

# NA2XS(FL)H 12/20 (24)kV Cable



Eland Product Group: C9X

## APPLICATION

Medium voltage power cables with additional waterblocking properties for distribution networks and generation units, suitable for external installation including in direct in ground and in buried cable ducts. UV Resistant.

## CHARACTERISTICS

**Voltage Rating**  $U_0/U$  (Um)  
12/20 (24)kV

**Test Voltage**  
42kV AC 50Hz (5 mins)

**Temperature Rating**  
-20°C to +60°C  
Permissible Conductor Operating Temperature: +90°C  
Permissible Short Circuit Temperature up to 5 sec: 250°C

**Minimum Bending Radius**  
15 x overall diameter

## CONSTRUCTION

**Conductor**  
Class 2 Stranded Aluminium

**Conductor Screen**  
Semi-conductive material

**Insulation**  
XLPE (Cross-Linked Polyethylene)

**Insulation Screen**  
Semi-conductive material (bonded)

**Longitudinal Waterblocking**  
Semi-conductive swellable tape

**Screen**  
Copper wires and copper tape

**Longitudinal Waterblocking**  
Swellable Tapes

**Radial Waterblocking**  
Al/PET (Aluminium/Polyester) Tape tightly bonded to sheath

**Outer Sheath**  
LSZH (Low Smoke Zero Halogen)

**Sheath Colour**  
● Red ● Black

## STANDARDS

IEC 60502-2, IEC 60228,  
Low Smoke Zero Halogen: IEC 60754-1/2, IEC 61034-2  
Flame Retardant: EN 60332-3-24 Cat C, IEC 60332-1-2  
UV Resistant: EN 50396  
Abrasion and Tear Resistant: EN 60229-4.1  
Impact rated to: AG2 EN 60364-5.51

## THE CABLE LAB<sup>®</sup>

AN ISO/IEC 17025 AND IEC CBTL ACCREDITED FACILITY

Our world-class testing facility assures the quality and compliance of this cable through a continuous and rigorous testing regime.



## SUSTAINABILITY COMMITMENT

We are on a journey to Net Zero.

We've committed to near-term emissions reductions and a net-zero target with the Science Based Targets initiative and we're a signatory to the United Nations Global Compact Sustainable Development Goals.

Learn more about embodied carbon and our carbon emissions reduction actions, our comprehensive recycling services, and wider ESG activities for sustainable operations at: [www.elandcables.com/company/about-us/esg-sustainability](http://www.elandcables.com/company/about-us/esg-sustainability)



SCIENCE  
BASED  
TARGETS

BUSINESS  
AMBITION FOR 1.5°C



## REGULATORY COMPLIANCE

This cable is compliant with European Regulation EN 50575, the Construction Products Regulation.



This cable meets the requirements of the RoHS Directive 2015/65/EU and Reach Directive EC 1907/2006. RoHS compliance has been tested and confirmed by The Cable Lab<sup>®</sup>.





