

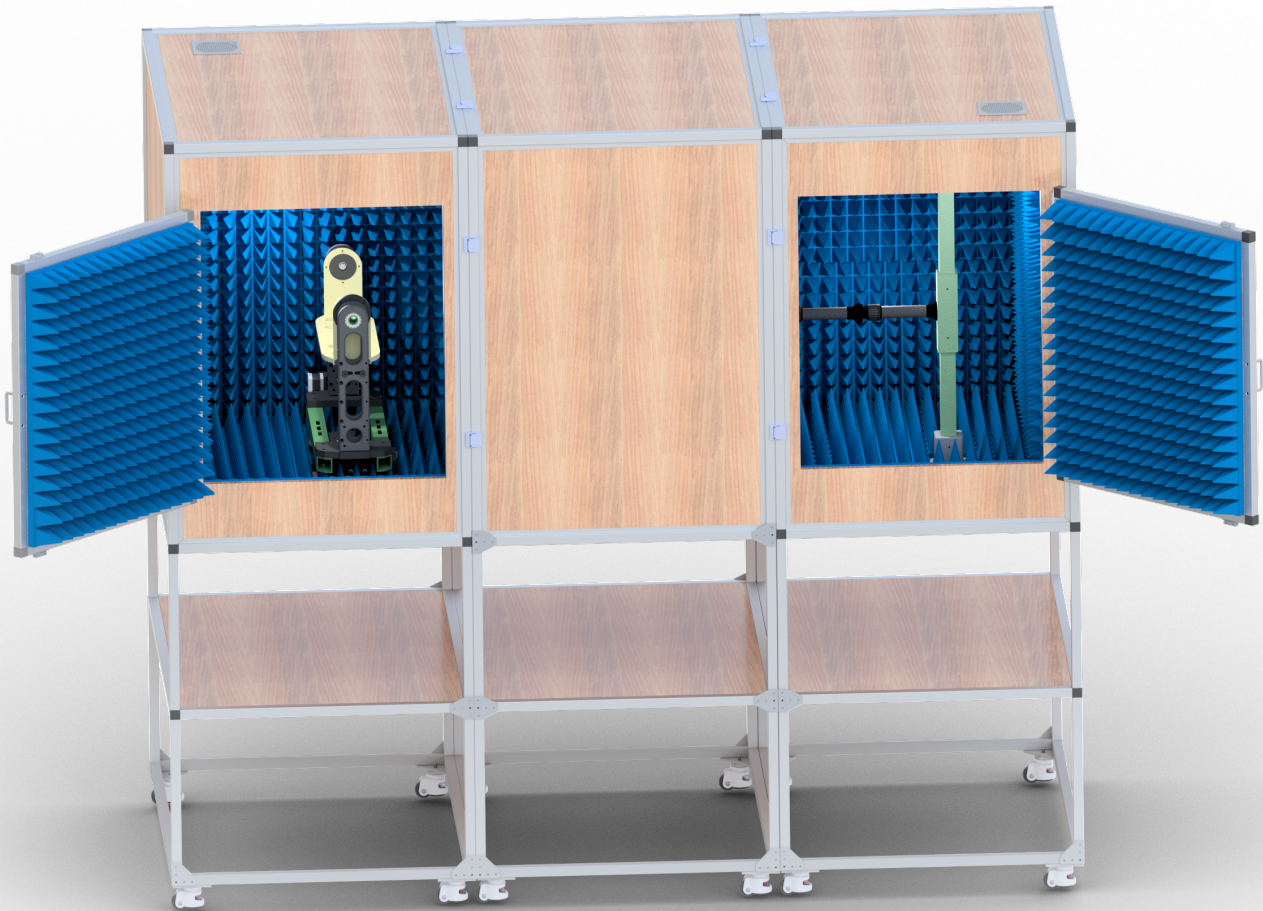


Diamond Engineering

Automated Measurement Systems

PC-9024

Portable Anechoic Chamber Antenna Measurement System



Features and Specifications

Introduction and Features

Introduction

Diamond Engineering's PC-9042 portable chamber provides a compact, low-cost, non-shielded anechoic test environment which is ideal for manufacturers of small devices (or individual components) to accurately measure and/or complete pre-compliance R&D. While it was designed for testing nearly any device, it is particularly well suited for measuring high frequencies such as 5G and/or mmW ranged frequencies.

Each segment of the PC-9042 is equipped with its own set of leveling caster wheels. Default configuration includes three segments with a center module—each of which can be removed or additional segments can be added to expand the length.

