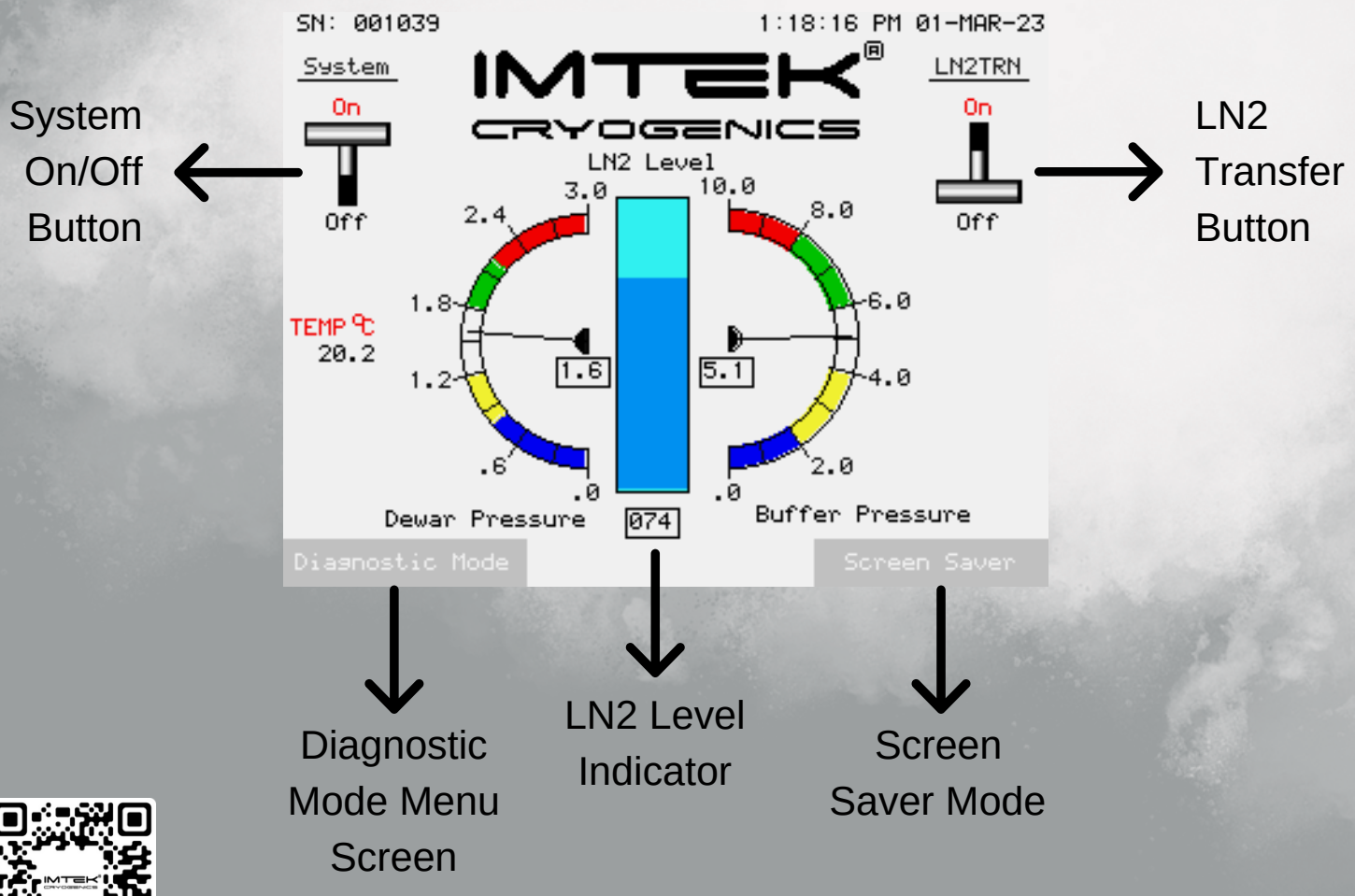
NEW GENERATION CRYOGENIC NITROGEN PLANTS

Your nitrogen, our priority.

