

METRIC MEASUREMENT VERSION

# 9165 Composite - ENG, EFP and CCTV Cable



For more Information please call

1-800-Belden1



# **General Description:**

22 AWG stranded (7x30) conductors, foam polyethylene (coax) and PVC (Pairs) insulation, coax w/BC braid shield (95% cverage), (3) STP, each pair w/Beldfoil shield, 22 AWG drain wire, PVC jacket.

| Physical Characteristics<br>Conductor<br>AWG:  | Coax   |             |  |  |
|--|--|-------------|--|--|
| Conductor   AWC:   # Coax AWG Stranding Conductor Material Dia. (mm)   1 2   7x80 BC - Bare Copper   0.762   Insulation Material:   Insulation Material   Type Innor Shield Material   Braid (BC - Bare Copper   Bog C - Bare Copper   9      Applicable Standards & Environmental Programs   EU CE Mark:   No   RG Type:   59/U    Electrical Characteristics  Nom. Characteristic Impedance:   Inductance (offm)   0.295   Nom. Inductance:   Inductance (offm)   0.295   Nom. Capacitance Conductor to Shield:   Capacitance Conductor to Shield:   Capacitance (offm)   0.5.7 <th></th> <th></th> <th></th> <th></th>  |  |             |  |  |
| i         Coase         Cooper         0.782           Insulation         issue in the insulation Material         issue in the insulation Material         issue insulation           insulation         insulation         issue insulation         issue insulation         issue insulation           insulation         issue insulation         issue insulation         issue insulation         issue insulation           insulation         issue insulation         issue insulation         issue insulation         issue insulation           insulation         issue insulation         issue insulation         issue insulation         issue insulation           issue insulation         issue insulation         issue insulation         issue insulation         issue insulation           issue insulation         issue insulation         issue insulation         issue insulation         issue insulation           issue insulation         issue insue insue insue insue insue insulation         i  | Conductor  |             |  |  |
| 1 22 7x30 BC - Bare Copper 0.762   Insulation Material:   Insulation Material:   Insulation Material:   Type Inner Shield Naterial:   Nom. Characteristic Inner Shield:   Type Inner Shield Naterial:   Nom. Characteristic Inner Shield:   Type Inner Shield Naterial:   Nom. Inductance:   Inner Shield Naterial:   Nom. Characteristic Inner Shield:   Type Inner Shield Naterial:   Nom. Characteristic Inner Shield Naterial:   Nom. Inductance:   Inner Shield Naterial:   Nom. In   | -  |             |  |  |
| Insulation Material:<br>Insulation Shield Material:<br>Insulations and Agency Compliance<br>Applicable Specifications and Agency Compliance<br>Nom. Characteristic Impedance:<br>Insulation (Ohm)<br>75<br>Nom. Inductance:<br>Insulation (Ohm)<br>75<br>Nom. Inductance (plfm)<br>65.761<br>Nominal Velocity of Propagation:<br>Vef (6)<br>78.000<br>Nominal Delay:<br>Belay (nois)<br>Applicable Specifications:<br>Delay (nois)<br>Applicable Specifications:<br>Applicable Specificat |  |             |  |  |
| Insulation Material:<br>Insulation Material:<br>IFFE-Foam Polyettylene 3.708<br>Inner Shield Material:<br>Type Inner Shield Material % Coverage (%)<br>Brad BC - Sare Coper 95<br>Applicable Specifications and Agency Compliance<br>Applicable Standards & Environmental Programs<br>EU CE Mark: No<br>RG Type: 59/U<br>Electrical Characteristics<br>Nom. Characteristic Impedance:<br>Impedance (0Hm)<br>75<br>Nom. Inductance:<br>Maddance (pHm)<br>5.761<br>Nom. Inductance:<br>Sare Conductor to Shield:<br>Capacitance (pHm)<br>5.761<br>Nom.inal Velocity of Propagation:<br>VP (%)<br>Nom.inal Velocity of Propagation:<br>VP (%)<br>Nom. Conductor DC Resistance:<br>Design (m)<br>4.265<br>Nom. Conductor DC Resistance:  |  |             |  |  |
| Insulation Material Dia. (mm)   FFE - Foam Polyethylene 3.708   Inner Shield Haterial % Coverage (%)   Braid BC - Bare Copper   95 95   Applicable Specifications and Agency Compliance   Applicable Standards & Environmental Programs   EU CE Mark: No   RG Type: 59/U   Electrical Characteristics   Nom. Characteristic Impedance:   Impedance (0hm)   76   Nom. Inductance:   Inductance (pifm)   58.761   Nominal Delay:   Delay (num)   4.285   Nom. Conductor DC Resistance:   Dick @ 20° (Ohm)(m)   42.15   Nom. Indry Did DC Resistance:   |  |             |  |  |
| Inner Shield<br>Inner Shield Material:<br>Type Inner Shield Material:<br>Type Inner Shield Material:<br>Type Inner Shield Material:<br>Type Inner Shield DC Bare Copper 98<br>Applicable Standards & Environmental Programs<br>EU CE Mark: No<br>RG Type: 59/U<br>Electrical Characteristics<br>Nom. Inductance:<br>Inngedance (Dhm)<br>75<br>Nom. Inductance:<br>Inngedance (pHm)<br>0.295<br>Nom. Capacitance Conductor to Shield:<br>Capacitance (pHm)<br>56.761<br>Nominal Velocity of Propagation:<br>YP (%)<br>72<br>Nom. Conductor DC Resistance:<br>Delay (nsim)<br>4.265<br>Nom. Conductor DC Resistance:   |  | nm)         |  |  |
