INSTALLATION / VERIFICATION

The installation and verification of lightning protection systems utilising one or more Pulsar units must be performed in accordance with the manufacturer’s recommendations and those given in standard NFC 17 102.

HELITA ALSO OFFERS A COMPLETE RANGE OF PRODUCTS:

- Simple rods, meshed cages, accessories
- Grounding equipment, earth plates and accessories
- Low voltage, Telecom and coaxial, surge arresters
- Air navigation / obstacle beacons
- Pylons

Your installer/dealer
In ongoing collaboration with the CNRS (French National Research Organisation), Hélita continues to innovate, and has developed a new generation of lightning devices.

The new Pulsar range with increased initiation advance performances, represents further progress in terms of protection, operating autonomy and ease of maintenance.

These advancements reinforce Hélita’s position as International leader in direct lightning protection with over 200,000 installations throughout the world.
Hélita has proven commitment to research and development and continuously sets new benchmarks for the efficiency of lightning conductors. Hélita’s co-operation with the CNRS led to a better understanding of the test process in high voltage laboratories and of the lightning phenomena itself.

The Pulsar have undergone testing in the IREQ laboratory in Canada and in Hélita’s own LEHTM centre. International certification organisations including BSI, LCIE and KERI have validated the results obtained.

THE ADVANTAGE OF INITIATION ADVANCE

The unique efficiency of the Pulsar lightning conductor is based on a specific initiation advance; well before the natural formation of an upward leader, the Pulsar 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 Pulsar lightning terminal is activated. It draw 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, and no radioactive components are used.

PROVEN EFFICIENCY

Ascending discharge on a Pulsar during the test procedure at IREQ (Canada)

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The radius of protection $R_p$ of a Pulsar is given by the French standard NF C 17-102 of July 1995. It depends on the initiation advance $\Delta T$ of the Pulsar 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 $h$ of the lightning conductor over the area to be protected (minimum height = 2m).

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

For $h < 5m$, see the radius of protection table opposite.

The level of protection is calculated according to appendix B of the French standard NF C 17-102.

For the Pulsar 60, limiting the value of $\Delta T$, that used in the radius of protection calculation, to 60 $\mu$s has been validated by the experiment conducted by the members of Gimelec (Group of Industries for Materials for Electrical Equipment and associated Industrial Electronics).

### HELITA MANUFACTURING QUALITY

The enviable reputation of the Pulsar has been earned through maintaining a consistently high quality in manufacture. Before leaving the factory, each pulsar has been tested for insulation breakdown at high voltage, and subjected to a current test that ensures its performance when conducting lightning discharges. The high voltage output pulses at the Pulsar are also examined to verify correct amplitude and frequency. The Pulsar is built to withstand the arduous conditions encountered in service, and its ongoing performance can be monitored simply and quickly using the pulsar test set.