

TECHNICAL DATA SHEET

Epsilon Advanced Conductor 880 - 87

High Temperature Low Sag Conductors


EPSILON
CABLEInternational size **BORDEAUX**

ASTM Size -



Governing Units: Metric to US Customary (Unit conversion)

STRANDING CONFIGURATION

	No. & Diameter of composite core	Metric			US Customary	
	Aluminum layers construction / Height	36 TW x	4.20	mm	1 x 0.415	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

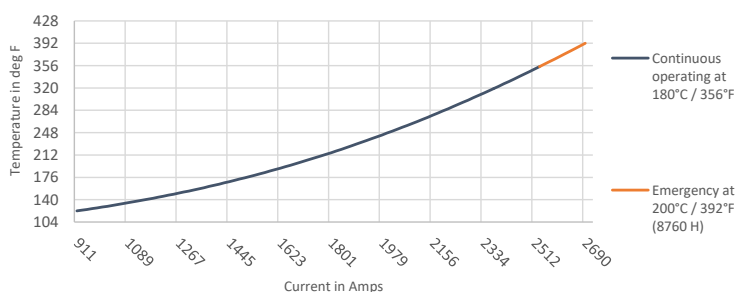
Cross Sectional Area - Annealed Aluminum (1350-O at 63%IACS)	874.2	mm ²	1725.2	kcmil
Cross Sectional Area - Composite Core	87.3	mm ²	0.1352	in. ²
Total Area of Conductor Cross Section	961.4	mm ²	1.4902	in. ²
Nominal equivalent Aluminum Area (1350-H19 at 61%IACS)	902.8	mm ²	1781.8	kcmil
Overall Diameter 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	4.07	10 ⁻³ K ⁻¹	2.109	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)	0.0420	ohm/km	0.0676	ohm/mile
AC Nominal Resistance at 180°C / 356°F (surface temperature)	0.0550	ohm/km	0.0885	ohm/mile
AC Nominal Resistance at 200°C / 392°F (surface temperature)	0.0575	ohm/km	0.0926	ohm/mile
AC Current Rating at 180°C / 356°F (surface temperature) ⁽¹⁾	2,537 A			
AC Current Rating at 200°C / 392°F (surface temperature) ⁽¹⁾	2,690 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.

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