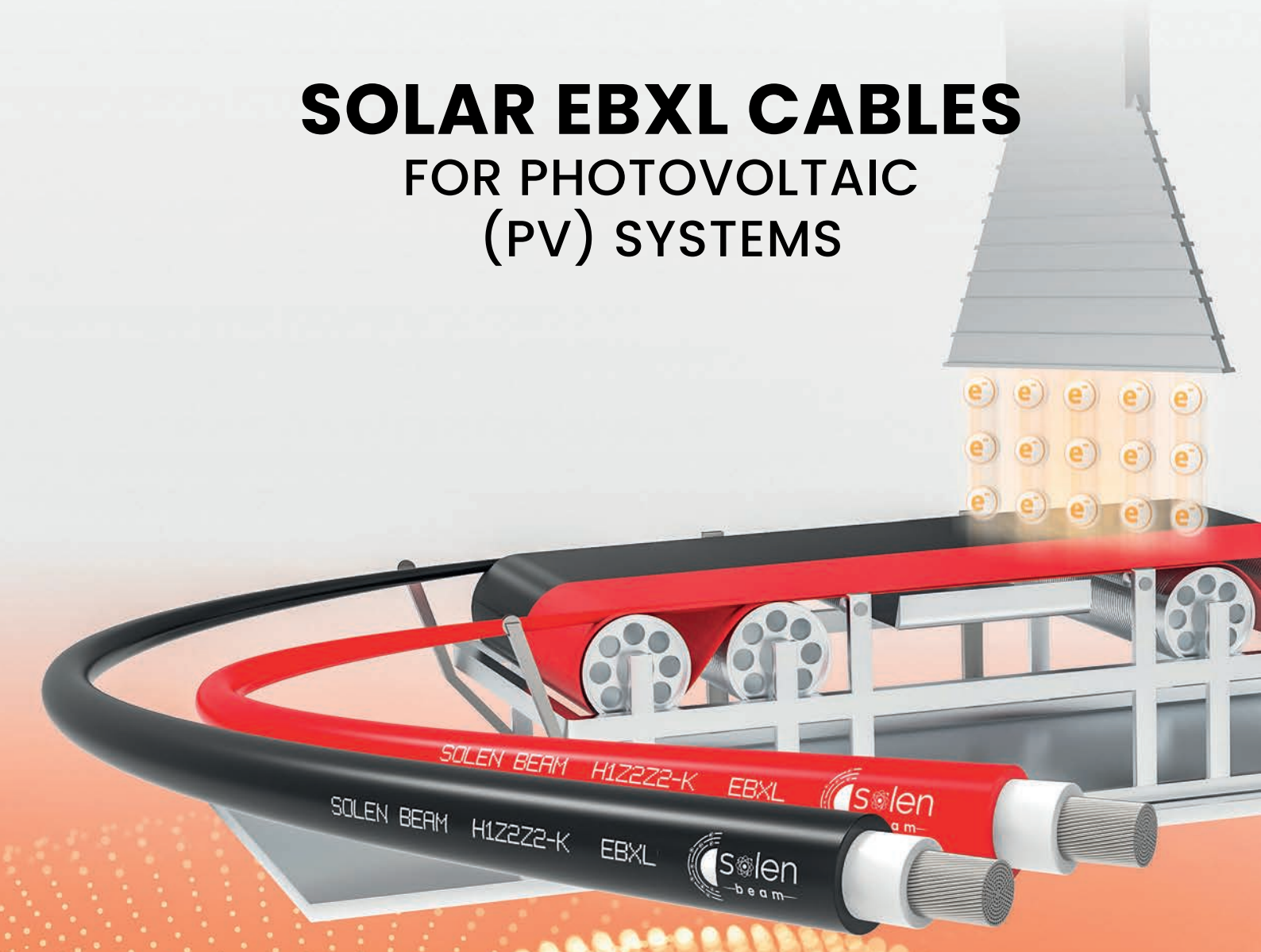
solen beam

# SOLAR EBXL CABLES

## FOR PHOTOVOLTAIC (PV) SYSTEMS




solen CABLE

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# Your Reliable Partner

## For Solar Energy

**Solen Kablo**, world's leading manufacturer of DC Solar Cables with comprehensive know-how, is young and dynamic company founded in 2021 by very professional team with years of experiences aiming to produce exclusively Solar Cables. Solen Kablo is the first cable factory who has electron-beam facility in Türkiye.

