

Water Load 9300MHz WR112

- RF absorption & cooling by water
- Excellent peak & average power capability
- High reliability & long life-time
- Free of maintenance & wear parts
- RoHS compliant
- Designed for X-band LINAC applications

Parameter	Value		
Footprint Drawing No.	FP-10074172		
Product Type	RF Load		
Configuration	Water Load		
Center Frequency f_0	9300 MHz		
Bandwidth BW	± 10 MHz		
Input Power	Options:	Xp = 1	Xp = 2
Input Peak Power		2 MW	2.5 MW
Input Average Power		2 kW	2.5 kW
Return Loss	≥ 30 dB		
VSWR	< 1.065		
RF Waveguide	WR112		
RF Flanges / Connectors	WR112 cover flange, UG-51/U, with 4x 8-32 UNC-28 threads		
Cooling System	demineralized water		
Water Tube Materials	Stainless steel		
Water Connectors	2x 1/4" hose barb fittings, stainless steel		
Water Inlet Temperature (nominal)	selectable between 20°C and 40°C		
Water Inlet Temperature Range	$\pm 2^\circ\text{C}$		
Water Flow Rate	≥ 300 l/h		
Water Pressure Drop	< 2 bar @ minimum flow rate		
Water Inlet Pressure	≤ 10 bar		
Water Leak Test Pressure	15 bar for 10min		

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Waveguide Dielectric Filling Gas	SF6	
Gas Pressure	nominal:	3 bar absolute
	maximum :	4 bar absolute
Gas Leak Rate (Helium)	< 5·10 ⁻⁴ mbar l/s	
	tested with Helium pressurization at 2.5 bar gauge	
Ambient Temperature	operating :	10°C to 40°C
	storage :	0°C to 60°C
Relative Humidity	< 80%, non-condensing	
Dimensions	see footprint drawing	
Weight	0.7 kg approximately	
Mounting Orientation	any	

Ordering Code

LW-WR112-01 - Xp - Xw

Variable	Description	Value Options	
Xp	Input Power Option	1 (2MW / 2kW)	2 (2.5MW / 2.5kW)
Xw	Water Inlet Temp. [°C]	20 .. 40	

Notes:

- Water quality, temperature, flow, and input pressure need to be controlled carefully according to the specified values. Air bubbles in the cooling channel have to be avoided. The device does not include any sensorics and interlocks for water temperature, flow or pressure.
- Low-Power Acceptance Tests: The following tests will be performed at the AFT factory before shipment: (1) small-signal network analyzer measurements of input return loss vs. frequency at room temperature, (2) water leak test, and (3) He-gas leak rate testing.
- 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.

As an *option to be ordered separately*, extended documentation is available in terms of a low-power RF test report (viewgraphs S-parameters vs. frequency) or written factory test protocol.

Rev.	Remark	Date	Name
0	Initial	23.06.2017	C. Weil
	Footprint drawing no.	27.04.2018	C. Weil