

Early Streamer
Emission Lightning Conductor

Ionise

Made in Spain
complies with NF C 17-102 Standard



**ESE LIGHTNING PROTECTION
THE ADVANTAGE OF INITIATION ADVANCE**

**LIGHTNING
PROTECTION**

FEATURES

- Non-radioactive air termination with enhanced protective radius
- Designed and tested to UNE-21186 and NF C17-102
- Stainless steel design suitable for most environment
- Active design which employs energy from surrounding E- field to active launch and up- leader at the critical time
- Proven track history with over 12,000 installation world wide
- Design refined and perfect through extensive high voltage and field testing over 25 years.

ESE LIGHTNING PROTECTION



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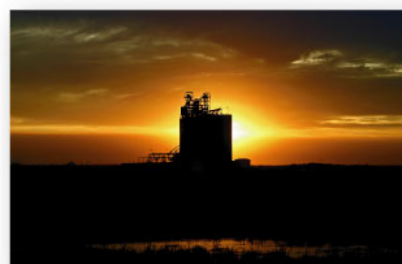
APPLICATIONS

The nature phenomenon of lighting, which strikes the earth an estimated 6000 times per minute, is an ever present and unpredictable force.

The unique efficiency of the lightning conductor is based on a specific initiation advance; well before the natural formation of an upward leader, it generates a leader that rapidly propagates to capture the lightning and direct it to earth. Validated in the laboratory, this gain in time relative to the simple rod provides additional essential protection.

COMPLETE AUTONOMY

During a storm the ambient electric field may rise to between 10 to 20 kV/m. As soon as the field exceeds a threshold representing the minimum risk of a lightning strike, the lightning terminal is activated. It draws its energy from the ambient electric field; the energy required to generate high voltage pulses, creating and propagating an upward leader. No other power sources are required; no radioactive components are used.

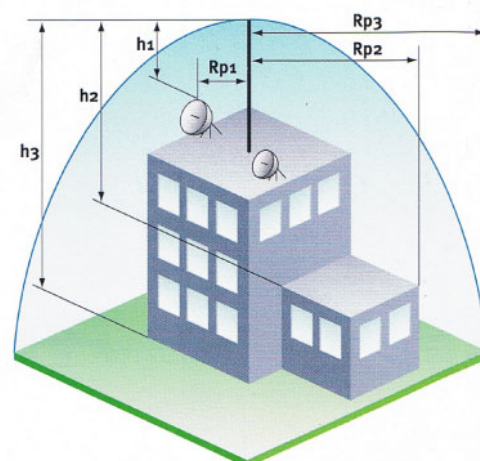


Calculation of Protected Areas

Ionise offers two models in its range of early streamer emission air terminals. All terminals have been tested to special norm UNE-21186 and French NF C 17-102.

The radius of protection R_p of a Ionise is given by the French standard NF C 17-102 of July 1995. It depends on the initiation advance ΔT of the Ionise measured in the high voltage laboratory, on the levels of protection I, II, III calculated according to the lightning risk assessment guide (Appendix B of the French standard NF C 17-102) and the height of the lightning conductor over the area to be protected (minimum height = 2m).

Ionise Radius of protection						
Level of protection	I (D=20 m)		II (D=45 m)		III (D=60 m)	
Ionise	IS 45	IS 60	IS 45	IS 60	IS 45	IS 60
h(m)	Radius of protection R_p (m)					
2	25	32	32	40	36	44
3	38	48	48	59	57	65
4	51	64	55	78	72	87
5	63	79	81	97	89	107
6	63	79	81	97	90	107
8	64	79	82	98	91	108
10	64	79	83	99	92	109
15	65	80	85	101	95	111
20	65	80	86	102	97	113
45	65	80	90	105	104	119
60	65	80	90	105	105	120



R_p : radius of protection in a horizontal plane located at a vertical distance h from the Ionise tip.

D : standardised striking distance. $\Delta L = 10^6 \Delta T$ (initiation advance)

$$R_p = \sqrt{h(2D-h) + \Delta L(2D + \Delta L)} \quad (\text{for } h \geq 5\text{m})$$

For $h < 5\text{m}$, see the radius of protection table opposite.

ΔT = initiation advance measured during efficiency tests according to appendix C of the French standard NF C 17-102



Lightning Strike Recorder (LSR II)

Feature

- Ease of installation, LSR II can be retro-fitted to any lightning protection down conductor
- IP67 rated enclosure
- Non-intrusive and fast acting proximity circuit detects lightning transient currents.
- Can be mounted at any location along the down conductor

Technical Data

Description :

Lightning Strike Recorder for Lightning Strike LSR II

Ordering code :

Current sensitivity :

1500A 08/20 μSEC impulse within 18 mm of the unit's base

Display :

7 Digits Digital Display (8.6mm height).

Max reading 9999999

Dimensions :

120 mm x 80 mm x 60 mm

Mounting :

Adjustable stainless steel clamp to accommodate a cable up to 40 mm dia, cable or 50 mm x 5 mm Flat tape

Construction :

Polycarbonate enclosure,

Colour :

Light grey

Operating Temperatures :

-10 °C to +55 °C (14 °F to 131 °F)

R&D PROVEN EFFICIENCY

IONISE has proven commitment to research and development and continuously sets new bench marks for the efficiency of lightning conduction co-operation with the test process in high voltage in laboratories and of the lightning phenomena itself.

The **IONISE** have underground testing in the IREQ laboratory in Canada and in **IONISE** own center.

Ascending discharge on IONISE during the test proceduse at IREQ (Canada)

