

The image is a collage of various solar wiring and components. At the top, there are several thick black cables with copper conductors. Below them, a solar panel array is shown with a metal support structure. In the foreground, there are several more cables of different sizes and colors (black, white, grey). The bottom right corner features the Priority Wire & Cable, Inc. logo, which includes a spool of wire and the company name in a stylized font.

Photo Voltaic (PV) Solar Wiring Solutions



PRIORITY
WIRE & CABLE, INC.



Aluminum Photovoltaic

600V Aluminum PV			
Size AWG/KCML Conductor	Insulation Thickness (in.)	Nominal O.D. (in.)	Approximate Weight (lbs/MFT)
8	0.075	0.300	42
1KV / 2KV Aluminum PV			
Size AWG/KCML Conductor	Insulation Thickness (in.)	Nominal O.D. (in.)	Approximate Weight (lbs/MFT)
8	0.085	0.316	47
6	0.085	0.339	56
4	0.085	0.383	76
2	0.085	0.438	107
1	0.105	0.508	143
1/0	0.105	0.547	171
2/0	0.105	0.584	203
3/0	0.105	0.631	245
4/0	0.105	0.680	295
250	0.120	0.754	353
300	0.120	0.806	411
350	0.120	0.847	467
500	0.120	0.976	622
700	0.135	1.147	836
750	0.135	1.178	913
1000	0.135	1.330	1180

** Additional colors available upon request - Black, White, Green Stocked

- Application:** Aluminum 1KV / 2KV Photovoltaic Cable is primarily used for interconnection wiring of grounded and ungrounded photovoltaic power systems, which do not exceed 2000V. Aluminum 1KV / 2KV Photovoltaic Cable is designed to operate in temperatures from -40°C to 90°C.
- Conductors:** Aluminum 1KV / 2KV Photovoltaic Cable has a compact or compressed round stranded 8000 series aluminum alloy conductor.
- Insulation:** Aluminum 1KV / 2KV Photovoltaic Cable has a black cross-linked polyethylene XLP insulation, which is sunlight & moisture resistant and direct burial rated.
- Standards:**
 UL 4703 Listed, PV Rated
 UL 44 Listed RHH/RHW-2
 UL 854 Listed USE-2
 Flame Test: VW-1
 CSA Listed RPVU90 under CSA C22.2 No.271
 ASTM D-800
 ASTM D-836
 ASTM D-901

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Copper Photovoltaic

600V Copper PV			
Size AWG/KCML Conductor	Insulation Thickness (in.)	Nominal O.D. (in.)	Approximate Weight (lbs/MFT)
10	0.060	0.237	48
8	0.075	0.297	76
1KV / 2KV Copper PV			
Size AWG/KCML Conductor	Insulation Thickness (in.)	Nominal O.D. (in.)	Approximate Weight (lbs/MFT)
14	0.075	0.222	32
12	0.075	0.237	41
10	0.075	0.261	57
8	0.085	0.312	86
6	0.085	0.349	121
4	0.085	0.396	176
2	0.085	0.456	261
1	0.105	0.531	338
1/0	0.105	0.570	413
2/0	0.105	0.614	506
3/0	0.105	0.664	627
4/0	0.105	0.720	773
250	0.120	0.801	924
300	0.120	0.854	1091
350	0.120	0.904	1205
400	0.120	0.949	1375
500	0.120	1.033	1700
600	0.135	1.139	2032
750	0.135	1.241	2515
1000	0.135	1.390	3335

** Additional colors available upon request

- Application:** Copper 1KV / 2KV Photovoltaic Cable is primarily used for interconnection wiring of grounded and ungrounded photovoltaic power systems, which do not exceed 2000V. Copper 1KV / 2KV Photovoltaic Cable is designed to operate in temperatures from -40°C to 90°C.
- Conductors:** Copper 1KV / 2KV Photovoltaic Cable has a compressed concentric strand soft drawn annealed copper.
- Insulation:** Copper 1KV / 2KV Photovoltaic Cable has a black cross-linked polyethylene XLP insulation, which is sunlight & moisture resistant and direct burial rated.
- Standards:**
 UL 4703 Listed, PV Rated
 UL 44 Listed RHH/RHW-2
 UL 854 Listed USE-2
 Flame Test: VW-1
 CSA Listed RPVU90 under CSA C22.2 No.271

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15KV & 35KV MV-105 Power EPR MV-105 (Tape Shield)

