

power in wire and cables



# KBE SOLAR DB+



★ H1Z2Z2-K / EN 50618

★ IEC 131 / IEC 62930

★ 2 PfG 1169/10.19

1500 V<sub>DC</sub> / 1800 V<sub>DC</sub> max. / max.

UV-stabiliteit / UV-stability

direct in de grond te leggen /  
direct burial

hogere waterbestendigheid /  
higher water resistance

Brandklasse D<sub>ca</sub> volgens BauPVO /  
flammability class D<sub>ca</sub> acc. CPR



MADE IN GERMANY

KBE Elektrotechnik GmbH • Symeonstraße 8 • 12279 Berlin • GERMANY

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KBE Elektrotechnik GmbH is een fabrikant van kabels en leidingen voor de auto-industrie en de sector van huishoudelijke apparatuur en daarnaast een internationaal toonaangevende aanbieder van zonnecabels met een geïnstalleerd vermogen van 70 GW.

Bij onze verbeterde KBE Solar DB+ hebben we er rekening mee gehouden dat er de laatste jaren aanzienlijk hogere eisen worden gesteld. Daarom is de KBE Solar DB+ de eerste drievoudig gecertificeerde zonneleiding volgens de Europese zonneleiding-norm EN 50618, evenals de internationale norm IEC 62930 en de TÜV Rheinland testnorm 2 PFG 1169/10.19 door de TÜV Rheinland.

Verder biedt de KBE Solar DB+ tal van voordelen ten opzichte van gangbare zonnecabels:

- certificering volgens EN 50618 (H1Z2Z2-K)
- certificering volgens IEC 62930 (62930 IEC 131)
- certificering volgens 2 PFG 1169/10.19 (PV 1500-K)
- Ontwikkeld voor 1500 V<sub>DC</sub> (max. 1800 V<sub>DC</sub>)
- Doorlopende metermarkering
- Direct te leggen in de grond dankzij hoogwaardige isolatiematerialen
- Hogere UV-bestendigheid
- Hogere waterbestendigheid
- Hogere isolatieweerstand
- Hogere mechanische stabiliteit
- brandbaarheidsklasse D<sub>ca</sub> volgens CPR
- geoptimaliseerd voor Floating PV-installaties (FPV)

Naast concurrerende voorwaarden biedt KBE u:

- 'Made in Germany' met vervaardiging in Berlijn
- Vanuit voorraad leverbaar, korte levertijd
- Voordelige directe levering over de hele wereld
- Hoge kwaliteit en lange levensduur (25 jaar volgens EN 50618)
- Hoge flexibiliteit en buigzaamheid
- Compatibiliteit met alle gangbare stekkers
- Kleuren: zwart, rood en blauw
- Verpakking: 100 m ringen, 500 m spoelen, 1000 m spoelen

*KBE Elektrotechnik GmbH is manufacturer for wires and cables for the automotive and household appliance industry as well as one of the leading international suppliers of solar cables with 70 GW installed capacity.*

*The advanced KBE Solar DB+ features the latest, significantly increased, technical requirements for solar cables. As a consequence KBE Solar DB+ is the first triple certified solar cable, which is TÜV Rheinland certified according to the European standard for solar cables EN 50618 and the international standard IEC 62930 as well as the new TÜV Rheinland test standard 2 PFG 1169/10.19.*

*KBE Solar DB+ provides a number of additional advantages in comparison to conventional solar cables:*







- *certification acc. to EN 50618 (H1Z2Z2-K)*
- *certification acc. to IEC 62930 (62930 IEC 131)*
- *certification acc. to 2 PFG 1169/10.19 (PV 1500-K)*
- *Voltage rating 1.500 V<sub>DC</sub> (max. 1.800 V<sub>DC</sub>)*
- *Consecutive meter marking*
- *Direct burial due to high quality insulation materials*
- *Higher UV-stability*
- *Higher water resistance*
- *Higher insulation resistance*
- *Higher mechanical stability*
- *flammability class D<sub>ca</sub> acc. CPR*
- *optimized for floating PV systems (FPV)*

*In addition to competitive conditions KBE offers:*

- *"Made in Germany" with production in Berlin, Germany*
- *Delivery from stock, short lead time*
- *Worldwide deliveries at favourable terms*
- *High quality and long life time (25 years acc. to EN 50618)*
- *High flexibility and bending capability*
- *Compatibility to all common connectors*
- *Colors: black, red, blue*
- *Packaging: 100m rings, 500m spools, 1.000m spools*










