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Trackers

## Who we are



**CERE** was originally set up as a Certification Entity for Renewable Energies.

**CERE** was created to be the access key on the target countries for Renewable Energies, where certification of components, full installations certificates, modeling and software validation of renewable Power Plants, were required.

The company is accredited as Testing Laboratory and Certification Body.

Our services include Testing and Certification according Safety, EMC, Grid Quality, grid connection requirements, design certification and complete installations Certificates, complementary simulations, modelling validation, electromagnetic transient analysis.

This full process includes Inspection, Testing and Certification of Components such as PV modules, Wind and PV converters, trackers, transformers, string boxes, combiner boxes, etc., and the Certification for full Power Plants according particular country, DSO or TSO requirements and / or According Client Requests

# CERE Profile

The Company is managed by Miguel Martínez. Its team has a large experience in Certification for more than 10 years, including renewable energy's components and installations for worldwide grid integration, design, safety, EMC and grid quality, among others.

During the last 6 years CERE has grown exponentially, diversifying its services until the actual company structure:



- Certification
- Converters
- Grid Code & safety
- Simulation
- Trackers
- Batteries
- EMC

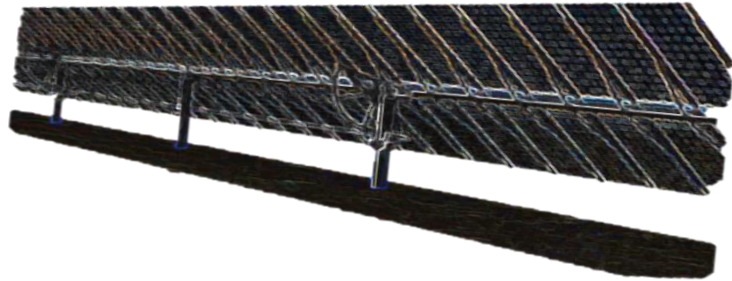
- Electrical Vehicle Charger
- Transformers
- Medical devices
- Electric and Electronic devices
- Quality System certification

# CERE Capabilities

**CERE's** Facilities in Getafe, Madrid, Spain have the following installations:

- Test site up to 500kVA for all kind of converters and Battery testing
- Test site up to 250kVA for all kind of converters including frequency variators up to 400Hz
- Test site up to 100kVA for DC-AC converters
- Test site up to 50kVA for all kind of converters and Battery testing. The source can act as DC source and AC source and electronic loads
- Test site up to 10kVA for single phase and three phase converters
- Passive loads up to 100kVA
- Electronic loads for Antiislanding up to 500kVA
- EMC Chamber and EMC laboratory
- Safety laboratory
- Simulation laboratory including Power Factory, PSSE and MATLAB

# What's CERE Trackers?



**CERE** Trackers is a department created to cover the demand of services for transformers inside of CERE (Certification Entity for Renewable Energies)

**CERE** Trackers was created to provide support and trust at any stage of certification and testing of trackers.

Our services include preliminary meeting, Testing and Certification according Safety, EMC and UL standards.

This process includes testing, certification and verification of trackers and their components.

# CERE's Accreditations

- **CERE** is accredited by ENAC and a2La (IAF/ILAC members) as Certification Body According ISO 17065 and Testing Laboratory according ISO 17025 for Power Generating Units. This fact ensures a deep knowledge in international requirements for components and Renewable Energies Power Plants.
- **CERE** is also CBTL and NCB for the IEC Scheme.
- MET approval for the North American market
- Sunspec approval
- SII approval for Israel
- RETIE approved certification body for PV inverters (Colombia)
- Corean Approval

CERE's Accreditation can be checked in:  
<http://www.cerecertification.com/accreditations>



# Applicable Standards

Nowadays, CERE leads the trackers certification in Spain, working with the main trackers, drives and control unit manufacturers. CERE is accredited as Certification and Testing body for trackers according the following standard:

## Full tracker Certification:

**USA and UL market** (Collaboration with NRTL Solar PTL)

- **UL 3703: 2015 STANDARD FOR SAFETY. Solar Trackers.**

## International

- **IEC 62817:2014+A1: 2017**

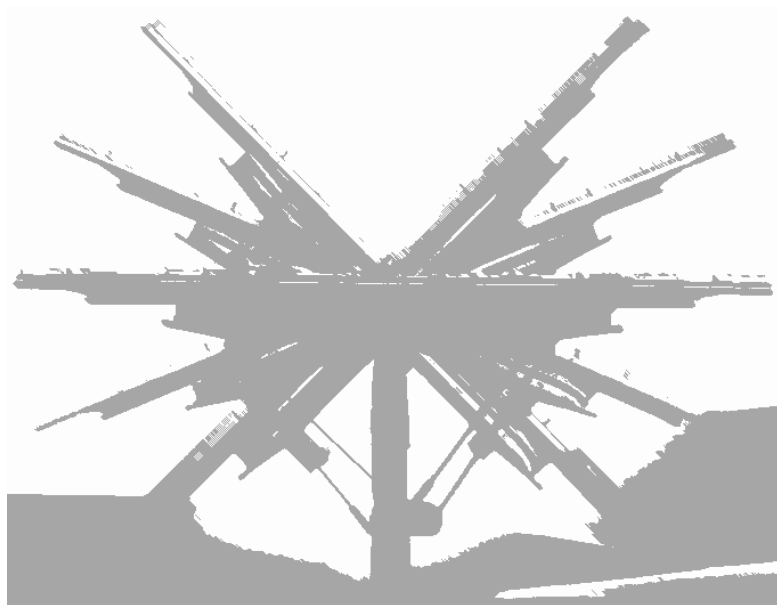
**Photovoltaic systems. Design qualification of solar trackers**

This standard application is for 2 axis trackers. It is also applicable for 1-axis tracker, based on the criteria of the Client, considering optional tests at the customer's choice and the market standards (Test to be found on Chapter 7, Chapter 8.5 and Chapter 9). There shall be performed on a tracker part, a tracker scale representation or on site. From CERE's point of view, the preliminary meeting with the new client is very important to ensure the project fulfils Client's requirements. CERE can perform the preliminary meeting online or personally.