15KV 133% Aluminum Single Conductor MV-105

Size AWG	Insulation Thickness	Conductor Diameter	Insulation Diameter	Insulation Shield Diameter	Jacket Diameter	Minimum Bending Radius	Approximate Weight	Ampacity	
	Mils	Inches	Inches	Inches	Inches	Inches	LBS/MFT	105C in Duct	105C in Air
2	220	0.266	0.65	0.71	0.84	11	386	130	170
1	220	0.299	0.69	0.74	0.91	12	445	145	195
1/0	220	0.336	0.72	0.78	0.94	12	487	165	225
2/0	220	0.379	0.77	0.82	0.99	12	538	190	260
3/0	220	0.423	0.81	0.87	1.03	13	598	215	300
4/0	220	0.479	0.87	0.92	1.09	14	672	245	350
250	220	0.522	0.92	0.97	1.14	14	742	270	385
350	220	0.622	1.02	1.07	1.24	15	893	330	480
500	220	0.742	1.14	1.19	1.36	17	1108	400	600
750	220	0.917	1.32	1.38	1.54	19	1454	490	780
1000	220	1.071	1.48	1.53	1.69	21	1790	565	940

35KV 100% Aluminum Single Conductor MV-105

Size AWG	Insulation Thickness	Conductor Diameter	Insulation Diameter	Insulation Shield Diameter	Jacket Diameter	Minimum Bending Radius	Approximate Weight	Ampacity	
	Mils	Inches	Inches	Inches	Inches	Inches	LBS/MFT	105C in Duct	105C in Air
1/0	345	0.336	1.070	1.130	1.290	16	825	165	225
2/0	345	0.379	1.110	1.170	1.330	16	886	190	260
4/0	345	0.479	1.210	1.270	1.430	18	1047	245	345
250	345	0.522	1.260	1.320	1.480	18	1131	270	380
350	345	0.622	1.360	1.420	1.580	19	1309	330	475
500	345	0.742	1.480	1.540	1.700	21	1557	400	590
750	345	0.917	1.680	1.770	2.010	25	2159	490	765
1000	345	1.071	1.820	1.880	2.100	26	2450	565	920

PRODUCT NOTES:

The above dimensions are approximate and subject to normal manufacturing tolerances.

Three Phase Operation

In Duct per 2011 NEC Table 310.60(C)(7)(8): Three-conductor cable in plastic duct, direct-buried, 105°C conductor temperature, 20°C ambient temperature, earth RHO of 90°C-cm/Watt, and 100% load factor, and shields short-circuited.

Isolated in Air per 2011 NEC Table 310.60(C)(7)(9): Three-conductor cable, 105°C conductor temperature, and 40°C ambient temperature, and shields grounded at one point only.

Three Phase Operation

In Cable Tray Per 2011 NEC 392.80(B)(2)(b): Single conductor cables, sizes 1/0 AWG and larger, installed in a single layer in an uncovered cable tray, with a maintained space of not less than one cable diameter between individual conductors, the ampacities shall not exceed the allowable ampacities stated in 2011 NEC Table 310.60(C)(7)(9) (Aluminum), "Isolated in Air" values noted above.

1EPROTENAX® EPR-insulated cables are capable of operating at 105°C. However, the maximum operating temperature of the cable should be based on the maximum operating temperature of the cable accessories to be used.

Application:

To be used in power circuits rated 15,000- 35,000 volts. For installation in open air, duct, conduit, cable tray (1/0 and larger) or direct buried and for use in wet or dry locations. UL approved at 105°C for continuous operation, 140°C for emergency overload and 250°C during short circuit conditions.

Conductors:

Soft bare 1350 series aluminum, Class B stranding per ASTM

Insulation:

Heat and moisture resistant natural high dielectric strength EPR-based insulation per ICEA S-97-682 with a semi-conducting thermosetting insulation shield

Metal Shield:

Helically applied non-magnetic 5mil copper tape with a minimum of 25% overlap

Jacket:

Sunlight resistant black PVC rated 90°C per UL 1277.

Standards:

- IEEE 383 flame test (1/0 and larger)
- IEEE 1202 flame test (250MCM and larger)
- UL 1072 type MV-105, sunlight resistance
- CT use (1/0 and larger)
- AEIC CS8
- ICEA S-93-639
- ICEA S-97-682

