



Quadrant Future Tek Ltd.

Smart Solar Solutions



ABOUT US

Quadrant Future Tek Limited is a Technology & Innovation-driven Company Certified to ISO/IRIS/TS Quality Management Systems. The company possesses state-of-the-art Electronics Manufacturing & Cable Production facilities at Mohali (Punjab Province, India) and two dedicated Engineering Centres located at Bangalore & Hyderabad. Quadrant people policy is committed to realizing the intrapreneurial qualities in each of its employees by providing equal attention to both passion & profession. The approach to people includes a culture with a vibrant ecosystem that drives 'ownership'.

The Company Possess Most Modern Production Facilities Including:

- State of the Art 2.5 MeV Electron Beam Irradiation facility
- Silicone & Polymer Vulcanization line
- Unique Polymer formulation Facility
- Conductor processing systems
- Fully Automated Electronic Manufacturing Line with Integrated Online Test Facility
- Fully Automated Testing & Simulation Centre for Development of Safety Critical Systems
- Dedicated Fabrication Facility
- High Speed moulding lines
- High Speed stamping machines
- High Speed Extrusion Lines

TEST INFRASTRUCTURE

Our in-house Laboratories are equipped to conduct the tests according to most of the internationally recognized test standards, including BIS, IEC, DIN, UIC, BS, UL, CE & CENELEC Standards. All the products undergo rigorous testing before they are supplied to the customer.





Contents

Title	Page
Cable Nomenclature	4
Solar Photovoltaic DC Cable, Single Core, Electron Beam Cross Linked, as per BIS 17293:2020	6
Solar Photovoltaic Cable, Single Core, Electron Beam Cross Linked, as per EN 50618	8
Solar Photovoltaic DC Cable, Single Core, Electron Beam Cross Linked, Aluminum Conductor, as per EN 50618 & AS/NZS 5000.1 with Nylon Sheathing	10
Solar Photovoltaic Cable, Multi-Core, Electron Beam Cross Linked, as per EN 50618 & UL	12
Solar Photovoltaic Cable, Twin Parallel, Electron Beam Cross Linked, XLPO Insulation/Sheathing	14
Solar Photovoltaic Cable, Twin Parallel, Electron Beam Cross Linked, XLPO Insulated, Nylon inner Sheathed & XLPO Outer Sheathed	15
Remote Monitoring & Data Transmission Cable, Electron Beam Cross Linked, Polyolefin Insulated	17
Remote Monitoring & Data Transmission Cable, Electron Beam Cross Linked, XLPE Insulated	19
PVC Insulated & Sheathed 600/1000V (UA) Power Cable, Single Core Stranded Aluminum Conductor as per IEC 60502 P-1	21
PVC Insulated & Sheathed 600/1000V (UA) Power Cable, Multi Core Stranded Aluminum Conductor as per IEC 60502 P-1	23
EBXL-XLPE 120°C Insulated, HR PVC Sheath (A) Power Cable, Single Core Copper Conductor, as per IEC 60502-1	25
EBXL-XLPE 120°C Insulated, HR PVC Sheath (UA) Power Cable, Single Core Copper Conductor, as per IEC 60502-1	27
EBXL-XLPE 120°C Insulated, HR PVC Sheath (A) Power Cable, Single Core Aluminum Conductor, as per IEC 60502-1	29
EBXL-XLPE 120°C Insulated, HR PVC Sheath (UA) Power Cable, Single Core, Aluminum Conductor, as per IEC 60502-1	31
Single Core Aluminum Conductor EBXL-XLPE 120°C Insulated, HR PVC Sheathed (A) Power Cable as per IEC 60502-1	33
Single Core Aluminum Conductor EBXL-XLPE 120°C Insulated, HR PVC Sheathed (UA) UV resistant Power Cable as per IEC 60502-1	35
EBXL-XLPE 120°C Insulated, HR PVC Sheathed (A) Power Cable, 2&3 core Copper Conductor, UV Resistant	37
EBXL-XLPE 120°C Insulated, HR PVC Sheathed (A) Power Cable, 3.5&4 core Copper Conductor, UV Resistant	39
EBXL-XLPE 120°C Insulated, HR PVC Sheathed (UA) Power Cable, 2&3 core Copper Conductor, UV Resistant	41
EBXL-XLPE 120°C Insulated, HR PVC Sheathed (UA) Power Cable, 3.5&4 core Copper Conductor, UV Resistant	43
EBXL-XLPE 120°C Insulated, HR PVC Sheathed (A) Power Cable, Single Core, Aluminum Conductor, UV Resistant	45
EBXL-XLPE 120°C Insulated, HR PVC Sheathed (UA) Power Cable, Single Core, Aluminum Conductor, UV Resistant	47
EBXL-XLPE 120°C Insulated, HR PVC Sheathed (A) Power Cable, 2&3 Core Aluminum Conductor UV Resistant	49
EBXL-XLPE 120°C Insulated, HR PVC Sheathed (A) Power Cable, 3.5&4 core Aluminum Conductor, UV resistant	51
EBXL-XLPE 120°C Insulated, HR PVC Sheathed (UA) Power Cable, 2&3 Core Aluminum Conductor UV Resistant	53
EBXL-XLPE 120°C Insulated, HR PVC Sheathed (UA) Power Cable, 3.5&4 core Aluminum Conductor, UV resistant	55
EBXL-XLPE 120°C Insulated Power Cable, HR PVC Sheathed (UA), Single Core APC Conductor	57
EBXL-XLPE 120°C Insulated, XLPVC 120°C Sheathed (UA) Power Cable, Single Core Aluminum Conductor	59
EBXL-XLPE 120°C Insulated, XLPVC 120°C Sheathed (UA) Power Cable, Multi Core APC Conductor	61
EBXL-XLPE 120°C Insulated, XLPVC 120°C Sheathed (A) Power Cable, Multi Core APC Conductor	63
MC4, Solar Male & Female Connectors	65
Anti-Reverse Diode	66
Solar PV Junction Box	67
Solar DC Fuse Holder	68
PV Solar Over-Moulded Wire Harness	69
Solar Panel System Architecture	70
Brief Description of Cross linking, Product reliability, advantages & Testing of QFTL's PV Cables & Accessories	71
Standard Conditions for Current rating & Life Time Expectations	80



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Cable Nomenclature

QF PV 001.5 WH BK IS17293 - RR.AT

QF	AA	BBB.B	CC	DD	STD	XX & YY
QFTL	Application	Conductor Size	Insulation Color	Sheath Color	Concerned Engineering Standard	Special Feature(s)

Application (AA)

Code	Application/Industry
AS	Aerospace
AT	Automotive
BT	Battery
BD	Building
EV	Electric Vehicle
FR	Fire Resistant
IN	Instrumentation
LH	Linear Heat Detection
MR	Marine, Shipboard, and Offshore
MI	Mining
NU	Nuclear
PV	Photovoltaic/Solar
RU	Rubber
SI	Silicon
TF	TEFLON (ETPE, PTEE, FEP, PFA, PEEK, PVDF & KAPTON)

Conductor Size (BBB.B)

Coding	Conductor Size
0.22	0.22 Sq.mm
0.25	0.25 Sq.mm
0.34	0.34 Sq.mm
0.50	0.50 Sq.mm
001.5	1.5 Sq.mm
002.5	2.5 Sq.mm
004.0	4 Sq.mm
006.0	6 Sq.mm
010.0	10 Sq.mm
016.0	16 Sq.mm
025.0	25 Sq.mm
035.0	35 Sq.mm
050.0	50 Sq.mm
070.0	70 Sq.mm
095.0	95 Sq.mm
120.0	120 Sq.mm
150.0	150 Sq.mm
185.0	185 Sq.mm
240.0	240 Sq.mm
300.0	300 Sq.mm
400.0	400 Sq.mm
500.0	500 Sq.mm
630.0	630 Sq.mm



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Insulation and Sheath Color (CCDD)

Coding	Color
BK	Black
WH	White
GY	Grey
RD	Red
BR	Brown
BL	Blue
GR	Green
CH	Chocolate
GL	Green-Yellow
OR	Orange

Special Feature (XXYY)

Coding	Special Feature
RR	Rodent Resistant
AT	Anti-Termite
AR	Armored
UA	Un-Armored
WR	Water Resistant
WB	Wire Braided
DU	Dual
TP	Twin Parallel
XLO	Cross-Linked Polyolefin
XLE	Cross-Linked Polyethylene
2C	2 Core
3C	3 Core
3.5C	3.5 Core
4C	4 Core
NY	Nylon Jacket
GI	Galvanized Iron
OO	Not Applicable
UV	Ultraviolet
OOOO	Not Applicable
HR P	Heat Resistant Polyvinyl Chloride



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Speciality Cables

Solar Photovoltaic DC Cable, Single Core, Electron Beam Cross Linked, as per BIS 17293:2020

Construction

- **Conductor:** Annealed Tinned Copper (APC Optional) according to IS 8130, class 5
- **Insulation:** Cross Linked Compound
- **Jacket:** EXBL- XLPO Highly weather & UV resistant (color Black, Blue, Red, Brown, Grey, Black with Red stripe)
- **Sheath Color:** Black

Technical Parameters

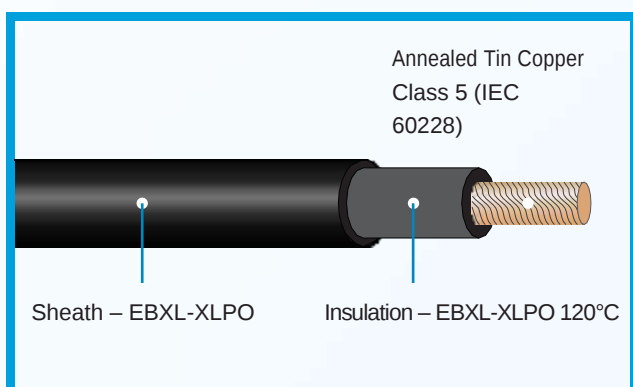
- Temperature Range: -40°C to +120°C
- Max. Temp. at Conductor: 250°C (for 5 sec)
- Test Voltage: 6.5kV AC for 5 minutes
- Rated Voltage: 1.0/1.0 kV AC
- Max. Voltage: 0.9/1.8 kV
- Short Circuit Temp: Up to 250°C for a duration of 5 seconds
- Halogen Free
- Flame Retardant: IS 10810 part 53 & 62
- Low smoke Emission
- UV and Weathering Resistance: EN 50618, EN 50289-4-17
- Cold Resistance
- Min Bending Radius: a) Cable OD x 4 for OD<8.0 mm

Features

Resistance against UV, Water, Ozone, Fluids, Oil, Salt & General Weathering.

Halogen Free, Flame Retardant, Low Smoke Emission

RoHS compliant as per IS norms





Quadrant Future Tek Ltd.

Solar Photovoltaic DC Cable, Single Core, Electron Beam Cross Linked, as per BIS 17293:2020

Part Number	Cross sectional area of conductor mm ²	Thickness of Insulation mm	Thickness Of Sheath	Mean Overall Diameter mm	Conductor resistance at 20°C	Minimum Insulation Resistance at 90°C MΩkm	Current Carrying capacity in air
QFPV001.5WHBKRD BIS172930000	1.5	0.7	0.8	5.4	12.2	1.05	28
QFPV002.5WHBKRD BIS172930000	2.5	0.7	0.8	5.9	7.56	0.862	38
QFPV004.0WHBKRD BIS172930000	4	0.7	0.8	6.6	4.70	0.709	52
QFPV006.0WHBKRD BIS172930000	6	0.7	0.8	7.2	3.11	0.61	66
QFPV010.0WHBKRD BIS172930000	10	0.7	0.8	8.3	1.84	0.489	89
QFPV016.0WHBKRD BIS172930000	16	0.7	0.9	9.8	1.16	0.393	120
QFPV025.0WHBKRD BIS172930000	25	0.9	1	12.2	0.734	0.395	167
QFPV035.0WHBKRD BIS172930000	35	0.9	1.1	14	0.529	0.335	207
QFPV050.0WHBKRD BIS172930000	50	1	1.2	16.3	0.391	0.314	261
QFPV070.0WHBKRD BIS172930000	70	1.1	1.2	18.7	0.270	0.291	329
QFPV095.0WHBKRD BIS172930000	95	1.1	1.3	20.8	0.195	0.258	394
QFPV120.0WHBKRD BIS172930000	120	1.2	1.3	23	0.154	0.249	462
QFPV150.0WHBKRD BIS172930000	150	1.4	1.4	25.7	0.126	0.26	537
QFPV185.0WHBKRD BIS172930000	185	1.6	1.6	28.7	0.100	0.268	611
QFPV240.0WHBKRD BIS172930000	240	1.7	1.7	32.3	0.0762	0.249	735
QFPV300.0WHBKRD BIS172930000	300	1.8	1.8	35.6	0.0607	0.237	831
QFPV400.0WHBKRD BIS172930000	400	2	2	40.6	0.0475	0.23	999

*Note: Please refer to the Nomenclature



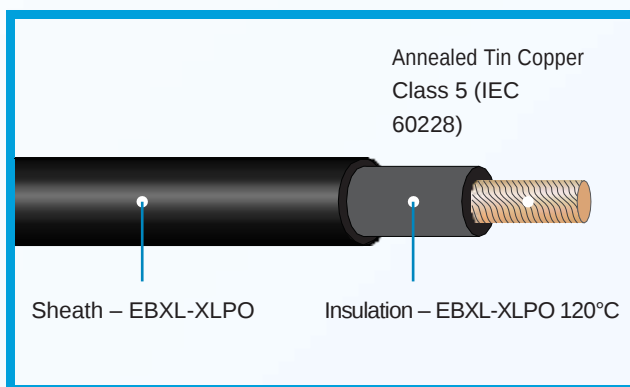
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Speciality Cables

Solar Photovoltaic Cable, Single Core, Electron Beam Cross Linked, as per EN 50618

Construction

- **Conductor:** Annealed Tinned Copper (APC Optional) according to IEC 60228, class 5 or as per customer order
- **Insulation:** EXBL- XLPO 120°C (Color White, Red & Black) Other colors as per customer order
- **Jacket:** EXBL- XLPO Highly weather & UV resistant (color Black, Blue, Red, Brown, Grey, Black with Red stripe)



Technical Parameters

- Temperature Range: -40°C to +120°C
- Max. Temp. at Conductor: 120°C (20000h)
- Test Voltage: 6500V AC for 5 minutes
- Insulation Resistance Test & Voltage Test: EN 50395
- Rated Voltage: 1.0/1.0kV AC, 1.5/1.5 kV DC
- Max. Voltage: 1.8 kV DC
- Short Circuit Temp: +280°C
- Halogen Free: EN50525-1
- Flame Retardant: EN 60332-1-2
- Low smoke Emission: EN 61034-2
- UV and Weathering Resistance: EN 50618, EN 50289-4-17
- Flame Retardant: EN60332-1-2
- Cold Resistance: EN 50618, EN 60811-504, EN 60811-505
- Min Bending Radius: a) Cable OD x 4 for OD<8.0 mm
b) Cable OD x 5 for 8.0 < OD< 12.0 mm
c) Cable OD x 6 for OD > 12.0 mm

Features

Resistance against UV, Water, Ozone, Fluids, Oil, Salt & General Weathering.

Halogen Free, Flame Retardant, Low Smoke Emission

RoHS compliant as per EU norms



Quadrant Future Tek Ltd.

Solar Photovoltaic Cable, Single Core, Electron Beam Cross Linked, as per EN 50618

Part Number	Cross Section Area (Sq.mm)	Nominal Insulation Thickness (mm)	Nominal Sheath Thickness (mm)	Cable Diameter (Max.) (mm)	Max. DC Conductor Resistance at 20°C	Cable Weight (Nom.) Kg/km	Current Rating for Two Loaded Cables Touching on Surfaces (Amps)
QFPV001.5WHBKRDEN506180000	1.5	0.7	0.8	5.4	13.7	37	24
QFPV002.5WHBKRDEN506180000	2.5	0.7	0.8	5.9	8.21	45	33
QFPV004.0WHBKRDEN506180000	4	0.7	0.8	6.6	5.09	58	44
QFPV006.0WHBKRDEN506180000	6	0.7	0.8	7.4	3.39	78	57
QFPV010.0WHBKRDEN506180000	10	0.7	0.8	8.8	1.95	125	79
QFPV016.0WHBKRDEN506180000	16	0.7	0.9	10.1	1.24	175	107
QFPV025.0WHBKRDEN506180000	25	0.9	1.0	12.5	0.795	274	142
QFPV035.0WHBKRDEN506180000	35	0.9	1.1	14.0	0.565	368	176
QFPV050.0WHBKRDEN506180000	50	1.0	1.2	16.3	0.393	511	221
QFPV070.0WHBKRDEN506180000	70	1.1	1.2	18.7	0.277	690	278
QFPV095.0WHBKRDEN506180000	95	1.1	1.3	20.8	0.210	908	333
QFPV120.0WHBKRDEN506180000	120	1.2	1.3	22.8	0.164	1127	390
QFPV150.0WHBKRDEN506180000	150	1.4	1.4	25.5	0.132	1406	453
QFPV185.0WHBKRDEN506180000	185	1.6	1.6	28.5	0.108	1741	515
QFPV240.0WHBKRDEN506180000	240	1.7	1.7	32.1	0.0817	2227	620
QFPV001.5WHBKRDEN506180000	300	2.4	2.4	32.6	0.0654	2925	714
QFPV001.5WHBKRDEN506180000	400	2.6	2.6	36.8	0.0495	3800	795

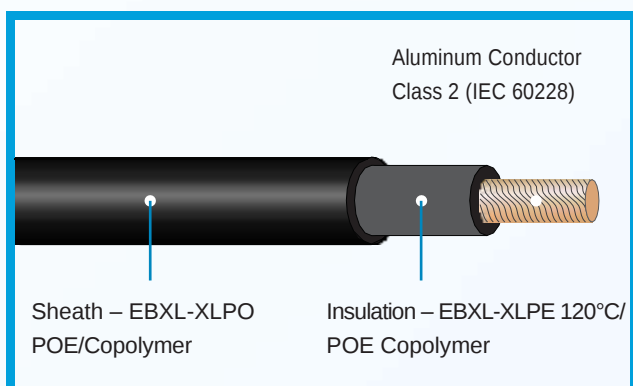
*Note: Please refer to the Nomenclature



Quadrant Future Tek Ltd.

Speciality Cables

Solar Photovoltaic DC Cable, Single Core, Electron Beam Cross Linked, Aluminum Conductor, as per EN 50618 & AS/NZS 5000.1 with Nylon Sheathing



Construction

- **Conductor:** Aluminum Stranded Conductor according to IEC 60228, Class 2
- **Insulation:** EXBL- XLPE 120°C (Color Red or Black) other colors as per customer order
- **Sheath:** EBXL- XLPO (Color Black, Black with Red Tape)
- **Jacket 1:** Nylon-12 (Black)
- **Jacket 2:** Sacrificial PVC (UV Resistant)- Black (Optional)

Specification

Quadrant future Tek Single & Multicore and Screened Solar Cables Constructed as per Spec. EN 50618 & AS/NZS 5000.1

Features

Rodent Resistant
Resistance against UV, Water, Ozone, Fluids, Oil, Salt & General Weathering.
Used for Direct burial.
Halogen Free, Flame Retardant, Low Smoke Emission
Fire retardant to meet IEC 607541-1/EN 50268-2
RoHS compliant as per EU norms
Max. Temp. at Conductor: 120°C (20,000h)
Test Voltage: 6500V AC for 5 minutes
Voltage Resistance Test: EN 50395
Rated Voltage: 1.0/1.0kV AC, 1.5kV DC
Short Circuit Temp: +280°C



Quadrant Future Tek Ltd.

