Caritec

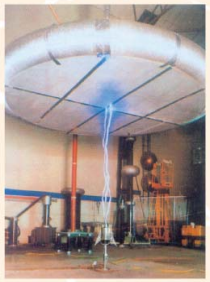
complies with NF C 17-102 Standard

R&D PROVEN EFFICIENCY

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

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

Ascending dicharge on CARITEC during the test proceduse at IREQ Canada - USA



Caritec Specifications on protection levels of Lightningco ESE

Lightningco Caritec	• H = Actual height of support from protection level (m)									
	2	4	5	8	11	15	25	45	60	65
I: Absolute protection level D = 30										
ESE 2.350	16	27	31	36	37	39	40	44	44	49
ESE 1.300	9	13	20	24	25	27	28	32	32	37
ESE 3.750	72	85	97	96	97	99	100	104	104	109
ESE 6.650	84	96	107	109	111	112	116	120	123	128
II: Medium protection level D = 45										
ESE 2.350	18	29	38	41	43	45	45	49	49	54
ESE 1.300	12	17	26	30	32	34	37	42	43	48
ESE 3.750	81	97	106	108	109	111	114	119	123	125
ESE 6.650	93	108	119	121	125	125	126	135	139	144
III: Standard protection level D = 60										
ESE 2.350	22	34	45	48	49	52	52	61	63	68
ESE 1.300	16	23	32	36	42	44	48	52	53	58
ESE 3.750	93	109	120	123	123	124	128	132	135	139
ESE 6.650	114	121	131	132	133	137	139	145	147	148

PCS 1.300
E S E

PCS 2.350
E S E

PCS 3.350
E S E

PCS 3.450
E S E

PCS 3.550
E S E

PCS 3.650
E S E

PCS 3.750
E S E

PCS 6.650
E S E

LIGHTNING PROTECTION

CARITEC CARITEC CARITEC CARITEC CARITEC CARITEC CARITEC CARITEC CARITEC CARITEC

LightningCo®

Lightning Protection

Caritec

Made in Canada

complies with NF C 17-102 Standard

ESE LIGHTNING PROTECTION
THE ADVANTAGE OF INITIATION ADVANCE

E S E

LIGHTNING PROTECTION

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Caritec
complies with NF C 17-102 Standard

FEATURES

- Non-radioactive air termination with enhanced protective radius
- Designed and tested to UNE-21186 and NFC17-102
- 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

THE ADVANTAGE OF INITIATION ADVANCE

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

COMPLETE AUTONOMY

During a Strom 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 lihgtning terminal is activated. It draw its energy from the ambient electric field the energy required to generated high voltage pluses, creating and propagating an upward leader. No other power sources are required, no radioactive components are used.

LIGHTNING PROTECTION

SURGE PROTECTION

CART- 170- 1LNE- 30ka	30 ka per phase
CART- 170- 1LNE- 50ka	50 ka per phase
CART- 260- 1LNE- 80ka	80 ka per phase
CART- 260- 1LNE- 100ka	100 ka per phase
CART- 260- 1LNE-125ka	125 ka per phase
CART- 400- 1LNE-150ka	150 ka per phase
CART- 400- 1LNE-180ka	180 ka per phase
CART- 400- 1LNE- 200ka	200 ka per phase
CART- 400- 1LNE- 250ka	250 ka per phase
CART- 400- 1LNG- 300ka	300 ka per phase
CART- 600- 1LNE- 350ka	350 ka per phase
CART- 600- 1LNE- 400ka	400 ka per phase
CART- 600- 1LNE- 450ka	450 ka per phase
CART- 600- 1LNE- 500ka	500 ka per phase

CART- 260- 3LNE- 50ka	50 ka per phase
CART- 260- 3LNE- 80ka	80 ka per phase
CART- 260- 3LNE- 120ka	120 ka per phase
CART- 320- 3LNE- 150ka	150 ka per phase
CART- 320- 3LNE- 180ka	180 ka per phase
CART- 320- 3LNE- 200ka	200 ka per phase
CART- 320- 3LNE- 225ka	225 ka per phase
CART- 400- 3LNE- 250ka	250 ka per phase
CART- 400- 3LNE- 280ka	280 ka per phase
CART- 400- 3LNE- 300kA	300 ka per phase
CART- 400- 3LNE- 350kA	350 ka per phase
CART- 400- 3LNE- 400kA	400 ka per phase
CART- 600- 3LNE- 450kA	450 ka per phase
CART- 600- 3LNE- 500kA	500 ka per phase
CART- 600- 3LNE- 550kA	550 ka per phase
CART- 600- 3LNE- 580kA	580 ka per phase
CART- 600- 3LNE- 600kA	600 ka per phase
CART- 320- 3LNE- 100kA	100 ka per phase

Caritec
complies with NF C 17-102 Standard

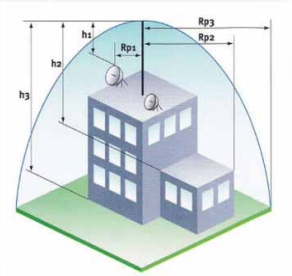
Calculation of Protected Areas

Caritec offers two models in its range of early streamer emission air terminals All terminal have been tested to special norm UNE-21186and French NFC 17-102

The radius of protection Rp of a Caritec is given by the French standard NF C 17-102 of July 1995. It depends on the initiation advance △T of the
Caritec measured in the high voltage laboratory, on the levels of protetion I, II, III calculated according to the lightning risk assessment guide
(Apppendix 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).

Caritec specifications on protection levels of Lightningco ESE

lightningco Caritec	• H = Actual height of support from protection level (m)									
	2	4	5	8	11	15	25	45	60	65
I: Absolute protection level D = 30										
ESE 3.350	18	38	48	49	50	52	53	53	54	54
ESE 3.450	25	51	65	67	68	68	70	71	72	72
ESE 3.550	27	61	75	76	76	79	79	81	81	83
ESE 3.650	33	65	85	86	87	88	89	90	90	91
II: Medium protection level D = 45										
ESE 3.350	23	44	57	59	61	63	65	68	68	70
ESE 3.450	30	60	75	76	77	80	84	85	85	88
ESE 3.550	35	69	86	87	88	90	93	94	94	95
ESE 3.650	39	77	96	98	99	101	104	105	105	107
III: Standard protection level D = 60										
ESE 3.350	26	52	65	66	67	72	75	79	84	85
ESE 3.450	33	65	85	86	87	88	94	97	100	103
ESE 3.550	38	76	95	96	98	100	105	106	109	110
ESE 3.650	45	87	107	108	109	112	115	116	120	120



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

D : standardised striking distance.

$\triangle L = 10^6 \triangle T$ (initiation advance)

$Rp = \sqrt{h(2D-h) + \triangle L(2D + \triangle L)}$ (for $h \geq 5m$)

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

△T = 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 lightningprotection 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
Ordering code :	LSR II
Current sensitivity :	1500A 08/20 pSEC 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)

LIGHTNING PROTECTION