

# TECHNICAL SPECIFICATIONS

## CMCE-GOLD

### Definition

The CMCE-MARINE is a lightning protection system designed to prevent the formation of lightning strikes. Its operating principle is based on stabilizing and compensating the variable electric field present in its surroundings, thereby inhibiting the development of the upward tracer.

### Maximum Operating 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 Admissible Short-Circuit Current

Tests conducted according to IEC 10/350  $\mu$ s power curves, with a peak current  $I_{pico}$  (kA) [100 kA  $\pm$  10%] of 100,000 amperes, as specified in IEC 62305, demonstrate that the device can withstand seven consecutive discharges of: 89.90 kA; 89.62 kA; 88.53 kA; 89.30 kA; 90.44 kA; 96.65 kA; 89.68 kA; without material failure, deterioration marks, or perforations.

### Product Warranty

Requires annual maintenance or according to the frequency established by the manufacturer based on the characteristics of the vessel.

Maintenance is mandatory and must be performed and certified by the authorized installer. Includes a 5-year warranty for manufacturing defects, provided maintenance is performed according to the specified schedule.

### Protection Efficiency

Provides a 99% reduction in direct lightning strikes to the protected structure.

In the event of a direct strike (1%) or indirect effects from externally induced overvoltages, the CMCE-MARINE acts as a thermal fuse, absorbing lightning energy as heat through the melting of its components, reducing voltage levels (between 60% and 90%) and mitigating electromagnetic effects.

### Materials

High-purity aluminum.

Insulator: Polyacetal (POM), also known as polyoxymethylene.

Contains no electronic components, heavy metals, or radioactive materials.



## Mounting System for the Mast or Manufactured Support:

The unit incorporates a central-axis connection system for attachment to the support. The CMCE-MARINE requires a support with an internal diameter of 37.4 mm. For a manufactured support, it must have a minimum wall thickness of 3.2 mm (this may vary depending on the model; consult the manufacturer for further information).

To secure the CMCE to the support, the device includes two through-holes: the first is a  $\varnothing 10$  mm hole located 12 mm from the edge of the support, and the second is a  $\varnothing 10$  mm hole located 30 mm from the edge of the support.

### CMCE Product Certification:

- Lloyd's Register Approval Certificate LR2514641TA
- RINA Type Approval Certificate ELE281223XG
- Compliant with IEC, EN, UNE-EN, and BS-EN 62305 Parts 1, 2, 3, and 4
- Compliant with UL 96 (for specific device)
- RoHS compliant
- CE marking
- UKCA marking
- ISO 9001:2015 and ISO 14001:2015 certifications
- Compliance with the Commonwealth of Independent States (CIS)
- Approved by the TESLA Institute in accordance with IEC 60060-1:2010 and IEC 60060-2:2010

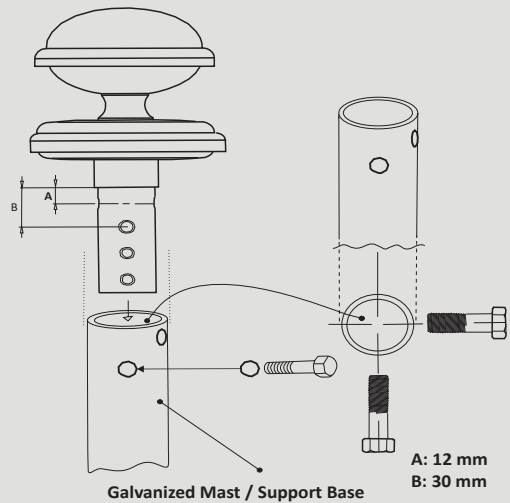
SERTEC S.R.L. is approved within the NATO Codification System (NCS) with the NCAGE code SFKU3 for CMCE SERTEC lightning protection devices.

DUNS registration number: 955067967

ITE laboratory testing under UNE 21186:2011 / NFC 17102:2011 (ENAC-ILAC accredited laboratories, ISO 17025):

- High-voltage impulse tests reaching up to 840 kV at one meter without tracer formation.
- Mechanical and environmental testing: UNE 60068-2-52, sulfurous atmosphere, current, and triggering advance.

Studies conducted at GCC-LAB (Saudi Arabia) under IEC 62305.



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### **Operating Principle:**

Compensation of the surrounding electric field. Through its high-efficiency capacitor system, the device prevents electrical discharge.

### **Maximum Operating Voltage Without Discharge:**

Maximum working electric field ..... 840 kV/m.