Part Number	Cross Section Area (Sq.mm)	Cond. Min. No. of Wires (Nos)	Cable Diameter (nom) (mm)	Max. DC Conductor Resistance at 20°C (km)	Cable Weight (nom) (Kg/km)	Current Rating in Air at 40°C (Amps)
QFPV016.0BKBKRDEN50618NYOO	16	6	13.1	1.91	209	09
QFPV015.0BKBKRDEN50618NYOO	15	6	15.5	1.20	290	143
QFPV035.0BKBKRDEN50618NYOO	35	6	16.5	0.868	338	178
QFPV050.0BKBKRDEN50618NYOO	50	6	18.7	0.641	444	217
QFPV070.0BKBKRDEN50618NYOO	70	12	20.3	0.443	533	281
QFPV095.0BKBKRDEN50618NYOO	95	15	23.4	0.320	703	342
QFPV120.0BKBKRDEN50618NYOO	120	15	24.9	0.253	810	399
QFPV150.0BKBKRDEN50618NYOO	150	15	27.4	0.206	979	460
QFPV185.0BKBKRDEN50618NYOO	185	30	30.0	0.164	1175	529
QFPV240.0BKBKRDEN50618NYOO	240	30	33.4	0.125	1458	627
QFPV300.0BKBKRDEN50618NYOO	300	30	36.4	1.100	1752	725
QFPV400.0BKBKRDEN50618NYOO	400	53	40.6	0.0778	2211	875

*Note: Please refer to the Nomenclature



Quadrant Future Tek Ltd.

Speciality Cables

Solar Photovoltaic Cable, Multi-Core, Electron Beam Cross Linked, as per EN 50618 & UL

Construction

- **Conductor:** Annealed Tinned Copper (APC Optional) according to IEC 60228, class 5 or as per customer order
- **Insulation:** XLPO 120°C (Color White, Red & Black) Other colors as per customer order
- **Jacket:** XLPO Highly weather & UV resistant (color Black, Black with Red stripe)

Types of Solar Cables:

- **TUV:** Quadrant Future Tek Single & Multi Core and Screened Solar Cables meets specn.2Pfg 1169/08.2007 & EN 50618
- **UL:** Quadrant Future Tek Single & Multi Core and Screened Solar Cables meets UL 4703
- **Dual:** Quadrant Future Tek Single & Multicore and Screened cables to meet both TUV & UL specn.

Quadrant Future Tek Cable Range:

- **Single Core:** 1.5 to 400sq.mm or its equivalent size in AWG
- **Multi Core:** 2 to 4 cores x 1.5 to 70 sq.mm or its equivalent size in AWG
- **Multi Core (EMC):** Up to 61 core screened cables (data sheet against specific request for EMC cables)

Features

Rodent Resistant

Resistance against UV, Water, Ozone, Fluids, Oil, Salt & General Weathering.

Used for Direct burial.

Halogen Free, Flame Retardant, Low Smoke Emission

Fire retardant to meet IEC 607541-1/EN 50268-2

RoHS compliant as per EU norms

Max. Temp. at Conductor: 120°C (20,000h)

Test Voltage: 6500V AC

Voltage Resistance Test: EN 50395

Rated Voltage: 600/1000 V AC, 1800 V DC, 1.5kV DC

Short Circuit Temp: +280°C





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Part Number	Cross Section Area (Sq.mm)	Max. Diameter of wires in Conductor Design (mm)	Max. DC Conductor Resistance at 20°C (ohm/km)	Cable Diameter (nom) (mm)			Cable Weight (nom) (kg/km)			Current Rating (Amps)	
				2 Core	3 Core	4Core	2 Core	3 Core	4 Core	2	3&4Core
QFPV001.5WHBKRDEN506182COO	1.5	0.26	13.7	8.4	9.1	9.9	93.0	116.0	141.0	24.0	21.0
QFPV002.5WHBKRDEN506182COO	2.5	0.26	8.21	9.3	10.1	11.2	122.0	154.0	194.0	33.0	29.0
QFPV004.0WHBKRDEN506182COO	4	0.31	5.09	10.8	11.9	13.1	172.0	225.0	282.0	44.0	39.0
QFPV006.0WHBKRDEN506182COO	6	0.31	3.39	12.4	14.0	15.4	237.0	323.0	396.0	57.0	50.0
QFPV010.0WHBKRDEN506182COO	10	0.41	1.95	15.4	16.8	19.0	378.0	492.0	636.0	79.0	69.0
QFPV016.0WHBKRDEN506182COO	16	0.41	1.24	18.8	20.0	22.3	584.0	745.0	951.0	107.0	94.0
QFPV025.0WHBKRDEN506182COO	25	0.41	0.795	23.0	24.5	27.1	883.0	1131.0	1432.0	142.0	124.0
QFPV035.0WHBKRDEN506182COO	35	0.41	0.565	25.4	27.1	30.0	1140.0	1479.0	1880.0	176.0	154.0
QFPV050.0WHBKRDEN506182COO	50	0.41	0.393	29.3	31.2	34.6	1532.0	1996.0	2544.0	221.0	193.0
QFPV070.0WHBKRDEN506182COO	70	0.51	0.277	32.8	35.5	39.3	2033.0	2707.0	3457.0	278.0	243.0

*Note: Please refer to the Nomenclature



Quadrant Future Tek Ltd.

Speciality Cables

Solar Photovoltaic Cable, Twin Parallel, Electron Beam Cross Linked, XLPO Insulation/Sheathing



Construction

- **Conductor:** Annealed Tinned Copper Conductor
- **Insulation:** EBXL – XLPO-120°C
- **Core Color:** Black
- **Outer Sheath:** EBXL-XLPO-120°C
- **Sheath Color:** Black with Red stripe

Technical Parameters

- Temperature Range:
Ambient Temp: -40°C to +90°C,
Max Temp at Conductor: 120°C
- Max. Continuous working Temp: 120°C (20000h)
- Rated Voltage: 1/1 kV AC, 1.5/1.5 kV DC
- Max. Permitted Voltage: 1.8 kV DC
- Permitted Short Circuit Temp: 250°C for 5 seconds
- Specification: Generally as per EN 50618
- Current rating for two loaded cables touching on Surface upto 60°C
4 sq.mm-44 A
6 sq.mm-57 A

Features

Resistance against UV, Water, Ozone, Fluids, Oil, Salt & General Weathering.

Halogen Free, Flame Retardant, Low Smoke Emission

Fire retardant to meet IEC 607541-1/EN 50268-2

RoHS compliant as per EU norms

Application

Used in Photovoltaic Power Supply systems Indoor & Outdoors

Applicable for installation in Cable trays, Conduits and in wall as well as for direct burial

Part Number	No of cores x Nominal Cross Sectional Area (Sq.mm)	Wire Dia (Max)	Thickness of insulation (Nom) (mm)	Thickness of outer Sheath (Nom) (mm)	Overall Diameter of twin Parallel (Nom) mm	DC Conductor Resistance 20°C (Max)	Approx cable Weight (kg/km)
QFPV004.0WHBKRDEN506182COO	2 x 4	0.31	0.7	0.8	(5.8 X 12.0) ± 0.6	5.09	120
QFPV006.0WHBKRDEN506182COO	2 x 6	0.31	0.7	0.8	(6.2 X 12.8) ± 0.6	3.39	155



Quadrant Future Tek Ltd.

Speciality Cables

Solar Photovoltaic Cable, Twin Parallel, Electron Beam Cross Linked, XLPO Insulated, Nylon inner Sheathed & XLPO Outer Sheathed



Construction

- **Conductor:** Annealed Tinned Flexible Copper Conductor
- **Insulation:** EBXL – XLPO- Low Smoke/ Halogen free/
- **Core Color:** Black
- **Outer Sheath:** EBXL-XLPO-120°C
- **Inner Sheath:** Nylon
- **Sheath Color:** Black with Red stripe

Technical Parameters

- Temperature Range: -40°C to +120°C, Max Continuous working Temp: 120°C
- Max. Continuous working Temp: 120c (20000h)
- Rated Voltage: 1/1 kV AC, 1.5/1.5 kV DC Nom
- Current Carrying Capacity:
 - In Ground at 30°C: 47 A
 - In Duct at 30°C: 41 A
 - In Air at 60°C: 44 A
 - Two Cables adjacent on surface: 44 A
- Max. Permitted Voltage: 1.8 kV DC
- Short Circuit capacity for 1 sec: 0.552 kA for 5 seconds
- Current Carrying Capacity:
 - Max conductor temperature at rated current: 90°C
 - Ambient Air Temperature: 45°C
 - Ambient Soil Temperature: 30°C
 - Over load capacity: 130°C
- Max Conductor temp at rated current: 90°C
- Max Conductor temp at of terminator short circuit for 5 sec: 250°C
- AC test Voltage: 6.5 kV, 50Hz, 5min
- DC test Voltage: 15 kV for 5 min
- Approx Dielectric Strength: 20 kV/mm
- Specification: Generally As per EN 50618
- Min. Binding radius; 5 X Cable OD

Features

Resistance against UV, Water, Ozone, Fluids, Oil, Salt & General Weathering.

Halogen Free, Flame Retardant, Low Smoke Emission

Fire retardant to meet IEC 607541-1/EN 50268-2

RoHS compliant as per EU norms

Resistant to Anti- Rodent and Anti- Termite attacks



Quadrant Future Tek Ltd.

Application

Used in Photovoltaic Power Supply systems Indoor & Outdoors

Applicable for installation in Cable trays, Conduits and in wall as well as for direct burial

Part number	No of cores x Nominal Cross Sectional Area (Sq.mm)	No of Strand/ Strand dia. (max) Nos/mm	Conductor Diameter (Nom) Mm	Thickness of insulation		Thickness of Outer Sheath		Overall diameter of Cable (Nom) mm	DC conductor Resistance 20°C (Max) km	Approx Cable weight Kg/km
				Nom	Min	Nom	Min			
QFPV004.0WHBKRDEN506182CNY	2 X 4	56/0.31	2.5	0.7	0.53	0.8	0.58	(6.6 x 13.6) ± 0.6	5.09	140



Quadrant Future Tek Ltd.

Speciality Cables

Remote Monitoring & Data Transmission Cable, Electron Beam Cross Linked, Polyolefin Insulated



Construction

- **Conductor:** Annealed Tinned Stranded Copper wires.
- **Insulation:** Electron Beam Cross Linked polyolefin
- **Binder Tape:** Polyester
- **Braiding:** Annealed tinned Copper Wires
- **Outer Sheath:** All weather Electron Beam XLPO jacket specially for PV Solar applications

Technical Parameters

- Temperature Range: -45°C to +125°C
- Voltage for testing: Core/Core: 2 kV, Core/ Shielding: 1 kV
- Bending Radius (Min):
Static: 8 x cable diameter
- Specific Insulation resistance: >5 G ohm x km.
- Inductivity: 0.65 mH/km (approx.)
- Mutual Capacitance:
Core/core: 60 nF/ km (approx.)
Core/Shielding: 160 nF/ km (approx.)
- Characteristic Impedance: 100± 15 ohm

Features

Flame retardant
Excellent UV, ozone and weather resistance
Resistive to Oils and chemicals.

Application

Data transmission and remote monitoring systems
PV Solar segment
Indoor and Outdoor uses
Direct burial
Fixed installation
Dry and damp interiors



Quadrant Future Tek Ltd.

Part Number	Number of pairs and mm Per Conductor	Outer Diameter in (mm) ² Approx.	Copper Index (kg/km)	Weight (kg/km) approx..
LioCo (TP)				
QFPV0.22WHBKRDEN50618XLO	2 x 2 x 0.22	8.8	23	76
QFPV0.22WHBKRDEN50618XLO	2 x 2 x 0.22	9.3	29	91
QFPV0.22WHBKRDEN50618XLO	4 x 2 x 0.22	10.0	35	108
QFPV0.22WHBKRDEN50618XLO	8 x 2 x 0.22	13.3	58	181
QFPV0.22WHBKRDEN50618XLO	10 x 2 x 0.22	15.0	70	216
QFPV0.34WHBKRDEN50618XLO	1 x 2 x 0.34	6.7	16	52
QFPV0.34WHBKRDEN50618XLO	2 x 2 x 0.34	9.3	29	86
QFPV0.34WHBKRDEN50618XLO	3 x 2 x 0.34	9.8	36	104
QFPV0.34WHBKRDEN50618XLO	4 x 2 x 0.34	10.6	45	124
QFPV0.34WHBKRDEN50618XLO	8 x 2 x 0.34	14.2	78	212
QFPV0.50WHBKRDEN50618XLO	1 x 2 x 0.5	7.1	20	58
QFPV0.50WHBKRDEN50618XLO	2 x 2 x 0.5	10.0	36	101
QFPV0.50WHBKRDEN50618XLO	3 x 2 x 0.5	10.4	47	120
QFPV0.50WHBKRDEN50618XLO	4 x 2 x 0.5	11.6	58	150
QFPV0.50WHBKRDEN50618XLO	8 x 2 x 0.5	15.2	104	251
QFPV0.25WHBKRDEN50618XLO	10 x 2 x 0.25	17.3	127	310
LioCo (TP) Fine Wires				
QFPV0.25WHBKRDEN50618XLO	1 x 2 x 0.25	6.5	14	49
QFPV0.25WHBKRDEN50618XLO	2 x 2 x 0.25	9.0	25	80
QFPV0.25WHBKRDEN50618XLO	3 x 2 x 0.25	9.5	31	95
QFPV0.50WHBKRDEN50618XLO	5 x 2 x 0.5	11.4	44	137
LioCo (TP) Inner Sheathed Cables				
QFPV0.50WHBKRDEN50618XLO	2 x 2 x 0.5	10.4	39	115
QFPV0.50WHBKRDEN50618XLO	8 x 2 x 0.5	15.8	113	288



Quadrant Future Tek Ltd.

Speciality Cables

Remote Monitoring & Data Transmission Cable, Electron Beam Cross Linked, XLPE Insulated



Construction

- **Conductor:** Annealed Tinned Stranded Copper wires.
- **Insulation:** Electron Beam Cross Linked XLPE
- **Binder Tape:** Polyester
- **Braiding:** Annealed tinned Copper Wires (Optional: Special Copper Tape 100% EMC Screening).
- **Outer Sheath:** Modified all weather PVC jacket specially for PV Solar applications

Technical Parameters

- Temperature Range: -45°C to $+125^{\circ}\text{C}$
- Voltage for testing:
Core/Core: 2 kV,
Core/ Shielding: 1 kV
- Bending Radius (Min):
Static: 8 x cable diameter
- Specific Insulation resistance: $>5 \text{ G ohm} \times \text{km}$.
- Inductivity: 0.65 mH/km (approx..)
- Mutual Capacitance:
Core/core: 60 nF/ km (approx.)
Core/Shielding: 160 nF/ km (approx.)
- Characteristic Impedance: $100 \pm 15 \text{ ohm}$

Features

Flame retardant
Excellent UV, ozone and weather resistance

Application

Data transmission and remote monitoring systems
PV Solar segment
Indoor and Outdoor uses
Direct burial
Fixed installation
Dry and damp interiors



Quadrant Future Tek Ltd.

Part Number	Number of pairs and mm Per Conductor	Outer Diameter in (mm) ² Approx.	Copper Index (kg/km)	Weight (kg/km) approx..
Li2YcYv***				
QFPV0.22WHBKRDEN50618XLE	2 x 2 x 0.22	8.8	23	76
QFPV0.22WHBKRDEN50618XLE	2 x 2 x 0.22	9.3	29	91
QFPV0.22WHBKRDEN50618XLE	4 x 2 x 0.22	10.0	35	108
QFPV0.22WHBKRDEN50618XLE	8 x 2 x 0.22	13.3	58	181
QFPV0.22WHBKRDEN50618XLE	10 x 2 x 0.22	15.0	70	216
QFPV0.34WHBKRDEN50618XLE	1 x 2 x 0.34	6.7	16	52
QFPV0.34WHBKRDEN50618XLE	2 x 2 x 0.34	9.3	29	86
QFPV0.34WHBKRDEN50618XLE	3 x 2 x 0.34	9.8	36	104
QFPV0.34WHBKRDEN50618XLE	4 x 2 x 0.34	10.6	45	124
QFPV0.34WHBKRDEN50618XLE	8 x 2 x 0.34	14.2	78	212
QFPV0.50WHBKRDEN50618XLE	1 x 2 x 0.5	7.1	20	58
QFPV0.50WHBKRDEN50618XLE	2 x 2 x 0.5	10.0	36	101
QFPV0.50WHBKRDEN50618XLE	3 x 2 x 0.5	10.4	47	120
QFPV0.50WHBKRDEN50618XLE	4 x 2 x 0.5	11.6	58	150
QFPV0.50WHBKRDEN50618XLE	8 x 2 x 0.5	15.2	104	251
QFPV0.25WHBKRDEN50618XLE	10 x 2 x 0.25	17.3	127	310

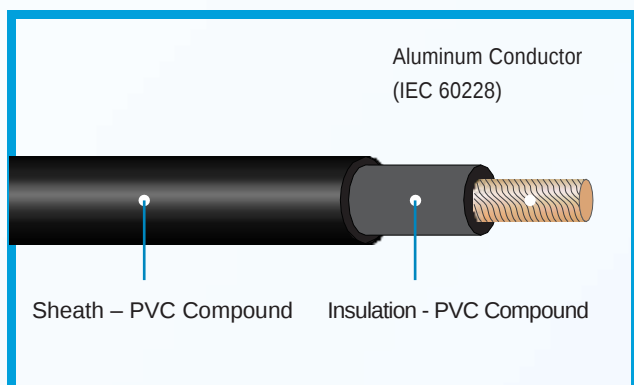
*Note: Please refer to the Nomenclature



Quadrant Future Tek Ltd.

Speciality Cables

PVC Insulated & Sheathed 600/1000V (UA) Power Cable, Single Core Stranded Aluminum Conductor as per IEC 60502 P-1



Construction

- **Conductor:** Aluminum conductor complying with IEC 60228
- **Insulation:** PVC Compound
- **Outer Sheath:** PVC Compound- Black

Technical Parameters

- Temperature Range:
Flexing: -5°C to +50°C
Fixed Installation: -40°C to +70°C
- Permissible short circuit: +160°C (Duration 5 secs)
- Voltage for testing: 4 kV
- Bending radius (Min):
Single Core: 12x Cable Diameter
Rated Voltage: U 600/1000 V
- Volume resistivity at 27°C (Min): 1×10^{13} Ohm-cm.

Features

Flame retardant
Self-extinguishing
UV resistant
Outdoor solar applications.

Application

Power Plants
Industrial and Switching installations
Secondary distribution networks
Indoor and outdoor uses
In open air, underground and in water
Where mechanical damage is not anticipated



Quadrant Future Tek Ltd.

Part Number	Number of pairs and mm Per Conductor	Outer Diameter in (mm) Approx.	Max. DC Conductor Resistance (km)	Weight (kg/km) approx..
QFPV016.0WHBKRDIEC60502P-1UAOO	1Cx16	10.2	1.91	144
QFPV025.0WHBKRDIEC60502P-1UAOO	1Cx25	11.7	1.20	194
QFPV035.0WHBKRDIEC60502P-1UAOO	1Cx35	12.7	0.868	233
QFPV050.0WHBKRDIEC60502P-1UAOO	1Cx50	14.1	0.641	299
QFPV070.0WHBKRDIEC60502P-1UAOO	1Cx70	15.7	0.443	377
QFPV095.0WHBKRDIEC60502P-1UAOO	1Cx95	18.3	0.320	507
QFPV120.0WHBKRDIEC60502P-1UAOO	1Cx120	19.8	0.253	601
QFPV150.0WHBKRDIEC60502P-1UAOO	1Cx150	21.8	0.206	730
QFPV185.0WHBKRDIEC60502P-1UAOO	1Cx185	23.9	0.164	882
QFPV240.0WHBKRDIEC60502P-1UAOO	1Cx240	26.7	0.125	1104
QFPV300.0WHBKRDIEC60502P-1UAOO	1Cx300	29.7	0.100	1360
QFPV400.0WHBKRDIEC60502P-1UAOO	1Cx400	33.2	0.0778	1732
QFPV500.0WHBKRDIEC60502P-1UAOO	1Cx500	36.6	0.0605	2110
QFPV630.0WHBKRDIEC60502P-1UAOO	1Cx630	49.6	0.0469	2814

*Note: Please refer to the Nomenclature



Quadrant Future Tek Ltd.

Speciality Cables

PVC Insulated & Sheathed 600/1000V (UA) Power Cable, Multi Core Stranded Aluminum Conductor as per IEC 60502 P-1



Construction

- **Conductor:** Aluminum conductor complying with IEC 60228
- **Insulation:** PVC Compound
- **Bedding:** PVC Compound
- **Outer Sheath:** PVC Compound- Black

Technical Parameters

- Temperature Range:
Flexing: -5°C to +50°C
Fixed Installation: -40°C to +70°C
- Permissible short circuit: +160°C (Duration 5 secs)
- Voltage for testing: 4 kV
- Bending radius (Min):
Multi Core: 12x Cable Diameter
Rated Voltage: U 600/1000 V
- Volume resistivity at 27°C (Min): 1×10^{13} Ohm-cm.

