

## 504PTZ Composite - For PTZ Cameras: CCTV + Control + Power



### Description:

(1) coax-20 AWG solid BC cond., gas-injected foam HDPE insul., 95% BC braid shield, PVC jkt., cabled with (2) pair-22 AWG stranded (7x30) BC cond., PVC insul., Beldfoil® shield, PVC jkt., cabled with (2) cond., 14 AWG (19x27) BC cond., PVC insul., PVC Jkt

### Coax

#### Physical Characteristics

##### Conductor

###### AWG:

| # Coax | AWG | Stranding | Conductor Material | Dia. (in.) |
|--------|-----|-----------|--------------------|------------|
| 1      | 20  | Solid     | BC - Bare Copper   | 0.032      |

##### Insulation

###### Insulation Material:

| Insulation Material                                 | Dia. (in.) |
|---|------------|
| Gas-injected FHDPE - Foam High Density Polyethylene | 0.145      |

##### Outer Shield

###### Outer Shield Material:

| Type  | Outer Shield Material | Coverage (%) |
|-------|-----------------------|--------------|
| Braid | BC - Bare Copper      | 95.000       |

##### Outer Jacket

###### Outer Jacket Material:

| Outer Jacket Material    |
|--------------------------|
| PVC - Polyvinyl Chloride |

###### Outer Jacket Diameter:

| Nom. Dia. (in.) |
|-----------------|
| 0.227           |

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

| Number | Color |
|--------|-------|
| Video  | Black |

#### Applicable Specifications and Agency Compliance

##### Applicable Standards & Environmental Programs

NEC/(UL) Specification: CMR

CEC/C(UL) Specification: CMG

EU CE Mark: Yes

RG Type: 59/U

##### Flame Test

UL Flame Test: UL1666 Vertical Shaft

##### Suitability

Suitability - Indoor: Yes

#### Electrical Characteristics

##### Nom. Characteristic Impedance:

| Impedance (Ohm) |
|-----------------|
|-----------------|

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**Nom. Inductance:**

| Inductance (µH/ft) |
|--------------------|
| 0.097              |

**Nom. Capacitance Conductor to Shield:**

| Capacitance (pF/ft) |
|---------------------|
| 16.300              |

**Nominal Velocity of Propagation:**

| VP (%) |
|--------|
| 83.000 |

**Nominal Delay:**

| Delay (ns/ft) |
|---------------|
| 1.220         |

**Nom. Conductor DC Resistance:**

| DCR @ 20°C (Ohm/1000 ft) |
|--------------------------|
| 10.000                   |

**Nominal Outer Shield DC Resistance:**

| DCR @ 20°C (Ohm/1000 ft) |
|--------------------------|
| 3.500                    |

**Nom. Attenuation:**

| Freq. (MHz) | Attenuation (dB/100 ft.) |
|-------------|--------------------------|
| 1.000       | 0.300                    |
| 5.000       | 0.650                    |
| 10.000      | 0.900                    |
| 50.000      | 1.900                    |
| 100.000     | 2.600                    |
| 200.000     | 3.600                    |
| 400.000     | 5.000                    |
| 700.000     | 7.000                    |
| 900.000     | 8.000                    |
| 1000.000    | 8.500                    |

**Max. Operating Voltage - UL:** 300 V RMS

### Twisted Pair

#### Physical Characteristics

##### Conductor

**AWG:**

| # Pairs | AWG | Stranding | Conductor Material | Dia. (in.) |
|---------|-----|-----------|--------------------|------------|
| 2       | 22  | 7x30      | BC - Bare Copper   | 0.044      |

##### Insulation

**Insulation Material:**

| Insulation Material      | Dia. (in.) |
|--------------------------|------------|
| PVC - Polyvinyl Chloride | 0.049      |

**Twisted Pair Color Code Chart:**

| Number | Color           |
|--------|-----------------|
| 1      | Black and Red   |
| 2      | Black and White |

##### 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 |
|-----|-----------|------------|--------------------|
|-----|-----------|------------|--------------------|

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|    |      |                    |
|----|------|--------------------|
| 24 | 7x32 | TC - Tinned Copper |
|----|------|--------------------|

### Outer Jacket

**Outer Jacket Material:**

| Outer Jacket Material    |
|--------------------------|
| PVC - Polyvinyl Chloride |