## DIMENSIONS

| ELAND PART NO.   | NO. OF CORES | NOMINAL CROSS SECTIONAL AREA<br>mm <sup>2</sup> |        | NOMINAL CONDUCTOR DIAMETER<br>mm | NUMBER WIRES CONDUCTOR<br>mm | NOM. THICKNESS SEMI-CON. LAYER |             | NOMINAL INSULATION THICKNESS<br>mm | MINIMUM INSULATION THICKNESS<br>mm | NOMINAL DIAMETER OVER INSULATION<br>mm |
|------------------|--------------|-------------------------------------------------|--------|----------------------------------|------------------------------|--------------------------------|-------------|------------------------------------|------------------------------------|----------------------------------------|
|                  |              | Conductor                                       | Screen |                                  |                              | INNER<br>mm                    | OUTER<br>mm |                                    |                                    |                                        |
| C9XHL20KV1050RDC | 1            | 50                                              | 16     | 8.20                             | 7 x 2.90                     | 0.50                           | 0.40        | 5.50                               | 4.85                               | 20.4                                   |
| C9XHL20KV1070RDC | 1            | 70                                              | 16     | 9.70                             | 19 x 2.18                    | 0.50                           | 0.40        | 5.50                               | 4.85                               | 21.9                                   |
| C9XHL20KV1095RDC | 1            | 95                                              | 16     | 11.4                             | 19 x 2.55                    | 0.50                           | 0.40        | 5.50                               | 4.85                               | 23.6                                   |
| C9XHL20KV1120RDC | 1            | 120                                             | 16     | 12.65                            | 19 x 2.90                    | 0.50                           | 0.40        | 5.50                               | 4.85                               | 24.9                                   |
| C9XHL20KV1150RDC | 1            | 150                                             | 25     | 14.4                             | 19 x 3.16                    | 0.50                           | 0.40        | 5.50                               | 4.85                               | 26.6                                   |
| C9XHL20KV1185RDC | 1            | 185                                             | 25     | 15.75                            | 37 x 2.55                    | 0.50                           | 0.40        | 5.50                               | 4.85                               | 28.4                                   |
| C9XHL20KV1240RDC | 1            | 240                                             | 25     | 18.2                             | 37 x 2.90                    | 0.50                           | 0.40        | 5.50                               | 4.85                               | 30.9                                   |
| C9XHL20KV1300RDC | 1            | 300                                             | 25     | 20.5                             | 61 x 2.55                    | 0.50                           | 0.40        | 5.50                               | 4.85                               | 33.2                                   |
| C9XHL20KV1400RDC | 1            | 400                                             | 35     | 23.0                             | 61 x 2.90                    | 0.50                           | 0.40        | 5.50                               | 4.85                               | 35.7                                   |
| C9XHL20KV1500RDC | 1            | 500                                             | 35     | 26.0                             | 61 x 3.20                    | 0.50                           | 0.40        | 5.50                               | 4.85                               | 38.7                                   |
| C9XHL20KV1630RDC | 1            | 630                                             | 35     | 30.2                             | 61 x 3.65                    | 0.50                           | 0.40        | 5.50                               | 4.85                               | 42.9                                   |

| NOMINAL CROSS SECTIONAL AREA<br>mm <sup>2</sup> | NUMBER WIRES SCREEN<br>mm | DIAMETER TAPE SCREEN<br>mm | NOMINAL SHEATH THICKNESS<br>mm | MINIMUM SHEATH THICKNESS<br>mm | NOMINAL OVERALL DIAMETER<br>mm | NOMINAL WEIGHT<br>kg/km | MAXIMUM SIDEWALL PRESSURE<br>N/cm <sup>2</sup> | MAXIMUM PULLING TENSION<br>N |
|-------------------------------------------------|---------------------------|----------------------------|--------------------------------|--------------------------------|--------------------------------|-------------------------|------------------------------------------------|------------------------------|
| 50                                              | 44 x 0.66                 | 1x0.1x10                   | 1.80                           | 1.24                           | 27                             | 800                     | 284                                            | 1500                         |
| 70                                              | 44 x 0.66                 | 1x0.1x10                   | 1.90                           | 1.32                           | 29                             | 900                     | 362                                            | 2100                         |
| 95                                              | 44 x 0.66                 | 1x0.1x10                   | 1.90                           | 1.32                           | 31                             | 1100                    | 448                                            | 2850                         |
| 120                                             | 44 x 0.66                 | 1x0.1x10                   | 2.00                           | 1.40                           | 32                             | 1200                    | 538                                            | 3600                         |
| 150                                             | 71 x 0.66                 | 1x0.1x10                   | 2.00                           | 1.40                           | 34                             | 1400                    | 620                                            | 4500                         |
| 185                                             | 71 x 0.66                 | 1x0.1x10                   | 2.10                           | 1.48                           | 36                             | 1600                    | 715                                            | 5550                         |
| 240                                             | 71 x 0.66                 | 1x0.1x10                   | 2.10                           | 1.48                           | 38                             | 1800                    | 854                                            | 7200                         |
| 300                                             | 71 x 0.66                 | 1x0.1x10                   | 2.20                           | 1.56                           | 41                             | 2000                    | 976                                            | 9000                         |
| 400                                             | 60 x 0.85                 | 1x0.1x15                   | 2.30                           | 1.64                           | 44                             | 2500                    | 1194                                           | 12000                        |
| 500                                             | 60 x 0.85                 | 1x0.1x15                   | 2.40                           | 1.72                           | 47                             | 3000                    | 1370                                           | 15000                        |
| 630                                             | 60 x 0.85                 | 1x0.1x15                   | 2.50                           | 1.80                           | 51                             | 3500                    | 1552                                           | 18900                        |



