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EMC
WWW.CERECERTIFICATION.COM

CERE, by UL Solutions is a Testing, Simulation and Certification body that was originally set up as a Certification Entity in 2015.

CERE, by UL Solutions was created in its beginnings as a Certification Entity for Renewable Energies, with the purpose of being the access key to the different countries where certification of components, full installations certificates, modeling and software validation of components and facilities was required.

Currently CERE, by UL Solutions has expanded its capabilities and is dedicated not only to Renewable Energies, but also to Electric Vehicle chargers, Industrial Machinery, Medical Devices and Electrical and Electronic Products.

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Accreditations

We have accreditations that verify our technical competences as a Certification Body and Testing Laboratory. This fact ensures a deep knowledge of the international requirements for components and installations.

CERE, by UL Solutions is accredited by ENAC and a2la (IAF/ILAC members) as a Certification Body according to ISO 17065; and as an Accredited Testing Laboratory according to ISO 17025. We also belong to the IEC Scheme being CBTL Testing Laboratory and NCB Certification Entity.

In addition, we can provide solutions to countries such as North America, Israel, Colombia, Korea, Australia, etc.

Our team

Our team has a long-accumulated experience in testing, simulation and certification for all its business areas, including an in-depth knowledge of grid integration standards, design, safety, EMC and grid quality.

All this knowledge is applicable in renewable energy generators and controllers, electric vehicle chargers, photovoltaic trackers, household appliances, industry, industrial machinery, electrical and electronic products and medical devices, among others.

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What's CERE EMC?

EMC means Electromagnetic Compatibility, studies the unwanted effects of the generation, propagation and reception of electromagnetic energy.

An equipment is electromagnetically compatible when it is unaffected by the electromagnetic noise around it and does not interfere with other equipment.

Testing a product is mandatory to be able to sell a product on the market. For this, you must follow the product standard that applies to each device.

The standards establish quite precisely the limits and tests that must be carried out to test a product.

There are, among others, product standards and testing standards.

The product standards indicate the limits to which each test must be tested.

The test standards indicate the correct procedure to perform each of the tests.

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Electromagnetic compatibility testing is the tool to ensure there are no interferences between different electronic equipment.

CERE, by UL Solutions tests and certificates under EMC standards both for emission and immunity in order to comply with the European directives and international requirements.

CERE, by UL Solutions specializes in and performs EMC tests on equipment as on-field wind turbines, solar inverters, medical devices, household, IT, etcetera.

CERE, by UL Solutions owns a FullAnechoic Chamber (FAR)

There are two groups of tests that must be passed to certify a product: Emission and Immunity.

Emission

It is the amount of radiation or energy emitted by electrical and electronic devices. This energy can be received by other equipment and cause it to fail, so it is necessary to set maximum limits that the equipment can emit.

Immunity

It is the ability of a device to defend itself from the radiation it receives from other devices.

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Accreditations

CERE, by UL Solutions is accredited as Certification Body and Testing Laboratory for Electromagnetic Compatibility according the following standards:

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Emission standards

RADIATED AND CONDUCTED EMMISION: CHARACTERISTICS OF RADIOELECTRIC PERTURBATIONS

CISPR 11

Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement

UNE-EN 55011

Industrial, scientific and medical equipment. Radio-frequency disturbance characteristics. Limits and methods of measurement (Endorsed by AENOR; October 2016)

HARMONICS

IEC 61000-3-2

Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions

IEC 61000-3-12

Electromagnetic compatibility (EMC) - Part 3-12: Limits - Limits for harmonic currents produced by equipment connected to public low-voltage systems

FLICKER

IEC 61000-3-3

Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems

IEC 61000-3-11

Electromagnetic compatibility (EMC) - Part 3-11: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems

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Immunity standards

ESD OR ELECTROSTATIC DISCHARGE

IEC 61000-4-2

Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test

RADIATED IMMUNITY

IEC 61000-4-3

Electromagnetic compatibility (EMC) - Part 4-3 : Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test

BURSTS

IEC 61000-4-4

Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test

SURGES

IEC 61000-4-5

Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test

Immunity standards

CONDUCTED IMMUNITY

IEC 61000-4-6

Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields

MAGNETIC FIELDS

IEC 61000-4-8

Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test

VOLTAGE DIPS, SHORT INTERRUPTIONS AND VOLTAJE VARIATIONS

IEC 61000-4-11

Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests for equipment with input current up to 16 A per phase

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Medical standard

IEC 60601-1-2

Medical electrical equipment - Part 1-2: General requirements for basic safety and essential performance - Collateral Standard: Electromagnetic disturbances - Requirements and tests

EMISSION

- Radiated emission
- Conducted emission
- Harmonics
- Flicker

IMMUNITY

- ESD or electrostatic discharge
- Radiated immunity
- Bursts
- Surges
- Conducted immunity
- Magnetic fields
- Voltage dips, short interruptions and voltaje variations.

