

# PRECISION ATTENUATOR SETS

DC – 40.0 GHz

2– 5 WATTS

Precision Coaxial Attenuator Sets							
Model Number	Frequency Range DC - (GHz)	Average Power (W)	Peak Power (kW)	Standard* Attenuation Values (dB)	Connectors	Attenuators Used	Page No.
WAS-6	18	5	1	3,6,10,20	N	4 x WA2	157
WAS-16	18	5	1	1,3,6,10,20,30	7 mm	6 x WA17	153
WAS-18	18	5	1	1,3,6,10,20,30	Precision N	6 x WA44	154
WAS-19	26.5	2	0.5	3,6,10,20	SMA	4 x WA9	155
WAS-20	40	2	0.2	3,6,10,20	2.92 mm	4 x WA54	156

\* Other configurations are available

## Features

**Calibration Data:** Attenuators are calibrated at 1 GHz intervals. Option 890 adds calibration data at 0.1 GHz and at 0.5 GHz intervals. DC Resistance values also provided.

**Certificate of Calibration:** Provided with each set, contains all calibration data.

**Storage Case:** Compact storage case organizes and protects the attenuators and their calibration data.

**Custom Sets Available:** Build your own set from our extensive offering of Fixed Coaxial Attenuators.



Custom solutions at “off-the-shelf” prices



## WEINSCHEL ASSOCIATES

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Specification  
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without notice

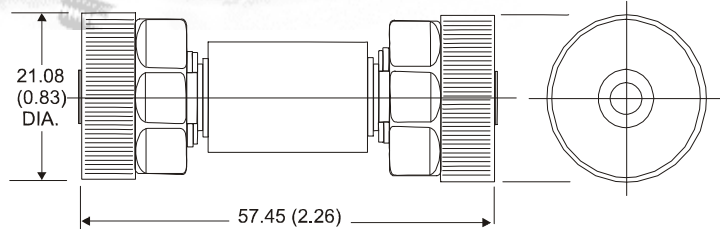
# ATTENUATOR SET

# MODEL WAS16

1 Each WA17-1, WA17-3, WA17-6, WA17-10, WA17-20, WA17-30

DC – 18.0 GHz

5 WATTS



## Features

The model WAS16 comes complete with Certificate of Calibration booklet and hardwood protective case for storing your attenuators. The WAS16 consists of 6 calibrated model WA17 attenuators, 1, 3, 6, 10, 20, and 30 dB. The Following data for each attenuator are provided.

All units are swept test for insertion loss and VSWR. A calibration certificate with test results is provided with each attenuator, including frequency sensitivity.

## Specifications

**Nominal Impedance:** 50 ohms

**Frequency Range:** DC to 18.0 GHz

**Maximum Deviation From Nominal Value (including frequency sensitivity):**

1 dB:	± 0.5 dB
3, 6 dB:	± 0.3 dB
10, 20 dB:	± 0.5 dB
30 dB:	± 0.75 dB

**Maximum VSWR:**

DC to 4.0 GHz	1.10
4.0 to 12.4 GHz	1.15
12.4 to 18 GHz	1.20

**Power Rating:** 5 watts average, 1kW peak at 25°C ambient temperature, de-rated linearly to: 4 watts at 45°C, 3 watts at 65°C, 2 watts at 85°C).

**Power Coefficient:** < 0.005 dB / dB x W

**Temperature Coefficient:** < 0.0004 dB / dB x °C

**Temperature Range:** -50°C to + 85°C

**Case Dimensions:** 10 5/8 in. (269.9 mm) long x 8 in. (203.2 mm) wide x 2 3/8 in. (60.3 mm) high.

**Weight:** Net 3 lb., 13 oz. (1.73 kg); Shipping weight, 5 lbs. (2.56 kg)

**Connectors:** Precision 7mm sexless stainless steel connectors, meets or exceeds requirements of IEEE Standard 287 and mates with all connectors conforming to design 2 of that standard.

