The Competitive Edge in Couplers

A Wide Range Of Couplers Monitor Forward And Reflected Power To 50 GHz.

Cover the RF spectrum from 10 kHz to 50 GHz with power handling capability from 50 to 15,000 watts continuous, 60,000 watts peak pulse power. This broad range gives you flexibility in coupling low-and high-power amps to power meters, spectrum analyzers, receivers, oscilloscopes, and other sensitive measuring instruments.

Dual directional design- two couplers in the same package—lets you monitor forward and reflected power. The directivity, flatness and coupling factors are excellent, allowing for accurate measurement of power..

Dual directional couplers are required for measurements per IEC 61000-4-3 and -6. Popular applications include power sampling, amplifier leveling, VSWR monitoring, field control and amplifier load protection.

All AR couplers are power- and frequency-matched to our amplifiers and antennas.

Different connector configurations are available for all models.

RF Couplers 9 kHz to 1 GHz.

	DC2035A	DC2500AM1	DC2600A	DC3001A	DC3002A	DC3010A	DC3400A	DC3401	DC3510A	DC4250*
Frequency Range	10 kHz–250 MHz	10 kHz–250 MHz	10 kHz–250 MHz	100 kHz–1000 MHz	100 kHz–1000 MHz	10 kHz–1000 MHz	10 kHz–400 MHz	10 kHz–400 MHz	9 kHz–1000 MHz	100 kHz–250 MHz
Power (max. watts)	3500 CW 7000 peak	1000 CW 2000 peak	600 CW, 1200 peak (10 kHz–100 MHz)	100 CW 1000 peak 300 CW, 600 peak (100–250 MHz)	120 CW 1200 peak	100 CW 200 peak	250 CW 400 peak	500 CW 1000 peak	200 CW 400 peak	15000 CW 50000 peak
Flatness (max.)	± 0.9 dB	± 0.9 dB	± 0.5 dB	± 0.6 dB	± 0.6 dB	± 0.6 dB	± 0.5 dB	± 0.6 dB	± 0.6 dB	± 0.9 dB
Coupling Factor (includes flatness)	50 ± 1 dB	50 ± 1 dB	50 ± 1 dB	40 ± 0.8 dB	40 ± 0.8 dB	40 ± 0.8 dB	40 ± 0.1dB	50 ± 0.8 dB	40 ± 0.8 dB	60 dB ± 1 dB
Directivity typical minimum	 5 dB 20 dB	 25 dB 20 dB (20 kHz–250 MHz) 18 dB (10 kHz–20 kHz)	 25 dB 18 dB	 25 dB 20 dB	 25 dB 20 dB	 25 dB 20 dB	 25 dB 20 dB	 25 dB 20 dB	 25 dB 20 dB (.01-1000 MHz) 15dB (.009-.01 MHz)	 25 dB 20 dB
Insertion Loss (max.)	0.30 dB	0.22 dB	0.25 dB	0.6 dB	0.65 dB	0.6 dB	0.5dB	0.5dB	0.5 dB	0.1 dB
Impedance (main line)	1.2:1 max. (50 ohms)	1.2:1 max. (50 ohms)	1.3:1 max. (50 ohms)	1.3:1 max. (50 ohms)	1.3:1 max. (50 ohms)	1.3:1 max. (50 ohms)	1.3:1 max. (50 ohms)	1.3:1 max. (50 ohms)	1.3:1 max. (50 ohms)	1.2:1 max. (50 ohms)
Connectors main line (J1/J2) coupled (J3/J4)	 7-16(M)/7-16(F) N(F)/N(F)	 N(M)/N(F) N(F)/N(F)	 N(M)/N(F) N(F)/N(F)	 N(M)/N(F) N(F)/N(F)	 N(M)/N(F) N(F)/N(F)	 N(M)/N(F) N(F)/N(F)	 N(M)/N(F) N(F)/N(F)	 N(F)/N(F) N(F)/N(F)	 N(M)/N(F) 1 5/8" EIA (m) N(F)/N(F)	 EIA fixed flanges 1 5/8" EIA (m) N(F)/N(F)
Weight (max.)	1.8 kg 4 lb	1.13 kg 2.5 lb	0.64 kg 1.4 lb	0.39 kg 0.86 lb	0.7 kg 1.5 lb	0.9 kg 2 lb	0.8 kg 1.8 lb	0.8 kg 1.8 lb	1.36 kg 3 lb	7 kg 15.5 lb
Size (approx.) W x H x D	25.4 x 8.9 x 11.7 cm (10 x 3.5 x 4.6 in.)	26.6 x 8.1 x 7.6 cm (10.1 x 3.2 x 3.0 in)	10.2 x 7.6 x 6.6 cm (4 x 3 x 2.6 in.)	12.7 x 5.1 x 3.8 cm (5 x 2 x 1.5 in.)	13.2 x 6.8 x 4.1 cm (5.2 x 2.7 x 1.6 in.)	12.7 x 5.1 x 3.8 cm (5 x 2 x 1.5 in.)	13.2 x 6.8 x 4.1 cm (5.2 x 2.7 x 1.6 in.)	13.2 x 6.8 x 4.1 cm (5.2 x 2.7 x 1.6 in.	4.3 x 5.8 x 4.3 cm (1.69 x 2.28 x 1.69 in.)	15.24 x 35.56 x 16.5 cm (6.5 x 6 x 14 in.)

