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MICROWAVE TEST ACCESSORIES

Coaxial Fixed Attenuators

HP 8490 Series, 11581/2/3, 84984



HP 8490 Series



HP 8492 Series



HP 8493A/B/C Series

Fixed Attenuators

Hewlett-Packard coaxial fixed attenuators provide precision attenuation, flat frequency response, low SWR over broad frequency ranges (dc to 50.0 GHz) at low prices. Attenuators are available in nominal attenuations of 3 dB and 6 dB, also 10 dB increments from 10 dB to 60 dB. These attenuators are swept-frequency tested to ensure they meet specifications at all frequencies. Calibration points are provided on a nameplate chart attached to each unit.

HP 8498A High Power Attenuator

The HP 8498A Option 030 is designed to meet the needs of high power attenuation applications in the RF and microwave frequency range. It is specified from dc to 18 GHz at 25 W average, 500 W peak, from dc to 5.8 GHz and 125 W peak from 5.8 to 18 GHz. Available only in a 30 dB model (Option 030), the unit offers low SWR (<1.30 at 18 GHz) and good accuracy (± 1 dB at 18 GHz). The unit also features "human engineered" cooling fins that prevent operator burns even under continuous maximum input power conditions.

Option 890 Calibration Data

Extensive calibration data is available on HP attenuators at low cost. When Option 890 is specified for the fixed attenuators or microwave step attenuators, standardized calibration data in frequency steps no larger than 500 MHz is provided over the frequency range of the units. This data is generated from measurements made on an HP 8510 automatic network analyzer and features excellent accuracy (traceable to NIST) and low cost. Data is given for attenuation and the SWR (reflection coefficient for the HP 8493C) of each port and is provided in a protective plastic envelope.

HP 8490D, 8491A/B/C, 8492A, 8493A/B/C, 8498A, Option 890 Specifications

Freq range (GHz)	Conn (m,f)	HP model	SWR (max)	Power	Attenuation accuracy								Price	
					3 dB Opt 003	6 dB Opt 006	10 dB Opt 010	20 dB Opt 020	30 dB Opt 030	40 dB Opt 040	50 dB Opt 050	60 dB Opt 060		
DC to 12.4	Type-N Type-N SMA	8491A 8491B 8493A	dc to 8 GHz: 1.2 8 to 12.4 GHz: 1.3	2 W avg 100 W peak	DC to 12.4	± 0.3	± 0.4	± 0.6	± 0.6	± 1.0	± 1.5	± 1.5	± 2	\$160
						Opt 003	Opt 006	Opt 010	Opt 020	Opt 030	Opt 040	Opt 050	Opt 060	\$160
						Opt 003	Opt 006	Opt 010	Opt 020	Opt 030	Opt 040	Opt 050	Opt 060	\$160
DC to 18	Type-N Type-N Type-N SMA APC-7 APC-7	8491B 8491B 8491C 8493B 8492A 8492A	dc to 8 GHz: 1.2 8 to 12.4 GHz: 1.3 12.4 to 18 GHz: 1.5	2 W avg 100 W peak	DC to 12.4 12.4 to 18	± 0.3	± 0.4	± 0.6	± 0.6	± 1.0	± 1.5	± 1.5	± 2	\$185
						± 0.4	± 0.5	± 0.6	± 1.0	± 1.0	± 1.5	± 1.5	± 2	\$250
						Opt 003	Opt 006	Opt 010	Opt 020	Opt 030	Opt 040	Opt 050	Opt 060	\$110
						Opt 003	Opt 006	Opt 010	Opt 020	Opt 030	Opt 040	Opt 050	Opt 060	\$195
DC to 18 high power	Type-N	8498A Opt 030	dc to 8 GHz: 1.15 8 to 12.4 GHz: 1.25 12.4 to 18 GHz: 1.30	25 W avg 500 W peak (dc to 5.8 GHz) 125 W peak (5.8 to 18 GHz) 500 W μ s max per pulse					Opt 030				\$360	
									Opt 030				\$410	
DC to 26.5	3.5 mm	8493C	dc to 8 GHz: 1.1 8 to 12.4 GHz: 1.15 12.4 to 26.5 GHz: 1.25 1.27 (Opt 006 only)	2 W avg 100 W peak	DC to 18 18 to 26.5	± 0.5	± 0.6	± 0.3	± 0.5	± 0.7	± 1.0			
						± 1.0	± 0.6	± 0.5	± 0.6	± 1.0	± 1.3			\$290
DC to 50	2.4 mm	8490D	dc to 26.5 GHz: 1.15 (1.08 Opt 040 only) 26.5 to 40 GHz: 1.25 (1.15 Opt 040 only) 40 to 50 GHz: 1.45 (1.25 Opt 040 only)	2 W avg 100 W peak	DC to 26.5 26.5 to 50	+0.9	+0.9	+0.09	+1.3	+1.3	+1.5			
						-0.5	-0.6	-0.6	-0.8	-0.8	-0.8			\$475
Opt 890 calibration data		HP models		Calibration frequencies (MHz)								Opt 890 price		
		8491A, 8493A		0.2 GHz to 12.4 GHz in 200 MHz steps								+\$20 to 25		
		8491B, 8492A, 8493B, 8498A 8493C		0.2 GHz to 18.0 GHz in 200 MHz steps								+\$25		
				1.5 GHz to 26.5 GHz in 250 MHz steps								+\$25 to 40		

HP 11581A, 11582A, 11583A/C Attenuator Sets

A set of four Hewlett-Packard attenuators—3, 6, 10, and 20 dB—are furnished in a handsome walnut accessory case. The HP 11581A set consists of HP 8491A attenuators; the HP 11582A set, HP 8491B attenuators; the HP 11583A set, HP 8492A attenuators; and the HP 11583C set, HP 8493C attenuators. The set includes calibration reports certified traceable to the National Institute of Standards and Technology, containing both the attenuation and the reflection coefficients for each attenuator at the frequencies indicated under "Option 890" calibration data above. Thus it is not required to specify Option 890.

These sets are ideal for calibration labs or where precise knowledge of attenuation and SWR is desired.

Key Literature

Microwave Test Accessories Catalog, p/n 5091-4269E.

Ordering Information

HP 11581A 3, 6, 10, 20 dB HP 8491A set
 HP 11582A 3, 6, 10, 20 dB HP 8491B set
 HP 11583A 3, 6, 10, 20 dB HP 8492A set
 HP 11583C 3, 6, 10, 20 dB HP 8493C set

Price

\$775
 \$865
 \$1,860
 \$1,610

☎ For off-the-shelf shipment, call 800-452-4844.