

NWLN4080-10

4 to 8GHz

Wideband Cryogenic LNA



NANOWAVE
Technologies Inc.

Industrial Products

Data Sheet

Revision 2.1

GENERAL DESCRIPTION

The NWLN4080-10 is a multi-stage C-band LNA with operational frequency range from 4000MHz to 8000MHz. The LNA is packaged in a module using SMA connectors and a 15-pin Micro-D connector. The lightweight gold plated aluminum module measures only 39x34x13.5mm. The power dissipation of the amplifier is below 15mW. Its gain exceeds 30dB in the operational range. The equivalent noise temperature of the amplifier is below 5K. The amplifier is applicable for any type of cryogenic microwave measurements.



Fig 1: Cryogenic LNA Drop-In Module

FEATURES

- Ultra-Low Noise Temperature: 5K @ 12K BPT
- Low Noise Figure: 1.1dB @ +25°C
- Frequency: 4000–8000 MHz
- Unconditionally Stable Over Temperature
- Small Signal Gain: 35±2 dB @ 12K

APPLICATIONS

- Any type of cryogenic microwave measurements
- Radio Astronomy

TYPICAL PERFORMANCE

Characteristic	Temperature	Unit	4 GHz	5 GHz	6 GHz	7 GHz	8GHz
Noise Figure	+25°C	dB	1.4	1.1	1	1	1.2
Small Signal Gain	+25°C	dB	26.2	27	27.8	27.3	27.4
Noise Temperature	+12K	K	4.7	3.6	3.4	4.2	5
Small Signal Gain	+12K	dB	35.8	36.3	36.1	34	33.6

Notes: Vd=0.8V, Id=18 mA

ELECTRICAL CHARACTERISTICS

Characteristic	Temperature	Unit	Min	Typ	Max
Input S ₁₁	+25°C	dB		-8	-6
Output S ₂₂	+25°C	dB		-12	-10
Supply Current	+25°C	mA		18	
Supply Voltage	+25°C	V		0.8	



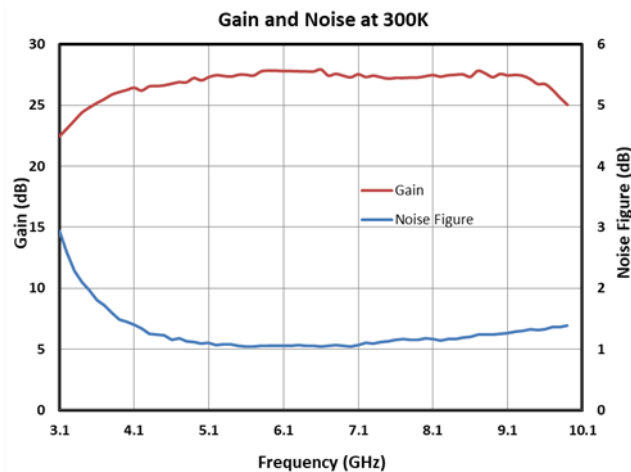
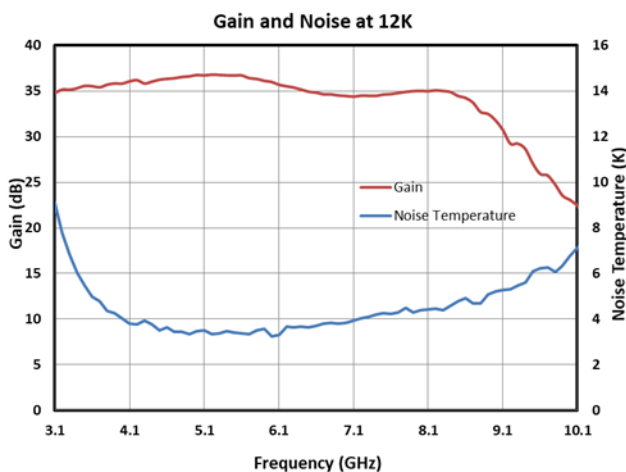
MECHANICAL AND ENVIRONMENTAL PARAMETERS

Parameter	Unit	Min	Typ	Max	Remarks
Operating Temperature Range	K		+12		
Storage Temperature Range	°C	-55.0	+25	+85	
RF Connectors			SMA		-40C to +85C
DC Connector			Micro D-15		After 30 days of operation
Size (length, width, height)	mm		39, 34, 13.5	1.5	After 30 days of operation
Weight	g		100	15	DC rails: -2.0, 1.5V, 2.5V, 4.0V and 15V: Can be rationalized to single 15V on request.

Notes:

Specifications subject to change without notice.

MEASURED DATA



ADDITIONAL FEATURES

- Marking: the unit is marked with manufacturer part no., date code, and Serial Number.
- All plating and painting is RoHS compliant

For further information please contact NANOWAVE Technologies Inc. at sales@nanowavetech.com, or call at (+1) 416-252-5602.