



**C-Series<sup>2</sup>**  
high capacity precision controlled  
industrial process chillers  
flow capacity: 46 to 95+ tons

**C<sup>2</sup>**

# nano C-Series<sup>2</sup> high capacity industrial process chillers

The advanced nano C-Series<sup>2</sup> is a high capacity industrial air cooled chiller designed for the toughest applications with the highest heat loads. All units are designed, built and tested in compliance with ISO 9001.

## weather proof construction

- The galvanized metal panels are polyester powder coated providing a durable weather-proof finish.

## reliable scroll compressors

- Each unit is equipped with dual refrigerant circuits including a total of four (4) hermetically sealed scroll compressors connected in tandem. These reliable and efficient compressors minimize power consumption and maximize operating life. Each compressor is equipped with a crankcase heater, non-return valve, oil sight glass and rubber mountings.

## efficient heat exchangers

- Choose from a stainless steel brazed plate or shell and tube heat exchanger. Both feature a manual air bleed, drain valve and a water differential pressure switch. Efficient thermal insulation with anti-condensation aluminum faced cladding minimizes ambient heat gain for highly efficient operation.

## dual independent condensers

- Dual independent condensing coils match the dual refrigeration circuits. Brazed plate heat recovery exchangers are also available as an option.

## quiet axial fans

- Quiet axial fans feature polypropylene-coated aluminum blades and never require lubrication. Fans are arranged in two rows and operate independently for maximum efficiency and minimum noise levels.
- Fan control based on either condenser pressure or a day/night schedule for noise sensitive areas.

## 100% reliability tested

- Each unit is factory tested at both standard operating conditions and maximum operating conditions to ensure optimum performance and reliability.



dual pumps & storage tank



low noise axial fans

## advanced microprocessor controls

The nano C-Series<sup>2</sup> range of high capacity industrial process chillers are controlled via a powerful yet user friendly microprocessor. Operators interact with the control system through a semi graphic back-lit 240 x 96 pixel screen and eight (8) programming buttons. With icons, multi-function keys, moving images and an audible buzzer, the interface provides operators with quick and concise information on system operation, settings and alarms in one of five available languages.



Access to the interface is provided via a polycarbonate cover for weather protection. An optional remote interface in a wall mountable enclosure is available as an option. This provides an exact replica of the interface on the unit but can be installed up to 650 feet away.

In the event of an alarm, the alarm message is recorded in history and displayed on the local and optional remote interface. Alarms can also be monitored via 24 VAC remote alarm contacts and/or an RS485 serial output using ModBUS communication protocol.

C-Series<sup>2</sup> chillers also include an Ethernet port with pre-loaded HTML supervision pages to display, monitor and modify system parameters through an internal network or over the internet

For sites using multiple chillers, up to four (4) units can be connected in parallel on a local LAN network for master / slave operation.

Some additional features and benefits of the nano controller include:

- Water temperature control with freeze-protection either at the evaporator inlet or down line of an external storage tank.
- Operating hours, compressor starts, run time equalization and preventative maintenance schedules.
- Condenser and evaporator pressures in each refrigeration circuit.
- An unloading function for efficient operation under very low heat loads.
- Management of electronic thermostatic valves (optional).
- Set points can be fixed, can be set to fluctuate with external air temperature, may be modified with an external signal or can be programmed to follow a preset daily or weekly schedule.



