



Description:

Series 59, 20 AWG solid .032" bare copper-covered steel conductor, gas-injected foam polyethylene insulation, Duobond® II (100% coverage) plus an aluminum braid (40% coverage), PVC jacket.

Physical Characteristics (Overall)

Conductor

AWG:

| # Coax | AWG | Stranding | Conductor Material | Dia. (in.) |
|--------|-----|-----------|----------------------------------|------------|
| 1 | 20 | Solid | BCCS - Bare Copper Covered Steel | .032 |

Insulation

Insulation Material:

| Insulation Material | Dia. (in.) |
|--------------------------------------|------------|
| Gas-injected FPE - Foam Polyethylene | .144 |

Outer Shield

Outer Shield Material:

| Layer # | Outer Shield Trade Name | Type | Outer Shield Material | Coverage (%) |
|---------|-------------------------|-------|---|--------------|
| 1 | Bonded Duofoil® | Tape | Bonded Aluminum Foil-Polyester Tape-Aluminum Foil | 100 |
| 2 | | Braid | AL - Aluminum | 40 |

Outer Jacket

Outer Jacket Material:

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

Overall Cabling

Overall Nominal Diameter: 0.237 in.

Mechanical Characteristics (Overall)

Operating Temperature Range: -40°C To +80°C

UL Temperature Rating: 80°C

Bulk Cable Weight: 20 lbs/1000 ft.

Max. Recommended Pulling Tension: 80 lbs.

Min. Bend Radius (Install)/Minor Axis: 2.500 in.

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

NEC/(UL) Specification: CM, CATV

CEC/C(UL) Specification: CM

EU CE Mark: Yes

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

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

EU RoHS Compliance Date (mm/dd/yyyy): 01/01/2004

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

PMSHA Specification: P-MSHA-SC-182/4

Series Type: Series 59

Flame Test

UL Flame Test: UL1685 UL Loading

Plenum/Non-Plenum

Plenum (Y/N): No

Electrical Characteristics (Overall)

Nom. Characteristic Impedance:

| Impedance (Ohm) | Tolerance (Ohms) |
|-----------------|------------------|
| 75 | ± 3 |

Nom. Inductance:

| Inductance (µH/ft) |
|--------------------|
| .097 |

Nom. Capacitance Conductor to Shield:

| Capacitance (pF/ft) |
|---------------------|
| 16.2 |

Nominal Velocity of Propagation:

| VP (%) |
|--------|
| 83 |

Nominal Delay:

| Delay (ns/ft) |
|---------------|
| 1.2 |

Nom. Conductor DC Resistance:

| DCR @ 20°C (Ohm/1000 ft) |
|--------------------------|
| 44.5 |

Nominal Outer Shield DC Resistance:

| DCR @ 20°C (Ohm/1000 ft) |
|--------------------------|
| 17 |

Max. Attenuation:

| Freq. (MHz) | Attenuation (dB/100 ft.) |
|-------------|--------------------------|
| 5 | 0.89 |
| 55 | 1.95 |
| 211 | 3.59 |
| 270 | 4.05 |
| 300 | 4.27 |
| 350 | 4.64 |
| 400 | 4.88 |
| 450 | 5.30 |
| 550 | 5.90 |
| 750 | 6.96 |
| 870 | 7.54 |
| 1000 | 8.09 |

Max. Operating Voltage - UL:

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

Minimum Return Loss:

| Description | Freq. (MHz) | Start Freq. (MHz) | Stop Freq. (MHz) | Min. RL (dB) |
|-------------|-------------|-------------------|------------------|--------------|
| | | 5 | 1000 | 20 |

Notes (Overall)

Notes: Sweep tested 5 MHz to 1 GHz.

Put Ups and Colors:

| Item # | Putup | Ship Weight | Color | Notes | Item Desc |
|---------------|----------|-------------|-------|-------|-------------------------|
| 9100 009U1000 | 1,000 FT | 28.000 LB | WHITE | | #20 GIFHDLDPPE SH FRPVC |
| 9100 010U1000 | 1,000 FT | 28.000 LB | BLACK | | #20 GIFHDLDPPE SH FRPVC |
| 9100 010U500 | 500 FT | 14.500 LB | BLACK | | #20 GIFHDLDPPE SH FRPVC |
| 9100 0101000 | 1,000 FT | 30.000 LB | BLACK | | #20 GIFHDLDPPE SH FRPVC |