| Inner Shield Material:<br>Type Inner Shield Material % Coverage (%)<br>Prad BC - Bare Copper 95<br>Applicable Standards & Environmental Programs<br>EU CE Mark: No<br>RG Type: 59/U<br>Electrical Characteristics<br>Nom. Characteristic Impedance:<br>mgedance (Dhm)<br>75<br>Nom. Inductance:<br>Inductance (pfm)<br>59.701<br>Nom. Capacitance Conductor to Shield:<br>Capacitance (pfm)<br>59.701<br>Nominal Velocity of Propagation:<br>V (%)<br>78.000<br>Nominal Delay:<br>Delay (ns/m)<br>4.265<br>Nom. Conductor DC Resistance:<br>Delay (ns/m)<br>4.265<br>Nom. Inner Shield DC Resistance:  | FPE - Foam Polyethylene 3.708  |             |  |  |
| Type inner Shield Material % Coverage (%)   Braid   <  | Inner Shield   |             |  |  |
| Braid BC- Bare Copper 95     Applicable Specifications and Agency Compliance   Applicable Standards & Environmental Programs   EU CE Mark: No   RG Type: 59/U   Electrical Characteristics Nom. Inductance:  Impedance (Ohm)    75 Nom. Inductance:   Inductance (pf/m)   0.295   Nom. Capacitance Conductor to Shield:   Capacitance (pf/m)   56.761   Nominal Velocity of Propagation:   VP (%)   78.000   Nominal Delay:   Delay (ms/m)   4.285   Nom. Conductor DC Resistance:   DPIay (ms/m)   4.215   Nom. Inner Shield DC Resistance:   |  |             |  |  |
| Applicable Specifications and Agency Compliance<br>Applicable Standards & Environmental Programs<br>EU CE Mark: No<br>RG Type: 59/U<br>Electrical Characteristics<br>Nom. Characteristic Impedance:<br>medance (Ohm)<br>75<br>Nom. Inductance:<br>Inductance (µHm)<br>0.295<br>Nom. Capacitance Conductor to Shield:<br>Capacitance (µHm)<br>10.295<br>Nom. Capacitance Conductor to Shield:<br>Capacitance (µHm)<br>10.295<br>Nom. Capacitance (Pfm)<br>56.701<br>Nominal Velocity of Propagation:<br>VP (%)<br>78.000<br>Nominal Delay:<br>Delay (ns/m)<br>42.05<br>Nom. Conductor DC Resistance:<br>DCR @ 20°C (Ohm/km)<br>49.215<br>Nom. Inner Shield DC Resistance:   |  | overage (%) |  |  |
| Applicable Standards & Environmental Programs         EU CE Mark:       No         RG Type:       59/U         Electrical Characteristics       Nom. Characteristic Impedance:         Impedance (Ohm)       75         75       Nom. Inductance:         Inductance (uH/m)       0.295         Nom. Capacitance Conductor to Shield:       Capacitance (uF/m)         66.761       Nominal Velocity of Propagation:         VP (%)       78.000         Nominal Delay:       Delay (ns/m)         0.295       Nom. Conductor DC Resistance:         Delay (ns/m)       4205         Nom. Space (us/m)       4205         Nom. Sheld DC Resistance:       Delay (ns/m)         042.15       Nom. Inner Shield DC Resistance:   |  |             |  |  |
| RG Type:       59/U         Electrical Characteristics       Nom. Characteristic Impedance:         Impedance (Ohm)       75         Nom. Inductance:       Inductance (IHm)         0.295       Nom. Capacitance Conductor to Shield:         Capacitance (pFm)       56.761         56.761       Nominal Velocity of Propagation:         VP (%)       78.000         Nominal Delay:       Delay (ns/m)         0.4265       Nom. Conductor DC Resistance:         DCR @ 20°C (Ohm/km)       49.215         Nom. Inner Shield DC Resistance:       Electrical Characteristica  |  |             |  |  |
| Electrical Characteristics<br>Nom. Characteristic Impedance:<br>Impedance (Ohm)<br>75<br>Nom. Inductance:<br>Inductance (µH/m)<br>0.296<br>Nom. Capacitance Conductor to Shield:<br>Capacitance (pF/m)<br>56.761<br>Nominal Velocity of Propagation:<br>VP (%)<br>78.000<br>Nominal Delay:<br>Delay (ns/m)<br>4.265<br>Nom. Conductor DC Resistance:<br>DCR @ 20°C (Ohm/km)<br>49.215<br>Nom. Inner Shield DC Resistance:  | EU CE Mark:  | No          |  |  |
| Nom. Characteristic Impedance:   Impedance (Ohm)   75   Nom. Inductance:   Inductance (µH/m)   0.295   Nom. Capacitance Conductor to Shield:   Capacitance (pF/m)   56.761   Nominal Velocity of Propagation:   VP %)   78.000   Nominal Delay:   Delay (ns/m)   4.265   Nom. Conductor DC Resistance:   DCR @ 20°C (Ohm/km)   49.215   Nom. Inner Shield DC Resistance:   | RG Type:   | 59/U        |  |  |
| DCR @ 20°C (Ohm/km)  | 75<br>Nom. Inductance:<br>Inductance (µH/m)<br>0.295<br>Nom. Capacitance Conductor to<br>Capacitance (pF/m)<br>56.761<br>Nominal Velocity of Propagation<br>VP (%)<br>78.000<br>Nominal Delay:<br>Delay (ns/m)<br>4.265<br>Nom. Conductor DC Resistance:<br>DCR @ 20°C (Ohm/km)<br>49.215<br>Nom. Inner Shield DC Resistance | :           |  |  |
|  | DCR @ 20°C (Ohm/km)  |             |  |  |