	DC4255*	DC4256*	DC4260*	DC6080A	DC6180A	DC6280AM1	DC6380	DC6380M1	DC6380M2	DC6580AM1
Frequency Range	10 kHz–250 MHz	10 kHz–250 MHz	10 kHz–250 MHz	80–1000 MHz	80–1000 MHz	80–1000 MHz	80–1000 MHz	80–1000 MHz	80–1000 MHz	80–1000 MHz
Power (max. watts)	10,000 CW 35000 peak	13,000 CW 50000 peak	20,000 CW 60000 peak	500 CW 1000 peak	600 CW 1000 peak	1500 CW 3000 peak	3000 CW 6000 peak	4500 CW 9000 peak	7000 CW 10,000 peak	1500 CW 3000 peak
Flatness (max.)	± 0.9 dB	±1 dB	± 2 dB	± 0.5 dB	± 0.5 dB	± 0.5 dB	± 1.0 dB	± 1.0 dB	± 1.0 dB	± 0.5 dB
Coupling Factor (includes flatness)	60 dB ± 1 dB	60 dB ± 1 dB	60 dB ± 2 dB	40 dB ± 1 dB	60 ± 1 dB	63 ± 1 dB	65 ± 1.5 dB	68 ± 1.5 dB	70 ± 1.5 dB	50 ± 1 dB
Directivity typical minimum	 25 dB 20 dB	 25 dB 20 dB	 25 dB 20 dB	 25 dB 20 dB	 25 dB 20 dB	 25 dB 20 dB	 25 dB 20 dB	 25 dB 20 dB	 25 dB 20 dB	 25 dB 20 dB
Insertion Loss (max.)	0.1 dB	0.1 dB	0.1 dB	0.25 dB	0.15 dB	0.15 dB	0.15 dB	0.15 dB	0.15 dB	0.15 dB
Impedance (main line)	1.20:1 max. (50 ohms)	1.20:1 max. (50 ohms)	1.25:1 max. (50 ohms)	1.2:1 max. (50 ohms)	1.15:1 max. (50 ohms)	1.2:1 max. (50 ohms)	1.5:1 max. (50 ohms)	1.5:1 max. (50 ohms)	1.5:1 max (50 ohms)	1.2:1 max. (50 ohms)
Connectors main line (J1/J2) coupled (J3/J4)	 EIA fixed flanges 1 5/8" EIA (m) N(F)/N(F)	 EIA fixed flanges 1 5/8" EIA (m) N(F)/N(F)	 EIA fixed flanges 3 1/8" EIA (m) N(F)/N(F)	 EIA fixed flanges 1 5/8" EIA (m) N (M)/N (F)	 N(M)/N(F) N(F)/N(F)	 7-16(M)/7-16(F) N(F)/N(F)	 EIA flange 1 5/8" EIA (m) N(F)	 EIA flange 1 5/8" EIA (m) N(F)	 EIA flange 1 5/8" EIA (m) N(F)	 C(M)/C(F) N(F)/N(F)
Weight (max.)	7 kg 15.5 lb	7 kg 15.5 lb	7.9 kg 17.5 lb	0.45 kg 1 lb	0.6 kg 1.2 lb	0.6 kg 1.2 lb	1.8 kg 4 lb	1.8 kg 4 lb	1.8 kg 4 lb	0.6 kg 1.2 lb
Size (approx.) W x H x D	15.2 x 11.4 x 30.48 cm (6.0 x 4.5 x 12 in)	15.24 x 11.43 x 32.38 cm (6.0 x 4.5 x 12.75 in)	17 x 14.5 x 30.5 cm (6.7 x 5.7 x 12 in)	7.62 x 7.62 x 2.77 cm 3.0 x 3.0 x 1.09 in	10.9 x 6.3 x 3.2 cm (4.3 x 2.5 x 1.3 in.)	10.9 x 6.3 x 3.2 cm (4.3 x 2.5 x 1.3 in.)	20.3 x 8.9 x 10.2 cm (8 x 3.5 x 4 in.)	20.3 x 8.9 x 10.2 cm (8 x 3.5 x 4 in.)	20.3 x 8.9 x 10.2 cm (8 x 3.5 x 4 in.)	7.62 x 7.62 x 2.79 cm (3 x 3 x 1.1 in.)