Broadband Coax

MATV Cables

Series 59

| Description | Part No. | UL NEC/ C(UL) CEC Type | Standard Lengths | | Standard Unit Weight | | Conductor (stranding) Diameter Nom. DCR | Nominal Core OD | | Shielding Materials Nom. DCR | Nominal OD | | Nom. Imp. (Ω) | Nom. Vel. of Prop. | Nominal Capacitance | | Nominal Attenuation | | |
|-------------|----------|------------------------------|------------------|---|----------------------|----|---|-----------------|----|---------------------------------|------------|----|---------------|--------------------|---------------------|------|---------------------|------------|---------|
| | | | Ft. | m | Lbs. | kg | | Inch | mm | | Inch | mm | | | pF/Ft. | pF/m | MHz | dB/100 Ft. | dB/100m |

Series 59 • 20 AWG Solid .032" Bare Copper-covered Steel Conductor • Foil + Braid Shield (40% Coverage)

Gas-injected Foam Polyethylene Insulation • Black PVC Jacket

| | | | | | | | | | | | | | | | | | | | |
|------|-------------|-----------------|---------------------|---------|------|------|----------------|------|------|-------------------------------|------|------|----|-----|------|------|--------------------------------|--|--|
| 80°C | 9275 | NEC: CATV CM | U-500 | U-152.4 | 12.0 | 5.5 | 20 AWG (solid) | .144 | 3.66 | Duofoil® + 40% Aluminum Braid | .237 | 6.02 | 75 | 83% | 16.2 | 53.1 | See Chart on page 6.92 | | |
| | | CEC: CM | U-1000 [▲] | U-304.8 | 23.0 | 10.4 | .032" BCCS | | | | | | | | | | Sweep tested 5 MHz to 550 MHz. | | |
| | | | | | | | 44.5Ω/M' | | | | | | | | | | 146.0Ω/km | | |

[▲]U-1000 ft. put-up also available in White.

| | | | | | | | | | | | | | | | | | | | |
|------|-------------|-----------------|---------------------|---------|------|------|----------------|------|------|-----------------------------------|------|------|----|-----|------|------|------------------------------|--|--|
| 80°C | 9100 | NEC: CATV CM | U-500 | U-152.4 | 12.0 | 5.5 | 20 AWG (solid) | .144 | 3.66 | Duobond® II* + 40% Aluminum Braid | .237 | 6.02 | 75 | 83% | 16.2 | 53.1 | See Chart on page 6.92 | | |
| | | CEC: CM | U-1000 [▲] | U-304.8 | 23.0 | 10.4 | .032" BCCS | | | | | | | | | | Sweep tested 5 MHz to 1 GHz. | | |
| | | | | | | | 44.5Ω/M' | | | | | | | | | | 146.0Ω/km | | |

[▲]U-1000 ft. put-up also available in White.

BCCS = Bare Copper-covered Steel • DCR = DC Resistance

*Duobond II = Bonded Duofoil® (100% coverage) + aluminum braid (67% coverage).