Our factory is based in Çerkezköy, Tekirdağ located 100 km away from İstanbul and head office is in heart of İstanbul. Solen Kablo is aware of the importance of renewable and sustainable energy for the future of our world. We are proud of using nature-friendly, renewable energy in all processes of the production.

Solen Kablo continues her operations on 10.000 $m^2$ land space with 5.000 $m^2$ closed area by having 3.000 tons copper drawing processing and 60.000 km of cable production capacity per year. All our production is carried out in our high-tech factory 100% integrated with fast and modern state-of-the-art machinery for aiming absolute customer satisfaction.

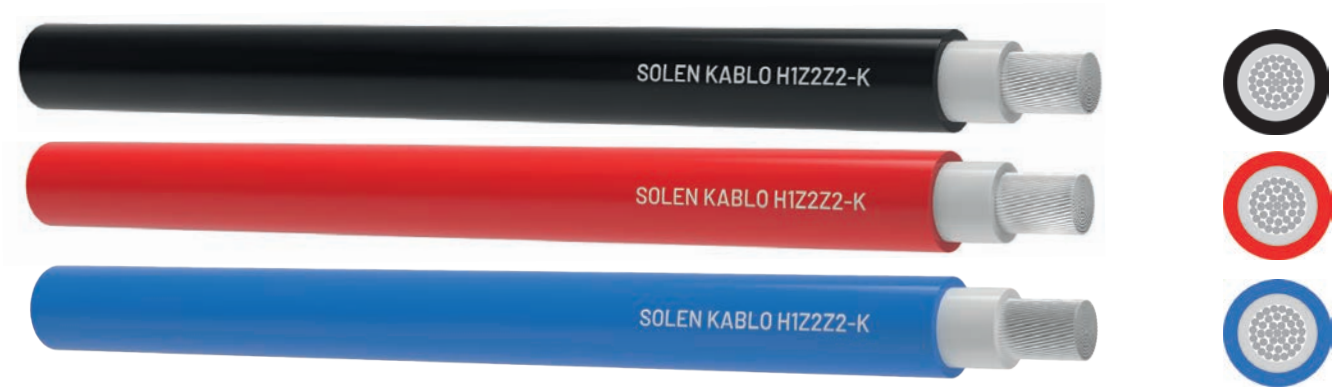
Solen high quality has been approved by both customers and international certification bodies. We are committed to philosophy being true partner with reputable references and always to be reliable partner.

# Why Choose Solen?

- Young, dynamic, and flexible company.
- Having very professional team with years of experience.
- Producing exclusively Solar Cables
- Keeping huge stock for 4-6-10 $mm^2$ DC cables
- Solenbeam™ EBXL Cables
  Electron Beam Cables
- AD8 compatibility and direct burial features.
- CPR rating for both CE & UKCA
- Laser marking on sheath
- Giving 5 years guarantee
- Having product liability insurance
- Reputable references
- Using always same raw materials in production what declared for TUV certification.
- Having in house copper rod break down, wire drawing and conductor tinning machines.

***We can do together better for greener world.***

# H1Z2Z2-K & 62930 IEC 131




## DESIGN STANDARDS

**EN 50618**
**IEC 62930**

## APPLICATION

Solen H1Z2Z2-K Solar cables conforming to European standard 'EN 50618' and international standard 'IEC 62930' are designed for installations in photovoltaic systems, solar parks, solar farms, rooftop solar systems and in interconnection of solar panels and inverter. They are intended for permanent use outdoor and indoor, for free movable, free hanging and fixed installation. Installation also in conduits and trunkings on, in or under plaster as well as in appliances. Suitable for the application in/at equipment with protective insulation (protection class II).

