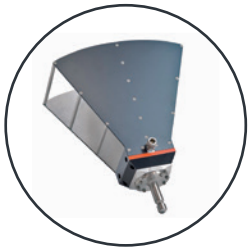
FLEXIBLE EMC

TEST & Measurement Solutions

PRODUCT OVERVIEW

mvg
Microwave Vision Group

Company Overview



At MVG we design, manufacture, and install best in class semi and fully anechoic chambers and shielded rooms, for a wide variety of EMC, EMPP, RF, microwave and antenna applications. Our solutions are used extensively in the aerospace, defense, telecommunications, commercial electronics and automotive industries as inhouse facilities, and also by major test houses. Whatever you need a quiet RF environment for, such as for EMC testing, be that emissions, immunity, pre-compliant or compliant, within MVG's wide portfolio, coupled with our experience of delivering chambers for over 30 years, we will have a solution for your needs.

Our RF Research & Development

Our 55 R&D engineers work tirelessly to develop our superior range of EMC testing products with an impressive 9.3% of revenue plowed back into product research and development.

Many private companies and public offices choose our EMC testing products to ensure that their tests are compliant to the latest industry standards. Testament to the high quality of our EMC products is that companies like Dyson Ltd, as well as other industry leaders, have chosen MVG's EMC test chambers to help them deliver efficient, on-site, EMC testing to fully compliant levels.

> *We design, manufacture, supply and install rooms and chambers for EMC, RF, microwave and antenna testing.*

COMPREHENSIVE IN-HOUSE EXPERTISE

From Advanced Design to Seamless Worldwide EMC Compliance

1 **Program Management**
Expert planning, manufacturing, shipping, execution, and delivery.

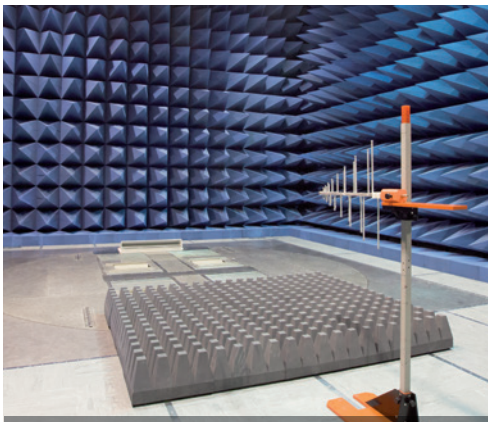
2 **Design**
Advanced 2D and 3D design expertise, including building integration CAD (BIM), from simple to complex projects.

3 **Installation**
Skilled execution and delivery of projects worldwide.

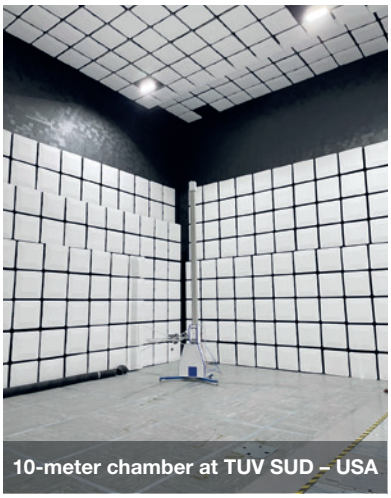
4 **RF/EMC Engineering**
Expert simulation, testing in absorber, and chamber design.

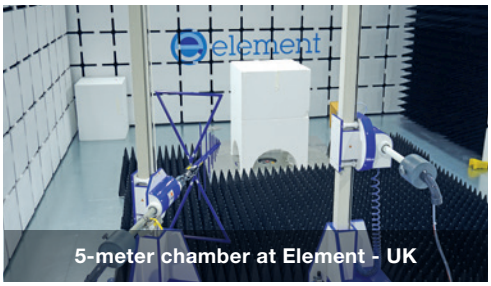
5 **EMC Standardization**
Trusted guidance in international EMC compliance from international experts.

