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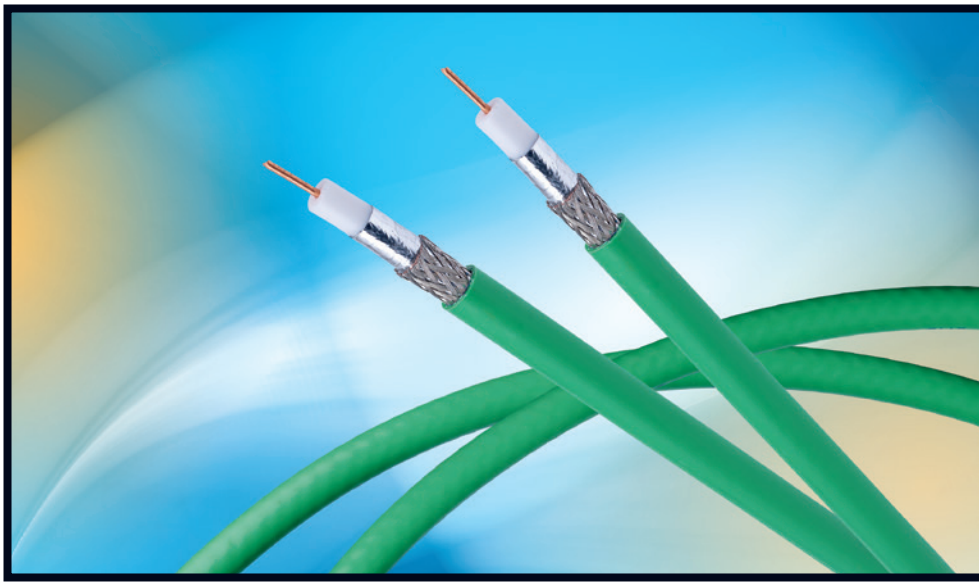
Product Bulletin

PB 137E

# Duobond® II HD Digital Video Cables

Belden launches Duobond® II HD Digital Video cables for the reliable transmission of HD digital video signals in broadcast systems at data rates of 3 GB/s



**Duobond® II HD Digital Video coaxial cables provide improved performance and uninterrupted transmission thanks to their perfect harmony with Belden 1-piece HD BNC connectors.**

- Connectors are easy to install on the cable, thanks to bonded foil on the dielectric
- Proven cable technology that has already been successful in broadband applications
- Coax reliably transmits HD digital video signals at a data rate of 3 GB/s

Belden's new Duobond® II HD Digital Video cables are coaxial cables for use in broadcast systems to carry data at up to 3 GB/s. As an extension to the company's existing product range of HD Digital Video cables, they provide high signal integrity and flawless streams.

## Applications

Broadcasters have to carry virtually any video signal including analog, digital (SD-SDI), high definition (HD), 3G (2K) and even 3D and Quad Full-HD with cable bundles of 2 or 4 coaxes. They are concerned about the distance their cables will be able to transmit video signals.

Duobond® II HD Digital Video cables, especially in combination with Belden 1-piece HD compression connectors, provide broadcasters with a cost-effective solution that is high in performance and reliability while supporting various rates and standards:

- SDI: SMPTE 259M (279 MB/s)
- HD: SMPTE 292M, 372M (1.5 GB/s)
- 2K: SMPTE 424M (3 GB/s)
- QFHD: SMPTE 425 under revision (6 GB/s)
- 4K: SMPTE 425 under revision (12 GB/s)

These cables have an operating temperature range of -30°C to +70°C. They are available in various colors: black, green, turquoise, blue, yellow, gray, purple.

The cables belong to a complete system from Belden for broadcast applications in the production and delivery area. Other products include connectors, patch panels, and routers.

## Your Benefits

The customer obtains an improved cable-connector combination, thanks to the easy installation of Belden 1-piece compression connectors at each end to form a secure connection. Crimp connectors are also easy to attach. End users can be sure of high signal integrity when using these cables.

The perfect combination of the cable and the connector not only improves the reliability of the system, it also helps reduce installation time. The technology used in the new cables has already been proven in other applications, broadband in particular.