Features

Portability

The PC-9042 was designed with easy portability in mind. Each segment can be disconnected and individually navigated through standard office doors or elevators.

Integrated Positioner Options

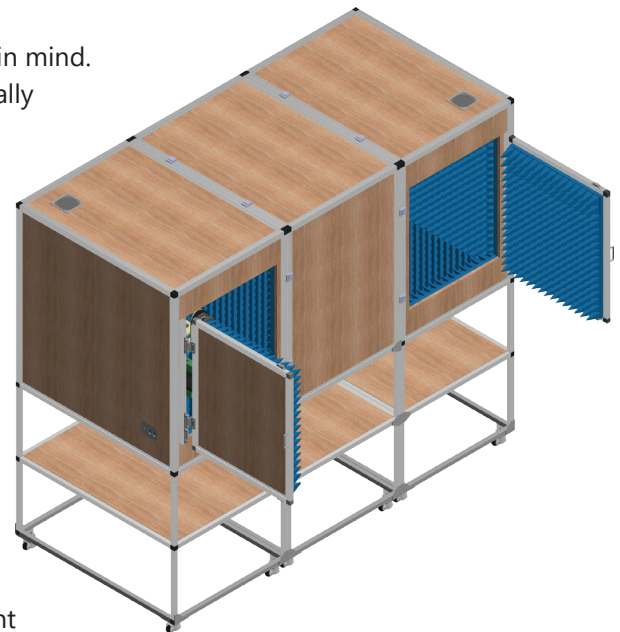
Can include a dual-axis positioner specially designed for this chamber which includes a removable gimbal mount for Y rotations and a turntable for X rotations. We can tailor the mounting plate specifically to your device(s).

Adaptive Mast

The built-in mast has a sliding mechanism which allows for height adjustment with a telescopic column to enable of manual adjustment to the distance between the horn and the DUT.

Versatile Options

Many different options exist which can turn the PC-9042 into a full turn-key solution. Aside from adding a positioner, we can create a custom package to also include custom horns, cables, pre-configured computer, network analyzer (or other test equipment), automated polarization switches, customized absorber and many other options. Contact us for details.



What's included?

- Portable anechoic chamber
- Fully furnished with absorber
- External control panel
- RF feed through
- Interior lighting
- Adjustable, integrated mast
- Dual fans for ventilation
- Caster wheels for easy portability
- Storage shelf below chamber
- All cables, tools and accessories

Specifications

General

Dimensions

External footprint:	43" (D) x 90" (W) total
	43" (D) x 30" (W) each segment
Internal free-space dimensions:	32" (D) x 81" (W) x 32" (H)
Total height:	79" (201 cm)
Total weight:	475 lbs (215 kg)
Shipping weight:	665 lbs (302 kg) <i>includes pallets, packaging, accessories, etc.</i>

Chamber Performance

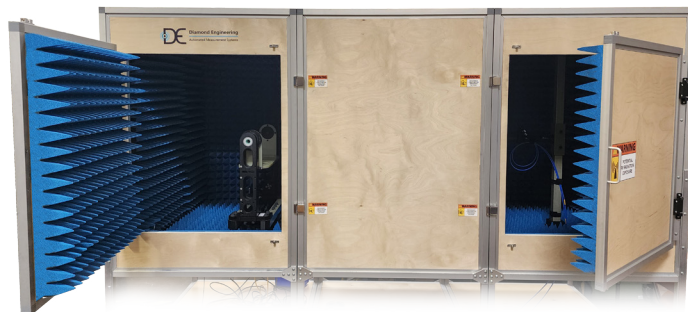
Frequency range:	30 MHz to 110 GHz
Reflectivity loss:	-30db @ 3.0 GHz
	-35db @ 6.0 GHz
	-40db @ 10.0 GHz
	-45db @ 18.0 GHz
	-50db @ 40.0 GHz
	-45db @ 100.0 GHz
Power handling:	1.5 kW/m ²
Standard shielding:	None (<i>optional</i>)

Measurement Specifications

Test distance, mast to DUT:	58" maximum, 32" minimum (with dual telescopic columns)
Vertical range, floor to horn:	Mast can be adjusted from 7" to 33"
Mast composition:	Fiberglass, carbon fiber

