

Neosys



Air cooled chillers / Heat pumps



R410A



AIR COOLED

 **200 - 1000 kW**
 **200 - 500 kW**

LENNOX participates in the ECP programme for LCP-HP. Check ongoing validity of certificate : www.eurovent-certification.com

- # Flat top, aesthetic grilles and very low unit height (< 2 m) for **discrete installation on a roof** reducing the requirement for costly cladding solutions around the unit.
- # **State of the art design** with hidden compressors, fans and pump for perfect architectural integration.
- # **Partial or total heat recovery** achieved with two configurations of the desuperheater, that provides free hot water for domestic use.
- # **Quiet operation** with the thermodynamic and hydraulic modules mounted in a soundproofed technical cabinet.

CASING & DESIGN

- # Casing made of white painted galvanised steel.
- # Flat top that hides the fans and reduces noise level.
- # Compact design, granted by the V-shaped coils.
- # All thermodynamic and hydraulic components are installed inside the box reducing the noise level and protecting them against climatic conditions.
- # Electrical panel with top opening provides protection to the service team against rain or snow during commissioning and maintenance operations.
- # Aesthetic protection grilles.



eDRIVE

Variable speed drive pump option, which modulates the water flow through the evaporator and reduces energy costs:

- # Saves energy consumption especially at part-load conditions and during off period, reaching up to 75% reduction of the pump consumption.
- # Savings on the initial system cost, due to fewer pumps and piping connections than primary-secondary systems.
- # Flexibility and accuracy of the pump operation control: smooth start and stop, gradual change of speed, accuracy and stability of control.
- # Reduction of the repeated stress on the pump and piping resulting in longer equipment lifetime.
- # Elimination of the start-up current thanks to variable frequency drive that controls a gradual pump motor supply.



ACOUSTIC COMFORT

- # **Quiet operation** (standard), achieved with compact design, silent compressors and pumps, and with high-performance propeller fans, all installed in a closed box.
- # **Active Acoustic Attenuation System** with variable fan speed allows progressive adaptation of the unit to the building load while respecting the noise level constraints and the operating limits (as an option).



CONTROL

- # Climatic electronic controller and intelligent control parameters optimising part-load efficiency.
- # Integrated communication solutions offering flexibility (master/slave, Modbus, BACnet)
- # DC Advanced display, equipped with a graphic screen providing access to the main user parameters, with two optional displays:
 - Remote Display
 - Service Display

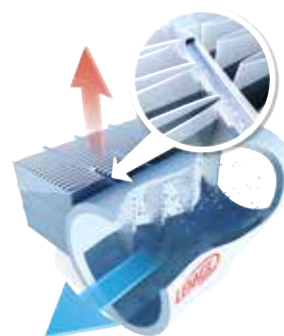


THERMODYNAMIC SYSTEM

- # Multi-scroll compressors, mounted in tandem or trio, to provide the best seasonal efficiencies.
- # Aluminium microchannel condenser coil (Cooling only version).
- # Variable speed fans with exclusive design with SKF hybrid Ceramic bearings that improves service life and reduces noise level.
- # Low water system volume to reduce the time to reach the setpoint.
- # Dynamic defrost (patented) to limit the number of defrost cycles.
- # Thermally insulated and frost-protected dual circuit water heat exchangers made from stainless steel plates with copper brazing.
- # Up to four independent circuits.
- # Desuperheater (as an option): additional plate heat exchanger on each circuit to recover the rejected heat and provide free hot water for sanitary or industrial purposes.
- # Single or dual pump.

REMOTE MONITORING

- # Connectivity through **LennoxHydrocontrol**, a user-friendly interface for local supervision of the entire hydraulic system.
- # Connectivity through **LennoxCloud** (LENNOX WEB PORTAL for Multi sites / units).
- # BMS through **e-savvy**



N_(A) A_(B) C_(C) 200_(D) D_(E) N_(F) M_(G) 7_(H) M_(I)

- (A) **N** = Neosys
- (B) **A** = Air cooled
- (C) **C** = Cooling mode - **H** = Heat pump mode
- (D) **200** = Cooling capacity in kW
- (E) Number of circuits - **S** = 1 circuit - **D** = 2 circuits - **T** = 3 circuits - **F** = 4 circuits
- (F) **N** = Non ducted
- (G) **M** = R410A refrigerant
- (H) **7** = Revision number
- (I) **M** = 400V/3/50Hz