## CONSTRUCTION

| | |
|---|---|
| **Conductor** | Tinned annealed flexible copper-Class 5 according to IEC 60228 |
| **Insulation** | Halogen free E-Beam Cross-linked compound according to EN 50618 Table B.1 |
| **Outer Sheath** | Halogen free E-Beam Cross-linked compound according to EN 50618 Table B.1 |
| **Sheath Colour** | Black or Red (Blue and Green-yellow available upon request) |

**Insulation and sheath are firmly bonded to enhance insulation resistance**

## KEY FEATURES

- TÜV Rheinland approval certified
- IEC CB certified
- REACH and RoHS Compliant
- CE-CPR rating Dca acc. to EN 50575 (Cca upon request)
- UKCA-CPR rating Dca to BS EN 50575
- Expected service lifetime (Min. 35 years acc. to EN 50618)
- Higher insulation resistance
- High current carrying capacity
- Compatible for all major connectors
- AD8 water submersion compatible
- AG2 Medium severity impact resistance
- Suitable for wet, damp and humid locations
- Excellent flexibility
- Good stripping performance from conductor
- Abrasion resistant
- UV, Oil, Grease and Ozone resistant
- Resistance against Ammonia
- Acid and Alkaline resistant
- Anti rodent and Anti termite versions are available.
- Conditional Direct Burial

## TECHNICAL CHARACTERISTICS

| | |
|---|---|
| Rated Voltage (U0/U) | AC 1000 / 1000 V - DC 1500 V |
| Max Voltage | AC 1200 / 1200 V - DC 1800 V |
| Test Voltage | 6,5 kV AC, 15 kV DC (5 min.) |
| Operating Temperature | -40°C / +90°C |
| Max. Temperature at Conductor | +125°C based on EN 60216-1 (20.000 h, 50% residual elongation) |
| Installations Temperature | -25°C / +60°C |
| Short Circuit Temperature | +280°C (Max. 5 sec.) |
| Min. Bending Radius | > 4 x D as per EN 50565-1 |
| Insulation Resistance | EN 50395 Clause 8.1, IEC 60227-2 Clause 2.4 |
| Surface Resistance of Sheath | EN 50395 Clause 11, IEC 62821 Clause 5.1 |
| Cold Bend Test | EN 60811-504 (-40°C) |
| Cold Elongation Test | EN 60811-505 (-40°C) |
| Cold Impact Test | EN 60811-506 & EN 50618 (-40°C) |
| Damp Heat Test | EN 50618 (Table 2), EN 60068-2-78 (1000 hours, 90°C & %85 humidity) |
| Halogen Free Properties | EN 50525-1 (Annex B), IEC 60754-1, IEC 60754-2 |
| Low Smoke Emission | EN 61034-2 (Light transmittance > 60%) |
| Flame Retardancy | EN 60332-1-2 |
| Ozone Resistance | IEC 60811-403, EN 50396 Clause 8.1.2 |
| Weather / UV Resistance | EN 50618 (Annex E), IEC 62930 |
| Dynamic Penatration Test | IEC 62930, EN 50618 (Annex E) |
| Impact Condition | AG2 acc.to EN 50618 and HD 60364-5-52 |
| Vibration Condition | AH3 acc.to EN 50618 and HD 60364-5-52 |
| Water Submersion | AD8 EN 50525-2-21 Appendix E (internal tested) |
| Acid and Alkaline Resistance | EN 50618 (Annex B) |
| Ammonia Resistance | 30 days in saturated ammonia atmosphere (internal tested) |
| Shrinkage Test | EN 60811-503, IEC 60811-503, EN 50618 (Table 2) |
| Durability of Print | EN 50618 |
| Long Term Resistance of Insulation to DC | EN 50395 Clause 9, IEC 62821-2 |

## DIRECT BURIAL CONDITIONS

Allowed to be direct burial to earth that does not contain any damaging chemicals, solvents, rodents, termites etc.
Proper and correct installation methods based on VDE 0800-174 and VDE 0891-6 should be applied.
Necessary cautions should be taken to avoid physical damage of cables during installation.
It is better that installation to be in pipes/conduits/concrete channels.