**Coupling Torque:** 14 ± 1 inch pounds

**Construction:** Brass body, plated, stainless steel and beryllium copper or silver alloy connectors.

Note: Dimensions are given in mm (inched). Dimensions are maximum unless otherwise specified.



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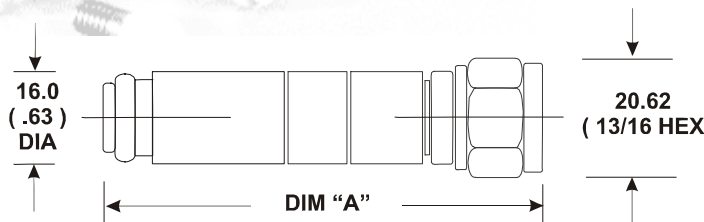
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# PRECISION ATTENUATOR SET MODEL WAS18

1 Each WA44-1, WA44-3, WA44-6, WA44-10, WA44-20, WA44-30

DC – 18.0 GHz

5 WATTS



## Features

The model WAS18 comes complete with Certificate of Calibration and hardwood protective case for storing your attenuators. The WAS18 consists of 6 calibrated model WA44 attenuators, 1, 3, 6, 10, 20, and 30 dB. The Following data for each attenuator are provided.

3 DC resistance values and insertion loss every 1.0 GHz from DC through 18.0 GHz.

✦ R.F Calibration Option -890 (42 frequencies) 100, 500, 1,000 and every 500 MHz to 16,000; 16,000 to 18,000 every 250 MHz.

## Specifications

**Nominal Impedance:** 50 ohms

**Frequency Range:** DC to 18.0 GHz

**Maximum Deviation From Nominal Value (including frequency sensitivity):**

1 dB:	± 0.5 dB
3, 6 dB:	± 0.3 dB
10, 20 dB:	± 0.5 dB
30 dB:	± 1.00 dB

**Maximum VSWR:**

DC to 4.0 GHz	1.15
4.0 to 12.4 GHz	1.20
12.4 to 18 GHz	1.25

**Power Rating:** 5 watts average, 1kW peak. (Maximum rated average power to 25°C ambient temperature, de-rated linearly to: 4 watts at 45°C, 3 watts at 65°C, 2 watts at 85°C).

**Power Coefficient:** < 0.005 dB / dB x W

**Temperature Coefficient:** < 0.0004 dB / dB x °C

**Temperature Range:** -50°C to + 85°C

**Case Dimensions:** 10 ¾ in. (273 mm) long x 8 ½ in. (215.9 mm) wide x 2 ½ in. (63.5 mm) high.

**Weight:** Net 2 lb., 8 oz. (1.12 kg); Shipping weight, 3 lbs. (1.36 kg)

**Connectors:** Type N connectors, stainless steel, conform to MIL-PRF-39012 lab standard test connector interface.

**Construction:** Stainless steel body with stainless steel connectors with gold plated beryllium copper female contact and stainless steel male contact.

Note: Dimensions are given in mm (inched). Dimensions are maximum unless otherwise specified.



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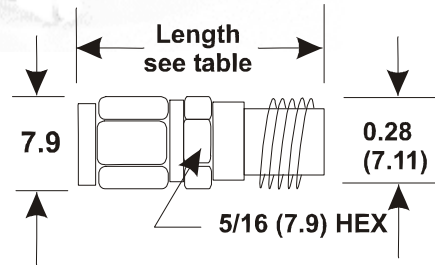
# ATTENUATOR SET

# MODEL WAS19

1 Each WA9-3, WA9-6, WA9-10, WA9-20

DC – 26.5 GHz

2 WATTS



## Features

The model WAS19 comes complete with Certificate of Calibration and hardwood protective case for storing your attenuators. The WAS19 consists of 4 calibrated model WA9 attenuators, 3, 6, 10, and 20 dB. The Following data for each attenuator are provided.