Features

Flame retardant
Self-extinguishing
UV resistant
Outdoor solar applications.

Application

Power Plants
Industrial and Switching installations
Secondary distribution networks
Indoor and outdoor uses
In open air, underground and in water
Where mechanical damage is not anticipated



Quadrant Future Tek Ltd.

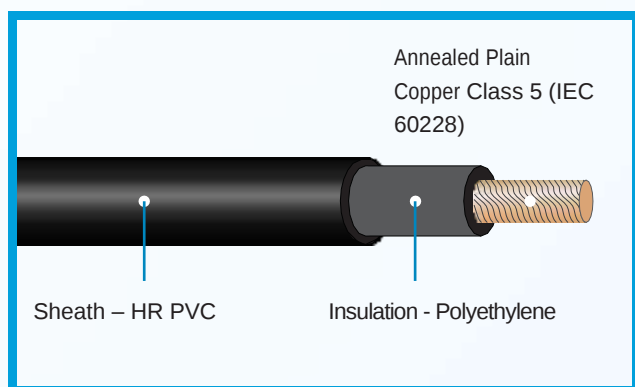
Part Number	Number of pairs and mm Per Conductor	Outer Diameter in (mm) Approx.	Max. DC Conductor Resistance (km)	Weight (kg/km) approx..
QFPV016.0WHBKRDIEC60502P-1UA2C	4Cx16	20.8	1.91	565
QFPV025.0WHBKRDIEC60502P-1UA2C	4Cx25	24.0	1.20	760
QFPV035.0WHBKRDIEC60502P-1UA2C	4Cx35	26.2	0.868	920
QFPV050.0WHBKRDIEC60502P-1UA2C	4Cx50	30.5	0.641	1255
QFPV070.0WHBKRDIEC60502P-1UA2C	4Cx70	34.4	0.443	1580
QFPV095.0WHBKRDIEC60502P-1UA2C	4Cx95	39.6	0.320	2100
QFPV120.0WHBKRDIEC60502P-1UA2C	4Cx120	43.2	0.253	2510
QFPV150.0WHBKRDIEC60502P-1UA2C	4Cx150	47.5	0.206	2980
QFPV185.0WHBKRDIEC60502P-1UA2C	4Cx185	53.4	0.164	3820
QFPV240.0WHBKRDIEC60502P-1UA2C	4Cx240	59.5	0.125	4750
QFPV300.0WHBKRDIEC60502P-1UA2C	4Cx300	65.4	0.100	5810
QFPV400.0WHBKRDIEC60502P-1UA2C	4Cx400	75.0	0.0778	7570



Quadrant Future Tek Ltd.

Speciality Cables

EBXL-XLPE 120°C Insulated, HR PVC Sheath (A) Power Cable, Single Core Copper Conductor, as per IEC 60502-1



Construction

- **Conductor:** Annealed Plain copper conductor complying with IEC-60228
- **Insulation:** Electron Beam Cross Linked Polyethylene 120°C
- **Aarmor:** Non-magnetic round wires
- **Jacket:** HR PVR (Black) & UV Resistant

Technical Parameters

- Operating Temperature Range: -15°C to +120°C
- High Insulation resistance at elevated temperature
- Short Circuit Temperature: 250°C
- Bending radius (Min):
12x Cable Diameter
- Test Voltage: 3.5 kV for 5 mins.

Features

Does not melt or drip

Enhanced Mechanical, electrical, Thermal & Weathering properties.

Flame retardant

Excellent UV and Ozone resistant.

Specially designed for PV Power cable segment

Extra UV & 120°C Continuous rating

Application

Transmission and distribution of Power in PV Solar segment

Indoor and outdoor uses

Cable ducts, cable trays and conduits

Direct burial



Quadrant Future Tek Ltd.

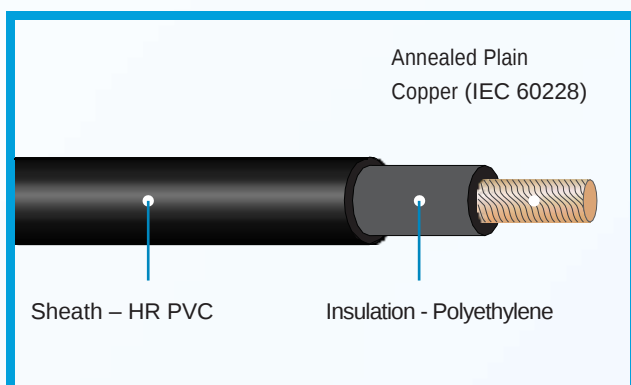
Part Number	Number of pairs and mm Per Conductor	Outer Diameter in (mm) Approx.	Max. DC Conductor Resistance (km)	Weight (kg/km) approx..
QFPV016.0WHBKRDIEC60502-1HRPAR	1Cx16	12.0	1.15	275
QFPV025.0WHBKRDIEC60502-1HRPAR	1Cx25	13.4	0.727	380
QFPV035.0WHBKRDIEC60502-1HRPAR	1Cx35	14.4	0.524	480
QFPV050.0WHBKRDIEC60502-1HRPAR	1Cx50	16.8	0.387	670
QFPV070.0WHBKRDIEC60502-1HRPAR	1Cx70	18.5	0.268	880
QFPV095.0WHBKRDIEC60502-1HRPAR	1Cx95	20.2	0.193	1125
QFPV120.0WHBKRDIEC60502-1HRPAR	1Cx120	21.9	0.153	1370
QFPV150.0WHBKRDIEC60502-1HRPAR	1Cx150	24.8	0.124	1710
QFPV185.0WHBKRDIEC60502-1HRPAR	1Cx185	27.0	0.0991	2060
QFPV240.0WHBKRDIEC60502-1HRPAR	1Cx240	29.7	0.0754	2630
QFPV300.0WHBKRDIEC60502-1HRPAR	1Cx300	32.6	0.0601	3222
QFPV400.0WHBKRDIEC60502-1HRPAR	1Cx400	36.8	0.0470	4260
QFPV500.0WHBKRDIEC60502-1HRPAR	1Cx500	40.5	0.0366	5235
QFPV630.0WHBKRDIEC60502-1HRPAR	1Cx630	45.6	0.0283	6520



Quadrant Future Tek Ltd.

Speciality Cables

EBXL-XLPE 120°C Insulated, HR PVC Sheath (UA) Power Cable, Single Core Copper Conductor, as per IEC 60502-1



Construction

- **Conductor:** Annealed Plain copper conductor complying with IEC-60228
- **Insulation:** Electron Beam Cross Linked Polyethylene 120°C
- **Jacket:** HR PVR (Black) & UV Resistant

Technical Parameters

- Operating Temperature Range: -15°C to +120°C
- High Insulation resistance at elevated temperature
- Short Circuit Temperature: 250°C
- Bending radius (Min):
12x Cable Diameter
- Test Voltage: 3.5 kV for 5 mins.

Features

Does not melt or drip
Enhanced Mechanical, electrical, Thermal & Weathering properties.
Flame retardant
Excellent UV and Ozone resistant.
Specially designed for PV Power cable segment
Extra UV & 120°C Continuous rating

Application

Transmission and distribution of Power in PV Solar segment
Indoor and outdoor uses
Cable ducts, cable trays and conduits
Direct burial



Quadrant Future Tek Ltd.

Part Number	Number of pairs and mm Per Conductor	Outer Diameter in (mm) Approx.	Max. DC Conductor Resistance (km)	Weight (kg/km) approx..
QFPV016.0WHBKRDIEC60502-1HRPUA	1Cx16	9.5	1.15	205
QFPV025.0WHBKRDIEC60502-1HRPUA	1Cx25	11.0	0.727	300
QFPV035.0WHBKRDIEC60502-1HRPUA	1Cx35	12.0	0.524	395
QFPV050.0WHBKRDIEC60502-1HRPUA	1Cx50	13.5	0.387	535
QFPV070.0WHBKRDIEC60502-1HRPUA	1Cx70	15.5	0.268	725
QFPV095.0WHBKRDIEC60502-1HRPUA	1Cx95	17.7	0.193	980
QFPV120.0WHBKRDIEC60502-1HRPUA	1Cx120	19.5	0.153	1210
QFPV150.0WHBKRDIEC60502-1HRPUA	1Cx150	21.5	0.124	1505
QFPV185.0WHBKRDIEC60502-1HRPUA	1Cx185	23.8	0.0991	1840
QFPV240.0WHBKRDIEC60502-1HRPUA	1Cx240	26.6	0.0754	2380
QFPV300.0WHBKRDIEC60502-1HRPUA	1Cx300	29.6	0.0601	2940
QFPV400.0WHBKRDIEC60502-1HRPUA	1Cx400	33.5	0.0470	3885
QFPV500.0WHBKRDIEC60502-1HRPUA	1Cx500	37.2	0.0366	4820
QFPV630.0WHBKRDIEC60502-1HRPUA	1Cx630	42.0	0.0283	6050

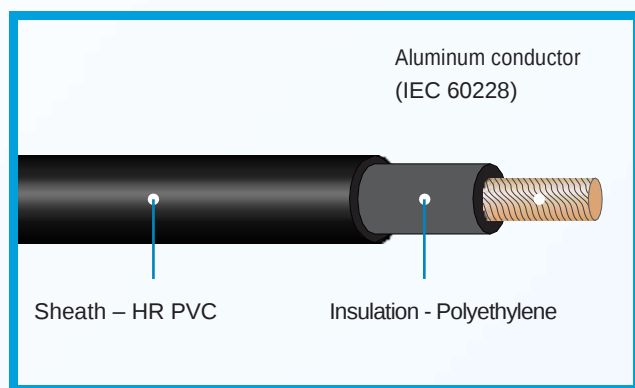
*Note: Please refer to the Nomenclature



Quadrant Future Tek Ltd.

Speciality Cables

EBXL-XLPE 120°C Insulated, HR PVC Sheath (A) Power Cable, Single Core Aluminum Conductor, as per IEC 60502-1



Construction

- **Conductor:** Aluminum conductor complying with IEC-60228
- **Insulation:** Electron Beam Cross Linked Polyethylene 120°C
- **Aarmor:** Non magnetic round wires
- **Jacket:** HR PVR (Black) & UV Resistant

Technical Parameters

- Operating Temperature Range: -15°C to +120°C
- High Insulation resistance at elevated temperature
- Short Circuit Temperature: 250°C
- Bending radius (Min):
12x Cable Diameter
- Test Voltage: 3.5 kV for 5 mins.

Features

Does not melt or drip

Enhanced Mechanical, electrical, Thermal & Weathering properties.

Flame retardant

Excellent UV and Ozone resistant.

Specially designed for PV Power cable segment

Extra UV & 120°C Continuous rating

Application

Transmission and distribution of Power in PV Solar segment

Indoor and outdoor uses

Cable ducts, cable trays and conduits

Direct burial



Quadrant Future Tek Ltd.

Single Core EBXL XLPE 120°C Power Cable

Part Number	Number of pairs and mm Per Conductor	Outer Diameter in (mm) Approx.	Max. DC Conductor Resistance (km)	Weight (kg/km) approx..
QFPV016.0WHBKRDIEC60502-1HRPAR	1Cx16	12.1	1.91	191
QFPV025.0WHBKRDIEC60502-1HRPAR	1Cx25	13.6	1.20	245
QFPV035.0WHBKRDIEC60502-1HRPAR	1Cx35	14.6	0.868	288
QFPV050.0WHBKRDIEC60502-1HRPAR	1Cx50	16.7	0.641	386
QFPV070.0WHBKRDIEC60502-1HRPAR	1Cx70	18.4	0.443	478
QFPV095.0WHBKRDIEC60502-1HRPAR	1Cx95	20.1	0.320	575
QFPV120.0WHBKRDIEC60502-1HRPAR	1Cx120	21.7	0.253	679
QFPV150.0WHBKRDIEC60502-1HRPAR	1Cx150	24.2	0.206	846
QFPV185.0WHBKRDIEC60502-1HRPAR	1Cx185	26.4	0.164	1001
QFPV240.0WHBKRDIEC60502-1HRPAR	1Cx240	28.9	0.125	1206
QFPV300.0WHBKRDIEC60502-1HRPAR	1Cx300	31.7	0.100	1441
QFPV400.0WHBKRDIEC60502-1HRPAR	1Cx400	36.3	0.0778	1904
QFPV500.0WHBKRDIEC60502-1HRPAR	1Cx500	39.8	0.0605	2286
QFPV630.0WHBKRDIEC60502-1HRPAR	1Cx630	53.6	0.0469	3102

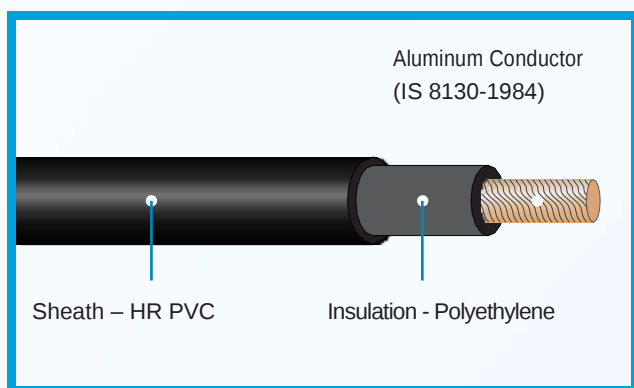
*Note: Please refer to the Nomenclature



Quadrant Future Tek Ltd.

Speciality Cables

EBXL-XLPE 120°C Insulated, HR PVC Sheath (UA) Power Cable, Single Core, Aluminum Conductor, as per IEC 60502-1



Construction

- **Conductor:** Aluminum conductor complying with IS:8130-1984
- **Insulation:** Electron Beam Cross Linked Polyethylene 120°C
- **Jacket:** HR PVR (Black) & UV Resistant

Technical Parameters

- Operating Temperature Range: -15°C to +120°C
- High Insulation resistance at elevated temperature
- Short Circuit Temperature: 250°C
- Bending radius (Min):
12x Cable Diameter
- Test Voltage: 3.5 kV for 5 mins.

Features

Does not melt or drip

Enhanced Mechanical, electrical, Thermal & Weathering properties.

Flame retardant

Excellent UV and Ozone resistant.

Specially designed for PV Power cable segment

Extra UV & 120°C Continuous rating

Application

Transmission and distribution of Power in PV Solar segment

Indoor and outdoor uses

Cable ducts, cable trays and conduits

Direct burial



Quadrant Future Tek Ltd.

Single Core EBXL XLPE 120°C Power Cable

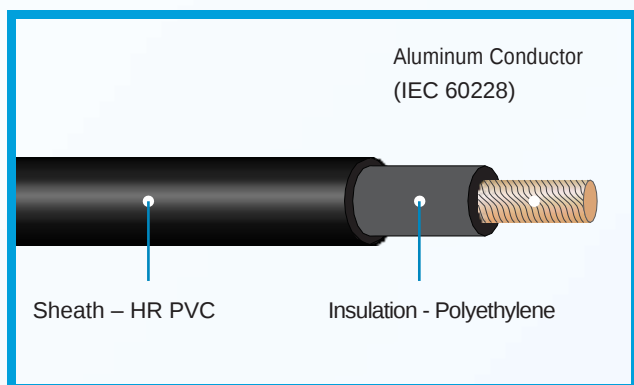
Part Number	Number of pairs and mm Per Conductor	Outer Diameter in (mm) Approx.	Max. DC Conductor Resistance (km)	Weight (kg/km) approx..
QFPV016.0WHBKRDIEC60502-1HRPUA	1Cx16	9.6	1.91	121
QFPV025.0WHBKRDIEC60502-1HRPUA	1Cx25	11.1	1.20	164
QFPV035.0WHBKRDIEC60502-1HRPUA	1Cx35	12.1	0.868	200
QFPV050.0WHBKRDIEC60502-1HRPUA	1Cx50	13.4	0.641	255
QFPV070.0WHBKRDIEC60502-1HRPUA	1Cx70	15.3	0.443	329
QFPV095.0WHBKRDIEC60502-1HRPUA	1Cx95	17.3	0.320	428
QFPV120.0WHBKRDIEC60502-1HRPUA	1Cx120	19.1	0.253	516
QFPV150.0WHBKRDIEC60502-1HRPUA	1Cx150	21.2	0.206	635
QFPV185.0WHBKRDIEC60502-1HRPUA	1Cx185	23.4	0.164	771
QFPV240.0WHBKRDIEC60502-1HRPUA	1Cx240	26.2	0.125	965
QFPV300.0WHBKRDIEC60502-1HRPUA	1Cx300	28.8	0.100	1175
QFPV400.0WHBKRDIEC60502-1HRPUA	1Cx400	32.4	0.0778	1512
QFPV500.0WHBKRDIEC60502-1HRPUA	1Cx500	35.7	0.0605	1854
QFPV650.0WHBKRDIEC60502-1HRPUA	1Cx630	49.5	0.0469	2528



Quadrant Future Tek Ltd.

Speciality Cables

Single Core Aluminum Conductor EBXL-XLPE 120°C Insulated, HR PVC Sheathed, (A) UV resistant Power Cable as per IEC 60502-1



Construction

- **Conductor:** Aluminum conductor complying with IEC - 60228
- **Insulation:** Electron Beam Cross Linked Polyethylene 120°C
- **Aarmor:** Non-magnetic round wires
- **Jacket:** PVC ST 2 & UV Resistant complying with IS: 5831-1984. (color Black)
- **Specification:** IS: 7098 (P-1)/ 1988 (with enhanced operating temperature)

Technical Parameters

- Operating Temperature Range: -15°C to +120°C
- High Insulation resistance at elevated temperature
- Short Circuit Temperature: 250°C
- Bending radius (Min):
12x Cable Diameter
- Test Voltage: 3.5 kV for 5 mins.

Features

Does not melt or drip
Enhanced Mechanical, electrical, Thermal & Weathering properties.
Flame retardant
Excellent UV and Ozone resistant.
Specially designed for PV Power cable segment

Application

PV Power cables
Transmission and distribution of Power
Industrial units
Commercial and residential places
Indoor and outdoor uses
Cable ducts, cable trays and conduits
Direct burial.



Quadrant Future Tek Ltd.

