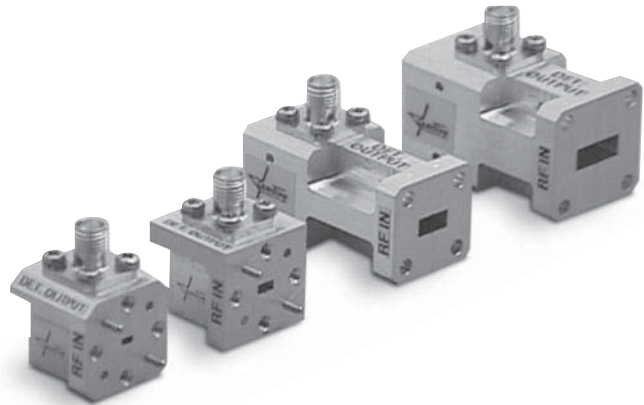




### Characteristics

- ◆ Full Waveguide Bandwidths
- ◆ High Sensitivity
- ◆ No Bias Required
- ◆ Positive or Negative Output



### Product Description

QuinStar Technology's **QEA series broadband detectors** cover the frequency range of 18 to 170 GHz in nine waveguide bands. These detectors provide an output voltage which is directly proportional to the power level of an RF signal without needing any external DC bias. They are useful for power detection, monitoring, built-in-test and frequency measurement. The detectors can also be used in millimeter-wave test systems with a wide variety of

high-impedance oscilloscopes and scalar analyzers. They can be used for both CW and pulsed power measurements. They are constructed with a very rugged, reliable split-block mechanical design and are available with either split positive or negative output voltage polarity. Detector adaptors for use with scalar network analyzers such as HP or Agilent 8756A are offered.

### Specifications

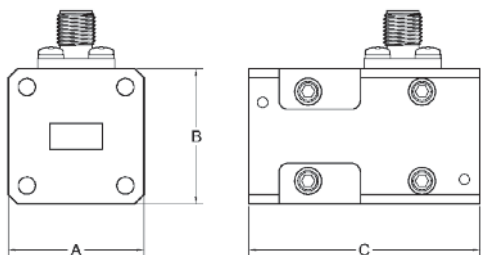
FREQUENCY BAND	K	Ka	Q	U	V	E	W	F	D
Frequency Range (GHz)	18-26.5	26.5-40	33-50	40-60	50-75	60-90	75-110	90-140	110-170
Waveguide Size	WR-42	WR-28	WR-22	WR-19	WR-15	WR-12	WR-10	WR-8	WR-6
Sensitivity (mV/mW min) <sup>1,2</sup>	1000	1000	1000	800	800	500	500	250	250
Flatness (dB max) <sup>3</sup>	±1.5	±1.5	±1.5	±1.5	±1.5	±1.5	±2.0	±3.0	±3.0
Input Power (mW max)	100	100	100	100	100	100	100	50	50

<sup>1</sup> The sensitivity of QEA broadband detectors can be optimized over a narrow bandwidth if desired.

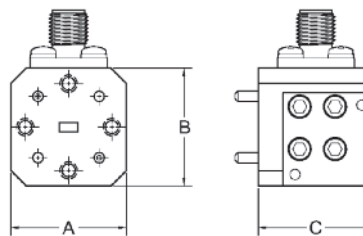
<sup>2</sup> Measured at -10dBm input power level, into a 100 K ohm load.

<sup>3</sup> Better flatness can be achieved over reduced bandwidth

### Outline Drawings/Mechanical Specifications



WR-42 and WR-28



WR-22 through WR-10

FREQUENCY BAND	WAVEGUIDE SIZE	FLANGE PATTERN <sup>1</sup>	VIDEO OUTPUT	OUTLINE DIMENSIONS, inches/mm		
				A	B	C
K	WR-42	UG-595/U	SMA JACK	0.88/22.4	0.88/22.4	1.5/38.1
Ka	WR-28	UG-599/U	SMA JACK	0.75/19.1	0.75/19.1	1.5/38.1
Q	WR-22	UG-383/U <sup>1</sup>	SMA JACK	1.13/28.7	1.13/28.7	1.25/31.75
U	WR-19	UG-383/U <sup>1</sup>	SMA JACK	1.13/28.7	1.13/28.7	1.25/31.75
V	WR-15	UG-385/U	SMA JACK	0.75/19.1	0.75/19.1	0.75/19.1
E	WR-12	UG-387/U	SMA JACK	0.75/19.1	0.75/19.1	0.75/19.1
W	WR-10	UG-387/U	SMA JACK	0.75/19.1	0.75/19.1	0.75/19.1

<sup>1</sup> Square flanges available for Q and U band.

### Ordering Information

Model Number **QEA -** **AB CD E F**

center frequency rounded to nearest GHz  
 (A0 = 100 GHz, A1 = 101 GHz, B0 = 110 GHz, B1 = 111 GHz, etc., FB = fullband)

bandwidth rounded to nearest GHz  
 (FB = fullband)

polarity \*  
 P = positive  
 N = negative  
 \* Detector output voltage with respect to case

waveguide band designator  
 K = K-band      V = V-band  
 A = Ka-band     E = E-band  
 Q = Q-band      W = W-band  
 U = U-band