**A new product to serve your needs. Be certain.**

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## Ordering Information

Duobond® II HD Digital Video cables give users in various broadcast applications extra confidence in signal integrity.

| Des-cription | Part No. | UL NEC/ C(UL) CEC Type IEC | Standard Lengths | | Standard Unit Weight | | Conductor (stranding) Diameter Nom. DCR | Nominal Insulation OD | | Shielding Material 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/100 m |
| **Mini RG59 Type • 22 AWG** • Solid 0.65 mm Bare Copper Conductor • Duobond® II • 80% Tinned Copper Braid | | | | | | | | | | | | | | | | | | | |
| **Gas-injected Foam HDPE Insulation • PVC Jacket** | | | | | | | | | | | | | | | | | | | |
| **HDTV/SDI**<br>Digital Video<br>75°C | **70080** | – | 1.640 | 500 | 26.5 | 12.0 | 0.65 mm<br>22 AWG<br>Solid BC<br>75.0 Ω/km*<br>55.0 Ω/km** | 0.142 | 2.9 | Duobond® II<br>+80%<br>TC braid<br>20.0 Ω/km*** | 0.175 | 4.45 | 75 | 84% | 16.2 | 53 | 1.0<br>3.6<br>10.0<br>71.5<br>135.0<br>270.0<br>360.0<br>540.0<br>720.0<br>750.0<br>1000.0<br>1500.0<br>2250.0<br>3000.0<br>4500.0 | 0.5<br>0.8<br>1.1<br>2.6<br>3.5<br>4.9<br>5.7<br>7.0<br>8.0<br>8.2<br>9.5<br>11.8<br>14.6<br>17.1<br>21.4 | 1.7<br>2.5<br>3.7<br>8.6<br>11.5<br>16.1<br>18.6<br>22.8<br>26.4<br>26.9<br>31.3<br>38.7<br>48.0<br>56.1<br>70.2 |
| | | | Return loss: | | 5-1.600 MHz: ≥ 23 dB<br>1.600-4.500 MHz: ≥ 21 dB | | | | | | | | | | | | | | |
| **Gas-injected Foam HDPE Insulation • FRNC/LSNH Jacket** | | | | | | | | | | | | | | | | | | | |
| **HDTV/SDI**<br>Digital Video<br>75°C | **70080NH**<br>IEC 60332-1<br>IEC 61034<br>IEC 60754 | – | 1.640 | 500 | 26.5 | 12.0 | 0.65 mm<br>22 AWG<br>Solid BC<br>75.0 Ω/km*<br>55.0 Ω/km** | 0.142 | 2.9 | Duobond® II<br>+80%<br>TC braid<br>20.0 Ω/km*** | 0.175 | 4.45 | 75 | 84% | 16.2 | 53 | see above information on PVC Jacket | | |
| | | | Return loss: | | 5-1.600 MHz: ≥ 23 dB<br>1.600-4.500 MHz: ≥ 21 dB | | | | | | | | | | | | | | |
| **HDTV/SDI**<br>Digital Video<br>75°C | **70080CH**<br>IEC 60332-3-25<br>IEC 60332-1<br>IEC 61034<br>IEC 60754 | – | 1.640 | 500 | 26.5 | 12.0 | 0.65 mm<br>22 AWG<br>Solid BC<br>75.0 Ω/km*<br>55.0 Ω/km** | 0.142 | 2.9 | Duobond® II<br>+80%<br>TC braid<br>20.0 Ω/km*** | 0.175 | 4.45 | 75 | 84% | 16.2 | 53 | see above information on PVC Jacket | | |
| | | | Return loss: | | 5-1.600 MHz: ≥ 23 dB<br>1.600-4.500 MHz: ≥ 21 dB | | | | | | | | | | | | | | |
| **RG59 Type • 20 AWG** • Solid 0.8 mm Bare Copper Conductor • Duobond® II • 80% Tinned Copper Braid | | | | | | | | | | | | | | | | | | | |
| **Gas-injected Foam HDPE Insulation • PVC Jacket** | | | | | | | | | | | | | | | | | | | |
| **HDTV/SDI**<br>Digital Video<br>75°C | **70081** | – | 1.640 | 500 | 48.5 | 22.0 | 0.8 mm<br>20 AWG<br>Solid BC<br>44.0 Ω/km*<br>32.0 Ω/km** | 0.145 | 3.68 | Duobond® II<br>+80%<br>TC braid<br>12.0 Ω/km*** | 0.233 | 5.92 | 75 | 83% | 16.2 | 53 | 1.0<br>3.6<br>10.0<br>71.5<br>135.0<br>270.0<br>360.0<br>540.0<br>720.0<br>750.0<br>1000.0<br>1500.0<br>2250.0<br>3000.0<br>4500.0 | 0.3<br>0.6<br>0.9<br>2.1<br>2.7<br>3.8<br>4.4<br>5.5<br>6.4<br>6.5<br>7.6<br>9.3<br>11.6<br>13.4<br>16.4 | 1.0<br>2.0<br>3.0<br>6.9<br>8.9<br>12.5<br>14.4<br>18.1<br>21.0<br>21.3<br>24.9<br>30.5<br>38.0<br>44.0<br>53.8 |
| | | | Return loss: | | 5-1.600 MHz: ≥ 23 dB<br>1.600-4.500 MHz: ≥ 21 dB | | | | | | | | | | | | | | |
| **Gas-injected Foam HDPE Insulation • FRNC/LSNH Jacket** | | | | | | | | | | | | | | | | | | | |
| **HDTV/SDI**<br>Digital Video<br>75°C | **70081NH**<br>IEC 60332-1<br>IEC 61034<br>IEC 60754 | – | 1.640 | 500 | 48.5 | 22.0 | 0.8 mm<br>20 AWG<br>Solid BC<br>44.0 Ω/km*<br>32.0 Ω/km** | 0.145 | 3.68 | Duobond® II<br>+80%<br>TC braid<br>12.0 Ω/km*** | 0.233 | 5.92 | 75 | 83% | 16.2 | 53 | see above information on PVC Jacket | | |
| | | | Return loss: | | 5-1.600 MHz: ≥ 23 dB<br>1.600-4.500 MHz: ≥ 21 dB | | | | | | | | | | | | | | |