## ELECTRICAL CHARACTERISTICS

| NOMINAL<br>CROSS<br>SECTIONAL<br>AREA<br><br>mm <sup>2</sup> | CONDUCTOR<br>DC RESISTANCE<br>AT 20°C | CONDUCTOR<br>DC RESISTANCE<br>AT 75°C | CONDUCTOR<br>AC RESISTANCE<br>BY MAX TEMP | CURRENT CARRYING<br>CAPACITY ( A ) |                | REACTANCE | CHARGING<br>ADMITTANCE | CAPACITANCE | S.C.C<br>CONDUCTOR<br>1SEC<br>kA | S.C.C<br>SCREEN<br>1SEC<br>kA | CONDUCTOR<br>LOSSES IN THE<br>GROUND |
|--------------------------------------------------------------|---------------------------------------|---------------------------------------|-------------------------------------------|------------------------------------|----------------|-----------|------------------------|-------------|----------------------------------|-------------------------------|--------------------------------------|
|                                                              | ohms/km                               | ohms/km                               | ohms/km                                   | In Ground<br>20°C                  | In Air<br>30°C | ohms/km   | A/km                   | uF/km       |                                  | kA                            | kW/km                                |
| 50                                                           | 0.641                                 | 1.32                                  | 0.825                                     | 195                                | 217            | 0.19      | 0.40                   | 0.15        | 4.70                             | 3.2                           | 31.4                                 |
| 70                                                           | 0.443                                 | 0.917                                 | 0.570                                     | 237                                | 270            | 0.19      | 0.38                   | 0.17        | 6.58                             | 3.2                           | 32.0                                 |
| 95                                                           | 0.32                                  | 0.662                                 | 0.412                                     | 282                                | 328            | 0.18      | 0.36                   | 0.19        | 8.93                             | 3.2                           | 32.8                                 |
| 120                                                          | 0.258                                 | 0.524                                 | 0.328                                     | 320                                | 378            | 0.18      | 0.35                   | 0.20        | 11.28                            | 3.2                           | 33.6                                 |
| 150                                                          | 0.203                                 | 0.426                                 | 0.268                                     | 353                                | 425            | 0.17      | 0.33                   | 0.22        | 14.10                            | 5.0                           | 33.4                                 |
| 185                                                          | 0.164                                 | 0.339                                 | 0.213                                     | 396                                | 485            | 0.17      | 0.33                   | 0.24        | 17.39                            | 5.0                           | 33.4                                 |
| 240                                                          | 0.125                                 | 0.258                                 | 0.160                                     | 457                                | 573            | 0.16      | 0.31                   | 0.27        | 22.56                            | 5.0                           | 34.0                                 |
| 300                                                          | 0.100                                 | 0.207                                 | 0.132                                     | 511                                | 652            | 0.16      | 0.30                   | 0.29        | 28.20                            | 5.0                           | 34.5                                 |
| 400                                                          | 0.0778                                | 0.161                                 | 0.103                                     | 566                                | 740            | 0.16      | 0.29                   | 0.32        | 37.60                            | 7.1                           | 33.0                                 |
| 500                                                          | 0.0605                                | 0.125                                 | 0.0810                                    | 630                                | 838            | 0.15      | 0.28                   | 0.35        | 47.00                            | 7.1                           | 32.1                                 |
| 630                                                          | 0.0469                                | 0.0972                                | 0.0640                                    | 701                                | 882            | 0.15      | 0.27                   | 0.40        | 59.22                            | 7.1                           | 47.3                                 |

Derating factor (ground): 1 (Soil thermal resistivity: 1km/W, Depth 0.8m, Flat formation - touching)

Derating factor (air): 1 (Flat formation - touching)