



**Features**

- **Models from 33 GHz to 500 GHz**
- **Up to 50dB Calibrated Attenuation Range**
- **Low VSWR**
- **±10% Attenuation Flatness across full waveguide band**



Model 29024

The Flann Series 024 USB Control Variable Waveguide Attenuator expands upon our range of variable attenuators to provide a compact, low cost solution. An improved RF design enables an attenuation flatness of ±10% across the full waveguide band, within its guaranteed attenuation range.

USB control provides quick and repeatable change in attenuation while also allowing the possibility to seamlessly incorporate the unit into larger and/or OEM systems.

This new attenuator provides a solution where Flann’s market-leading high precision variable attenuator is either too large or too costly for the required application.

Enhanced possibility of full band attenuation mapping to allow attenuation correction through the supply of .s2p files where requested.

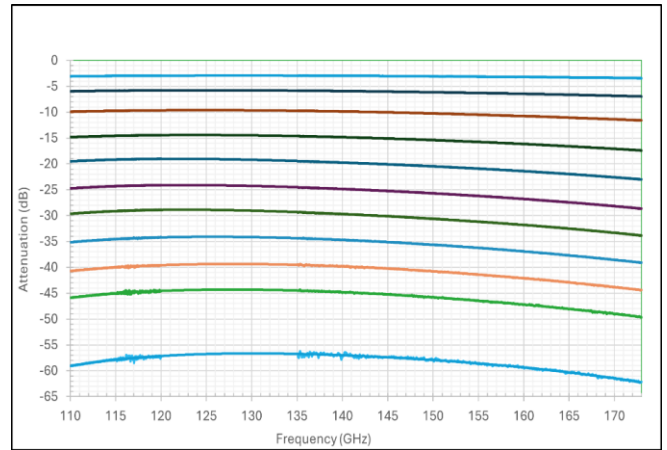
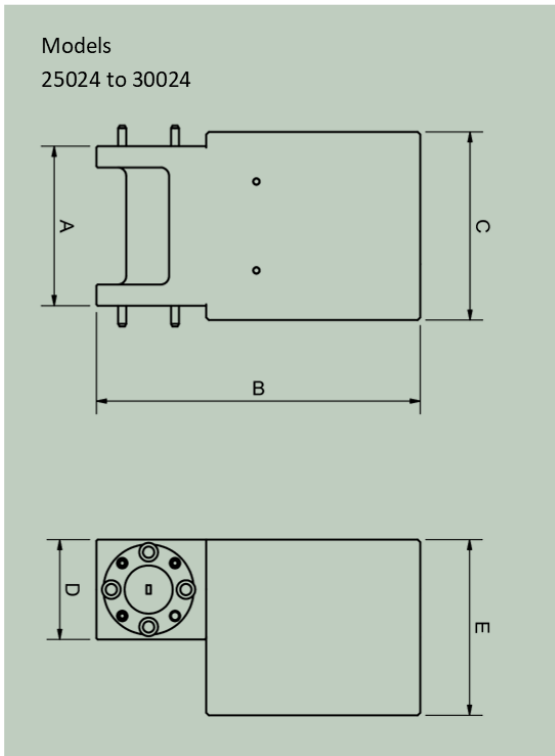


Figure: 29024 measured Attenuation vs. Frequency results

**Specifications**

Model	Waveguide Size			Frequency Range (GHz)	VSWR (MAX)	IL (dB)	Attenuation				Power (mW)
	WG	WR	WM				Range (dB)	Flatness (±% of dB)	Repeatability (dB)	Resolution (dB)	
25024	25	15	-	49.9 – 75.8	1.10	0.2	0-50	10	0.04	0.04	230
26024	26	12	-	60 – 92	1.10	0.2	0-50	10	0.05	0.05	190
27024	27	10	-	73.8 – 112	1.10	0.3	0-50	10	0.07	0.07	150
28024	28	8	-	90 – 140	1.15	0.4	0-50	10	0.08	0.08	120
29024	29	6	-	110 – 173	1.20	0.5	0-50	10	0.10	0.10	100
30024	30	5	-	140 – 220	1.20	0.55	0-50	10	0.13	0.13	80
31024	31	4	-	170 – 261	1.25	0.65	0-50	10 (tbc)	0.15	0.15	70
32024	32	3	-	217 – 330	1.25	0.7	0-50	10 (tbc)	0.19	0.19	50



Model	Dimensions (mm)				
	A	B Max	C	D	E
25024	40	62	34	19.5	36
26024	40	62	34	19.5	36
27024	40	62	34	19.5	36
28024	30.5	62	34	19.5	36
29024	30.5	62	34	19.5	36
30024	25	62	34	19.5	36
31024	25	62	34	19.5	36
32024	25	62	34	19.5	36

### Related Products

- Series 020: Attenuators, Manual Calibrated Variable
- 080: Attenuators, Manual Variable
- 081: Attenuators, Fixed
- 620: Attenuators, Programmable Rotary Vane
- 621: Attenuators, Programmable Rotary Vane
- 624: Attenuators, System
- 625-03: Attenuators, Programmable Ethernet
- 064: USB Control Variable Phase Changer

### Custom Design

Custom built and/or integrated instruments can be supplied; please contact the sales team for more information

[sales@flann.com](mailto:sales@flann.com)