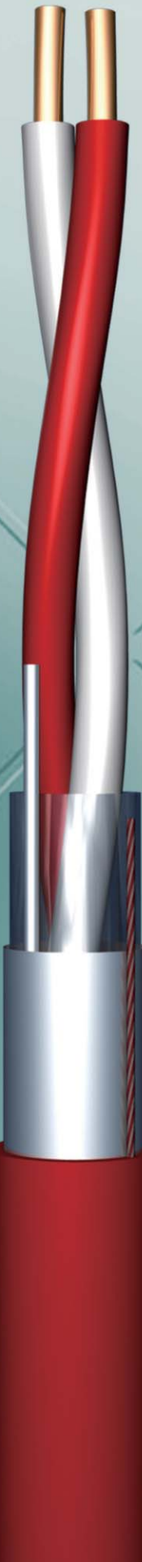
Caleb Cable

Alarm System Cables
Fire - Resistant Series Cables
Belden Equivalent
CCTV Cables



Security Cable

the link to possibilities
for the next generation

Caleb Cable Industrial Ltd.

Hong Kong: RM. 806 Landmark North, 39 Lung Sum Avenue, Sheung Shui, N. T.
China Factory: 107. Luyuan Rd, Ke Yuan Cheng, Tangxia,
Dongguan City, Guangdong Province, PR China
TEL: (HK) +852-2668-8903
FAX: (HK) +852-2668-8701
E-mail: info@calebcable. com www.calebcable.com

Company Profile

Caleb Cable Industrial Ltd. in Hong Kong & South-China, is a brand dedicated to providing European quality cables with competitive prices to a wide spectrum of different applications which include telecommunication, Digital TV, Automotive, Data transmission, Industrial purposes and Health care, etc.

With an experienced and passionate workforce & team of engineers, Caleb Cable focuses on technical innovation and developments that bring about inspiration to global end-users. Knowing that every customer is unique, Caleb Cable is always with our customers for tailored products & solutions.

All Caleb's products are ISO9001 certificated, and automotive products are ISO/TS16949 certificated, a reflection of the quality that goes into every details of what we do.

Introduction

Caleb Cable offers a complete series of cables for control, 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 Cables)**, which is in process for LPCB approval, 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 UTP LAN cables.** And **Belden equivalents** are also offered for the application of sound, data, control and security application.

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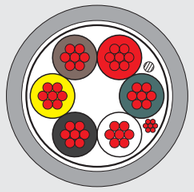
Alarm Cable



◆Cable structure

Inner Conductor of Material: Tinned Copper
Insulation: PVC, PE, LSF, LSOH
Screen (optional): Al-Pet + Drain Wire
Jacket: PVC, PE, LSF, LSOH, FR-PVC

◆Application

Flexible cable used for the wiring of burglar alarms and other low voltage circuits.

◆Technical data

Operating Temperature(℃): -20 ~ 80
Operating Voltage Uo/U(V): 300
Min. Insulation DC Resistance at 20℃(MΩ*km): >200
Test Voltage(V): 1200
Minimum bending radius: 10¢ OD.
Test Materia: PVC
Elongation(%): >100
Tensile Strength(Mpa): ⩾10.5
Cold Bend(-20+/-2℃x2Hrs): No Crack
Heat Shock(80+/-2℃x2Hrs): No Crack

NO. of Cores	Conductor Specification No. of cores x size (mm^2)	Jacket Thickness (mm)	Jacket OD. (mm)
4C	4*0.2	0.45	3.4
6C	6*0.2	0.45	4.0
8C	8*0.2	0.45	4.2
10C	10*0.2	0.6	5.0
18C	18*0.2	0.6	5.4
20C	20*0.2	0.8	7.3
30C	30*0.2	0.5	8.0
2C +2C	2*0.5 + 2*0.2	0.5	4.1
2C + 4C	2*0.5 + 4*0.2	0.5	4.8
2C + 6C	2*0.5 + 6*0.2	0.5	5.2
2C + 8C	2*0.5 + 8*0.2	0.6	5.8
2C + 10C	2*0.5 + 10*0.2	0.6	6.0
2C + 12C	2*0.5 + 12*0.2	0.8	6.2

