

## 658AFS Composite - Lock Power, Card Reader, Door Contract, REX Applications



### Description:

18 AWG stranded bare copper conductors, Flamarrest® insulation and jackets, no overall jacket, all cables are Beldfoil® shielded, cable jackets are color coded by application, individual jacket is sequentially marked at two foot intervals.

### Usage (Overall)

Suitable Applications: Access Control

### Twisted Pair

#### Physical Characteristics

##### Conductor

###### AWG:

# Pairs	AWG	Stranding	Conductor Material	Dia. (in.)
3	22	7x30	BC - Bare Copper	0.030

##### Insulation

###### Insulation Material:

Insulation Trade Name	Insulation Material	Dia. (in.)
Flamarrest®	LS PVC - Low Smoke Polyvinyl Chloride	0.047

###### Twisted Pair Color Code Chart:

Number	Color	Description
1	Black and Red	Card Reader 1
2	White and Green	Card Reader 2
3	Orange and Brown	Card Reader 3

##### Outer Shield

###### Outer Shield Material:

Outer Shield Trade Name	Type	Outer Shield Material	Coverage (%)
Beldfoil®	Tape	Aluminum Foil-Polyester Tape	100.000

###### Outer Shield Drain Wire AWG:

AWG	Stranding	Drain Wire Conductor Material
24	7x32	TC - Tinned Copper

##### Outer Jacket

###### Outer Jacket Material:

Outer Jacket Trade Name	Outer Jacket Material
Flamarrest®	LS PVC - Low Smoke Polyvinyl Chloride

###### Outer Jacket Diameter:

Nom. Dia. (in.)
0.218

###### Outer Jacket Color Code Chart:

Number	Color	Description
1	Orange	Card Reader

### Applicable Specifications and Agency Compliance Applicable Standards & Environmental Programs

NEC/(UL) Specification: CMP

CEC/C(UL) Specification: CMP

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### Flame Test

UL Flame Test: NFPA 262

### Suitability

Suitability - Indoor: Yes

### Electrical Characteristics

#### Nom. Capacitance Conductor to Shield:

Capacitance (pF/ft)
60.000

#### Nom. Capacitance Conductor to Conductor:

Capacitance (pF/ft)
33.000

#### Nom. Conductor DC Resistance:

DCR @ 20°C (Ohm/1000 ft)
16.300

Ind. Pair Nominal Shield DC Resistance @ 20 Deg. C: 13.900 Ohm/1000 ft

#### Max. Operating Voltage - Non-UL:

Voltage
300 V RMS

#### Max. Recommended Current:

Description	Current
Card Reader	2

## Multi Conductor

### Physical Characteristics

#### Conductor

##### AWG:

# Conductors	AWG	Stranding	Conductor Material	Dia. (in.)
2	22	7x30	BC - Bare Copper	0.030
4	22	7x30	BC - Bare Copper	0.030
4	18	7x26	BC - Bare Copper	0.046

### Insulation

#### Insulation Material:

Insulation Trade Name	Insulation Material	Dia. (in.)	AWG
Flamarrest®	LS PVC - Low Smoke Polyvinyl Chloride	0.047	22
Flamarrest®	LS PVC - Low Smoke Polyvinyl Chloride	0.066	18

#### Insulation Color Code Chart:

Number	Color	Description
1	Black	Door Contact 1
2	Red	Door Contact 2
3	Black	Rex/Spare 1
4	Red	Rex/Spare 2
5	White	Red/Spare 3
6	Green	Rex/Spare 4
7	Black	Lock/Power 1
8	Red	Lock/Power 2
9	White	Lock/Power 3
10	Green	Lock/Power 4

### Individual Shield

#### Individual Shield Color Code Chart:

1

### Outer Shield

#### Outer Shield Material:

AWG	Outer Shield Trade Name	Type	Outer Shield Material	Coverage (%)	Description
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## 658AFS Composite - Lock Power, Card Reader, Door Contract, REX Applications

22	Beldfoil®	Tape	Aluminum Foil-Polyester Tape	100.000	Door Contact
22	Beldfoil®	Tape	Aluminum Foil-Polyester Tape	100.000	Rex/Spare
18	Beldfoil®	Tape	Aluminum Foil-Polyester Tape	100.000	Lock/Power

### Outer Shield Drain Wire AWG:

Component	AWG	Stranding	Drain Wire Conductor Material
Door Contact	24	7x32	TC - Tinned Copper
Rex/Spare	24	7x32	TC - Tinned Copper
Lock/Power	24	7x32	TC - Tinned Copper

