

CRYOMECH

Liquid Nitrogen Plant Specification Sheet

LNP40

Liquid nitrogen production rate* ≥ 40 liter/day (1.7 liter/hour); 10.6 gal/day (0.44 gal/hour)
*reduced production rate on 50Hz

Dewar assembly

Capacity 160 liters (42 gal)
Empty Weight 260 lb (118 kg)
Full Weight 545 lb (247 kg)
Dimensions (OD x H) 24 x 60 in (61 x 152 cm)

Cold head model AL200, mounted on dewar

Helium compressor model CP950, available as air or water cooled

Air cooled:

Weight 387 lb (176 kg)
Dimensions (L x W x H) 23 x 21 x 46 in (58 x 53 x 117 cm)
Electrical rating 220/230; 460VAC, 3Ph, 60Hz // 200/220; 380/420VAC, 3Ph, 50Hz
Power consumption 6 kW // 5.1 kW

Water cooled:

Weight 262 lb (119 kg)
Dimensions (L x W x H) 23 x 21 x 26 in (58 x 53 x 66 cm)
Electrical rating 220/230; 460VAC, 3Ph, 60Hz // 200/220; 380/420VAC, 3Ph, 50Hz
Power consumption 5.5 kW // 4.6 kW
Cooling water flow rate Minimum flow 1.6 GPM (6 LPM) @ 80°F (27°C) maximum temperature

Helium flexible lines

Standard length 10 ft (3 m)
Weight per pair 9.2 lb (4.2 kg)

Nitrogen generator assembly

Nitrogen purity 98%
Weight 66 lb (30 kg)
Dimensions (L x W x H) 42 x 7 x 29 in (107 x 18 x 74 cm)
Nitrogen Gas Flow Rate 0.76 SCFM at 7 PSIG (12.6 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

5.1 ACFM at 85 PSIG (144 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 74 dBA @ 1 meter
Water cooled 70 dBA @ 1 meter

Minimum footprint requirement

Air cooled helium compressor 6 x 6 ft (1.8 m x 1.8 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 330 lb (150 kg)
Dimensions (L x W x H) 34 x 33 x 70 in (86 x 84 x 178 cm)

Crate 2(Helium Compressor):

Weight 725 lb (329 kg)
Dimensions (L x W x H) 48 x 40 x 59 in (122 x 102 x 150 cm)

Crate 3(Optional Air Compressor):

Weight 975 lb (442 kg)
Dimensions (L x W x H) 60 x 40 x 54 in (152 x 102 x 137 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 208/230; 460VAC, 3Ph, 60Hz // 220; 380VAC, 3Ph, 50Hz
Sound level 74 dBA @ 1meter

Refrigerated air dryer

Nominal capacity 15 SCFM (425 SLPM)
Weight 44 lb (20 kg)
Dimensions (L x W x H) 18 x 8 x 18 in (46 x 20 x 46 cm)
Power consumption 0.23 kW
Electrical rating 115VAC, 1Ph, 60Hz; 230VAC, 1Ph, 50Hz

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