

**TECHNICAL DATA SHEET**
**HVCRC® 230 - 87**  
 Epsilon Advanced Conductors

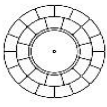
**EPSILON**  
**CABLE**

International size	<b>MONTE CARLO</b>
ASTM Size	-
Technical designation	ECRC® 230-AL0/87-S1



Governing Units: Metric

**STRANDING CONFIGURATION**

	No. & Diameter of HVCRC core	1 x 10.54	mm
	Aluminium Layers Construction / height	28 TW x	2.56 mm
	1st layer composition and $\phi_{eq}$	12 x	3.20 mm
	2nd layer composition and $\phi_{eq}$	16 x	3.25 mm
	Lay Direction of outer layer	Right Hand (Z)	

**CONDUCTOR PROPERTIES**

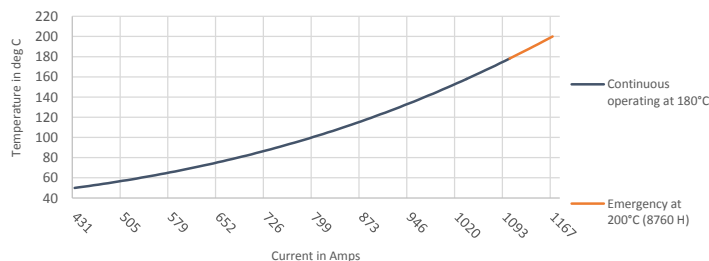
Cross Sectional Area - Annealed Aluminium	229.1	mm <sup>2</sup>
Cross Sectional Area - HVCRC Core	87.3	mm <sup>2</sup>
Total Area of Conductor Cross Section	316.4	mm <sup>2</sup>
Nominal equivalent Aluminium Area (1350-H19 at 61%IACS)	236.6	mm <sup>2</sup>
Overall Diameter of Conductor	20.78	mm
Mass per unit length - Annealed Aluminium	635.2	kg/km
Mass per unit length - Core	161.4	kg/km
Mass per unit length - Conductor	796.6	kg/km
Ultimate Tensile Strength of Conductor	209.5	kN
Core Rated Tensile Strength	195.8	kN
Coefficient of Linear Expansion <b>Above</b> Thermal Kneepoint	1.3	10 <sup>-6</sup> K <sup>-1</sup>
Coefficient of Linear Expansion <b>Below</b> Thermal Kneepoint	13.02	10 <sup>-6</sup> K <sup>-1</sup>
Final Modulus of Elasticity <b>Above</b> Thermal Kneepoint	123	GPa
Final Modulus of Elasticity <b>Below</b> Thermal Kneepoint	74	GPa

**THERMAL SPECIFICATIONS**

Maximum Continuous Operating Temperature <sup>(2)</sup> (surface temperature)	180	°C
Maximum Emergency Temperature / 8760 Hours <sup>(2)</sup> (surface temperature)	200	°C
Thermal Heat Capacity for Annealed Aluminium Layers	606.6	W.s/m.°C
Thermal Heat Capacity for Composite Core	129.1	W.s/m.°C

**ELECTRICAL SPECIFICATIONS**

Maximum DC Electrical Resistance at 20°C (1370-O at 63%IACS)	0.1225	Ω.km <sup>-1</sup>
Temperature Coefficient of Resistance	4.03	10 <sup>-3</sup> K <sup>-1</sup>
AC Nominal Resistance at 25°C (surface temperature)	0.1256	Ω.km <sup>-1</sup>
AC Nominal Resistance at 75°C (surface temperature)	0.1502	Ω.km <sup>-1</sup>
AC Nominal Resistance at 160°C (surface temperature)	0.1921	Ω.km <sup>-1</sup>
AC Nominal Resistance at 180°C (surface temperature)	0.2019	Ω.km <sup>-1</sup>
AC Nominal Resistance at 200°C (surface temperature)	0.2118	Ω.km <sup>-1</sup>
AC Current Rating at 160°C (surface temperature) <sup>(1)</sup>	1,042	A
AC Current Rating at 180°C (surface temperature) <sup>(1)</sup>	1,107	A
AC Current Rating at 200°C (surface temperature) <sup>(1)</sup>	1,167	A



Geometric Mean Radius (GMR)	8.87	mm
Inductive Reactance Ø0.3m radius	0.222	Ω.km <sup>-1</sup>
Capacitive Reactance Ø0.3m radius	0.194	MΩ.km

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

25 °C ambient temperature,	0.61 m/s wind velocity with an angle of 90 °,
1000 W/m <sup>2</sup> solar radiation,	0.5 solar absorption coefficient,
0.6 emissivity coefficient,	Resistance AC at 50 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.

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