### Outer Jacket

#### Outer Jacket Material:

Outer Jacket Trade Name	Outer Jacket Material
Flamarrest®	LS PVC - Low Smoke Polyvinyl Chloride

#### Outer Jacket Diameter:

Component #	Nom. Dia. (in.)
Door Contact	0.131
Rex/Spare	0.150
Lock/Power	0.193

Outer Jacket Ripcord: Yes

#### Outer Jacket Color Code Chart:

Number	Color	Description
1	White	Door Contact
2	Blue	Rex/Spare
3	Gray	Lock/Power

### Applicable Specifications and Agency Compliance Applicable Standards & Environmental Programs

NEC/(UL) Specification: CMP

CEC/C(UL) Specification: CMP

### Flame Test

UL Flame Test: NFPA 262

### Suitability

Suitability - Indoor: Yes

### Electrical Characteristics

#### Nom. Capacitance Conductor to Shield:

Description	Freq. (MHz)	Capacitance (pF/ft)
Door Contact	1.000	99.000
Rex/Spare	1.000	59.000
Lock Power	1.000	76.000

#### Nom. Capacitance Conductor to Conductor:

Description	Freq. (MHz)	Capacitance (pF/ft)
Door Contact	1.000	55.000
Rex/Spare	1.000	33.000
Lock Power	1.000	40.000

#### Nom. Conductor DC Resistance:

Description	DCR @ 20°C (Ohm/1000 ft)
Door Contact	16.400
Rex/Spare	16.400
Lock Power	6.500

#### Nom. Inner Shield DC Resistance:

Description	DCR @ 20°C (Ohm/1000 ft)
Door Contact	16.700
Rex/Spare	16.700
Lock Power	15.900

#### Max. Operating Voltage - UL:

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<b>Voltage</b>
300 V RMS

### Max. Recommended Current:

Description	Current
Door Contact	2.2 Amps
Rex/Spare	2.2 Amps
Lock Power	4.0 Amps

## Physical Characteristics (Overall)

### Conductor

### Outer Jacket

#### Outer Jacket Material:

<b>Outer Jacket Material</b>
Unjacketed

### Overall Cabling

Overall Nominal Diameter: 0.420 in.

## Mechanical Characteristics (Overall)

Bulk Cable Weight: 100 lbs/1000 ft.

Max. Recommended Pulling Tension: 200 lbs.

Min. Bend Radius (Install)/Minor Axis: 4.200 in.

## Applicable Specifications and Agency Compliance (Overall)

### Applicable Standards & Environmental Programs

EU Directive 2000/53/EC (ELV): Yes

EU Directive 2002/95/EC (RoHS): Yes

EU RoHS Compliance Date (mm/dd/yyyy): 04/01/2005

EU Directive 2002/96/EC (WEEE): Yes

EU Directive 2003/11/EC (BFR): Yes

CA Prop 65 (CJ for Wire & Cable): Yes

MII Order #39 (China RoHS): Yes

### Plenum/Non-Plenum

Plenum (Y/N): Yes

Non-Plenum Number: 558AFS

## Notes (Overall)

**Notes:** Cold environment installation: When installing cables that have been stored at ambient temperatures of 32 degrees Fahrenheit (0 degrees Centigrade) or lower. Belden recommends conditioning of the cable for 12 hours at room temperature prior to individual cable leg separation. Banana Peel® US PATENT 7049523.

## Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
658AFS 0001000	1,000 FT	108.000 LB	NONE	C	4C18 + 4C22 + 3P22 + 2C22 SHLD
658AFS 000500	500 FT	55.000 LB	NONE	C	4C18 + 4C22 + 3P22 + 2C22 SHLD

### Notes:

C = CRATE REEL PUT-UP.