**Outer Jacket Diameter:**

| Nom. Dia. (in.) |
|-----------------|
| 0.219           |

**Outer Jacket Color Code Chart:**

| Number | Color |
|--------|-------|
| 1      | Blue  |

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

NEC/(UL) Specification: CMR

CEC/(UL) Specification: CMG

### Flame Test

UL Flame Test: UL1666 Vertical Shaft

### Suitability

Suitability - Indoor: Yes

### Electrical Characteristics

**Nom. Capacitance Conductor to Shield:**

| Capacitance (pF/ft) |
|---------------------|
| 38.000              |

**Nom. Capacitance Conductor to Conductor:**

| Capacitance (pF/ft) |
|---------------------|
| 21.000              |

**Nom. Conductor DC Resistance:**

| DCR @ 20°C (Ohm/1000 ft) |
|--------------------------|
| 17.500                   |

**Max. Operating Voltage - Other:**

| Voltage   |
|-----------|
| 300 V RMS |

**Max. Recommended Current:**

| Description  | Current  |
|--------------|----------|
| Data/Control | 5.2 Amps |

## Multi Conductor

### Physical Characteristics

#### Conductor

**AWG:**

| # Conductors | AWG | Stranding | Conductor Material | Dia. (in.) |
|--------------|-----|-----------|--------------------|------------|
| 2            | 14  | 19x27     | BC - Bare Copper   | 0.074      |

### Insulation

**Insulation Material:**

| Insulation Material      |
|--------------------------|
| PVC - Polyvinyl Chloride |

**Insulation Color Code Chart:**

| Number | Color |
|--------|-------|
| 1      | Red   |
| 2      | Black |

## 504PTZ Composite - For PTZ Cameras: CCTV + Control + Power

### Outer Jacket

Outer Jacket Diameter:

| Nom. Dia. (in.) |
|-----------------|
| 0.244           |

Outer Jacket Color Code Chart:

| Number | Color |
|--------|-------|
| 1      | White |

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

NEC/(UL) Specification: CMR

CEC/C(UL) Specification: CMG

### Flame Test

UL Flame Test: UL1666 Vertical Shaft

### Suitability

Suitability - Indoor: Yes

### Electrical Characteristics

Nom. Capacitance Cond. to Other Conductor & Shield:

| Capacitance (pF/ft) |
|---------------------|
| 21.000              |

Nom. Conductor DC Resistance:

| DCR @ 20°C (Ohm/1000 ft) |
|--------------------------|
| 2.520                    |

Max. Operating Voltage - Other:

| Voltage   |
|-----------|
| 300 V RMS |

Max. Recommended Current:

| Current                     |
|-----------------------------|
| 5 Amps per conductor @ 25°C |

## Physical Characteristics (Overall)

### Conductor

### Outer Jacket

Outer Jacket Material:

| Outer Jacket Material |
|-----------------------|
| Unjacketed            |

### Overall Cabling

Overall Nominal Diameter: 0.496 in.

## Mechanical Characteristics (Overall)

Operating Temperature Range: -10°C To +75°C

Separation Temperature Range: 0°C To +75°C

Bulk Cable Weight: 84.000 lbs/1000 ft.

Max. Recommended Pulling Tension: 183.000 lbs.

Min. Bend Radius (Install)/Minor Axis: 5.000 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): 09/21/2006

## 504PTZ Composite - For PTZ Cameras: CCTV + Control + Power

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): No

### Notes (Overall)

**Notes:** RG59 CCTV + 2 TP 22 AWG Shld + 2C 14 AWG CMR. Individually jacketed and color coded components, cabled around and each fused to a central binding spline. 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                 |
|----------------|----------|-------------|-------|-------|---------------------------|
| 504PTZ 0001000 | 1,000 FT | 101.000 LB  | NONE  | C     | 2P22 + 2C14 + 1 RG59 SHLD |