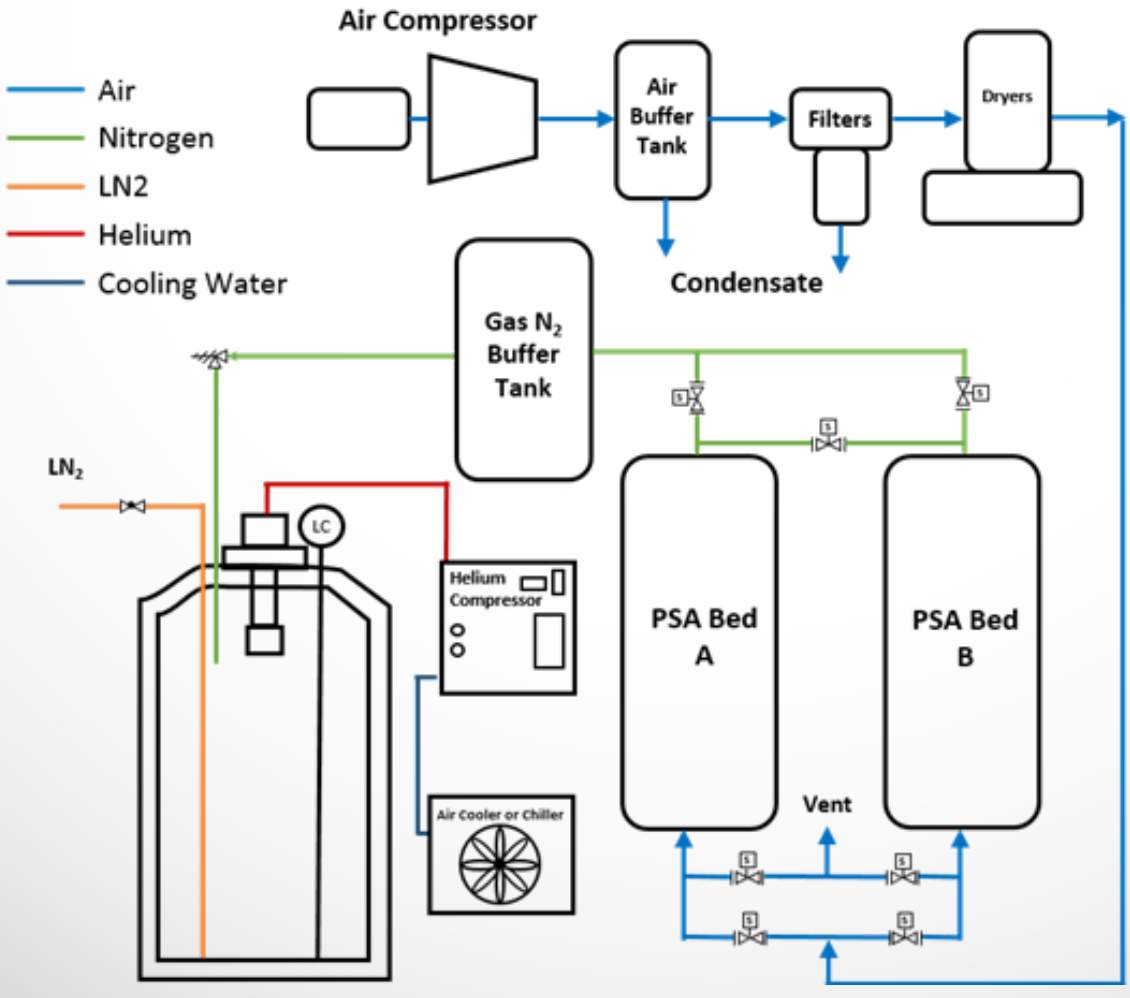
The CNP20 is a state-of-the-art liquid nitrogen plant with a production capacity of 20 liters per day. In addition, the CNP20 also features a laboratory station version, which is ideal for applications requiring smaller volumes of liquid nitrogen. Both models are designed as a plug-and-liquefy system. With a user-friendly interface and one-button operation, the CNP series liquefiers can be easily integrated into any environment. Simply make the necessary electrical connections and enjoy fully automated operation, facilitated by the PLC controller. The operator is only required to replace filters and perform routine checks at maintenance intervals of 6,500 operating hours.