# Sound, Security and Alarm Cables

## Cable Finder Guide — Coax and Composite



Coax Series or Component Type	AWG Size	Stranding	Non-Plenum				Plenum			
			Part No.	Rating	Shield/Braid Coverage	Page No.	Part No.	Rating	Shield/Braid Coverage	Page No.
<b>CATV/MATV Coax</b>										
RG-59/U	20	Solid	—	—	—	—	6439C8	CMP	Duofoil + 80% Aluminum	20.49
	20	Solid	—	—	—	—	6439Q8	CMP	Quad Shield	20.49
RG-6/U	18	Solid	5339B5	CM	Duofoil + 60% Aluminum	20.48	633938	CMP	Duofoil + 90% Aluminum	20.49
	18	Solid	5339Q5	CM	Quad Shield	20.48	6339Q8	CMP	Quad Shield	20.49
RG-11/U	14	Solid	—	—	—	—	6139B8	CMP	Duofoil + 60% Aluminum	20.49
<b>CCTV Coax</b>										
Mini 59	25	Solid	573945	CM	94% Bare Copper	20.37	673948	CMP	95% Bare Copper	20.39
RG-59/U	22	7	551945	CM	95% Bare Copper	20.37	—	—	—	—
	20	Solid	543945	CM	95% Bare Copper	20.37	643948	CMP	95% Bare Copper	20.39
RG-6/U	18	Solid	533945	CM	95% Bare Copper	20.37	633948	CMP	95% Bare Copper	20.39
RG-11/U	14	Solid	513945	CM	95% Bare Copper	20.37	613948	CMP	95% Bare Copper	20.39
<b>CCTV Coax, Surveillance</b>										
RG-59/U	20	Solid	—	—	—	—	7986LC	CMP	95% Bare Copper	20.50
RG-6/U	18	Solid	—	—	—	—	7985LC	CMP	95% Bare Copper	20.50
<b>CATV Coax, Water-blocked</b>										
RG-59/U	20	Solid	5439W5	CM	Duofoil® + 95% TC	20.37	—	—	—	—
RG-6/U	18	Solid	5339W5	CM	Duofoil + 60% Aluminum	20.37	—	—	—	—
<b>Security Coax</b>										
RG-62	22	Solid	—	—	—	—	6539Y8	CMP	95% Bare Copper	20.39
<b>Schlage Coax</b>										
RG-6/U	18	Solid	5399B5	CM	Duobond® + 60% Alum.	20.48	—	—	—	—
<b>CCTV Composite Coax with Unshielded Pair for Control or Power</b>										
Mini RG-59	25	Solid	579945	CM	95% Bare Copper	20.38	679948	CMP	95% Bare Copper	20.38
UTP	20	7	—	—	Unshielded	—	—	—	Unshielded	—
RG-59	20	Solid	549945	CM	95% Bare Copper	20.38	649948	CMP	95% Bare Copper	20.38
UTP	18	7	—	—	Unshielded	—	—	—	Unshielded	—
RG-6	18	Solid	539945	CM	95% Bare Copper	20.38	639948	CMP	95% Bare Copper	20.38
UTP	18	7	—	—	Unshielded	—	—	—	Unshielded	—
<b>Pan/Tilt/Zoom BananaPeel Composite Coax</b>										
RG-59/U	20	Solid	500PTZ	CMR	95% Bare Copper Braid	20.42	600PTZ	CMP	95% Bare Copper Braid	20.43
1UTP	23	Solid	—	—	Unshielded	—	—	—	Unshielded	—
2/C	18	7	—	—	Unshielded	—	—	—	Unshielded	—
RG-59/U	20	Solid	501PTZ	CMR	95% Bare Copper Braid	20.44	601PTZ	CMP	95% Bare Copper Braid	20.45
1STP	22	7	—	—	Beldfoil®	—	—	—	Beldfoil	—
2/C	18	7	—	—	Unshielded	—	—	—	Unshielded	—
RG-59/U	20	Solid	502PTZ	CMR	95% Bare Copper Braid	20.46	602PTZ	CMP	95% Bare Copper Braid	20.47
1STP	18	7	—	—	Beldfoil	—	—	—	Beldfoil	—
2/C	18	7	—	—	Unshielded	—	—	—	Unshielded	—
<b>CCTV Surveillance UTP and Composite Cables</b>										
2/C	16	19	5284US	CMR	Unshielded	20.51	6284US	CMP	Unshielded	20.52
2TP	24	Solid	—	—	Unshielded	—	—	—	Unshielded	—
2/C	16	19	5284UE	CMR	Unshielded	20.51	6284UE	CMP	Unshielded	20.52
2TP	23	Solid	—	—	Unshielded	—	—	—	Unshielded	—
2/C	16	19	5288US	CMR	Unshielded	20.51	6288US	CMP	Unshielded	20.52
4TP	23	Solid	—	—	Unshielded	—	—	—	Unshielded	—
4TP	24	Solid	1583A	CM	Unshielded	20.40/53	1585A	CMP	Unshielded	20.41/54
4TP	24	Solid	1500A	CM	Unshielded	20.40/53	1501A	CMP	Unshielded	20.41/54
4TP	24	Solid	1583R	CMR	Unshielded	20.40/53	—	—	—	—
2TP	24	Solid	1500R	CMR	Unshielded	20.40/53	—	—	—	—
4TP	23	Solid	7881A	CMR	Unshielded	20.40/53	7882A	CMP	Unshielded	20.41/54
<b>Access Control BananaPeel® Composite Cables</b>										
4/C	18	7	558AFS	CMR	Beldfoil	20.36	658AFS	CMP	Beldfoil	20.35
3TP	22	7	—	—	Beldfoil	—	—	—	Beldfoil	—
4/C	22	7	—	—	Beldfoil	—	—	—	Beldfoil	—
2/C	22	7	—	—	Beldfoil	—	—	—	Beldfoil	—
4/C	16	19	538AFS	CMR	Beldfoil	20.36	638AFS	CMP	Beldfoil	20.35
3TP	18	7	—	—	Beldfoil	—	—	—	Beldfoil	—
4/C	18	7	—	—	Beldfoil	—	—	—	Beldfoil	—
2/C	18	7	—	—	Beldfoil	—	—	—	Beldfoil	—