		Eisenprofiel - KBE Solar DB+	Requirement Profile - KBE Solar DB+
	Productnaam / Product name	KBE Solar DB+	KBE Solar DB+
	Typecode / leidingcode / Code designation	H1Z2Z2-K / 62930 IEC 131 / PV 1500-K	H1Z2Z2-K / 62930 IEC 131 / PV 1500-K
	Verkrijgbare doorsneden / Cross selections available	4,0 mm <sup>2</sup> - 10 mm <sup>2</sup>	4,0 mm <sup>2</sup> - 10 mm <sup>2</sup>
	Normen / goedkeuringen / Standard / Approbations	DIN EN 50618; TÜV certificaat-nr. R60147048; IEC 62930 2 PfG 1169/10.19	DIN EN 50618; TÜV Certificate-No. R60147048; IEC 62930 2 PfG 1169/10.19
		<b>Algemene gegevens</b>	<b>General Information</b>
	Geleider / Conductor	E-Cu vertind volgens IEC 60228 klasse 5	E-Cu tinned acc. IEC 60228 Class 5
	Isolatie / Insulation	Vernette speciale polyolefine	Crosslinked special Polyolefin
	Mantel / Sheathing	Vernette speciale polyolefine	Crosslinked special Polyolefin
	Bedrukking / Printing	KBE SOLAR DB+ X,XX mm <sup>2</sup> EN 50618 H1Z2Z2-K 62930 IEC 131 HALOGEN FREE LOW SMOKE R60147048 MADE IN GERMANY CE	KBE SOLAR DB+ X,XX mm <sup>2</sup> H1Z2Z2-K 62930 IEC 131 PV 1500-K HALOGEN FREE LOW SMOKE R60147048 MADE IN GERMANY CE EAC
	Afstand van opschriften / Continuity of marks	≤ 550 mm	≤ 550 mm
	Kleur van mantel / Sheat colour	rood, blauw, zwart (gebruik van een kleur met een zeer hoge lichtechtheid (BWS 8) volgens ISO 4892)	red, blue, black (Usage of colour with very high lighth fastness (BWS 8) according to ISO 4892)
	Verwachte gebruiksduur / Expected period of use	25 jaar	25 years
		<b>Elektrische eisen</b>	<b>Electrical Specifications</b>
	Nominale spanning / Rated Voltage U <sub>0</sub> /U	1,0/1,0 kV <sub>AC</sub> 1,5/1,5 kV <sub>DC</sub>	1,0/1,0 kV <sub>AC</sub> 1,5/ 1,5 kV <sub>DC</sub>
	Maximaal toegestane bedrijfsspanning / Max. permissible operating voltage	1,2/1,2 kV <sub>AC</sub> 1,8/1,8 kV <sub>DC</sub> (geleider-geleider, geleider-aarde)	1,2/ 1,2 kV <sub>AC</sub> 1,8/ 1,8 kV <sub>DC</sub> (conductor-conductor, conductor-ground)
	Stroomvoercapaciteit / Current carrying capacity	volgens EN 50618, tabel A-3	acc. to EN 50618, table A-3
	Geleiderweerstand / Resistance of the conductor	EN 50395 deel 5 volgens EN 50618, tabel 2	EN 50395 clause 5 acc. to EN 50618, table 2
	Doorslagtest AC / DC bij de volledige kabel / Voltage test on the complete cable with AC or DC	EN 50395 deel 6 (6,5 kV <sub>AC</sub> of 15 kV <sub>DC</sub> ; 5 minuten)	EN 50395 clause 6 (6,5 kV <sub>AC</sub> or 15 kV <sub>DC</sub> ; 5 min)
	Oppervlakteweerstand / Surface resistance	EN 50395 deel 11	EN 50395 clause 11