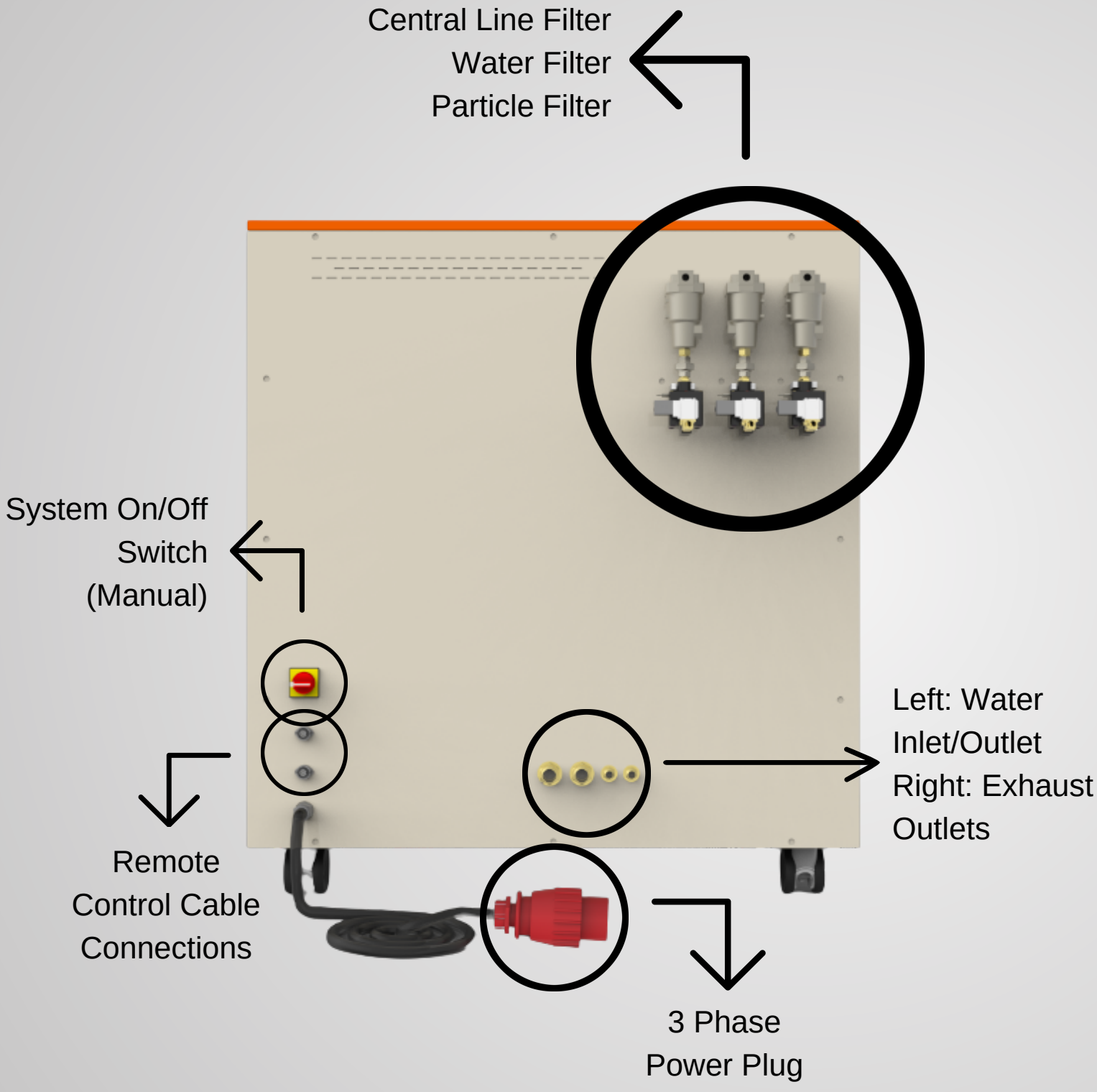
The production of liquid nitrogen is achieved through liquefaction from air, which is then stored in an internal Dewar with capacity of your choice. The availability of liquid nitrogen is ensured at all times, allowing for convenient filling of the dispensing thermos or transfer to external Dewars via a flexible hose with a simple activation. The transfer of liquid nitrogen is independent of the system's operating mode, and the programmable logic controller (PLC) automatically initiates production when the Dewar level drops to 70%. The plant will stop production when the Dewar is full, entering standby mode until liquid nitrogen is transferred.