COMPLETED PROJECTS

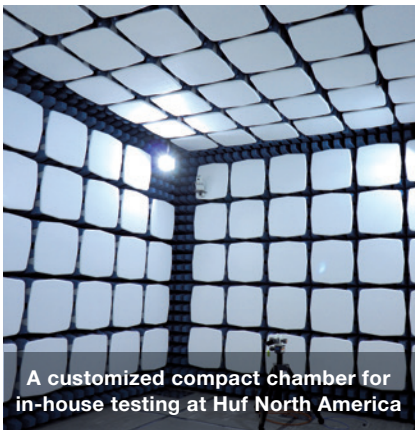

Combined AMS & EMC Test Chamber at Ilmenau University of Technology - Germany

3-meter chamber at Dyson Ltd - UK


10-meter chamber at TUV SUD – USA



5-meter chamber at Element - UK


A customized compact chamber for in-house testing at Huf North America


Joint Research Centre - European Commission – Italy

CASE STUDY

Dyson Ltd dyson

Today's industry is highly competitive. The secrecy in their knowledge and developments has been a crucial element in Dyson's success to date. But how do they achieve this? Fabio Scalon, Principal Engineer at Dyson Ltd says: ... "our tests are all completed in house in our SAC which helps us to maintain confidentiality and keep product developments on-site rather than shipping to outside test facilities. This also gives us the capability to test to the standards specified by the industry, namely CISPR, IEC and FCC."

The existing chamber was evaluated by MVG and upgraded to refit new "Hyperloss" hybrid absorber matched to the existing ferrite tiles. Fabio explains, "With changes in the complexity of our products, we now have a need to also test for Electro Magnetic Fields (EMF) up to 2.7 GHz. The upgraded chamber will allow us to do this, therefore expanding both the capability and the performance of the chamber."

Download the full document here

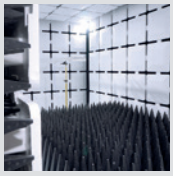
Element Materials Technology

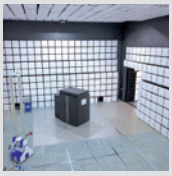
Most regions worldwide require electromagnetic compatibility (EMC) testing before electrical and electronic products can enter the market. Devices used close to the body must also comply with Specific Absorption Rate (SAR) regulations, while every wireless standard — from LTE to 5G — defines strict certification requirements.
As a leading global Testing, Inspection and Certification (TIC) provider, Element operates more than 270 laboratories across 30+ countries, supporting customers from early R&D to regulatory approval and production.

To meet growing demand and increasing wireless complexity, Element has strengthened its capabilities with advanced EMC, antenna, and SAR measurement solutions from MVG, ensuring accuracy, efficiency, and future-ready performance.

Download the full document here

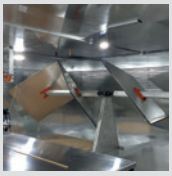
Quick Guide of MVG's EMC Test Chamber Solutions




Product Name	EMC-3C	EMC-3m	EMC-5m	EMC-10m	MIL-STD	CISPR25 Automotive Component	CISPR12 Automotive Vehicle
Dimensions	7 m x 3 m x 3 m	8.9 m x 5.6 m x 5.8 m	11.5 m x 7.5 m x 5.8 m	21 m x 12 m x 8.5 m	Dimensions may vary. E.g: a test bench up to Aircraft	5.6 m x 5.1 m x 3.5 m	21 m x 12 m x 8.5 m
Frequency	30 MHz - 18 GHz	30 MHz - 18 GHz	30 MHz - 18 GHz	30 MHz - 18 GHz	10 KHz - 40 GHz	9 KHz to 18 GHz (Option 40 GHz)	30 MHz - 18 GHz
Radiated Immunity	80 MHz - 18 GHz	80 MHz - 18 GHz	80 MHz - 18 GHz	80 MHz - 18 GHz	80 MHz - 18 GHz	80 MHz - 18 GHz	80 MHz - 18 GHz
Radiated Emissions	30 MHz - 18 GHz	30 MHz - 18 GHz	30 MHz - 18 GHz	30 MHz - 18 GHz	30 MHz - 18 GHz	30 MHz - 18 GHz	30 MHz - 18 GHz
Test Volume	1.0 m	2.0 m	3.0 m	> 3.0 m	Will vary	Will vary	> 3.0 m
Standards Pre-compliant	CISPR-16	-	-	-	-	-	-
Standards Compliant	• EN61000-4-3	• ANSI C63.4 • MIL STD 461G • CISPR 16-1-4 • EN61000-4-3	• ANSI C63.4 • MIL STD 461G • CISPR 16-1-4 • EN61000-4-3	• ANSI C63.4 • MIL STD 461G • CISPR 16-1-4 • EN61000-4-3	• MIL STD 461G • RTCA DO 160	• CISPR25 Annex J • ISO11452-2	• CISPR 25 Annex J • CISPR 12 • ISO11452-2
Shielding	SmartShield shielding						
Absorbers	Hybrid anechoic absorber combining HyPyr-Loss™ UF series ferrite tiles and UH series polypropylene absorbers, with alternative UHC series broadband option for the MIL STD chamber						

