

# HIKRA® PlusXL (PV1-F)



This cable is intended for use in PV installations e.g. acc. IEC 60364-7-712 and suitable for the application in/at equipment with protective insulation (protection class II). Our double insulated HIKRA® PlusXL Solar cable is intended for permanent use outdoor and indoor, for free movable, free hanging and fixed installation. Robust materials defy the long-term influences of nature and offer a maximum quality and safety.

Thanks to its good resistance to atmospheric conditions, the cable has a specifically water repellency and can be laid directly underground.

Approvals:

PV1-F acc. TÜV 2 Pfg 1169/08.07; R 60089447  
 RoHS and REACH compliant  
 (In preparation at VDE: H1Z2Z2-K acc. EN50618)



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## Construction

Strand construction:	Tin-plated copper strand (electrolytic copper), fine wire acc. IEC 60228 Class 5
Insulation	Chemically cross-linked Polyolefin; Shore hardness D 32
Outer Sheath	Chemically cross-linked special compound; Shore hardness D 36
Colour	Sheath: black; Insulation: clear – naturally coloured
Marking	HIKRA PlusXL PV1-F 4,0mm <sup>2</sup> R 60089447



## Technical characteristics

Nominal voltage [U <sub>0</sub> /U]	0,9/1,5kV DC and 0,6/1,0kV AC
Maximum permitted operating voltage:	1,8kV DC (conductor/conductor not grounded system, non-loaded circuit) (Internal examination: 2,0kV conductor/conductor not grounded system, non-loaded circuit)
Voltage test on complete cable	6,5kV AC / 15kV DC (5 minutes water bath, 20±5°C)
Current carrying capacity	See document „Current rating – HIKRA® Solar Cable“ November 2013
Short-circuit-temperature	200° C/5s; (Internal examination: 250° C/5s)

## Material properties

UV stability	Test-duration 720 h, relative humidity 65%, Test-temperature 65±3°C, minimum demand 60±2W/m <sup>2</sup> (HD 605/A1)
Ozone resistance	72h, relative humidity 55±5%, Temperature 40±2°C (EN 50396 Method B; Ozone concentration (200±50)x10 <sup>-6</sup> )
Insulation resistance	Insulation resistance in water bath at 20°C: Minimum value 10 <sup>14</sup> Ω x cm; at +90°C : minimum value 10 <sup>11</sup> Ω x cm
Surface resistance of sheath	≥10 <sup>9</sup> Ω (applied voltage 100-500V DC, 1 minute) acc. EN 50395 Clause 11
Dynamic penetration test	Spring-steel-needle through insulation or sheath (EN50618 Annex D)
Specifically water repellency	Long-term insulation resistance test in water bath at 90°C >3GΩ*m (internal examination)
Crushing- and impact-resistance	Acc. UL 854 (Impact-Resistance UL 854.23 and Crushing-Resistance UL 854.24 (internal examination)
Sheath resistance against acid and alkaline solution	168h at 23°C in N-Oxal acid and N-Sodium hydroxide (EN 60811-404); Ammoniac-resistant
Behaviour in case of fire	Flame-retardant acc. EN 60332-1-2 Annex A, (Internal examination: low smoke emission EN 61034,-2)
Halogen-free	Acc. TÜV 2 Pfg 1169/08.7, Annex B
Cold impact test	EN 60811-1-4 at -40°C, Sizes acc. table E.1 (TÜV 2 Pfg 1169/08.07)
Cold bending test	-40°C±2°C; 16h (EN 60811-1-4)
Cold elongation test	Max. 30% elongation at -40°C (EN 60811-1-4)
Damp heat test	Duration 1000h at 90°C and min. 85% relative humidity (EN 60068-2-78)
Minimum bending radius flexible / fixed	10x cable diameter   4x cable diameter

## Range of temperature

Temperature	Ambient temperature: -40° C to +90°C; Maximum conductor temperature: +120° C
Maximum storage temperature:	+40°C
Minimum temperature for installation and handling:	-25°C

	Order No.			Cross-section mm <sup>2</sup>	Conductor construction n x max-Ø (mm)	Max. resistance of Conductor (Ω/km)	Cabel OD (+/- 0,2 mm)	Copper kg/km	Approx. Weight kg/km
black	Red	Blue							
734809	735151	735155		1 x 4.0	56 x 0.31	5.09	5.9	38.4	60.0
734810	735152	735156		1 x 6.0	80 x 0.31	3.39	6.4	57.6	80.0
734811	735153	735157		1 x 10.0	80 x 0.41	1.95	7.5	96.0	120.0