

**TECHNICAL DATA SHEET**
**HVCRC® 430 - 52**  
 Epsilon Advanced Conductors

**EPSILON**  
**CABLE**

International size	<b>BRUSSELS</b>
ASTM Size	<b>GROSBEAK</b>
Technical designation	ECRC® 430-AL0/52-S1



Governing Units: Metric

**STRANDING CONFIGURATION**

	No. & Diameter of HVCRC core	1 x 8.13	mm
	Aluminium Layers Construction / height	20 TW x	4.25 mm
	1st layer composition and $\phi_{eq}$	8 x	5.01 mm
	2nd layer composition and $\phi_{eq}$	12 x	5.29 mm
	Lay Direction of outer layer	Right Hand (Z)	

**CONDUCTOR PROPERTIES**

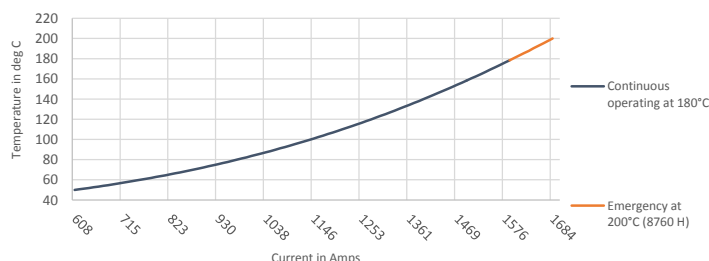
Cross Sectional Area - Annealed Aluminium	421.7	mm <sup>2</sup>
Cross Sectional Area - HVCRC Core	51.9	mm <sup>2</sup>
Total Area of Conductor Cross Section	473.6	mm <sup>2</sup>
Nominal equivalent Aluminium Area (1350-H19 at 61%IACS)	435.5	mm <sup>2</sup>
Overall Diameter of Conductor	25.13	mm
Mass per unit length - Annealed Aluminium	1,166.0	kg/km
Mass per unit length - Core	96.0	kg/km
Mass per unit length - Conductor	1,262.0	kg/km
Ultimate Tensile Strength of Conductor	141.8	kN
Core Rated Tensile Strength	116.5	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	18.32	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	62	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	1,113.5	W.s/m.°C
Thermal Heat Capacity for Composite Core	76.8	W.s/m.°C

**ELECTRICAL SPECIFICATIONS**

Maximum DC Electrical Resistance at 20°C (1370-O at 63%IACS)	0.0664	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)	0.0689	Ω.km <sup>-1</sup>
AC Nominal Resistance at 75°C (surface temperature)	0.0821	Ω.km <sup>-1</sup>
AC Nominal Resistance at 160°C (surface temperature)	0.1046	Ω.km <sup>-1</sup>
AC Nominal Resistance at 180°C (surface temperature)	0.1100	Ω.km <sup>-1</sup>
AC Nominal Resistance at 200°C (surface temperature)	0.1153	Ω.km <sup>-1</sup>
AC Current Rating at 160°C (surface temperature) <sup>(1)</sup>	1,499	A
AC Current Rating at 180°C (surface temperature) <sup>(1)</sup>	1,595	A
AC Current Rating at 200°C (surface temperature) <sup>(1)</sup>	1,684	A


**Geometric Mean Radius (GMR)**

10.20 mm

**Inductive Reactance Ø0.3m radius**

 0.213 Ω.km<sup>-1</sup>
**Capacitive Reactance Ø0.3m radius**

0.183 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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