Security Cables

Caleb Cable offers a complete series of cables for alarm, security and CCTV applications.

Alarm Cables are used for the wiring of burglar alarms and other low voltage circuits.

Fire Alarm Cables, which are UL listed, are for application of fire alarm, smoke detectors, signaling and fire protective circuits.

FireTech (Fire Resistant Cable) is for fixed installation typically in fire alarm and emergency lighting circuits where circuit integrity must be maintained and installation where fire, smoke emission and toxic fumes create a potential threat to life and equipment.

For CCTV application, we offer a series of coax cables, composite cables (both for signal and power in one cable) and IPTV cables.

Security Cables

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Fire Test Standard

BS6387:1994-Fire
Fire with Water and Fire with Mechanical Shock Test

The following test is the internationally recognized UK test used to determine if a cable is capable of maintaining circuit integrity under fire conditions, fire with water and fire with mechanical shock. These tests uses a number of alternative time and temperature parameters and depending on the level achieved by the cable, a corresponding letter is assigned to denote the category the cable passed.

Resistance to fire:	Symbol
650 ℃ for 3 hours	A
750 ℃ for 3 hours	B
950 ℃ for 3 hours	C
950 ℃ for 20 minutes	S

Resistance to fire and water:	Symbol
650 ℃ for 15 minutes, then for 15 minutes with fire and water	W

Resistance to fire with mechanical shock:	Symbol
650 ℃ for 15 minutes with 30 seconds hammer blows	X
750 ℃ for 15 minutes with 30 seconds hammer blows	Y
950 ℃ for 15 minutes with 30 seconds hammer blows	Z

Fire Test Standard

IEC60754 - Acid Gas Emissions Test

Due to concerns regarding the amount of acid gas, which can be produced when cables are burnt, this international test determines the amount of gas evolved by burning cables.

The recommended values of the test state that the weighted pH value should not be less than 4.3, when related to 1 liter of water and the weighted value of conductivity should not exceed 10 μs/mm.

IEC60332 Part 3 - Flame Propagation

This test defines the ability of bunched cables to restrict vertical flame propagation when laid in cable trays, or conduit.

The test comprises of 3 categories, each determined by the amount of combustible material in a 1 m sample.

IEC60331 - Fire Test

This international fire test is to establish whether a cable can maintain circuit integrity during and after exposure to fire. A sample is exposed to fire for 3 hours at a temperature of between 750 ℃ and 800 ℃, after 3 hours the fire is extinguished and the current is turned off. After a further 12 hours, the sample of cable is re-energised and must maintain circuit integrity.

IEC61034 - Smoke Density Test

This test measures the smoke emission from electric cables during fire. The test is carried out in a 3 m^3 chamber where cable sample is subjected to fire.

The smoke emission and density are measured by transmission a beam of light across the inside of the chamber to a photoelectric cell which measures the amount of light received.

PH30 BS 8434-1:2003

The duration of the test shall be 30 min (15 min for the initial fire and impact phase followed by an additional 15 min for the fire, impact and water phase), during which the cable shall not reach the point of failure.

Conformity to this requirement shall qualify for a 30 min classification.

PH120 BS 8434-2:2003

The duration of the test shall be 120 min (60 min for the initial fire and impact phase followed by an additional 60 min for the fire, impact and water phase), during which the cable shall not reach the point of failure.

Conformity to this requirement shall qualify for a 120 min classification.

Certificate

ONLINE CERTIFICATIONS DIRECTORY

HNIR.E334180
Power-limited Fire Alarm Cable

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Power-limited Fire Alarm Cable

See General Information for Power-limited Fire Alarm Cable

CALEB CABLE INDUSTRIAL LTD E334180
ROOM 806
LANDMARK NORTH
39 LUNG SUM AVE
SHEUNG SHUI N T, HONG KONG

Type(s) FPLR

Last Updated on 2013-03-11

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Alarm Cable

Technical data

- **Temperature range**: -20 ℃ to 80 ℃
- **Rated voltage**: 300 V
- **Min. insulation resistance**: 200 MOhm x km
- **Test voltage**: 1200 V
- **Minimum bending radius:** 10 x cable diameter

Cable structure

- Inner Conductor: TCCA
- Insulation: PVC
- Screen (optional): Al-PET + drain wire
- Sheath: PVC/LSF

Application

The flexible alarm cable is used for the wiring of burglar alarms and other low voltage circuits.

