TECHNICAL DATA SHEET

ECRC® 520 - 60

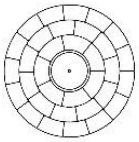
Epsilon Advanced Conductors

EPSILON CABLE

International size	**WARSAW**
ASTM Size	**GALVESTON**
Technical designation	ECRC® 520-AL0/60-S1



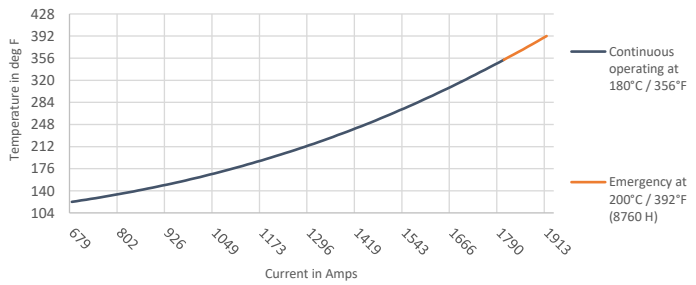
Governing Units: Metric to US Customary (Unit conversion)

STRANDING CONFIGURATION		Metric		US Customary	
	*No. & Diameter of the core*	1 x 8.76	mm	1 x 0.345	in.
	Aluminium layers construction / Height	33 TW x 3.16	mm	0.124	in.
	1st layer composition and Øeq	7 x 4.54	mm	0.179	in.
	2nd layer composition and Øeq	11 x 4.45	mm	0.175	in.
	3st layer composition and Øeq	15 x 4.41	mm	0.174	in.
	Lay Direction of outer layer	Right Hand (Z)			

CONDUCTOR PROPERTIES				
Cross Sectional Area - Annealed Aluminum (1350-O at 63%IACS)	513.1	mm²	1012.7	kcmil
Cross Sectional Area - Composite Core	60.3	mm²	0.0934	in.²
Total Area of Conductor Cross Section	573.4	mm²	0.8887	in.²
Nominal equivalent Aluminum Area (1350-H19 at 61%IACS)	529.9	mm²	1045.9	kcmil
Overall Diameter of Conductor	27.72	mm	1.091	in.
Mass per unit length - Annealed Aluminum	1,421.0	kg/km	954.9	lb/kft
Mass per unit length - Core	111.5	kg/km	74.9	lb/kft
Mass per unit length - Conductor	1,532.5	kg/km	1,029.8	lb/kft
Ultimate Tensile Strength of Conductor	166.0	kN	37.3	kips
Core Rated Tensile Strength	135.2	kN	30.4	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	18.49	10^{-6} K^{-1}	10.27	10^{-6} F^{-1}
Final Modulus of Elasticity Above Thermal Kneepoint	123	GPa	17.84	Msi
Final Modulus of Elasticity Below Thermal Kneepoint	62	GPa	9.01	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	1,357.1	W-s/m-°C	229.7	W-s/ft-°F
Thermal Heat Capacity for Composite Core	89.2	W-s/m-°C	15.1	W-s/ft-°F

ELECTRICAL SPECIFICATIONS				
Maximum DC Electrical Resistance at 20°C / 68°F *(1370-O at 63%IACS)*	0.0546	ohm/km	0.0879	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)	0.0578	ohm/km	0.0930	ohm/mile
AC Nominal Resistance at 75°C / 167°F (surface temperature)	0.0684	ohm/km	0.1101	ohm/mile
AC Nominal Resistance at 180°C / 356°F (surface temperature)	0.0911	ohm/km	0.1466	ohm/mile
AC Nominal Resistance at 200°C / 392°F (surface temperature)	0.0955	ohm/km	0.1536	ohm/mile
AC Current Rating at 180°C / 356°F (surface temperature) [1]	1,810 A			
AC Current Rating at 200°C / 392°F (surface temperature) [1]	1,913 A			



Geometric Mean Radius (GMR)				
	11.22	mm	0.0368	ft.
Inductive Reactance Ø0.3m (Ø0.98ft) radius				
	0.207	Ω.km-1	0.3331	ohm/mile
Capacitive Reactance Ø0.3m (Ø0.98ft) radius				
	0.177	MΩ.km	0.1100	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.

Depending on conductor manufacturer rated specifications may slightly change.

Revision 03

Ref. Document ST21-00053

Date 8-Jan-2026

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