Technical Information

Attenuation vs. Frequency for Belden® Broadband Coaxial Products

| Frequency Point (MHz) | Series 59 | | | | Series 6 | | | | Series 11 | | | |
|-----------------------|--------------------|-----------------|--------------------|-----------------|--------------------|-----------------|--------------------|-----------------|--------------------|-----------------|--------------------|-----------------|
| | Nominal dB/100 Ft. | Nominal dB/100m | Maximum dB/100 Ft. | Maximum dB/100m | Nominal dB/100 Ft. | Nominal dB/100m | Maximum dB/100 Ft. | Maximum dB/100m | Nominal dB/100 Ft. | Nominal dB/100m | Maximum dB/100 Ft. | Maximum dB/100m |
| 5 | .75 | 2.46 | .89 | 2.92 | .54 | 1.77 | .67 | 2.20 | .34 | 1.12 | .38 | 1.25 |
| 55 | 1.84 | 6.04 | 1.95 | 6.40 | 1.45 | 4.76 | 1.60 | 5.25 | .91 | 2.99 | .97 | 3.18 |
| 211 | 3.36 | 11.02 | 3.59 | 11.78 | 2.64 | 8.66 | 2.87 | 9.42 | 1.68 | 5.51 | 1.81 | 5.94 |
| 216 | 3.41 | 11.19 | 3.69 | 12.11 | 2.67 | 8.76 | 2.95 | 9.68 | 1.70 | 5.58 | 1.84 | 6.04 |
| 240 | 3.57 | 11.71 | 3.87 | 12.70 | 2.80 | 9.19 | 3.09 | 10.14 | 1.78 | 5.84 | 1.94 | 6.36 |
| 270 | 3.79 | 12.43 | 4.05 | 13.29 | 2.97 | 9.74 | 3.24 | 10.63 | 1.89 | 6.20 | 2.05 | 6.73 |
| 300 | 3.99 | 13.09 | 4.27 | 14.01 | 3.13 | 10.27 | 3.43 | 11.25 | 1.99 | 6.53 | 2.15 | 7.05 |
| 325 | 4.16 | 13.65 | 4.50 | 14.76 | 3.26 | 10.70 | 3.59 | 11.78 | 2.07 | 6.79 | 2.24 | 7.35 |
| 350 | 4.33 | 14.21 | 4.64 | 15.22 | 3.39 | 11.12 | 3.72 | 12.20 | 2.15 | 7.05 | 2.32 | 7.61 |
| 375 | 4.49 | 14.73 | 4.84 | 15.88 | 3.52 | 11.55 | 3.87 | 12.70 | 2.22 | 7.28 | 2.40 | 7.87 |
| 400 | 4.66 | 15.29 | 4.88 | 16.01 | 3.65 | 11.97 | 4.00 | 13.12 | 2.30 | 7.55 | 2.47 | 8.10 |
| 450 | 4.96 | 16.27 | 5.30 | 17.39 | 3.88 | 12.73 | 4.26 | 13.98 | 2.45 | 8.04 | 2.65 | 8.69 |
| 500 | 5.22 | 17.13 | 5.50 | 18.04 | 4.09 | 13.42 | 4.48 | 14.70 | 2.59 | 8.50 | 2.85 | 9.35 |
| 550 | 5.48 | 17.98 | 5.90 | 19.36 | 4.30 | 14.11 | 4.71 | 15.45 | 2.73 | 8.96 | 2.94 | 9.65 |
| 600 | 5.75 | 18.86 | 6.18 | 20.28 | 4.51 | 14.80 | 4.94 | 16.21 | 2.85 | 9.35 | 3.08 | 10.10 |
| 650 | 6.03 | 19.78 | 6.52 | 21.39 | 4.72 | 15.49 | 5.18 | 16.99 | 2.98 | 9.78 | 3.22 | 10.56 |
| 700 | 6.28 | 20.60 | 6.83 | 22.41 | 4.92 | 16.14 | 5.45 | 17.88 | 3.10 | 10.17 | 3.37 | 11.06 |
| 750 | 6.51 | 21.36 | 6.96 | 22.83 | 5.11 | 16.76 | 5.59 | 18.34 | 3.21 | 10.53 | 3.50 | 11.48 |
| 800 | 6.71 | 22.01 | 7.30 | 23.95 | 5.27 | 17.29 | 5.75 | 18.86 | 3.32 | 10.89 | 3.65 | 11.97 |
| 862 | 6.97 | 22.87 | 7.50 | 24.61 | 5.47 | 17.95 | 5.98 | 19.62 | 3.46 | 11.35 | 3.82 | 12.53 |
| 870 | 7.00 | 22.97 | 7.54 | 24.74 | 5.49 | 18.01 | 6.00 | 19.68 | 3.48 | 11.42 | 3.84 | 12.60 |
| 900 | 7.14 | 23.42 | 7.79 | 25.56 | 5.60 | 18.37 | 6.11 | 20.05 | 3.55 | 11.65 | 3.96 | 12.99 |
| 950 | 7.39 | 24.25 | 7.90 | 25.92 | 5.79 | 19.00 | 6.35 | 20.83 | 3.66 | 12.01 | 4.10 | 13.45 |
| 1000 | 7.68 | 25.20 | 8.09 | 26.54 | 5.99 | 19.65 | 6.54 | 21.46 | 3.77 | 12.37 | 4.23 | 13.88 |
| 1450 | — | — | — | — | 7.80 | 25.60 | 8.00 | 26.20 | 5.00 | 16.41 | 5.50 | 18.10 |
| 1800 | — | — | — | — | 8.60 | 28.20 | 8.80 | 28.90 | 5.70 | 18.70 | 6.27 | 20.60 |
| 2250 | — | — | — | — | 9.80 | 32.20 | 10.00 | 32.80 | 6.50 | 21.33 | 7.15 | 23.50 |
| 3000 | — | — | — | — | 11.30 | 37.10 | 11.90 | 39.00 | 8.00 | 26.25 | 8.80 | 28.90 |