

CRYOMECH

Liquid Nitrogen Plant Specification Sheet

LNP20

Liquid nitrogen production rate* ≥ 20 liter/day (0.8 liter/hour); 5.2 gal/day (0.22 gal/hour)
*reduced production rate on 50Hz

Dewar assembly

Capacity 100 liters (26 gal)
Weight:
Empty 210 lb (95 kg)
Full 388 lb (176 kg)
Dimensions (OD x H) 24 x 48 in (61 x 122 cm)

Cold head model

AL125, mounted on dewar

Helium compressor model

CP830, available as air or water cooled

Air cooled:

Weight 176 lb (80 kg)
Dimensions (L x W x H) 19 x 22 x 22 in (48 x 56 x 56 cm)
Electrical rating 208/230VAC, 1Ph, 60Hz // 200VAC, 1Ph, 50Hz
Power consumption 4.1 kW // 3.5 kW

Water cooled:

Weight 165 lb (75 kg)
Dimensions (L x W x H) 18 x 18 x 22 in (46 x 46 x 56 cm)
Electrical rating 208/230VAC, 1Ph, 60Hz // 200VAC, 1Ph, 50Hz
Power consumption 3.9 kW // 3.3 kW
Cooling water flow rate Minimum flow 1.2 GPM (4.5 LPM) @ 80°F (27°C) maximum temperature

Helium flexible lines

Standard length 10 ft (3 m)
Weight per pair 6.4 lb (2.9 kg)

Nitrogen generator assembly

Nitrogen purity 98%
Weight 61 lb (28 kg)
Dimensions (L x W x H) 42 x 7 x 29 in (107 x 18 x 74 cm)
Nitrogen Gas Flow Rate 0.38 SCFM at 7 PSIG (10.8 LPM at 0.5 bar)

System parameters

Helium pressure 200 \pm 5 PSIG (13.8 \pm .34 bar) @ 60 Hz
200 \pm 5 PSIG (13.8 \pm .34 bar) @ 50 Hz
Ambient temperature range 45°F to 100°F (7°C to 38°C)
Maximum altitude (standard LNP) 10,000 ft (3000 m)

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Compressed air requirement

3.7 ACFM at 85 PSIG (105 ALPM at 6 bar) FAD

FAD (free air delivery) measures the compressor's output while operating at a specific pressure. The result, expressed in actual cubic feet per minute (ACFM), rates the outlet flow based on the inlet conditions.

Maximum sound level

Air cooled 76 dBA @ 1 meter
Water cooled 70 dBA @ 1 meter

Minimum footprint requirement

Air cooled helium compressor 7.5 x 2.5 ft (2.3 m x 0.8 m)
Water cooled helium compressor 4.5 x 3.5 ft (1.4 m x 1.1 m)

Shipping weight and dimensions

The standard LNP is packaged in two wooden crates

Crate 1(Cold Head, Dewar):

Weight 380 lb (172 kg)
Dimensions (L x W x H) 41 x 38 x 65 in (104 x 97 x 165 cm)

Crate 2(Helium Compressor):

Weight 440 lb (200 kg)
Dimensions (L x W x H) 48 x 40 x 38 in (122 x 102 x 97 cm)

Crate 3(Optional Air Compressor):

Weight 880 lb (399 kg)
Dimensions (L x W x H) 69 x 43 x 64 in (175 x 109 x 163 cm)

Optional Equipment

Air compressor

Flow rate 6.3 ACFM at 175 PSIG (178 ALPM at 12.1 bar) FAD
Weight 500 lb (227 kg)
Dimensions (L x W x H) 53 x 28 x 48 in (135 x 71 x 122 cm)
Duty cycle 1/3
Horsepower 3
Electrical rating 230VAC, 1Ph, 60Hz; 200VAC, 1Ph, 50Hz
Sound level 76 dBA @ 1meter

Refrigerated air dryer

Nominal capacity 10 SCFM (283 SLPM)
Weight 42 lb (19 kg)
Dimensions (L x W x H) 18 x 8 x 18 in (46 x 20 x 46 cm)
Power consumption 0.2 kW
Electrical rating 115VAC, 1Ph, 60Hz; 230VAC, 1Ph, 50Hz