Complementary EMC Products to our Anechoic Test Chamber Solutions






Product Name	Reverberation Chamber	RF Shielded Rooms	SmartShield Door Systems	Hyperloss EMC Antennas Absorbers	EMC Antennas	EMPP
Info	4 Models: • RVC 80 • RVC200 • RVC400 • RVC800/1000	• EMC Testing (conducted emissions, conducted immunity) • Shielded control and amplifier rooms • RF development testing • Electromagnetic pulse protection • Electromagnetically secure environments • Medical (audiology, EEG, etc)	A very efficient RF shielded door system to complement any RF shielded room environment including TEMPEST & EMPP designs	Both broadband antenna & hybrid EMC applications available. The ULTRA is a new polypropylene material only available from MVG	EMI testing for commercial, automotive, and mil/aero applications	Shielded enclosures from small bench top, through 19" racks, to full ISO containers, along with associated filters, for providing high levels of EMP protection
Frequency	80 MHz - 40 GHz; 200 MHz - 40 GHz; 400 MHz - 40 GHz; 800/1000 MHz - 40 GHz	10 KHz - 100 GHz plus	10 KHz- 100 GHz plus	10 KHz - 100 GHz plus	30 MHz to 18 GHz	-
Radiated Immunity	80 MHz - 18 GHz	-	-	-	-	-
Radiated Emissions	80 MHz - 18 GHz	-	-	-	-	-
Test Volume	TBD	-	-	-	-	-
Standards Pre-compliant	-	-	-	-	-	-
Standards Compliant	• MIL STD 461G • RTCA/DO 160	• IEEE-Std-299 • IEC/EN 50147-1	• IEEE-Std-299 • IEC/EN 50147-1	• ANSI 63.4 • CISPR 11, 12, 13, 16-1-4, 16-1-6, 25, 32 • EN 61000-6-3, EN 61000-6-4 • FCC Part15, 18, 25, 90 • IEC 60601-1-2 • MIL STD 461G • RTCA/DO 160	• ANSI 63.4 • CISPR 11, 12, 13, 16-1-4, 16-1-6, 25, 32 • EN 61000-6-3, EN 61000-6-4 • FCC Part15, 18, 25, 90 • IEC 60601-1-2 • MIL STD 461G • RTCA/DO 160	-
Shielding	SmartShield shielding					-
Benefits	• With stirrer paddles, automated servo motors and test software	• Flexible modular sandwich panel or tray panel designs with RF filters and all penetrations • All accessories to ensure RF shielding specifications are achieved	• Doors with manual, semi-auto and fully-auto functions. • Large range of dimensions available • High level of RF shielding compatible with our screened room performance	• Wide range of RF polyurethane & polypropylene pyramidal absorbers • Ferrite tile materials where required	• Stiff/robust & lightweight mechanical design • Reduced higher order modes • Smooth AF • High reliability N coaxial connector	-

Commercial EMC Anechoic Chambers

Reliable EMC compliance testing for consumer electronics, telecom and industrial devices

Commercial EMC anechoic chambers support emissions and immunity testing to international EMC standards. Used by electronics manufacturers, telecom companies, and test labs, they enable reliable in-house testing from pre-compliance to full compliance. Optimized for accuracy, space efficiency, and cost, they accelerate development and reduce dependence on external facilities.