Part Number	Conductor Area (Sq. mm)	Conductor Min. no. of Wires (Nos)	Thickness of EBXL XLPE Insulation (Nom) (mm)	Dimension of Arm Wire (Nom) (mm)	Thickness of outer Sheath (Min) (mm)	Approx. Overall Diameter (mm)	Approx Net Wt. of Cable (kg/km)	Max. DC Resistance at 20°C (Ohm/km)	Approx Capacitance per phase (km)	Current Rating for EBXL-XLPE Cables (120°C) Direct Ground Duct Air (Amps)			Short Circuit Rating for 1 sec
QFPV001.5WHBKIE C60502-1HRPARUV	1.5	1	1.0	1.4	1.24	9.5	117	12.1	-	39	34	34	0.21
QFPV001.5WHBKIE C60502-1HRPARUV	2.5	1	1.0	1.4	1.24	10.0	134	7.41	-	53	45	47	0.36
QFPV001.5WHBKIE C60502-1HRPARUV	4	1	1.0	1.4	1.24	10.5	156	4.61	-	68	60	61	0.57
QFPV001.5WHBKIE C60502-1HRPARUV	6	1	1.0	1.4	1.24	11.0	189	3.08	-	86	74	78	0.86
QFPV001.5WHBKIE C60502-1HRPARUV	10	6	1.0	1.4	1.24	12.0	233	1.83	0.32	112	98	105	1.4
QFPV001.5WHBKIE C60502-1HRPARUV	16	6	1.0	1.4	1.24	12.5	300	1.15	0.38	150	126	140	2.3
QFPV001.5WHBKIE C60502-1HRPARUV	25	6	1.2	1.4	1.24	14.5	438	0.727	0.380	192	164	191	3.6
QFPV001.5WHBKIE C60502-1HRPARUV	35	6	1.2	1.4	1.24	15.5	547	0.524	0.423	229	197	237	5.0
QFPV001.5WHBKIE C60502-1HRPARUV	50	6	1.3	1.4	1.24	17.0	691	0.387	0.464	272	234	286	7.1
QFPV001.5WHBKIE C60502-1HRPARUV	70	12	1.4	1.4	1.24	19.5	953	0.268	0.518	333	290	367	10.0
QFPV001.5WHBKIE C60502-1HRPARUV	95	15	1.4	1.6	1.4	20.0	1147	0.193	0.587	396	344	446	13.6
QFPV001.5WHBKIE C60502-1HRPARUV	120	18	1.5	1.6	1.4	22.0	1398	0.153	0.616	449	398	517	17.1
QFPV001.5WHBKIE C60502-1HRPARUV	150	18	1.7	1.6	1.4	24.0	1706	0.124	0.607	507	447	597	21.4
QFPV001.5WHBKIE C60502-1HRPARUV	185	30	1.9	1.6	1.4	26.0	2071	0.0991	0.604	571	513	680	26.4
QFPV001.5WHBKIE C60502-1HRPARUV	240	34	2.0	1.6	1.4	29.0	2575	0.0754	0.657	665	600	803	34.3
QFPV001.5WHBKIE C60502-1HRPARUV	300	34	2.1	1.6	1.56	31.0	3213	0.0601	0.689	750	688	927	42.9
QFPV001.5WHBKIE C60502-1HRPARUV	400	53	2.4	2.0	1.56	35.0	4187	0.0470	0.696	838	786	1112	57.1
QFPV001.5WHBKIE C60502-1HRPARUV	500	53	2.6	2.0	1.56	38.0	5187	0.0366	0.716	941	895	1282	71.4
QFPV001.5WHBKIE C60502-1HRPARUV	630	53	2.8	2.0	1.72	43.0	6480	0.0283	0.745	1065	1037	1483	90.0

Current ratings given in this leaflet are calculated at an ambient air temperature 40°C and ground temperature 30°C

Rating factors for variation in ambient air temperature:

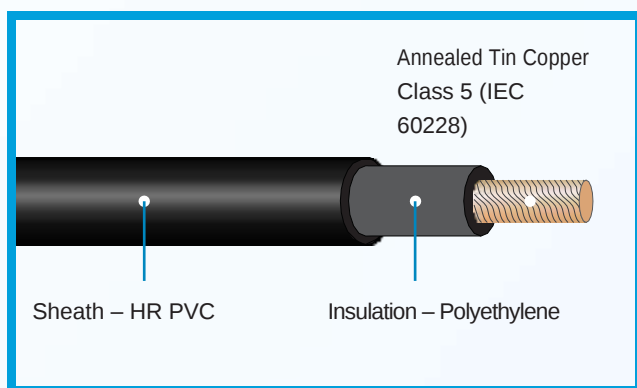
Rating factors for variation in ambient air temperature.														
Temperature- C°		20	25	30	35	40	45	50	55	60	65	70	75	80
Rating factors	Conductor Temp. 120°C	1.12	1.09	1.06	1.03	1.00	0.97	0.94	0.91	0.88	0.83	0.79	0.75	0.71



Quadrant Future Tek Ltd.

Speciality Cables

Single Core Aluminum Conductor EBXL-XLPE 120°C Insulated, HR PVC Sheathed, (UA) UV resistant Power Cable as per IEC 60502-1



Construction

- **Conductor:** Aluminum conductor complying with IEC – 60228
- **Insulation:** Electron Beam Cross Linked Polyethylene 120°C
- **Aarmor:** Non-magnetic round wires
- **Jacket:** PVC ST 2 & UV Resistant complying with IS: 5831-1984. (color Black)
Optional: 105°C HR PVC (UV)
- **Specification:** IS: 7098 (P-1)/ 1988 (with enhanced operating temperature)

Technical Parameters

- Operating Temperature Range: -15°C to +120°C
- High Insulation resistance at elevated temperature
- Short Circuit Temperature: 250°C
- Bending radius (Min):
12x Cable Diameter
- Test Voltage: 3.5 kV for 5 mins.

Features

Does not melt or drip
Enhanced Mechanical, electrical, Thermal & Weathering properties.
Flame retardant
Excellent UV and Ozone resistant.
Specially designed for PV Power cable segment

Application

PV Power cables
Transmission and distribution of Power
Industrial units
Commercial and residential places
Indoor and outdoor uses
Cable ducts, cable trays and conduits
Direct burial.



Quadrant Future Tek Ltd.

Part Number	Conduct or Area (Sq. mm)	Cond. Min. no. of Wires (Nos)	Thickness of EBXL XLPE Insulation (Nom) (mm)	Thickness of outer Sheath (Min) (mm)	Approx. Overall Diameter (mm)	Approx. Net Wt of Cable (kg/km)	Max. DC Resistance at 20°C (Ohm/km)	Approx. Capacitance per phase (km)	Current Rating for EBXL-XLPE Cables (120°C) Direct Ground Duct Air (Amps)			Short Circuit Rating for 1 sec
QFPV001.5WHBKRDIEC 60502-1HRPUAUV	1.5	1	0.7	1.8	6.8	65	12.1	0.19	39	34	34	0.21
QFPV002.5WHBKRDIEC 60502-1HRPUAUV	2.5	1	0.7	1.8	7.2	75	7.41	0.24	53	45	47	0.36
QFPV004.0WHBKRDIEC 60502-1HRPUAUV	4	1	0.7	1.8	7.5	95	4.61	0.29	68	60	61	0.57
QFPV006.0WHBKRDIEC 60502-1HRPUAUV	6	1	0.7	1.8	8.0	120	3.08	0.34	86	74	78	0.86
QFPV010.0WHBKRDIEC 60502-1HRPUAUV	10	6	0.7	1.8	9.0	165	1.83	0.43	112	98	105	1.4
QFPV016.0WHBKRDIEC 60502-1HRPUAUV	16	6	0.7	1.8	10.0	225	1.15	0.51	150	126	140	2.3
QFPV025.0WHBKRDIEC 60502-1HRPUAUV	25	6	0.9	1.8	11.5	320	0.727	0.487	192	164	191	3.6
QFPV035.0WHBKRDIEC 60502-1HRPUAUV	35	6	0.9	1.8	12.5	415	0.524	0.545	229	197	237	5.0
QFPV050.0WHBKRDIEC 60502-1HRPUAUV	50	6	1.0	1.8	13.5	545	0.387	0.586	272	234	286	7.1
QFPV070.0WHBKRDIEC 60502-1HRPUAUV	70	12	1.1	1.8	15.5	770	0.268	0.643	333	290	367	10.0
QFPV095.0WHBKRDIEC 60502-1HRPUAUV	95	15	1.1	1.8	17.0	1000	0.193	0.731	396	344	446	13.6
QFPV120.0WHBKRDIEC 60502-1HRPUAUV	120	18	1.2	1.8	19.0	1260	0.153	0.755	449	398	517	17.1
QFPV150.0WHBKRDIEC 60502-1HRPUAUV	150	18	1.4	2.0	21.0	1570	0.124	0.724	507	447	597	21.4
QFPV185.0WHBKRDIEC 60502-1HRPUAUV	185	30	1.6	2.0	23.0	1910	0.0991	0.705	571	513	680	26.4
QFPV240.0WHBKRDIEC 60502-1HRPUAUV	240	34	1.7	2.0	26.0	2410	0.0754	0.764	665	600	803	34.3
QFPV300.0WHBKRDIEC 60502-1HRPUAUV	300	34	1.8	2.0	28.0	2980	0.0601	0.794	750	688	927	42.9
QFPV400.0WHBKRDIEC 60502-1HRPUAUV	400	53	2.0	2.2	33.0	3970	0.0470	0.823	838	786	1112	57.1
QFPV500.0WHBKRDIEC 60502-1HRPUAUV	500	53	2.2	2.2	36.0	4945	0.0366	0.835	941	895	1282	71.4
QFPV630.0WHBKRDIEC 60502-1HRPUAUV	630	53	2.4	2.2	40.0	6130	0.0283	0.859	1065	1037	1483	90.0

Current ratings given in this leaflet are calculated at an ambient air temperature 40°C and ground temperature 30°C

Rating factors for variation in ambient air temperature:

Temperature- C°		20	25	30	35	40	45	50	55	60	65	70	75	80
Rating factors	Conductor Temp. 120°C	1.12	1.09	1.06	1.03	1.00	0.97	0.94	0.91	0.88	0.83	0.79	0.75	0.71



Quadrant Future Tek Ltd.

Speciality Cables

EBXL-XLPE 120°C Insulated, HR PVC Sheathed (A) Power Cable, 2&3 core Copper Conductor, UV Resistant



Construction

- **Conductor:** Annealed Plain Copper conductor complying with IS:8130-1984
- **Insulation:** Electron Beam Cross Linked Polyethylene 120°C
- **Armor:** Galvanized mild steel round wire/ flat strip
- **Jacket:** PVC ST 2 & UV Resistant complying with IS: 5831-1984. (color Black)
Optional: 105°C HR PVC (UV)
- **Specification:** IS: 7098 (P-1)/ 1988 (with enhanced operating temperature)

Technical Parameters

- Operating Temperature Range: -15°C to +120°C
- High Insulation resistance at elevated temperature
- Short Circuit Temperature: 250°C
- Bending radius (Min):
12x Cable Diameter
- Test Voltage: 3.5 kV for 5 mins.

Features

Does not melt or drip
Enhanced Mechanical, electrical, Thermal & Weathering properties.
Flame retardant
Excellent UV and Ozone resistant.
Specially designed for PV Power cable segment

Application

PV Power cables
Transmission and distribution of Power
Industrial units
Commercial and residential places
Indoor and outdoor uses
Cable ducts, cable trays and conduits
Direct burial.



Quadrant Future Tek Ltd.

Part Number	Conductor Area (Sq.m.m)	Cond. Min. no. of Wires (Nos)	Thickness of EBXL XLP E Insulation (No m) (mm)	Min. Thickness of PVC Inner Sheath (mm)		Dimension of Arm wire/strip (no m) (m m)	Thickness of outer sheath (Min) (mm)		Approx. Overall Diameter (mm)		Approx. Net Wt of Cable (kg/km)		Max. DC Resistance at 20° C (Ohm /k m)	Approx Capacitance per phase (km)		Current rating for EBXL-XLPE Cables (120°C)										Short Circuit Rating for 1 sec
																Direct Air					Duct					
				2 Core	3 Core	2 Core	3 Core	2 Core	3 Core	2 Core	3 Core	2 Core	3 Core	2 core	3 core	2core	3 core	2 core	3 core							
QFPV001.5WHBKRDWHB KHRPARUV2C	1.5	1	0.7	0.3	0.3	1.4	1.24	1.24	13.0	1.4	38.3	41.7	12.1	0.051	0.15	3.9	3.3	3.4	2.6	3.1	27	0.21				
QFPV002.5WHBKRDWHB KHRPARUV2C	2.5	1	0.7	0.3	0.3	1.4	1.24	1.24	14.0	1.5	43.1	48.6	7.41	0.058	0.18	5.0	4.4	4.3	3.7	4.3	38	0.36				
QFPV004.0WHBKRDWHB KHRPARUV2C	4	1	0.7	0.3	0.3	1.4	1.24	1.24	15.0	1.6	52.0	58.8	4.61	0.065	0.22	6.6	5.5	5.5	4.7	5.9	49	0.57				
QFPV006.0WHBKRDWHB KHRPARUV2C	6	1	0.7	0.3	0.3	1.4	1.24	1.24	16.0	1.7	61.0	68.0	3.08	0.071	0.25	8.4	6.9	6.8	5.7	7.4	64	0.86				
QFPV010.0WHBKRDWHB KHRPARUV2C	10	6	0.7	0.3	0.3	1.4	1.24	1.24	17.0	1.9	76.0	86.4	1.83	0.081	0.31	11.0	9.2	9.2	7.4	10.1	88	1.4				
QFPV016.0WHBKRDWHB KHRPARUV2C	16	6	0.7	0.3	0.3	4x 0.8	1.4	1.40	18.0	1.9	79.0	85.0	1.15	0.088	0.36	14.2	11.8	11.7	9.7	13.7	118	2.3				
QFPV025.0WHBKRDWHB KHRPARUV2C	25	6	0.9	0.3	0.3	4x 0.8	1.4	1.40	19.0	2.1	95.0	124.5	0.727	0.089	0.41	18.5	15.5	15.0	12.3	17.7	151	3.6				
QFPV035.0WHBKRDWHB KHRPARUV2C	35	6	0.9	0.3	0.3	4x 0.8	1.4	1.40	21.0	2.3	108.5	158.1	0.524	0.096	0.47	21.9	18.3	17.9	14.9	21.9	199	5.0				
QFPV050.0WHBKRDWHB KHRPARUV2C	50	6	1.0	0.3	0.3	4x 0.8	1.4	1.40	23.0	2.6	146.0	194.9	0.387	0.098	0.50	26.0	21.5	21.2	17.4	26.7	228	7.1				
QFPV070.0WHBKRDWHB KHRPARUV2C	70	12	1.1	0.3	0.4	4x 0.8	1.56	1.56	26.0	3.0	195.0	299.6	0.268	0.100	0.53	32.0	26.6	26.2	21.5	34.2	291	10.0				
QFPV095.0WHBKRDWHB KHRPARUV2C	95	15	1.1	0.4	0.4	4x 0.8	1.56	1.56	29.0	3.3	250.0	346.8	0.193	0.110	0.61	37.8	31.0	30.5	25.5	41.6	352	13.6				
QFPV120.0WHBKRDWHB KHRPARUV2C	120	18	1.2	0.4	0.4	4x 0.8	1.56	1.56	31.0	3.6	305.0	422.7	0.153	0.110	0.63	43.1	36.0	34.9	28.7	48.5	410	17.1				
QFPV150.0WHBKRDWHB KHRPARUV2C	150	18	1.4	0.4	0.5	4x 0.8	1.72	1.72	35.0	4.0	365.0	520.9	0.124	0.110	0.64	48.6	40.7	39.4	32.4	55.9	472	21.4				
QFPV185.0WHBKRDWHB KHRPARUV2C	185	30	1.6	0.5	0.5	4x 0.8	1.72	1.88	38.0	4.5	440.0	633.1	0.099	0.110	0.65	54.4	45.6	44.2	36.2	64.1	540	26.4				
QFPV001.5WHBKRDWHB KHRPARUV2C	240	34	1.7	0.5	0.6	4x 0.8	1.88	2.04	41.0	5.0	548.6	793.3	0.075	0.110	0.66	62.9	52.7	50.9	41.7	78.7	637	34.3				
QFPV001.5WHBKRDWHB KHRPARUV2C	300	34	1.8	0.6	0.6	4x 0.8	2.04	2.20	47.0	5.3	690.0	995.0	0.060	0.120	0.67	71.1	59.7	57.5	47.0	87.6	735	42.9				
QFPV001.5WHBKRDWHB KHRPARUV2C	400	53	2.0	0.6	0.7	4x 0.8	2.36	2.52	52.0	5.8	903.0	1283.6	0.047	0.120	0.67	83.4	66.0	66.8	53.3	97.4	816	57.1				



Quadrant Future Tek Ltd.

Speciality Cables

EBXL-XLPE 120°C Insulated, HR PVC Sheathed (A) Power Cable, 3.5 & 4 core Copper Conductor, UV Resistant



Construction

- **Conductor:** Annealed Plain Copper conductor complying with IS:8130-1984
- **Insulation:** Electron Beam Cross Linked Polyethylene 120°C
- **Aarmor:** Galvanized mild steel round wire/ flat strip
- **Jacket:** PVC ST 2 & UV Resistant complying with IS: 5831-1984. (color Black)
Optional: 105°C HR PVC (UV)
- **Specification:** IS: 7098 (P-1)/ 1988 (with enhanced operating temperature)

Technical Parameters

- Operating Temperature Range: -15°C to +120°C
- High Insulation resistance at elevated temperature
- Short Circuit Temperature: 250°C
- Bending radius (Min):
12x Cable Diameter
- Test Voltage: 3.5 kV for 5 mins.

Features

Does not melt or drip
Enhanced Mechanical, electrical, Thermal & Weathering properties.
Flame retardant
Excellent UV and Ozone resistant.
Specially designed for PV Power cable segment

Application

PV Power cables
Transmission and distribution of Power
Industrial units
Commercial and residential places
Indoor and outdoor uses
Cable ducts, cable trays and conduits
Direct burial.



Quadrant Future Tek Ltd.

Part Number	Conduct or Area (Sq. mm)	Con d. Min . no. of Wires (Nos)	Thick ness of EBXL XLPE Insula tion (Nom) (mm)	Min. Thickness of PVC Inner Shealth (mm)		Dimen sion of Arm wire/ strip (nom) (mm)	Thickness of outer shealth (Min) (mm)		Approx. Overall Diameter (mm)		Approx. Net Wt of Cable (kg/km)		Max. DC Resista nce at 20°C (Ohm/k m)	Approx Capacitance per phase (km)		Current rating for EBXL-XLPE Cables (120°C)			Short Circuit Rating for 1 sec
																Direct Duct Air			
				3.5 Core 4 Core		3.5 Core 4 Core		3.5 Core 4 Core		3.5 Core 4 Core		3.5 Core 4 Core		3.5 Core 4 Core		3.5 Core 4 Core		3.5 Core	
QFPV001.5WHBKRDHR PARUV3.5C	1.5	1	0.7	0.3	0.3	1.4	1.24	1.24		15		458	12.1		0.15	33	26	27	0.21
QFPV002.5WHBKRDHR PARUV3.5C	2.5	1	0.7	0.3	0.3	1.4	1.24	1.24		16		549	7.41		0.18	44	37	38	0.36
QFPV004.0WHBKRDHR PARUV3.5C	4	1	0.7	0.3	0.3	1.4	1.24	1.24		17		680	4.61		0.22	55	47	49	0.57
QFPV006.0WHBKRDHR PARUV3.5C	6	1	0.7	0.3	0.3	1.4	1.24	1.24		18		790	3.08		0.25	69	57	64	0.86
QFPV010.0WHBKRDHR PARUV3.5C	10	6	0.7	0.3	0.3	1.4	1.24	1.24		20		1030	1.83		0.31	92	74	88	1.4
QFPV016.0WHBKRDHR PARUV3.5C	16	6	0.7	0.3	0.3	4x0.8	1.4	1.40		21		1070	1.15		0.36	118	97	118	2.3
QFPV025.0WHBKRDHR PARUV3.5C	25	6	0.9	0.3	0.3	4x0.8	1.4	1.40	23	24	1409	1532	0.727	0.41	0.41	151	123	151	3.6
QFPV035.0WHBKRDHR PARUV3.5C	35	6	0.9	0.3	0.3	4x0.8	1.4	1.40	25	26	1765	1982	0.524	0.47	0.47	183	149	199	5.0
QFPV050.0WHBKRDHR PARUV3.5C	50	6	1.0	0.3	0.3	4x0.8	1.4	1.40	28	29	2320	2507	0.387	0.50	0.50	215	174	228	7.1
QFPV070.0WHBKRDHR PARUV3.5C	70	12	1.1	0.3	0.4	4x0.8	1.56	1.56	33	33	3112	3459	0.268	0.53	0.53	267	215	291	10.0
QFPV095.0WHBKRDHR PARUV3.5C	95	15	1.1	0.4	0.4	4x0.8	1.56	1.56	36	36	4018	4462	0.193	0.61	0.61	316	255	352	13.6
QFPV120.0WHBKRDHR PARUV3.5C	120	18	1.2	0.4	0.4	4x0.8	1.56	1.56	39	40	5035	5560	0.153	0.63	0.63	360	287	410	17.1
QFPV150.0WHBKRDHR PARUV3.5C	150	18	1.4	0.4	0.5	4x0.8	1.72	1.72	44	45	5950	6788	0.124	0.64	0.64	407	324	472	21.4
QFPV185.0WHBKRDHR PARUV3.5C	185	30	1.6	0.5	0.5	4x0.8	1.72	1.88	49	50	7340	8264	0.0991	0.65	0.65	456	362	540	26.4
QFPV240.0WHBKRDHR PARUV3.5C	240	34	1.7	0.5	0.6	4x0.8	1.88	2.04	56	56	9400	10373	0.0754	0.66	0.66	527	417	637	34.3
QFPV300.0WHBKRDHR PARUV3.5C	300	34	1.8	0.6	0.6	4x0.8	2.04	2.20	59	62	11237	12940	0.0601	0.67	0.67	593	470	735	42.9
QFPV400.0WHBKRDHR PARUV3.5C	400	53	2.0	0.6	0.7	4x0.8	2.36	2.52	67	68	14720	16981	0.0470	0.67	0.67	660	523	816	57.1

Note: Please refer to the Nomenclature



Quadrant Future Tek Ltd.

