

## Cryogenic Primary Noise Standard 18-500 GHz

VivaTech THz's Cryogenic Noise Standard is a noise source with primary reference performance. Providing precision calibration of low noise components such as amplifiers, diode noise sources or receiver systems, it offers the ultimate in performance. The unique design covers 18 to 500 GHz in standard waveguide bands, incorporating replaceable waveguide assemblies. The standard is particularly suited to mm and sub-mm wave [THz] low noise measurement applications.

### General Features

- Side entry design with convenient connections to waveguide systems
- Vertical or horizontal waveguide orientation – no mismatched bends or twists required
- Low maintenance, compact temperature stabilization system – no water cooling
- Interchangeable waveguide feed-horn assemblies provide mm to sub-mm wave [THz] coverage
- Automatic or manual LN2 filling-auto fill minimizes LN2 use and allows continuous operation
- Fully automated operation with integrated PC
- Real time noise temperature display at any frequency with full data logging

### Specifications

Cryostat Model	Frequency (GHz)	Feed-horn Assembly	Effective Noise Temperature (K) <sup>-1</sup>	Accuracy, deg K	Waveguide
THZPN-18-110	50 – 75	THZA-15-NS	76.67	-0.54 / +0.55	WR 15, UG 385/U
<b>THZPN-18-110</b>	<b>75 – 110</b>	<b>THZA-10-NS</b>	<b>76.02</b>	<b>-0.59 / +0.50</b>	<b>WR 10, UG 387/U-M</b>
THZPN-110-500-FS	90 – 140	THZA-8-NS	76.00	-0.54 / +0.54	WR 08, UG 387/U-M
THZPN-110-500-FS	110 – 170	THZA-6-NS	75.01	-0.59 / +0.60	WR 06, UG 387/U-M
THZPN-110-500-FS	140 – 220	THZA-5-NS	74.56	-0.59 / +0.60	WR 05, UG 387/U-M
THZPN-110-500-FS	220 – 275	THZA-3.4FA-NS	74.20	-1.16 / +1.20	WR 3.4, UG 387/U-M
THZPN-110-500-FS	275 – 325	THZA-3.4FB-NS	73.08	-1.16 / +1.20	WR 3.4, UG 387/U-M
THZPN-110-500-FS	325 – 400	THZA-2.2FA-NS	72.27	-1.46 / +1.55	WR 2.2, UG 387/U-M
THZPN-110-500-FS	400 – 500	THZA-2.2FB-NS	70.44	-1.46 / +1.54	WR 2.2, UG 387/U-M

### Notes

1. Average mid band noise temperature
2. Auto fill option adds a 35 litre LN2 dewar and an automatic LN2 dispenser
3. **How to make a request:** Indicate the cryostat and feed-horn assembly (s) required; Specify manual or automatic liquid nitrogen filling.
4. Email to: [sales@vivatechthz.com](mailto:sales@vivatechthz.com)

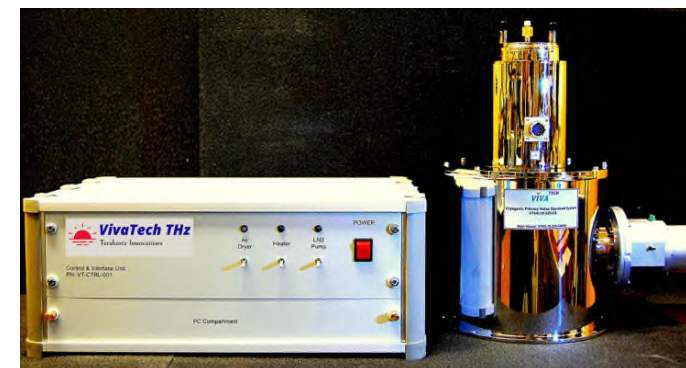


Fig 1 Noise Standard Cryostat with Controller

Fig 2 Output Temperature Display

