

KIC

Excellence in Cryogenics

NL-84 LN₂ GENERATOR and AUTOMATIC DELIVERY SYSTEM

**SAFE
RELIABLE
EFFICIENT
FAST DELIVERY
FULLY AUTOMATIC
WORLD-WIDE SUPPORT
READY TO OPERATE**

**STANDARD MODEL
15-20 Liters Per Day**

**ENHANCED MODEL
40-50 Liters Per Day**

**Several Tank Capacity
And Options**



APPLICATIONS:

Research Centers * Industrial Testing
University Laboratories * Forensic Archives
Food Processing * Biological Storage

DESCRIPTION:

Facility GN₂ enters the M50 where it is liquefied producing over 100-350 liters per week and stored in the internal 40 liter storage. Liquid levels for the internal and satellite dewars are monitored and automatically controlled using the Touch Screen controls. Liquefier takes minutes to install and will produce LN₂ within a few hours.

FEATURES:

PLC and Touch Screen Controls
Zero Installation Effort
Auto-Delivery for Tool Dewars
Built-In Diagnostics and Safety
Many Optional Configurations

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NL84 DETAILED PRODUCT SPECIFICATIONS

NL84-F Enhanced Production	40-50 lpd 200 or 400 VAC, 50-60Hz, 3-phase (1)
NL84-H Standard Model	15-20 lpd 200-240 VAC, 50-60Hz, 1-phase (1)
Arrangement	A single integrated assembly is available with several options as described within this brochure. The standard offering is water cooled with a 40 liter dewar.
Automatic Controls	<p>PLC and Touch Screen Controls provide fully automatic operation</p> <p>AUTO-START feature for when power returns</p> <p>Digital display of internal and external tank and ALARMS</p> <p>Electronic level gauge for automatic cycling operation</p> <p>Dewar set points (start-stop) can be controlled by customer</p> <p>Password protected functions for user to control access</p> <p>Touch screen push button of LN₂ delivery valve</p> <p>Automatic control and display of dewar pressure settings</p> <p>Purity venting for clean start-up of GN₂</p> <p>Calendar and daily operation timing for ON-OFF operation</p> <p>Self diagnostics on every start-up</p> <p>EMO Button for safety</p> <p>Built-in AUTO- DELIVERY of LN₂ for external Dewar</p> <p>iPad or Remote PC monitoring and operation are optional</p>
Warranty	A three-year warranty on all electronic and electrical components. Lifetime support on software and instrument calibrations.
Standards	This is a CE marked product that meets Health and Safety Standards set forth in the Machinery Directive on machinery safety, 98/37/EC and the International Standards: BS EN ISO 12100-1:2003, BS EN ISO 12100-2:2003, BS EN 294:1992, BS EN 349:1998, BS EN ISO 13850:2006, BS EN 60204-1:1998, BS EN 1050:1997. SEMI S2 Compliance and Certification are Pending (FY2015-3Q)
Shipping	All equipment is cleaned, bagged, and packed in reusable heat-treated wooden crates having an international crate shippers compliance standard. This allows for OEM to receive, integrate the NL84, then re-ship to the final destination.
Performance and Quality	Every NL84 is tested at KIC and must pass all Q/C inspections and performance testing prior to being released for delivery. Customers are invited to witness final inspection during the week-long performance and functionality testing procedure.
Long Life and Reliability	Cold head is maintained every 13,000 hours. Helium compressor interval is 30,000 hours. Service and parts are available world-wide.