Air cooled version

Cooling only units

Neosys - NAC		200D	230D	270D	300D	340D	380D	420D	480D
Nominal thermal performances - Cooling mode									
Cooling capacity ⁽¹⁾	kW	208,2	235,7	272,8	307,6	351,3	387,3	429,6	489,9
Total absorbed power ⁽¹⁾	kW	72,1	85,7	106,7	106,9	125,6	149,1	152,3	174,3
EER ⁽¹⁾		2,89	2,75	2,56	2,88	2,80	2,60	2,82	2,81
Comfort Application	Seasonal Energy Efficiency Ratio ⁽²⁾ SEER	4,72	4,62	4,36	4,73	4,70	4,57	4,86	4,79
	Seasonal energy efficiency ⁽³⁾ η_{s,c}	%	186	182	171	186	185	180	191
Process Application	Seasonal Energy Performance Ratio ⁽⁴⁾ SEPR - High temperature (7°C)	5,53	5,26	5,29	5,51	5,68	5,50	5,65	5,55
	Seasonal Energy Performance Ratio ⁽⁵⁾ SEPR - Medium temperature (-8°C)	3,88	3,85	3,82	3,82	3,99	3,91	3,92	3,99
Nominal thermal performances - Heating mode									
Heating capacity ⁽¹⁾	kW	-	-	-	-	-	-	-	-
Total absorbed power ⁽¹⁾	kW	-	-	-	-	-	-	-	-
COP ⁽¹⁾		-	-	-	-	-	-	-	-
Comfort Application	Seasonal Coefficient of Performance ⁽⁶⁾ SCOP	-	-	-	-	-	-	-	-
	Seasonal energy efficiency ⁽⁷⁾ η_{s,h}	%	-	-	-	-	-	-	-
	Seasonal efficiency class ⁽⁸⁾		-	-	-	-	-	-	-
Acoustic data									
Global sound power level - Standard unit	dB(A)	89,2	89,3	89,7	91,2	91,3	91,4	92,5	92,6
Electrical data									
Maximum power	kW	96,7	113,7	135,0	147,1	166,2	191,7	205,9	231,4
Maximum current	A	169,6	199,0	225,0	247,3	277,2	321,3	344,1	388,2
Starting current	A	397,0	449,7	475,7	498,0	527,9	572,0	594,8	638,9
Short circuit current	kA	10	10	50	50	50	50	50	50
Refrigeration circuit									
Number of circuits		2	2	2	2	2	2	2	2
Number of compressors		4	4	4	4	5	5	6	6
Total refrigerant load - R410a	kg	25,6	25,5	29,3	35,2	37,1	39,0	52,4	55,3
Evaporator									
Nominal water flow rate	m ³ /h	35,80	40,60	46,90	52,90	60,40	66,60	73,90	84,30
Nominal pressure drop	kPa	43	54	56	48	35	42	50	49
Hydraulic connection									
Type		Victaulic							
Diameter		4"	4"	4"	4"	5"	5"	5"	5"

(1) EUROVENT certified data, in accordance with standard EN 14511.

Cooling mode: Evaporator water temperature = 12/7°C | Outdoor air temperature = 35°C / **Heating mode:** Condenser water temperature = 40/45°C | Outdoor air temperature = 7°C

(2) SEER in accordance with standard EN 14825. | (3) Following ecodesign regulation EU 2016/2281 on space cooling, normalized leaving water temperature at 7°C, in accordance with standard EN 14825. |

(4) Following ecodesign regulation EU 2016/2281 on process cooling units, normalized leaving water temperature at 7°C, in accordance with standard EN 14825. |

(5) Following ecodesign regulation EU 2015/1095 on process cooling chillers, normalized leaving water temperature at -8°C, in accordance with standard EN 14825. |

(6) SCOP in accordance with standard EN 14825. Heating mode performance is defined for average climate conditions. | (7) Following ecodesign regulation EU 813/2013 on space heaters, normalized leaving water temperature at 7°C, in accordance with standard EN 14825, average climate conditions. | (8) Following energy labelling regulation EU 811/2013 on space heaters.