Typical applications include:

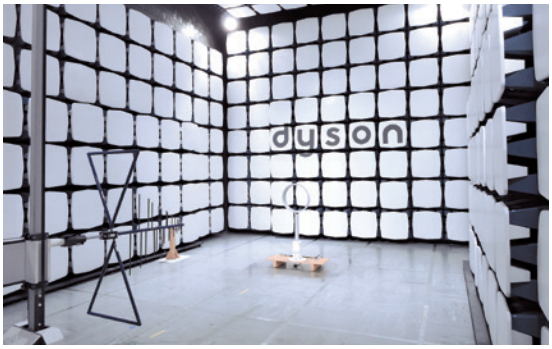
- Consumer electronics & home appliances
- Industrial and medical electronics
- Telecom and wireless devices
- R&D validation and compliance testing

EMC-3

3-meter EMC compliance testing for small to medium electronic devices in space-constrained R&D and production environments.

Key strengths:

- 3 m Semi Anechoic Chamber
- Fast installation with efficient footprint
- Reliable compliance confidence to CISPR 16 and IEC 61000-4-3 at 3 m distance

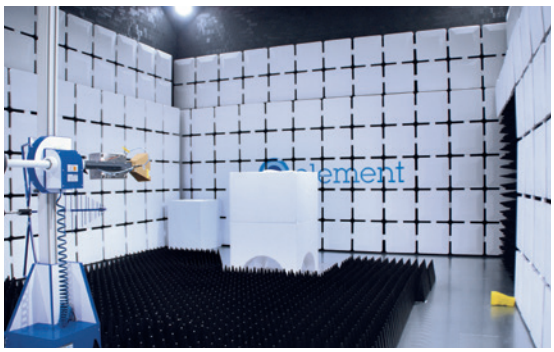


EMC-5

Versatile 5-meter EMC compliance testing for commercial electronic products requiring flexible test configurations.

Key strengths:

- 5 m Semi Anechoic Chamber
- Flexible test configurations
- Space efficient performance

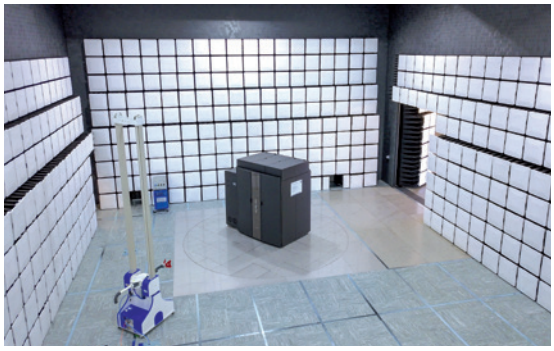


EMC 10

Reference-grade 10-meter EMC chamber for high-accuracy testing of large and complex electronic systems.

Key strengths:

- 10 m Semi Anechoic Chamber
- Test volumes available from 3 m to 6 m and beyond
- Large EUT support



MIL STD EMC Anechoic Chambers

Mission-critical EMC testing solutions engineered for defense, aerospace, and high-reliability military platforms

Defense and aerospace platforms operate in extreme electromagnetic environments where reliability is critical. Our MIL-STD EMC anechoic chambers support component-level and full-platform testing. Engineered with custom geometries and high performance absorber layouts, they deliver accurate, repeatable results for qualification, certification, and acceptance testing.

Compliance Standards:
- MIL STD 461
- RTCA DO 160
- EN50147-1 / IEEE 299 (shielding effectiveness)
- Program specific military requirements

Idea for:
- Avionics & aerospace equipment
- Radar and RF subsystems
- Defense electronics qualification labs
- Military land vehicles

MIL STD Component EMC Chamber

EMC compliance testing for military and aerospace electronic components and subsystems.