Speciality Cables

EBXL-XLPE 120°C Insulated, HR PVC Sheathed (UA) Power Cable, 2&3 core Copper Conductor, UV Resistant



Construction

- **Conductor:** Annealed Plain Copper conductor complying with IS:8130-1984
- **Insulation:** Electron Beam Cross Linked Polyethylene 120°C
- **Jacket:** PVC ST 2 & UV Resistant complying with IS: 5831-1984. (color Black)
Optional: 105°C HR PVC (UV)
- **Specification:** IS: 7098 (P-1)/ 1988 (with enhanced operating temperature)

Technical Parameters

- Operating Temperature Range: -15°C to +120°C
- High Insulation resistance at elevated temperature
- Short Circuit Temperature: 250°C
- Bending radius (Min):
12x Cable Diameter
- Test Voltage: 3.5 kV for 5 mins.

Features

Does not melt or drip
Enhanced Mechanical, electrical, Thermal & Weathering properties.
Flame retardant
Excellent UV and Ozone resistant.
Specially designed for PV Power cable segment

Application

PV Power cables
Transmission and distribution of Power
Industrial units
Commercial and residential places
Indoor and outdoor uses
Cable ducts, cable trays and conduits
Direct burial.



Quadrant Future Tek Ltd.

Part Number	Conduct or Area (Sq.m)	Cond. Min. no. of Wires (Nos)	Thickness of EB XL PE Insulation (mm)	Min. Thickness of PVC Inner Sheath (mm)		Dimension of Arm wire/strip (mm)	Thickness of outer sheath (mm)		Approx. Overall Diameter (mm)		Approx. Net Wt of Cable (kg/km)		Max. DC Resistance at 20°C (Ohm/km)	Approx Capacitance per phase (km)		Current rating for EBXL-XLPE Cables (120°C)			Short Circuit Rating for 1 sec
																Direct Air	Duct		
QFPV001.5WHBKRD HRPUAUV2C	1.5	1	0.7	0.3	0.3	1.4	1.8	1.8	11	11	135	173	12.1	0.051	0.15	33	26	27	0.21
QFPV002.5WHBKRD HRPUAUV2C	2.5	1	0.7	0.3	0.3	1.4	1.8	1.8	12	12	160	218	7.41	0.058	0.18	44	37	38	0.36
QFPV004.0WHBKRD HRPUAUV2C	4	1	0.7	0.3	0.3	1.4	1.8	1.8	13	14	180	260	4.61	0.065	0.22	55	47	49	0.57
QFPV006.0WHBKRD HRPUAUV2C	6	1	0.7	0.3	0.3	1.4	1.8	1.8	14	15	250	350	3.08	0.071	0.25	69	57	64	0.86
QFPV010.0WHBKRD HRPUAUV2C	10	6	0.7	0.3	0.3	1.4	1.8	1.8	15	17	310	450	1.83	0.081	0.31	92	74	88	1.4
QFPV016.0WHBKRD HRPUAUV2C	16	6	0.7	0.3	0.3	4x0.8	1.8	1.8	15	18	445	553	1.15	0.088	0.36	118	97	118	2.3
QFPV025.0WHBKRD HRPUAUV2C	25	6	0.9	0.3	0.3	4x0.8	2.0	2.0	18	20	620	865	0.727	0.089	0.41	151	123	151	3.6
QFPV035.0WHBKRD HRPUAUV2C	35	6	0.9	0.3	0.3	4x0.8	2.0	2.0	20	22	825	1161	0.524	0.096	0.47	183	149	199	5.0
QFPV050.0WHBKRD HRPUAUV2C	50	6	1.0	0.3	0.3	4x0.8	2.0	2.0	22	25	1050	1560	0.387	0.098	0.50	215	174	228	7.1
QFPV070.0WHBKRD HRPUAUV2C	70	12	1.1	0.3	0.4	4x0.8	2.0	2.2	24	29	1495	2200	0.268	0.100	0.53	267	215	291	10.0
QFPV095.0WHBKRD HRPUAUV2C	95	15	1.1	0.4	0.4	4x0.8	2.2	2.2	28	32	2010	2940	0.193	0.110	0.61	316	255	352	13.6
QFPV120.0WHBKRD HRPUAUV2C	120	18	1.2	0.4	0.4	4x0.8	2.2	2.2	30	35	2495	3650	0.153	0.110	0.63	360	287	410	17.1
QFPV150.0WHBKRD HRPUAUV2C	150	18	1.4	0.4	0.5	4x0.8	2.2	2.4	33	39	3040	4600	0.124	0.110	0.64	407	324	472	21.4
QFPV185.0WHBKRD HRPUAUV2C	185	30	1.6	0.5	0.5	4x0.8	2.4	2.6	37	44	3755	5760	0.0991	0.110	0.65	456	362	540	26.4
QFPV240.0WHBKRD HRPUAUV2C	240	34	1.7	0.5	0.6	4x0.8	2.6	2.8	39.5	49	4795	7340	0.0754	0.110	0.66	527	417	637	34.3
QFPV300.0WHBKRD HRPUAUV2C	300	34	1.8	0.6	0.6	4x0.8	2.8	3.0	45	52	5990	9100	0.0601	0.120	0.67	593	470	735	42.9
QFPV400.0WHBKRD HRPUAUV2C	400	53	2.0	0.6	0.7	4x0.8	3.0	3.2	50	57	7970	12100	0.0470	0.120	0.67	660	523	816	57.1

Note: Please refer to the Nomenclature



Quadrant Future Tek Ltd.

Speciality Cables

EBXL-XLPE 120°C Insulated, HR PVC Sheathed (UA) Power Cable, 3.5 & 4 core Copper Conductor, UV Resistant



Construction

- **Conductor:** Annealed Plain Copper conductor complying with IS:8130-1984
- **Insulation:** Electron Beam Cross Linked Polyethylene 120°C
- **Jacket:** PVC ST 2 & UV Resistant complying with IS: 5831-1984. (color Black)
Optional: 105°C HR PVC (UV)
- **Specification:** IS: 7098 (P-1)/ 1988 (with enhanced operating temperature)

Technical Parameters

- Operating Temperature Range: -15°C to +120°C
- High Insulation resistance at elevated temperature
- Short Circuit Temperature: 250°C
- Bending radius (Min):
12x Cable Diameter
- Test Voltage: 3.5 kV for 5 mins.

Features

Does not melt or drip
Enhanced Mechanical, electrical, Thermal & Weathering properties.
Flame retardant
Excellent UV and Ozone resistant.
Specially designed for PV Power cable segment

Application

PV Power cables
Transmission and distribution of Power
Industrial units
Commercial and residential places
Indoor and outdoor uses
Cable ducts, cable trays and conduits
Direct burial.



Quadrant Future Tek Ltd.

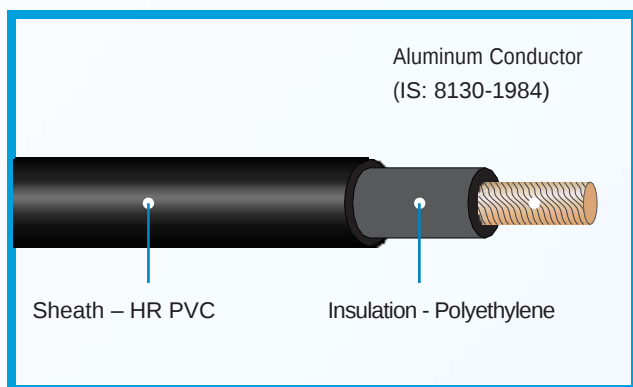
Part Number	Conductor Area (Sq. mm)	Cond. Min. no. of Wires (Nos)	Thickness of EBXLPE Insulation (mm)	Min. Thickness of PVC Inner Sheath (mm)		Thickness of outer sheath (Min) (mm)		Approx. Overall Diameter (mm)		Approx. Net Wt of Cable (kg/km)		Max. DC Resistance at 20°C (Ohm/km)	Approx Capacitance per phase (km)		Current rating for EBXL-XLPE Cables (120°C)			Short Circuit Rating for 1 sec
				3.5 Core 4 Core		3.5 Core 4 Core		3.5 Core 4 Core		3.5 Core 4 Core			3.5 Core 4 Core		Direct Air	Duct	4	
QFPV001.5WHBKHRP UAUV3.5C	1.5		0.7		0.3		1.8		12		200	12.1		0.15	33		27	0.21
QFPV002.5WHBKHRP UAUV3.5C	2.5		0.7		0.3		1.8		13		250	7.41		0.18	44		38	0.36
QFPV004.0WHBKHRP UAUV3.5C	4		0.7		0.3		1.8		15		260	4.61		0.22	55		49	0.57
QFPV006.0WHBKHRP UAUV3.5C	6		0.7		0.3		1.8		16		350	3.08		0.25	69		64	0.86
QFPV010.0WHBKHRP UAUV3.5C	10		0.7		0.3		1.8		18		500	1.83		0.31	92		88	1.4
QFPV016.0WHBKHRP UAUV3.5C	16		0.7		0.3		1.8		19		760	1.15		0.36	118		118	2.3
QFPV025.0WHBKHRP UAUV3.5C	25	6	0.9		0.3	2.0	2.0	22	22	1033	1200	0.727	0.41	0.41	151	123	151	3.6
QFPV035.0WHBKHRP UAUV3.5C	35	6	0.9	0.3	0.3	2.0	2.0	24	25	1410	1578	0.524	0.47	0.47	183	149	199	5.0
QFPV050.0WHBKHRP UAUV3.5C	50	6	1.0	0.3	0.3	2.0	2.0	27	28	1848	2049	0.387	0.50	0.50	215	174	228	7.1
QFPV070.0WHBKHRP UAUV3.5C	70	12	1.1	0.3	0.4	2.2	2.2	32	32	2629	2969	0.268	0.53	0.53	267	215	291	10.0
QFPV095.0WHBKHRP UAUV3.5C	95	15	1.1	0.4	0.4	2.2	2.2	35	35	3416	3910	0.193	0.61	0.61	316	255	352	13.6
QFPV120.0WHBKHRP UAUV3.5C	120	18	1.2	0.4	0.5	2.2	2.4	38	39	4330	4854	0.153	0.63	0.63	360	287	410	17.1
QFPV150.0WHBKHRP UAUV3.5C	150	18	1.4	0.5	0.5	2.4	2.6	42	44	5290	6050	0.124	0.64	0.64	407	324	472	21.4
QFPV185.0WHBKHRP UAUV3.5C	185	30	1.6	0.5	0.5	2.6	2.8	47	48	6595	7440	0.0991	0.65	0.65	456	362	540	26.4
QFPV240.0WHBKHRP UAUV3.5C	240	34	1.7	0.5	0.6	2.8	3.0	54	54	8448	9620	0.0754	0.66	0.66	527	417	637	34.3
QFPV300.0WHBKHRP UAUV3.5C	300	34	1.8	0.6	0.7	3.0	3.2	57	60	10347	12100	0.0601	0.67	0.67	593	470	735	42.9
QFPV400.0WHBKHRP UAUV3.5C	400	53	2.0	0.7	0.7	3.4	3.6	65	66	13930	15800	0.0470	0.67	0.67	660	523	816	57.1



Quadrant Future Tek Ltd.

Speciality Cables

EBXL-XLPE 120°C Insulated, HR PVC Sheathed (A) Power Cable, Single Core, Aluminum Conductor, UV Resistant



Construction

- **Conductor:** Aluminum conductor complying with IS:8130-1984
- **Insulation:** Electron Beam Cross Linked Polyethylene 120°C
- **Armor:** Non-magnetic round wires
- **Jacket:** PVC ST 2 & UV Resistant complying with IS: 5831-1984. (color Black)
Optional: 105°C HR PVC (UV)
- **Specification:** IS: 7098 (P-1)/ 1988 (with enhanced operating temperature)

Technical Parameters

- Operating Temperature Range: -15°C to +120°C
- High Insulation resistance at elevated temperature
- Short Circuit Temperature: 250°C
- Bending radius (Min):
12x Cable Diameter
- Test Voltage: 3.5 kV for 5 mins.

Features

Does not melt or drip

Enhanced Mechanical, electrical, Thermal & Weathering properties.

Flame retardant

Excellent UV and Ozone resistant.

Specially designed for PV Power cable segment

Application

PV Power cables

Transmission and distribution of Power

Industrial units

Commercial and residential places

Indoor and outdoor uses

Cable ducts, cable trays and conduits

Direct burial.



Quadrant Future Tek Ltd.

Part Number	Conductor Area (Sq. mm)	Cond. Min. no. of Wires (Nos)	Thickness of EBXL XLPE Insulation (Nom) (mm)	Dimension of Arm Wire (Nom)	Thickness of outer Sheath (Min) (mm)	Approx. Overall Diameter (mm)	Approx. Net Wt of Cable (kg/km)	Max. DC Resistance at 20°C (Ohm/km)	Approx Capacitance per phase (km)	Current Rating for EBXL-XLPE Cables (120°C) Direct Ground Duct Air (Amps)			Short Circuit Rating for 1 sec
QFPV004.0WHBKHRP ARUV	4	1	1.0	1.4	1.24	10.5	131	7.41	-	57	48	55	0.38
QFPV006.0WHBKHRP ARUV	6	1	1.0	1.4	1.24	11.0	152	4.61	-	71	62	68	0.57
QFPV010.0WHBKHRP ARUV	10	6	1.0	1.4	1.24	12.0	176	3.08	0.32	87	74	83	0.94
QFPV016.0WHBKHRP ARUV	16	6	1.0	1.4	1.24	12.5	200	1.91	0.38	112	97	109	1.5
QFPV025.0WHBKHRP ARUV	25	6	1.2	1.4	1.24	14.5	287	1.20	0.380	149	126	143	2.4
QFPV035.0WHBKHRP ARUV	35	6	1.2	1.4	1.24	15.5	331	0.868	0.423	176	152	178	3.3
QFPV050.0WHBKHRP ARUV	50	6	1.3	1.4	1.24	17.0	406	0.641	0.464	212	180	217	4.7
QFPV070.0WHBKHRP ARUV	70	12	1.4	1.4	1.24	19.5	523	0.443	0.518	258	224	281	6.6
QFPV095.0WHBKHRP ARUV	95	15	1.4	1.6	1.4	20.0	655	0.320	0.587	310	267	342	9.0
QFPV120.0WHBKHRP ARUV	120	18	1.5	1.6	1.4	22.0	767	0.253	0.616	351	311	399	11.3
QFPV150.0WHBKHRP ARUV	150	18	1.7	1.6	1.4	24.0	907	0.206	0.607	394	349	460	14.2
QFPV185.0WHBKHRP ARUV	185	30	1.9	1.6	1.4	26.0	1067	0.164	0.604	453	398	529	17.5
QFPV240.0WHBKHRP ARUV	240	34	2.0	1.6	1.4	29.0	1322	0.125	0.657	522	463	627	22.6
QFPV300.0WHBKHRP ARUV	300	34	2.1	1.6	1.56	31.0	1522	0.100	0.689	597	534	725	28.3
QFPV400.0WHBKHRP ARUV	400	53	2.4	2.0	1.56	35.0	2015	0.0778	0.696	661	611	875	37.7
QFPV500.0WHBKHRP ARUV	500	53	2.6	2.0	1.56	38.0	2465	0.0605	0.716	754	709	1013	47.2
QFPV630.0WHBKHRP ARUV	630	53	2.8	2.0	1.72	43.0	2969	0.0469	0.745	858	819	1178	59.4

Current ratings given in this leaflet are calculated at an ambient air temperature 40°C and ground temperature 30°C

Rating factors for variation in ambient air temperature:

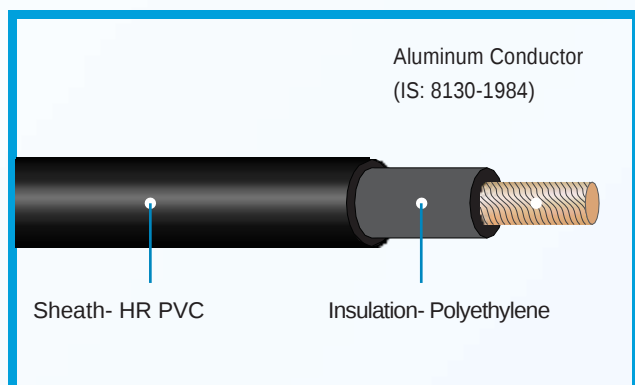
Temperature- C°		20	25	30	35	40	45	50	55	60	65	70	75	80
Rating factors	Conductor Temp. 120°C	1.12	1.09	1.06	1.03	1.00	0.97	0.94	0.91	0.88	0.83	0.79	0.75	0.71



Quadrant Future Tek Ltd.

Speciality Cables

EBXL-XLPE 120°C Insulated, HR PVC Sheathed (UA) Power Cable, Single Core, Aluminum Conductor, UV Resistant



Construction

- **Conductor:** Aluminum conductor complying with IS:8130-1984
- **Insulation:** Electron Beam Cross Linked Polyethylene 120°C
- **Aarmor:** Non-magnetic round wires
- **Jacket:** PVC ST 2 & UV Resistant complying with IS: 5831-1984. (color Black)
Optional: 105°C HR PVC (UV)
- **Specification:** IS: 7098 (P-1)/ 1988 (with enhanced operating temperature)

Technical Parameters

- Operating Temperature Range: -15°C to +120°C
- High Insulation resistance at elevated temperature
- Short Circuit Temperature: 250°C
- Bending radius (Min):
12x Cable Diameter
- Test Voltage: 3.5 kV for 5 mins.

Features

Does not melt or drip
Enhanced Mechanical, electrical, Thermal & Weathering properties.
Flame retardant
Excellent UV and Ozone resistant.
Specially designed for PV Power cable segment

Application

PV Power cables
Transmission and distribution of Power
Industrial units
Commercial and residential places
Indoor and outdoor uses
Cable ducts, cable trays and conduits
Direct burial.



Quadrant Future Tek Ltd.

Part Number	Conduct or Area (Sq. mm)	Cond. Min. no. of Wires (Nos)	Thickness of EBXL XLPE Insulation (Nom) (mm)	Thickness of outer Sheath (Min) (mm)	Approx. Overall Diameter (mm)	Approx. Net Wt of Cable (kg/km)	Max. DC Resistance at 20°C (Ohm/km)	Approx Capacitance per phase (km)	Current Rating for EBXL-XLPE Cables (120°C) Direct Ground Duct Air (Amps)			Short Circuit Rating for 1 sec
QFPV004.0WHBKHR PUAUV	4	1	0.7	1.8	7.5	65	7.41	0.29	57	48	55	0.38
QFPV006.0WHBKHR PUAUV	6	1	0.7	1.8	8.0	80	4.61	0.34	71	62	68	0.57
QFPV010.0WHBKHR PUAUV	10	6	0.7	1.8	9.0	90	3.08	0.43	87	74	83	0.94
QFPV016.0WHBKHR PUAUV	16	6	0.7	1.8	10.0	125	1.91	0.51	112	97	109	1.5
QFPV025.0WHBKHR PUAUV	25	6	0.9	1.8	11.5	160	1.20	0.487	149	126	143	2.4
QFPV035.0WHBKHR PUAUV	35	6	0.9	1.8	12.5	190	0.868	0.545	176	152	178	3.3
QFPV050.0WHBKHR PUAUV	50	6	1.0	1.8	13.5	250	0.641	0.586	212	180	217	4.7
QFPV070.0WHBKHR PUAUV	70	12	1.1	1.8	15.5	325	0.443	0.643	258	224	281	6.6
QFPV095.0WHBKHR PUAUV	95	15	1.1	1.8	17.0	415	0.320	0.731	310	267	342	9.0
QFPV120.0WHBKHR PUAUV	120	18	1.2	1.8	19.0	520	0.253	0.755	351	311	399	11.3
QFPV150.0WHBKHR PUAUV	150	18	1.4	2.0	21.0	625	0.206	0.724	394	349	460	14.2
QFPV185.0WHBKHR PUAUV	185	30	1.6	2.0	23.0	750	0.164	0.705	453	398	529	17.5
QFPV240.0WHBKHR PUAUV	240	34	1.7	2.0	26.0	960	0.125	0.764	522	463	627	22.6
QFPV300.0WHBKHR PUAUV	300	34	1.8	2.0	28.0	1120	0.100	0.794	597	534	725	28.3
QFPV400.0WHBKHR PUAUV	400	53	2.0	2.2	33.0	1450	0.0778	0.823	661	611	875	37.7
QFPV500.0WHBKHR PUAUV	500	53	2.2	2.2	36.0	1760	0.0605	0.835	754	709	1013	47.2
QFPV630.0WHBKHR PUAUV	630	53	2.4	2.2	40.0	2210	0.0469	0.859	858	819	1178	59.4

Current ratings given in this leaflet are calculated at an ambient air temperature 40°C and ground temperature 30°C

Rating factors for variation in ambient air temperature:

Temperature- C°		20	25	30	35	40	45	50	55	60	65	70	75	80
Rating factors	Conductor Temp. 120°C	1.12	1.09	1.06	1.03	1.00	0.97	0.94	0.91	0.88	0.83	0.79	0.75	0.71



Quadrant Future Tek Ltd.