General

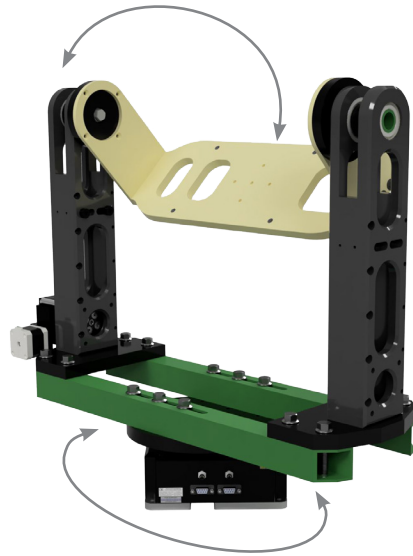
Material composition:	Aluminum, furniture-grade birch, polyurethane absorber
Portability:	Each easy-to-disconnect segment includes leveling caster wheels
Standard included options:	Integrated non-metallic telescopic mast Interior lighting Two fans for ventilation RF pass through Dual cable access ports
Lighting specifications:	Four (4) 12V LED adjustable lights, 1200 lumens, 2700K color temp
Ventilation specifications:	Two (2) 12V 3.5W 120mm fans spinning at 2500 RPM with a CFM rating of 83.2 CFM & 35.7 dBM noise



Positioner Options: DC202

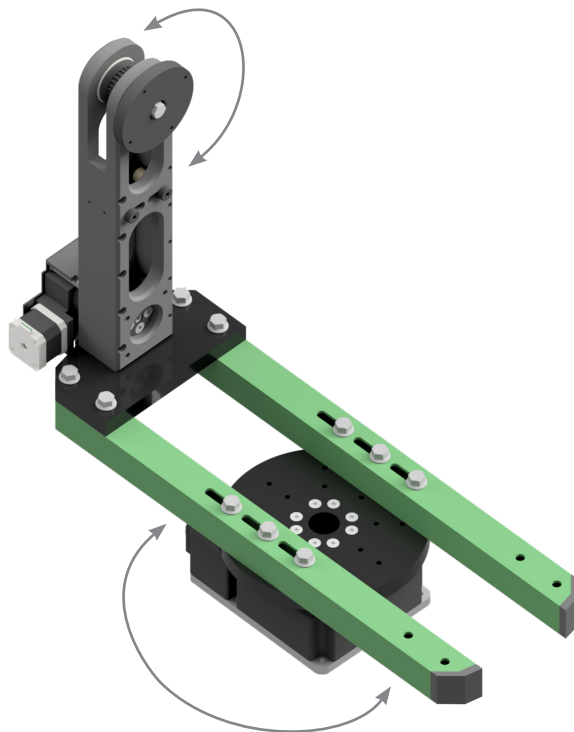
DC202 with Gimbal System

Our DC202 was specially designed for the PC-9042 chamber. It features two-axis of movement on a largely non-metallic positioning system equipped with a gimbal-style mounting tray which is ideal for full spherical measurements. It is capable of measuring DUTs up to 30 pounds (13.6 kg).



DC202 without Gimbal System

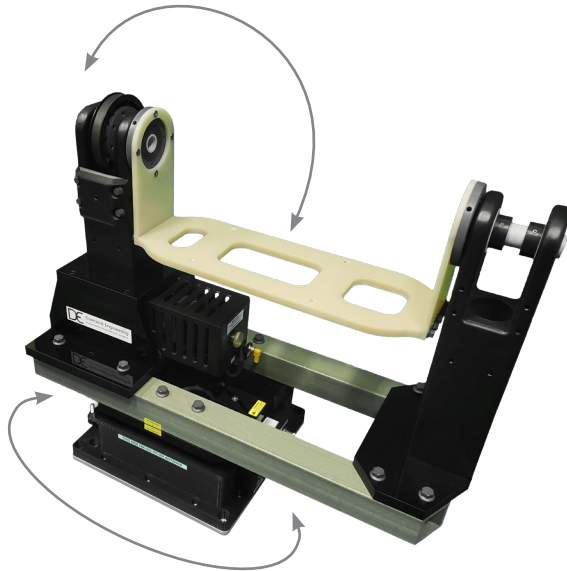
The DC202 system can be configured without the slave head and/or the gimbal tray which enables unimpeded Phi-Theta (or AZ over EL) measurements.



