



Micrometer Type Level Set Attenuators, Variable Phase Shifters and Fixed Attenuators QAF/QAL/QAS

Characteristics

- ◆ Broadband Operation
- ◆ 3-30 dB Fixed Attenuation
- ◆ 0-25 dB Variable Attenuation
- ◆ 0-180° Variable Phase Shift



Product Description

QuinStar Technology's **QAF** and **QAL** series **fixed and level set attenuators** and **QAS** series **variable phase shifters** are available in seven waveguide bands covering the frequency range of 18 to 110 GHz. The fixed attenuators feature low VSWR in five standard values of attenuation. The level set attenuators and phase shifters incorporate a

micrometer which enables very fine and repeatable adjustments to be made. They are fabricated using a straight waveguide section into which is placed either a lossy material for the attenuators, or a dielectric vane for the phase shifters. Operating characteristics are relatively constant over full waveguide bandwidths.

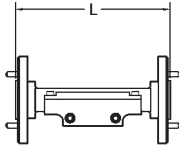
Specifications

FREQUENCY BAND	K	Ka	Q	U	V	E	W
Frequency Range (GHz)	18-26.5	26.5-40	33-50	40-60	50-75	60-90	75-110
Waveguide Size	WR-42	WR-28	WR-22	WR-19	WR-15	WR-12	WR-10
Fixed Attenuator Attenuation Values	03, 06, 10, 20, 30 dB or customer specific value						
VSWR (typ)	1.15:1						
Level Set Attenuator Range	0 to 25 dB variable						
Insertion Loss (dB typ)	0.5	0.5	0.6	0.7	0.8	0.9	1.0
VSWR (typ)	Attenuation < 20 dB 1.2:1, attenuation > 20 dB: 1.5:1						
Variable Phase Shifter Range	0-180 degrees						
Insertion Loss (dB typ)	0.5	0.5	0.6	0.7	0.8	0.9	1.0
VSWR (typ)	1.4:1						
Power Rating (all products)	0.5 Watts up to 60 GHz, 0.3 Watts beyond						

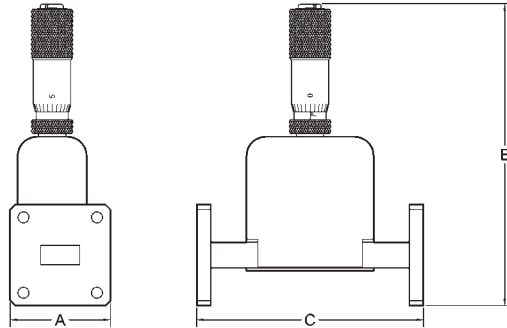


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Outline Drawings/Mechanical Specifications



Fixed Attenuator
(round flange pattern shown)



Level Set Attenuator/Variable Phase Shifter
(square flange pattern shown)

FREQUENCY BAND	WAVEGUIDE SIZE	FLANGE PATTERN	OUTLINE DIMENSIONS, inches/mm			
			LEVEL SET ATTENUATOR/PHASE SHIFTER			FIXED ATTENUATOR
			A	B	C	L
K	WR-42	UG-595/U	0.88/22.4	3.70/94.0	4.00/101.6	3.0/76.2
Ka	WR-28	UG-599/U	0.75/19.1	3.60/91.4	2.96/75.2	2.75/69.9
Q	WR-22	UG-383/U	1.25/31.8	3.60/91.4	2.96/75.2	2.75/69.9
U	WR-19	UG-383/U	1.25/31.8	3.60/91.4	2.96/75.2	2.75/69.9
V	WR-15	UG-385/U	0.75/19.1	3.60/91.4	2.96/75.2	2.0/50.8
E	WR-12	UG-387/U	0.75/19.1	3.60/91.4	2.96/75.2	2.0/50.8
W	WR-10	UG-387/U	0.75/19.1	3.60/91.4	2.96/75.2	2.0/50.8
F	WR-8	UG-387/U	0.75/19.1	3.60/91.4	2.96/75.2	2.0/50.8
D	WR-6	UG-387/U	0.75/19.1	3.60/91.4	2.96/75.2	2.0/50.8

Ordering Information

Model Number **QA - A BC 000**

model prefix

- F = fixed attenuator
- L = level set attenuator
- S = variable phase shifter

fixed attenuator value in dB

("00" for level set attenuator and variable phase shifter)

waveguide band designator

- K = K-band
- A = Ka-band
- Q = Q-band
- U = U-band
- V = V-band
- E = E-band
- W = W-band
- F = F-band
- D = D-band