*Power required for fan cooling.

Microwave Couplers 0.7 to 50 GHz.

	DC7128A	DC7144A	DC7154A	DC7154AM1	DC7200A	DC7205A	DC7210A	DC7276M1	DC7281A
Frequency Range	0.8–2.8 GHz	0.7–4.2 GHz	0.7–4.2 GHz	0.7–4.2 GHz	1–6 GHz	0.7–6 GHz	0.7–6GHz	2.5–7.5 GHz	2–8 GHz
Power (max. watts)	1500 CW 10K peak	400 CW 4K peak	400 CW	700 CW	250 CW	250 CW	500 CW	2800 CW 20K peak	600 CW 10K peak
Flatness (max.)	± 0.8 dB	± 0.8 dB	± 0.8 dB	± 0.8 dB	± 0.8 dB	± 0.8 dB	± 1.0dB	± 2.5 dB	± 1 dB
Coupling Factor (includes flatness)	50 ± 1.0 dB	40 ± 1.3 dB	50 ± 1.3 dB	50 ± 1.3 dB	40 ± 1.2 dB	41 ± 1.2 dB	50 dB ± 1.2 dB	50 ± 3 dB	50 ± 2 dB
Directivity									
typical	25 dB	19 dB	19 dB	19 dB	18 dB	18 dB	18dB	28 dB	15 dB
minimum	20 dB	15 dB	15 dB	15 dB	16 dB	15 dB	15 dB	25 dB	16 dB
Insertion Loss (max.)	0.2 dB	0.4 dB	0.4 dB	0.4 dB	0.1 dB	0.2 dB	0.2 dB	0.3 dB	0.2 dB max.
Impedance (main line)	1.3:1 max. (50 ohms)	1.25:1 max. (50 ohms)	1.25:1 max. (50 ohms)	1.25:1 max. (50 ohms)	1.2:1 max. (50 ohms)	1.2:1 max. (50 ohms)	1.35:1 max. (50 ohms)	1.1:1 max.. (50 ohms)	1.30:1 max. (50 ohms)
Connectors									
main line (J1/J2)	7-16(M)/7-16(F)	N(M)/N(F)	N(M)/N(F)	7-16(M)/7-16(F)	N(M)/N(F)	N(M)/N(F)	7-16(M)/7-16(F)	WRD-250	N(M)/N(F)
coupled (J3/J4)	N(F)/N(F)	N(F)/N(F)	N(F)/N(F)	N(F)/N(F)	N(F)/N(F)	N(F)/N(F)	N(F)/N(F)	N(F)	N(F)/N(F)
Weight (max.)	0.7 kg 1.5 lb	0.24 kg 0.525 lb	0.29 kg 0.64 lb	0.29 kg 0.64 lb	0.24 kg 0.53 lb	0.27 kg 0.6 lb	0.27 kg 0.6 lb	1.7 kg 3.8 lb	0.22 kg 0.48 lb
Size (approx.) W x H x D	7.6 x 7.6 x 2.9 cm (3 x 3 x 1.125 in.)	2.35 x 5.84 x 19 cm (0.925 x 2.3 x 7.48 in.)	3.2 x 6.3 x 10.9 cm (1.3 x 2.5 x 4.3 in.)	3.2 x 6.3 x 10.9 cm (1.3 x 2.5 x 4.3 in.)	6.8 x 5.1 x 2.8 cm (2.7 x 2.0 x 1.1 in.)	6.8 x 5.1 x 3.05 cm (2.7 x 2.0 x 1.2 in.)	54.6 x 50.8 x 34.5 cm (2.15 x 2.0 x 1.36 in)	45.7 x 8.1 x 8.1 cm (18 x 3.2 x 3.2 in.)	10.49 x 3.07 x 2.54 cm (4.13 x 1.21 x 1 in.)

