

# LIVA ACTIVE LIGHTNING RODS

## LAP-CX 070



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### PHYSICAL PROPERTIES LAP-CX 070

| Order code | Size                                                          | Package Size | $\Delta t$ Early Streamer Warning Time<br>(according to NFC 17 – 102 standards)<br>(*) | Protection Radius (Mt.)<br>(according to NFC 17 – 102 standards)<br>(**) |         |         |         |
|------------|---------------------------------------------------------------|--------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------|---------|---------|---------|
|            |                                                               |              |                                                                                        | Level 1                                                                  | Level 2 | Level 3 | Level 4 |
| LAP-CX 070 | Length: 70 cm<br>Net weight: 2.40 kg<br>Gross weight: 3.10 kg | 13x13x70 cm  | 31 $\mu$ sec.                                                                          |                                                                          |         |         |         |
|            |                                                               |              |                                                                                        | 49                                                                       | 56      | 65      | 73      |

## KIM THU SÉT LIVA LAP-CX040

## LAP-CX 040

### PHYSICAL PROPERTIES LAP-CX 040

| Order code | Size                                                          | Package Size | $\Delta t$ Early Streamer Warning Time<br>(according to NFC 17 – 102 standards)<br>(*) | Protection Radius (Mt.)<br>(according to NFC 17 – 102 standards)<br>(**) |         |         |         |
|------------|---------------------------------------------------------------|--------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------|---------|---------|---------|
|            |                                                               |              |                                                                                        | Level 1                                                                  | Level 2 | Level 3 | Level 4 |
| LAP-CX 040 | Length: 70 cm<br>Net weight: 2.30 kg<br>Gross weight: 2.90 kg | 13x13x70 cm  | 22 $\mu$ sn                                                                            |                                                                          |         |         |         |
|            |                                                               |              |                                                                                        | 40                                                                       | 46      | 54      | 62      |

## LAP-CX 040



(\*)  $\Delta t$  value shows the early streamer time advantage that a lightning rod (ESE lightning rod, for instance) has in arresting the lightning, compared to an ordinary capture terminal (S.R.). Bigger  $\Delta t$  value means that the active reaction of the lightning rod is better. It shows that it can attract the lightning to itself at a higher point, at a larger protection diameter and fastly.)

(\*\*) It involves the situation that the lightning rod is mounted at least 6 m. higher than the highest point of the building to be protected, with the help of the lightning pole. The protection diameter is calculated by taking into account the approximate early streamer warning time.

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## KIM THU SÉT LIVA LAP-CX040

### B. Early Streamer Emission System (ESE) and Piezo Crystallized Lightning Rod:

**MATERIAL:** The metal components of the conductor rod, which will carry the lightning, are produced of stainless steel (Inox) to resist against chemical interactions and corrosion. This feature of the lightning rod allows it to remain strong and durable, just like the first day, against heavy elements of the nature.

#### OPERATION SYSTEM:

Electro Atmospheric Field and Wind Effective Liva Active Lightning Rod, which works in accordance with the principle of Early Streamer Emission System (ESE) and Piezo Crystallized Emission System, obtains its energy from the density changes between electrostatic and electromagnetic fields in the air, and making use of the dynamic energy of the wind.

1. Capture Terminal
2. Wind Wings
3. Body;
  - (a) Energy Block
  - (b) Piezo Crystals and related equipment
4. Bottom Mil
5. Conductor Rod Connection Adaptor

### TESTS AND DOCUMENTS

You can find below the tests that Liva Active Lightning Rods underwent.

**Lightning Surge Voltage By-Passing Time ( $\Delta t$ ) Test:** Lightning Surge Voltage By-Passing (Early Streamer Warning) Time ( $\Delta t$ ) Test at NFC 17-102 (Appendix C) was applied to the Lightning Rod at the High Voltage Laboratories of the Middle East Technical University (METU) Department of Electrics and Electronics. The tests proved that the Lightning Rod is in conformity with the relevant standards.

