TECHNICAL DATA SHEET	Lite	HVCRC® Lite (AL1) 680 - 71 Epsilon Advanced Conductors	EPSILON CABLE

International size	**BUDAPEST**
ASTM Size	**FORT WORTH**
Technical designation	ECRC® 680-AL1/71-L0



Governing Units: Metric

CONDUCTOR PROPERTIES		
Cross Sectional Area - Aluminium	670.2	mm²
Cross Sectional Area - HVCRC Core	71.3	mm²
Total Area of Conductor Cross Section	741.6	mm²
Overall Diameter of Conductor	31.49	mm
No. & Diameter of the core	1 x 9.53	mm
Mass per unit length - Annealed Aluminium	1,856.0	kg/km
Mass per unit length - Core	134.1	kg/km
Mass per unit length - Conductor	1,990.1	kg/km
Ultimate Tensile Strength of Conductor	187.1	kN
Core Rated Tensile Strength	79.9	kN
Coefficient of Linear Expansion **Above** Thermal Kneepoint	1.6	10^{-6} K^{-1}
Coefficient of Linear Expansion **Below** Thermal Kneepoint	19.19	10^{-6} K^{-1}
Final Modulus of Elasticity **Above** Thermal Kneepoint	112	GPa
Final Modulus of Elasticity **Below** Thermal Kneepoint	60	GPa
THERMAL SPECIFICATIONS		
Maximum Continuous Operating Temperature (surface temperature)	90	°C
Thermal Heat Capacity for Annealed Aluminium Layers	1,772.5	W.s/m.°C
Thermal Heat Capacity for Composite Core	107.3	W.s/m.°C
ELECTRICAL SPECIFICATIONS		
Maximum DC Electrical Resistance at 20°C	0.0432	$\Omega.km^{-1}$
Temperature Coefficient of Resistance	4.03	10^{-3} K^{-1}
AC Nominal Resistance at 25°C (surface temperature)	0.0459	$\Omega.km^{-1}$
AC Nominal Resistance at 75°C (surface temperature)	0.0544	$\Omega.km^{-1}$
AC Nominal Resistance at 90°C (surface temperature)	0.0569	$\Omega.km^{-1}$
AC Current Rating at 90°C (surface temperature)[1]	1,393	A
Geometric Mean Radius (GMR)	12.72	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.*

Conductor continuous operating temperature can be changed in accordance with country specification for hard aluminium.

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.

Revision	*00*
Ref. Document	*ST26-00079*
Date	*6-Mar-2026*

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