* DCR loop = DCR center conductor + shielding • ** DCR center conductor • *** DCR shielding • BC = Bare Copper • DCR = DC resistance

| Des-cription | Part No. | UL NEC/ C(UL) CEC Type IEC | Standard Lengths | | Standard Unit Weight | | Conductor (stranding) Diameter Nom. DCR | Nominal Insulation OD | | Shielding Material 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/100 m |
| **RG59 Type • 20 AWG** • Solid 0.8 mm Bare Copper Conductor • Duobond® II • 80% Tinned Copper Braid | | | | | | | | | | | | | | | | | | | |
| **Gas-injected Foam HDPE Insulation • FRNC/LSNH Jacket** | | | | | | | | | | | | | | | | | | | |
| **HDTV/SDI**<br>Digital Video<br>75°C | **70081CH**<br>IEC 60332-3-25<br>IEC 60332-1<br>IEC 61034<br>IEC 60754 | – | 1.640 | 500 | 48.5 | 22.0 | 0.8 mm<br>20 AWG<br>Solid BC<br>44.0 Ω/km*<br>32.0 Ω/km** | 0.145 | 3.68 | Duobond® II<br>+80%<br>TC braid<br>12.0 Ω/km*** | 0.233 | 5.92 | 75 | 83% | 16.2 | 53 | 1.0<br>3.6<br>10.0<br>71.5<br>135.0<br>270.0<br>360.0<br>540.0<br>720.0<br>750.0<br>1000.0<br>1500.0<br>2250.0<br>3000.0<br>4500.0 | 0.3<br>0.6<br>0.9<br>2.1<br>2.7<br>3.8<br>4.4<br>5.5<br>6.4<br>6.5<br>7.6<br>9.3<br>11.6<br>13.4<br>16.4 | 1.0<br>2.0<br>3.0<br>6.9<br>8.9<br>12.5<br>14.4<br>18.1<br>21.0<br>21.3<br>24.9<br>30.5<br>38.0<br>44.0<br>53.8 |
| | | | Return loss: | | 5-1.600 MHz: ≥ 23 dB<br>1.600-4.500 MHz: ≥ 21 dB | | | | | | | | | | | | | | |
| **RG6 Type • 18 AWG** • Solid 1.0 mm Bare Copper Conductor • Duobond® II • 80% Tinned Copper Braid | | | | | | | | | | | | | | | | | | | |
| **Gas-injected Foam HDPE Insulation • PVC Jacket** | | | | | | | | | | | | | | | | | | | |
| **HDTV/SDI**<br>Digital Video<br>75°C | **70082** | – | 1.640 | 500 | 63.0 | 28.5 | 1.02 mm<br>18 AWG<br>Solid BC<br>31.0 Ω/km*<br>21.0 Ω/km** | 0.18 | 4.57 | Duobond® II<br>+80%<br>TC braid<br>10.0 Ω/km*** | 0.274 | 6.96 | 75 | 82% | 16.2 | 53 | 1.0<br>3.6<br>10.0<br>71.5<br>135.0<br>270.0<br>360.0<br>540.0<br>720.0<br>750.0<br>1000.0<br>1500.0<br>2250.0<br>3000.0<br>4500.0 | 0.2<br>0.5<br>0.7<br>1.7<br>2.3<br>3.2<br>3.7<br>4.6<br>5.3<br>5.5<br>6.4<br>7.9<br>9.8<br>11.6<br>14.6 | 0.8<br>1.5<br>2.4<br>5.6<br>7.4<br>10.4<br>12.1<br>15.0<br>17.5<br>17.9<br>21.0<br>26.0<br>32.0<br>38.0<br>48.0 |
| | | | Return loss: | | 5-1.600 MHz: ≥ 23 dB<br>1.600-4.500 MHz: ≥ 21 dB | | | | | | | | | | | | | | |
| **Gas-injected Foam HDPE Insulation • FRNC/LSNH Jacket** | | | | | | | | | | | | | | | | | | | |
| **HDTV/SDI**<br>Digital Video<br>75°C | **70082NH**<br>IEC 60332-1<br>IEC 61034<br>IEC 60754 | – | 1.640 | 500 | 63.0 | 28.5 | 1.02 mm<br>18 AWG<br>Solid BC<br>31.0 Ω/km*<br>21.0 Ω/km** | 0.18 | 4.57 | Duobond® II<br>+80%<br>TC braid<br>10.0 Ω/km*** | 0.274 | 6.96 | 75 | 82% | 16.2 | 53 | see above information on PVC Jacket | | |
| | | | Return loss: | | 5-1.600 MHz: ≥ 23 dB<br>1.600-4.500 MHz: ≥ 21 dB | | | | | | | | | | | | | | |
| **HDTV/SDI**<br>Digital Video<br>75°C | **70082CH**<br>IEC 60332-3-25<br>IEC 60332-1<br>IEC 61034<br>IEC 60754 | – | 1.640 | 500 | 63.0 | 28.5 | 1.02 mm<br>18 AWG<br>Solid BC<br>31.0 Ω/km*<br>21.0 Ω/km** | 0.18 | 4.57 | Duobond® II<br>+80%<br>TC braid<br>10.0 Ω/km*** | 0.274 | 6.96 | 75 | 82% | 16.2 | 53 | see above information on PVC Jacket | | |
| | | | Return loss: | | 5-1.600 MHz: ≥ 23 dB<br>1.600-4.500 MHz: ≥ 21 dB | | | | | | | | | | | | | | |