	DC7351	DC7352A	DC7435A	DC7441A	DC7450M1	DC7530	DC7620	DC7820
Frequency Range	4–8 GHz	4–8 GHz	4–18 GHz	3–12 GHz	7.5–18 GHz	18–26.5 GHz	26.5–40 GHz	33–50 GHz
Power (max. watts)	6000 CW 92K peak	600 CW 10K peak	200 CW 3K peak	500 CW 10K peak	3000 CW 21K peak	300 CW 80K peak	200 CW 30K peak	200 CW 30K peak
Flatness (max.)	± 1.5 dB	± 1 dB	± 1.0 dB	± 1.0 dB	± 1.5 dB	± 1 dB	± 1 dB	± 1.0 dB
Coupling Factor (includes flatness)	40 ± 2 dB	50 ± 2 dB	35 ± 2.5 dB	40 ± 1.2 dB	50 ± 2 dB	40 ± 2 dB	40 ± 2 dB	40 dB ± 2.0 dB
Directivity								
typical	35 dB	15 dB	16 dB	18 dB	28 dB	40 dB	28 dB	32 dB
minimum	30 dB	18 dB	12 dB	16 dB	25 dB	30 dB	23 dB	30 dB
Insertion Loss (max.)	0.15 dB max.	0.4 dB	0.6 dB	0.25 dB max.	0.15 dB	0.20 dB	0.26 dB max.	0.15 dB max.
Impedance (main line)	1.1:1 max. (50 ohms)	1.35:1 max. (50 ohms)	1.5:1 max. (50 ohms)	1.30:1 max. (50 ohms)	1.1:1 max. (50 ohms)	1.10:1 max. (50 ohms)	1.15:1 max. (50 ohms)	1.1:1 max. (50 ohms)
Connectors								
main line (J1/J2)	WRD-350	N(M)/N(F)	N(M)/N(F)	N(F)/N(F)	WRD-750 D24	WR42	WR28	WR22
coupled (J3/J4)	N(F)	N(F)/N(F)	SMA(F)	N(F)/N(F)	N(F)	K(F)	K(F)	2.4mm (F)
Weight (max.)	1.24 kg 2.75 lb	0.22 kg 0.48 lb	0.1 kg 3 oz	0.23 kg 0.5 lb	0.64 kg 1.42 lb	204 g 7.2 oz	113 g 4 oz	0.45 kg 1 lb
Size (approx.) W x H x D	4.1 x 6.9 x 45.8 cm (1.61 x 2.72 x 18 in.)	2.3 x 4.8 x 8.8 cm (0.9 x 1.9 x 3.5 in.)	4.3 x 1.9 x 1.9 cm (1.7 x 0.75 x 0.75 in.)	2.54 x 2.54 x 8.36 cm (1 x 1 x 3.29 in.)	3.5 x 4.4 x 30.5 cm (1.4 x 1.7 x 12 in.)	2.2 x 3.5 x 22.9 cm (0.88 x 1.4 x 9 in.)	3.5 x 1.9 x 14 cm 1.4 x 0.75 x 5.5 in.)	3.3 x 3.3 x 15.24 cm (1.3 x 1.3 x 6 in.)