	Isolatiweerstand / Insulation resistance	EN 50395 deel 8.1 doorgevoerd bij 20°C en 90°C in water, uitkomsten volgens EN 50618, tabel 1 2 PfG 1169/10.19 uitgevoerd bij 20 °C & 90 °C in water Resultaten conform 2 PfG 1169/10.19 minimaal: 1050 MΩ*km @ 20 °C 1,05MΩ*km @ 90 °C	EN 50395 clause 8.1 performed at 20 °C & 90 °C in water results acc. to EN 50618, table 1 2 PfG 1169/10.19 performed at 20 °C & 90 °C in water results acc. to 2 PfG 1169/10.19 at minimum: 1050 MΩ*km @ 20 °C 1,05MΩ*km @ 90 °C
	Vonktest / Spark test	EN 62230, bijlage A	EN 62230, Annex A
	Gelijkspanningsweerstand / Long term resistance of insulation to DC	EN 50395 deel 9 (10 dagen, 85°C in NaCl 3%, 1,8 kV <sub>DC</sub> )	EN 50395 clause 9 (10 days, 85 °C in NaCl 3 %, 1,8 kV <sub>DC</sub> )
		<b>Mechanische eisen</b>	<b>Mechanical Specifications</b>
	Eigenschappen voor veroudering / Properties before ageing	EN 60811-1-1; EN 60811-1-2 (treksterkte isolatie ≥ 8,0 N/mm <sup>2</sup> treksterkte mantel ≥ 8,0 N/mm <sup>2</sup> rek bij breuk ≥ 125%)	EN 60811-1-1; EN 60811-1-2 (tensile strenth insulation ≥ 8,0 N/mm <sup>2</sup> tensile strenth jacket ≥ 8,0 N/mm <sup>2</sup> elongation at break ≥ 125 %)
	Test thermische uitzetting / Hot Set test	EN 60811-2-1 (200°C; 15 min. onder belasting; 20 N/cm <sup>2</sup> belasting)	EN 60811-2-1 (200 °C; 15 min. under load; 20 N/cm <sup>2</sup> stress)
	Buigstraal / Bending radius	≥ 4 x buitendiameter	≥ 4 x outer diameter
	Dynamische penetratietest / Dynamic penetration test	volgens EN 50618 - bijlage D	acc. to EN 50618 - Annex D
		<b>Thermische eisen</b>	<b>Thermal Specifications</b>
	Omgevingstemperatuur bij bedrijf / Ambient temperature in operation	-40°C tot +90°C	-40 °C to + 90 °C
	Laagste toegestane omgevingstemperatuur voor installatie / Min. ambient temperature for installation	-25°C	-25 °C
	Laagste toegestane omgevingstemperatuur / Min. allowable ambient temperature	-40°C	-40 °C
	Hoogste temperatuur bij geleider / Max. temperature at conductor	120°C op basis van EN 60216-1 (20.000 u; 50% resterende rek)	120 °C, based on EN 60216-1 (20.000 h; 50 % residual elongation)
	Kortsluitingstemperatuur / Short-circuit temperature	+250 °C (bij geleider max. 5 sec.)	+250 °C (max. 5 sec on conductor)
	Vocht-warmtetest / Damp heat test	EN 60068-2-78 (1000 u bij 90°C en 85% luchtvochtigheid)	EN 60068-2-78 (1.000h at 90 °C and 85 % relative humidity)
	Krimtest / Shrinkage test	EN 60811-503 (120°C, 1 u, krimp <2,0%)	EN 60811-503 (120°C, 1h, shrinkage <2,0%)
	Koudbuigproef / Cold bending test	EN 60811-504 (-40°C, duur van conditionering: 16 u)	EN 60811-504 (-40 °C, duration of conditioning: 16 h)
	Koudrektest / Cold elongation test	DIN EN 60811-505 (-40 ± 2°C, duur van conditionering: 16 u)	DIN EN 60811-505 (-40 °C ± 2 °C, duration of conditioning: 16 h)
	Koudeschokproef / Cold impact test	EN 60811-506 en EN 50618, bijlage C (-40°C; massa van valgewicht 1000 g)	EN 60811-506 and EN 50618, Annex C (-40 °C; mass of hammer 1.000 g)