Cables without screen

NO. of Cores	No. of cores x mm²	Sheath Thickness mm	Outer Diameter mm
4C	4 x 0.22	0.45	3.4
6C	6 x 0.22	0.45	4.0
8C	8 x 0.22	0.45	4.2
10C	10 x 0.22	0.6	5.0
18C	18 x 0.22	0.6	5.4
20C	20 x 0.22	0.8	7.3
30C	30 x 0.22	0.5	8.0
2C +2C	2 x 0.5 + 2 x 0.22	0.5	4.1
2C + 4C	2 x 0.5 + 4 x 0.22	0.5	4.8
2C + 6C	2 x 0.5 + 6 x 0.22	0.5	5.2
2C + 8C	2 x 0.5 + 8 x 0.22	0.6	5.8
2C + 10C	2 x 0.5 + 10 x 0.22	0.6	6.0
2C + 12C	2 x 0.5 + 12 x 0.22	0.8	6.2

Cables with screen

NO. of Cores	No. of cores x mm²	Sheath Thickness mm	Outer Diameter mm
6C	6 x 0.22	0.45	4.4
8C	8 x 0.22	0.45	4.6

Fire Alarm Cable

Technical data

- **Temperature range:** -40 ℃ to +105 ℃
- **Max. rated voltage-UL:** 300 V RMS
- **Minimum bending radius**
  10x cable diameter

Cable structure

- Conductor: solid bare copper
- PVC core insulation: 2 cores
- Insulation color: black and red
- Optional screen: Al-PET and drain wire
- PVC Sheath (Red)

Certificate

- UL Approval: UL1424 Power-Limited Fire-Alarm Circuit Cable, Type FPLR, rated 60, 75, 90 or 105°C.
- UL File Number: E334180

Application

The power limited fire alarm and communications cable is used for the wiring of fire alarm, smoke detectors, signaling, and fire protective circuits.

Conductor Diameter mm	AWG-no.	Outer Diameter mm	Copper Weight kg/km	Cable Weight kg/km	Max. Conductor Resistance Ohm/km
1.02	18	5.9	18.2	47.9	22.0
1.29	16	6.1	27.1	58.4	14.5
1.63	14	7.8	50.0	96.2	9.1
2.05	12	8.7	72.3	128.7	5.5

Fire Resistant Cable

Fire Tech

Technical data

- **Temperature range:** -40 °C to 90 °C
- **Rated voltage:** 300/500 V
- **Test voltage:** 5000 V
- **Minimum bending radius:** 6 x cable diameter

Cable structure

- Plain annealed copper solid (1.0 - 2.5 mm^2) or stranded (4.0 mm^2) complying with B6360 class 1 or class 2.
- Insulation: Silicone rubber
- Screen: Al-PET foil + drain wire
- Sheath: LSOH

Standard

- BS 7629-1
- BS 6387 CWZ
- BS 5839-1 CLAUSE 26.2
- BS EN 50200 PH 30
- BS 8434-1

Application

The fire resistant cable is for fixed installation in fire alarm and emergency lighting circuits where circuit integrity must be maintained; its low smoke and zero halogen features makes it suitable for installation where fire, smoke emission and toxic fumes create a potential threat to life and equipment.

NO. of Cores	Cross Section mm^2	Conductor Construction NO. x mm	Outer Diameter mm	Max. Conductor Resistance Ohm/km
2	1.0	1/1.13	8.0	18.1
2	1.5	1/1.38	8.1	12.1
2	2.5	1/1.78	9.5	7.4
2	4.0	7/0.85	11.6	4.6
3	1.0	1.1.13	8.2	18.1
3	1.5	1/.138	8.4	12.1
3	2.5	1/1.78	10.4	7.4
3	4.0	7/0.85	12.3	4.6
4	1.0	1/1.13	8.5	18.1
4	1.5	1/1.38	10	12.1
4	2.5	1/1.78	11.9	7.4
4	4.0	7/0.85	13.5	4.6

