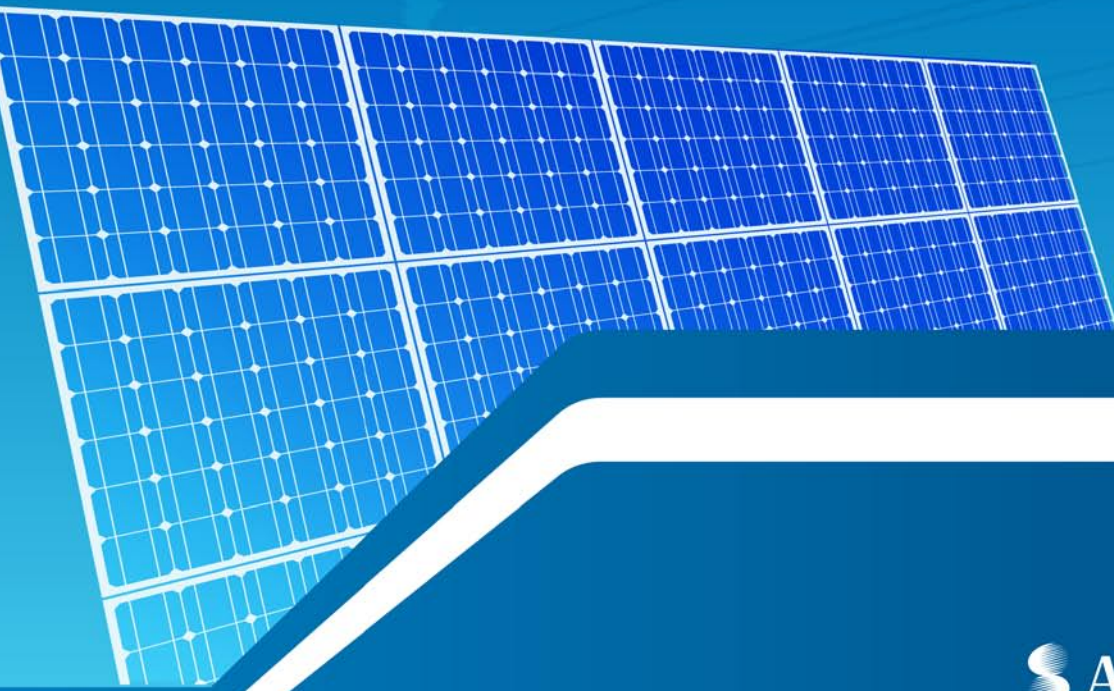




Caledonian

Photovoltaic Cables



 **ADDISON**

www.caledonian-cables.co.uk
www.addison-cables.com



COMPANY PROFILE

Caledonian, established in 1978, offers one of the most complete lines of fiber and copper cabling system solutions with over hundreds of different cabling system products. Our superior products provide leading edge within every cable series and for every application.

Among the national and international standards with which our cables could comply are: BS - British Standard; LPCB Fire Performance Standard, ISO Standard etc. Caledonian Cables offers a comprehensive stock of cables and cabling products through its nationwide network of resellers and distributors. Caledonian Cables has continually expanded its global presence in Europe and Asia.

Caledonian & Addison, produces a wide range of cables for communication, power and electronics in its primary plants in UK, Italy and Spain. To stay in front, we continually keep expanding our manufacturing capabilities in more low cost region such as Romania, Taiwan, Malaysia etc. This low-cost manufacturing facilities enable us provide a flexible, scalable global system that delivers superior operational performance and optimal results for our customers.

Our extensive global network of manufacturing facilities gives us significant scale and the flexibility to fulfill our customer requirements. This global presence provides design and consultancy solutions that are combined with core cable manufacturing, logistic services, and vertically integrated with our E commerce technologies, to optimize customer operations by lowering costs and reducing time to market.

Caledonian & Addison has been respected for its high standards of quality, excellent service level, competitive pricing and a unique and innovative spirit. With our latest technologies, we are both inspired and well-positioned to meet the changing needs of our customers. We have the resources to diversify and to enhance our product lines and services. We understand the need for change and with our accurate planning, we are ready for the future and the promise of new marketing opportunities. Our tradition of growth through excellence is assured.

Our Design Centers work closely with customers to constantly improve its standard range of products and technologies and to develop customized, country and industry-specific solutions. Caledonian & Addison has established an extensive network of design, manufacturing, and logistics facilities in the world's major markets to serve the growing outsourcing needs of both multinational and regional customers.





PHOTOFLEX Photovoltaic Cable

» Applications

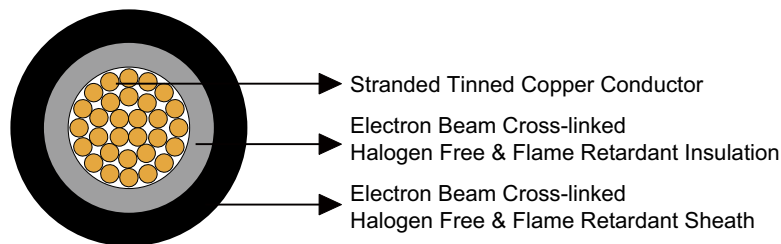
These cables are designed for connecting photovoltaic system components inside and outside of buildings and equipment with high mechanical requirements and extreme weather conditions.