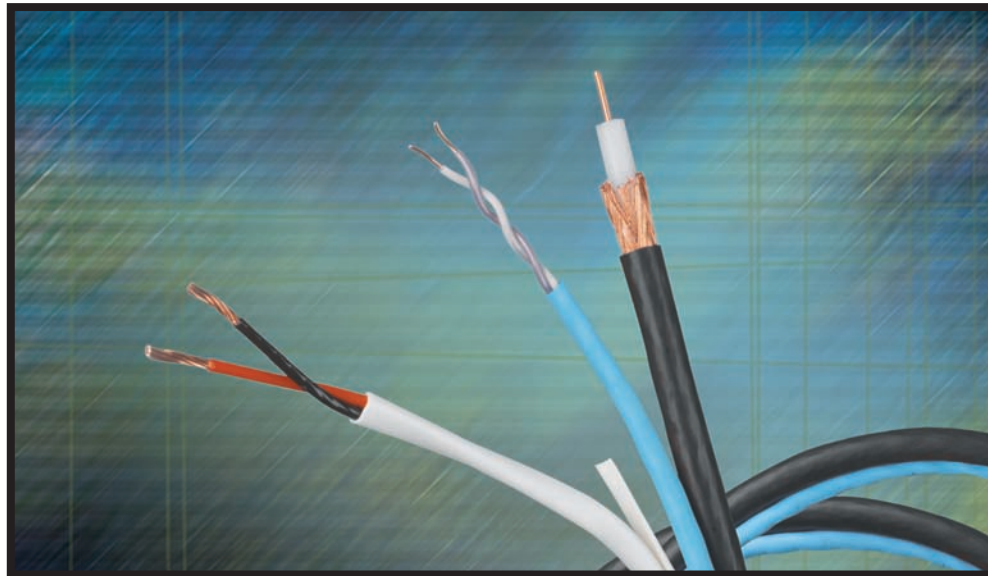
**Notes:**

C = CRATE REEL PUT-UP.

**NP 256**

**Composite Surveillance Monitoring Cables**

To suit your CCTV/Surveillance installation needs, Belden® offers Banana Peel® Composite cables for pan/tilt/zoom (PTZ) cameras. Video is achieved with coax, optical fiber or UTP cables; power and control cables complete the composite.



**Belden Extends Its CCTV Camera Cable Line With More New Generation® Banana Peel PTZ Composite Cables, and Fiber Plus Copper Composites**

Wherever you look today – our offices and public spaces such as hospitals, airports, amusement parks, retail establishments, universities, casinos, sports stadiums and correctional facilities all have a surveillance system in place to monitor the people visiting their facilities and the people working within them.

But whatever the type of equipment used, the objective of these systems is clear: protect the people involved with the facility and the facility's assets.

**Surveillance System Camera Technology**

Although traditional analog cameras are frequently used in security systems, the use of Digital Signal Processed (DSP) cameras is trending upwards – in part because they produce high quality images and they are better able to handle diverse or extreme lighting conditions. Also, camera users typically have more control setting options, plus DVRs (digital video recorders) enable users to quickly sort through their recorded images, while requiring less storage space than videotapes. Both DSP cameras and DVRs could be handled with existing coax technology.

From an applications standpoint, there are two types of security cameras available: Fixed and PTZ (pan/tilt/zoom). If you consider a CCTV set-up in a casino, the fixed cameras would be appropriate for high-risk, fixed areas – entrances and exits, cash registers, etc.

The PTZ cameras would be more appropriate for the gaming tables since the cameras must be made to move or zoom in on a particular exchange at the table or a particular customer.

**New Generation Banana Peel Composite Cables For PTZ Installations**

For both riser and plenum PTZ applications, Belden offers composite cables that feature its revolutionary new Banana Peel design. Banana Peel PTZ cables offer the following:

- No overall jacket – Banana Peel cables feature a patent-pending design that affixes the individual cables to a center spline, eliminating the need for an overall jacket.
- The absence of the overall jacket eliminates a whole step in the termination process: the stripping of the jacket.
- Reduces installation time by requiring less set-up, pulling and termination time with the Banana Peel versus individual cables.
- Short circuits, caused by contact with the center conductor while stripping off the outer jacket can be prevented.
- The individual cables are color-coded for easy identification.
- Eliminates the need for pulling several individual components by using an all-in-one Banana Peel cable (reducing installation costs and time).

New Generation® PTZ Banana Peel® composite cables are comprised of the following components in order to accommodate control encoding schemes or protocols such as Manchester, Sensornet and RS-422:

- Video: Coax, Optical Fiber, or UTP
- Power: 2/C Copper
- Control: STP, TP/OAS, or UTP

### Availability

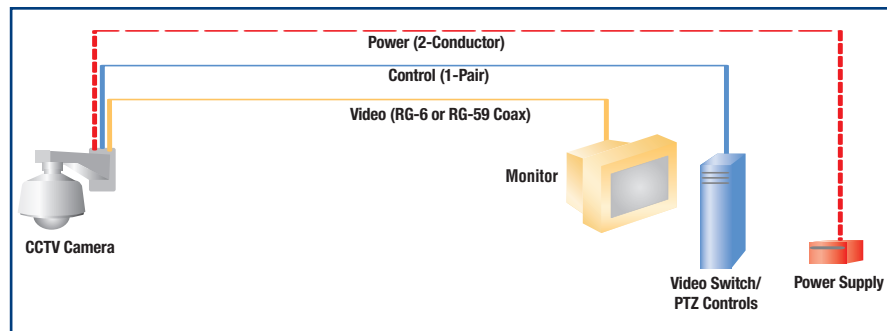
Belden offers a wide range of New Generation cables for pan/tilt/zoom camera applications that meet all your installation needs – whether large or small in scope – in both Plenum-rated and Non-plenum versions. An exceptional line of single coaxes, coaxial/twisted pair composites and unshielded multi-conductor constructions are also available for fixed camera applications.

