

# CRYOMECH

## Liquid Nitrogen Plant Specification Sheet

### LNP60

Liquid nitrogen production rate\*  $\geq 60$  liter/day (2.5 liter/hour); 15.9 gal/day (0.66 gal/hour)  
\*reduced production rate on 50Hz

#### Dewar assembly

Capacity 210 liters (56 gal)  
Weight:  
Empty 340 lb (154 kg)  
Full 714 lb (324 kg)  
Dimensions (OD x H) 30 x 51 in (76 x 130 cm)

Cold head model AL300, mounted on dewar

Helium compressor model CP2870, available as air or water cooled

#### Water cooled:

Weight 247 lb (112 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 7.5 kW // 7.0 kW  
Cooling water flow rate Minimum flow 2.3 GPM (9 LPM) @ 80°F (27°C) maximum temperature

#### Air cooled:

Weight 388 lb (176 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 8.1 kW // 7.6 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 68 lb (31 kg)  
Dimensions (L x W x H) 42 x 7 x 29 in (107 x 18 x 74 cm)  
Nitrogen Gas Flow Rate 1.14 SCFM at 7 PSIG (32.3 LPM at 0.5 bar)

#### System parameters

Helium pressure 210  $\pm$  5 PSIG (14.5  $\pm$  .34 bar) @ 60 Hz  
230  $\pm$  5 PSIG (15.9  $\pm$  .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

7.9 ACFM at 85 PSIG (224 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

6.5 x 6 ft (2 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

468 lb (212 kg)

Dimensions (L x W x H)

45 x 45 x 64 in (114 x 114 x 163 cm)

Crate 2(Helium Compressor):

Water Cooled- Weight

520 lb (235 kg)

Air cooled- Weight

660 lb (299 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

900 lb (408 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

17.4 ACFM at 175 PSIG (493 ALPM at 12.1 bar) FAD

Weight

575 lb (261 kg)

Dimensions (L x W x H)

54 x 30 x 52 in (137 x 76 x 132 cm)

Duty cycle

1/3

Horsepower

5

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