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8.531

Nom. Attenuation:

**Twisted Pair** 

| Freq. (MHz) | Attenuation (dB/100m) |
|-------------|-----------------------|
| 1.000       | 0.984                 |
| 5.000       | 2.297                 |
| 10.000      | 3.281                 |
| 50.000      | 6.890                 |
| 100.000     | 9.843                 |
| 400.000     | 24.279                |

| # Pairs                          | AWG                      | Stranding   | Conduc                    | ctor | Material  | Dia. (m |
|----------------------------------|--------------------------|-------------|---------------------------|------|-----------|---------|
| 3                                | 22                       | 7x30        | TC - Tir                  | ned  | Copper    | 0.762   |
| sulation<br>Insulation Material: |                          |             |                           |      |           |         |
| 1                                |                          |             | <b>D</b> '. (             |      |           |         |
| Insulat                          | ion Ma                   | terial      | Dia. (mi                  | n)   |           |         |
|                                  |                          |             | <b>Dia. (m</b> i<br>1.372 | n)   |           |         |
|                                  | Polyviny                 | yl Chloride |                           | n)   |           |         |
| PVC - F<br>ner Shie<br>Inner Shi | Polyviny<br>Id<br>eld Ma | yl Chloride | 1.372                     |      | er Shield | Materia |

**Physical Characteristics** 

| AWG | Stranding | Dia. (mm) | Conductor Material |
|-----|-----------|-----------|--------------------|
| 22  | 7x30      | 0.762     | TC - Tinned Copper |

Aluminum Foil-Polyester Tape 100

#### **Inner Jacket**

Inner Jacket Color Code Chart:

| Number | Color            |
|--------|------------------|
| 1      | Black and Red    |
| 2      | Orange and Brown |
| 3      | Green and White  |

### **Electrical Characteristics**

Nom. Characteristic Impedance:



35

Nom. Capacitance Conductor to Conductor:

Capacitance (pF/m)

167.331

Nominal Velocity of Propagation:

VP (%) 58.000

Nom. Conductor DC Resistance:

DCR @ 20°C (Ohm/km) 36.091

# **Physical Characteristics (Overall)**

**Outer Jacket** 

**Outer Jacket Material:** 

Outer Jacket Material PVC - Polyvinyl Chloride

**Overall Cable** 

Coverage (%)



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| Overall Nominal Diameter:                 | 7.366 x 14.249 mm   |
|---|---------------------|
| lechanical Characteristics (Overall)      |                     |
| Operating Temperature Range:              | -40°C To +60°C      |
| Non-UL Temperature Rating:                | 60°C                |
| Bulk Cable Weight:                        | 126.497 Kg/Km       |
| Max. Recommended Pulling Tension:         | 653.885 N           |
| Min. Bend Radius/Minor Axis:              | 76.200 mm           |
| Applicable Specifications and Agency Co   | ompliance (Overall) |
| Applicable Standards & Environmental Prog |                     |
| NEC/(UL) Specification:                   | CL2X                |
| AWM Specification:                        | UL Style 20006      |
| EU Directive 2011/65/EU (ROHS II):        | Yes                 |
| 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):                             | No                  |

#### Electrical Characteristics (Overall)

Max. Operating Voltage - UL:

Voltage 30 V RMS

#### Notes (Overall)

Notes: Siamese Type Construction.

#### Put Ups and Colors:

| Item #       | Putup  | Ship Weight | Color | Notes | Item Desc                |
|--------------|--------|-------------|-------|-------|--------------------------|
| 9165 0101000 | 305 MT | 42.638 KG   | BLACK | С     | 3 SH PR#22,1 75 OHM COAX |
| 9165 010500  | 152 MT | 22.680 KG   | BLACK | С     | 3 SH PR#22,1 75 OHM COAX |

Notes:

C = CRATE REEL PUT-UP.

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