

# 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

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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