* DCR loop = DCR center conductor + shielding • ** DCR center conductor • *** DCR shielding • BC = Bare Copper • DCR = DC resistance

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## Ordering Information

| Des-cription | Part No. | UL NEC/ C(UL) CEC Type IEC | Standard Lengths | | Standard Unit Weight | | Conductor (stranding) Diameter Nom. DCR | Nominal Insulation OD | | Shielding Material 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/100 m |
| **RG11 Type • 14 AWG** • Solid 1.6 mm Bare Copper Conductor • Duobond® II • 80% Tinned Copper Braid | | | | | | | | | | | | | | | | | | | |
| **Gas-injected Foam HDPE Insulation • PVC Jacket** | | | | | | | | | | | | | | | | | | | |
| **HDTV/SDI**<br>Digital Video<br>75°C | **70084** | – | 1.640 | 500 | 124.5 | 56.5 | 1.63 mm<br>14 AWG<br>Solid BC<br>13.9 Ω/km*<br>8.2 Ω/km** | 0.28 | 7.11 | Duobond® II<br>+80%<br>TC braid<br>5.7 Ω/km*** | 0.402 | 10.2 | 75 | 84% | 16.2 | 53 | 1.0<br>3.6<br>10.0<br>71.5<br>135.0<br>270.0<br>360.0<br>540.0<br>720.0<br>750.0<br>1000.0<br>1500.0<br>2250.0<br>3000.0<br>4500.0 | 0.2<br>0.3<br>0.5<br>1.1<br>1.5<br>2.1<br>2.4<br>3.0<br>3.6<br>3.7<br>4.3<br>5.5<br>6.9<br>8.2<br>10.4 | 0.5<br>1.0<br>1.5<br>3.6<br>4.8<br>6.9<br>8.0<br>10.1<br>11.7<br>12.0<br>14.1<br>18.0<br>22.6<br>26.9<br>34.1 |
| | | | Return loss: | | 5-1.600 MHz: ≥ 23 dB<br>1.600-4.500 MHz: ≥ 21 dB | | | | | | | | | | | | | | |
| **Gas-injected Foam HDPE Insulation • FRNC/LSNH Jacket** | | | | | | | | | | | | | | | | | | | |
| **HDTV/SDI**<br>Digital Video<br>75°C | **70084NH**<br>IEC 60332-1<br>IEC 61034<br>IEC 60754 | – | 1.640 | 500 | 124.5 | 56.5 | 1.63 mm<br>14 AWG<br>Solid BC<br>13.9 Ω/km*<br>8.2 Ω/km** | 0.28 | 7.11 | Duobond® II<br>+80%<br>TC braid<br>5.7 Ω/km*** | 0.402 | 10.2 | 75 | 84% | 16.2 | 53 | see above information on PVC Jacket | | |
| | | | Return loss: | | 5-1.600 MHz: ≥ 23 dB<br>1.600-4.500 MHz: ≥ 21 dB | | | | | | | | | | | | | | |
| **Gas-injected Foam HDPE Insulation • FRNC/LSNH Jacket** | | | | | | | | | | | | | | | | | | | |
| **HDTV/SDI**<br>Digital Video<br>75°C | **70084CH**<br>IEC 60332-3-25<br>IEC 60332-1<br>IEC 61034<br>IEC 60754 | – | 1.640 | 500 | 124.5 | 56.5 | 1.63 mm<br>14 AWG<br>Solid BC<br>13.9 Ω/km*<br>8.2 Ω/km** | 0.28 | 7.11 | Duobond® II<br>+80%<br>TC braid<br>5.7 Ω/km*** | 0.402 | 10.2 | 75 | 84% | 16.2 | 53 | see above information on PVC Jacket | | |
| | | | Return loss: | | 5-1.600 MHz: ≥ 23 dB<br>1.600-4.500 MHz: ≥ 21 dB | | | | | | | | | | | | | | |