Positioner Options: DC402

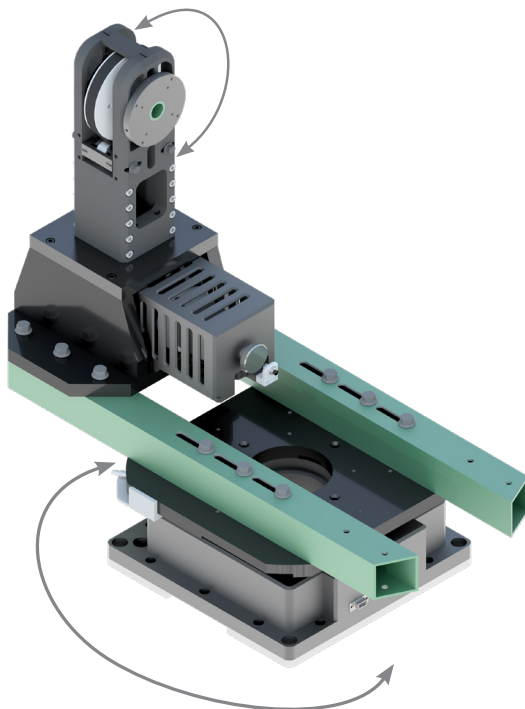
DC402 with Gimbal System

Our DC402 is our slightly larger model was specially designed for small chambers such as the PC-9042. It features two-axis of movement on a largely non-metallic positioning system equipped with a gimbal-style mounting tray. It is capable of measuring DUTs up to 40 pounds (18.1 kg).



DC402 without Gimbal System

The DC402 system can be configured without the slave head and/or the gimbal tray which enables unimpeded Phi-Theta (or AZ over EL) measurements. (The entire upper assembly can also be removed to reveal a basic turntable as well!)



System Package Options

Standard Models

All standard packages include the chamber, tools and documentation and AUT mounting hardware.
If you have special requirements, we are happy to custom design a package for you.

Basic Model

PC9042 Basic chamber (no RF, no positioner)

With DC202 Positioner

PC9042-202-NORF Includes DC202 positioner without RF Components
PC9042-202-6 Includes DC202 positioner with 6 GHz SMA RF Components
PC9042-202-18 Includes DC202 positioner with 18 GHz SMA RF Components
PC9042-202-40 Includes DC202 positioner with 40 GHz 2.92 mm RF Components
PC9042-202-50 Includes DC202 positioner with 40 GHz 2.92 mm RF Components
PC9042-202-67 Includes DC202 positioner with 67 GHz 1.85 mm RF Components

With DC402 Positioner

PC9042-402-NORF Includes DC402 positioner without RF Components
PC9042-402-6 Includes DC402 positioner with 6 GHz SMA RF Components
PC9042-402-18 Includes DC402 positioner with 18 GHz SMA RF Components
PC9042-402-40 Includes DC402 positioner with 40 GHz 2.92 mm RF Components
PC9042-402-50 Includes DC402 positioner with 40 GHz 2.92 mm RF Components
PC9042-402-67 Includes DC402 positioner with 67 GHz 1.85 mm RF Components

