

PDC.E

Lightning rod with Early Streamer Emission - ESE System



100%
Efficacy

High Protection
Class

200kA
Tested

AISI 316L
Stainless steel

Electronic
System

QR
Authentication

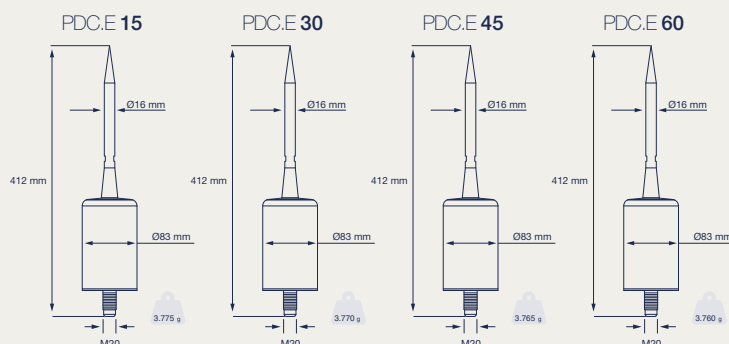
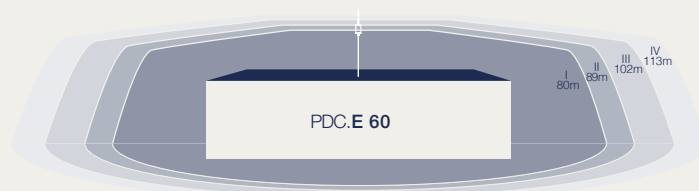
LIGHTNING PROTECTION



Level of Protection	PDC.E 15 Ref. 102004	PDC.E 30 Ref. 102005	PDC.E 45 Ref. 102006	PDC.E 60 Ref. 102007
	15μs	30μs	45μs	60μs
● LEVEL I	35 m	50 m	65 m	80 m
● LEVEL	43 m	59 m	74 m	89 m
● LEVEL III	54 m	70 m	86 m	102 m
● LEVEL	63 m	81 m	97 m	113 m

Protection radius calculated according to **NFC 17-102:2011**, UNE 21186:2011 and NP 4426:2013, based on a 20 m height difference between the lightning rod tip and the horizontal reference plane.

Protection radius



Quality



The **PDC.E** complies with all current regulations and has the certificate issued by **Bureau Veritas** according to standard **UNE 21186:2011** and **NFC 17-102:2011**. Our company has ISO 9001:2015 and 14001:2015 **environmental** certification.

Technology



State-of-the-art capacitive circuit and an atmospheric accelerator generating the upward leader. It has been tested by **LABELEC** (High Voltage Laboratory accredited by **ENAC** n°307/LE681 according to **ISO 17025**) and has been tested in natural field.

Warranty



This product has a **5-year warranty** against any manufacturing defect. Offering a performance effective in any atmospheric and environmental conditions. **Operating temperature range:** -40°C to + 90°C.

ASSEMBLY INSTRUCTIONS

CAPTURE SYSTEM

- Fix the central axis of the air terminal to the lightning head-mast adaptor piece.
- Pass the down conductor cable through the interior of the mast and connect it to the base of the adaptor, fixing it using two Allen screws.
- Couple the adaptor inside the mast. Secure it with its screw.
- Connect all the metallic structures that are within the safety distance using spark gaps.

DOWN CONDUCTOR

- Anchor the mast to the structure using the most appropriate support and, if necessary, fix the mast to the cover using anchor braces.
- Fix the down conductor with clamping brackets, ensuring that they are firmly tightened and, as a reference, using three fasteners per metre.
- Install the lightning counter on the lower part of the conductor, two or three metres above the ground.
- Protect the lower part of the down conductor with a protection tube that is at least 2m long.
- Each PDC will be connected to earth using two down conductors, while four down conductors will be required for buildings that are taller than 60 m. These down conductors will be located, wherever possible, at the four corners of the building and interconnected using a perimeter ring.

GROUNDING SYSTEM

- There are two types of grounding systems, Type A and Type B:
 - Type A1: "crow's foot" horizontal electrodes.
 - Type A2: straight or triangular vertical electrodes.
 - Type B: ring-shaped electrodes outside the structure.
- Another possible configuration, particularly recommended for rocky ground that does not permit excavation to a great depth, consists of placing an electrode-grounding plate vertically in a hole with a minimum volume of 1m³.
 - It is recommended to add Quibacsol composite to improve the ground's conductivity.
 - Connect the lightning grounding system to the building's general grounding system using a spark gap.

OPERATION

As a downward leader approaches from a storm cloud, the **INGESCO® PDC.E** lightning rod with an early streamer emission device is designed to detect the increase in the electric field, accumulating energy in its capacitor.

When the electric field reaches a critical level, the atmospheric accelerator of the **INGESCO® PDC.E** lightning rod releases the accumulated energy, generating an upward ion leader that creates a preferred path to channel the lightning discharge safely to the ground, preventing it from striking the protected area or structure.

The **INGESCO® PDC.E** lightning rod combines two key quality factors:

- The use of state-of-the-art electronic technology.
- A robust mechanical design that ensures a long service life.
- All of this makes the **INGESCO® PDC.E** the most reliable lightning rod in its class.

The performance of the device is defined by the Δt value, which represents the triggering advance compared to a conventional lightning rod, allowing calculation of its **protection radius** in accordance with **NFC 17-102:2011**, **UNE 21186:2011**, and **NP 4426:2013** standards.

TEST AND CERTIFICATES

INGESCO® PDC.E lightning rod have successfully surpassed the following test and trials:

- Product certificate issued by the **Bureau Veritas** Certification entity.
- ESE lightning rod streamer emission time evaluation test (Annex C UNE 21186:2011 and NFC 17-102:2011), at **LABELEC High Voltage Laboratory**.
- Mechanical test (tensile and bending at break).
- Testing by **UL** Test Report Number: 4789563988.1.

INSTALLATION



VIDEO



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