Fire Alarm Cable

◆Cable structure

Solid Bare Copper Conductor
PVC core insulation: 2 cores
Insulation color: Black and Red
Screen (Optional)
Drain wire: 22AWG Stranded Tinned Copper
Al-Pet foil: 115% coverage
PVC Sheath (Red)

◆Application

Power limited fire alarm and communications cable for riser or non-riser applications;
Fire alarm, smoke detectors, signaling, and fire protective circuits;
For use as fixed wiring within building, principally for power-limited fire-alarm circuits

◆Technical data

Temperature range
-40℃ to +105℃
Max. Operating Voltage-UL:
300V RMS
Minimum Bending radius
10x cable thickness

◆Certificate

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

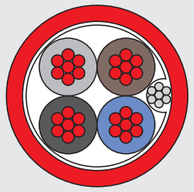
◆Characteristic

Conductor elongation(%): ⩾10
Insulation tensile strength(N/mm^2): ⩾13.8
Insulation elongation(%): ⩾100
Insulation Heat Shock(1 hour at 150°C): no cracks
Insulation Cold bend test (-40°C): no cracks
Sheath tensile strength (N/mm^2): ⩾13.8
Sheath elongation (%): ⩾100
Sheath tensile strength after 7 days 136°C (N/mm^2): ⩾85% unaged
Sheath elongation after 7 days 136°C (%): ⩾85% unaged
Sheath Heat Shock (1 hour at 150°C): no cracks
Sheath Cold bend test (-40°C): no cracks
Strip ability 40mm sheath (N): 10~15

Conductor Diameter (mm)	AWG-no.	Outer Diameter (mm)	Copper Weight (kg/km)	Cable Weight (kg/km)	Max. DCR Resistance at 20 °C (Ω/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



◆Cable structure

Plain annealed copper solid (1.0 - 2.5mm^2) or stranded (4.0 mm^2) circular conductor complying with B6360 class 1 or class 2.

Insulation: Silicone Rubber

Screen: Al-Pet foil + Drain Wire

Sheath: Robust thermoplastic LSOH sheath;
Colour - White or Red
Other colours to special order, For external exposure, the use of a white sheath is recommended

◆Application

For fixed installation typically in fire alarm and emergency lighting circuits where circuit integrity must be maintained. For installation where fire, smoke emission and toxic fumes create a potential threat to life and equipment.

◆Technical data

Operating Temperatuer: -40 to 90°C
Operating Voltage: 300~500V
Test Voltage: 5000V
Temperature Rating: -30 to +70°C
Minimum Bending Radius:
6 x overall diameter

◆Standard

BS 7629-1
BS 6387 C W Z
BS 5839-1 CLAUSE 26.2
BS EN 50200 PH30
BS 8434-1

NO OF CORES	Nominal cross section (mm^2)	Conceptual Construction (no./mm)	Mean overall diameter (mm)	Max. conductor resistance at 20 °C (Ω/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

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 20minutes	S

Resistance to fire and water:	Symbol
650 ° for 15minutes, then for 15minutes 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

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 10μs/mm.

IEC60332 Part 3-Flame Propagation

This test defines the ability of bunched cables to restrict vertical flame propagation when laid in trunking, cable trays, or conduit.
The test comprises of 3 categories, each determined by the amount of combustible material in a 1m 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 3m^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

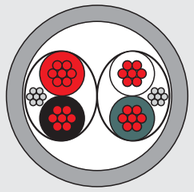
The duration of the test shall be 30 min(15 min for the initial fire and impact phase followed by an additional 15 min for the fire, impact and water phase), during which the cable shall not reach the point of failure.
Conformity to this requirement shall qualify for a 30 min classification.

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.

