

# Overview of the R&S® NRP power sensors

Sensor type R&S®	Frequency range	Power range, max. average power / peak envelope power	Connector type
<b>Three-path diode power sensors</b>			
NRP8S(N)	10 MHz to 8 GHz	100 pW to 200 mW (–70 dBm to +23 dBm) max. 1 W (AVG) / 2 W (PK, 10 µs)	N (m)
NRP18S(N)	10 MHz to 18 GHz	100 pW to 200 mW (–70 dBm to +23 dBm) max. 1 W (AVG) / 2 W (PK, 10 µs)	N (m)
NRP33S(N)/ NRP33SN-V	10 MHz to 33 GHz	100 pW to 200 mW (–70 dBm to +23 dBm) max. 1 W (AVG) / 2 W (PK, 10 µs)	3.50 mm (m)
NRP40S(N)	50 MHz to 40 GHz	100 pW to 100 mW (–70 dBm to +20 dBm) max. 200 mW (AVG) / 1 W (PK, 10 µs)	2.92 mm (m)
NRP50S(N)	50 MHz to 50 GHz	100 pW to 100 mW (–70 dBm to +20 dBm) max. 200 mW (AVG) / 1 W (PK, 10 µs)	2.40 mm (m)
NRP67S(N) NRP67SN-V	50 MHz to 67 GHz	100 pW to 100 mW (–70 dBm to +20 dBm) max. 200 mW (AVG) / 1 W (PK, 10 µs)	1.85 mm (m)
NRP90S(N)	50 MHz to 90 GHz	100 pW to 100 mW (–70 dBm to +20 dBm) max. 200 mW (AVG) / 1 W (PK, 10 µs)	1.35 mm (m) / 1.00 mm (m)
<b>High-power three-path diode power sensors</b>			
NRP18S-10	10 MHz to 18 GHz	1 nW to 2 W (–60 dBm to +33 dBm) max. 3 W (AVG) / 20 W (PK, 10 µs)	N (m)
NRP18S-20	10 MHz to 18 GHz	10 nW to 15 W (–50 dBm to +42 dBm) max. 18 W (AVG) / 100 W (PK, 10 µs)	N (m)
NRP18S-25	10 MHz to 18 GHz	30 nW to 30 W (–45 dBm to +45 dBm) max. 36 W (AVG) / 300 W (PK, 10 µs)	N (m)
<b>Average power sensors</b>			
NRP6A(N)	8 kHz to 6 GHz	100 pW to 200 mW (–70 dBm to +23 dBm) max. 1 W (AVG) / 2 W (PK, 10 µs)	N (m)
NRP18A(N)	8 kHz to 18 GHz	100 pW to 200 mW (–70 dBm to +23 dBm) max. 1 W (AVG) / 2 W (PK, 10 µs)	N (m)
<b>Thermal power sensors</b>			
NRP18T(N)	DC to 18 GHz	300 nW to 100 mW (–35 dBm to +20 dBm) max. 300 mW (AVG) / 20 W (PK, 1 µs)	N (m)
NRP33T(N)	DC to 33 GHz	300 nW to 100 mW (–35 dBm to +20 dBm) max. 300 mW (AVG) / 10 W (PK, 1 µs)	3.50 mm (m)
NRP40T(N)	DC to 40 GHz	300 nW to 100 mW (–35 dBm to +20 dBm) max. 300 mW (AVG) / 10 W (PK, 1 µs)	2.92 mm (m)
NRP50T(N)	DC to 50 GHz	300 nW to 100 mW (–35 dBm to +20 dBm) max. 300 mW (AVG) / 10 W (PK, 1 µs)	2.40 mm (m)
NRP67T(N)	DC to 67 GHz	300 nW to 100 mW (–35 dBm to +20 dBm) max. 300 mW (AVG) / 10 W (PK, 1 µs)	1.85 mm (m)
NRP90T(N)	DC to 90 GHz	300 nW to 100 mW (–35 dBm to +20 dBm) max. 300 mW (AVG) / 10 W (PK, 1 µs)	1.35 mm (m)
NRP110T	DC to 110 GHz	300 nW to 100 mW (–35 dBm to +20 dBm) max. 300 mW (AVG) / 10 W (PK, 1 µs)	1.00 mm (m)
<b>Thermal waveguide power sensors</b>			
NRP75TWG(N)	50 GHz to 75 GHz	300 nW to 100 mW (–35 dBm to +20 dBm) max. 300 mW (AVG) / 10 W (PK, 1 µs)	WR15
NRP90TWG(N)	60 GHz to 90 GHz	300 nW to 100 mW (–35 dBm to +20 dBm) max. 300 mW (AVG) / 10 W (PK, 1 µs)	WR12
NRP110TWG(N)	75 GHz to 110 GHz	300 nW to 100 mW (–35 dBm to +20 dBm) max. 300 mW (AVG) / 10 W (PK, 1 µs)	WR10
NRP170TWG(N)	110 GHz to 170 GHz	300 nW to 100 mW (–35 dBm to +20 dBm) max. 300 mW (AVG) / 5 W (PK, 1 µs)	WR6.5