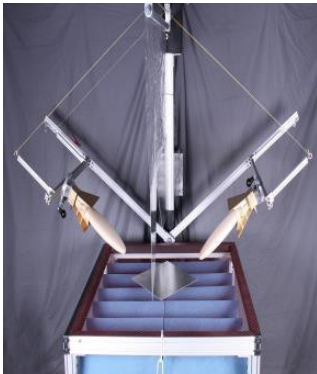


Gaussian Beam Reflection Loss Arch Systems

Keysight Technologies and
MWI Laboratories

Precise & Cost-Effective Non-Destructive Testing of Critical Materials

Users and developers of non-metallic composite materials need to understand fully their material's uniformity and isotropy. To do so requires the ability to scan for material defects by measuring the interaction of the material (dielectric properties and magnetic properties) with RF, either over a broad range of frequency or within a specific narrow frequency band of interest.



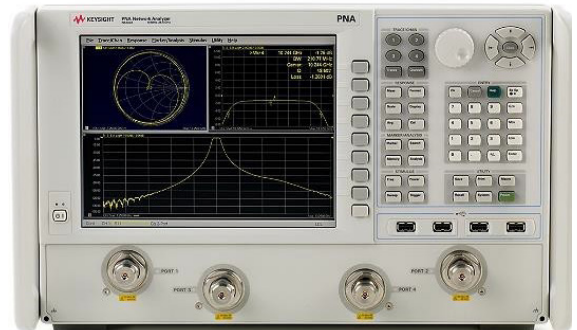
MWI_Arch48 Gaussian Beam Reflection Loss Arch with two PRA_0716 antennas

MWI Laboratories provide a range of Gaussian Beam Reflection Loss Arch systems that utilize MWI's polyrod antennas. The antennas can be moved independently to permit an angle of reflection from ± 5 degrees to ± 80 degrees. When used with the MWI PRA_0716 antennas, the systems provide a frequency range of 0.7-16 GHz with a beam size of 12.5 inches diameter at 2 GHz. They can be adjusted for aligning the E-field for Transverse Electric (TE) or Transverse Magnetic (TM) polarities. The systems can accommodate a variety of sample size, the MWI_Arch48, for example, offers a sample test region of 48"x48"x86".

MWI Laboratories' Gaussian Beam Polyrod antennas provide a planar wave within 1 inch of the tip and produce a collimating beam (without a focal point) to inspect composite materials. Similar to a laser, MWI's collimating RF beam is very directional, narrow and prevents over-illumination of the sample. This makes it very easy for the user to determine where the energy is located in performing non-destructive testing for material characterization, uniformity and defect detection measurements over a wide range of bi-static measurement angles.

The systems are light-weight and easy to operate without the need for an RF engineer. Mechanical and software noise reduction improvements increase dynamic range greater than 70dB while reducing signal scattering and sample wrap-around.

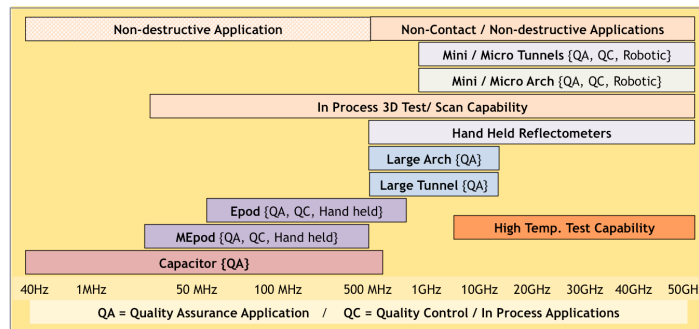
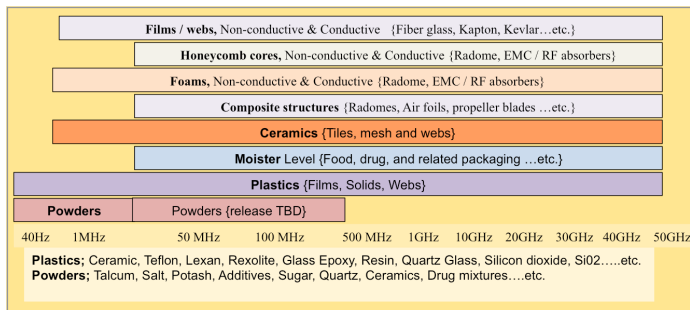
- Non-destructive testing of critical materials
- Adjustable for aligning E-field for TE and TM polarities
- Produces a beam size of 12.5 inches diameter at 2 GHz.
- Frequency range 0.7 - 16 GHz with PRA_0716 antenna
- Used with Keysight's Vector Network Analyzers



Gaussian Beam Reflection Loss Arch Systems

When combined with a Keysight Vector/Performance Network Analyzer the Reflection Loss Arch allows the customer to save time on testing, reduces manpower cost, while increasing product quality if inspected in a Laboratory Quality Assurance (QA) or during manufacturing via an in-process Quality Control (QC) environment.

Customers who have implemented MWI's Non-Destructive Testing solutions have eliminated the need to machine samples and have reduced scrap rates by as much as 60%, as well as reduced production down time by 85%.



System Components

Keysight Technologies

PNA Series N52xxx	Vector Network Analyzer
or, PXI M937xx	Vector Network Analyzer
or, FieldFox Series N99xxx	Hand-held Vector Network Analyzer

MWI Laboratories

MWI_Arch24	Mini-Reflection Loss Arch (7-50GHz)
MWI_Arch48	Gaussian Beam Reflection Loss Arch (0.7-16GHz)
MWI_Arch60	Gaussian Beam Reflection Loss Arch (0.7-16GHz)
MWI_ArchXX	Custom Gaussian Beam Reflection Loss Arch

To learn how this solution can address your specific needs please contact
 Keysight's solutions partner,
 MWI Laboratories
www.keysight.com/find/mwi



Keysight & Solutions Partners
 Extending our solutions to meet your needs

Keysight and its Solutions Partners work together to help customers meet their unique challenges, in design, manufacturing, installation or support. To learn more about the program, our partners and solutions go to
www.keysight.com/find/solutionspartner

Material-Wave Interactions Laboratories (MWI Lab) is a spin-off from Arizona State University with exclusive rights for three research patents: the revolutionary Gaussian Beam and Linearly Polarize Resonate Loop Technologies. MWI is the premier provider of "Non-Destructive" in-process Quality Control and laboratory Quality Assurance, and Radio Frequency testing services used to measure the anisotropic, dielectric, and/or magnetic material properties.

www.mwilab.com

For information on Keysight Technologies' products, applications and services, go to
www.keysight.com

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