

TECHNICAL DATA SHEET

Epsilon Advanced Conductor 190 - 28

High Temperature Low Sag Conductors

EPSILON
CABLE


International size ROVINJ

ASTM Size -



Governing Units: Metric to US Customary (Unit conversion)

STRANDING CONFIGURATION

	No. & Diameter of composite core	1 x 5.97	mm	1 x 0.235	in.	
	Aluminum layers construction / Height	16 TW x	2.78	mm	0.109	in.
	1st layer composition and Øeq	6 x	3.92	mm	0.154	in.
	2nd layer composition and Øeq	10 x	3.86	mm	0.152	in.
	Lay Direction of outer layer	Right Hand (Z)				

CONDUCTOR PROPERTIES

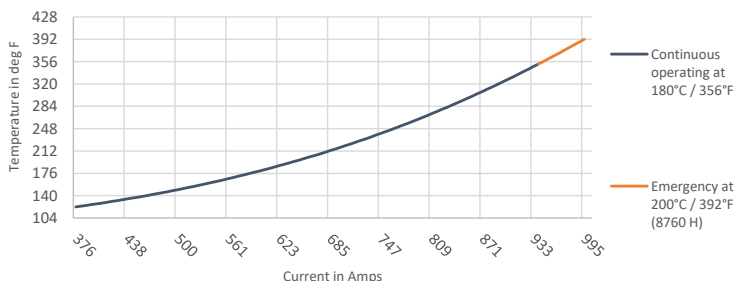
Cross Sectional Area - Annealed Aluminum (1350-O at 63%IACS)	189.1	mm ²	373.2	kcmil
Cross Sectional Area - Composite Core	28.0	mm ²	0.0434	in. ²
Total Area of Conductor Cross Section	217.1	mm ²	0.3365	in. ²
Nominal equivalent Aluminum Area (1350-H19 at 61%IACS)	195.3	mm ²	385.5	kcmil
Overall Diameter of Conductor	17.09	mm	0.673	in.
Mass per unit length - Annealed Aluminum	523.1	kg/km	351.5	lb/kft
Mass per unit length - Core	51.8	kg/km	34.8	lb/kft
Mass per unit length - Conductor	574.9	kg/km	386.3	lb/kft
Ultimate Tensile Strength of Conductor	71.2	kN	16.0	kips
Core Rated Tensile Strength	59.8	kN	13.4	kips
Coefficient of Linear Expansion Above Thermal Kneepoint	1.6	10 ⁻⁶ K ⁻¹	0.889	10 ⁻⁶ F ⁻¹
Coefficient of Linear Expansion Below Thermal Kneepoint	18.04	10 ⁻⁶ K ⁻¹	10.02	10 ⁻⁶ F ⁻¹
Final Modulus of Elasticity Above Thermal Kneepoint	112	GPa	16.24	Msi
Final Modulus of Elasticity Below Thermal Kneepoint	62	GPa	9.04	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	499.6	W-s/m-°C	84.6	W-s/ft-°F
Thermal Heat Capacity for Composite Core	41.4	W-s/m-°C	7.0	W-s/ft-°F

ELECTRICAL SPECIFICATIONS

Maximum DC Electrical Resistance at 20°C / 68°F (1370-O at 63%IACS)	0.1481	ohm/km	0.2383	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)	0.1519	ohm/km	0.2445	ohm/mile
AC Nominal Resistance at 75°C / 167°F (surface temperature)	0.1819	ohm/km	0.2927	ohm/mile
AC Nominal Resistance at 180°C / 356°F (surface temperature)	0.2450	ohm/km	0.3943	ohm/mile
AC Nominal Resistance at 200°C / 392°F (surface temperature)	0.2571	ohm/km	0.4137	ohm/mile
AC Current Rating at 180°C / 356°F (surface temperature) ⁽¹⁾	944 A			
AC Current Rating at 200°C / 392°F (surface temperature) ⁽¹⁾	995 A			



Geometric Mean Radius (GMR)

6.98 mm 0.0229 ft.

Inductive Reactance Ø0.3m (Ø0.98ft) radius

0.237 Ω.km-1 0.3814 ohm/mile

Capacitive Reactance Ø0.3m (Ø0.98ft) radius

0.205 MΩ.km 0.1274 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 03

Ref. Document ST21-00143

Date 12-Sep-2023

This document is the property of EPSILON COMPOSITE

contact@epsilon-cable.com
www.epsilon-cable.com