TECHNICAL DATA SHEET

ECRC® 160 - 28

Epsilon Advanced Conductors

EPSILON CABLE

International size	**HELSINKI**
ASTM Size	**PASADENA**
Technical designation	ECRC® 160-AL0/28-L1



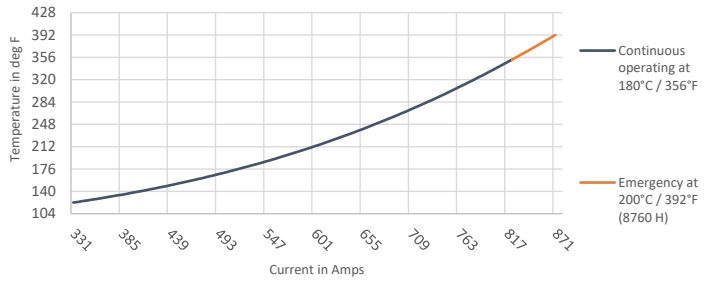
Governing Units: Metric to US Customary (Unit conversion)

STRANDING CONFIGURATION	Metric		US Customary	
No. & Diameter of composite core	1 x 5.97	mm	1 x 0.235	in.
Aluminum layers construction / Height	18 TW x 2.42	mm	0.095	in.
1st layer composition and Øeq	7 x 3.29	mm	0.130	in.
2nd layer composition and Øeq	11 x 3.28	mm	0.129	in.
Lay Direction of outer layer	Right Hand (Z)			

CONDUCTOR PROPERTIES				
Cross Sectional Area - Annealed Aluminum (1350-O at 63%IACS)	152.5	mm²	301.0	kcmil
Cross Sectional Area - Composite Core	28.0	mm²	0.0434	in.²
Total Area of Conductor Cross Section	180.5	mm²	0.2798	in.²
Nominal equivalent Aluminum Area (1350-H19 at 61%IACS)	157.5	mm²	310.9	kcmil
Overall Diameter of Conductor	15.65	mm	0.616	in.
Mass per unit length - Annealed Aluminum	422.0	kg/km	283.6	lb/kft
Mass per unit length - Core	52.6	kg/km	35.4	lb/kft
Mass per unit length - Conductor	474.6	kg/km	318.9	lb/kft
Ultimate Tensile Strength of Conductor	69.0	kN	15.5	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	17.18	10^{-6} K^{-1}	9.54	10^{-6} F^{-1}
Final Modulus of Elasticity Above Thermal Kneepoint	112	GPa	16.24	Msi
Final Modulus of Elasticity Below Thermal Kneepoint	64	GPa	9.26	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	403.0	W-s/m-°C	68.2	W-s/ft-°F
Thermal Heat Capacity for Composite Core	42.1	W-s/m-°C	7.1	W-s/ft-°F

ELECTRICAL SPECIFICATIONS				
Maximum DC Electrical Resistance at 20°C / 68°F *(1370-O at 63%IACS)*	0.1836	ohm/km	0.2955	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)	0.1879	ohm/km	0.3024	ohm/mile
AC Nominal Resistance at 75°C / 167°F (surface temperature)	0.2248	ohm/km	0.3618	ohm/mile
AC Nominal Resistance at 180°C / 356°F (surface temperature)	0.3024	ohm/km	0.4866	ohm/mile
AC Nominal Resistance at 200°C / 392°F (surface temperature)	0.3172	ohm/km	0.5104	ohm/mile
AC Current Rating at 180°C / 356°F (surface temperature) [1]	827 A			
AC Current Rating at 200°C / 392°F (surface temperature) [1]	871 A			



Geometric Mean Radius (GMR)				
	6.44	mm	0.0211	ft.
Inductive Reactance Ø0.3m (Ø0.98ft) radius				
	0.242	Ω.km-1	0.3895	ohm/mile
Capacitive Reactance Ø0.3m (Ø0.98ft) radius				
	0.21	MΩ.km	0.1305	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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