### PTZ Camera Manufacturers Cross-Reference\*

| Manufacturer                 | Belden Part No.   | Video | Power     | Control                    |
|------------------------------|-------------------|-------|-----------|----------------------------|
| Sony, Toshiba, GE Interlogix | 500PTZ and 600PTZ | RG-59 | 2c 18 AWG | 1 UTP, 23 AWG              |
| Pelco, American Dynamics     | 501PTZ and 601PTZ | RG-59 | 2c 18 AWG | 1 STP, 22 AWG (8761-type)  |
| Bosch, American Dynamics     | 502PTZ and 602PTZ | RG-59 | 2c 18 AWG | 1 STP, 18 AWG (8760-type)  |
| Various                      | 503PTZ            | RG-59 | 2c 14 AWG | 2 TP, 22 OAS (5541FE-type) |
| Various                      | 504PTZ            | RG-59 | 2c 14 AWG | 1 STP, 18 AWG (8760-type)  |

\*Always use cables recommended by the camera manufacturer. Check their specs to determine recommended power AWG size and control configuration.

### PTZ Banana Peel Layout



### PTZ Camera Cable

Banana Peel Composite Cables, Plenum and Riser-rated  
The Cable Without a Jacket®



| Description | Part No. | UL NEC/ C(UL) CEC Type | Standard Lengths |   | Standard Unit Weight |    | Overall Nom. OD |    | Component Descriptions | Component Jacket Material & Colors | Component Nom. OD |    |
|-------------|----------|------------------------|------------------|---|----------------------|----|-----------------|----|------------------------|------------------------------------|-------------------|----|
|             |          |                        | Ft.              | m | Lbs.                 | kg | Inch            | mm |                        |                                    | Inch              | mm |

**Composite • (1) RG-59/U Coax + (1) STP 18 AWG + 2/c 14 AWG** (NEC CMR and CEC CMG FT4)

| Individual Riser-Rated PVC Jackets • No Overall Jacket |  |                      |   |      |       |       |      |      |      |  |           |      |      |
|--|--|----------------------|---|------|-------|-------|------|------|------|--|-----------|------|------|
|  |  | 503PTZ<br><b>new</b> | CMR/CMG<br>Vertical<br>Shaft UL<br>1666 | 1000 | 304.8 | 104.0 | 47.3 | .496 | 12.6 | <b>Video:</b> (1) RG-59 543945 Type      | PVC Black | .227 | 5.77 |
|  |  |                      |   |      |       |       |      |      |      | <b>Control:</b> (1) STP 18 AWG 8760 Type | PVC Blue  | .219 | 5.56 |
|  |  |                      |   |      |       |       |      |      |      | <b>Power:</b> 2/c 14 AWG 5100UE Type     | PVC White | .244 | 6.20 |

**Composite • (1) RG-59/U Coax + (2) TP 22 AWG OAS + 2/c 14 AWG** (NEC, CMR and CEC CMG FT4)

| Individual Riser-Rated PVC Jackets • No Overall Jacket |  |                      |   |      |       |      |      |      |      |   |           |      |      |
|--|--|----------------------|---|------|-------|------|------|------|------|---|-----------|------|------|
|  |  | 504PTZ<br><b>new</b> | CMR/CMG<br>Vertical<br>Shaft UL<br>1666 | 1000 | 304.8 | 93.0 | 42.3 | .496 | 12.6 | <b>Video:</b> (1) RG-59 543945 Type           | PVC Black | .227 | 5.77 |
|  |  |                      |   |      |       |      |      |      |      | <b>Control:</b> (2) TP 22 AWG OAS 5541FE Type | PVC Blue  | .219 | 5.56 |
|  |  |                      |   |      |       |      |      |      |      | <b>Power:</b> 2/c 14 AWG 5100UE Type          | PVC White | .244 | 6.20 |