◆Individually Screened Multi-Pair Cable

RoHS Compliant



◆Cable structure

Conductor: Stranded tinned copper
Insulation: PP (Polypropylene)
Screen: Al-Pet
8728LSF: Individual and Overall Screen
Drain Wire: Tinned copper
Armouring:
8723 SWA: SWA (Steel Wire Armour)
Sheath:
8723LSF: (Low Smoke and Fume)
8723PE: (Polyethylene)
8723SWA PE: (Polyethylene)
8723LSZH: (Low Smoke Zero Halogen)
8728LSF: (Low Smoke and Fume)
8777LSF: (Low Smoke and Fume)
8778LSF: (Low Smoke and Fume)

Sheath Colour
8723LSF: Grey
8723PE: Black
8723SWA PE: Black
8723LSZH: Grey
8728LSF: Grey
8777LSF: Grey
8778LSF: Grey

◆Application

Individually Screened Multi-Pair Cable (Belden Equivalent) is designed to prevent cross-talk between pairs and ensures excellent protection from electrical interference.
Suitable for instrumentation, computer and security applications, point of sale, control systems, and RS232 applications.

◆Technical data

Voltage Rating:
8723LSF: 300V
8723PE: 300V
8723SWA PE: 300V
8723LSZH: 300V
8728LSF: 300V
8777LSF:30V
8778LSF: 30V

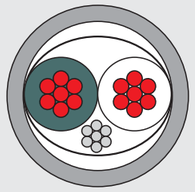
Temperature Rating:
8723LSF: -20ºC to +80ºC
8723PE: -40ºC to +80ºC
8723SWA PE: -40ºC to +80ºC
8723LSZH: -20ºC to +60ºC
8728LSF: -20ºC to +80ºC
8777LSF: -20ºC to +80ºC
8778LSF: -20ºC to +80ºC

Part Number	No. of Pairs x Pair x AWG (No. of Strands) # x # x AWG(#)	Nominal Diameter of Strands (mm)	Nominal Overall Diameter (mm)	Max. Conductor Resistance (Ω/km)
8723LSF	2x2xAWG22(7)	0.254	4.27	48.2
8723PE	2x2xAWG22(7)	0.254	4.27	48.2
8723SWA PE	2x2xAWG22(7)	0.254	8.20	48.2
8723LSZH	2x2xAWG22(7)	0.254	4.27	48.2
8723LSF	2x2xAWG22(7)	0.254	5.46	55.7
8777LSF	3x2xAWG22(7)	0.254	6.93	49.2
8778LSF	6x2xAWG22(7)	0.254	9.20	49.2

Belden Equivalent

◆Overall Screened Single Pair Cable

RoHS Compliant



◆Cable structure

Conductor: Stranded tinned copper
Insulation: PE (Polyethylene)
Screen: Al-Pet + Drain Wire
Sheath: LSF (Low Smoke and Fume)
Sheath Colour: Grey
Core Identifcation:
8451LSF 1 Pair: Black, Red
8760LSF 1 Pair: Black, Clear
8761LSF 1 Pair: Black, Clear
8762LSF 1 Pair: Black, Clear
8719LSF 1 Pair: Black, Clear

◆Application

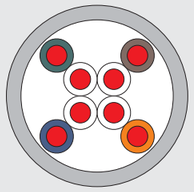
Overall Screened Single Pair Cable (Belden Equivalent) is suitable for use in instrumentation, data and audio applications where protection against electrical interference is required. Cables with polyethylene insulation show lower signal loss than those using PVC.

◆Technical data

Voltage Rating:
8451LSF: 300V
8760LSF: 300V
8761LSF: 300V
8762LSF: 300V
8719LSF: 600V

Temperature Rating:
8451LSF: 75ºC
8760LSF: 60ºC
8761LSF: 60ºC
8762LSF: 60ºC
8719LSF: 80ºC

Part Number	No. of Pairs x Pair x AWG (No. of Strands) # x # x AWG(#)	Nominal Diameter of Strands (mm)	Nominal Overall Diameter (mm)	Max. Conductor Resistance (Ω/km)
8451LSF	1x2xAWG22(7)	0.254	3.51	47.6
8760LSF	1x2xAWG18(16)	0.254	5.65	21.3
8761LSF	1x2xAWG22(7)	0.254	4.90	52.5
8762LSF	1x2xAWG20(7)	0.320	5.60	31.2
8719LSF	1x2xAWG16(19)	0.300	7.95	14.1



