

Waveguide Attenuator

Attenuation	VSWR
3dB,6dB	≤1.25-1.35
10-30	≤1.15



Waveguide Fixed Attenuator

ELECTRICAL CHARACTERISTICS:

Part No.	WG Type EIA	Freq Range(GHz)	VSWR	Optional Attenuation (dB)	Flange	Material
SH-3WFA...	WR2300	0.32-0.49	≤1.25	3-30	FDP	Al
SH-4WFA...	WR2100	0.35-0.53	≤1.25	3-30	FDP	Al
SH-5WFA...	WR1800	0.41-0.62	≤1.25	3-30	FDP	Al
SH-6WFA...	WR1500	0.49-0.75	≤1.25	3-30	FDP	Al
SH-8WFA...	WR1150	0.64-0.98	≤1.25	3-30	FDP	Al
SH-9WFA...	WR975	0.75-1.15	≤1.25	3-30	FDP	Al
SH-12WFA...	WR770	0.96-1.46	≤1.25	3-30	FDP	Al
SH-14WFA...	WR650	1.13-1.73	≤1.25	3-30	FDP	Al
SH-18WFA...	WR510	1.45-2.20	≤1.25	3-30	FDP	Al
SH-22WFA...	WR430	1.72-2.61	≤1.25	3-30	FDP	Al
SH-26WFA...	WR340	2.17-3.30	≤1.25	3-30	FDP	Al
SH-32WFA...	WR284	2.60-3.95	≤1.25	3-30	FDP	Al
SH-40WFA...	WR229	3.22-4.90	≤1.25	3-30	FDP	Al
SH-48WFA...	WR187	3.94-5.99	≤1.25	3-30	FDP	Al
SH-58WFA...	WR159	4.64-7.05	≤1.25	3-30	FDP	Al
SH-70WFA...	WR137	5.38-8.17	≤1.25	3-30	FDP	Cu
SH-84WFA...	WR112	6.57-9.99	≤1.25	3-30	FBP	Cu
SH-100WFA...	WR90	8.20-12.40	≤1.25	3-30	FBP	Cu
SH-120WFA...	WR75	9.84-15.0	≤1.25	3-30	FBP	Cu
SH-140WFA...	WR62	11.9-18.0	≤1.25	3-30	FBP	Cu
SH-180WFA...	WR51	14.5-22.0	≤1.25	3-30	FBP	Cu
SH-220WFA...	WR42	17.6-26.7	≤1.25	3-30	FBP	Cu
SH-260WFA...	WR34	21.7-33.0	≤1.25	3-30	FBP	Cu
SH-320WFA...	WR28	26.5-40.0	≤1.25	3-30	FBP	Cu
SH-400WFA...	WR22	32.9-50.1	≤1.30	3-30	FUGP	Cu
SH-500WFA...	WR19	39.2-59.6	≤1.30	3-30	FUGP	Cu
SH-620WFA...	WR15	49.8-75.8	≤1.30	3-30	FUGP	Cu
SH-740WFA...	WR12	60.5-91.9	≤1.35	3-30	FUGP	Cu
SH-900WFA...	WR10	73.8-112	≤1.35	3-30	FUGP	Cu

Waveguide Attenuator

Attenuation	Frequency Response
3dB	$\leq \pm 1.8\text{dB}$
6dB	$\leq \pm 1\text{dB}$
10-60dB	$\leq \pm 0.75\text{dB}$



Waveguide Coupling Fixed Attenuator

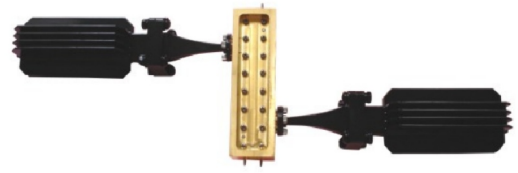
ELECTRICAL CHARACTERISTICS:

Part No.	WG Type EIA	Freq Range(GHz)	VSWR	Optional Attenuation(dB)	Frequency Response(dB)	Flange	Material
SH-12WCFAX	WR770	0.96-1.46	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Al
SH-12WCFUAX	WR770	0.96-1.46	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Al
SH-14WCFAX	WR650	1.13-17.3	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Al
SH-14WCFUAX	WR650	1.13-17.3	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Al
SH-18WCFAX	WR510	1.45-2.20	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Al
SH-18WCFUAX	WR510	1.45-2.20	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Al
SH-22WCFAX	WR430	1.72-2.61	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Al
SH-22WCFUAX	WR430	1.72-2.61	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Al
SH-20WCFAX	WR340	2.17-3.30	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Al
SH-26WCFUAX	WR340	2.17-3.30	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Al
SH-32WCFAX	WR284	2.60-3.95	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Al
SH-32WCFUAX	WR284	2.60-3.95	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Al
SH-40WCFAX	WR229	3.22-4.90	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Al
SH-40WCFUAX	WR229	3.22-4.90	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Al
SH-48WCFAX	WR187	3.94-5.99	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Al
SH-48WCFUAX	WR187	3.94-5.99	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Al
SH-58WCFAX	WR159	4.64-7.05	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Al
SH-58WCFUAX	WR159	4.64-7.05	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Al
SH-70WCFAX	WR137	5.38-8.17	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Cu
SH-70WCFUAX	WR137	5.38-8.17	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Cu
SH-B4WCFAX	WR112	6.57-9.99	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Cu
SH-84WCFUAX	WR112	6.57-9.99	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Cu
SH-100WCFAX	WR90	8.20-12.40	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Cu
SH-100WCFUAX	WR90	8.20-12.40	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Cu
SH-120WCFAX	WR75	9.84-15.0	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Cu
SH-120WCFUAX	WR75	9.84-15.0	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Cu
SH-140WCFAX	WR62	11.9-18.0	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Cu
SH-140WCFUAX	WR62	11.9-18.0	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Cu
SH-1B0WCFAX	WR51	14.5-22.0	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Cu
SH-1B0WCFUAX	WR51	14.5-22.0	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Cu
SH-220WCFAX	WR42	17.6-26.7	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Cu
SH-220WCFUAX	WR42	17.6-26.7	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Cu
SH-260WCFAX	WR34	21.7-33.0	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Cu
SH-260WCFUAX	WR34	21.7-33.0	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Cu
SH-320WCFAX	WR28	26.5-40.0	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Cu
SH-320WCFUAX	WR28	26.5-40.0	≤ 1.20	3-60	$\pm 0.5-1.8$	FDP	Cu
SH-400WCFAX	WR22	32.9-50.1	≤ 1.20	3-60	$\pm 0.5-1.8$	FUGP	Cu
SH-400WCFUAX	WR22	32.9-50.1	≤ 1.20	3-60	$\pm 0.5-1.8$	FUGP	Cu
SH-500WCFAX	WR19	39.2-59.6	≤ 1.25	3-60	$\pm 0.5-1.8$	FUGP	Cu
SH-500WCFUAX	WR19	39.2-59.6	≤ 1.25	3-60	$\pm 0.5-1.8$	FUGP	Cu
SH-620WCFAX	WR15	49.8-75.8	≤ 1.25	3-60	$\pm 0.5-1.8$	FUGP	Cu
SH-620WCFUAX	WR15	49.8-75.8	≤ 1.25	3-60	$\pm 0.5-1.8$	FUGP	Cu
SH-740WCFAX	WR12	60.5-91.9	≤ 1.25	3-60	$\pm 0.5-1.8$	FUGP	Cu
SH-740WCFUAX	WR12	60.5-91.9	≤ 1.25	3-60	$\pm 0.5-1.8$	FUGP	Cu
SH-900WCFAX	WR10	73.8-112	≤ 1.25	3-60	$\pm 0.5-1.8$	FUGP	Cu
SH-900WCFUAX	WR10	73.8-112	≤ 1.25	3-60	$\pm 0.5-1.8$	FUGP	Cu

Waveguide Attenuator

High Power Waveguide
Coupling Fixed Attenuator

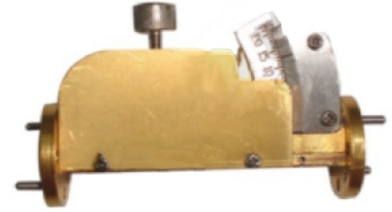
Attenuation	Frequency Response
3dB	$\leq \pm 1.8\text{dB}$
6dB	$\leq \pm 1\text{dB}$
10-60dB	$\leq \pm 0.75\text{dB}$



ELECTRICAL CHARACTERISTICS:

Part No.	WG Type EIA	Freq Range (GHz)	VSWR	Optional Attenuation(dB)	Frequency Response(dB)	Avg Power Range(W)	Flange	Material
SH-12WHPCFA...	WR770	0.96-1.46	≤ 1.20	3-60	$\pm 0.5-1.8$	10-4000	FDP	Al
SH-14WHPCFA...	WR650	1.13-1.73	≤ 1.20	3-60	$\pm 0.5-1.8$	10-4000	FDP	Al
SH-18WHPCFA...	WR510	1.45-2.20	≤ 1.20	3-60	$\pm 0.5-1.8$	10-4000	FDP	Al
SH-22WHPCFA...	WR430	1.72-2.61	≤ 1.20	3-60	$\pm 0.5-1.8$	10-4000	FDP	Al
SH-26WHPCFA...	WR340	2.17-3.30	≤ 1.20	3-60	$\pm 0.5-1.8$	10-4000	FDP	Al
SH-32WHPCFA...	WR284	2.60-3.95	≤ 1.20	3-60	$\pm 0.5-1.8$	10-4000	FDP	Al
SH-40WHPCFA...	WR229	3.22-4.90	≤ 1.20	3-60	$\pm 0.5-1.8$	10-4000	FDP	Al
SH-48WHPCFA...	WR187	3.94-5.99	≤ 1.20	3-60	$\pm 0.5-1.8$	10-4000	FDP	Al
SH-58WHPCFA...	WR159	4.64-7.05	≤ 1.20	3-60	$\pm 0.5-1.8$	10-4000	FDP	Al
SH-70WHPCFA...	WR137	5.38-8.17	≤ 1.20	3-60	$\pm 0.5-1.8$	10-3000	FDP	Cu
SH-84WHPCFA...	WR112	6.57-9.99	≤ 1.20	3-60	$\pm 0.5-1.8$	10-3000	FBP	Cu
SH-100WHPCFA...	WR90	8.20-12.40	≤ 1.20	3-60	$\pm 0.5-1.8$	10-3000	FBP	Cu
SH-120WHPCFA...	WR75	9.84-15.0	≤ 1.20	3-60	$\pm 0.5-1.8$	10-3000	FBP	Cu
SH-140WHPCFA...	WR62	11.9-18.0	≤ 1.20	3-60	$\pm 0.5-1.8$	10-1000	FBP	Cu
SH-180WHPCFA...	WR51	14.5-22.0	≤ 1.20	3-60	$\pm 0.5-1.8$	10-1000	FBP	Cu
SH-220WHPCFA...	WR42	17.6-26.7	≤ 1.20	3-60	$\pm 0.5-1.8$	10-600	FBP	Cu
SH-260WHPCFA...	WR34	21.7-33.0	≤ 1.20	3-60	$\pm 0.5-1.8$	10-600	FBP	Cu
SH-320WHPCFA...	WR28	26.5-40.0	≤ 1.20	3-60	$\pm 0.5-1.8$	10-600	FBP	Cu
SH-400WHPCFA...	WR22	32.9-50.1	≤ 1.20	3-60	$\pm 0.5-1.8$	10-600	FUGP	Cu
SH-500WHPCFA...	WR19	39.2-59.6	≤ 1.25	3-60	$\pm 0.5-1.8$	10-300	FUGP	Cu
SH-620WHPCFA...	WR15	49.8-75.8	≤ 1.25	3-60	$\pm 0.5-1.8$	10-300	FUGP	Cu
SH-740WHPCFA...	WR12	60.5-91.9	≤ 1.25	3-60	$\pm 0.5-1.8$	10-200	FUGP	Cu
SH-900WHPCFA...	WR10	73.8-112	≤ 1.25	3-60	$\pm 0.5-1.8$	10-200	FUGP	Cu

Waveguide Attenuator



Waveguide Variable Attenuator

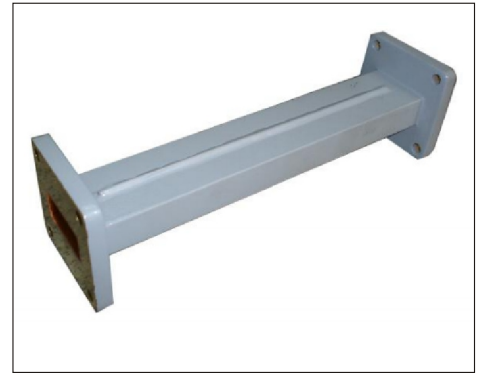
ELECTRICAL CHARACTERISTICS:

Part No.	WG Type EIA	Freq Range (GHz)	VSWR	Optional Attenuation (dB)	Flange	Material
SH-12WVA30	WR770	0.96-1.46	≤1.25	0-30	FDP	Al
SH-14WVA30	WR650	1.13-1.73	≤1.25	0-30	FDP	Al
SH-18WVA30	WR510	1.45-2.20	≤1.25	0-30	FDP	Al
SH-22WVA30	WR430	1.72-2.61	≤1.25	0-30	FDP	Al
SH-26WVA30	WR340	2.17-3.30	≤1.25	0-30	FDP	Al
SH-32WVA30	WR284	2.60-3.95	≤1.25	0-30	FDP	Al
SH-40WVA30	WR229	3.22-4.90	≤1.25	0-30	FDP	Al
SH-48WVA30	WR187	3.94-5.99	≤1.25	0-30	FDP	Al
SH-58WVA30	WR159	4.64-7.05	≤1.25	0-30	FDP	Al
SH-70WVA30	WR137	5.38-8.17	≤1.25	0-30	FDP	Cu
SH-84WVA30	WR112	6.57-9.99	≤1.25	0-30	FBP	Cu
SH-100WVA30	WR90	8.20-12.40	≤1.25	0-30	FBP	Cu
SH-120WVA30	WR75	9.84-15.0	≤1.25	0-30	FBP	Cu
SH-140WVA30	WR62	11.9-18.0	≤1.25	0-30	FBP	Cu
SH-180WVA30	WR51	14.5-22.0	≤1.25	0-30	FBP	Cu
SH-220WVA30	WR42	17.6-26.7	≤1.30	0-30	FBP	Cu
SH-260WVA30	WR34	21.7-33.0	≤1.30	0-30	FBP	Cu
SH-320WVA30	WR28	26.5-40.0	≤1.30	0-30	FBP	Cu
SH-400WVA30	WR22	32.9-50.1	≤1.30	0-30	FUGP	Cu
SH-500WVA30	WR19	39.2-59.6	≤1.30	0-30	FUGP	Cu
SH-620WVA30	WR15	49.8-75.8	≤1.30	0-30	FUGP	Cu
SH-740WVA30	WR12	60.5-91.9	≤1.30	0-30	FUGP	Cu
SH-900WVA30	WR10	73.8-112	≤1.30	0-30	FUGP	Cu

WAVEGUIDE ATTENUATOR

Waveguide Fixed Attenuator

Shinhom Microwave offers a series of rectangular waveguide attenuators. Typical Attenuation values are 3dB, 6dB, 10dB, 20dB and 30dB (other attenuation values available, consult sales engineers for details). The assembly construction includes a precision element for optimum electrical performance, but note that Attenuation vs. Frequency can vary greatly depending on the attenuation at a given frequency. Waveguide Fixed Attenuators with normal and high power units are also available. For more information feel free to call us and discuss your needs with one of our sales engineers.



ELECTRICAL CHARACTERISTICS:

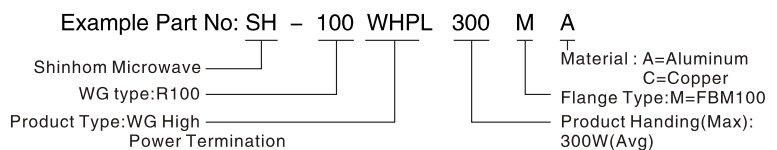
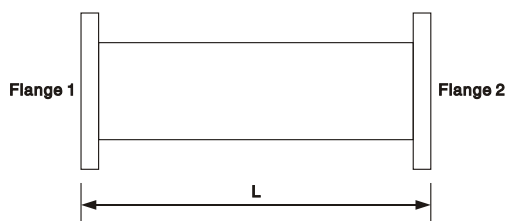
Part No.	Freq Range (GHz)	VSWR (Max)	Power (W)	Attenuation (dB)	WG Type		Flange	Material
					IEC	EIA		
SH-14WFA...	1.13-1.73	1.20	2	3/6/10/20/30	R14	WR650	FDP/FDM	Al
SH-18WFA...	1.45-2.20	1.20	2	3/6/10/20/30	R18	WR510	FDP/FDM	Al
SH-22WFA...	1.72-2.61	1.20	2	3/6/10/20/30	R22	WR430	FDP/FDM	Al/Cu
SH-26WFA...	2.17-3.30	1.20	2	3/6/10/20/30	R26	WR340	FDP/FDM	Al/Cu
SH-32WFA...	2.60-3.95	1.15	2	3/6/10/20/30	R32	WR284	FDP/FDM	Al/Cu
SH-40WFA...	3.22-4.90	1.15	2	3/6/10/20/30	R40	WR229	FDP/FDM	Al/Cu
SH-48WFA...	3.94-5.99	1.15	2	3/6/10/20/30	R48	WR187	FDP/FDM	Al/Cu
SH-58WFA...	4.64-7.05	1.15	2	3/6/10/20/30	R58	WR159	FDP/FDM	Al/Cu
SH-70WFA...	5.38-8.17	1.15	2	3/6/10/20/30	R70	WR137	FDP/FDM	Al/Cu
SH-84WFA...	6.57-9.99	1.15	2	3/6/10/20/30	R84	WR112	FBP/FBM/FBE	Al/Cu
SH-100WFA...	8.20-12.40	1.15	2	3/6/10/20/30	R100	WR90	FBP/FBM/FBE	Al/Cu
SH-120WFA...	9.84-15.0	1.15	2	3/6/10/20/30	R120	WR75	FBP/FBM/FBE	Al/Cu
SH-140WFA...	11.9-18.0	1.15	2	3/6/10/20/30	R140	WR62	FBP/FBM/FBE	Al/Cu
SH-180WFA...	14.5-22.0	1.15	2	3/6/10/20/30	R180	WR51	FBP/FBM/FBE	Al/Cu
SH-220WFA...	17.6-26.7	1.20	2	3/6/10/20/30	R220	WR42	FBP/FBM/FBE	Al/Cu
SH-260WFA...	21.7-33.0	1.20	2	3/6/10/20/30	R260	WR34	FBP/FBM/FBE	Al/Cu
SH-320WFA...	26.3-40.0	1.20	2	3/6/10/20/30	R320	WR28	FBP/FBM/FBE	Al/Cu

