

### Definition

The CMCE-MARINE is a Protection System Against Atmospheric Discharges THAT PREVENTS THE FORMATION OF LIGHTNING, whose operating principle is based on balancing or compensating the variable electric field existing in its environment, avoiding the generation of the UPWARD TRACER.

### Maximum working voltage of the CMCE-MARINE without lightning discharge

840 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 power curves of 100,000 Amps, specified in the IEC-62305 standards, show that the equipment can withstand 7 continuous discharges of 89.90KA; 89.62KA; 88.53KA; 89.30KA; 90.44KA; 96.65KA; 89.68KA; without suffering breakage of materials or marks of deterioration or perforation.

### Product warranty

Annual maintenance or according to the frequency established by the manufacturer based on the specifications of the boat. Maintenance is mandatory, carried out and certified by the official installer. 5-year product warranty due to manufacturing defect, justifying maintenance with the established frequency.

### 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-MARINE 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, Insulator: Polyacetal, also called polyoxymethylene (POM). It does not contain electronic components, heavy metals or radioactive.

### Connection system to the mast or manufactured support:

It incorporates the mast connection system on its axis. The CMCE-MARINE requires an internal Ø 42 mm and an external Ø 49 mm mast with a Ø 8 mm through hole at 32 mm from the edge of the mast. For a manufactured support, it must have a minimum thickness of 3.2 mm (It may vary depending on the model, for more detailed information consult the manufacturer).

### CMCE Product Certificate

- RYNA approval certificate ELE281223XG
- Complies with IEC, EN, UNE-EN and BS-EN 62305 Part 1,2,3,4.
- Complies with UL 96 (For a specific device)
- Complies with RoHS regulations.
- It has CE marking.
- It has UCKA Marking.
- ISO 9001:2015
- ISO 14001:2015
- Compliance with the community of Independent States.
- Approved by the TESLA institute based on:
  - IEC 60060-1:2010 High voltage test techniques Part 1: General definitions and test requirements
  - IEC 60060-2:2010 High voltage test techniques - Part 2: Measurement systems
- 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
- ITE Laboratory Studies under UNE 21186:2011 NFC 17102:2011 standards: (Laboratories with ENAC-ILAC and ISO 17025 Accreditation):
  - High voltage electrical impulse and ignition tests up to a record voltage of 840KV at one meter without tracer formation.
  - Mechanical, Environmental Tests of Salt Fog, in sulfurous atmosphere, current, Priming advance.
- Laboratory studies in the GCC-LAB laboratory in Saudi Arabia under IEC 62305 standards



# TECHNICAL SPECIFICATIONS

## CMCE-GOLD



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

COMPLIES WITH THE IEC 62305 PART 1, 2, 3 STANDARD.

### OPERATING PRINCIPLE:

Compensation of the electric field in its environment.

### CONNECTION SYSTEM TO THE MAST OR SUPPORT:

It incorporates in its axis the system of direct connection to the mast or for the support.

### MAXIMUM WORKING VOLTAGE WITHOUT LIGHTNING

840 KV at one meter.

### MAXIMUM INTENSITY

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

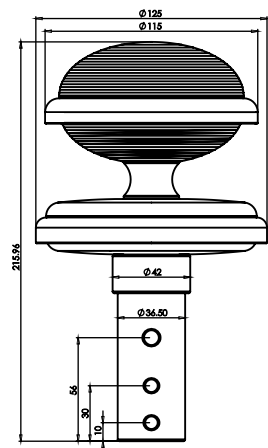
### Applications

Thanks to its small size and weight, it is especially suitable for use in small boats, sailboats, marine buoys, etc.

### WEIGHT / MEASURES OF THE CMCE-MARINE

Weight: 1.062 kg (Bruto)

Measurements:  $\varnothing$  12.5 cm x 21.6 cm.



  
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