

HERMES 3

3 m EMC CHAMBER

SIEPEL HERMES 3 is the fruit of a long experience in anechoic chambers design and manufacturing. This chamber enables to perform full compliance RE & RS measurements, at 3 meters distance, according to the most commonly used international standards. The optimized design and absorbers layout allow to save space inside the chamber, offering this way a comfortable place to work inside HERMES 3.

The HERMES 3 has been designed to ensure high precision measurements, with repeatability through the years and long term reliability of the chamber performances.



HERMES 3

3 m EMC CHAMBER

MAIN FEATURES

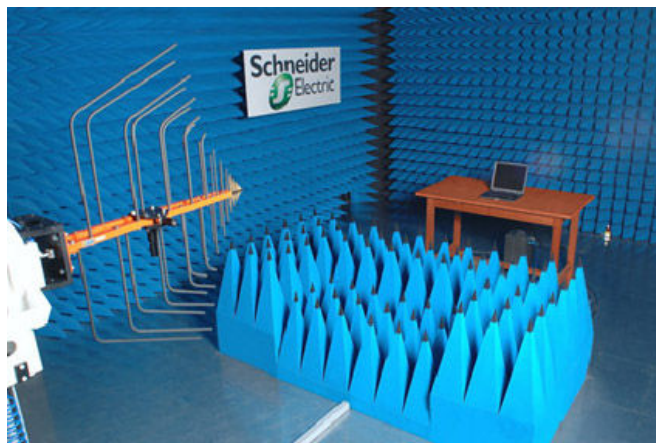
- Broadband frequency range, from 26 MHz to 40 GHz
- 3 meters measurement distance
- Radiated EMI testing: fully compliant with the following standards: CISPR 16-1-4 Ed2, EN 50147-2, ANSI C63.4, EN 55022, CISPR 22, EN 55011, CISPR 11, ... from 30 MHz to 18 GHz
- Radiated EMS testing: fully compliant with EN / IEC 61000-4-3: 2006 from 26 MHz to 18 GHz
- Unique optimized design, with cost effective absorbers layout
- Incomparable possible customization
- Turnkey solutions, including positioners and complete test systems / instrumentation

BASIC CONFIGURATION

- Shielded room 8940 x 5940 x 5550 mm (external shield to shield dimensions),
- Structural steel frame and stiffeners,
- 1 manual, single leaf, "knife edge" shielded door, with clear opening 1200 x 2100 mm, including maintenance kit,
- 4 honeycomb air vents 300 x 600 mm, fitted with flanges,
- 2 feedthrough panels 1200 x 200 mm fitted with 2 N connections and 2 feedthrough waveguides Ø 20 mm (pipe penetration) for fibre optics,
- 1 power filter 2 lines (single phase + neutral) – 32 A – 230 V – 50 Hz/60 Hz,
- Absorbers lining :
 - * Ferrite tiles FE30Z lining of the four side walls and ceiling,
 - * Pyramidal matched hybrid absorbers HYFRAL HY45 (aqueous blue paint) lining of the most critical areas of the two side walls, back wall and ceiling (computer optimized design).

OPTIONS

- Installation of the chamber
- Other doors dimensions & types (single, double, sliding)
- Pneumatic or electric assistance for door latching
- Shielded control room, shielded amplifier room
- Raised floor, with metallic ground plane and 2 access hatches
- Turntable (any diameter, any max payload)
- Automatic antenna mast (1 to 4 m height scan)
- GPIB interface controller (for positioners remote control)
- Additional power filters, data filters and special connectors
- Internal electric package: 1 main switchboard with appropriate protection, distribution and lighting
- Video monitoring CCTV system, Intercom/Audio monitoring system
- Vinyl tiles on the floor
- Plastic paint for HYFRAL HY45 pyramidal matched hybrid absorbers
- Your company's name or logo printed on the absorbers
- Chamber testing:
 - * Shielding effectiveness, according to EN 50147-1, from 10 kHz to 18 GHz
 - * Site Attenuation, according to CISPR 16-1-4 Ed2, from 30 MHz to 1 GHz
 - * Site VSWR, according to CISPR 16-1-4 Ed2, from 1 to 18 GHz
 - * Field Uniformity, according to IEC 61000-4-3, from 26 MHz to 18 GHz.