Please check individual coupler data sheets available on the AR web site price list for other connector combinations.

Dual Directional Couplers and Termination Loads For RF Amplifiers.

A-Series Amplifiers

Power Amplifier	Dual Directional Coupler	Load Resistor Or Attenuator
150A100C	DC2600A	LA500
600A225A	DC2500AM1	
1000A225	DC2500AM2	
2500A225	DC2035A	
5000A225	DC4255	
10,000A225A	DC4256	
12,500A225A	DC4256	
25A250A	DC3010A	LA150
100A250B	DC2600A	LA250
500A250C	DC2500AM1	
100A400A	DC3400A	
125A400	DC3400A	
150A400	DC3400A	LA250
200A400A	DC3401A	
400A400B	DC3401A	
350AH1	N/A	
800A3B	DC2500AM1	

W-Series Amplifiers

1W1000B	DC3001A	LR0050
30W1000B	DC3001A	LR0050
50W1000B	DC3001A	LA150
50W1000D	DC3001A	
100W1000B	DC3510A	LA150
125W1000	DC6080A	LA250
150W1000A	DC6080A	LA250
250W1000B	DC6180A	LA500
500W1000B	DC6180A	LA1000
750W1000A	DC6280AM1	
1000W1000F	DC6280AM1	LA4000
2000W1000D	DC6380	LR5000
3000W1000A	DC6380M1	LR5000
4000W1000B	DC6380M2	LR5000
6000W1000A		
10000W1000A		
10WD1000	DC3010A	LA150
50WD1000	DC3010A	LA150

S-Series Amplifiers

Power Amplifier	Dual Directional Coupler	Load Resistor Or Attenuator
100S1G2z5A	DC7144A	
250S1G2z5A	DC7144A	
500S1G2z5	DC7154AM1	
1000S1G2z5A	DC7164M1	
20S1G4	DC7144A	
40S1G4	DC7144A	
60S1G4A	DC7144A	
80S1G4	DC7144A	
125S1G4	DC7144A	
175S1G4A	DC7144A	
250S1G4A	DC7154AM1	
350S1G4A	DC7154AM1	
525S1G4A	DC7164	
700S1G4A	DC7164M1	TL501000M1
1000S1G4	DC7164M1	TL502000
15S1G6	DC7205A	
30S1G6	DC7205A	
60S1G6	DC7205A	
30S1G6AB	DC7200A	
50S1G6AB	DC7200A	
100S1G6AB	DC7200A	
125S1G6	DC7205A	
200S1G6	DC7205A	
250S1G6	DC7210A	
350S1G6	DC7210A	
5S4G11	DC7441A	LR0050
10S4G11A	DC7441A	LR0050
20S4G11A	DC7441A	LR0050
40S4G11	DC7441A	
60S4G11	DC7441A	
80S4G11	DC7441A	
20S6G18A	DC7435A	
40S6G18B	DC7435A	

