
empower the future

KAUFMANN ELECTRIC

DUROcab®

Creeping risk of cable failures occurs silently after first years of operations. → Significant impact on plant performance. Risk: Downtime PV plant and profit loss.

Electron-beam cross-linked compounds. Testing beyond standard requirements. → Reduce TotEx & avoid mistakes. Ensure plant avaliablaity and Return on Invest.

**Increase** resilience to operation-critical conditions → the **lower** the likelihood of failure.

| Standard Solar Cable (H1Z2Z2-K) EN50618 / IEC69230 | | Direct Burial & AD8 | Floating-PV TÜV2 PfG 2750 |
|---|---|---|---|
| Presence of water EN 50525-2-21 Annex E | Condition AD7 | Crushing-Resistance-Test UL 854.24 | 2016h water bath at 90±5°C |
| Long-term resistance of insulation DC | 240h, water bath at 85°±5C | Impact-Resistance-Test UL 854.23 | Test voltage 3.6kV DC |
| Test-voltage long-term resistance of insulation DC | 1.8kV DC | Condition AD8 | Water capacitance 90°C 14d ≤ 10% 1d; ≤ 4% 7d |

## Technical data sheet

Intended for use in PV installations, such as those outlined in IEC 60364-7-712, and environmental conditions specified in Table A.1 of EN 50618. These cables are for use at the direct current (DC) side of photovoltaic systems, with a rated DC voltage up to 1.5 kV between conductors and between conductor and earth. The cables are suitable to be used with Class II equipment as defined in IEC 61140. The cables are designed to operate at a normal continuous maximum conductor temperature of 90 °C. The permissible period of use at a maximum conductor temperature of 120 °C is limited to 20 000 h.

## Design

| | |
|---|---|
| Product Name | DUROcab Solar H1Z2Z2-K IEC 131 PV1500-WR CE |
| Conductor | Flexible tinned Electrolyte Cu (E-Cu) acc. IEC 60228 cl. 5 |
| Compound | Sheath: Electron-beam special cross-linked compound XLPO (black/red) |
| | Insulation: Electron-beam special cross-linked compound XLPO (natural) |
| Lifetime expectancy | 25 years acc. EN/IEC (Internal approval: 30 years under normal usage conditions acc. IEC 60216-2) |

## Standards

| | |
|---|---|
| EN 50618 | H1Z2Z2-K; TÜV Certificate; TÜV Certificate R 50638193 |
| IEC 6930 | IEC 131; TÜV Certificate ; TÜV Certificate R 50638213 |
| TÜV 2 PfG 2750 (FPV) | PV 1500-WR Floating-PV; TÜV Certificate R 50638218 |
| CPR-Approval | Dca s1a, d0, a1 DIN EN 50575, Declaration of Performance DoP 2401 |

## Electrical parameter

| | |
|---|---|
| Rated voltage | $U_0$ 1.5kV DC |
| Maximum voltage | U max. 1.8kV DC (internal examination 2.0kV DC) |
| Test voltage | 6.5 kV AC or 15kV DC, 50 Hz / 5 min |
| Current carrying capacity | IEC69230/EN50618 Table A.3 & A.4; Rating conversation factors and Group factor acc. IEC 60364-5-52 shall apply |

## Material properties

| | |
|---|---|
| Wheating/UV | IEC 69230 Annex E: 720 hours (360 cycles) irradiance 60 W/m2 ± 15 % |
| Ozone resistance | Ozone concentration by volume in %200±50x10-6 ;+40°C ±2 relative |
| | humidity 55% ±5, duration 72h acc. EN 50396 cl. 8.3.1 Method B 60811 |
| Ageing | Tensile strength ≥ 8,0 N/mm elong. at break ≥ 125% EN 60811-1-1; -2 |
| Hot-set-test | EN 60811-2-1 (200 °C; 15 min. under load; 20 N/cm² stress) |
| Cold impact test | -40°C acc EN 60811-506 and EN50618 Annex C Table C1 |
| Cold bending test | No cracks at -40°±2°C, duration 16h cable-OD ≤12.5mm acc. EN 60811-504 |
| Cold elongation test | Min 30% elongation at -40°±2°C,16h cable-OD >12.5mm acc. EN 60811-505 |
| Dynamic penetration | EN 50618 - Annex D |
| Acid / Alkaline | Resistant acc. EN 60811-404: 7 days; 23 °C (N-Oxalic-acid; N-Sodium |
| | hydroxide solution) |
| Damp heat test | EN 60068-2-78 (1.000h at 90 °C and 85 % relative humidity) |
| Insulation resistance | Water bath, 20°C and 90°C, 2 h acc. EN 50395 clause 8.1 |
| Long term insulation DC | Resistance in water bath at +85±5°C, 240h, 1,8 kV DC EN50395 cl.9 |
| Floating PV | PV1500-WR certified acc. TÜV 2 PFG 2750 |
| Extended water | Insulation resistance test: 2016h, 90°C, 3,6kV DC acc. TÜV 2 Pfg 2750 |
| immerson test | Water capacity: 14 days, +90°C acc. TÜV 2 Pfg 2750 |
| Long-term insulation | acc. to UL 44 sec 5.4 & UL 2556 sec 6.4 (internal test) |
| Presence of water | EN50618/IEC69230 AD7 (Internal test AD8 based on DIN EN 50525-2-21) |
| Direct Burial | Enhanced sheath: Impact-Resistance Test UL 854.23 (internal test) |
| | Crushing-Resistance Test UL 854.24 (internal test) |