IPTV Cable

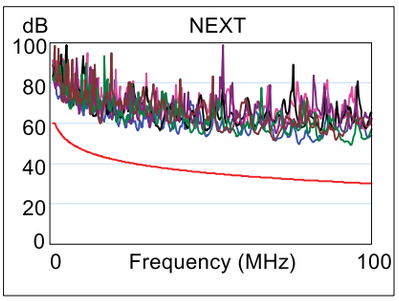
Technical Data

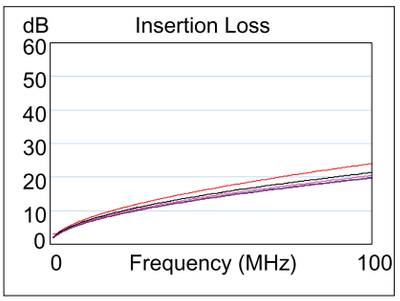
- **Temperature range**: -20 ℃ to 70 ℃
- **Velocity ratio**: 69%
- **Characteristic impedance:** 100±15 Ohm
- **Min. bending radius :** 8 x cable diameter
- **Flame retardancy**: CMP, CMR, CMG, CM
- **UL File number is E334179**

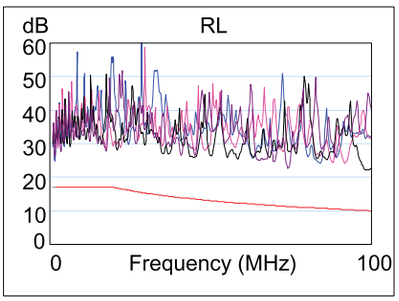
Standards and performances

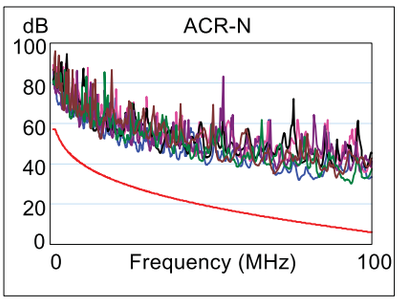
- IEC 61156-5 Edition 2.0
- EN 50288-3-1
- EIA/TIA 568-B.2 – Cat 5e
- ISO 11801 Edition 2 – CLASS D
- EN 50173 Edition 2 – CLASS D

Construction		Cat5e
Conductor	(dia.mm)	24 AWG Solid bare copper 0.51
Insulation	(dia.mm)	HDPE 0.92
Sheath	(dia.mm)	PVC/LSOH 5.20
No. of Pairs		4









Security Cables

IPTV Cable

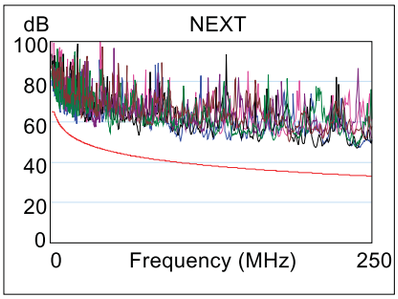
Technical Data

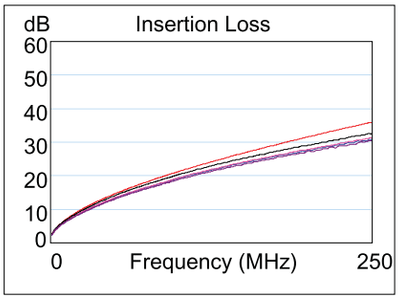
- **Temperature range:** -20 ℃ to 70 ℃
- **Velocity ratio:** 72%
- **Characteristic impedance:**
  (From 1 to 250 MHz)100±15 Ohm
- **Bending radius (min.):** 8 x cable diameter
- **Flame retardancy:** CMP, CMR, CMG, CM
- **UL File number is E334179**