Speciality Cables

EBXL-XLPE 120°C Insulated, HR PVC Sheathed (A) Power Cable, 2&3 Core Aluminum Conductor UV Resistant



Construction

- **Conductor:** Aluminum conductor complying with IS:8130-1984
- **Insulation:** Electron Beam Cross Linked Polyethylene 120°C
- **Armor:** Galvanized mild steel round wire/ strip
- **Jacket:** PVC ST 2 & UV Resistant complying with IS: 5831-1984. (color Black)
Optional: 105°C HR PVC (UV)
- **Specification:** IS: 7098 (P-1)/ 1988 (with enhanced operating temperature)

Technical Parameters

- Operating Temperature Range: -15°C to +120°C
- High Insulation resistance at elevated temperature
- Short Circuit Temperature: 250°C
- Bending radius (Min):
12x Cable Diameter
- Test Voltage: 3.5 kV for 5 mins.

Features

Does not melt or drip
Enhanced Mechanical, electrical, Thermal & Weathering properties.
Flame retardant
Excellent UV and Ozone resistant.
Specially designed for PV Power cable segment

Application

PV Power cables
Transmission and distribution of Power
Industrial units
Commercial and residential places
Indoor and outdoor uses
Cable ducts, cable trays and conduits
Direct burial.



Quadrant Future Tek Ltd.

Part Number	Conductor Area (Sq.m)	Conductor Min. no. of Wires (Nos)	Thickness of EBXLPE Insulation (Nom)(mm)	Min. Thickness of PVC Inner Sheath (mm)		Dimension of Arm wire/strip (nom)(mm)	Thickness of outer sheath (Min)(mm)		Approx. Overall Diameter (mm)		Approx. Net Wt of Cable (kg/km)		Max. DC Resistance at 20°C (Ohm/km)	Approx Capacitance per phase (km)		Current rating for EBXL-XLPE Cables (120°C)						Short Circuit Rating for 1 sec
																Direct	Duct		Air			
																	2 core 3 core	2core 3 core		2 core 3 core		
QFPV004.0WHBKHR PARUV2C	4	1	0.7	0.3	0.3	1.4	1.24	1.24	15.0	16	440	510	7.41	0.065	0.22	50	44	43	37	46	38	0.38
QFPV006.0WHBKHR PARUV2C	6	1	0.7	0.3	0.3	1.4	1.24	1.24	16.0	17	500	580	4.61	0.071	0.25	63	54	54	45	59	49	0.57
QFPV010.0WHBKHR PARUV2C	10	6	0.7	0.3	0.3	1.4	1.24	1.24	17.0	19	600	675	3.08	0.081	0.31	84	71	71	59	79	69	0.94
QFPV016.0WHBKHR PARUV2C	16	6	0.7	0.3	0.3	4x0.8	1.4	1.40	18.0	19	605	550	1.91	0.088	0.36	110	92	92	76	108	91	1.5
QFPV025.0WHBKHR PARUV2C	25	6	0.9	0.3	0.3	4x0.8	1.4	1.40	19.0	21	630	790	1.20	0.089	0.41	140	117	116	97	127	114	2.4
QFPV035.0WHBKHR PARUV2C	35	6	0.9	0.3	0.3	4x0.8	1.4	1.40	21.0	23	730	900	0.868	0.096	0.47	168	141	139	116	160	142	3.3
QFPV050.0WHBKHR PARUV2C	50	6	1.0	0.3	0.3	4x0.8	1.4	1.40	23.0	26	860	1090	0.641	0.098	0.50	198	168	165	136	194	173	4.7
QFPV070.0WHBKHR PARUV2C	70	12	1.1	0.3	0.4	4x0.8	1.56	1.56	26.0	30	1070	1400	0.443	0.100	0.53	244	207	204	168	250	221	6.6
QFPV095.0WHBKHR PARUV2C	95	15	1.1	0.4	0.4	4x0.8	1.56	1.56	29.0	33	1330	1720	0.320	0.110	0.61	290	246	239	199	304	269	9.0
QFPV120.0WHBKHR PARUV2C	120	18	1.2	0.4	0.4	4x0.8	1.56	1.56	31.0	36	1540	2030	0.253	0.110	0.63	330	278	272	224	355	311	11.3
QFPV150.0WHBKHR PARUV2C	150	18	1.4	0.4	0.5	4x0.8	1.72	1.72	35.0	40	1800	2150	0.206	0.110	0.64	373	315	306	255	410	360	14.2
QFPV185.0WHBKHR PARUV2C	185	30	1.6	0.5	0.5	4x0.8	1.72	1.88	38.0	45	2240	2550	0.164	0.110	0.65	418	354	344	284	469	411	17.5
QFPV240.0WHBKHR PARUV2C	240	34	1.7	0.5	0.6	4x0.8	1.88	2.04	41.0	50	2630	3650	0.125	0.110	0.66	483	408	396	326	556	484	22.6
QFPV300.0WHBKHR PARUV2C	300	34	1.8	0.6	0.6	4x0.8	2.04	2.20	47.0	53	3260	4460	0.100	0.120	0.67	546	462	446	369	642	558	28.3
QFPV400.0WHBKHR PARUV2C	400	53	2.0	0.6	0.7	4x0.8	2.36	2.52	52.0	58	4060	5600	0.0778	0.120	0.67	606	513	495	410	714	619	37.7

Note: Please refer to the Nomenclature



Quadrant Future Tek Ltd.

Speciality Cables

EBXL-XLPE 120°C Insulated, HR PVC Sheathed (A) Power Cable, 3.5 & 4 core Aluminum Conductor, UV resistant



Construction

- **Conductor:** Aluminum conductor complying with IS:8130-1984
- **Insulation:** Electron Beam Cross Linked Polyethylene 120°C
- **Armor:** Galvanized mild steel wire/ strips
- **Jacket:** PVC ST 2 & UV Resistant complying with IS: 5831-1984. (color Black)
Optional: 105°C HR PVC (UV)
- **Specification:** IS: 7098 (P-1)/ 1988 (with enhanced operating temperature)

Technical Parameters

- Operating Temperature Range: -15°C to +120°C
- High Insulation resistance at elevated temperature
- Short Circuit Temperature: 250°C
- Bending radius (Min):
12x Cable Diameter
- Test Voltage: 3.5 kV for 5 mins.

Features

Does not melt or drip

Enhanced Mechanical, electrical, Thermal & Weathering properties.

Flame retardant

Excellent UV and Ozone resistant.

Specially designed for PV Power cable segment

Application

PV Power cables

Transmission and distribution of Power

Industrial units

Commercial and residential places

Indoor and outdoor uses

Cable ducts, cable trays and conduits

Direct burial.



Quadrant Future Tek Ltd.

Part Number	Conductor Area (Sq. mm)	Cond. Min. no. of Wires (Nos)	Thickness of EBXLPE Insulation (mm)	Min. Thickness of PVC Inner Sheath (mm)		Dimension of Arm wire/strip (nom) (mm)	Thickness of outer sheath (Min) (mm)		Approx. Overall Diameter (mm)		Approx. Net Wt of Cable (kg/km)		Max. DC Resistance at 20°C (Ohm/km)	Approx Capacitance per phase (km)	Current rating for EBXL-XLPE Cables (120°C)			Short Circuit Rating for 1 sec
				3.5 Core	4 Core		3.5 Core	4 Core	3.5 Core	4 Core	3.5 Core	4 Core			Direct Air	Duct		
QFPV004.0WHBKHRPARUV3.5C	4	1	0.7		0.3	1.4		1.24		17		570	7.41	0.22	44	37	38	0.38
QFPV006.0WHBKHRPARUV3.5C	6	1	0.7		0.3	1.4		1.24		18		650	4.61	0.25	54	45	49	0.57
QFPV010.0WHBKHRPARUV3.5C	10	6	0.7		0.3	1.4		1.4		20		770	3.08	0.31	71	59	69	0.94
QFPV016.0WHBKHRPARUV3.5C	16	6	0.7		0.3	4x0.8		1.4		21		730	1.91	0.36	92	76	91	1.5
QFPV025.0WHBKHRPARUV3.5C	25	6	0.9	0.3	0.3	4x0.8	1.4	1.4	23	24	870	950	1.20	0.41	117	97	114	2.4
QFPV035.0WHBKHRPARUV3.5C	35	6	0.9	0.3	0.3	4x0.8	1.4	1.4	25	26	1000	1100	0.868	0.47	141	116	142	3.3
QFPV050.0WHBKHRPARUV3.5C	50	6	1.0	0.3	0.3	4x0.8	1.4	1.56	28	29	1250	1320	0.641	0.50	168	136	173	4.7
QFPV070.0WHBKHRPARUV3.5C	70	12	1.1	0.4	0.4	4x0.8	1.56	1.56	33	33	1600	1730	0.443	0.53	207	168	221	6.6
QFPV095.0WHBKHRPARUV3.5C	95	15	1.1	0.4	0.4	4x0.8	1.56	1.56	36	36	1940	2130	0.320	0.61	246	199	269	9.0
QFPV120.0WHBKHRPARUV3.5C	120	18	1.2	0.4	0.4	4x0.8	1.72	1.72	39	40	2350	2650	0.253	0.63	278	224	311	11.3
QFPV150.0WHBKHRPARUV3.5C	150	18	1.4	0.5	0.5	4x0.8	1.72	1.88	44	45	2700	3080	0.206	0.64	315	255	360	14.2
QFPV185.0WHBKHRPARUV3.5C	185	30	1.6	0.5	0.5	4x0.8	1.88	2.04	49	50	3300	3700	0.164	0.65	354	284	411	17.5
QFPV240.0WHBKHRPARUV3.5C	240	34	1.7	0.6	0.6	4x0.8	2.04	2.20	56	56	4150	4700	0.125	0.66	408	326	484	22.6
QFPV300.0WHBKHRPARUV3.5C	300	34	1.8	0.6	0.7	4x0.8	2.20	2.36	59	62	4950	5590	0.100	0.67	462	369	558	28.3
QFPV400.0WHBKHRPARUV3.5C	400	53	2.0	0.7	0.7	4x0.8	2.52	2.68	67	68	6180	6950	0.0778	0.67	513	410	619	37.7



Quadrant Future Tek Ltd.

Speciality Cables

EBXL-XLPE 120°C Insulated, HR PVC Sheathed (UA) Power Cable, 2 & 3 Core Aluminum Conductor UV Resistant



Construction

- **Conductor:** Aluminum conductor complying with IS:8130-1984
- **Insulation:** Electron Beam Cross Linked Polyethylene 120°C
- **Jacket:** PVC ST 2 & UV Resistant complying with IS: 5831-1984. (color Black)
Optional: 105°C HR PVC (UV)
- **Specification:** IS: 7098 (P-1)/ 1988 (with enhanced operating temperature)

Technical Parameters

- Operating Temperature Range: -15°C to +120°C
- High Insulation resistance at elevated temperature
- Short Circuit Temperature: 250°C
- Bending radius (Min):
12x Cable Diameter
- Test Voltage: 3.5 kV for 5 mins.

Features

Does not melt or drip
Enhanced Mechanical, electrical, Thermal & Weathering properties.
Flame retardant
Excellent UV and Ozone resistant.
Specially designed for PV Power cable segment

Application

PV Power cables
Transmission and distribution of Power
Industrial units
Commercial and residential places
Indoor and outdoor uses
Cable ducts, cable trays and conduits
Direct burial.



Quadrant Future Tek Ltd.

Part Number	Conduct or Area (Sq. mm)	Con d. Min. no. of Wires (Nos)	Thickne ss of EBXL XLP E Insulation (No m) (mm)	Min. Thickness of PVC Inner Sheath (mm)		Thickness of outer sheath (Min) (mm)		Approx. Overall Diameter (mm)		Approx. Net Wt of Cable (kg/km)		Max. DC Resist ance at 20°C (Ohm/km)	Approx Capacitance per phase (km)	Current rating for EBXL-XLPE Cables (120°C)								Short Circuit Rating for 1 sec
														Direct		Duct		Air				
														2 core	3 core	2 core	3 core	2 core	3 core	2 core	3 core	
QFPV004.0WHBKHRPU AUV2C	4	1	0.7	0.3	0.3	1.8	1.8	13	14	150	170	7.41	0.22	50	44	43	37	46	38	0.38		
QFPV006.0WHBKHRPU AUV2C	6	1	0.7	0.3	0.3	1.8	1.8	14	15	200	200	4.61	0.25	63	54	54	45	59	49	0.57		
QFPV010.0WHBKHRPU AUV2C	10	6	0.7	0.3	0.3	1.8	1.8	15	17	230	230	3.08	0.31	84	71	71	59	79	69	0.94		
QFPV016.0WHBKHRPU AUV2C	16	6	0.7	0.3	0.3	1.8	1.8	15	18	280	320	1.91	0.36	110	92	92	76	108	91	1.5		
QFPV025.0WHBKHRPU AUV2C	25	6	0.9	0.3	0.3	2.0	2.0	18	20	320	450	1.20	0.41	140	117	116	97	127	114	2.4		
QFPV035.0WHBKHRPU AUV2C	35	6	0.9	0.3	0.3	2.0	2.0	20	22	390	560	0.868	0.47	168	141	139	116	160	142	3.3		
QFPV050.0WHBKHRPU AUV2C	50	6	1.0	0.3	0.3	2.0	2.0	22	25	480	680	0.641	0.50	198	168	165	136	194	173	4.7		
QFPV070.0WHBKHRPU AUV2C	70	12	1.1	0.3	0.4	2.2	2.2	24	29	630	970	0.443	0.53	244	207	204	168	250	221	6.6		
QFPV095.0WHBKHRPU AUV2C	95	15	1.1	0.4	0.4	2.2	2.2	28	32	820	1220	0.320	0.61	290	246	239	199	304	269	9.0		
QFPV120.0WHBKHRPU AUV2C	120	18	1.2	0.4	0.4	2.2	2.2	30	35	990	1460	0.253	0.63	330	278	272	224	355	311	11.3		
QFPV150.0WHBKHRPU AUV2C	150	18	1.4	0.4	0.5	2.4	2.4	33	39	1190	1880	0.206	0.64	373	315	306	255	410	360	14.2		
QFPV185.0WHBKHRPU AUV2C	185	30	1.6	0.5	0.5	2.6	2.6	37	44	1490	2390	0.164	0.65	418	354	344	284	469	411	17.5		
QFPV240.0WHBKHRPU AUV2C	240	34	1.7	0.5	0.6	2.8	2.8	39	49	1900	3000	0.125	0.66	483	408	396	326	556	484	22.6		
QFPV300.0WHBKHRPU AUV2C	300	34	1.8	0.6	0.6	3.0	3.0	45	52	2360	3750	0.100	0.67	546	462	446	369	642	558	28.3		
QFPV400.0WHBKHRPU AUV2C	400	53	2.0	0.6	0.7	3.2	3.2	50	57	2940	4760	0.0778	0.67	606	513	495	410	714	619	37.7		



Quadrant Future Tek Ltd.

Speciality Cables

EBXL-XLPE 120°C Insulated, HR PVC Sheathed (UA) Power Cable, 3.5 & 4 core Aluminum Conductor, UV resistant



Construction

- **Conductor:** Aluminum conductor complying with IS:8130-1984
- **Insulation:** Electron Beam Cross Linked Polyethylene 120°C
- **Jacket:** PVC ST 2 & UV Resistant complying with IS: 5831-1984. (color Black)
Optional: 105°C HR PVC (UV)
- **Specification:** IS: 7098 (P-1)/ 1988 (with enhanced operating temperature)

Technical Parameters

- Operating Temperature Range: -15°C to +120°C
- High Insulation resistance at elevated temperature
- Short Circuit Temperature: 250°C
- Bending radius (Min):
12x Cable Diameter
- Test Voltage: 3.5 kV for 5 mins.

Features

Does not melt or drip
Enhanced Mechanical, electrical, Thermal & Weathering properties.
Flame retardant
Excellent UV and Ozone resistant.
Specially designed for PV Power cable segment

Application

PV Power cables
Transmission and distribution of Power
Industrial units
Commercial and residential places
Indoor and outdoor uses
Cable ducts, cable trays and conduits
Direct burial



Quadrant Future Tek Ltd.

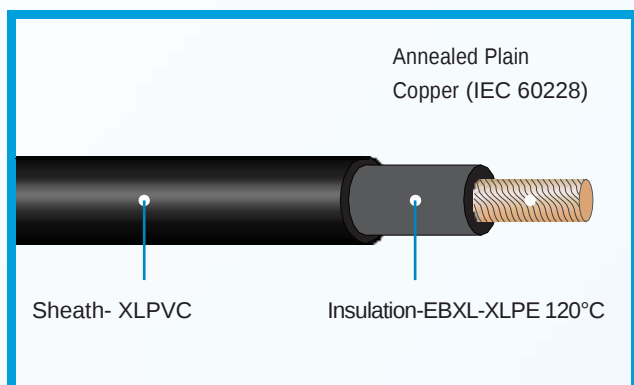
Part Number	Conductor Area (Sq. mm)	Conduct. Min. no. of Wires (Nos)	Thickness of EBXLPE Insulation (Nom) (mm)	Min. Thickness of PVC Inner Sheath (mm)		Thickness of outer sheath (Min) (mm)		Approx. Overall Diameter (mm)		Approx. Net Wt of Cable (kg/km)		Max. DC Resistance at 20°C (Ohm/km)	Approx Capacitance per phase (km)	Current rating for EBXL-XLPE Cables (120°C)			Short Circuit Rating for 1 sec
				3.5 Core	4 Core	3.5 Core	4 Core	3.5 Core	4 Core	3.5 Core	4 Core			Direct	Duct	Air	
QFPV004.0WHBKHRPUAU V3.5C	4	1	0.7		0.3		1.8		15		190	7.41	0.22	44	37	38	0.38
QFPV006.0WHBKHRPUAU V3.5C	6	1	0.7		0.3		1.8		16		220	4.61	0.25	54	45	49	0.57
QFPV010.0WHBKHRPUAU V3.5C	10	6	0.7		0.3		1.8		18		270	3.08	0.31	71	59	69	0.94
QFPV016.0WHBKHRPUAU V3.5C	16	6	0.7		0.3		1.8		19		360	1.91	0.36	92	76	91	1.5
QFPV025.0WHBKHRPUAU V3.5C	25	6	0.9	0.3	0.3	2.0	2.0	22	22	480	520	1.20	0.41	117	97	114	2.4
QFPV035.0WHBKHRPUAU V3.5C	35	6	0.9	0.3	0.3	2.0	2.0	24	25	580	650	0.868	0.47	141	116	142	3.3
QFPV050.0WHBKHRPUAU V3.5C	50	6	1.0	0.3	0.3	2.0	2.0	27	28	740	860	0.641	0.50	168	136	173	4.7
QFPV070.0WHBKHRPUAU V3.5C	70	12	1.1	0.4	0.4	2.2	2.2	32	32	1000	1170	0.443	0.53	207	168	221	6.6
QFPV095.0WHBKHRPUAU V3.5C	95	15	1.1	0.4	0.4	2.2	2.2	35	35	1290	1500	0.320	0.61	246	199	269	9.0
QFPV120.0WHBKHRPUAU V3.5C	120	18	1.2	0.4	0.4	2.2	2.4	38	39	1600	1790	0.253	0.63	278	224	311	11.3
QFPV150.0WHBKHRPUAU V3.5C	150	18	1.4	0.5	0.5	2.4	2.6	42	44	1930	2210	0.206	0.64	315	255	360	14.2
QFPV185.0WHBKHRPUAU V3.5C	185	30	1.6	0.5	0.5	2.6	2.8	47	48	2420	2750	0.164	0.65	354	284	411	17.5
QFPV240.0WHBKHRPUAU V3.5C	240	34	1.7	0.6	0.6	2.8	3.0	54	54	3100	3650	0.125	0.66	408	326	484	22.6
QFPV300.0WHBKHRPUAU V3.5C	300	34	1.8	0.6	0.7	3.0	3.2	57	60	3800	4500	0.100	0.67	462	369	558	28.3
QFPV400.0WHBKHRPUAU V3.5C	400	53	2.0	0.7	0.7	3.4	3.6	65	66	5100	5900	0.0778	0.67	513	410	619	37.7



Quadrant Future Tek Ltd.