STP = Shielded Twisted Pair • TC = Tinned Copper • TP = Twisted Pair(s) • UTP = Unshielded Twisted Pair • /C = Conductor(s) (Multi-conductor)

# Access Control Banana Peel® Cable

Lock Power, Card Reader, Door Contact, REX Applications  
Plenum-Rated



## Composite Shielded Multi-Conductors CMP FT6 Rated

### Product Description

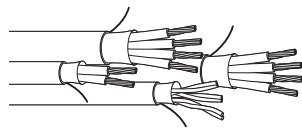
Stranded bare copper conductors, Flamarrest® insulation and jackets. No overall jacket. All cables are Beldfoil® shielded (100% coverage) with drain wire and rip cord. Cable jackets are color coded by application. Individual jacket is sequentially marked at two foot intervals.

### Specifications

<b>Conductor</b>	Bare Copper
<b>Insulation</b>	Flamarrest
<b>Shield</b>	Beldfoil
<b>Individual Jackets</b>	Flamarrest
<b>Overall Jacket</b>	None
<b>Approvals</b>	
NEC	CMP
CEC	CMP FT6
<b>NEC Articles</b>	800
<b>Voltage Rating</b>	300V
<b>Temperature Rating</b>	75°C

### Applications

- Security Systems
- Power-Limited Controls
- Access Control
- Card Reader
- Lock Power
- Door Control
- REX



### Individual Cable Jacket Color Coding System

Jacket Color	Print Legend	Cable Type
Orange	Card Reader	3/P, 18 or 22 AWG, Shielded
White	Door Contact	2/C, 18 or 22 AWG, Shielded
Blue	Rex/Spare	4/C, 18 or 22 AWG, Shielded
Gray	Lock Power	4/C, 16 or 18 AWG, Shielded

Part No.	Component Descriptions	Insulation Material & (Color Code)	Jacket Material & Component OD		Overall Nom. OD		Standard Lengths		Standard Unit Weight	
			Inch	mm	Inch	mm	Ft.	m	Lbs.	kg

### Composite Shielded Multi-Conductors (NEC CMP and CEC CMP FT6)

(3) Shielded Multi-Conductors • (1) Shielded Multi-Pair										
<b>658AFS</b> <small>NEW</small>	(1) 3-Pair 22 AWG Stranded (7x30) Bare Copper Shielded	Flamarrest (Black & Red, White & Green, Orange & Brown)	Orange Flamarrest	.420	10.67	500	152	60	27.2	
	(1) 2-Cond. 22 AWG Stranded (7x30) Bare Copper Shielded	Flamarrest (Black, Red)	White Flamarrest	.131	3.33	1000	304	113	51.3	
	(1) 4-Cond. 22 AWG Stranded (7x30) Bare Copper Shielded	Flamarrest (Black, Red, White, Green)	Blue Flamarrest	.150	3.81					
	(1) 4-Cond. 18 AWG Stranded (7x26) Bare Copper Shielded	Flamarrest (Black, Red, White, Green)	Gray Flamarrest	.191	4.85					
<b>638AFS</b> <small>NEW</small>	(1) 3-Pair 18 AWG Stranded (7x26) Bare Copper Shielded	Flamarrest (Black & Red, White & Green, Orange & Brown)	Orange Flamarrest	.542	13.77	1000	305	189	85.7	
	(1) 2-Cond. 18 AWG Stranded (7x26) Bare Copper Shielded	Flamarrest (Black, Red)	White Flamarrest	.168	4.27					
	(1) 4-Cond. 18 AWG Stranded (7x26) Bare Copper Shielded	Flamarrest (Black, Red, White, Green)	Blue Flamarrest	.197	5.00					
	(1) 4-Cond. 16 AWG Stranded (19x30) Bare Copper Shielded	Flamarrest (Black, Red, White, Green)	Gray Flamarrest	.224	5.69					

U.S. Patent 7,049,523