OPTIONS	STANDARD (15-20 LPD) WATER COOLED		ENHANCED (40-50 LPD) WATER COOLED	
40 LITER DEWAR	STANDARD		STANDARD	
60 LITER DEWAR	OPTION	60L	OPTION	60L
75 LITER DEWAR	OPTION	75L	OPTION	75L
120 LITER DEWAR	OPTION	120L	OPTION	120L
V.J TRANSFER LINE (1) (2)	OPTION	VJL-3M	OPTION	VJL-3M
AIR COOLING CONVERSION	OPTION	ZEPH	2015-3Q	
220V, 1-PHASE, 50-60 Hz	STANDARD		NO	
220V, 3-PHASE, 50-60 Hz	OPTION	HC8E4	OPTION	F70L
400V, 3-PHASE, 50 Hz (3)	NO		STANDARD	
460V, 3-PHASE, 60 Hz (3)	NO		STANDARD	
REMOTE OPERATION BY PC	OPTION	CMOR	OPTION	CMOR
IP-56 OUTDOOR COVER	OPTION	IP56	OPTION	IP56
AUTO-FILL DELIVERY (4)	STANDARD		STANDARD	
SET OF FOUR CASTERS	OPTION	4CAST	OPTION	4CAST
EXTERNAL 4 KW CHILLER	OPTION	4KWC	NO	
EXTERNAL 8 KW CHILLER	NO		OPTION	8KWC
GN2 OF 99.0% PURITY	NO		STANDARD	
GN2 OF 99.9% PURITY	STANDARD		NO	
GN2 TAP WITH REGULATOR	OPTION	N2TAP	OPTION	N2TAP
AIR TAP WITH REGULATOR	OPTION	AIRTAP	OPTION	AIRTAP
HIGH ALTITUDE OPERATION (5)	STANDARD		OPTION	5HPAC

- (1) REQUIRES ORDERING THE 60 OR 120 LITER DEWAR WITH THIS OPTION
(2) UP TO TWO OF THE 3-METER TRANSFER LINE CAN BE FITTED
(3) CONSULT WITH KIC AS ADDITIONAL TRANSFORMERS MAY BE REQUIRED
(4) REQUIRES ORDERING AN ADDITIONAL SENSOR AND CABLE
(5) FOR >2500-M ASL APPLICATIONS OR FOR ADDITIONAL AIR PRODUCTION

DESCRIPTION OF AVAILABLE OPTIONS

60L	The standard 40 liter dewar can be replaced by a larger 60 liter type which allows for the Vacuum Jacketed line option. The liquefier will be 50 mm wider and longer in order to accept this option.
75L	A taller version of the 40 liter tank allows for more LN2 storage. Similar to the 40 liter standard model, transfer VJ lines are not possible with this option.
120L	A taller version of the 60L holding 120 liters is available with the same benefits.
VJL-3M	An optional ultra-flexible all Stainless Steel transfer line with a permanent vacuum insulation is available having a length of 3 meters and terminated with a manual unjacketed cryogenic valve. This is the preferred method to feed LN2 to bio storage units. Up to two lines can be installed in each liquefier. The standard electric valve remains so that customer has the ability to AUTO-FILL a third device. The 60 or 120 liter dewars must be ordered for this option.
ZEPH	The Standard model can be configured with air cooling instead of the standard offering of water cooling. This will allow the NL84 to operate in an environment
HC8E4	Three-phase models are available for higher power efficiencies
F70L	Higher Current at lower voltages are possible with this option.
CMOR	Using a customer supplied IP Address, the liquefier (and the customers satellite tank) can be remotely monitored and operated from any PC with access. An iPad can also be used for this function, and can be ordered separately.
IP56	An enclosure with an IP-56 Ingress rating is available where equipment is outdoors. There are temperature limitations that apply. Consult with KIC before selecting this option. Add 200 mm to all dimensions for this option.
4CAST	The NL84 is designed to be moved by pallet jacks and forklifts as a permanent installation is usually desired. With the optional caster set (4) the liquefier can be moved by hand. The casters add 300 mm to the height and arrive loose.
4KWC	A separate chiller is available to remove heat from the water cooled Standard Model where 4kW of heat is removed. It is recommended that chiller be installed outdoors.
8KWC	A separate chiller is available to remove heat from the water cooled Enhanced Model where 8kW of heat is removed. It is recommended that chiller be installed outdoors.
N2TAP	A separate regulator provides 2-4 bar GN2 for a separate application.
AIRTAP	A separate regulator provides 6-8 bar Compressed Air.
5HPAC	A higher capacity 5HP scroll air compressor can be provided for when the Enhanced model is operating above 2500 meters above sea level.