# Applicable Standards

**CERE** is accredited as Certification Body and Testing Laboratory for trackers according the following standard:

## IEC 62817:2014+A1: 2017 Photovoltaic systems. Design qualification of solar trackers



**Drives** (can be validated separately and marketed to different tracker manufacturers. Validation is done in accordance with the standard and section below mentioned)

IEC 62817: 2014 + A1: 2017, Photovoltaic systems. Design qualification of solar trackers. Chapter 8.5

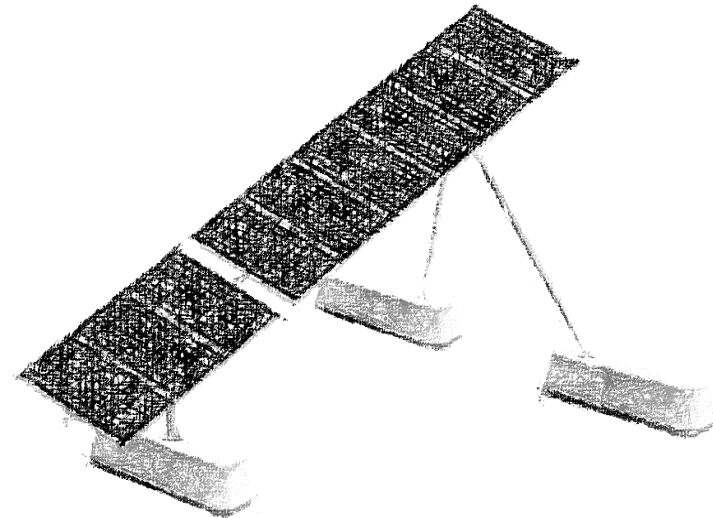


# Applicable Standards

CERE is accredited as Certification Body and Testing Laboratory for trackers according the following standard:

## Control Safety Standards

- **IEC 60204-1:2016**, Safety of machinery – Electrical equipment of machines – Part 1: General requirements.
- **IEC 62109-1:2010** Safety of power converters for use in photovoltaic power systems - Part 1: General requirements
- **IEC 61010-1:2010+AMD1:2016** Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements



# Applicable Standards

**CERE** is accredited as Certification Body and Testing Laboratory for trackers according the following standard:

## Control EMC Standards

- **IEC 61000-6-2:2016** Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments
- **IEC 61000-6-4:2018** Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments


## Control UL and IEC Standard

- **UL 3703:2015** STANDARD FOR SAFETY. Solar Trackers.
- **IEC 62817: 2014 + A1: 2017**, Photovoltaic systems. Design qualification of solar trackers. Chapter 9.

# Resume

**CERE** is accredited as a testing laboratory and certification entity for the tracker solution, both nationally and internationally. In addition to being NCB and CBTL accredited for safety standards:

- IEC 60204-1: 2016
- IEC 62109-1: 2010
- IEC 61010-1: 2010 + AMD1: 2016



In addition, **CERE** has been participating in the development of photovoltaic tracker standards since 2015. The standard “IEC 62817: 2014 + A1: 2017, Photovoltaic systems. Design qualification of solar trackers” is currently under review and **CERE** participates in the working group in charge of this development.

Another standard that is being developed and in which **CERE** is actively participating is the product safety standard for photovoltaic trackers.

# References

**CERE** Trackers has a wide expertise in the field of testing.

Some of the most important projects carried out recently are located in Germany, France, Spain and South Africa for the European and North American market. Some examples:

- ✓ European manufacturer has test and certificate satisfactorily a single axis tracker family and its components, according to the IEC 62817. The testing process for the tracker was performed on his facilities and for the components all the testing process is performed in our laboratory. To complement this certification earth bonding test has been performed to the trackers to confirm the safety of the tracker during operation.
- ✓ Earth bonding is a general requirement on operative PV plants. A Client requested this service for more than 150 operating solar trackers, and the earth bonding has been measured on field as request of PV plant owner.
- ✓ The behavior of a Spanish tracker against the effects of flutter and galloping has been analyzed and certified. The tests have been successfully performed on a scale model of the tracker in a wind tunnel. The project itself took 4 months to be completed since the acceptance of the offer.
- ✓ TCE Marking and verification is a common request for PV trackers manufacturers Under request of the manufacturer for complying with the different directives associated with the CE marking for trackers and components, we have performed the testing and certification process of different standards that give conformity to the directives that apply to these products such as EMC standards, IEC 60204, IEC 62109, etc
- ✓ Environmental testing is an important part of the type tests applicable for solar trackers. The E&E testing laboratory has already performed several successfully projects for European manufacturers, according to IEC 62817. Standard for solar trackers, incorporates several environmental tests to the different components which are part of such systems.



# Key Clients



## Contact us



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