

- Waveguide 90° H-bend with phase tuning element (ball)
- Manual phase tuning (360°) via a linearly moveable plunger
- High power capability
- Compact & robust design
- RoHS compliant
- Designed for S-band LINAC applications

Parameter	Value	
Footprint Drawing No.	3-123853-FP	
Product Type	Phase Wand	
Configuration	H-bend 90° waveguide	
Center Frequency f_0	2998 MHz or 2856MHz	
Bandwidth BW	± 10 MHz	
Forward Peak Power	6 MW max.	
Forward Average Power	6 kW max.	
Reverse Power	100% at any phase	
Insertion Loss	≤ 0.15 dB	
Return Loss	≥ 30 dB	ball out (Ø 9 mm)
	≥ 21 dB	ball in, (Ø 9 mm)
	26 dB ± 5 dB typ., see Fig. 1	ball in, (Ø 9 mm)
Phase Wand Ball Size	Ø 9 mm, installed with M4 thread	
	alternative ball sizes Ø 10 mm, 11 mm and 12 mm	
Phase Shift of Phase Wand	360° min., in reflection	travel distance 113 mm min.
Positional Indication	ruler scale, visible through cut-out windows	
RF Waveguide	WR284	
RF Flanges / Connectors		
Flange 1 (to load)	CPR284 10 hole flat	
Flange 2 (to circulator port 3)	CPR284 10-hole grooved, for metallic gasket	
Waveguide Dielectric Filling Gas	SF6	
Gas Pressure	nominal: 3 bar absolute, max. 4 bar absolute	
Gas Leak Rate (Helium)	< 5·10 ⁻⁴ mbar l/s, pressurized with He gas at 2.5 bar gauge	
Ambient Temperature	operational :	10°C to 40°C
	storage :	0°C to 60°C
Relative Humidity	< 80%, non-condensing	
Body Material	Aluminium	
Dimensions	see footprint drawing	
Weight	1.1 kg ± 10%	

Mounting Orientation	any
Accessories included	1x WR284 metallic gasket P/N 1-0002998000-000
	1x set of alternative ball sizes: Ø 10 mm, 11 mm and 12 mm

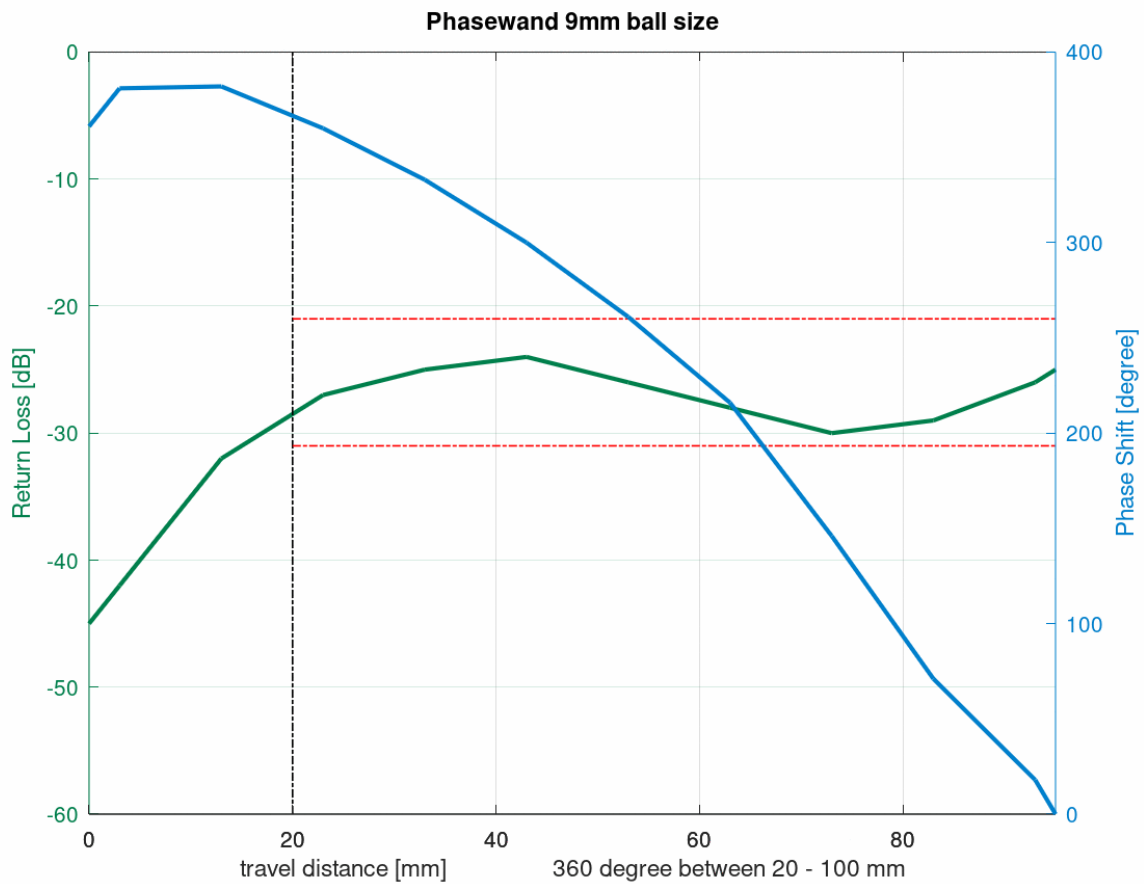


Fig. 1 : Typical characteristic of S_{11} in magnitude and phase vs. travel distance of the ball (Ø 9mm)

Rev.	Remark	Date	Name
00	Initial	07.06.2019	C. Weil
	Phase wand details, alternative ball sizes, Fig. 1	08.07.2021	C. Weil
	Footprint drawing no., flange definition	08.09.2021	C. Weil
	Formal update	30.03.2022	C. Weil
01	Scale added to slider	24.04.2023	C. Weil
	Set of alternative ball sizes	29.04.2024	C. Weil
	Ruler scale, weight	28.06.2024	C. Weil