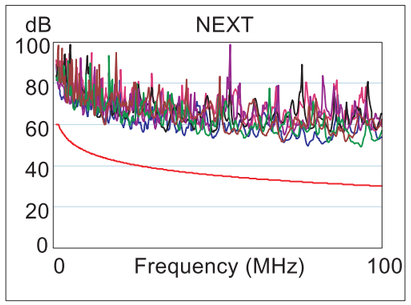
Grade		Cat 5E (100m)
Conductor	(dia.mm) (dia.Inch)	24 AWG SBC 0.51 0.020
Insulation	(dia.mm) (dia.Inch)	HDPE 0.92 0.036
Nylon Rip Cord		150D
Jacket	(dia.mm) (dia.Inch)	PVC,LSOH,PE 5.20 0.205
No. of Pairs		4
Effective Length (M/Ft.)		100/328
Packaging		305m/Reel/Box, 1000m/Wooden Drum, According to customer

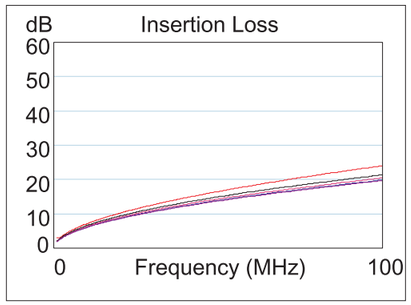
◆Technical Data

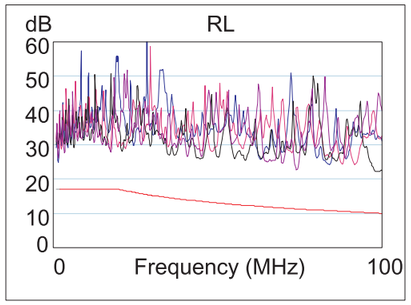
Rated Temperature(℃): -40~70
Velocity ratio(%): 69
Characteristic impedance: 100±15Ω
Bending radius (min.):8 X Cable diameter
Flame Retardancy: CMP, CMR, CMG, CM
UL approval is in process, UL File number is E334179

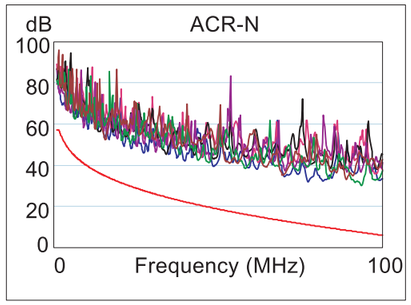
◆Standards and performances

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









IP - TV Cable

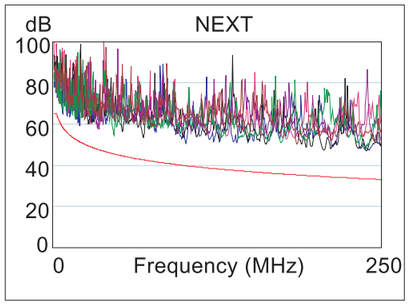
Grade		UTP Cat 6
Conductor		23 AWG SBC
Insulation	(dia.mm) (dia.Inch)	Solid PE 0.94 0.037
Filler		Cross Member
Jacket	(dia.mm) (dia.Inch)	PVC/LSZH 6.00 0.236
No. of Pairs		4
Packaging		305m/Reel/Box, According to customer

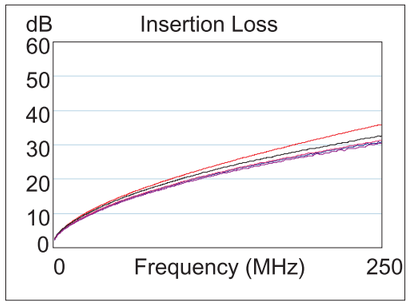
◆Technical Data

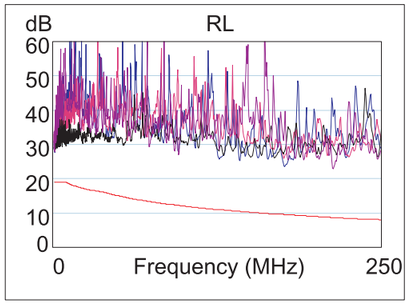
Rated Temperature(℃): -40~70
Velocity ratio(%): 72
Characteristic impedance:
(From 1 to 100MHz)100±15Ω
(From 100 to 250MHz)100±20Ω
Bending radius (min.):8 X Cable diameter
Flame Retardancy: CMP, CMR, CMG, CM
UL approval is in process, UL File number is E334179