HERMES 3

3 m EMC CHAMBER

RADIATED EMI TESTING

SIEPEL HERMES 3 chamber is designed to perform **full compliance radiated EMI testing** according to the following standards: EN 50147-2, ANSI C63.4, EN 55011, CISPR 11, EN 55016, CISPR 16, EN 55022, CISPR 22, from **30 MHz to 18 GHz**.

As a basis, we propose a test volume with following main features:

- Diameter: 2 meters / Height : 2 meters
- NSA (30 MHz – 1 GHz) max deviation from theoretical value: better than ± 4 dB
- Site VSWR (1-18 GHz) ≤ 6 dB
- For bigger EUTs, we can propose larger test volume. Please contact us: we can design the chamber that fits your particular needs!

EMI (Electromagnetic Interference)		
Frequency range	From 30 MHz to 1 GHz	From 1 GHz to 18 GHz
Applicable standards	EN 50147-2, ANSI C63.4, EN 55011, EN 55016, EN 55022, CISPR 16 ...	CISPR 16
Height of Tx antenna	Horizontal: 1 m, 2 m Vertical: 1 m, 1.5 m	Horizontal: 1.36 m, 2,36 m Vertical: 1.36 m, 2,36 m
Height of Rx antenna	Scan from 1 to 4 m	1.36 m and 2,36 m
Measurement distance	3 m	3 m
Polarization	Horizontal and vertical	Horizontal and vertical
Measured position of Tx antenna	Tx antenna to be located in four positions (centre, front, left and right)	Tx antenna to be located in four positions (centre, front, left and right)
Working volume	Diameter: 2 m / Height : 2 m	Diameter: 2 m / Height: 2 m (0.36 m above ground plane)
Remarks	Test with metallic ground plane	16 HYFRAL APM 66 absorbers on the floor
Max. deviation	± 4 dB from NSA value	≤ 6 dB Site VSWR

RADIATED EMS TESTING

SIEPEL HERMES 3 is **fully compliant to perform radiated EMS testing** according to the EN/IEC 61000-4-3, in the extended frequency range from **26 MHz to 18 GHz**.

Immunity tests are performed with 16 electromagnetic pyramidal absorbers HYFRAL APM66 (610x610x660 mm) on the floor, between field generation antenna and uniform field plane.

Those absorbers can be very easily removed, stacked and stored outside the chamber when they are not necessary.

EMS (Electromagnetic Susceptibility)	
Applicable standards	EN/IEC 61000-4-3
Frequency range	From 26 MHz to 18 GHz
Measurement distance	3 m
Field Generation Antenna	Biconical/ Log Per or broadband antenna
Rx antenna	Broadband isotropic probe, 16 positions, measured area of 1,5 x 1,5 m, located 0,8 m – 2,3 m over the floor
Polarization	Horizontal and vertical
Remark	Test with 16 APM66 absorbers on the floor
Field Uniformity	+0 to +6 dB for 75% of the 16 measured points

