

# CRYOMECH

## Liquid Nitrogen Plant Specification Sheet

### LNP40

Liquid nitrogen production rate\*  $\geq 40$  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 CP2850, available as water or air cooled

#### Water cooled:

Weight 243 lb (110 kg)  
Dimensions - L x W x H 19 x 18 x 24.5 in (48 x 46 x 62 cm)  
Electrical rating 200/230 or 440/480VAC, 3Ph, 60Hz // 200 or 380/415VAC, 3Ph, 50Hz  
Power consumption @ steady state 5.1 kW // 4.2 kW  
Cooling water flow rate Minimum flow 2.3 GPM (9 LPM) @ 80°F (27°C) maximum temperature

#### Air cooled:

Weight 384 lb (174 kg)  
Dimensions - L x W x H 23.5 x 21 x 43 in (60 x 54 x 109 cm)  
Electrical rating 200/230 or 440/480VAC, 3Ph, 60Hz // 200 or 380/415VAC, 3Ph, 50Hz  
Power consumption @ steady state 5.7 kW // 4.8 kW

#### 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 (21.6 LPM at 0.5 bar)

#### System parameters

Helium pressure 210  $\pm$  5 PSIG (14.5  $\pm$  .34 bar) @ 60 Hz  
210  $\pm$  5 PSIG (14.5  $\pm$  .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

Dew point

35°F (2°C)

Flow rate

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

Water cooled

70 dBA @ 1 meter

Air cooled

74 dBA @ 1 meter

#### Minimum footprint requirement

Water cooled helium compressor

4.5 x 3.5 ft (1.4 m x 1.1 m)

Air cooled helium compressor

6 x 6 ft (1.8 m x 1.8 m)

#### Shipping weight and dimensions

The standard LNP is packaged in one wooden crate

Crate 1(Cold Head, Dewar and Helium Compressor):

Water Cooled- Weight

831 lb (377 kg)

Air Cooled- Weight

972 lb (441 kg)

Dimensions (L x W x H)

62 x 38 x 70 in (157 x 97 x 178 cm)

Crate 2(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