## CABLE MARKING

SOLEN BEAM TUV RHEINLAND EN 50618 H1Z2Z2-K EBXL 1xN mm2 1,5 kV DC / 62930 IEC 131 AD8
HALOGEN FREE LOW SMOKE SCXXXX <CE> Dca (yyyy) XX MT

*N: Cross Section *SCXXXX: Traceability Code *(yyyy): Year marking *XX MT: Meter Marking

## DIMENSIONAL PARAMETERS

| Part No. | Number Of Cores | Cross Sections $mm^2$ | Conductor Diameter mm | Overall Diameter mm | Bending Radius (min.) mm | Weight kg/km |
|---|---|---|---|---|---|---|
| SEB50015CL000 | 1 | 1,5 | 1,6 | 4,50 -0,2 /+0,3 | 22 | 33 |
| SEB50025CL000 | 1 | 2,5 | 2,0 | 4,90 -0,2 /+0,3 | 24 | 41 |
| SEB50040CL000 | 1 | 4 | 2,5 | 5,50 -0,2 /+0,3 | 26 | 57 |
| SEB50060CL000 | 1 | 6 | 3,0 | 5,90 -0,2 /+0,3 | 30 | 73 |
| SEB50100CL000 | 1 | 10 | 4,0 | 6,90 -0,2 /+0,3 | 35 | 114 |
| SEB50160CL000 | 1 | 16 | 5,0 | 8,20 -0,2 /+0,3 | 41 | 174 |
| SEB50250CL000 | 1 | 25 | 6,1 | 10,00 -0,3 /+0,5 | 50 | 260 |

CL refers to colour for :

Red replace RD
Black replace BK
Green/Yellow replace GY
Blue replace BL

## ELECTRICAL PARAMETERS

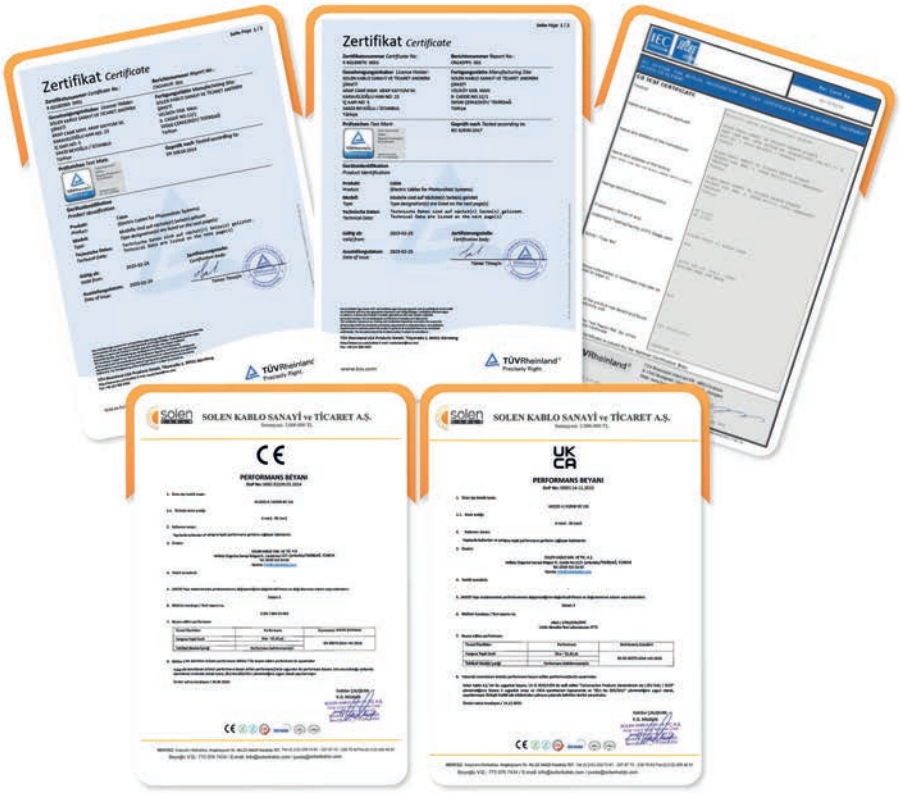
| Part No. | Number Of Cores | Cross Sections $mm^2$ | Conductor Resistance 20°C ohm / km | Current Carrying Capacity (*) at 60°C Ambient Temperature | | | Short Circuit Current |
|---|---|---|---|---|---|---|---|
| | | | | Single Cable In Free Air A | Single Cable On Surface A | Two Loaded Cables Touching On Surface A | (5s. From 90°C To 280°C) kA |
| SEB50015CL000 | 1 | 1,5 | 13,7 | 40 | 35 | 29 | 0,10 |
| SEB50025CL000 | 1 | 2,5 | 8,21 | 54 | 47 | 40 | 0,17 |
| SEB50040CL000 | 1 | 4 | 5,09 | 71 | 63 | 53 | 0,27 |
| SEB50060CL000 | 1 | 6 | 3,39 | 90 | 80 | 68 | 0,41 |
| SEB50100CL000 | 1 | 10 | 1,95 | 126 | 113 | 96 | 0,69 |
| SEB50160CL000 | 1 | 16 | 1,24 | 169 | 153 | 130 | 1,10 |
| SEB50250CL000 | 1 | 25 | 0,795 | 225 | 204 | 173 | 1,72 |

