

NC5000 Series

18 GHz to 110 GHz



Precision Calibrated Millimeter-Wave Wave Guide AWGN Noise Sources

The NC5000 Series AWGN noise sources feature outstanding stability, switching speed, and ripple-free response over standard waveguide bands. The high stability of the NC5000 Series allows these units to be used in place of cumbersome gas tube noise sources.

Ripple in the output of noise sources has a direct effect on measurement accuracy, so Noisecom has tailored the response of the NC5000 Series so that ripple is minimized throughout the specified frequency range.

The NC5000 Series is available with noise output of 15.5 dB for instrumentation (noise figure meter) applications, as well as in narrow and full waveguide bands with 15 to 25 dB ENR output. The standard input bias connector is BNC female; others are available.

Applications

- Noise figure measurement
- Radiometers
- 802.11ad, 60GHz Wi-Fi
- Small Cell Wireless Backhaul
- Built-in test equipment (BITE)
- Military applications
- 60 GHz WiGig
- Wireless HD
- Automotive Radar

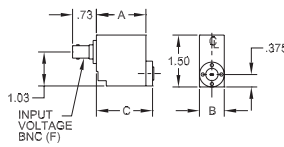
Specifications

Noise output rise and fall times	Less than 1 μ s
Noise output variation with temperature	Less than 0.01 dB/ $^{\circ}$ C
Noise output variation with voltage	Less than 0.1 dB/1 % Δ V
Operating temperature	0 to +85 $^{\circ}$ C
Input power	+28 VDC at 30 mA max

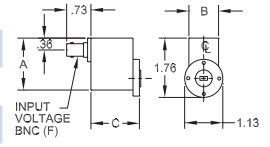
Options

NC5opt01	+15 VDC
NC5opt02	TNC bias connector
NC5opt03	Right-angle BNC bias connector
NC5opt04	+28 VDC with regulation Stabilized noise output for \pm 2V variation
NC5opt05	Output isolator
NC5opt08	SMA bias connector

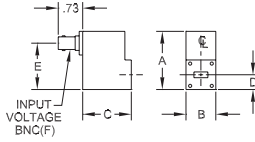
Waveguide	DIM A (in.)	DIM B (in.)	DIM C (in.)
WR15	1.78	0.76	1.96
WR10	1.50	0.76	1.70



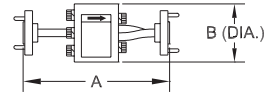
Waveguide	DIM A (in.)	DIM B (in.)	DIM C (in.)
WR22	1.51	0.75	1.31
WR19	1.51	0.75	1.31



Waveguide	DIM A (in.)	DIM B (in.)	DIM C (in.)	DIM D (in.)	DIM E (in.)
WR42	1.72	0.88	1.44	0.44	1.38
WR28	1.55	0.75	1.30	0.38	1.20



	WR42	WR28	WR22
DIM A (in.)	4.34	3.28	2.69
DIM B (in.)	1.45	1.32	1.73
	WR19	WR15	WR10
DIM A (in.)	2.63	2.56	2.46
DIM B (in.)	1.32	0.99	0.99



Noise Figure Meter Compatible - Full Calibration Band (1 pt / GHz)

Model	Frequency Range (GHz)	Noise Output ENR (dB)	Noise Output Flatness (dB)	Typical VSWR	Mating Flange	Calibration Frequencies	Waveguide	I (max) (mA)
NC5142	18 - 26.5	15.5	±0.75	1.3:1*	UG595/U	1 GHz steps	WR42	30
NC5128	26.5 - 40	15.5	±0.75	1.3:1*	UG599/U	1 GHz steps	WR28	30
NC5122	33 - 50	15.5	±1.0	1.3:1*	UG383/U	1 GHz steps	WR22	30
NC5115	50 - 75	15.5	±2.5	1.6:1*	UG385/U	1 GHz steps	WR15	30
NC5112	60 - 90	15	±3	1.6:1*	UG387/U	1 GHz steps	WR12	30
NC5110	75 - 105	15	±5.5	1.6:1*	UG387/U	1 GHz steps	WR10	30

* Maximum VSWR with isolator - Option 5

High Noise Output - Full Calibration Band (1 pt / GHz)

Model	Frequency Range (GHz)	Noise Output ENR (dB)	Noise Output Flatness (dB)	Typical VSWR	Mating Flange	Calibration Frequencies	Waveguide	I (max) (mA)
NC5242	18 - 26.5	25.0	±1.0	1.3:1*	UG595/U	1 GHz steps	WR42	30
NC5228	26.5 - 40	23.0	±2.0	1.3:1*	UG599/U	1 GHz steps	WR28	30
NC5222	33 - 50	21.0	±2.0	1.3:1*	UG383/U	1 GHz steps	WR22	30
NC5215	50 - 75	17.0	±2.5	1.6:1*	UG385/U	1 GHz steps	WR15	30

* Maximum VSWR with isolator - Option 5

High Noise Output - User Selected 1 GHz Calibration Band (3 pts)

Model	Frequency Range (GHz)	Noise Output ENR (dB)	Noise Output Flatness (dB)	Typical VSWR	Mating Flange	Calibration Frequencies	Waveguide	I (max) (mA)
NC5342	18 - 26.5**	25.0	±0.5	1.3:1*	UG595/U	Minimum Center And Maximum	WR42	30
NC5328	26.4 - 40**	23.0	±0.5	1.3:1*	UG599/U		WR28	30
NC5322	33 - 50**	21.0	±0.5	1.3:1*	UG383/U		WR22	30

* Maximum VSWR with isolator - Option 5

** Bandwidths of 1 GHz may be specified anywhere in the band. Other bandwidths may be specified. However, wider bandwidths may result in a different flatness specification.

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