# Technisch gegevensblad KBE Solar DB+ / Technical Data Sheet

Versie / Stand: 01-08-2020

		Veiligheidsvereisten	specifications regarding safety
	Duitse bouwproductenverordening (BauPVO) / Construction Product Regulation (CPR)	Klasse D <sub>ca</sub> conform EN 50575:2014	class D <sub>ca</sub> in accordance with EN 50575:2014
	Bestendigheid tegen zuren en logen / Resistance against acid and alkaline solution	EN 60811-404 7 dagen; 23°C (N-oxaalzuur; N-natronloog)	EN 60811-404 7 days; 23 °C (N-Oxalic-acid; N-Sodium hydroxide solution)
	Test van de ozonbestendigheid van de volledige kabel / Ozone resistance on completed cable	EN 50396 deel 8.1.3, procedure B	EN 50396 clause 8.1.3, method B
	Verouderings-/UV-test van mantel / Weathering/ UV-resistance on sheath	voldoet aan EN 50618, bijlage E EN 50289-4-17, methode A (720h; 60 °C ± 3 °C; 50 ± 5 % luchtvochtigheid) komt overeen met 2 PFG 1169/10.19 met een test van 2000 uur, dus aanzienlijk hoger dan 720 uur conform EN 50618	meets EN 50618, Annex E EN 50289-4-17, method A (720 h; 60 °C ± 3 °C; 50 ± 5 % relative humidity) meets 2 PFG 1169/10.19 test with 2.000h and exceeds significantly the test of 720h acc. EN 50618
	Beproeving van de verticale brandvoortplanting bij de volledige kabel / Test for vertical flame propagation on complete cable	EN 60332-1-2	EN 60332-1-2
	Rookontwikkeling bij de volledige kabel / Smoke emission of complete cable	EN 61034-2 (lichtdoorlaatbaarheid > 70%)	EN 61034-2 (light transmittance > 70 %)
	Test op vrijheid van halogenen / bepaling van halogenen - elementaire test / Assessment of halogens / Determination of halogens - Elemental test	EN 50525-1, bijlage B	EN 50525-1, Annex B
		Extra interne tests van KBE	Additional internal tests of KBE
	Direct in de grond te leggen / Direct burial	KBE-interne test volgens UL 854: - deel 23: schokbestendigheidstest - deel 24: drukbestendigheidstest	KBE internal test acc. To UL 854: -Section 23 Impact-resistance Test -Section 24 Crushing-Resistance Test
	Isolatieweerstand op lange termijn in water / Long-term insulation resistance in water	KBE-test volgens UL 44 deel 5.4 & UL 2556, deel 6.4: 90°C ± 5°C; 2000 V (DC) ≥ 3 GΩ×m na 12 weken, testresultaat KBE: > 50 GΩ×m na 12 weken	KBE test acc. to UL 44 Section 5.4 & UL 2556, Section 6.4: 90 °C ± 5 °C; 2000V (DC) ≥ 3 GΩ×m after 12 weeks test result KBE: > 50GΩ×m after 12 weeks
	Classificatie in categorie AD8 / Classification to the category AD8	getest volgens EN 50525-21 - bijlage E: - Spanningstest in water bij 1 kV AC, bij 50 ° C hierboven 100 dagen zonder pauze - Wateropname van de jas na 100 dagen wateropslag bij 50 °C < 40 % - Isolatieweerstand van minimaal 10 <sup>11</sup> Ω·cm	Tested acc. to EN 50525-21 – Annex E: - Voltage at 1 kV on cable in water at 50 °C during 100 days without any break - Water absorption on sheath after immersion 100 days at 50 °C less than 40 % - Insulation resistance tests with a minimum resistivity of 10 <sup>11</sup> Ω·cm
	Isolatieweerstand op lange termijn in de lucht / Long-term insulation resistance in air	KBE-test volgens UL 44, deel 5.5 & UL 2556, deel 6.4: 120°C; 2000 V (DC) ≥ 50 GΩ×m na 12 weken	KBE test acc. to UL 44, Section 5.5 & UL 2556, Section 6.4: 120 °C; 2000V (DC) ≥ 50 GΩ×m after 12 weeks
	Maximaal toegestane bedrijfsspanning met KBE / Max. permissible operating voltage by KBE	2,0/2,0 kV <sub>DC</sub>	2,0/ 2,0 kV <sub>DC</sub>
	Diëlektrische sterkte / Dielectrical strength	12 kV 60 min. Vergelijking met vereiste van EN 50618: 6,5 kV; 5 min.	12 kV 60 min Comparison to Requirement of EN 50618: 6.5 kV; 5 min
	Weerstand tegen zoutwater / Resistance against salt water	Opslag bij 23 °C gedurende 7 dagen in een verzadigde zoutoplossing, verandering van de treksterkte < 5%	storage at 23 °C for 7 days in saturated salt solution Change of tensile strength < 5 %
	Weerstand tegen ammoniak / Resistance against Ammonia	7 dagen bij 23 ° C verzadigde ammoniak-atmosfeer (interne test)	7 days at 23 °C saturated ammonia atmosphere (int. Test)
	Elektrische capaciteit en relatieve diëlektrische constante / Electrical capacitance and relative permittivity	KBE-test volgens UL 44, deel 5.6 & UL 2556, deel 6.5: 90°C ± 5°C watertemperatuur; onderdempelen gedurende 14 dagen, relatieve permittiviteit na 1 dag onderdempelen ≤ 6% Capaciteit na 14 dagen onderdempelen ≤ 10%, verschil in capaciteit van dag 7 tot dag 14 ≤ 4%	KBE test acc. to UL 44, Section 5.6 & UL 2556, Section 6.5: 90 °C ± 5 °C water temperature; immersion for 14 days relative permittivity after 1 day immersion ≤ 6 % capacitance after 14 days immersion ≤ 10 % difference in capacitance from day 7 to day 14 ≤ 4 %
	Richtlijnen & certificaten / Certificates & Guidelines	EN 50618, IEC 62930, 2 PFG 1169/10.19 TÜV Rheinland certificaat-nr. R60147048 RoHS 2011/65/EU + 2015/863/EU REACH 1907/2006	EN 50618, IEC 62930, 2 PFG 1169/10.19 TÜV Rheinland certificate-Nr. R60147048 RoHS 2011/65/EU + 2015/863/EU REACH 1907/2006