Atmospheric air is compressed to high pressure by an oil-free built-in compressor and subsequently directed to a Buffer Tank. The high-pressure air within the Buffer Tank is then directed to a filter group located behind the unit in order to remove water droplets and particles from the air. Subsequently, an internal air dryer eliminates any remaining moisture within the gas phase. The resulting treated dry and clean air, with a dew point of up to -40°C, is then directed to one of the adsorber beds located within the Pressure Swing Adsorption (PSA) module.

PSA technology can effectively deliver nitrogen at the requisite purity level for liquefaction. The carbon molecular sieve located within the PSA beds selectively adsorbs oxygen and carbon dioxide molecules until the bed becomes saturated. Once saturation occurs, the feed flow process valves are switched to the second adsorption bed while the first adsorption bed is rapidly depressurized and purged to remove adsorbed oxygen. By continuing to switch between the two beds, a constant flow of pure nitrogen gas is generated. The purified nitrogen is then directed through a nitrogen buffer tank and ultimately into a cryogenic storage tank where it is stored alongside the cryocooler and other associated instrumentation.




Central Line Filter
Water Filter
Particle Filter
System On/Off
Switch
(Manual)
Left: Water
Inlet/Outlet
Right: Exhaust
Outlets
Remote
Control Cable
Connections
3 Phase
Power Plug

MODEL	CNLab20	CNP20
Production Rate	≥ 20 liter/day (≥28 Lt/day @ 23 °C)	
Electrical Options	342-418 VAC, 50 Hz, 3PH 360-440 VAC, 50 Hz, 3 PH 374-456 VAC, 50 Hz, 3 PH 414-528 VAC, 60 Hz, 3 PH	
Power Consumption (Steady State)	3.5kW @ 50Hz 3.9kW @ 60Hz	
Dimensions (W x L x H)	765 mm x 1170 mm x 1380 mm	
Weight	400kg	
Suggested Installation Area	3m (W) x 3m (L) x 3m (H)	
Built-in Air Compressor	Built-In Oil-Free Compressor, ≥ 2 m^3 / hour @7 bar (102 psig)	
Cryocooler	GM Type Cryocooler Mounted on Dewar	
Compressor	He, 99.995% purity @ 19-19.3bar (275-280 psig), Air Cooled	
Built-In Nitrogen Generator		
Purity	≥ 99%	
Dew Point	up to -40°C	
Flow Rate	≥ 1 m^3 / hour	
PLC Interface	6” Color Graphic Touch Screen	
Dewar Volume	60 Liters (120 Liters + Option)	
Operating Pressure	1.5 bar	
Dewar Level Control	Capacitive Level Sensor	
Ambient Temperature Range	+4°C to +40°C	
Maximum Altitude	3000 meters	
Noise Level	< 65 dB @ 1 meter	
Conformities	CE Conformance, ISO 12100:2010, IEC 60204-1, 2006/42/EC, 97/23/EC; ISO9001:2015	