-180 kW output in 15 individual sizes.  
Higher outputs can be achieved if multiple units are installed in up to 2 units in series or parallel, site or factory assembled.

## Construction

- **Casework** - Formed from heavy gauge galvanised steel sheet to a rigid structure with inlet and outlet flanges for easy connection.
- **Enclosures** - Enclosures are of thin gauge galvanized steel and epoxy powder coated, to BS-10-A-05 as standard (other colours available upon request). Internal, plantroom and external options available with front and top flue outlets.
- **Heat exchangers** - A four pass tubular heat exchanger assemblies. Tubes options available as standard are aluminised steel or AISI T409 grade stainless steel, with AISI T316 option available.
- **Burners** - Modulating as standard with HiLo options. Multi inshot burners matched to each tube assembly and manifolded to a common gas valve and ignition system, itself complete with flame monitoring and safety controls and supplied ready for use with natural gas.
- (G20). Alternative LPG propane (G31) kits are available for engineer site conversion.

## Performance

All units have a Gross Efficiency of 82% on average (as required by ERP) Or a Nett Efficiency of 92% on average. Modulation range nominally between 100 and 50% for a single unit.

## Controls

As standard all HEM units are supplied with approved safety controls including high limit protection, flame monitoring and multi try ignition. Heat enable and fan over run protection are the responsibility of the installer/user. Modules are specified with modulating burners as standard and supplied with an interface modulating control board and require a 0-10v DC operating signal. Optional High/Low units require a 230v operating signal.

## Approvals

CE mark tested to: CE679735 & CE679736  
2015/1188, Directive 2009/125/EC - Lot 21 Tier 1b.  
Energy Related Product Directive: 2009/125/EC  
Gas Appliance Directive: 2016/426/EC  
Electromagnetic Compatibility Directive: 2014/30/EU  
Low Voltage Directive: 2014/35/EU  
Machinery Directive: 2006/42/EC

**Note:**

- Future legislation changes: As of January 1st 2021 – Lot 21 Tier 2 of the 2015/1188, Directive 2009/125/EC comes into force and the HEM range of products will be re-engineered to meet or exceed these requirements.

# Technical Specification

## HEM NVx

Model HEM NVx				10-3	15-4	18-5	25-5	30-6	40-8	50-6	60-7	75-9	100-12	110-13	125-15	150-18	175-21	200-24
Output	High/Low & Modulation	Max	kW	9.6	14.5	17.7	23.6	27.4	36.0	44.8	54.2	67.6	91.9	98.0	112.0	134.9	154.4	n/a
		Min	kW	5.0	9.8	11.9	25.7	18.2	23.2	29.0	36.4	49.6	62.5	66.0	76.5	78.8	112.8	n/a
NOx Seasonal (Gross)			mg/kWh	<95	<95	<96	<96	<97	<97	<98	<98	<99	<99	<100	<100	<101	<101	n/a
Seasonal Space Heating Energy Efficiency			% $\eta_{s,h}$	72.2%	72.3%	72.6%	72.6%	73.1%	72.0%	73.2%	74.0%	72.0%	72.4%	72.3%	72.0%	72.1%	74.4%	n/a
Temp	Rise	Max	$\Delta t$ °C	35														
	Air off	Min	°C	70														
Airflow	Volume	Min Volume for Max $\Delta t$	m <sup>3</sup> /s	0.34	0.44	0.58	0.71	0.86	1.01	1.55	1.94	2.28	2.78	2.99	3.39	4.14	4.67	n/a
	Pressure Drop	At Above Airflow	Pa	43	26	45	32	47	31	59	67	59	54	43	43	47	45	n/a
Electrics			V/ph/Hz	1N/230V/50~														
Fuel	Connection		BSP/Rc	3/4										1 1/4				
	Natural Gas	Min inlet Pressure	Mbar	20.0														
		Rate	m <sup>3</sup> /h	1.09	1.72	2.09	2.77	3.22	4.18	5.26	6.52	8.10	10.92	11.62	13.37	16.27	18.40	n/a
Flue	Diameter		mm $\emptyset$	80			100			130								
	Max Length - type B		M	14						16						max 3M @dia 130mm*		
	Max Length** - type C		M	14**						16**						N/A		
Nett Weight ( Single Units )			kg	38	45	53	60	68	74	91	114	123	140	145	168	195	230	n/a
Two Modules in Series $\Delta t = 70^\circ\text{C}$	Heat Output		kW	19.2	29.1	35.4	47.2	54.9	72.0	89.5	108.4	135.2	183.8	196.0	224.0	269.7	308.8	n/a
	Minimum Airflow @ 0°C air inlet		m <sup>3</sup> /s	0.34	0.44	0.58	0.71	0.86	1.01	1.55	1.94	2.28	2.78	2.99	3.39	4.14	4.67	n/a
	Pressure Drop At Minimum Airflow		Pa	87	52	91	65	95	62	117	134	119	108	86	86	93	91	n/a
Model HEM NVx				10-3	15-4	18-5	25-5	30-6	40-8	50-6	60-7	75-9	100-12	110-13	125-15	150-18	175-21	200-24

\*  $\emptyset 150$  for a total **calculated** length in excess of 3M up to 9M,  $\emptyset 180$  for in excess of 10m up to 18M and  $\emptyset 200$  for in excess of 18m up to 24M. If an offset is required a set of 45° bends should be used being equivalent to 0.5m of flue length. 90° bends may be used but each set will be equivalent to 1.0m of flue length.

\*\*Length shown is maximum **calculated** length. Concentric flue terminals are equivalent to 5m of flue length. If an offset is required two sets of 45° bends should be used each set being equivalent to 0.5m of flue length. 90° bends may be used but each set will be equivalent to 1.0m of flue length.

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