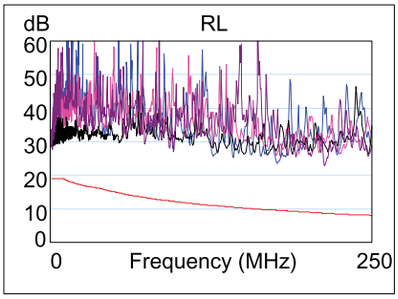
Standards and performances

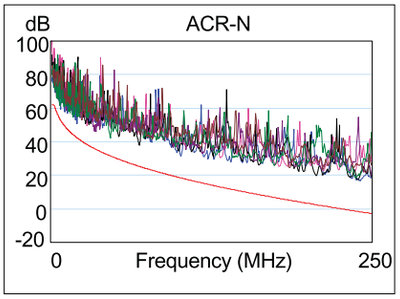
- IEC 61156-5 Edition 2.0
- EN 50288-5-1
- EIA/TIA 568-B.2-1 – Cat 6
- ISO 11801 Edition 2 – CLASS E
- EN 50173 Edition 2 – CLASS E

Construction		Cat6
Conductor	(dia.mm)	23 AWG Solid bare copper 0.55
Insulation	(dia.mm)	Solid PE 1.02
Filler		Cross member
Mylar Coverage(%)		>=125%
Drain wire		Tinned copper
Al-PET Shielded		>=125%
Sheath	(dia.mm)	PVC/LSZH 7.20
No. of Pairs		4

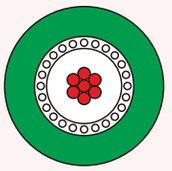








CCTV Coax Cable



Construction Data

Cable code		KX6	KX6 (Long Distance)	KX8
Inner conductor	material	Bare copper	Bare copper	Bare copper
	dia. mm	0.2 x 7	0.8	0.4 x 7
Dielectric	material	Solid PE	Foam PE	Solid PE
	dia. mm	3.70	3.7	7.25
Screen:				
Film foil type	material	----	Al-PET-Al(Bonded)	----
Foil coverage	%	----	> 100	----
Braid material		Bare copper	Tinned copper	Bare copper
Braid coverage	%	80	> 75	80
Outer sheath	material	PVC	PVC	PVC
	dia. mm	6.10	6.0	10.2

Electrical Data

Impedance	Ohm	75 ± 3	75 ± 3	75 ± 3
Capacitance	pF/m	67 ± 2	< 56	67 ± 2
Velocity ratio	%	66	83	66
Attenuation (at 20℃)				
at 50 MHz	dB/100m	8.1	----	2.9
at 100 MHz	dB/100m	13.0	7.9	4.5
at 200 MHz	dB/100m	18.5	10.9	10.9
at 450 MHz	dB/100m	27.5	----	20.7
at 800 MHz	dB/100m	34.5	22.8	23.6
at 860 MHz	dB/100m	35.8	----	24.5
at 1000 MHz	dB/100m	45.0	----	27.5
Inner conductor resistance	Ohm/km	87.5	37	22.2

CCTV Composite Cable

Construction Data

Cable code		RG59 + 2 C		RG59 + 4 C	
		A	B	A	B
Inner conductor	material	CCS	Bare copper	CCS	Bare copper
	dia. mm	0.58	0.2 x 24	0.58	0.19 x 16
Dielectric	material	Solid PE	PVC	Solid PE	PVC
	dia. mm	3.70	2.0	3.70	1.8
Screen:					
Braid material		Bare copper	Chalk	Bare copper	Chalk
Braid coverage	%	84	----	80	----
Sheath	material	PVC		PVC	PVC
	dia. mm	6.10		6.10	10.2
Mylar spiral coverage	%	115		115	PVC
Outer sheath	material	LSZH		PVC	PVC
	dia. mm	10.3		9.8	10.2

Electrical Data

Impedance			Ohm	75 ± 3		75 ± 3	
Capacitance			pF/m	>70		>70	
Velocity ratio			%	66		66	
Attenuation (at 20℃)							
at	50	MHz	dB/100m	8.5		8.5	
at	100	MHz	dB/100m	11.8		11.8	
at	200	MHz	dB/100m	16.5		16.5	
at	450	MHz	dB/100m	26.0		26.0	
at	800	MHz	dB/100m	35.8		35.8	
at	860	MHz	dB/100m	37.2		37.2	
at	1000	MHz	dB/100m	39.5		39.5	
Inner conductor resistance			Ohm/km	235	<24.6	235	<40.5