## Fire Behaviour & CPR

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|---|---|
| CPR-rating performance | Dca s1a, d0, a1 DIN EN 50575; Declaration of Performance DoP 2401 |
| Fire behaviour | No flame propagation IEC 60332-1-2 Annex A; Low Smoke Emission IEC |
| | 61034-2 (light transmittance, min.60%) |
| Halogen-free material | Acc. EN50525-1 Annex B, EN 50525-1 Annex C, EN 60754-1; -2 |

## Temperature & Laying instruction

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|---|---|
| Ambient temperature | -40°C to +90°C |
| Max. operating temp. | +120°C; Max. short circuit temperature +250°C (max. 5s) |
| Bending radius | Minimal ambient installation temperature -25°C Flexible installation 10x ø |
| | OD; Fixed installation > 4 x ø OD occasionally moved > 5 x ø OD |
| Laying instructions | Document "*Laying instructions DUROCab solar cables"* applies. |



## Order number

| Cross-section mm² | Item No. black | Item. No. red | Conductor n x max mm | Max R 20°C (Ω/km) | Outer-Ø mm (± 0,2) | Cu- index kg/km | weight kg/km |
|---|---|---|---|---|---|---|---|
| 1x4 | 701001 | 701002 | 52 x 0,31 | 5,09 | 5,45 | 38,4 | 55,0 |
| 1x6 | 701003 | 701004 | 78 x 0,31 | 3,39 | 5,95 | 57,6 | 74,0 |
| 1x10 | 701005 | 701006 | 77 x 0,41 | 1,95 | 7,15 | 96,0 | 22,0 |
| 1x16 | 701007 | 701008 | 126 x 041 | 1,24 | 8,65 | 153,6 | 191,0 |
| 1x25 | 701009 | 701010 | 190 x 0,41 | 0,795 | 10,50 | 240,0 | 279,0 |

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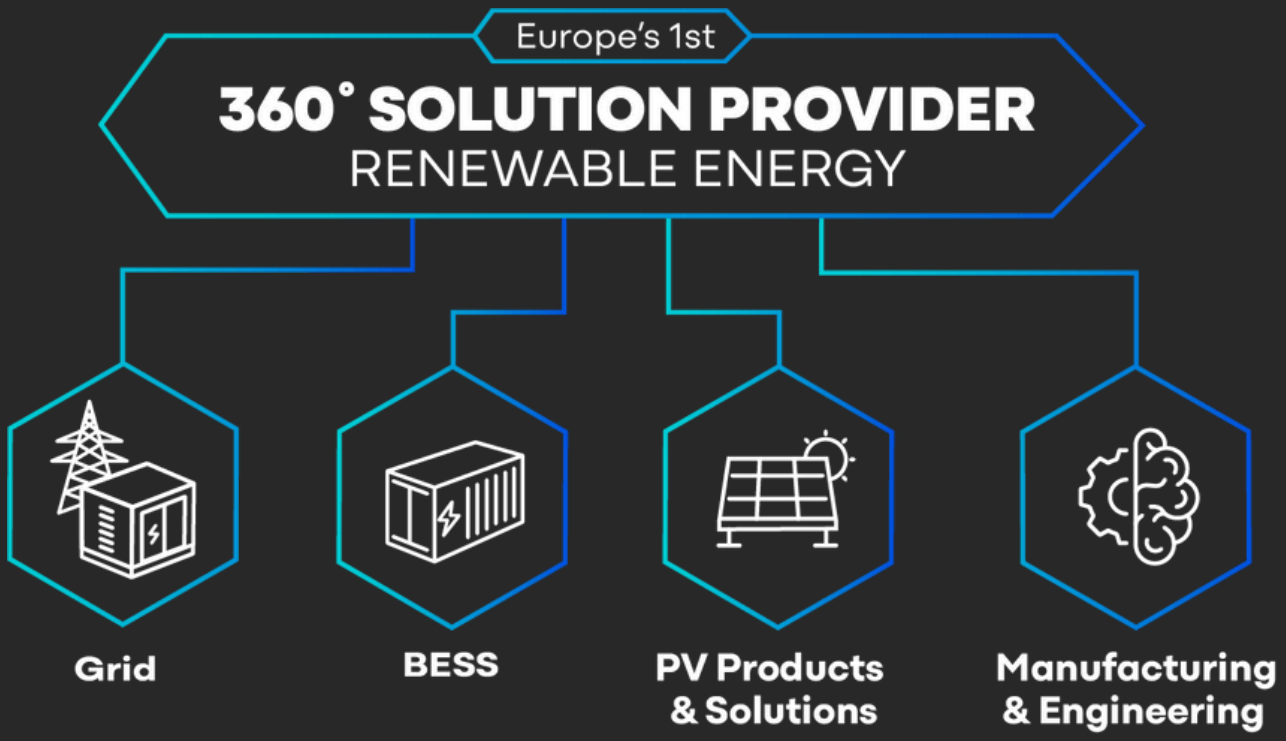


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