3 DC resistance values and insertion loss every 1.0 GHz from DC through 26.0 GHz.

✪ R.F Calibration Option -890 (42 frequencies) 100, 500, 1,000 and every 500 MHz to 16,000; 16,000 to 18,000 every 250 MHz.

## Specifications

**Nominal Impedance:** 50 ohms

**Frequency Range:** DC to 26.5 GHz

**Maximum Deviation From Nominal Value (including frequency sensitivity):**

3 dB:	± 0.5 dB
6 dB:	± 0.6 dB
10 dB:	± 0.8 dB
20 dB:	± 1.0 dB

**Maximum VSWR:**

DC to 4.0 GHz	1.10
4.0 to 8.0 GHz	1.15
8.0 to 12.4 GHz	1.20
12.4 to 18.0 GHz	1.25
18.0 to 26.5 GHz	1.35

**Power Rating:** 2 watts average, 500W peak. (Maximum rated average power to 25°C ambient temperature, de-rated linearly to: 1 watt at 75°C and 0 watts at 125°C).

**Power Coefficient:** < 0.005 dB / dB x W

**Temperature Coefficient:** < 0.0004 dB / dB x °C

**Temperature Range:** -55°C to + 125°C

**Case Dimensions:** 5 ½ in. (139.7 mm) long x 4 7/8 in. (123.8 mm) wide x 2 3/8 in. (60.3 mm) high.

**Weight:** Net 1 lb., 4 oz. (0.56 kg); Shipping weight, 2 lbs. 8 oz. (1.14 kg)

**Connectors:** SMA connectors per MIL-STD-348 Interface dimension mate nondestructively with MIL-PRF-39012 connectors.

**Construction:** Stainless steel body with stainless steel connectors with gold plated beryllium copper female contact and stainless steel male contact.

Note: Dimensions are given in mm (inched). Dimensions are maximum unless otherwise specified.



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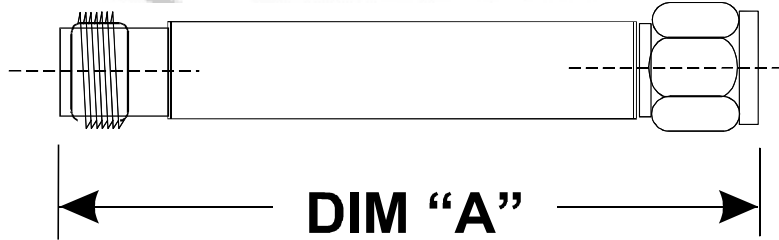
# ATTENUATOR SET

# MODEL WAS20

1 Each WA54-3, WA54-6, WA54-10, WA54-20

DC – 40.0 GHz

2 WATTS



## Features

The model WAS20 comes complete with Certificate of Calibration and hardwood protective case for storing your attenuators. The WAS20 consists of 4 calibrated model WA54 attenuators, 3, 6, 10, and 20 dB. The Following data for each attenuator are provided.

3 DC resistance values and insertion loss every 1.0 GHz from DC through 40.0 GHz.

✪ R.F Calibration Option -890: 100, 500, 1,000 and every 500 MHz to 26,500; 26,500 to 40,000 every 250 MHz.

## Specifications

**Nominal Impedance:** 50 ohms

**Frequency Range:** DC to 40.0 GHz

**Maximum Deviation From Nominal Value (including frequency sensitivity):**

3 dB:	± 1.0 dB
6 dB:	± 1.0 dB
10 dB:	± 1.0 dB
20 dB:	± 1.0 dB

**Maximum VSWR:**

DC to 26.5 GHz	1.25
26.5 to 40.0 GHz	1.45

**Power Rating:** 2 watts average, 200W peak. (Maximum rated average power to 25°C ambient temperature, de-rated linearly to 0.1 watts at 100° C).

