

**ünika®**



**Solar Cables for PV Systems**  
Product Brochure

**UNIKA** Universal Cable  
Cable Specialist

# Zertifikat

# Certificate



Zertifikat Nr. *Certificate No.*  
R 60131874

Blatt *Sheet*  
0002

Ihr Zeichen *Client Reference*

Unser Zeichen *Our Reference*

Ausstellungsdatum

*Date of Issue*

0001--27141298 002

19.10.2018

(day/mo/yr)

Genehmigungsinhaber *License Holder*

ÜNİKA UNIVERSAL KABLO SAN.  
VE TIC. A.S.

SANAYİ MAH. 3.CADDE  
VELİKÖY ORG. SAN. BÖLGESİ  
59550 ÇERKEZKÖY TEKİRDAĞ  
Türkiye

Fertigungsstätte *Manufacturing Plant*

ÜNİKA UNIVERSAL KABLO SAN.  
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Türkiye

Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*

EN 50618:2014



Zertifiziertes Produkt (Geräteidentifikation)

*Certified Product (Product Identification)*

Lizenzentgelte - Einheit

*License Fee - Unit*

Cable (Electric Cables for Photovoltaic Systems)

Code designation: H1Z2Z2-K  
Cross section: 1,5mm<sup>2</sup> to 240mm<sup>2</sup> acc. to  
IEC 60228:2004 Table 3

Trade mark: ÜNİKA

Rated Voltage: AC 1.0/1.0 kV; DC 1,5 kV  
Conductor-conductor, Conductor-earth

Ambient temperature: -40°C to +90°C  
Max. Conductor temp.: +120°C (for 20.000h)  
Material of insulation: Halogen free cross- linked  
compound

Material of sheath: Halogen free cross- linked  
compound

Color of insulation: White  
Color of sheath: Black, red

Modification: Additional color of sheath added.

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.  
This certificate is based on our Testing and Certification Regulation and states the conformity of the product with the standards and testing requirements as indicated above. Any additional requirements in countries where the product is going to be marketed have to be considered additionally. The manufacturing of the certified product is subject to surveillance.

TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg

Tel.: +49 221 806-1371 e-mail: cert-validity@de.tuv.com  
Fax: +49 221 806-3935 http://www.tuv.com/safety



## Committed to Quality

At ÜNİKA, quality is an intrinsic part of our Operations. Our comprehensive product and System certification not only are mandatory requirements for our industry but our Commitment to continous and growing Quality.

### Ünika Cables are certified by :

- American Bureau of Shipping (ABS)
- Det Norske Veritas (DNV)
- Bureau Veritas (BV)
- Nippon Kaiji Kyokai (ClassNK)
- Lloyd's Register (LR)
- Germanisher Lloyd (GL)
- Türk Loydu
- Registro Italiano Navale (RINA)
- Russian Maritime Register of Shipping (RMRS)





ÜNIKA was founded in 1936 upon the directives of Atatürk, the founder and the president of modern Turkish Republic, to manufacture paper insulated cables which were strongly needed at that time since the country was constructing its infrastructure. The Name of the company was Istanbul Cable Factory at the foundation period in 1968, the name has changed to ÜNIKA ÜNİVERSAL KABLO SANAYİ VE TİC. A. Ş. with the start of its restructuring program. Today, ÜNIKA manufactures mainly PVC, Rubber and Halogen-Free Marine Cables, Off-shore Cables, Onshore for OG&Petrochemical Industry, Heavy Duty Flexible Rubber Cables, Fire Resistant, Flame Retardant, Low Smoke Emission and Halogen-Free Power and Installation Cables, Mining Cables, Airfield Ground Lighting Cables, Railways Cables, Solar Cables and further Special Cables in compliance with the national and international standards.

ÜNIKA owns Type Approval Certificates for marine cables from TL, BV, LR, GL, DNV, ABS, RMRS, RINA and NK. Furthermore it has product certificates for Rubber and PVC insulated power cables awarded by Turkish Standards Institution and MGM ALSz certificate for Mining cables.

ÜNIKA owns ABS and DNS certificates for offshore cables and FAA certificate for Airfield Lighting and we are also approved for TUV Certification for Photovoltaic Systems.

