| TECHNICAL DATA SHEET | Lite | HVCRC® Lite (AL0) 180 - 40<br>Epsilon Advanced Conductors | EPSILON CABLE |
|---|---|---|---|
| International size | **ZADAR** | | |
| ASTM Size | - | | |
| Technical designation | ECRC® 180-AL0/40-L0 | | |



*Governing Units: Metric*

| | | |
|---|---|---|
| **CONDUCTOR PROPERTIES** | | |
| Cross Sectional Area - Annealed Aluminium | 177.6 | mm² |
| Cross Sectional Area - HVCRC Core | 39.7 | mm² |
| Total Area of Conductor Cross Section | 217.3 | mm² |
| Nominal equivalent Aluminium Area (1350-H19 at 61%IACS) | 183.4 | mm² |
| Overall Diameter of Conductor | 17.09 | mm |
| No. & Diameter of the core | 1 x 7.11 | mm |
| Mass per unit length - Annealed Aluminium | 491.4 | kg/km |
| Mass per unit length - Core | 74.6 | kg/km |
| Mass per unit length - Conductor | 566.0 | kg/km |
| Ultimate Tensile Strength of Conductor | 95.5 | kN |
| Core Rated Tensile Strength | 84.8 | kN |
| Coefficient of Linear Expansion **Above** Thermal Kneepoint | 1.6 | $10^{-6}$ $K^{-1}$ |
| Coefficient of Linear Expansion **Below** Thermal Kneepoint | 16.30 | $10^{-6}$ $K^{-1}$ |
| Final Modulus of Elasticity **Above** Thermal Kneepoint | 112 | GPa |
| Final Modulus of Elasticity **Below** Thermal Kneepoint | 65 | GPa |
| **THERMAL SPECIFICATIONS** | | |
| Maximum Continuous Operating Temperature (surface temperature) | 110 | °C |
| Maximum Emergency Temperature (surface temperature) | 115 | °C |
| Thermal Heat Capacity for Annealed Aluminium Layers | 469.3 | W.s/m.°C |
| Thermal Heat Capacity for Composite Core | 59.7 | W.s/m.°C |
| **ELECTRICAL SPECIFICATIONS** | | |
| Maximum DC Electrical Resistance at 20°C | 0.1578 | Ω.$km^{-1}$ |
| Temperature Coefficient of Resistance | 4.03 | $10^{-3}$ $K^{-1}$ |
| AC Nominal Resistance at 25°C (surface temperature) | 0.1615 | Ω.$km^{-1}$ |
| AC Nominal Resistance at 75°C (surface temperature) | 0.1932 | Ω.$km^{-1}$ |
| AC Nominal Resistance at 110°C (surface temperature) | 0.2154 | Ω.$km^{-1}$ |
| AC Nominal Resistance at 115°C (surface temperature) | 0.2186 | Ω.$km^{-1}$ |
| AC Current Rating at 110°C (surface temperature)[1] | 704 | A |
| AC Current Rating at 115°C (surface temperature)[1] | 722 | A |
| Geometric Mean Radius (GMR) | 7.10 | mm |

*(1) Ampacity calculations based on IEEE Standard 738-2012, according to the following data:*

*25 °C ambient temperature,* — *0.61 m/s wind velocity with an angle of 90 °,*

*1000 W/m² solar radiation,* — *0.5 solar absorption coefficient,*

*0.6 emissivity coefficient,* — *Resistance AC at 50 Hz current frequency.*

*Core properties tested as per methods of ASTM B987/IEC 62818-1*

*Reference standards for electrical specifications: IEC 62219.*

*Reference standards for stranding parameters: ASTM B779/IEC 62219.*

*Depending on conductor manufacturer rated specifications may slightly change.*

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