

## NCS 0502 US

460/3/60 - 31.6 tons industrial process chiller

The C<sup>1</sup> operates in a closed circuit (open circuit optional), offering precise water temperature control and rapid response to changes in ambient and thermal load. This design also eliminates the waste, corrosion and bacterial growth associated with open circuit systems.

In addition, energy efficient and reliable compressors combined with a unique, oversized, patented, NO FROST in-tank evaporator provide the lowest operating costs available on the market today.



### unit performance<sup>(1)</sup>

|                          |         |
|--------------------------|---------|
| cooling capacity (tons)  | 31.6    |
| cooling capacity (btu/h) | 379,430 |
| cooling capacity (kW)    | 111.2   |
| EER (btu/W)              | 7.74    |

### refrigerant gas

|                  |       |
|------------------|-------|
| refrigerant type | R410A |
|------------------|-------|

### power supply

|                            |          |
|----------------------------|----------|
| power output (V/Ph/Hz)     | 460/3/60 |
| total power input (kW)     | 48.7     |
| full load running amps (A) | 97.0     |

### working conditions<sup>(1)</sup>

|                                       |          |
|---------------------------------------|----------|
| maximum inlet temperature (°F (°C))   | 86 (30)  |
| maximum ambient temperature (°F (°C)) | 106 (41) |

### compressor data

|                             |        |
|-----------------------------|--------|
| number of compressors       | 2      |
| compressor type             | scroll |
| independent gas circuit     | 2      |
| step of capacity            | 2      |
| compressor power input (kW) | 53.8   |
| absorbed current (a)        | 80.0   |

### hydraulic data

|                                 |                                               |
|---------------------------------|-----------------------------------------------|
| number of tanks                 | 1                                             |
| water tank content (US gallons) | 132.1                                         |
| fluid connection (NPT M)        | 3"                                            |
| evaporator type                 | nano patented No Frost immersed in water tank |
| number of water pumps           | 1                                             |
| pump type                       | centrifugal                                   |
| water flow (gpm)                | 75.6                                          |
| pump pressure (psi (bar))       | 45.0 (3.1)                                    |
| water pump (hp)                 | 4.0                                           |

### aerualics data

|                                            |                 |
|--------------------------------------------|-----------------|
| number of fans                             | 4               |
| fan type                                   | axial           |
| fan power input (kW)                       | 6.5             |
| total airflow (scfm (Nm <sup>3</sup> /hr)) | 29,072 (49,400) |

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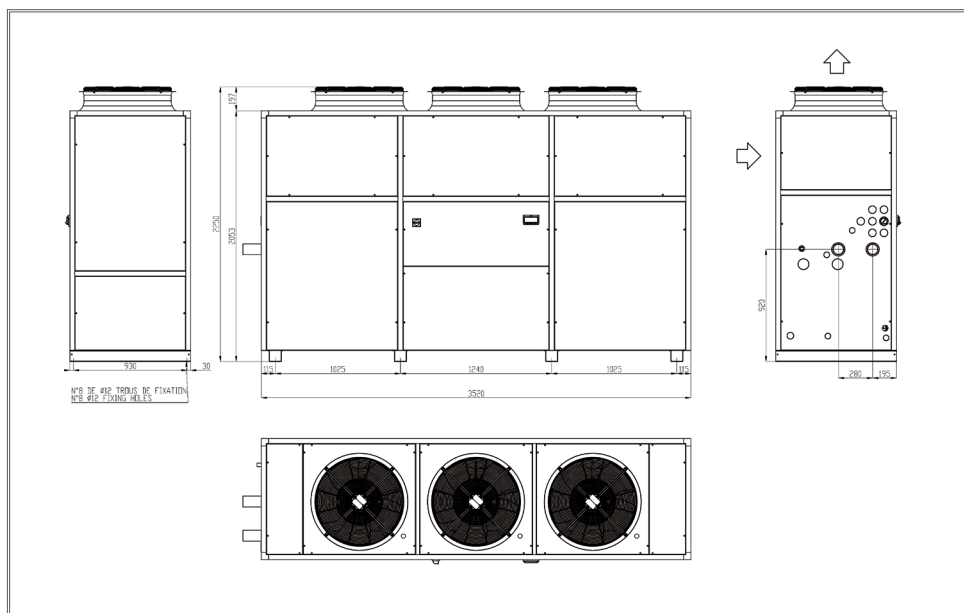
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## technical specification

### dimensions, weight & sound pressure

|                                   |               |
|-----------------------------------|---------------|
| length (ins (mm))                 | 139(3,520)    |
| depth (ins (mm))                  | 39 (990)      |
| height (ins (mm))                 | 89 (2,245)    |
| weight - without water (lbs (kg)) | 3,960 (1,796) |
| weight - with water (lbs (kg))    | 5,060 (2,295) |
| sound pressure (dB(a))            | 61.1          |



### correction factors<sup>(4)</sup>

|                                    |         |         |         |         |         |         |           |          |
|------------------------------------|---------|---------|---------|---------|---------|---------|-----------|----------|
| water outlet temperature (°F (°C)) | 30 (-1) | 35 (-2) | 40 (5)  | 45 (7)  | 50 (10) | 55 (13) | 60+ (16+) |          |
| correction factor                  | 0.73    | 0.82    | 0.91    | 1       | 1.09    | 1.17    | 1.25      |          |
| ambient temperature (°F (°C))      | 70 (21) | 75 (24) | 80 (27) | 85 (29) | 90 (32) | 95 (35) | 100 (38)  | 105 (41) |
| correction factor                  | 1.21    | 1.12    | 1.09    | 1.06    | 1.03    | 1       | 0.97      | 0.94     |
| propylene glycol (%)               | 0       | 10      | 20      | 30      | 40      | 45      | 50        |          |
| correction factor                  | 1       | 0.99    | 0.98    | 0.97    | 0.96    | 0.95    | 0.93      |          |

- (1) assumes 45°F (7°C) cooling water supply, 55°F (13°C) cooling water return and 95°F (35°C) ambient temperature. For all other conditions refer to the correction factors
- (2) total nominal absorbed power by (all) compressor(s) at rated inlet conditions using 230/1/60 or 460/3/60 power supply as applicable
- (3) all models are 60 Hz. Protection class IP55 standard except for NCS 0002 - 0006 US IP44 standard. Contact support@n-psi.com for 50Hz electrical options
- (4) to be used as a guide only. All applications should be confirmed by nano. Contact support@n-psi.com for sizing assistance
- (5) assumes no change to condenser inlet water temperature
- (6) assumes no change to evaporator outlet water temperature
  - standard water temperature control is +/- 3.5°F (1.1°C). Close temperature control is available
  - crankcase heater included as standard
- (7) consult nano for sizing assistance for ambient temperatures below 32°F (0°C) or above 106°F (41°C)
- (8) the standard unit is a carbon steel circuit. As a result, the unit must be filled with 10% rust inhibited glycol or the warranty will be void. For low ambient temperatures refer to the factory for glycol % required