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Other Product Standards

IEC 61326-1

Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements

IEC 61851-21-2

Electric vehicle conductive charging system - Part 21-2: Electric vehicle requirements for conductive connection to an AC/DC supply - EMC requirements for off board electric vehicle charging systems

IEC 62920

Photovoltaic power generating systems - EMC requirements and test methods for power conversion equipment

Other Product Standards

CISPR 32
Electromagnetic compatibility of multimedia equipment – Emission requirements

CISPR 35
Electromagnetic compatibility of multimedia equipment – Immunity requirements

CISPR 14-1
Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus – Part 1: Emission

CISPR 14-2
Electromagnetic compatibility – Requirements for household appliances, Electric tools and similar apparatus – Part 2: Immunity – Product family standard

IEC 61000-6-1
Electromagnetic compatibility – Requirements for household appliances, Electric tools and similar apparatus – Part 2: Immunity – Product family standard

IEC 61000-6-2
Electromagnetic compatibility – Requirements for household appliances, Electric tools and similar apparatus – Part 2: Immunity – Product family standard

IEC 61000-6-3
Electromagnetic compatibility (EMC)– Part 6-3: Generic standards – Emission standard for equipment in residential environments

IEC 61000-6-4
Electromagnetic compatibility (EMC) – Part 6-4: Generic standards – Emission standard for industrial environments

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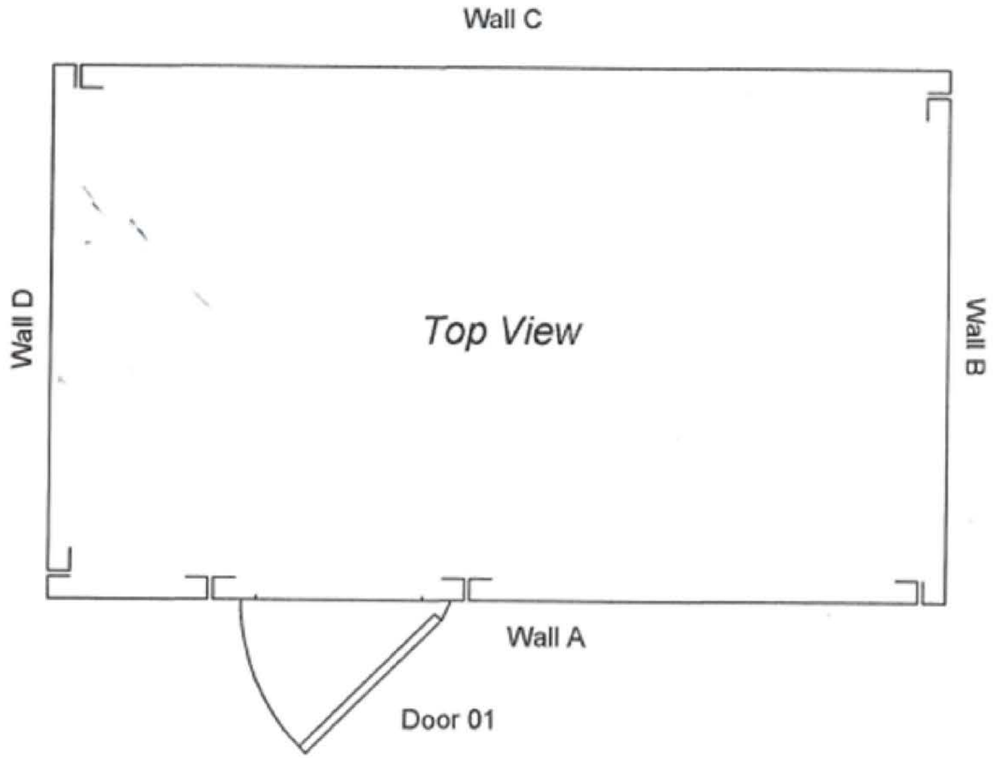
CERE's Full Anechoic Chamber (FAR)

CERE, by UL Solutions has a FullAnechoic Chamber (FAR), with Quiera Zone (QZ) Ø1.5m (rotatory table), for EMC Compliance Testing @ 3m: - Radiated Immunity (RI) Industrial environment(1): Full Compliance @ 80MHz-6GHz.:



Approx. external dimensions: 8.10m x 4.80m x 3.975m H up to 1Tonne, 1,5m diameter.

Door 1,5mx 2,4m H

Internal dimensions between hybrid absorbers (HT45 model):
(L x W x H) approx. 7.08m x 3.78m x 2.81m.

Resume

The mains standards CERE, by UL Solutions used to test and/or certified:

- Industrial environment: IEC 61000-6-2 and IEC 61000-6-4
- Residential environment: IEC 61000-6-1 and IEC 61000-6-3
- Solar inverters: IEC 62920
- Industrial, scientific and medical equipment: CISPR 11
- Grid quality: IEC 61000-3-2, IEC 61000-3-3, IEC 61000-3-11 and IEC 61000-3-12
- Immunity: IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11.
- Medical electrical equipment: IEC 60601-1-2
- Electric vehicle conductive charging system IEC 61851-21-2

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Laboratory Capabilities

EMC

- Full Anechoic Chamber of 3 meters and up to 6GHz both in emission and radiated immunity.
- Complete test capacity of IEC 61000 in both radiated and conducted.

Test Benches

- ✓ Test bench up to 500kVA for converters
- ✓ 3 test benches up to 166kVA with parallel connection capacity.
- ✓ DC voltage range up to 1500V and AC voltage range up to 800V and 400Hz
- ✓ Passive loads up to 100kVA and electronic load up to 500kVA for island testing.

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Environmental and Climate Laboratory

TEMPERATURE RANGE FROM -40ºC TO 85ºC WITH 85%RH OR 125ºC WITHOUT HUMIDITY REFERENCE.

- ✓ Low temperature chamber
- ✓ High temperature chamber
- ✓ Temperature chamber
- ✓ Dycometal temperature chamber
- ✓ Binder temperature chamber
- ✓ IP and Nema Camera
- ✓ Vibration table
- ✓ Saline atmospheres chamber

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