Key strengths:
- Designed to support MIL-STD-461 and RTCA DO-160
- Optimized chamber design for component-level testing
- High performance hybrid or broadband absorber
- High shielding effectiveness for accurate measurements

MIL STD Vehicle EMC Chamber

Full scale EMC compliance testing for complete military and aerospace platforms.

Key strengths:
- Full-vehicle and large system EMC testing capability
- Supports MIL-STD-461 and program-specific requirements
- Customized chamber dimensions and absorber configurations
- High shielding effectiveness for mission-critical validation

Reverberation EMC Chamber

High field strength EMC susceptibility testing chamber for severe military electromagnetic environments.

Key strengths:
- Very high field strength capability for radiated immunity testing
- Supports mode stirred and mode tuned operation
- Ideal for high power and large EUT testing
- Designed to support MIL STD 461 and program specific requirements

Automotive EMC Anechoic Chambers

High-performance EMC testing solutions for automotive components, modules, complete vehicles, and electric vehicles (EVs)

Modern vehicles rely on complex electronic and RF systems operating in harsh electromagnetic environments. Our automotive EMC anechoic chambers support component-level and full-vehicle testing, delivering accurate, repeatable results. Engineered with hybrid absorbers, optimized geometries, and automotive-specific layouts, they ensure EMC compliance across development, validation, and certification.

Compliance Standards:
- CISPR 12 and 25
- ISO 11451-2 and ISO 11452-2
- ANSI C63.4 / CISPR 16-1-4
- EN50147-1 / IEE 299

Idea for:
- Automotive electronic components and modules
- Infotainment, ADAS, powertrain, and EV applications
- OEM and independent EMC test laboratories
- Full-vehicle emissions and immunity testing

CISPR 25 Automotive Component EMC Chamber

Automotive EMC anechoic chamber for component level emissions and immunity testing.

Key strengths:
- Designed to meet CISPR 25 and ISO 11452-2
- Compact footprint with optimized absorber layout
- Hybrid absorber technology for wide frequency coverage
- High repeatability for component qualification

CISPR 12 Automotive Vehicle EMC Chamber

Full vehicle EMC anechoic chamber for automotive emissions testing.

Key strengths:
- 10 meter class chamber for complete vehicle testing
- Compliant with CISPR 12 and CISPR 16-1-4
- Hybrid absorber system for high measurement accuracy
- Optimized layout for efficient vehicle access

Reverberation EMC Chamber - RVC Auto

High-field reverberation chamber testing for advanced automotive electronic systems.

Key strengths:
- Very high field strength capability for radiated immunity testing
- Supports mode stirred and mode tuned operation
- Ideal for high power and large EUT testing
- Compliant with IEC 61000-4-21, ISO 11451-5, and ISO 11452-11

RF Shielded Rooms & Shielded Doors

High-attenuation RF shielding solutions for EMC testing, secure environments, and mission-critical applications

High performance shielding solutions for EMC, RF, and secure test environments. MVG RF Shielded Rooms and SmartShield Door Systems deliver high attenuation, modular flexibility, and long term reliability. Designed for permanent or relocatable installations, they ensure consistent shielding effectiveness, seamless EMC chamber integration, and adaptable access for sensitive applications.

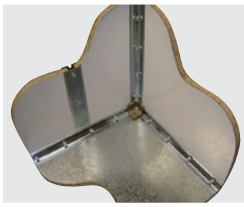
Compliance Standards:
- EN50147-1
- IEEE 299

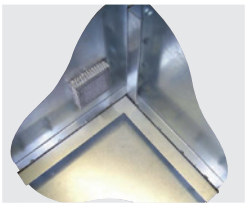
Idea for:
- EMC and RF test laboratories
- Shielded control and amplifier rooms
- Antenna and microwave testing
- Electromagnetically secure environments
- Medical, defense, and industrial applications

SmartShield RF Shielded Room

Modular high performance RF shielded room for EMC and RF testing environments.