(*) Max. conductor temperature: 125 °C. Ambient temperature 30 °C
Calculations done according to IEC 60287-1-1 Clause 1.4.4 Cables directly exposed to solar radiation.
Maximum permitted conductor temperature of 125 °C according to IEC 60216 is limited to 20.000 h.
For reduction factor for groups of more circuits for different installation methods refer to Table B.52.17 & B.52.21 of IEC 60364-5-52

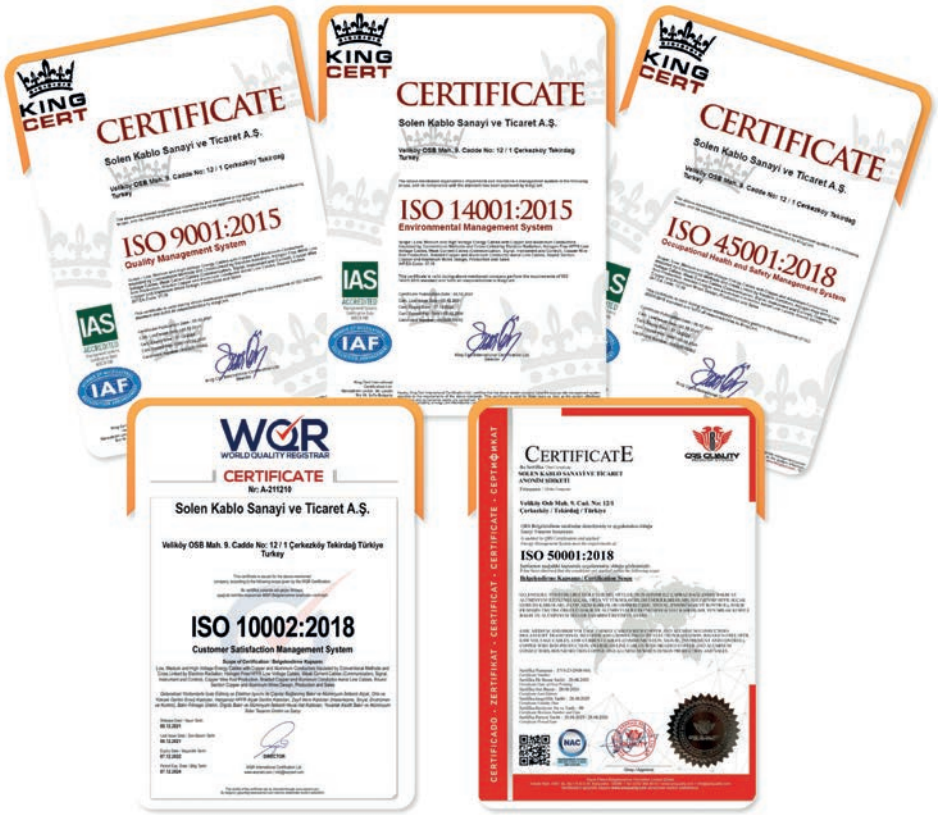
### CURRENT RATING CONVERSION FACTORS FOR DIFFERENT AMBIENT TEMPERATURES
### Table B.52.14 of IEC 60364-5-52

| Ambient temperature | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
|---|---|---|---|---|---|---|---|---|
| Conversion factor | 1,15 | 1,08 | 1,00 | 0,91 | 0,82 | 0,71 | 0,58 | 0,41 |

## PRODUCT CERTIFICATES




## SYSTEM CERTIFICATES



# We Carry Nature's Energy to the Future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