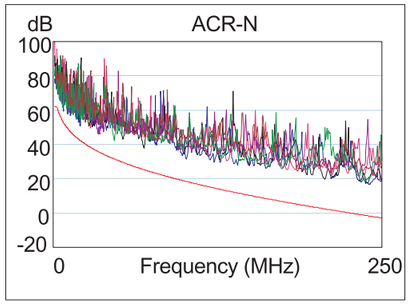
◆Standards and performances

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



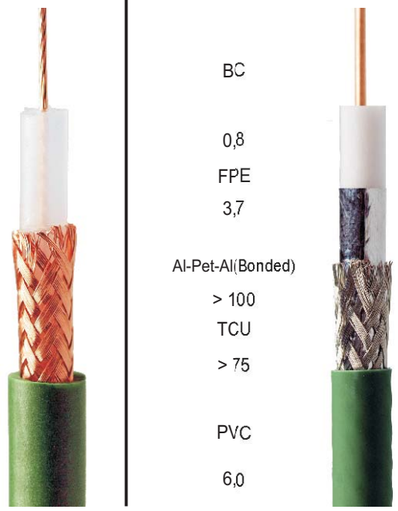


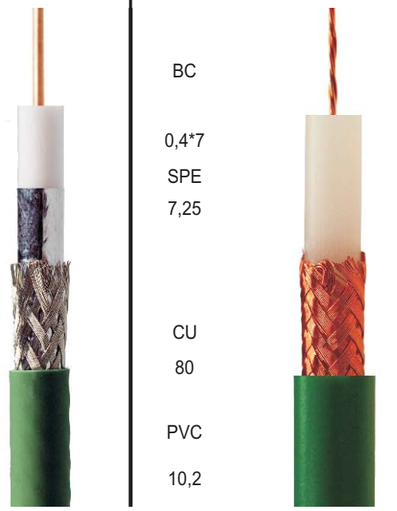


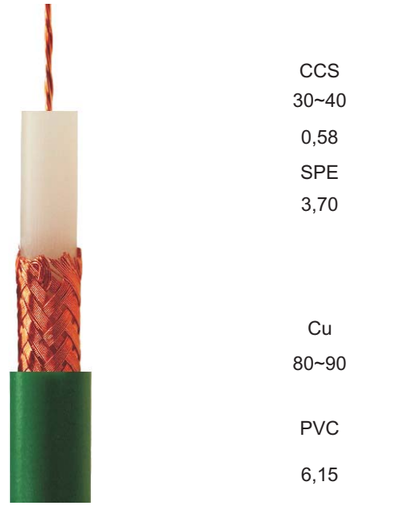


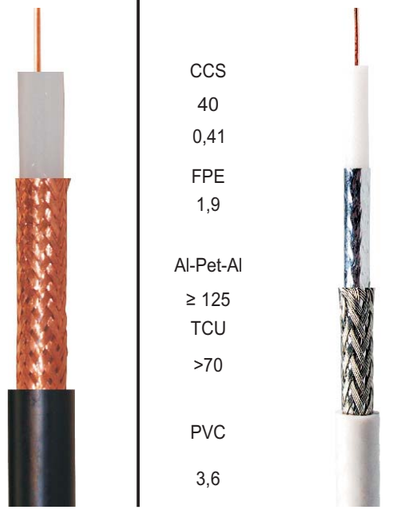
CCTV Coax Cables

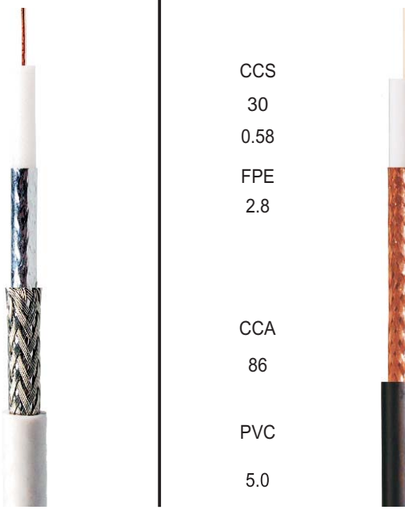
Cable code		KX6	KX6(Long Distance)	KX8	RG59 B/U	RG59 MINI	RG59 Foam
Construction Data							
Inner conductor	material	BC	BC	BC	CCS	CCS	CCS
Conductivity	%				30~40	40	30
	dia. mm	0,2*7	0,8	0,4*7	0,58	0,41	0.58
Dielectric	material	SPE	FPE	SPE	SPE	FPE	FPE
	dia. mm	3,70	3,7	7,25	3,70	1,9	2.8
Screen:							
Film foil type	material		Al-Pet-Al(Bonded)			Al-Pet-Al	
Foil coverage	%		> 100			≥ 125	
Braid material		CU	TCU	CU	Cu	TCU	CCA
Braid coverage	%	80	> 75	80	80~90	>70	86
Outer sheath	material	PVC	PVC	PVC	PVC	PVC	PVC
	dia. mm	6,10	6,0	10,2	6,15	3,6	5.0











◆Electrical Data

Impedance	Ω	75 ± 3	75 ± 3	75 ± 3	75 ± 3	75 ± 3	75 ± 3
Capacitance	pF/m	67 ± 2	< 56	67 ± 2	< 70	< 60	53 ± 3
Velocity ratio	%	66	83	66	66	82	82
Attenuation (at 20℃)							
at 50 **MHz**	dB/100m	8,1	----	2.9	8,5	12,5	—
at 100 **MHz**	dB/100m	13,0	7,9	4.5	11,8	16,7	11.9
at 200 **MHz**	dB/100m	18,5	10,9	10.9	16,5	22,5	16.8
at 450 **MHz**	dB/100m	27,5	----	20,7	26,00	33,1	—
at 800 **MHz**	dB/100m	34,5	22,8	23,6	35,80	44,75	—
at 860 **MHz**	dB/100m	35,8	----	24.5	37,20	46,64	35.7
at 1000 **MHz**	dB/100m	45.0	----	27.5	39,50	50,50	38.9
Inner Conductor Resistance	Ω/km	87,5	37	22,2	235	359.1	239
Standard packing							