Key strengths:
- High shield attenuation, >100 dB to 40 GHz
- Custom dimensions and shapes to fit building constraints
- Seamless integration with shielded doors, filters, and services
- Turnkey delivery including design, installation, and validation
- Available with two modular construction options:
  - **SmartShield Modular Sandwich System**
  - **SmartShield Modular Tray System**


Modular Sandwich Panel


Modular Tray Panel

SmartShield RF Shielded Door System

High performance RF shielded doors for secure and flexible chamber access.

Key strengths:
- Shielding performance from 10 kHz to 40 GHz
- Swing or sliding designs, manual to fully automatic
- Large door formats for equipment and vehicle access

EMC HyPyr-Loss™ Ultra Absorbers

High performance RF absorbers for automotive, EMC, and antenna test environments

MVG absorbers are engineered to deliver stable, repeatable RF performance while minimizing maintenance over the full lifecycle of the chamber. Built on HyPyr Loss™ EPP technology and proven ferrite solutions, they support demanding EMC and automotive test requirements with long term reliability.

Idea for:
- Automotive EMC anechoic chambers
- EMC pre compliance and full compliance testing
- Antenna and microwave measurements

HyPyr Loss™ Ultra Ferrite Tiles (UF Series)

Low frequency absorption solution for hybrid EMC chamber layouts.

Key strengths:
- Optimized low frequency absorption when combined with hybrid absorbers
- High repeatability for compliance and pre compliance testing
- Robust ceramic construction for long term chamber stability

HyPyr Loss™ Ultra Hybrid Absorbers (UH Series)

Hybrid absorber solution for compact, high performance EMC chambers.

Key strengths:
- Zero shedding closed cell EPP structure (cleanroom compatible)
- Impact resistant design that withstands foot traffic
- 35+ year lifespan with no moisture absorption or material decay

HyPyr Loss™ Ultra Broadband Absorbers (UHC Series)

Broadband absorber for EMC and antenna measurements over a wide frequency range.

Key strengths:
- Excellent broadband RF absorption for EMC testing
- Zero shedding EPP material for low maintenance facilities
- Long term durability with stable performance over decades

EMPP (EMP / HEMP Protection) Solutions

Integrated shielding and filtering solutions to protect critical infrastructure and electronics against EMP and HEMP threats

MVG EMPP solutions combine high performance RF shielding, EMP/HEMP rated power and signal filtering, and secure enclosures to ensure continuous operation of mission critical systems during electromagnetic events. Solutions are fully customizable and delivered as integrated systems, from rooms and containers to test cells and cabinets.

Compliance Standards:
- MIL STD 188 125
- MIL STD 461
- IEEE STD 299
- EN 50147 1

Idea for:
- Defense and government facilities
- Critical infrastructure and utilities
- Secure and deployable communication sites

EMPP RF Shielded Enclosures

Fixed or modular EMP protected rooms and enclosures for permanent installations.

Key strengths:
- High shielding effectiveness against EMP and HEMP threats
- Based on proven SmartShield RF shielding technologies
- Modular construction for rooms, test cells, and equipment enclosures
- Custom layouts for racks, operators, and protected equipment

EMPP Shielded Containers

Deployable, self contained EMP protected facilities in ISO containers.

Key strengths:
- Based on 20', 40', and 45' ISO containers
- Fully integrated shielding, doors, filters, and waveguides
- Rapid deployment for temporary or mobile sites
- Optional camouflage and discrete exterior appearance

Integrated EMPP components include:
- EMP / HEMP power line filters
- Waveguide below cutoff air vents
- Waveguide signal feed throughs
- Shielded access doors and cable interfaces

Testing Connectivity for a Wireless World

The Microwave Vision Group offers cutting-edge technologies for the visualization of electromagnetic waves. With advanced test solutions for antenna characterization, radar signature evaluation and EMC, we support company R&D teams in their drive to innovate and boost product development.

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