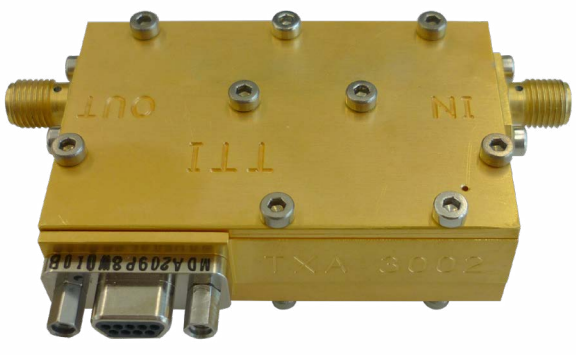
CELESTIA | TTi

X band Cryo LNA
8-9 GHz
4 K

X BAND CRYO-LNA RANGE FOR RADIOASTRONOMY & QUANTUM COMPUTING

Using **cutting-edge technology**, the new cryo-LNA family offers outstanding performance in cryogenic operations



INNOVATIVE TECHNOLOGY

A combination of Indium Phosphide (InP) and Gallium Arsenide (GaAs) technologies to deliver outstanding low Noise Temperature (NT).

Each unit is fully tested in cryogenic operating temperatures and delivered with a complete factory acceptance test report at 295 K and 12 K.

KEY FEATURES

- InP/GaAs technology
- Extremely low temperatures operation (4 to 15 K)
- Superior performance
- High reliability & efficiency
- Ultra-low noise figure
- High gain & low ripple
- Compact size & lightweight

TECHNICAL SPECIFICATIONS

ELECTRICAL

Operating frequency range	8-9 GHz
Noise temperature	<4 K at 12 K
Input return loss (50 Ω)	<-10 dB
Output return loss (50 Ω)	<-10 dB
Gain	38 to 40 dB
Gain flatness	1.5 dB pp max
Output P1dB	From -20 dBm to +5 dBm (typ)
Output IP3	>10 dBm
Reverse isolation	<-45 dB

POWER SUPPLY

Drain voltage range	0 V to 3.5 V
Drain current range	≤30 mA
Gate voltage range	-3 to +3 V
Power consumption	≤65 mW @P1dB 5 dBm (lower for less P1dB)
Power biasing	6 wires

INTERFACES & PHYSICAL

Dimensions (L x W x H)	50.6 x 32 x 10.5 mm
Weight	44 gr
Interfaces	RF input: SMA (f) / SMA (m)
	RF output: SMA (f) / SMA (m)
	DC: Nano D 9-P / Micro D 9-P

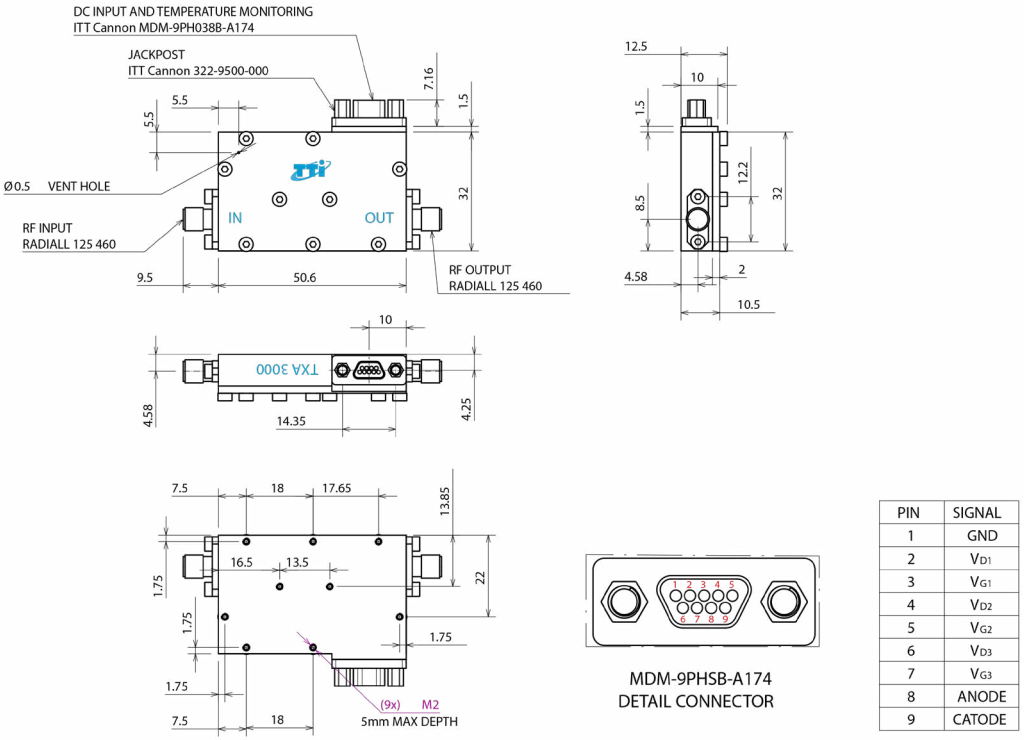
ENVIRONMENTAL

Operating temperature	2 K to 15 K

OPTIONS

* Micro or Nano DC connector
* Servo-controlled power supply unit

OUTLINE DRAWING

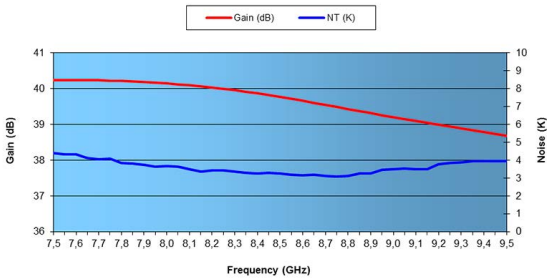


MDM-9PHSB-A174
DETAIL CONNECTOR

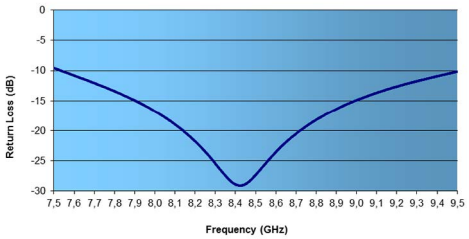
PIN	SIGNAL
1	GND
2	V_{D1}
3	V_{G1}
4	V_{D2}
5	V_{G2}
6	V_{D3}
7	V_{G3}
8	ANODE
9	CATODE

TYPICAL MEASURED DATA

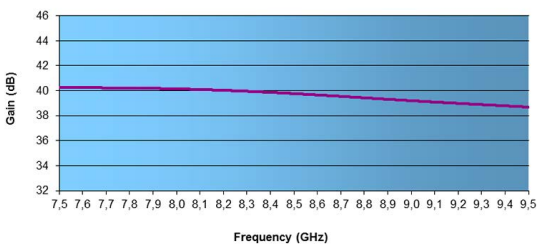
Gain & Noise variation at 12 K



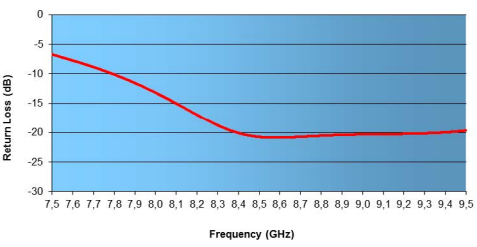
Input return losses at 12 K



Gain variation at 12 K



Output return losses at 12 K



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