NWLN4080-10

4 TO 8 GHz WIDEBAND CRYOGENIC LNA

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 39×34×13.5mm. 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.

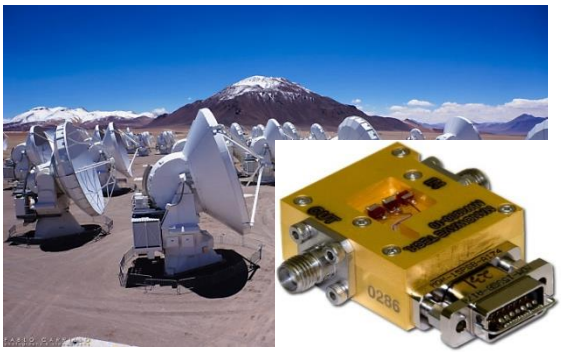

Figure 1: Cryogenic LNA Drop-In Module

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 telescope

Typical Performance (1)

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: (1) Vd=0.8V, Id=18 mA

Electrical Characteristics

Characteristic	Temperature	Unit	Min	Typ	Max
Input $\|S_{11}\|$	+25°C	dB		-8	-6

Please contact Nanowave for Cryogenic LNA solutions in other frequency bands

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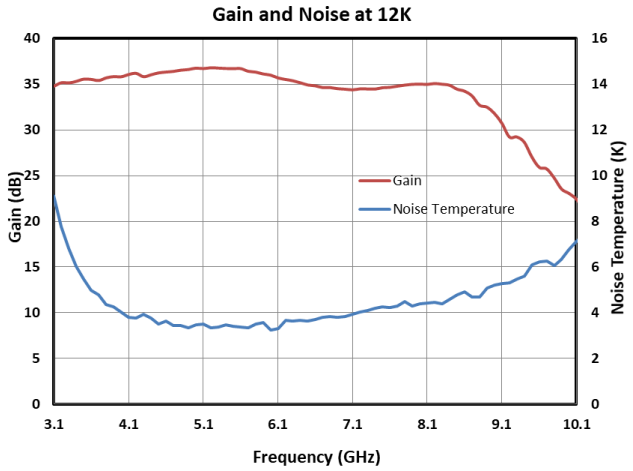
Output $\|S_{22}\|$	+25°C	dB		-12	-10
Supply Current	+25°C	mA		18	
Supply Voltage	+25°C	V		0.8	

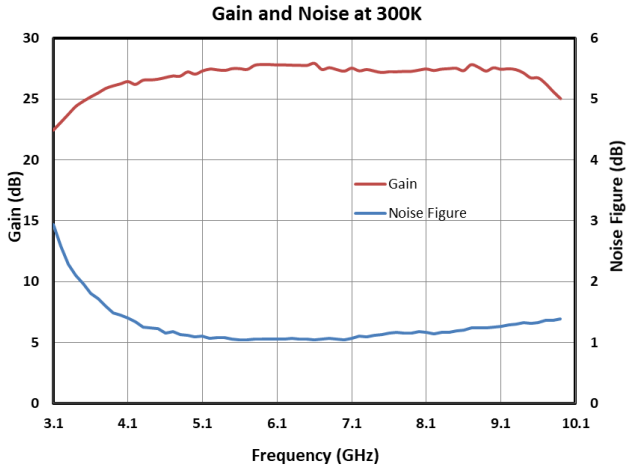
Mechanical and Environmental Parameters

Parameter	Unit	Min	Typ	Max	Remarks
Operating Temperature Range	K		+12		
Storage Temperature Range	°C	-55.0	+25	+85	
RF Connectors			SMA		
DC Connector			Micro D-15		
Size (length, width, height)	mm		39, 34, 13.5		
Weight	g		100		

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.

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