## Opschrift / Printing:

**KBE SOLAR DB+ X,XX mm<sup>2</sup> H1Z2Z2-K 62930 IEC 131 PV 1500-K HALOGEN FREE LOW SMOKE MADE IN GERMANY CE EAC**

Doorsnede / cross section	Ontwerp geleider / conductor design	Weerstand / resistance	Min. wanddikte isolatie / min. insulation thickness	Min. wanddikte mantel / min. jacket thickness	Buitendiameter / outer Ø	Gewicht / weight	Verpakking / packaging	KBE-artikelnnummer / KBE item no		
[mm <sup>2</sup> ]	n x max- Ø [mm]	Rmax. [mΩ/m]	[mm]	[mm]	[mm]	[kg/km]	[Meter]	● zwart / black	● rood / red	● blauw / blue
4,0	56 x 0,310	5,09	0,53	0,58	5,4	55	500 / 1.000	730400015060QUSW	730400015060QURT	730400015060QUBL
4,0	56 x 0,310	5,09	0,53	0,58	5,4	55	100 ringen / Ring	820400015060QUSW	820400015060QURT	820400015060QUBL
6,0	80 x 0,310	3,39	0,53	0,58	6,0	75	500 / 1.000	730600015060QUSW	730600015060QURT	730600015060QUBL
6,0	80 x 0,310	3,39	0,53	0,58	6,0	75	100 ringen / Ring	820600015060QUSW	820600015060QURT	820600015060QUBL
10,0	80 x 0,410	1,95	0,53	0,58	7,1	115	500	731000015060QUSW	731000015060QURT	731000015060QUBL
10,0	80 x 0,410	1,95	0,53	0,58	7,1	115	100 Ring	821000015060QUSW	821000015060QURT	821000015060QUBL

power in wire and cables

# KBE Solar DB+ certifikaten / certificates

Versie / Stand: 01-08-2020

**Zertifikat**

Zertifikat Nr. / Certificate No. R 60147048

Blatt / Sheet 0001

Br. Zeichen / Class Reference 1837/19

Hersteller / License Holder  
KBE Elektrotechnik GmbH  
Symeonstr. 8  
12279 Berlin  
Deutschland

**Certificate**

Blatt / Sheet 0002

Umsr. Zeichen / Our Reference 0010--60193773 002

Anstellungsdatum / Date of Issue 03.03.2020

Fertigungsstätte / Manufacturing Plant  
KBE Elektrotechnik GmbH  
Symeonstr. 8  
12279 Berlin  
Deutschland



TÜV Rheinland

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**Prüfzeichen / Test Mark**



**Zertifiziertes Produkt (Geräteidentifikation) / Certified Product (Product Identification)**

**PV Components for BOS - electrical / PV cable**

Type Designation: KBE Solar DB+  
Code Designation: K1232-K  
Cross section: 4,0mm<sup>2</sup> ; 6,0mm<sup>2</sup> ; 10,0mm<sup>2</sup>  
Rated voltage: AC 00/0 1,0/ 1,0kV  
DC 1,0kV  
max. voltage: DC 1,8kV (conductor/conductor and conductor/earth)  
Ambient temperature range to: -40°C to +95°C  
max. temperature at conductor: + 120°C @ 20,000h  
Colour insulation: white  
Colour sheath: black  
Material insulation: crosslinked Polyolefine  
Material sheath: crosslinked Polyolefine