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35KV Primary Power Cable

TR-XLPE 100% Medium Voltage

35KV 100% Aluminum Single Conductor Primary								
Size AWG	Neutral			Conductor Nominal Diameter Inches	Insulation		Jacket Nominal Diameter Inches	Approximate Weight LBS/MFT
	Size	No. of Wires	Size of Wires		Min Diameter Inches	Max Diameter Inches		
1/0	Full	16	14	0.364	1.045	1.145	1.410	914
2/0	Full	20	14	0.408	1.090	1.190	1.450	982
3/0	Full	16	12	0.458	1.140	1.240	1.560	1190
4/0	Full	20	12	0.515	1.195	1.295	1.600	1330
4/0	1/2	16	14	0.515	1.195	1.295	1.580	1126
4/0	1/3	11	14	0.515	1.195	1.295	1.580	1074
250	1/3	13	14	0.561	1.250	1.350	1.620	1160
350	1/3	18	14	0.664	1.355	1.455	1.770	1484
500	1/3	16	12	0.794	1.480	1.580	1.950	1854
750	1/6	19	14	0.974	1.670	1.770	2.140	2185
1000	1/6	16	12	1.124	1.815	1.920	2.320	2697
1250	1/6	20	12	1.251	2.045	2.155	2.540	3225

- Application:** Aluminum Conductor 35KV URD cable is primarily used for underground distribution, in direct burial applications or installed in conduit. 35KV URD cable is suitable for use in wet or dry locations. URD cable is to be used at 35,000 volts or less and not to exceed 90°C temperature in normal use.
- Conductors:** Aluminum Conductor 35KV URD cable has a solid or compressed concentric strand soft drawn 1350 series aluminum conductor per ASTM.
- Conductor Shield:** Aluminum Conductor 35KV URD cable has an extruded thermoset semiconducting shield, which is free stripping from the conductor and bonded to the insulation.
- Insulation:** Aluminum Conductor 35KV URD cable has naturally high dielectric strength TR-XLPE insulation. There is also extruded thermoset semiconducting insulation shield. Optional EPR insulation is available upon request.
- Metallic Shield:** Aluminum Conductor 35KV URD cable has a concentric neutral shield consisting of solid bare copper wires helically applied and uniformly spaced over the insulation shield.
- Jacket:** Aluminum Conductor 35KV URD cable has a black jacket of linear low density polyethylene (LLDPE), which is sunlight, abrasion and heat resistant. The jacket has 3 red stripes, the NESC lightning bolt and sequential footage markings.
- Standards:** ASTM B-3, B-8, B230, B-231, B-609
 UL MV-90
 AEIC CS8
 ICEA S-94-649
 ICEA T-31-610
 ICEA T-34-664
 RUS Bulletin 1728F-U1 where applicable
 For 90°C continuous, 130°C emergency and 250°C short-circuit operation

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**PV Type MC Cable with PVC Jacket
Jacketed 2 Conductor PV MC + Ground**

1KV / 2KV PV Jacketed Type MC					
Size AWG	Ground Size	Cable Diameter (Inches)			Approximate Weight
		Under Armor	Over Armor	Over PVC Jacket	LBS/MFT
6	8	0.66	0.85	0.95	284
4	6	0.75	0.94	1.04	351
2	6	0.86	1.05	1.15	433
1	4	1.00	1.19	1.29	541
1/0	4	1.07	1.27	1.37	628
2/0	4	1.15	1.35	1.45	709
3/0	4	1.25	1.44	1.54	811
4/0	2	1.35	1.61	1.73	1015
250	2	1.50	1.76	1.88	1166
300	2	1.60	1.86	1.98	1302
350	2	1.69	1.95	2.07	1439
400	1	1.78	2.04	2.16	1565
500	1	1.93	2.19	2.31	1817
750	1/0	2.34	2.59	2.74	2588

Application:

Priority Wire & Cable offers 1KV / 2KV PV Jacketed Type MC as a cost saving alternative to traditional cable in conduit due to a drastic reduction in installation cost and time. With an added feature of a rugged PVC jacket, Priority Wire & Cable's 1KV / 2KV PV Jacketed Type MC can easily stand up to the elements. Jacketed Type MC is approved for applications including direct burial, cable tray and outdoor exposure environments.



- Run from combiner box to power inverter
- Sunlight Resistant
- Wet Locations
- Direct Buried
- Concrete Encased

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Additional Options

Paralleling & Triplexing

- Priority Wire & Cable is able to offer a full range of paralleling options to suit any application a solar project may require. In addition to paralleling, Priority Wire & Cable also offers a full range of triplexed 1KV / 2KV aluminum feeder PV. With our commitment to inventory and superior service, Priority Wire & Cable is able to offer complete rapid solutions for the solar market.

Cable in Conduit

- Priority Wire's Cable in Conduit is manufactured by continuously extruding high density polyethylene (HDPE) over 1KV / 2KV aluminum feeder PV cable constructions adding an extremely rugged layer of protection. All cable constructions will adhere to the NEC recommended fill requirements. HDPE conduit is available in SDR 15.5, SDR 13.5 & Schedule 40.



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