



E-Band Programmable Attenuator, High Power

Description:

Model STA-60-12-P1 is a motorized, general purpose programmable rotary vane attenuator for use in millimeterwave systems across the standard E-band frequency range of 60 to 90 GHz. The attenuation control is an IEEE-488 (GPIB) and USB port interface to accommodate remote operations from 0 to 70 dB. Attenuation increments are 0.05 dB between 0 and 20 dB and 0.1 dB between 20 and 70 dB. On the front panel, a local adjustment switch and digital readout allows for convenient manual operations. When used remotely, the local switch can be locked to prevent inadvertent adjustments. The motor control and interface circuits are custom designed and uniquely packaged within the attenuator housing. The microprocessor based electronics ramp the speed of a precision stepper motor to ensure fast and accurate positioning.



Features:

- Full Band Coverage
- High Attenuation Accuracy
- IEEE-488 and USB Control Port

Applications:

- Test Lab
- Instrumentations
- Auto Test Set

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency Range	60 GHz		90 GHz
Insertion Loss		1.6 dB	
Attenuation Range	0 dB		70 dB
Attenuation Accuracy	0.1 dB or 3% of reading, whichever is larger, up to 40 dB		
Attenuation Step Size	0.05 dB from 0 to 20 dB and 0.10 dB from 20 to 70 dB		
Control Resolution	0.01 dB Steps from 0 to 70 dB		
Return Loss		20 dB	
Operating Voltage	+24 V _{DC} (100 to 240 V _{AC} Adapter is Supplied)		
Power Handling			5 W (CW)
Specification Temperature		+25 °C	
Operating Temperature	0 °C		+50 °C

Mechanical Specifications:

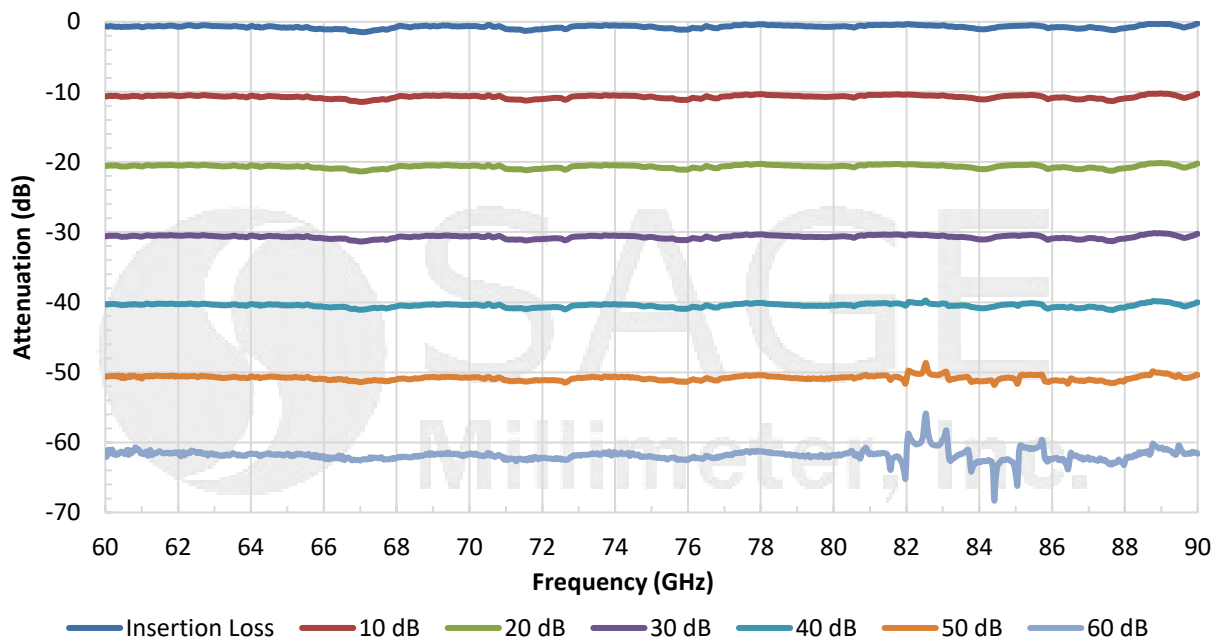
Port	Connector
RF Ports	WR-12 Waveguide with UG-387/U Flange
Control Interface	IEEE-488 and USB Port
DC Bias	2.5 mm DC Jack (AC-to-DC power converter included)
Finish	Gold Plated Waveguide Flange; Black Anodized Body
Weight	5 lb
Outline	TA-PE-M2



