

# CRYOMECH

## Liquid Nitrogen Plant Specification Sheet

### LNP10

Liquid nitrogen production rate\*  $\geq 10$  liter/day (0.4 liter/hour); 2.6 gal/day (0.11 gal/hour)  
\*reduced production rate on 50Hz

#### Dewar assembly

Capacity 35 liters (9 gal)  
Weight:  
Empty 105 lb (48 kg)  
Full 167 lb (76 kg)  
Dimensions (OD x H) 18.25 x 32 in (46 x 81 cm)

#### Cold head model

AL60, mounted on Dewar

#### Helium compressor model

CP820, available as air or water cooled

#### Air cooled:

Weight 144 lb (65 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 2.2 kW // 1.9 kW

#### Water cooled:

Weight 135 lb (61 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 2.0 kW // 1.7 kW  
Cooling water flow rate Minimum flow 0.75 GPM (2.8 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 59 lb (27 kg)  
Dimensions (L x W x H) 42 x 7 x 29 in (107 x 18 x 74 cm)  
Nitrogen Gas Flow Rate 0.19 SCFM at 7 PSIG (5.4 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

1.7 ACFM at 85 PSIG (48 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 x 2.5 ft (2.1 m x 0.8 m)  
Water cooled helium compressor 4.5 x 3 ft (1.4 m x 0.9 m)

#### Shipping weight and dimensions

Crate 1(Cold head, Dewar, CP820):

Weight 460 lb (208.7 kg)  
Dimensions (L x W x H) 48 x 40 x 59 in (122 x 102 x 150 cm)

Crate 2(Optional Air Compressor):

Weight 415 lb (188.2 kg)  
Dimensions (L x W x H) 47 x 27 x 54 in (119 x 69 x 137 cm)

#### **Optional Equipment**

##### Air compressor

Flow rate 4.8 ACFM at 100 PSIG (136 ALPM at 6.9 bar) FAD  
Weight 249 lb (113 kg)  
Dimensions (L x W x H) 43 x 22 x 39 in (109 x 56 x 99 cm)  
Duty cycle 1/3  
Horsepower 2  
Electrical rating 208/230VAC, 1Ph, 60Hz; 200VAC, 1Ph, 50Hz  
Sound level 72 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