Dual-Band S Series Amplifiers

xx/xxS1G11	
dual-output	DC7144A and DC7441A
single-output	DC7420

Solid State Pulsed Amplifiers

Power Amplifier	Dual Directional Coupler	Load Resistor Or Attenuator
8000SP0z8G2z5	DC7128A	
3000SP1G2z5	DC7128A	
1000SP1G2	DC7128A	
2000SP1G2	DC7128A	
4000SP1G2	DC7128A	
18000SP1G2	DC7128A	
20000SP1G2	DC7128AM6	
1000SP1z2G1z4	DC7128A	
2000SP1z2G1z4	DC7128A	
4000SP1z2G1z4	DC7128A	
8000SP1z2G1z4	DC7128A	
3000SP2G4	DC7154AM1	
6000SP2G4	DC7154AM1	
2000SP2z7G3z1	DC7154AM1	
4000SP2z7G3z1	DC7154AM1	
8000SP2z7G3z1	DC7154AM1	

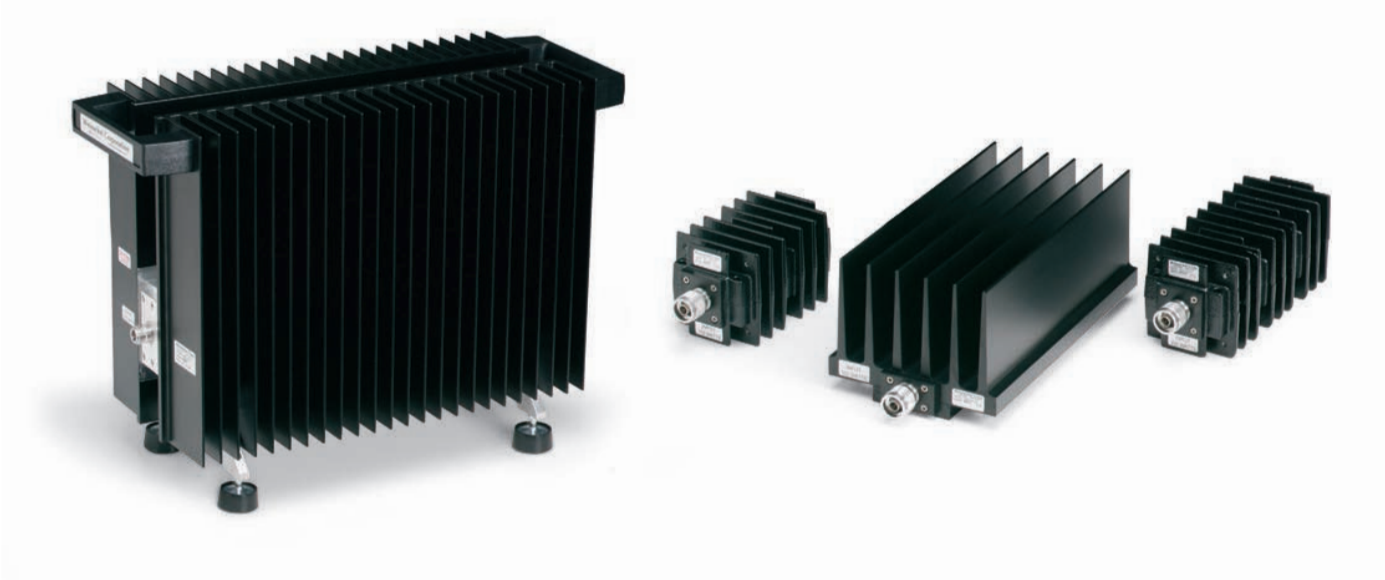
TWT Amplifiers - CW

1000T1G2B	DC7128A	LR2500
200T2G4	DC7144A	LA500
300T2G8	DC7281A	
300TR2z5G7z5	DC7281A	
500T2G8	DC7281AM2	
1000T2G8B	DC7276M1	LR2000M1
1500T2G8A	DC7276M1	LR2000M1
2000T2G8	DC7276M1	LR2000M1
200T4G8	DC7352A	LR0500
200TR4G8	DC7352A	
250T8G18	DC7450M1	
250TR7z5G18	DC7450M1	
500T8G18	DC7450M1	LR1000
1000T8G18B	DC7450M1	LR1500M1
1500T8G18	DC7450M1	LR1500M1
40T18G26A	DC7530	LR142
130T18G26z5B	DC7530	
200T18G26z5A	DC7530	
40T18G40	DC7750	
40T26G40A	DC7620	LR128
100T40G50	DC7820	
130T26z5G40B	DC7620	
200T26z5G40A	DC7620	

