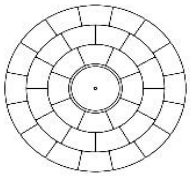
TECHNICAL DATA SHEET	ECRC® 880 - 87 Epsilon Advanced Conductors	EPSILON CABLE

International size	**BORDEAUX**
ASTM Size	-
Technical designation	ECRC® 880-AL0/87-S1



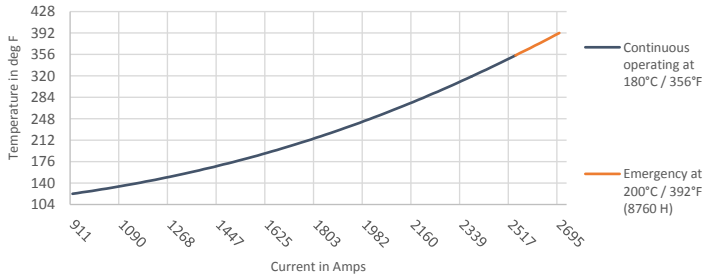
Governing Units: Metric to US Customary (Unit conversion)

STRANDING CONFIGURATION		Metric		US Customary	
	*No. & Diameter of composite core*	1 x 10.54	mm	1 x 0.415	in.
	Aluminum layers construction / Height	36 TW x 4.20	mm	0.166	in.
	1st layer composition and Øeq	8 x 5.46	mm	0.215	in.
	2nd layer composition and Øeq	12 x 5.57	mm	0.219	in.
	3st layer composition and Øeq	16 x 5.60	mm	0.220	in.
	Lay Direction of outer layer	Right Hand (Z)			

CONDUCTOR PROPERTIES				
Cross Sectional Area - Annealed Aluminum (1350-O at 63%IACS)	874.2	mm²	1725.2	kcmil
Cross Sectional Area - Composite Core	87.3	mm²	0.1352	in.²
Total Area of Conductor Cross Section	961.4	mm²	1.4902	in.²
Nominal equivalent Aluminum Area (1350-H19 at 61%IACS)	902.8	mm²	1781.8	kcmil
Overall Diameter of Conductor	35.76	mm	1.408	in.
Mass per unit length - Annealed Aluminum	2,417.7	kg/km	1,624.6	lb/kft
Mass per unit length - Core	161.4	kg/km	108.5	lb/kft
Mass per unit length - Conductor	2,579.1	kg/km	1,733.1	lb/kft
Ultimate Tensile Strength of Conductor	248.2	kN	55.8	kips
Core Rated Tensile Strength	195.8	kN	44.0	kips
Coefficient of Linear Expansion Above Thermal Kneepoint	1.3	10^{-6} K^{-1}	0.722	10^{-6} F^{-1}
Coefficient of Linear Expansion Below Thermal Kneepoint	19.04	10^{-6} K^{-1}	10.57	10^{-6} F^{-1}
Final Modulus of Elasticity Above Thermal Kneepoint	123	GPa	17.84	Msi
Final Modulus of Elasticity Below Thermal Kneepoint	61	GPa	8.87	Msi

THERMAL SPECIFICATIONS				
Maximum Continuous Operating Temperature[2] (surface temperature)	180	°C	356	°F
Maximum Emergency Temperature / 8760 Hours[2] (surface temperature)	200	°C	392	°F
Thermal Heat Capacity for Annealed Aluminum Layers	2,308.9	W-s/m-°C	390.8	W-s/ft-°F
Thermal Heat Capacity for Composite Core	129.1	W-s/m-°C	21.9	W-s/ft-°F

ELECTRICAL SPECIFICATIONS				
Maximum DC Electrical Resistance at 20°C / 68°F *(1370-O at 63%IACS)*	0.0320	ohm/km	0.0515	ohm/mile
Temperature Coefficient of Resistance	4.03	10^{-3} K^{-1}	2.089	10^{-3} F^{-1}
AC Nominal Resistance at 25°C / 77°F (surface temperature)	0.0360	ohm/km	0.0579	ohm/mile
AC Nominal Resistance at 75°C / 167°F (surface temperature)	0.0419	ohm/km	0.0675	ohm/mile
AC Nominal Resistance at 180°C / 356°F (surface temperature)	0.0548	ohm/km	0.0882	ohm/mile
AC Nominal Resistance at 200°C / 392°F (surface temperature)	0.0573	ohm/km	0.0922	ohm/mile
AC Current Rating at 180°C / 356°F (surface temperature) [1]	2,542 A			
AC Current Rating at 200°C / 392°F (surface temperature) [1]	2,695 A			



Geometric Mean Radius (GMR)			
14.41	mm	0.0473	ft.
Inductive Reactance Ø0.3m (Ø0.98ft) radius			
0.192	Ω.km-1	0.3090	ohm/mile
Capacitive Reactance Ø0.3m (Ø0.98ft) radius			
0.162	MΩ.km	0.1007	Mohm-mile

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

25 °C / 77 °F ambient temperature, 0.61 m/s (2 ft/s) wind velocity with an angle of 90 °,

1000 W/m² (92.9 W/ft²) solar radiation, 0.5 solar absorption coefficient,

0.6 emissivity coefficient, Resistance AC at 60 Hz current frequency.

(2) Temperatures defined according to ASTM B987-20.

Reference standards for core properties: ASTM B987-20.

Reference standards for electrical specifications: IEC 62219.

Reference standards for stranding parameters: ASTM B857-14/IEC 62219.

Rated specifications may slightly change depending on conductor manufacturer.

Revision 02

Ref. Document ST21-00139

Date 12-Sep-2023

This document is the property of EPSILON COMPOSITE

contact@epsilon-cable.com

www.epsilon-cable.com