N_(A) A_(B) C_(C) 200_(D) D_(E) N_(F) M_(G) 7_(H) M_(I)

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 (C) **C** = Cooling mode - **H** = Heat pump mode
 (D) **200** = Cooling capacity in kW
 (E) Number of circuits - **S** = 1 circuit - **D** = 2 circuits - **T** = 3 circuits - **F** = 4 circuits
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Air cooled version

Cooling only units

Neosys - NAC		540D	600D	640D	680F	760F	840F	960F	1080F
Nominal thermal performances - Cooling mode									
Cooling capacity ⁽¹⁾	kW	530,9	605,0	626,9	702,6	774,7	859,1	979,8	1061,9
Total absorbed power ⁽¹⁾	kW	201,9	219,1	226,1	251,3	298,2	304,6	348,7	403,8
EER ⁽¹⁾		2,63	2,76	2,77	2,80	2,60	2,82	2,81	2,63
Comfort Application	Seasonal Energy Efficiency Ratio ⁽²⁾ SEER	4,62	4,59	4,60	4,63	4,55	4,84	4,78	4,60
	Seasonal energy efficiency ⁽³⁾ η_{s,c}	%	182	181	181	182	179	191	188
Process Application	Seasonal Energy Performance Ratio ⁽⁴⁾ SEPR - High temperature (7°C)	5,52	5,51	5,50	5,68	5,51	5,65	5,55	5,50
	Seasonal Energy Performance Ratio ⁽⁵⁾ SEPR - Medium temperature (-8°C)	3,81	4,04	4,06	3,95	3,86	3,88	3,95	3,92
Nominal thermal performances - Heating mode									
Heating capacity ⁽¹⁾	kW	-	-	-	-	-	-	-	-
Total absorbed power ⁽¹⁾	kW	-	-	-	-	-	-	-	-
COP ⁽¹⁾		-	-	-	-	-	-	-	-
Comfort Application	Seasonal Coefficient of Performance ⁽⁶⁾ SCOP	-	-	-	-	-	-	-	-
	Seasonal energy efficiency ⁽⁷⁾ η_{s,h}	%	-	-	-	-	-	-	-
	Seasonal efficiency class ⁽⁸⁾		-	-	-	-	-	-	-
Acoustic data									
Global sound power level - Standard unit	dB(A)	93,0	94,0	94,0	94,3	94,4	95,5	95,6	96,0
Electrical data									
Maximum power	kW	258,1	288,4	288,4	2 x 166,2	2 x 191,7	2 x 205,9	2 x 231,4	2 x 258,1
Maximum current	A	431,7	482,8	482,8	2 x 277,23	2 x 321,3	2 x 344,13	2 x 388,2	2 x 431,7
Starting current	A	765,9	817,0	817,0	2 x 527,93	2 x 572	2 x 594,83	2 x 638,9	2 x 765,9
Short circuit current	kA	50	50	50	50	50	50	50	50
Refrigeration circuit									
Number of circuits		2	2	2	4	4	4	4	4
Number of compressors		6	6	6	10	10	12	12	12
Total refrigerant load - R410a	kg	59,8	73,4	69,0	74,2	78,0	104,8	110,6	119,6
Evaporator									
Nominal water flow rate	m ³ /h	91,30	104,10	107,90	120,90	133,30	147,80	168,60	182,70
Nominal pressure drop	kPa	57	59	58	57	51	56	66	71
Hydraulic connection									
Type		Victaulic							
Diameter		6"	6"	6"	8"	8"	8"	8"	8"

(1) EUROVENT certified data, in accordance with standard EN 14511.

Cooling mode: Evaporator water temperature = 12/7°C | Outdoor air temperature = 35°C / **Heating mode:** Condenser water temperature = 40/45°C | Outdoor air temperature = 7°C

(2) SEER in accordance with standard EN 14825. | (3) Following ecodesign regulation EU 2016/2281 on space cooling, normalized leaving water temperature at 7°C, in accordance with standard EN 14825. | (4) Following ecodesign regulation EU 2016/2281 on process cooling units, normalized leaving water temperature at 7°C, in accordance with standard EN 14825. | (5) Following ecodesign regulation EU 2015/1095 on process cooling chillers, normalized leaving water temperature at -8°C, in accordance with standard EN 14825. |

(6) SCOP in accordance with standard EN 14825. Heating mode performance is defined for average climate conditions. | (7) Following ecodesign regulation EU 813/2013 on space heaters, normalized leaving water temperature at 7°C, in accordance with standard EN 14825, average climate conditions. | (8) Following energy labelling regulation EU 811/2013 on space heaters.