TWT Amplifiers - Pulse

Power Amplifier	Dual Directional Coupler	Load Resistor Or Attenuator
1000TP2G8	DC7280A	LR2000M1
1000TP8G18	DC7450M1	LR1000
2000TP2G8B	DC7281A	LR2000M1
2000TP8G18	DC7450M1	LR1000
4000TP2G4	DC7281A	LA500
4000TP4G8	DC7351	
4000TP8G12	DC7490	
3000TP12G18	DC7462	
4000TP12G18	DC7462	
5000TP1G2		
5500TP12G18	DC7462	
5700TP12G18	DC7462	
6500TP1z5G2	DC7128A	
6500TP1z35G5		
6900TP2G4	DC7154AM1	
7400TP4G8	DC7351	
8000TP1G1z5	DC7128A	
8000TP2z7G3z1		
8000TP4G6		
8300TP8G12	DC7490	
10000TP8G10	DC7490M1	
12000TP8G12	DC7490M1	
13000TP2G4		
16000TP1G1z35		

LA Series Load Attenuators.



Monitor Signals at Acceptable Levels.

This series of high-power, fixed coaxial attenuators is recommended for use with RF power amplifiers that operate in the same frequency and power range as the attenuators. The attenuated output provides a means of monitoring the signal at an acceptable level by sensitive measuring instruments like a spectrum analyzer, power meter or oscilloscope, and permits use of a detector for RF leveling.

LA Load Attenuators

	LA100	LA150	LA500	LA1000
Frequency Range	DC–18 GHz	DC–6 GHz	DC–5 GHz	DC–3 GHz
Power (max. watts)	100 W continuous to 55°C*	150 W continuous to 25°C*	500 W continuous to 25°C*	1000 W continuous to 25°C*
Attenuation	40 dB ± 1.0 dB (DC–5 GHz)	40 dB ± 2.0 dB (DC–5 GHz)	40 dB ± 1 dB (DC–2.5 GHz) 40 dB +0.5 dB, -3 dB (2.5–5 GHz)	40 dB ± 0.75 dB (DC–1.5 GHz) +1.5, –0.5 dB (1.5–3 GHz)
Input VSWR (max.)	1.25:1 (DC–8 GHz)	1.1:1 (DC–2 GHz) 1.2:1 (2–6 GHz)	1.15:1 (DC–2.5 GHz) 1.35:1 (2.5–5 GHz)	1.15:1 (DC–1.5 GHz) 1.25:1 (1.5–3 GHz)
Output VSWR (max.)	1.35:1 (8–12.4 GHz) 1.45:1 (12.4–18 GHz)	1.20:1 (2–5 GHz)	1.15:1 (DC–2.5 GHz) 1.25:1 (2.5–5 GHz)	1.15:1 (DC–1.5 GHz) 1.25:1 (1.5–3 GHz)
Connectors Input Output	N (M) N (F)	N (M) N (F)	N (M) N (F)	N (F) N (F)
Ambient Temperature Range	–55°C to 125°C	–55°C to 125°C	–55°C to 125°C	–55°C to 125°C
Operating Position	Horizontal Only	Horizontal Only	Horizontal Only	Horizontal Only
Weight (max.)	320 g 11 oz	1.13 kg 2.5 lb	3.63 kg 8 lb	13.15 kg 29 lb
Size (approximate) W x H x D	21.8 x 4.2 x 4.2 cm (8.6 x 1.62 x 1.62 in.)	80 x 80 x 137.1 mm (3.15 x 3.15 x 5.4 in.)	138.7 x 109.5 x 259.6 mm (5.46 x 4.31 x 10.22 in.)	178 x 332 x 451 mm (7.00 x 13.1 x 17.76 in.)

* See specification sheet for derating curves.