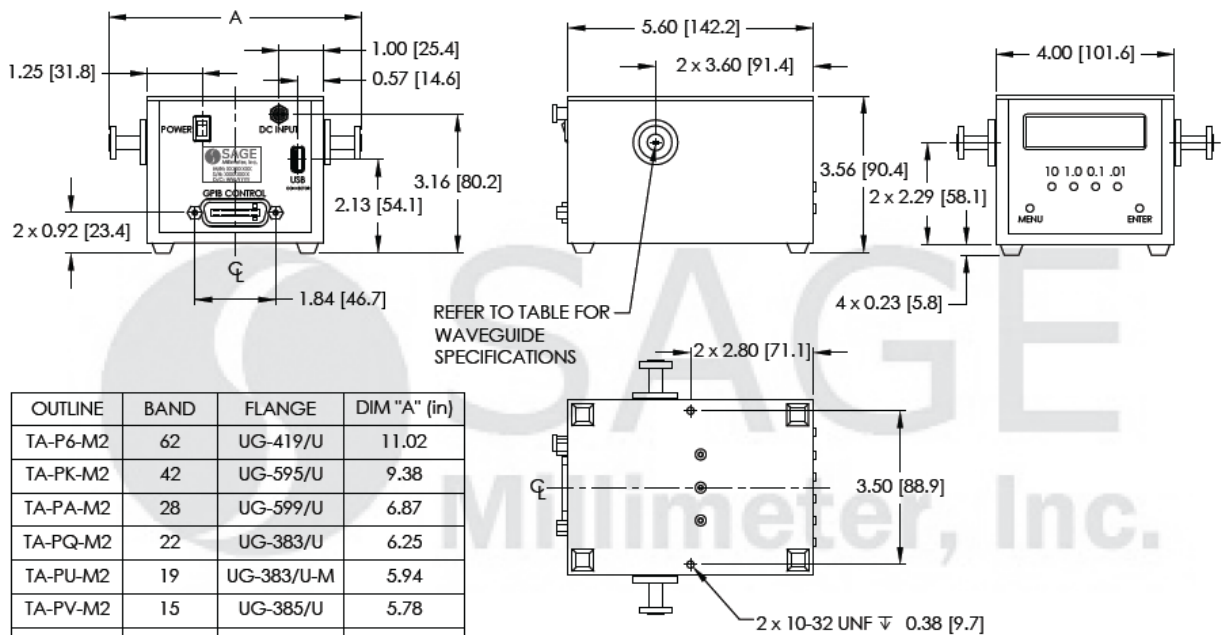


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Typical Attenuation vs. Frequency



Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [millimeters])



OUTLINE	BAND	FLANGE	DIM "A" (in)
TA-P6-M2	62	UG-419/U	11.02
TA-PK-M2	42	UG-595/U	9.38
TA-PA-M2	28	UG-599/U	6.87
TA-PQ-M2	22	UG-383/U	6.25
TA-PU-M2	19	UG-383/U-M	5.94
TA-PV-M2	15	UG-385/U	5.78
TA-PE-M2	12	UG-387/U	5.78
TA-PW-M2	10	UG-387/U-M	5.78
TA-PF-M2	08	UG-387/U-M	5.78
TA-PD-M2	06	UG-387/U-M	5.78
TA-PG-M2	05	UG-387/U-M	5.78
TA-P04-M2	04	UG-387/U-M	5.78
TA-P03-M2	03	UG-387/U-M	5.78



www.sagemillimeter.com | 3043 Kashiwa Street, Torrance, CA 90505
 Phone: 424-757-0168 | Fax: 424-757-0188 | Email: sales@sagemillimeter.com



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Note:

- Calibration accuracy is 0.1 dB or 3% of the reading, whichever is greater, for attenuation ranges up to 40 dB, 5% up to 50 dB, and “for reference only” above 50 dB.
- The attenuation flatness is $\pm 2\%$ or ± 0.5 dB of the indicated value, whichever is greater, for the frequency band.
- The phase shift value does change while varying the attenuation.
- AC-to-DC power converter with cord is included.
- All data presented is collected from a sample lot. Actual data may vary unit to unit, slightly.
- All testing was performed under $+25$ °C case temperature.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

Caution:

- Exceeding absolute maximum ratings shown will damage the device.
- Any foreign objects in the waveguide will cause performance degradation and may damage the device.