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Air cooled version

Heat pump units

Neosys - NAH		200D	230D	270D	300D	340D	380D	420D	480D	
Nominal thermal performances - Cooling mode										
Cooling capacity ⁽¹⁾	kW	191,0	217,0	265,9	295,4	323,6	360,9	398,5	442,2	
Total absorbed power ⁽¹⁾	kW	73,5	92,7	104,7	117,1	131,8	133,4	159,1	183,5	
EER ⁽¹⁾		2,60	2,34	2,54	2,52	2,46	2,71	2,50	2,41	
Comfort Application	Seasonal Energy Efficiency Ratio ⁽²⁾ SEER	4,23	4,10	4,40	4,30	4,45	4,80	4,66	4,63	
	Seasonal energy efficiency ⁽³⁾ η_{s,c}	%	166	161	173	169	175	189	183	182
Process Application	Seasonal Energy Performance Ratio ⁽⁴⁾ SEPR - High temperature (7°C)	5,35	5,02	5,29	5,25	5,40	5,42	5,27	5,12	
	Seasonal Energy Performance Ratio ⁽⁵⁾ SEPR - Medium temperature (-8°C)	-	-	-	-	-	-	-	-	
Nominal thermal performances - Heating mode										
Heating capacity ⁽¹⁾	kW	218,5	234,9	290,8	339,0	363,3	404,5	452,5	499,2	
Total absorbed power ⁽¹⁾	kW	71,7	84,0	104,3	112,7	121,3	132,9	151,7	169,5	
COP ⁽¹⁾		3,05	2,80	2,79	3,01	3,00	3,04	2,98	2,95	
Comfort Application	Seasonal Coefficient of Performance ⁽⁶⁾ SCOP	3,44	3,32	3,39	3,45	3,47	3,39	3,33	3,35	
	Seasonal energy efficiency ⁽⁷⁾ η_{s,h}	%	134	130	132	135	136	132	130	131
	Seasonal efficiency class ⁽⁸⁾		A+	A+	A+	A+	A+	A+	A+	A+
Acoustic data										
Global sound power level - Standard unit	dB(A)	89,2	89,3	91,1	91,2	91,3	92,4	91,5	91,6	
Electrical data										
Maximum power	kW	96,7	113,7	138,6	155,6	166,2	180,4	205,9	231,4	
Maximum current	A	169,6	199,0	232,6	262,0	277,2	300,1	344,1	388,2	
Starting current	A	397,0	449,7	483,3	512,7	527,9	527,4	594,8	638,9	
Short circuit current	kA	10	10	50	50	50	50	50	50	
Refrigeration circuit										
Number of circuits		2	2	2	2	2	2	2	2	
Number of compressors		4	4	4	4	5	6	6	6	
Total refrigerant load - R410a	kg	52,0	52,0	81,0	81,0	83,0	102,0	102,0	104,0	
Evaporator										
Nominal water flow rate	m ³ /h	33,07	37,52	45,60	51,29	55,96	62,29	68,46	76,88	
Nominal pressure drop	kPa	37	47	53	51	28	34	41	36	
Hydraulic connection										
Type		Victaulic								
Diameter		4"	4"	4"	4"	5"	5"	5"	5"	

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Cooling mode: Evaporator water temperature = 12/7°C | Outdoor air temperature = 35°C / **Heating mode:** Condenser water temperature = 40/45°C | Outdoor air temperature = 7°C
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Air cooled version

Cooling only units

Neosys - NAC		200D	230D	270D	300D	340D	380D	420D	480D	540D	600D	640D	680F	760F	840F	960F	1080F
A	mm	3593			4623			5653			6683			9040		11100	
B		2280			2280			2280			2280			2280		2280	
C		2025			2025			2025			2025			1965		1965	

Weight of standard units



Air cooled version

Heat pump units

Neosys - NAH		200D	230D	270D	300D	340D	380D	420D	480D	
A	mm	3593			4518			5548		
B		2280			2280			2280		
C		2025			2025			2025		

Weight of standard units

Basic unit	kg	200D	230D	270D	300D	340D	380D	420D	480D
		2176	2175	2906	3380	3349	4020	4066	4148

