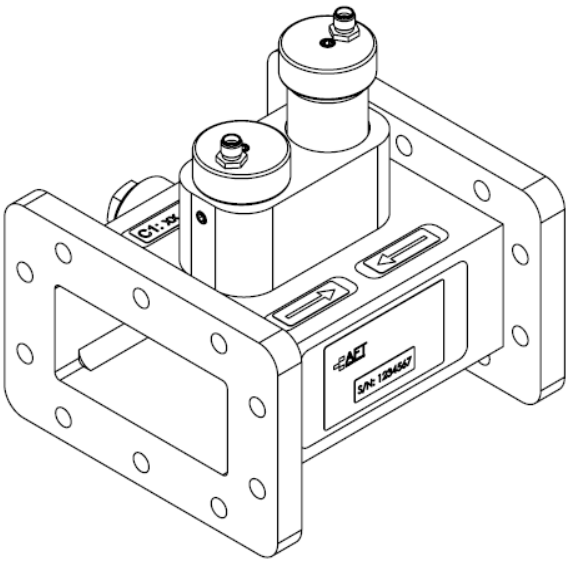

- Dual directional loop coupler for precise measurement of forward and reverse RF power
- Coupling coefficient selectable
- High directivity
- High power capability
- Compact & robust design
- High reliability
- RoHS compliant
- Designed for S-band LINAC applications

Parameter	Value
Footprint Drawing No.	FP-10073077
Product Type	Directional Coupler
Configuration	Dual Directional Loop Coupler
Center Frequency f_0	2856 MHz or 2998 MHz
Bandwidth BW	± 10 MHz
Forward Power	
Forward Peak Power	20 MW max.
Forward Average Power	15 kW max.
Reverse Power	100% at any phase
Insertion Loss (in WR284)	≤ 0.05 dB
Return Loss (in WR284)	≥ 30 dB
Coupling of Port C1	Xc1 ± 1 dB, Xc1 selectable from -50dB to -70dB
Coupling of Port C2	Xc2 ± 1 dB, Xc2 selectable from -50dB to -70dB
Directivity of C1 and C2	≥ 27 dB
Directional Sense of C1 and C2	see Fig. 1
RF Waveguide	WR284
RF Flanges	1x CPR284F, flat, 10x hole D6.5
	1x CPR284G, grooved, 10x hole D6.5
RF Coupling Connectors	2x SMA female, 50 Ω

Waveguide Dielectric Filling Gas	SF6	
Gas Pressure	nominal:	3 bar absolute
	maximum :	4 bar absolute
Gas Leak Rate (Helium)	< $5 \cdot 10^{-4}$ mbar l/s	
	device pressurized with He gas at 2.5 bar gauge	
Ambient Temperature	operating :	10°C to 40°C
	storage :	0°C to 60°C
Relative Humidity	< 80%, non-condensing	
Body Material	Aluminium	
Surface Finish	none	
Dimensions	see footprint drawing, length 120mm	
Weight	1.5 kg approximately	
Mounting Orientation	any	
Accessories included	1x metallic gasket 1-0002998000-000	

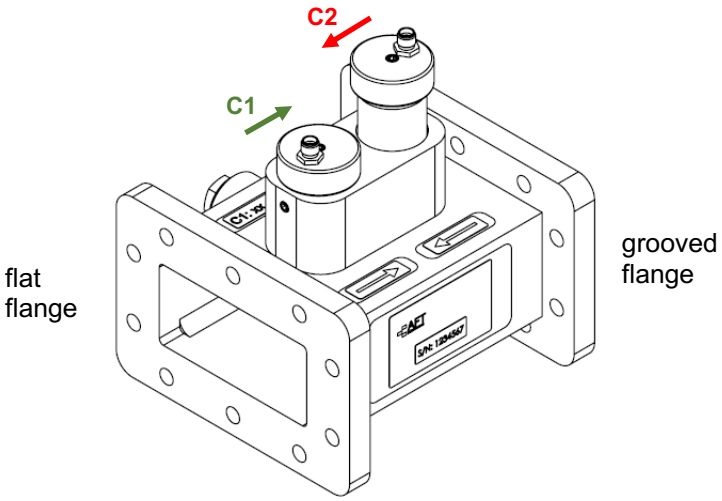

Fig. 1: Location and directional sense of couplers C1 and C2

Ordering Code

DC-WR284-01 - Xf - Xc1 - Xc2

Variable	Description	Value Options
Xf	Center Frequency [MHz]	**2856** or **2998**
Xc1	Coupling of Port C1 [dB]	**50** to **70**
Xc2	Coupling of Port C2 [dB]	**50** to **70**

Notes:

1 Low-Power Acceptance Tests: The following tests will be performed at the AFT factory before shipment: (1) small-signal network analyzer measurements of insertion loss, return loss, coupling and directivity all ports/ signal paths vs. frequency at room temperature, (2) He-gas leak rate testing.

2 Documentation: An owner´s manual is supplied for providing information on the installation, operation and maintenance of the device. The documentation will also include specification, footprint drawing, an inspection report, and the RF test results as viewgraphs of S-parameters vs. frequency.

Rev.	Remark	Date	Name
00	Initial	24.11.2015	C. Weil
	Update logo, note 2 inspection report addad	13.11.2023	C. Weil