*Indicates Model Number. See Ordering Information for complete part number.

** Nominal Attenuation Accuracy: ± 0.5dB

Frequency Sensitivity: ± 0.7dB

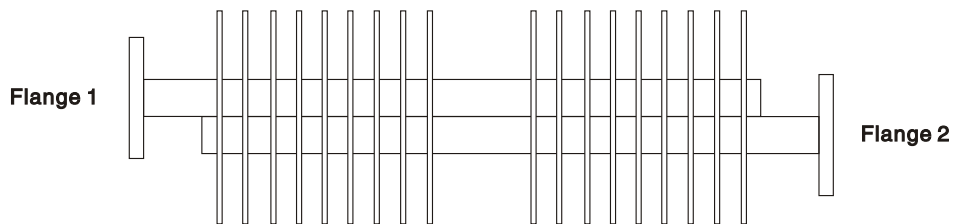
Ordering Information



- Flange type: Multiple types available – see Shinhom Microwave Flanges page
- Finish: Corrosion protection plus black top coat

WAVEGUIDE ATTENUATOR

Waveguide High Power Fixed Attenuator



ELECTRICAL CHARACTERISTICS:

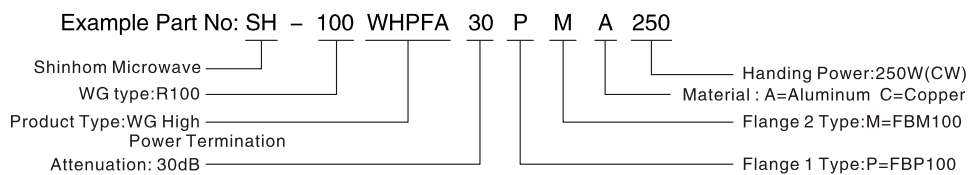
Part No.	Freq Range (GHz)	VSWR (Max)	Power (W)	Attenuation (dB)	WG Type		Flange	Material
					IEC	EIA		
SH-48WHPFA...	5.4-5.9	1.25	50	10/20	R48	WR187	FDP/FDM	Al/Cu
SH-70WHPFA...	5.85-7.025	1.20	500	55	R70	WR137	FDP/FDM	Al/Cu
SH-100WHPFA...	8.5-9.6	1.10	250	10	R100	WR90	FBP/FDM/FBE	Al/Cu
SH-120WHPFA...	9.84-15.0	1.15	50	10/20/30	R120	WR75	FBP/FDM/FBE	Al/Cu
SH-140WHPFA...	14.5-15.5	1.25	100	40	R140	WR62	FBP/FDM/FBE	Al/Cu
SH-320WHPFA...	26.3-40.0	1.25	20	10	R320	WR28	FBP/FDM/FBE	Al/Cu

*Indicates Model Number. See Ordering Information for complete part number.

** Nominal Attenuation Accuracy: ± 0.5dB

Frequency Sensitivity: ± 0.7dB

Ordering Information



- Flange type: Multiple types available – see Shinohm Microwave Flanges page
- Finish: Corrosion protection plus black top coat