### **Maximum Current:**

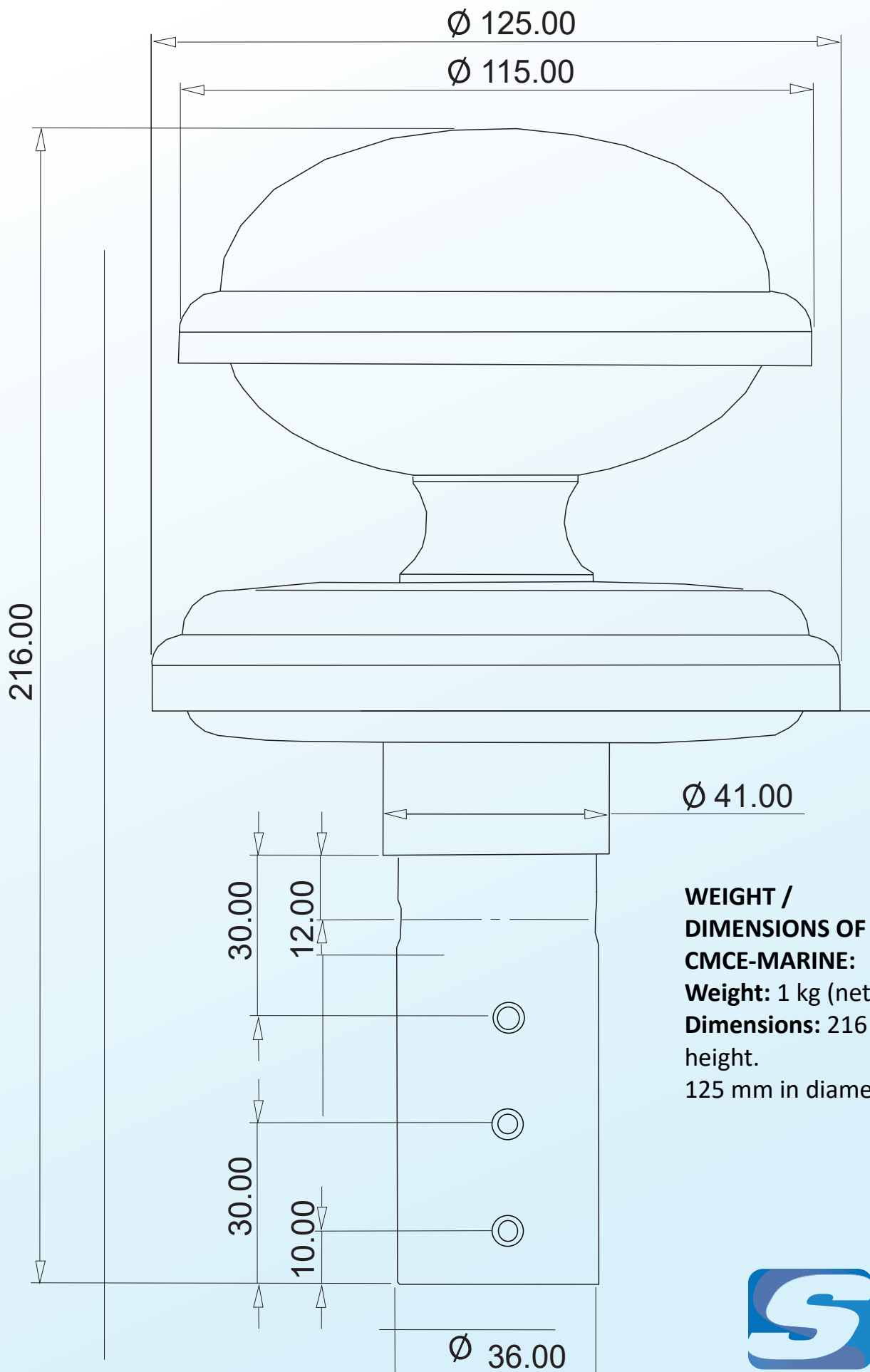
Tested at 100 kA according to IEC 10/350  $\mu$ s under IEC 62305 for the CMCE-MARINE.

### **Applications:**

Thanks to its compact size and reduced weight, it is particularly suitable for small vessels, sailboats, marine buoys, and other compact nautical structures.



**CMCE-GOLD**



**WEIGHT /  
DIMENSIONS OF THE  
CMCE-MARINE:**  
**Weight:** 1 kg (net)  
**Dimensions:** 216 mm in  
height.  
125 mm in diameter.