Unit length	m	500	500	500	500	500	500

Cable code		RG59+2C A	RG59+2C B	RG59+4C A	RG59+4C B
Construction Data					
Inner conductor	material	CCS	BC	CCS	BC
	dia. mm	0.58	0.20*24	0.58	0.19*16
Dielectric	material	SPE	PVC	SPE	PVC
	dia. mm	3,70	2.0	3,70	1.8
Screen:					
Braid material		BC	Chalk	BC	Chalk
Braid coverage	%	>84	—	>80	—
Sheath	material	PVC		PVC	
	dia. mm	6,10		6,10	
Mylar spiral coverage	%	115		125	
Outer sheath	material	LSZH		PVC	
	dia. mm	10.3		9.8	

◆Electrical Data

Impedance		Ω	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		Ω/km	235	<24.6	235	<40.5
Standard packing						
Unit length		m	1000		1000	

R&D keeps the vigor and possibility of growth for any company. Our professional engineers specialise in products, materials, production process, machinery, parts & components, etc. With the aid of several build-to-standard labs focusing on electrical performance, mechanical, and chemical testing, our engineers become the driving engine of technical innovation and new product launches.

Electrical

Bedea Coupling Tube: for screening efficiency & transfer impedance of coaxial cable
LAN Cable Testing (1 Ghz)

Mechanical

Environment Testing Chamber
Aging & Humidity Testing
Low Temperature Testing
Fire resistant testing chamber circuit integrity to BS 5389-1:2002 BS 8434-1:2003 BS 6387
Flame resistant chamber to IEC60331 IEC60332
Ladder Testing to IEC 60332-3-10
UV Test
Elongation & Tensile Strength

Chemical

Smoke emission chamber to IEC 61034, BS EN 50268
Spectrum Meter (RoHS)
Gas Acidity Testing to BS EN 50267-2-2:1999