HERMES 3 3 m EMC CHAMBER

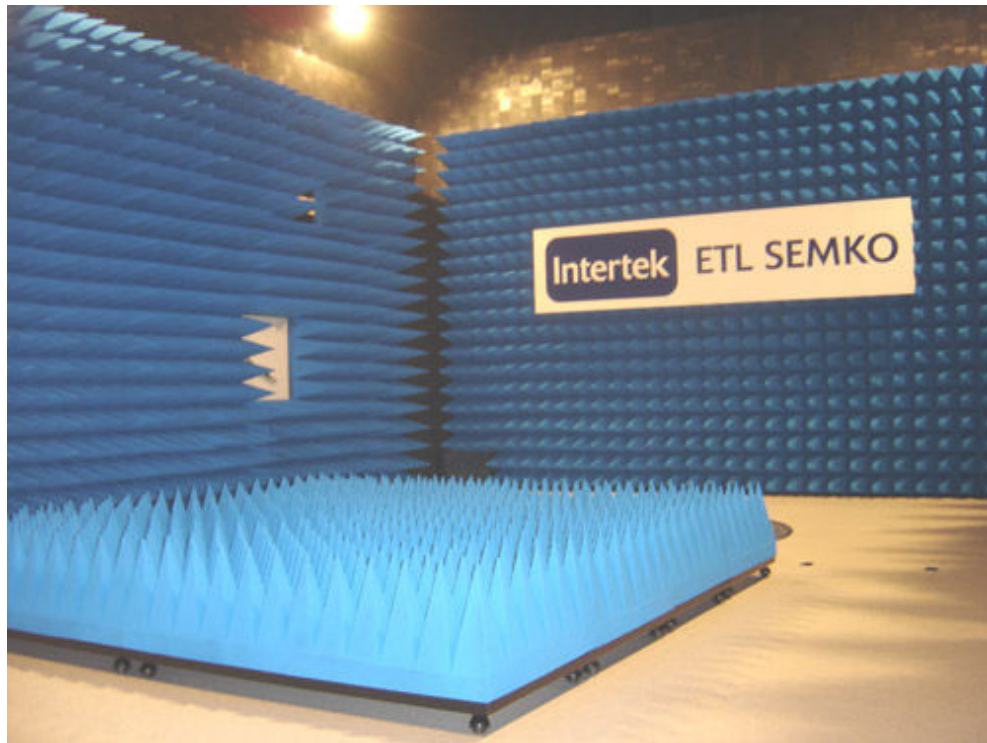
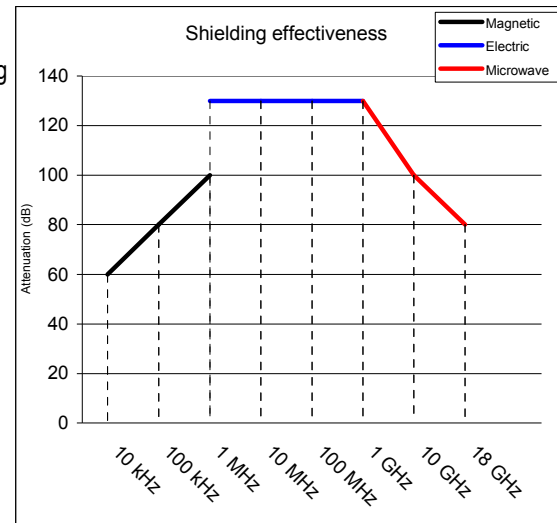
SHIELDING EFFECTIVENESS

As a recognized expert company in manufacturing shielded products, SIEPEL does not make any compromise on the shielding quality.

Therefore, SIEPEL HERMES 3 chamber benefits from SIEPEL experience in **high shielding effectiveness performances**.

The leading technology of **modular, "sandwich type"**, shielded panels has the following advantages:

- Incomparable shielding attenuation
- Full flexibility in the later addition of feedthrough panels, honeycomb air vents, power filters or other fittings,
- Very easy dismantling and re-installation (no gaskets!), without any weakness in the performances.



ABSORBERS

The optimized state-of-the-art HYFRAL HY45 hybrid absorbers lining (combination of ferrite tiles and pyramidal matched absorbers in the critical area) results in limited total overall dimensions (9,11 m x 6,60 m x 5,95 m, including structural steel frame):

- * High levels of performances, guaranteed **for 20 years**.
- * Open cell structure for better carbon impregnation and homogeneity,
- * **Extreme softness and shape memory**,
- * Excellent power handling, up to 2000 W/m²,
- * State-of-the-art **fire retardant properties** (ISO 11925-2 Euroclass E, DIN 4102 class B2, NRL 8093 tests 1,2 & 3, UL 94 / HBF, ISO 4589-2),
- * Various coatings (standard aqueous paint or **unique HYFRAL plastic paint**), with several colours...