**Power Coefficient:** < 0.01 dB /dB/W

**Temperature Coefficient:** < 0.0004 dB/dB/°C

**Temperature Range:** -55°C to + 100°C

**Case Dimensions:** 5 1/2 in. (139.7 mm) long x 4 7/8 in. (123.8 mm) wide x 2 3/8 in. (60.3 mm) high.

**Weight:** Net 1 lb., 4 oz. (0.56 kg); Shipping weight, 2 lbs. 8 oz. (1.14 kg)

**Connectors:** 2.92mm connectors per MIL-STD-348A Interface dimension mate nondestructively with MIL-PRF-39012 connectors.

**Construction:** Stainless steel body with stainless steel connectors with gold plated beryllium copper female contact and stainless steel male contact.

**Physical Dimensions:**

Connector Option	Dim "A"
54-XX-12 (F/M)	36.07 (1.42)
54-XX-11 (F/F)	34.80 (1.37)
54-XX-22 (M/M)	37.34 (1.47)

Note: Dimensions are given in mm (inched). Dimensions are maximum unless otherwise specified.



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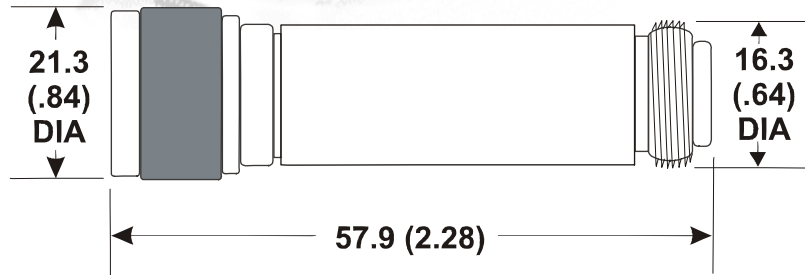
# ATTENUATOR SET

# MODEL WAS6

1 Each WA2-3, WA2-6, WA2-10, WA2-20

DC – 18.0 GHz

5 WATTS



## Features

The model WAS6 comes complete with Certificate of Calibration and hardwood protective case for storing your attenuators. The WAS6 consists of 4 calibrated model WA2 attenuators, 3, 6, 10, and 20 dB. The Following data for each attenuator are provided.

3 DC resistance values and insertion loss every 1.0 GHz from DC through 18.0 GHz. (18 frequencies)

✪ R.F Calibration Option -890 (42 frequencies) 100, 500, 1,000 and every 500 MHz to 16,000; 16,000 to 18,000 every 250 MHz.

These attenuators are designed to meet environmental tests of MIL-A-3933.

## Specifications

**Nominal Impedance:** 50 ohms

**Frequency Range:** DC to 18 GHz

**Maximum Deviation From Nominal Value (including frequency sensitivity):**

3, 6 dB: ± 0.3 dB  
10, 20 dB: ± 0.5 dB

**Power Rating:** 5 watts average, 1kW peak.  
(Maximum rated average power to 25°C ambient temperature, de-rated linearly to 0 watts at 125°C).

## Maximum VSWR:

DC to 4.0 GHz 1.15  
4.0 to 8.0 GHz 1.20  
8.0 to 12.4 GHz 1.25  
12.4 to 18 GHz 1.40

**Power Coefficient:** < 0.005 dB / dB x W

**Temperature Coefficient:** < 0.0004 dB / dB x °C

**Temperature Range:** -55°C to + 125°C

**Case Dimensions:** 4 ¾ in. (120.6 mm) long x 4 ½ in. (114.3 mm) wide x 2 ¾ in. (44.5 mm) high.

**Weight:** Net 1 lb., 13 oz. (0.82 kg); Shipping weight, 3 lbs. (1.36 kg)

**Connectors:** Stainless steel Type N, male and female each attenuator. Connector mate nondestructively with Type N per MIL-C39012 and MIL-C-71.

**Construction:** Passivated stainless steel body and connectors. Beryllium copper female contacts, stainless steel male contacts.

Note: Dimensions are given in mm (inched). Dimensions are maximum unless otherwise specified.



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