Speciality Cables

EBXL-XLPE 120°C Insulated Power Cable, HR PVC Sheathed (UA), Single Core APC Conductor



Construction

- **Conductor:** Annealed Plain Copper conductor complying with IEC-60228
- **Insulation:** EBXL-XLPE 120°C
- **Jacket:** XLPVC 120°C (black)

Technical Parameters

- Operating Temperature Range: -15°C to +120°C
- High Insulation resistance at elevated temperature
- Short Circuit Temperature: 250°C
- Bending radius (Min):
12x Cable Diameter
- Test Voltage: 3.5 kV for 5 mins.

Features

Does not melt or drip
Enhanced Mechanical, electrical, Thermal & Weathering properties.
Flame retardant
Excellent UV and Ozone resistant.
Specially designed for PV Power cable segment

Application

Transmission and distribution of Power in PV Solar segment
Indoor and outdoor uses
Cable ducts, cable trays and conduits
Direct burial.



Quadrant Future Tek Ltd.

Part Number	Number of pairs and mm Per Conductor	Outer Diameter in (mm) Approx.	Max. DC Conductor Resistance (km)	Weight (kg/km) approx..
QFPV016.0WHBKUAAO	1Cx16	9.5	1.15	205
QFPV025.0WHBKUAAO	1Cx25	11.0	0.727	300
QFPV035.0WHBKUAAO	1Cx35	12.0	0.524	395
QFPV050.0WHBKUAAO	1Cx50	13.5	0.387	535
QFPV070.0WHBKUAAO	1Cx70	15.5	0.268	725
QFPV095.0WHBKUAAO	1Cx95	17.7	0.193	980
QFPV120.0WHBKUAAO	1Cx120	19.5	0.153	1210
QFPV150.0WHBKUAAO	1Cx150	21.5	0.124	1505
QFPV185.0WHBKUAAO	1Cx185	23.5	0.0991	1840
QFPV240.0WHBKUAAO	1Cx240	26.6	0.0754	2380
QFPV300.0WHBKUAAO	1Cx300	29.6	0.0601	2940
QFPV400.0WHBKUAAO	1Cx400	33.5	0.0470	3885
QFPV500.0WHBKUAAO	1Cx500	37.2	0.0366	4820
QFPV630.0WHBKUAAO	1Cx630	42.0	0.0283	6050

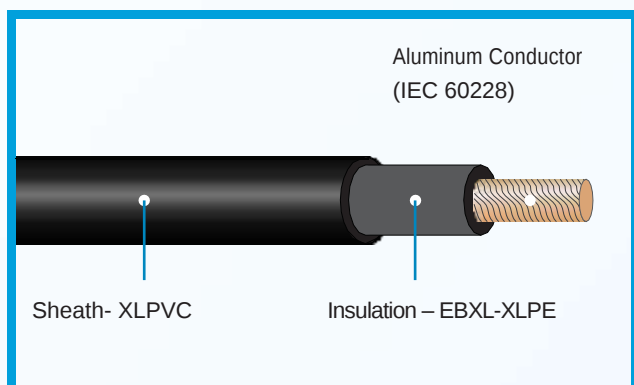
Note: Please refer to the Nomenclature



Quadrant Future Tek Ltd.

Speciality Cables

EBXL-XLPE 120°C Insulated, XLPVC 120°C Sheathed (UA) Power Cable, Single Core Aluminum Conductor



Construction

- **Conductor:** Aluminum conductor complying with IEC-60228
- **Insulation:** EBXL-XLPE 120°C
- **Jacket:** XLPVC 120°C (black)

Technical Parameters

- Operating Temperature Range: -15°C to +120°C
- High Insulation resistance at elevated temperature
- Short Circuit Temperature: 250°C
- Bending radius (Min):
12x Cable Diameter
- Test Voltage: 3.5 kV for 5 mins.

Features

Does not melt or drip
Enhanced Mechanical, electrical, Thermal & Weathering properties.
Flame retardant
Excellent UV and Ozone resistant.
Specially designed for PV Power cable segment

Application

Transmission and distribution of Power in PV Solar segment
Indoor and outdoor uses
Cable ducts, cable trays and conduits
Direct burial.



Quadrant Future Tek Ltd.

Part Number	Number of pairs and mm Per Conductor	Outer Diameter in (mm) Approx.	Max. DC Conductor Resistance (km)	Weight (kg/km) approx..
QFPV016.0WHBKUAAO	1Cx16	9.6	1.91	121
QFPV025.0WHBKUAAO	1Cx25	11.1	1.20	164
QFPV035.0WHBKUAAO	1Cx35	12.1	0.868	200
QFPV050.0WHBKUAAO	1Cx50	13.4	0.641	255
QFPV070.0WHBKUAAO	1Cx70	15.3	0.443	329
QFPV095.0WHBKUAAO	1Cx95	17.3	0.320	428
QFPV120.0WHBKUAAO	1Cx120	19.1	0.253	516
QFPV150.0WHBKUAAO	1Cx150	21.2	0.206	635
QFPV185.0WHBKUAAO	1Cx185	23.4	0.164	771
QFPV240.0WHBKUAAO	1Cx240	26.2	0.125	965
QFPV300.0WHBKUAAO	1Cx300	28.8	0.100	1175
QFPV400.0WHBKUAAO	1Cx400	32.4	0.0778	1512
QFPV500.0WHBKUAAO	1Cx500	35.7	0.0605	1854
QFPV630.0WHBKUAAO	1Cx630	49.5	0.0469	2528

Note: Please refer to the Nomenclature



Quadrant Future Tek Ltd.

Speciality Cables

EBXL-XLPE 120°C Insulated, XLPVC 120°C Sheathed (UA) Power Cable, Multi Core APC Conductor



Construction

- **Conductor:** Annealed Plain Copper conductor, Class 5 complying with IEC-60228
- **Insulation:** EBXL-XLPE 120°C
- **Jacket:** XLPVC 120°C (black)

Technical Parameters

- Operating Temperature Range: -15°C to +120°C
- High Insulation resistance at elevated temperature
- Short Circuit Temperature: 250°C
- Bending radius (Min):
12x Cable Diameter
- Test Voltage: 3.5 kV for 5 mins.

Features

Does not melt or drip
Enhanced Mechanical, electrical, Thermal & Weathering properties.
Flame retardant
Excellent UV and Ozone resistant.
Specially designed for PV Power cable segment

Application

Transmission and distribution of Power in PV Solar segment
Indoor and outdoor uses
Cable ducts, cable trays and conduits
Direct burial.



Quadrant Future Tek Ltd.

Multicore EBXL XLPE 120°C Solar Cable

Part Number	Number of pairs and mm Per Conductor	Outer Diameter in (mm) Approx.	Max. DC Conductor Resistance (km)	Weight (kg/km) approx..
QFPV001.5WHBKUAAO3C	3Cx1.5	10.8	13.3	161
QFPV002.5WHBKUAAO3C	3Cx2.5	11.7	7.98	203
QFPV004.0WHBKUAAO3C	3Cx4	12.8	4.95	261
QFPV006.0WHBKUAAO3C	3Cx6	14.0	3.30	334
QFPV010.0WHBKUAAO3C	3Cx10	16.0	1.91	468
QFPV001.5WHBKUAAO4C	4Cx1.5	11.6	13.3	188
QFPV002.5WHBKUAAO4C	4Cx2.5	12.7	7.98	240
QFPV004.0WHBKUAAO4C	4Cx4	13.9	4.95	313
QFPV006.0WHBKUAAO4C	4Cx6	15.3	3.30	405
QFPV010.0WHBKUAAO4C	4Cx10	17.7	1.91	582

Note: Please refer to the Nomenclature



Quadrant Future Tek Ltd.

Speciality Cables

EBXL-XLPE 120°C Insulated, XLPVC 120°C Sheathed (A) Power Cable, Multi Core APC Conductor



Construction

- **Conductor:** Annealed Plain Copper conductor, Class 5 complying with IEC-60228
- **Insulation:** EBXL-XLPE 120°C
- **Aarmor:** GI round wires
- **Jacket:** XLPVC 90°C (black)

Technical Parameters

- Operating Temperature Range: -15°C to +120°C
- High Insulation resistance at elevated temperature
- Short Circuit Temperature: 250°C
- Bending radius (Min):
12x Cable Diameter
- Test Voltage: 3.5 kV for 5 mins.

Features

Does not melt or drip

Enhanced Mechanical, electrical, Thermal & Weathering properties.

Flame retardant

Excellent UV and Ozone resistant.

Specially designed for PV Power cable segment

Application

Transmission and distribution of Power in PV Solar segment

Indoor and outdoor uses

Cable ducts, cable trays and conduits

Direct burial.



Quadrant Future Tek Ltd.

Multicore EBXL XLPE 120°C Solar Cable

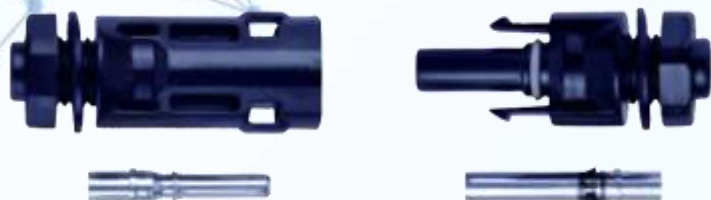
Part Number	Number of pairs and mm Per Conductor	Outer Diameter in (mm) Approx.	Max. DC Conductor Resistance (km)	Weight (kg/km) approx..
QFPV001.5WHBKAR3C	3Cx1.5	12.5	13.3	274
QFPV002.5WHBKAR3C	3Cx2.5	13.4	7.98	329
QFPV004.0WHBKAR3C	3Cx4	14.5	4.95	401
QFPV006.0WHBKAR3C	3Cx6	15.7	3.30	490
QFPV010.0WHBKAR3C	3Cx10	18.6	1.91	748
QFPV001.5WHBKAR4C	4Cx1.5	13.3	13.3	310
QFPV002.5WHBKAR4C	4Cx2.5	14.4	7.98	379
QFPV004.0WHBKAR4C	4Cx4	15.6	4.95	469
QFPV006.0WHBKAR4C	4Cx6	17.8	3.30	669
QFPV010.0WHBKAR4C	4Cx10	20.0	1.91	885

Note: Please Refer to the Nomenclature



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MC4, Solar Male & Female Connectors



Construction

- Contacts: Tinned Copper
- Housings: Specially Formulated PPO
- Conductor Size: 2.5/4.0/6.0 Sqmm

Features

- Compatible with MC4
- Easy on-site processing
- Keyed housings for mating safety
- Multiple cycles of plugging and unplugging
- Supports PV cables with varying insulation diameters
- High current carrying capacity

Technical Parameters

- Current Rating: Upto 50A
- Voltage Rating: 1000V/1500V DC
- PPO insulated material
- Copper, Tinned plated contacts
- IP 68 Ingress Protection
- <0.5mΩ Contact resistance
- -40°C~+85°C Ambient temperature
- UL94-V0 Flame class
- Suitable for 2.5-6mm² (14-10AWG)



Quadrant Future Tek Ltd.

Anti-Reverse Diode



Construction

- Insulation material: PPE
- Contact Material: Copper, Tin Plated

Key Features

- Compatible with solar panel connectors, such as multi-contact MC4 or H4 connector.
- Fast and easy to on-site install & strong commonality & low power loss
- IP68 Ingress Protection Suitable for harsh environment
- Suitable for 25 Years Working
- The shell of diode connector has anti-aging and anti-ultraviolet radiation ability
- Stable and quick connection, lower maintenance cost.

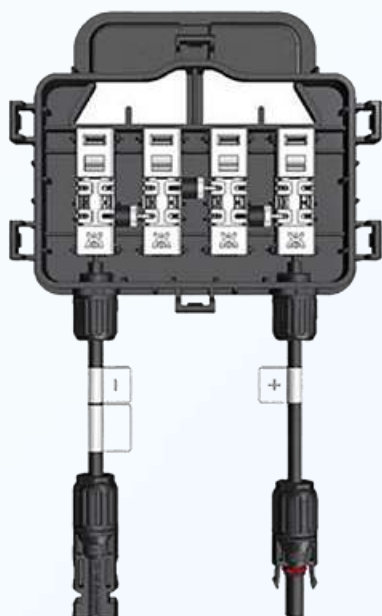
Technical Parameters

- Current Rating: 10A
- Voltage Rating: 1500V DC
- Test voltage: 8kV (50Hz, 1 min)
- Contact Resistance: <0.5mΩ
- Protection: IP68
- Safety Class: II
- Flammability: UL94-V0
- Insertion Force: Max 50N
- Withdrawal Force: Min 50N
- Ambient Temperature range: 40°C.+85°C(IEC)



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Solar PV Junction Box



Key Features

- Split Type Junction box type may be used normally even under extreme weather conditions because of its superior anti-aging and waterproof shell (junction box, connection).
- The upgraded bus bar's center distance is under 6 mm, and the diode uses resistance welding, making the connection more dependable and safer.
- The split junction box has a superior heat dissipation effect and produces less heat than a junction box.
- In order to install the positive and negative junction boxes on the left and right sides of the photovoltaic panel, the three-part design also modifies the installation and outlet method. This significantly reduces the distance between the battery panel and the battery panel's circuit connection during engineering installation.

Technical Parameters

- Current Rating: 50A
- Voltage Rating: 1500V DC
- IP 68 water rating
- Working temperature: -40°C~+85°C



Quadrant Future Tek Ltd.

Solar DC Fuse Holder



Construction

- Tinned Copper PPO
- Product Size : 10x38mm, 1-30A
- Insulation Material: PPO

Features

- Compatible with solar wires of various specifications, MC4, and fuses.
- Easy to plug in and operate, widely used for PV DC applications.
- High carrying capacity for current, replaceable fuse.
- Keyed housings and the IP68 waterproof standard ensure mating safety.
- Male and female points with auto-lock equipment make connections simple and dependable.

Technical Parameters

- Current Rating: 10A/15A/20A/30A (According to the fuse)
- Voltage Rating: 1000V/1500V DC
- TUV, CE, ISO certified
- Copper, Tinned plated contact material
- IP 68 water rating
- <0.5mΩ Contact resistance
- -40°C~+85°C Ambient temperature
- UL94-V0 Flame class
- Safety Class: II
- Test Voltage: 6000V (50Hz, 1 min)
- Suitable for 2.5-6mm² (14-10AWG) cable and MC4 Connector



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PV Solar Over-Moulded Wire Harnesses



Construction

- Contacts: Tinned Copper
- Connector Housings: PPO
- Structure: Stranded for flexibility

Features

- Ready to Install Cable Assemblies
- 2.5, 4.0, and 6.0 mm² cables
- UV-resistant and well-suited for PV power systems.
- Customizable options include straight connectors or inline fuse connectors

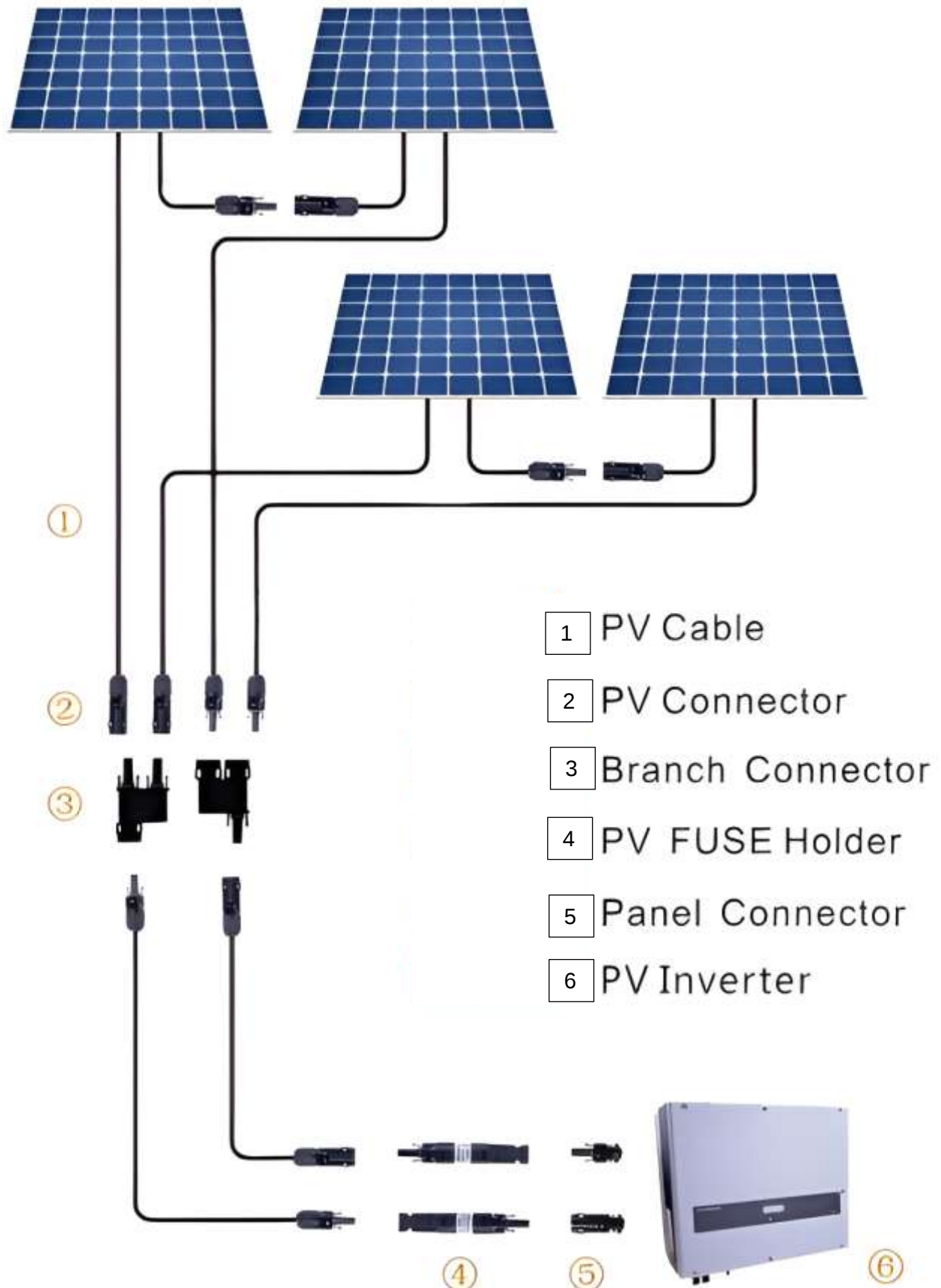
Technical Parameters

- Rated Voltage: 1000V / 1500V DC
- Rated Current: 30A - 50A (Depending on cable size)
- Insulation Resistance: $\geq 1000\text{M}\Omega$
- Contact Resistance: $\leq 0.5\text{m}\Omega$



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Solar Panel System Architecture





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Brief Description of Cross linking, Product reliability, advantages & Testing of QFTL's PV Cables & Accessories

Polymer Cross-Linking Information

Quadrant Future Tek PV Cables are cross-linked by Electron beam irradiation. QFTL Manufacturing facility houses, the most modern 2.5 MeV irradiation Accelerator. The Facility is certified by the Atomic Energy Regulation Board (Government of India). The molecules of the specially formulated polymers, when exposed to E.Beam radiation, start forming chemical bonds resulting in significantly enhanced Durability & Thermal Resistance.