Remark: Sheath also in red and blue when requested

**Geprüft nach / Tested acc. to**

EN 50618:2014

**Lizenzgebühr - Einheit / License Fee - Unit**

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**Prüfzeichen / Test Mark**



**Zertifiziertes Produkt (Geräteidentifikation) / Certified Product (Product Identification)**

**PV Components for BOS - electrical / PV cable**

Type Designation: KBE Solar DB+  
Code Designation: 4393 IEC 131  
Cross section: 4,0mm<sup>2</sup> ; 6,0mm<sup>2</sup> ; 10,0mm<sup>2</sup>  
Rated voltage: AC 00/0 1,0/ 1,0kV  
DC 1,0kV  
max. voltage: DC 1,8kV (conductor/conductor and conductor/earth)  
Ambient temperature range to: -40°C to +95°C  
max. temperature at conductor: + 120°C @ 20,000h  
Colour insulation: white  
Colour sheath: black  
Material insulation: crosslinked Polyolefine  
Material sheath: crosslinked Polyolefine

Remark: Sheath also in red and blue when requested

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Das Zertifikat liegt einem Prüf- und Zertifizierungsantrag zugrunde und ist lediglich die Konfirmation des Produkts mit den oben genannten Standards und Prüfverfahren. Zusätzliche Anforderungen an Lieferen, an denen das Produkt zu finden ist, werden nicht, sondern ausschließlich festgehalten werden. Die Herstellung des zertifizierten Produkts wird überwacht. Das Zertifikat ist basierend auf den Test- und Zertifizierungsprotokollen und unter der Aufsicht der Prüfstelle mit den Standards und sonstigen Anforderungen angedeutet. 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 (21) 896-1371 | e-mail: cert-validity@tuev.com  
Fax: +49 (21) 896-1075 | http://www.tuev.com/safety

**Zertifizierungsstelle / Certification Body**



Golda Yulberg

**Zertifikat**

Zertifikat Nr. / Certificate No. R 60147048

Blatt / Sheet 0002

Br. Zeichen / Class Reference 1837/19

Hersteller / License Holder  
KBE Elektrotechnik GmbH  
Symeonstr. 8  
12279 Berlin  
Deutschland

**Certificate**

Blatt / Sheet 0003

Umsr. Zeichen / Our Reference 0010--60193773 003

Anstellungsdatum / Date of Issue 03.03.2020

Fertigungsstätte / Manufacturing Plant  
KBE Elektrotechnik GmbH  
Symeonstr. 8  
12279 Berlin  
Deutschland



TÜV Rheinland

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**Prüfzeichen / Test Mark**



**Zertifiziertes Produkt (Geräteidentifikation) / Certified Product (Product Identification)**

**PV Components for BOS - electrical / PV cable**

Type Designation: KBE Solar DB+  
Code Designation: 4393 IEC 131  
Cross section: 4,0mm<sup>2</sup> ; 6,0mm<sup>2</sup> ; 10,0mm<sup>2</sup>  
Rated voltage: AC 00/0 1,0/ 1,0kV  
DC 1,0kV  
max. voltage: DC 1,8kV (conductor/conductor and conductor/earth)  
Ambient temperature range to: -40°C to +95°C  
max. temperature at conductor: + 120°C @ 20,000h  
Colour insulation: white  
Colour sheath: black  
Material insulation: crosslinked Polyolefine  
Material sheath: crosslinked Polyolefine

Remark: Sheath also in red and blue when requested

**Geprüft nach / Tested acc. to**

IEC 62930:2017

**Lizenzgebühr - Einheit / License Fee - Unit**

1

**Prüfzeichen / Test Mark**



**Zertifiziertes Produkt (Geräteidentifikation) / Certified Product (Product Identification)**

**PV Components for BOS - electrical / PV cable**

Type Designation: KBE Solar DB+  
Code Designation: 4393 IEC 131  
Cross section: 4,0mm<sup>2</sup> ; 6,0mm<sup>2</sup> ; 10,0mm<sup>2</sup>  
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TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg  
Tel: +49 (21) 896-1371 | e-mail: cert-validity@tuev.com  
Fax: +49 (21) 896-1075 | http://www.tuev.com/safety