**Gost Document:** The Lightning Rod has "GOST" Document.

**CE Certificate:** The Lightning Rod has received "CE" Conformity to Europe document.

**Warranty Period:** The Lightning Rod has "30-Year Warranty" Document.

You can also find detailed information about our Active Lightning Rods on our website  
[www.livaparatoner.com](http://www.livaparatoner.com)

## TABLE OF LIVA LIGHTNING RODS PROTECTION LEVELS

|                        |    | LEVEL- 1                        |            |            |            |            |            |             | LEVEL- 2                        |            |            |            |            |            |             | LEVEL- 3                        |            |            |            |            |            |             | LEVEL- 4                        |            |            |            |            |            |             |
|------------------------|----|---------------------------------|------------|------------|------------|------------|------------|-------------|---------------------------------|------------|------------|------------|------------|------------|-------------|---------------------------------|------------|------------|------------|------------|------------|-------------|---------------------------------|------------|------------|------------|------------|------------|-------------|
| Protection Levels      |    | LAP-AX 210                      | LAP-BX 175 | LAP-BX 125 | LAP-CX 070 | LAP-CX 040 | LAP-DX 250 | LAP-PEX 220 | LAP-AX 210                      | LAP-BX 175 | LAP-BX 125 | LAP-CX 070 | LAP-CX 040 | LAP-DX 250 | LAP-PEX 220 | LAP-AX 210                      | LAP-BX 175 | LAP-BX 125 | LAP-CX 070 | LAP-CX 040 | LAP-DX 250 | LAP-PEX 220 | LAP-AX 210                      | LAP-BX 175 | LAP-BX 125 | LAP-CX 070 | LAP-CX 040 | LAP-DX 250 | LAP-PEX 220 |
| Type of Lightning Rods |    | Radius of Protection Area (Mt.) |            |            |            |            |            |             | Radius of Protection Area (Mt.) |            |            |            |            |            |             | Radius of Protection Area (Mt.) |            |            |            |            |            |             | Radius of Protection Area (Mt.) |            |            |            |            |            |             |
| Height of the Pole (m) | 4  | 100                             | 81         | 58         | 48         | 39         | 115        | 155         | 108                             | 89         | 65         | 55         | 45         | 123        | 164         | 120                             | 100        | 74         | 64         | 53         | 134        | 176         | 130                             | 110        | 83         | 72         | 60         | 146        | 188         |
|                        | 5  | 100                             | 82         | 58         | 49         | 39         | 115        | 155         | 109                             | 90         | 65         | 56         | 46         | 124        | 164         | 121                             | 100        | 75         | 65         | 54         | 135        | 177         | 131                             | 110        | 84         | 72         | 61         | 146        | 188         |
|                        | 6  | 101                             | 82         | 58         | 49         | 40         | 115        | 155         | 109                             | 90         | 66         | 56         | 46         | 124        | 164         | 121                             | 101        | 76         | 65         | 54         | 135        | 177         | 131                             | 111        | 84         | 73         | 62         | 146        | 188         |
|                        | 8  | 102                             | 82         | 59         | 50         | 40         | 115        | 156         | 110                             | 90         | 66         | 57         | 47         | 124        | 165         | 122                             | 101        | 77         | 66         | 56         | 136        | 177         | 132                             | 111        | 85         | 75         | 63         | 147        | 189         |
|                        | 10 | 102                             | 82         | 59         | 50         | 41         | 116        | 156         | 110                             | 91         | 67         | 58         | 48         | 124        | 165         | 122                             | 102        | 77         | 67         | 57         | 137        | 178         | 133                             | 112        | 87         | 76         | 65         | 148        | 190         |
|                        | 15 | 102                             | 83         | 60         | 51         | 42         | 116        | 156         | 111                             | 92         | 68         | 59         | 50         | 125        | 165         | 123                             | 104        | 80         | 70         | 60         | 138        | 178         | 135                             | 114        | 89         | 79         | 69         | 149        | 191         |
|                        | 20 | 102                             | 83         | 60         | 51         | 42         | 116        | 156         | 112                             | 92         | 69         | 60         | 51         | 126        | 166         | 125                             | 105        | 81         | 72         | 62         | 139        | 179         | 136                             | 116        | 92         | 82         | 72         | 151        | 192         |