Additional Options

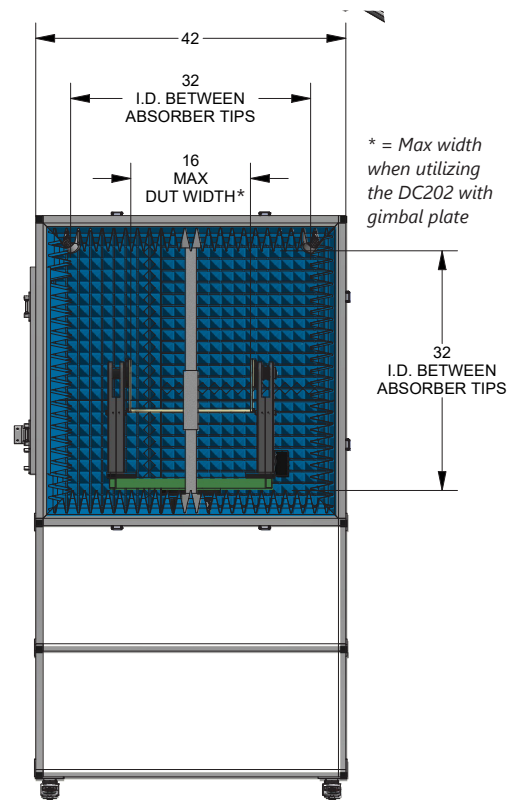
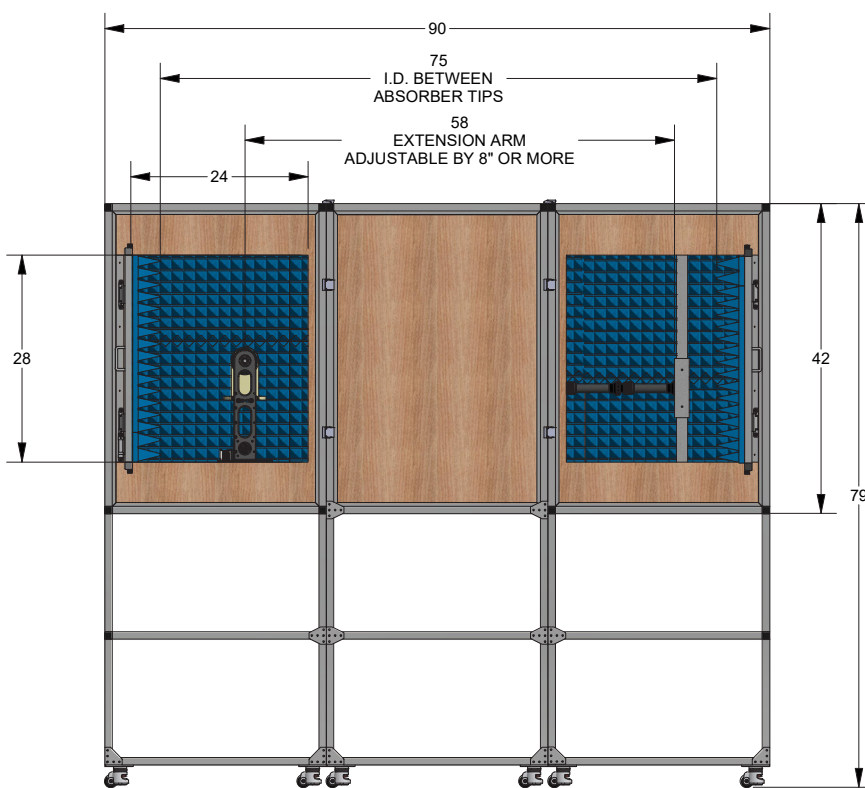
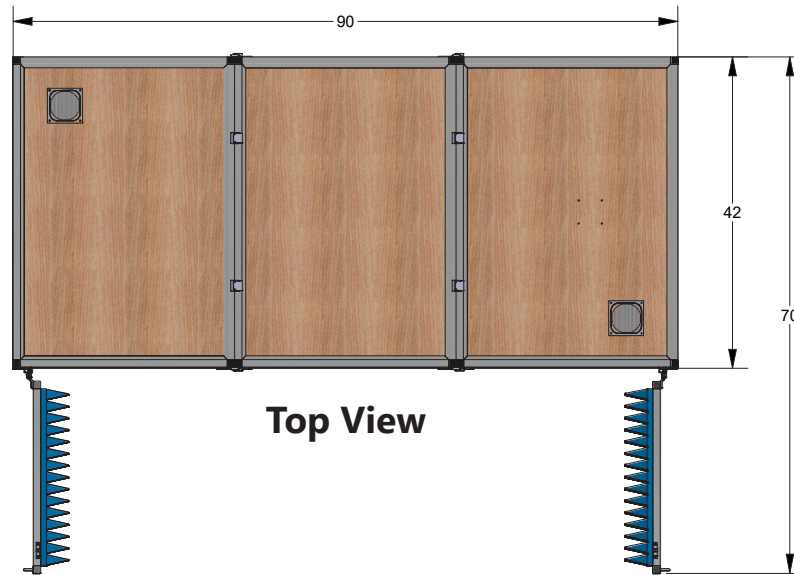
OPT-PCS Electrically sealed with aluminum shielding
OPT-UPAB Upgraded absorber (from 4" to 8" cones)
OPT-PCEXT Additional chamber segment
DPA-AUTOPOL 18 GHz SPDT RF switch auto-polarizer with cables/adapters
DPA-AUTOPOL-40 40 GHz SPDT RF switch auto-polarizer with cables/adapters
DPA-AUTOPOL-50 50 GHz SPDT RF switch auto-polarizer with cables/adapters
DE-05xx Broadband reference horn 500 MHz to xx (18, 26, 30 or 40 GHz)
OPT-SMA Software maintenance agreement
DPA-PDK DAMS Platform Development Kit

Accessories

DEPC-D Pre-configured PC (desktop)
DEPC-L Pre-configured PC (laptop)
DE-SIM DAMS Antenna & Network Simulator software add-on
DPA-SW-N2F Spherical near-field processing

Chamber Dimensions

Units: Inches



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<http://www.DiamondEng.net> · Support@DiamondEng.net

P.O. Box 2037 · Diamond Springs, CA 95619 · 530-626-3857