

- Microwave Technologies
- Custom Technical Ceramics
- Industrial Services
- Quality Assurance, NQA - 1

- Product Information - Microwave Waveguide Vapor Barriers

Background:

Microwave heating and accessory technologies used in the fabrication of advanced microwave vacuum furnaces constitute the core of Hadron Technologies' knowledge base. HTI announces the release of high performance microwave vapor barriers used for industrial processing in controlled atmospheres.

At Hadron we are constantly developing new materials and designs for systems and components to be used with microwave (MW) technology. Microwave casting systems often push the limits of traditional microwave components typically used in less demanding processes. In order to meet these demands, HTI has developed several proprietary high performance waveguide vapor barriers by implementing several technological advancements in barrier design. HTI vapor barriers are compatible with standard WR window sizes and are customized for each specific application.

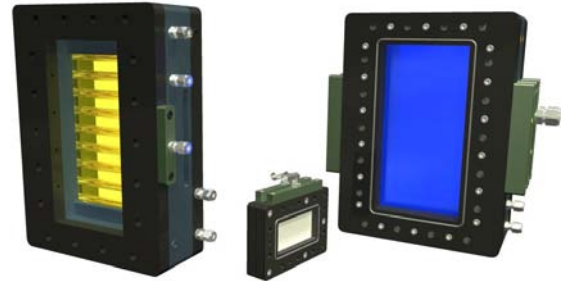


Specifications:

- Sizes: WR-975, WR-430, and WR-340.
- Operating Pressure: Up to 15psi across lens.
- Operating Temperature: Less than 180°F at full power.
- Maximum Temperature: Up to 275°F bake out.
- Cooling: Optional water cooled frames.
- Lens Purge: Optional Argon or Nitrogen purge manifold.
- Vacuum: Less than 1×10^{-8} std cc/sec leak rate.
- VSWR: 1.10 : 1 Maximum.
- Maximum Power: Up to 100kW.



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Product Model Information:

Model No	Waveguide	f(Mhz)	P _{max} (kW)	H2O Cooling	Lens Purge	Lens Material	Ambient Cooling
HT-WR975-VB-100-01 †	WR-975	915	100	✓	✓	-01	
HT-WR975-VB-050-01 †	WR-975	915	50	✓		-01	
HT-WR975-VB-050-04	WR-975	915	50	✓		-04	
HT-WR430-VB-015-04	WR-430	2450	15	✓		-04	
HT-WR430-VB-015-01	WR-430	2450	12	✓		-01	
HT-WR430-VB-006-03	WR-430	2450	6		✓	-03	✓
HT-WR340-VB-012-01	WR-340	2450	12	✓	✓	-01	
HT-WR340-VB-006-01	WR-340	2450	6		✓	-01	✓
HT-WR340-VB-006-02	WR-340	2450	6		✓	-02	✓
HT-WR340-VB-003-01	WR-340	2450	3			-01	✓
HT-WR340-VB-003-02	WR-340	2450	3			-02	✓
HT-WR340-VB-003-03	WR-340	2450	3			-03	✓

† Barrier consists of two lenses.

Lens	Material	Pressure	Temperature	Vacuum	VSWR	Comparative Cost
-01	Hi-purity Quartz	Good	Good	Best	Good	\$\$\$
-02	Teflon	Poor	Good	Poor	Good	\$\$
-03	Polystyrene	Poor	Poor	Poor	Best	\$
-04	96% Alumina	Good	Best	Good	Poor	\$\$\$\$