**Zertifizierungsstelle / Certification Body**



Golda Yulberg

**Declaration of Performance: DoP 0225**  
According to Annex III of regulation (EU) no. 305/2011

1 Unique identification code of the product: 111222 R

2 Product name: KBE Solar DB+

3 Usage: Category 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

4 Manufacturer: KBE Elektrotechnik GmbH  
Symeonstr. 8  
12279 Berlin

5 System of assessment and verification of constancy of performance: System 1

6 Product certification body: ISIRIP - Institut scientifique de services publics Nr. 2474

7 Date of declaration of performance concerning a specific product: The product certification body verified the type testing under system 1 subject to reaction to fire and smoke:  
- Test report no. 0876-1-16-10-12-20  
- Test report no. 0877-1-16-10-12-20  
- Test report no. 0878-1-16-10-12-20  
- Classification report no. 16-10-12-20

8 Declared performance:


Essential characteristics	Performance	Harmonized technical standard
Reaction to fire	EN 13501-1-1	EN 50575:2014 + A1:2018
Smoke and toxic gases	EN 13501-1-1	-

9 The performance of the product identified in point 1 & 2 is conforming with the declared performance in point 8. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

10 Declaration on behalf of the manufacturer:

Berlin, 28.05.2020  
/Place/ Date/

Dr. Ina Späthmann  
Expert, TÜV Rheinland LGA Products GmbH, Dr. B. Group




KBE  
BERLIN

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Das Zertifikat liegt einem Prüf- und Zertifizierungsantrag zugrunde und ist lediglich die Konfirmation des Produkts mit den oben genannten Standards und Prüfverfahren. Zusätzliche Anforderungen an Lieferen, an denen das Produkt zu finden ist, werden nicht, sondern ausschließlich festgehalten werden. Die Herstellung des zertifizierten Produkts wird überwacht. Das Zertifikat ist basierend auf den Test- und Zertifizierungsprotokollen und unter der Aufsicht der Prüfstelle mit den Standards und sonstigen Anforderungen angedeutet. 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 (21) 896-1371 | e-mail: cert-validity@tuev.com  
Fax: +49 (21) 896-1075 | http://www.tuev.com/safety

**Zertifizierungsstelle / Certification Body**



Golda Yulberg

**Zertifikat**

Zertifikat Nr. / Certificate No. R 60147048

Blatt / Sheet 0003

Br. Zeichen / Class Reference 448/20

Hersteller / License Holder  
KBE Elektrotechnik GmbH  
Symeonstr. 8  
12279 Berlin  
Deutschland

**Certificate**

Blatt / Sheet 0004

Umsr. Zeichen / Our Reference 0010--60193773 004

Anstellungsdatum / Date of Issue 09.07.2020

Fertigungsstätte / Manufacturing Plant  
KBE Elektrotechnik GmbH  
Symeonstr. 8  
12279 Berlin  
Deutschland



TÜV Rheinland

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**Prüfzeichen / Test Mark**



**Zertifiziertes Produkt (Geräteidentifikation) / Certified Product (Product Identification)**

**PV Components for BOS - electrical / PV - Cables**

as page 0001 - 0002/

Supplement:  
Product complies also with the above mentioned standard.

Additional Code Designation: PV 1500-E

**Geprüft nach / Tested acc. to**

2 PEG 1169/10.13

**Lizenzgebühr - Einheit / License Fee - Unit**

1

**Prüfzeichen / Test Mark**



**Zertifiziertes Produkt (Geräteidentifikation) / Certified Product (Product Identification)**

**PV Components for BOS - electrical / PV - Cables**

as page 0001 - 0002/

Supplement:  
Product complies also with the above mentioned standard.

Additional Code Designation: PV 1500-E

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Das Zertifikat liegt einem Prüf- und Zertifizierungsantrag zugrunde und ist lediglich die Konfirmation des Produkts mit den oben genannten Standards und Prüfverfahren. Zusätzliche Anforderungen an Lieferen, an denen das Produkt zu finden ist, werden nicht, sondern ausschließlich festgehalten werden. Die Herstellung des zertifizierten Produkts wird überwacht. Das Zertifikat ist basierend auf den Test- und Zertifizierungsprotokollen und unter der Aufsicht der Prüfstelle mit den Standards und sonstigen Anforderungen angedeutet. 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.

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**Zertifizierungsstelle / Certification Body**



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>70 GW worldwide**