

**TECHNICAL DATA SHEET**
**HVCRC® 880 - 87**  
 Epsilon Advanced Conductors

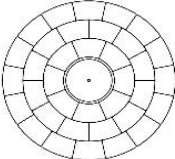
**EPSILON**  
**CABLE**

International size	<b>BORDEAUX</b>
ASTM Size	-
Technical designation	ECRC® 880-AL0/87-S1



Governing Units: Metric

**STRANDING CONFIGURATION**

	No. & Diameter of HVCRC core	1 x 10.54	mm
	Aluminium Layers Construction / height	36 TW x	4.20 mm
	1st layer composition and $\phi_{eq}$	8 x	5.46 mm
	2nd layer composition and $\phi_{eq}$	12 x	5.57 mm
	3st layer composition and $\phi_{eq}$	16 x	5.60 mm
	Lay Direction of outer layer	Right Hand (Z)	

**CONDUCTOR PROPERTIES**

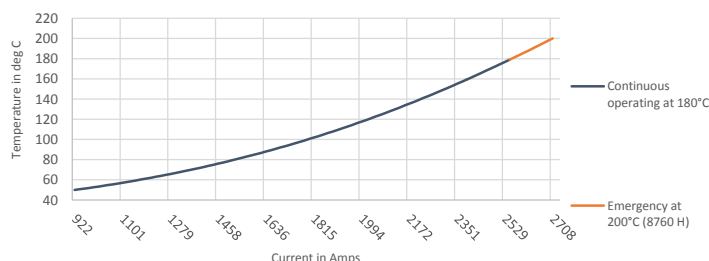
Cross Sectional Area - Annealed Aluminium	874.2	mm <sup>2</sup>
Cross Sectional Area - HVCRC Core	87.3	mm <sup>2</sup>
Total Area of Conductor Cross Section	961.4	mm <sup>2</sup>
Nominal equivalent Aluminium Area (1350-H19 at 61%IACS)	902.8	mm <sup>2</sup>
Overall Diameter of Conductor	35.76	mm
Mass per unit length - Annealed Aluminium	2,417.7	kg/km
Mass per unit length - Core	161.4	kg/km
Mass per unit length - Conductor	2,579.1	kg/km
Ultimate Tensile Strength of Conductor	248.2	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	19.04	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	61	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	2,308.9	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)	0.0320	$\Omega \cdot \text{km}^{-1}$
Temperature Coefficient of Resistance	4.03	10 <sup>-3</sup> K <sup>-1</sup>
AC Nominal Resistance at 25°C (surface temperature)	0.0350	$\Omega \cdot \text{km}^{-1}$
AC Nominal Resistance at 75°C (surface temperature)	0.0411	$\Omega \cdot \text{km}^{-1}$
AC Nominal Resistance at 160°C (surface temperature)	0.0517	$\Omega \cdot \text{km}^{-1}$
AC Nominal Resistance at 180°C (surface temperature)	0.0542	$\Omega \cdot \text{km}^{-1}$
AC Nominal Resistance at 200°C (surface temperature)	0.0567	$\Omega \cdot \text{km}^{-1}$
AC Current Rating at 160°C (surface temperature) <sup>(1)</sup>	2,393	A
AC Current Rating at 180°C (surface temperature) <sup>(1)</sup>	2,556	A
AC Current Rating at 200°C (surface temperature) <sup>(1)</sup>	2,708	A



Geometric Mean Radius (GMR)	14.41	mm
Inductive Reactance $\phi$ 0.3m radius	0.192	$\Omega \cdot \text{km}^{-1}$
Capacitive Reactance $\phi$ 0.3m radius	0.162	M $\Omega \cdot \text{km}$

(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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