» Standards

2PFG 1169/08.2007 (PV1-F)



» Construction



Conductor: Stranded tinned copper conductor per DIN VDE 0295 and IEC 60228 Class 5.

Insulation: Electron beam cross-linked, halogen free and flame retardant compound.

Sheath: Electron beam cross-linked, halogen free and flame retardant compound, Black.

» Electrical Properties

- » Rated Voltage U_0/U : 0.6/1 kV AC; 0.9/1.5 kV DC
- » Maximum Permitted DC Voltage: 1.8 kV DC (conductor/conductor, non earthed system, circuit not under load)
- » Insulation Resistance: 1000 M Ω -km
- » Spark Test: 6000 Vac (8400 Vdc)
- » Voltage Withstand: 6500 Vac for 5 min

Caledonian Photovoltaic Cables

2PFG 1169 Photovoltaic Cables



» Thermal Properties

- » Maximum Voltage: Ambient Temperature: $-40^{\circ}\text{C} \sim +90^{\circ}\text{C}$
- » Maximum Temperature At Conductor: 120°C (20000h) according to IEC/EN 60216-1
- » Short Circuit Temperature: $200^{\circ}\text{C}/5 \text{ sec}$
- » Thermal Endurance Test: According to EN 60216-2 (temperature index $+120^{\circ}\text{C}$)
- » High Temperature Pressure Test: According to EN 60811-3-1
- » Damp-Heat Resistance: According to EN 60068-2-78 with 85% humidity

» Mechanical Properties

- » Minimum Bending Radius: $4 \times \text{OD}$ (fixed), $5 \times \text{OD}$ (flexing)
- » Dynamic Penetration: According to 2 PfG 1169/08.2007 Annex F
- » Notch Propagation: According to 2 PfG 1169/08.2007 Annex G
- » Tensile Strength And Elongation Of Insulation And Jacket: According to EN 60811
- » Anticipated Period Of Use: 25 years

» Chemical Properties

- » Ozone Resistance: According to EN 50396 part 8.1.3 Method B
- » Weathering- UV Resistance: According to HD 605/A1
- » Ammoniac resistant
- » Very good resistance to oils and chemicals
- » High wear and robust, abrasion resistant
- » Acid & Alkaline Resistance: According to EN 60811-2-1 (Oxal acid and sodium hydroxide)

» EC directives

- » The cables are conform to the EC directives CE 2006/95/EC (Low voltage directive) and RoHS 2002/95/EC (Restriction of Hazardous Substances)

» Fire Performance

- » Flame retardant according to EN 50265-2-1, IEC 60332-1, VDE 0482-332-1-2, DIN EN 60332-1-2
- » Low smoke emission according to IEC 61034, EN 50268
- » Halogen free according to EN 50267-2-1, IEC 60754-1
- » Low corrosivity of gases according to EN 50267-2-2, IEC 60754-2



» Dimensions and Weight

No. of Cores × Nominal Cross Section	No. of Stranding	Nominal Conductor Diameter	Nominal Insulation Thickness	Nominal Sheath Thickness	Nominal Overall Diameter	Nominal Weight
No. × mm ²	-	mm	mm	mm	mm	kg/km
1×1.5	30/0.25	1.58	1.14	0.82	5.4	52
1×2.5	50/0.25	2.04	1.14	0.82	5.8	67
1×4.0	56/0.30	2.59	1.14	0.82	6.4	87
1×6.0	84/0.30	3.17	1.14	0.82	7.0	113
1×10	78/0.40	4.07	1.52	0.82	8.6	178
1×16	128/0.40	5.22	1.52	0.82	9.8	254
1×25	199/0.40	6.51	1.52	0.82	11.1	363
1×35	279/0.40	7.71	1.52	0.82	12.3	473

» Current Carrying Capacity

Cross Section	AWG	Maximum Conductor Resistance @ 20°C	Current Carrying Capacity		
			Single cable free in air	Single cable on surfaces	To cables adjacent on surfaces
mm ²	-	Ω	A	A	A
1.5	16	13.7	30	29	24
2.5	14	8.21	41	39	33
4	12	5.09	55	52	44
6	10	3.39	70	67	57
10	8	1.95	98	93	79
16	6	1.24	132	125	107
25	4	0.795	176	167	142
35	2	0.565	218	207	176

» Conversion Factor for Deviating Temperatures

Ambient Temperature °C	Conversion Factor
Up to 60	1.00
70	0.91
80	0.82
90	0.71
100	0.58
110	0.41

Reduction factor for accumulation according to IEC 60364-5-52, Table B.52-17



UNITED KINGDOM

Marchants Industrial Centre,
Mill Lane, Laughton, Lewes,
East Sussex, BN8 6AJ, UK
Tel: 44 (0) 207 419 5087
Fax: 44 (0) 207 831 9489
Email: sales@caledonian-cables.co.uk
www.caledonian-cables.co.uk

HONG KONG

Unit B 22/F CMA Building,
64-66 Connaught Road Central,
Hong Kong
Tel: 852 36527508
Fax: 852 35834834
Email: hk@caledonian-cables.co.uk
www.caledonian-cables.co.uk