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# CMCE NANO



## Multiple Electric Field Compensator



### General Technical Specifications

#### Definition

The cmce (variable electric field balancer and electrostatic charge deionizer) is an atmospheric discharge protection system and electro-atmospheric protector that avoids the formation of lightning; defined a passive captor system of electrostatic currents in time, which drifts them to ground, whose principle of operation is based on balancing or compensating the existing variable electric field in this environment, avoiding the generation of the ascendent tracer in the cmce and in the structure it protects, depending on its radius of coverage. It also minimizes, significantly (60% -90%), the indirect effects caused by lightning strikes in its surroundings, outside its coverage radius, minimizing electromagnetic effects.

#### CMCE Maximum Working Voltage WITHOUT Lightning Discharge

515.41 KV at one meter, according to high voltage laboratory tests (UNE 21186: 2011 // NF C17-102: 2011).

#### Maximum permissible short-circuit current

The tests carried out according to IEC-10/350 Q energy curves of 100,000 Amps, specified in the IEC-62305 standards, show that the equipment can withstand 7 continuous discharges of 89,906KA; 89.62KA; 88.53KA; 89.3KA; 90.44KA; 96,656KA; 89,688KA; without suffering breakage of materials or marks of deterioration or perforation.

#### Product warranty

5 years, subject to annual maintenance. Coverage in case of direct lightning strike on the product. The effects that could appear on the protected structure derived from indirect effects due to external induced overvoltages or due to non-compliance in the installation of the manufacturer's requirements such as grounding, assembly, materials and correct technical practices (specified in the Installation Manual).

#### Protection efficiency

99% reduction of direct lightning impact on the protected structure. In case of direct lightning strike (1%) or indirect effects by external induced overvoltages on the protected structure, the CMCE behaves like a thermal fuse, absorbing part of the lightning energy in heat by melting its components, reducing to a minimum (between 60% - 90%) electromagnetic effects.

#### Materials that compose it

Recycled aluminum, polyacetal insulator, also called polyoxymethylene (POM). It does not contain electronic components or heavy metals or radioactive materials.

#### Mechanical connection to mast

It incorporates in its axis the system of connection to the mast. The CMCE needs a pole measuring internal  $\varnothing$  42 mm and external  $\varnothing$  49 mm with a through hole of  $\varnothing$  8 mm at 50 mm from the edge of the mast (It may vary depending on the model, more detailed information consult the manual).

#### Certifications and Compliance

- ISO 9001-2015 Certificate
- ISO 14001-2015 certificate
- INTN Product Certificate (Paraguay) (National Institute of Technology, Standardization and Metrology).
- High Voltage Comparative Tests at INTI (Argentina) according to NFC-17100, where the comparative difference is that no lightning discharges appear.
- SERTEC S.R.L. It is approved within the NATO Cataloging System (NOC) with the NCAGE code SFKU3 for our CMCE SERTEC lightning rods
- DUNS REGISTRATION Number 955067967
- CE MARKING on all CMCE models.
- UKCA MARKING on all CMCE models
- RoHS is EN IEC 63000: 2018 "Technical documentation for the evaluation of electrical and electronic products with respect to the restriction of hazardous substances"

#### ENAC; ILAC-MRA

- A.1. General tests (Section 3.1 UNE21186: 2011 // NF C17-102: 2011)
- Essay: Documentation, information and identification (C.3.1.1)
- Essay: Marked (C.3.1.2)
- A.2. Mechanical tests (Section c.3.2 UNE21186: 2011 // NF C17-102: 2011) - Test: Mechanical tests (C.3.2)
- A.3 Environmental tests (Section 3.3 UNE 21186: 2011 // NF C17-102: 2011) - Test: Salt spray test (C.3.3.1) - Test: Test in a humid sulfurous atmosphere (C.3.3.two)ç
- A.4 Current test (Section 3.4 UNE21186: 2011 // NF C17-102: 2011) - Test: Current test (C.3.4)
- TO 5. Priming advance tests (Section c.3.5 UNE21186: 2011 // NF C17- 102: 2011) - Test: Determination of advancement in the priming of the PDC (C.3.5.3 UNE 21186: / C.3.5.2.4 NF C17-102: 2011)





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## Technical specifications CMCE-NANO



Non-polarized electrode designed for the protection of lightning in all types of structures on the ground, including facilities with risk of fire or explosion.

COMPLIES WITH IEC 62305 PART 1,2,3

### OPERATING PRINCIPLE:

Deionization.

### TURBINE CONNECTION SYSTEM:

Incorporates in its axis the system of direct connection to the mast

### COVERAGE RADIO

120 meter radius according to each study of lightning protection needs.

### MAXIMUM WORKING VOLTAGE WITHOUT LIGHTNING

515.41 KV at one meter, according to high voltage laboratory tests (UNE 21186:2011// NF C17-102:2011).

### MAXIMUM INTENSITY

100 KA tests according to IEC-10/350  $\mu$ s CMCE.

### PROTECTION EFFECTIVENESS

99% reduction in direct lightning strikes on protected structures.

In the event of a lightning strike (1%), the CMCE behaves like a thermal fuse, absorbing part of the lightning energy in heat by melting its components, minimizing electromagnetic effects, in this case SERTEC SRL, covers only replacement of equipment under warranty (not labor).

### APPLICATIONS

Developed for small warehouses, telecommunications towers, medium and high voltage lines, traffic lights, small radars, road cameras, sentry boxes and other structures that can be covered by their protection radius.

### MATERIALS COMPOSED

Recycled aluminum, polyacetal insulator, also called polyoxymethylene (POM). It does not contain electronic components, heavy metals or radioactive.

### WEIGHT / MEASURES OF THE CMCE-SERTEC

Weight: 1.2 Kg (Net)

Measurements: 12 cm diameter x 22.2 cm high.