semi-graphic back-lit user interface



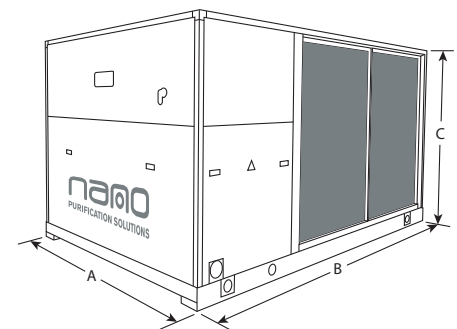
optional shell & tube heat exchanger

# sizing & specifications

Model	Water Inlet & Outlet	Cooling Capacity <sup>(1)</sup>		Total Installed Power	Full Load Amps <sup>(2)</sup>	Water Pump	Tank Capacity	Dimensions <sup>(3)</sup> (inches)			Approx. Weight
	Flanged	BTU/h	tons	kW	amps	hp	gal	A	B	C	lbs
NPC 480	3"	545,941	45.5	66.9	147	7	53	86.1	134.6	76.2	3254
NPC 500	4"	658,541	54.9	74.9	160	7	53	86.1	134.6	76.2	3684
NPC 520	4"	716,547	59.7	79.0	170	10	105	86.1	134.6	76.2	4083
NPC 540	4"	757,492	63.1	85.9	177	10	105	86.1	134.6	76.2	4251
NPC 560	5"	842,796	70.2	99.5	196	12	105	86.1	177.9	76.2	4713
NPC 580	5"	917,862	76.5	114	212	12	105	86.1	177.9	76.2	4914
NPC 600	5"	1,050,935	87.6	120	248	12	105	86.1	177.9	76.2	5315
NPC 620	5"	1,115,766	95.0	131	277	12	105	86.1	177.9	76.2	5582

specifications			480	500	520	540	560	580	600	620
compressors	quantity	-	4	4	4	4	4	4	4	4
	absorbed power <sup>(4)</sup>	kW	58.1	66	70	76.9	90.4	105	107	118
fans	quantity	-	4	4	4	4	4	4	6	6
	power (each)	hp	3	3	3	3	3	3	3	3
power supply	voltage <sup>(5)</sup>	V/Ph/Hz	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60
refrigerant	circuits	-	2	2	2	2	2	2	2	2
	type	-	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a
inlet water temperature	minimum	°F	39	39	39	39	39	39	39	39
	maximum	°F	77	77	77	77	77	77	77	77
outlet water temperature	minimum	°F	32	32	32	32	32	32	32	32
	maximum	°F	68	68	68	68	68	68	68	68
ambient temperature	minimum	°F	23	23	23	23	23	23	23	23
	maximum <sup>(6)</sup>	°F	104	104	104	104	104	104	104	104
sound level	maximum <sup>(7)</sup>	dBa	66	65	65	65	65	65	65	65

correction factors <sup>(8)</sup>			30	35	40	45	50	55	60+
water outlet temperature (°F)	correction factor		0.68	0.79	0.91	1	1.10	1.19	1.27
ambient temperature (°F)	correction factor		1.14	1.11	1.18	1.04	1	0.96	0.92
evaporator ΔT (°F) <sup>(9)</sup>	correction factor		0.99	0.99	1	1.01	1.01	1.02	1.03
condenser ΔT (°F) <sup>(10)</sup>	correction factor		1	0.99	0.98	0.97	0.96	0.95	0.93
ethylene glycol (%)	correction factor		1	0.99	0.98	0.97	0.96	0.95	0.93



- (1) Assumes 45°F cooling water supply, 55°F cooling water return and 95°F ambient temperature. For all other conditions refer to the correction factors. Larger capacity models available on request. Contact support@n-psi.com.
- (2) Assumes chiller with pump at rated inlet conditions.
- (3) Assumes base model with no options.
- (4) Total nominal absorbed power by all compressors at rated inlet conditions.
- (5) 50 Hz models available on request. Contact support@n-psi.com.
- (6) Higher ambient models available on request. Contact support@n-psi.com.
- (7) Sound level is ± 2 dBA in an open field at 33 ft from condenser side and 5 ft from the ground. Assumes operation at full load at nominal conditions with circulation pump, no options fitted. Lower noise level models are available on request. Contact support@n-psi.com.
- (8) To be used as a rough guide only. All applications should be confirmed by n-psi. Contact support@n-psi.com for sizing assistance.
- (9) Assumes no change to condenser inlet water temperature.
- (10) Assumes no change to evaporator outlet water temperature.

Experience. Customer. Service...n-psi

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