Unique Features of QFTL EBXL Cables

1. Continuous/Long Term High Temperature Stability
2. Highly resistant to UV & Ozone, and Water.
3. High Flexibility
4. Superior abrasion and cut-through resistance
5. Enhanced crush resistance.
6. Resistance to soldering irons.
7. Improved over-load characteristics.
8. Resistant to stress cracks.
9. Improved fluid, chemical, and oil resistance.
10. Excellent Fire Properties, Low Smoke Zero Halogen

FREQUENTLY REFERRED STANDARDS

The European Electrical Committee – Fire Performance Categories

- a. IEC 60332-1 – Fire Resistance & Flame Propagation of Single Wire
- b. IEC 60332-2 – Fire Resistance & Flame Propagation of Single Wire
- c. IEC 60332-3 – Fire Resistance & Flame Propagation of Bundled Wires

IEC 61034-1&2/ASTM E662: Determination of Smoke Density

IEC 60216/VDE 0304 part 21 : Determination of Temperature Index

BS EN 60332-2-3-10 : Flame Test on Single Vertical Insulated Wires/Cables

IEC60754-1/BS6425-1 : Test for Emission of Halogens

IEC 60754-2 : Determination of Smoke Acidity



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Table 1: Comparative Study of EBXL XLPO Panel Wiring Cables Vs Others

Specification for Electron beam Single core, Unsheathed, Multi strand, Copper, Flexible Wire Cables and Comparison between EBXL XLPO / XLPE, Vs Others (Chemically Cured Cables)

Sl. No	Test Details	Unit	Conventional PVC Cables as per IS:694/IS:1554 70°C	XLPE (Chemical Curing) 90°C	EBXL - XLPE 125°C	EBXL - XLPO 125°C
A) Conductor						
1.0	Material		Annealed Plain EC grade flexible copper	Annealed Plain EC grade flexible copper	Annealed Plain EC grade flexible copper	Annealed Plain EC grade flexible copper
2.0	No. of wires/dia of wire	No/mm	As per IS:8130/84 or IEC 60228 : Class 5	As per IS:8130/84 or IEC 60228 : Class 5	As per IS:8130/84 or IEC 60228 : Class 5	As per IS:8130/84 or IEC 60228 : Class 5
3.0	Conductor Diameter	mm	As per IS:8130/84 or IEC 60228 : Class 5	As per IS:8130/84 or IEC 60228 : Class 5	As per IS:8130/84 or IEC 60228 : Class 5	As per IS:8130/84 or IEC 60228 : Class 5
4.0	DC Resistance at 20°C	ohm/Km	As per IS:8130/84 or IEC 60228 : Class 5	As per IS:8130/84 or IEC 60228 : Class 5	As per IS:8130/84 or IEC 60228 : Class 5	As per IS:8130/84 or IEC 60228 : Class 5
B) Insulation						
1.0	Material		PVC Type A	Cross - linked Polyethylene	Electron Beam Cross - linked Polyethylene	Electron Beam cross - linked Polyolefin
2.0	Nominal Thickness	mm	Insulation thickness as per IS:694 table for insulation	Up to 33% insulation thickness less than that of IS:694 table for insulation	Up to 33% insulation thickness less than that of IS:694 table for insulation	Up to 33% insulation thickness less than that of IS:694 table for insulation
3.0	Overall diameter of cable	mm	Conductor dia + (2 x t) t=thickness of insulation as per IS: 694	Conductor dia + (2 x t) t=thickness of insulation as per IS: 694	Conductor dia + (2 x t) t=thickness of insulation as per IS: 694	Conductor dia + (2 x t) t=thickness of insulation as per IS: 694
C) General						
1.0	Continuous operating Temp	°C	70	90	125	125
2.0	Short circuit Temperature	°C	160	250	280	280 & 300
3.0	Soldering iron Resistance		Melts and emit dark smoke	Melts Reasonably	Resistant & shall not melt	Resistant & shall not melt
4.0	Ozone resistance at complete cable	°C h %	NA	NA	NA	Temperature at 40 ± 2 Relative Humidity 55 ± 5 Duration 72 Ozone concentration (200 ± 50) × 10 ⁶ Absence of cracks
5.0	Weathering / UV Resistance	h °C % W/m ² min	NA	NA	NA	Duration 720 Black Standard Temp. 63°C Relative Humidity 65 Min. power at wavelength 300nm to 400nm is 60 ± 2 Duration spraying / drying is 18/102 Absence of cracks



D) Mechanical Properties

Sl. No	Test Details	Unit	Conventional PVC Cables as per IS:694/IS:1554 70°C	XLPE (Chemical Curing) 90°C	EBXL - XLPE 125°C	EBXL - XLPO 125°C
			Test Method IS: 10810	Test Method IS: 10810	Test Method IS: 10810	Test Method IS: 10810
1.0	Tensile Strength Min.	N/Sq.mm	12.5	12.5-15	15-20	10-15
2.0	Elongation at break Min.	%	150	200	400	150-250
3.0	After ageing in air oven:					
3.1	Test Temperature	°C	80	135	150-185	150-185
3.2	Duration		168 hrs (7 days)	168 hrs (7 days)	168 hrs (7 days)	240 hrs (10 days)
3.3	Variation in Tensile strength Max.	%	±20	±25	±25	±15
3.4	Variation in Elongation at break	%	±20	±25	±25	±15
4.0	Cold bend / impact test:		< 4.0%	4.0%	2%	< 0.5%
4.1	Test Temp.	°C	-5	-15	-15	-50
4.2	Duration	hrs	1 hr	1 hr	1 hr	1 hr
4.3	Result		No Cracks	No Cracks	No Cracks	No Cracks



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E) Thermal Properties

Sl. No	Test Details	Unit	Conventional PVC Cables as per IS:694/IS:1554 70°C	XLPE (Chemical Curing) 90°C	EBXL - XLPE 125°C	EBXL - XLPO 125°C
1.0	Loss of mass:					
1.1	Temperature	°C	80 ±2	80 ±2	100	100 ±2
1.2	Duration	Days	7	7	7	7
1.3	Results Max.	mg/Sq. cm	2	2	2	0.1
2.0	Hot Deformation at 100 ± 2°C for 1 Hr depth of indentation Max.	%	50%	50%	15%	5%
	Heat Shock test					
2.2	Test Temp	°C	150	150	240	240
2.3	Duration	hrs	1 hr	1 hr	1 hr	1 hr
2.4	Result	Visual/kV	No Cracks	No Cracks	No Cracks	Withstand 6kV 5 mins



F) Electrical Properties

Sl. No	Test Details	Unit	Conventional PVC Cables	XLPE	EBXL - XLPE	EBXL - XLPO
Insulation resistance:						
1.0	Volume resistivity at 27°C	Ohm cm	1×10^9	1×10^{14}	$>1 \times 10^{14}$	$>1 \times 10^{14}$
2.0	Volume resistivity at 125°C		Fails	Fails	$\geq 1 \times 10^{12}$	$\geq 1 \times 10^{12}$
3.0	Insulation resistance at 27°C	Mohm km	36.7	>500	>500	>500
4.0	Insulation resistance at 125°C	Mohm km	at 90°C (fails)	at 90°C (fails)	>50	>50

G) High Voltage Test

Sl. No	Test Details	Unit	Conventional PVC Cables	XLPE	EBXL - XLPE	EBXL - XLPO
High Voltage Test after ageing of complete cable:						
1.0	Ageing temp.	°C	80	135	160	158
1.1	Duration	Days	168 hrs (7 days)	168 hrs (7 days)	168 hrs (7 days)	168 hrs (7 days)
2.0	Test voltage	kV	3 kV for 5 minutes	3 kV for 5 minutes	6 kV for 5 minutes	6 kV for 5 minutes
3.0	Withstand test at room temperature	kV	3 kV for 5 min	3 kV for 5 min	6 kV for 5 min	6 kV for 5 min
4.0	Break down voltage Min.	kV	<10	<10	18	18
5.0	Spark test	kV	As per IS:694 test voltage	As per IS:694 test voltage	25% higher than IS:694 test voltage	25% higher than IS:694 test voltage



H) Fire Retardant Properties

Sl. No	Test Details	Unit	Conventional PVC Cables	XLPE	EBXL - XLPE	EBXL - XLPO
Fire Retardant Properties						
1.0	Smoke density (ASTM D 2843)Max.		>80	NA	NA	10
2.0	Toxicity index (NES 713)	%	>25	>10	>10	<5
3.0	Oxygen Index	%	29	>29	>29	>30
4.0	Acid gas emission (IEC 754-1)		≥25 (fails)	NA	Nil	Nil
5.0	Temperature index (ASTM D 2863)Min.	°C	160 (fails)	250	280	280
6.0	Swedish Chimney test		Pass	NA	Excellent	Excellent
6.1	Flammability as per IEC 60332-1		<50	300	300	>350
6.1.1	Length of unaffected portion from lower edge of top clamp	mm	<60	<60	<20	<20

i) Field test

Sl. No	Test Details	Unit	Conventional PVC Cables as per IS:694/IS:1554 70°C	XLPE (Chemical Curing) 90°C	EBXL - XLPE 125°C	EBXL - XLPO 125°C
1	Soldering iron test: Hot Soldering iron shall be kept on the wire for minimum 1 minute		The insulation melts or drips with dark smoke emission	Melts Reasonably	The insulation shall not melt or drip and no smoke shall be emitted	The insulation shall not melt or drip and no smoke shall be emitted



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Table 2 Comparative Study of EBXL-HFFR(XLPO), Power Cable Vs Others Electrical Properties

Property	General PVC 70°C	FRLS PVC 70°C	HFFR 90°C	XLPE (Chemical Curing) 90°C	EBXL - XLPE 125°C	EBXL - XLPO 125°C
Insulation resistance Min. at room temp.	1 x 10 ¹⁰ Ω-Cm	1 x 10 ⁹ Ω-Cm	1 x 10 ⁹ Ω-Cm	1 x 10 ¹⁰ Ω-Cm	>1 x 10 ¹⁰ Ω-Cm	>1 x 10 ¹⁰ Ω-Cm
At operating temp.	1 x 10 ¹⁰ Ω-Cm	1 x 10 ¹⁰ Ω-Cm	1 x 10 ¹⁰ Ω-Cm	1 x 10 ¹⁰ Ω-Cm	>1 x 10 ¹⁰ Ω-Cm	>1 x 10 ¹⁰ Ω-Cm
High voltage water immersion test after 6 hrs	6 kV	6 kV	6 kV	6 kV	6 kV	6 kV
Time Period	5 minutes	5 minutes	5 minutes	5 minutes	5 minutes	5 minutes
Dielectric constant	5 to 6	5 to 6	5 to 6	3	3	3

Mechanical Properties

Property	General PVC 70°C	FRLS PVC 70°C	HFFR 90°C	XLPE (Chemical Curing) 90°C	EBXL - XLPE 125°C	EBXL - XLPO 125°C
Tensile strength Min.	12.5 N/mm ²	12.5 N/mm ²	10.0 N/mm ²	12.5 N/mm ²	15.0 N/mm ²	10-15 N/mm ²
Elongation at break Min.	>150%	>150%	>150%	400%	400%	150% - 500%
Cold bend / impact test at	-15°C	-15°C	-40°C	-15°C	-15°C	-45°C
Wind ability / bending radius	12 x cable dia.	12 x cable dia.	9 x cable dia.	12 x cable dia.	12 x cable dia.	4 x cable dia.
Density	1.45 g/cc	1.55 g/cc	1.4 g/cc	1.00 g/cc	1.00 g/cc	1.4 g/cc
Cable diameter/ Weight	More/Bulky	More/Bulky	More/Bulky	Sleek & light weight	Sleek & light weight	Sleek & light weight



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Thermal Properties

Property	General PVC 70°C	FRLS PVC 70°C	HFFR 90°C	XLPE (Chemical Curing) 90°C	EBXL - XLPE 125°C	EBXL - XLPO 125°C
Heat ageing at	80°C for 7 days	80°C for 7 days	80°C for 7 days	135°C for 7 days	158°C for 7 days	158°C for 7 days
Variation in Tensile strength & elongation at break after ageing.	±20%	±20%	±20%	±25%	±15%	±15%
Hot deformation Max	50%	50%	50%	50%	<25%	<25%
Heat shock test Result	At 150°C for 1 hr shall not crack at 200°C for 1 hr insulation cracks	At 150°C for 1 hr shall not crack at 200°C for 1 hr insulation cracks	At 150°C for 1 hr shall not crack at 200°C for 1 hr insulation cracks	At 150°C for 1 hr shall not crack at 200°C for 1 hr insulation cracks	At 240°C for 3 hrs shall not crack	At 240°C for 3 hrs shall not crack
Shrinkage Max.	4%	4%	4%	4%	2%	0.50%
Operating temp.	70°C	70°C	-40°C to 90°C	90°C	-15°C to 125°C	-45°C to 125°C
Short circuit temp.	160°C	160°C	160°C	250°C	280°C & 300°C	280°C & 300°C
Soldering iron resistance	Insulation melts and emits smoke	Insulation melts and emits smoke	Insulation melts	Melts Reasonably	Resistant	Resistant

Fire Properties

Property	General PVC 70°C	FRLS PVC 70°C	HFFR 90°C	XLPE (Chemical Curing) 90°C	EBXL - XLPE 125°C	EBXL - XLPO 125°C
Smoke density max.	> 80 %	60%	20%	NA	<10%	<10%
Toxicity Index	High	High	<5	>10	<4	<4
Acid gas Emission Max.	>25%	20%	Nil	NA	Nil	Nil
Flammability	Melt and Drip	Melt and drip	Melt and Drip	Melt and Drip	Do not melt or drip	Do not melt or drip
Flame propagation	High	High	Moderate	High	High	Very low



EBXL XLPO cables provide superior fire characteristics as compared to PVC, FRLS, HFFR, and XLPE cables.

According to the results of the above comparison, Electron Beam Cured Zero Halogen Polyolefin Cables outperform PVC-based cables in all aspects.

As a result, it is planned to use new generation high technology EBXL wires and cables that are created in-house. The information provided above is for guide only, and actual results may vary marginally between sources.

Solar Cable: Design Calculation for Maximum allowed voltage drop

Let us consider the following PV Modules for voltage drop calculation

Nominal power of PV Modules $P_m = 222 \text{ W}$

Current at maximum power: $I_{mp} = 7.07 \text{ A}$

Voltage at maximum power: $V_{mp} = 29.84 \text{ V}$

Short Circuit Current: $I_{sc} = 7.96 \text{ A}$

Number of panels in series in each array: $N_p = 16$

The total Current: $I = 33$

Maximum ambient temperature: 55°C

Therefore,

The peak power delivered by PV module is given by

$$P = N_p \times 33 \times P_m$$

$$P = 16 \times 33 \times 222 \text{ W} = 117,216 \text{ W} = 117.216 \text{ kW}$$

The voltage at the junction box is

For a given array, the panels are connected in series, so the voltage of the array is the sum of the voltage of the modules.

The applicable voltage at the junction box level is

$$V = V_{mp} \times 16 = 29.84 \text{ V} \times 16 = 477.44 \text{ V}$$

The total current is the addition of the current of each single array. There are 11 arrays per junction box.

$$I = I_{mp} \times 11 = 7.07 \times 11 = 77.77 \text{ A}$$

The voltage drop between the generating point and the point of connection to the Public Distribution Network or indoor installations shall not exceed 1.5% at nominal current.

The maximum allowed voltage drop is:

$$V_{drop} = 0.01 \times 477.44 \text{ V} = 4.77 \text{ V}$$

The cable section, in this case, is defined as follows:

$$S = (L \times I_{in}) / (\gamma \times V_{drop})$$

Where

L = length of the line (positive + negative) $2 \times 42 = 84 \text{ m}$

I_{in} = nominal current 77.77 A

γ = conductivity of copper (at 70°C) 46.82 mm^2

V_{drop} = Maximum voltage drop 4.77 V

This leads to:

$$S = (84 \times 77.77) / (46.82 \times 4.77) = 29.25 \text{ approximated to } 35 \text{ mm}^2 \text{ (i.e., required size of the cable)}$$

Current Rating of Solar cable under different service Conditions

$$I_{wx} = I_w \times RF1 \times RF2 \times RF3$$

I_{wx} = rated current for continuous operation under different service conditions in A

I_w = rated current for continuous operation under standard conditions I in A

$RF1$ = reduction factor for increased ambient temperature in A

$RF2$ = reduction factor for elevated conductor temperature in A

$RF3$ = reduction factor for bundles cables



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Standard conditions for current rating & Life Time Expectations

The tabular values for the current rating were computed using IEC 287 under the following standard conditions:
Continuous operation with a single circuit for 3-phase current and a single conductor for 1-phase current at 30°C ambient temperature, as well as adequately spacious and ventilated places where the ambient temperature is not significantly enhanced by cable heat.
Conductor temperature: 120°C.

Frequency ranges up to 200 Hz.

Installation in air, unfettered heat dissipation, implies that the following installation conditions are met:

- Cable distances from walls, floors, and ceilings exceed cable diameters.
- The distance between two neighboring power circuits exceeds 2 times cable diameter.
- Vertical distance between power circuits for cables with diameters higher than 2 × and layers of more than 200 mm.
- Tray having perforations covering more than 30% of its surface.

Open trays are continuous supports with vertical sides but no lid. Perforations may occur on less than 30% of the surface area.
Closed ducts are completely closed. This category includes pipes as well. The maximum filling degree is 70%.

De rating Factors for Deviating Ambient Temperature (Basis 30°C)

Current Rating °C																			
Ambient Temp. °C	20	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115
Reduction Factor RF1	1.05	1.00	0.97	0.94	0.91	0.88	0.85	0.82	0.78	0.75	0.71	0.67	0.62	0.58	0.53	0.47	0.41	0.33	0.22

Reduction Factors for Different Conductor Temperature

Conductor Temp. °C	120	110	100	90	80	70
Reduction Temp. °C	1	0.96	0.91	0.85	0.79	0.72

Maximum permitted typical conductor temperature for various insulation materials according to IEC 60216 (20000 h/ 50% Elongation at break)

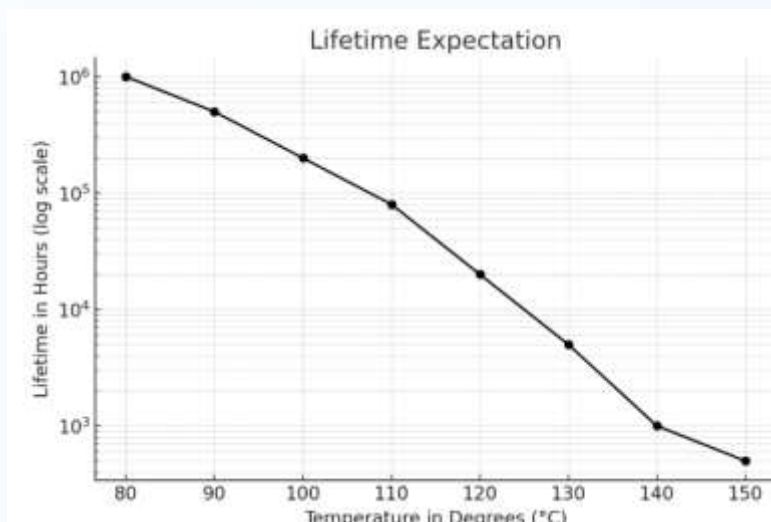
Material	Temperature °C
PVC, FRLS	70
XLPE & EPR (Chemical cured)	90
Quadrant Future Tek EBXL- XLPO	120
Quadrant Future Tek EBXL- XLPE	120



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Lifetime Expectations

If cross-linked wires are used at temperatures greater than those indicated by IEC 60216's temperature index, their lifetime is reduced. In contrast, at lower temperatures, the longevity increases. Quadrant Future Tek EBXL Solar cable 125, for example, has a life span of 20,000 hours at a conductor temperature of +120°C, or around 2.5 years. If it is utilized at a different temperature, the lifetime expectations are as follows.



Current Rating 120°C
Ambient Temperature 30°C

Construction Sq. mm	Free Air	On Surfaces without Opposite Contact	On Surfaces with Opposite Contact	In Conduit, Duct
1.5	39	37	26	21
2.5	51	48	34	27
4	68	65	45	36
6	88	84	59	47
10	121	115	80	65

Ambient Temperature 90°C

Construction Sq. mm	Free Air	On Surfaces without Opposite Contact	On Surfaces with Opposite Contact	In Conduit, Duct
1.5	21	21	17	12
2.5	29	28	23	15
4	39	37	31	20
6	50	48	40	27
10	70	66	56	37

Ambient Temperature 60°C

Construction Sq. mm	Free Air	On Surfaces without Opposite Contact	On Surfaces with Opposite Contact	In Conduit, Duct
1.5	32	30	21	17
2.5	42	39	28	22
4	56	53	37	30
6	72	69	48	39
10	99	94	66	52



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