## SOLAR CABLES

U-PV / H1Z2Z2-K 1,5/1,5 kV DC

EN 50618

Halogen Free, Flame Retardant, Low Smoke, UV Resistant



### »» Construction

- ❶ **Conductor** : Annealed tinned bunch stranded copper in accordance with IEC 60228 Class 5
- ❷ **Insulation** : Cross-linked compound in accordance with EN 50618 Table B.1
- ❸ **Outer Jacket** : Cross-linked compound in accordance with EN 50618 Table B.1

### »» Technical Features

<b>Rated Voltage</b>	: 1,5/1,5 kV DC
<b>Max. Operating Voltage</b>	: 1,8/1,8 kV, DC (EN 50618, Annex A)
<b>Test Voltage</b>	: AC 6,5 kV, DC 15 kV ( 5 min. )
<b>Current Carrying Capacity</b>	: EN 50618, Table A.3
<b>Operating Temperature</b>	: -40/120 °C
<b>Installation Temperature</b>	: -25/60 °C
<b>Cold Bend</b>	: EN 60811-504 ( -40 °C)
<b>Cold Elongation</b>	: EN 60811-505 ( -40 °C)
<b>Cold Impact</b>	: EN 60811-506 & EN 50618 ( -40 °C)
<b>Damp Heat Test</b>	: EN 50618 ( 1000h, 90 °C, %85 humidity )
<b>Halogen Free Properties</b>	: EN 50525-1, Annex B
<b>Low Smoke Emission</b>	: EN 61034-2 ( Light Transmittance >%60)
<b>Flame Retardancy</b>	: EN 60332-1-2
<b>Weather Resistance</b>	: EN 50618 , Annex E
<b>Acid and Alkaline Resistance</b>	: EN 50618 , Annex B
<b>Min. Bending Radius</b>	: EN 50565-1 ( 4xD For Fixed Installations, D:cable outer diameter)
<b>Shrinkage Test</b>	: EN 50618, Table 2
<b>Durability of Print</b>	: EN 50618

### »» Application

ÜNİKA U-PV Solar Cables are designed for use in Photovoltaic Power Supply Systems both for indoor and/or outdoor solar energy applications.

## U-PV / H1Z2Z2-K 1,5/1,5 kV DC CABLE DATA SHEET

Item	Cross-section (mm <sup>2</sup> )	Max. Conductor Diameter (mm)	Outer Diameter (mm)		Weight (approx.) (kg/km)	Max. Conductor DC Resistance at 20 °C (Ω/km)	Max. Current Carrying Capacity (Air) CT at 120 °C AT at 60 °C (A)	Max. Current Carrying Capacity (Surface) CT at 120 °C AT at 60 °C (A)
			Nom.	Max.				
1.	1 x 1,5	1,8	4,5	5,4	30	13,7	30	29
2.	1 x 2,5	2,4	4,9	5,9	40	8,21	41	39
3.	1 x 4	3,0	5,4	6,6	56	5,09	55	52
4.	1 x 6	3,9	6,0	7,4	75	3,39	70	67
5.	1 x 10	5,1	6,9	8,8	115	1,95	98	93
6.	1 x 16	6,3	8,1	10,1	172	1,24	132	125
7.	1 x 25	7,8	10,9	12,5	273	0,795	176	167
8.	1 x 35	9,2	12,3	14,0	367	0,565	218	207
9.	1 x 50	11,0	14,1	16,3	512	0,393	276	262
10.	1 x 70	13,1	16,4	18,7	730	0,277	347	330
11.	1 x 95	15,1	18,1	20,8	919	0,21	416	395
12.	1 x 120	17,0	19,9	22,8	1141	0,164	488	464
13.	1 x 150	19,0	22,6	25,5	1454	0,132	566	538
14.	1 x 185	21,0	25,1	28,5	1771	0,108	644	612
15.	1 x 240	24,0	28,2	32,1	2280	0,0817	775	736

CT: Conductor Temperature

AT: Ambient Temperature



ünika®

Rely on Ünika  
**U-PV Solar Cables**  
for Photovoltaic Systems



# Various Applications



Offshore / Onshore



Marine Cables



Mining Cables



Airfield Ground Lighting Cables



Railway Cables



Rubber Cables



Halogen Free Cables



Fire Resistant Cables



**ünika®**

**Merkez / Head Office**

Yeni Sülün Sokak No: 5 İç Levent 34330 Beşiktaş - İstanbul / Turkey  
Tel. : +90 212 278 23 53 / Fax : +90 212 279 37 51

**Fabrika / Factory**

Veliköy Sanayi Bölgesi 3. Cadde No : 4 Çerkezköy - Tekirdağ / Turkey  
Tel. : +90 282 746 11 76 / Fax : +90 282 746 11 80

[www.unika.com.tr](http://www.unika.com.tr)