* DCR loop = DCR center conductor + shielding • ** DCR center conductor • *** DCR shielding • BC = Bare Copper • DCR = DC resistance

### Connector Reference

| Duobond® II Design | | | Compression Connector | | | | | Crimp BNC Connector | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PVC | DESCR 1 PVC | DESCR 2 | 1-piece Locking | 1-piece | Compression Tool | Strip Tool | Boot | 3-piece Crimp | Crimp Tool | Strip Tool | Boot |
| 70080 | Coax mini RG59/U PVC HDTV Precision Video | 0.65/2.9 PHYS 180T 4.3 | 1855ABHDL | 1855ABHD1 | CPLCRBC-BR | LDT-Mini | SLS-RGB/color | 1855ABHD3-ENH | BB3PHCT | BB3PST | SLS-RGB |
| 70081 | Coax RG59/U PVC HDTV Precision Video | 0.81/3.68 PHYS 180T 5.94 | 1505ABHDL | 1505ABHD1 | CPLCRBC-BR | LDT596-250 | SLS-59/6-color | 1505ABHD3 | BB3PHCT | BB3PST | SLS-59/6 |
| 70082 | Coax RG6/U PVC HDTV Precision Video | 1.02/4.57 PHYS 180T 6.99 | 1694ABHDL | 1694ABHD1 | CPLCRBC-BR | LDT596-250 | SLS-59/6-color | 1694ABHD3 | BB3PHCT | BB3PST | SLS-59/6 |
| 70084 | Coax RG11/U PVC HDTV Precision Video | 1.63/7.11 PHYS 180T 10.3 | – | FS11BNC | CPLCCT-11BNC | SDT11-250 | – | – | – | – | – |
| **LSNH IEC 60332-1** | **DESCR 1 LSNH** | **DESCR 2** | **1-piece Locking** | **1-piece** | **Compression Tool** | **Strip Tool** | **Boot** | **3-piece Crimp** | **Crimp Tool** | **Strip Tool** | **Boot** |
| 70080NH | Coax mini RG59/U LSNH HDTV Precision Video | 0.65/2.9 PHYS 180T 4.3 | 1855ABHDL | 1855ABHD1 | CPLCRBC-BR | LDT-Mini | SLS-RGB/color | 1855ABHD3-ENH | BB3PHCT | BB3PST | SLS-RGB |
| 70081NH | Coax RG59/U LSNH HDTV Precision Video | 0.81/3.68 PHYS 180T 5.94 | 1505ABHDL | 1505ABHD1 | CPLCRBC-BR | LDT596-250 | SLS-59/6-color | 1505ABHD3 | BB3PHCT | BB3PST | SLS-59/6 |
| 70082NH | Coax RG6/U LSNH HDTV Precision Video | 1.02/4.57 PHYS 180T 6.99 | 1694ABHDL | 1694ABHD1 | CPLCRBC-BR | LDT596-250 | SLS-59/6-color | 1694ABHD3 | BB3PHCT | BB3PST | SLS-59/6 |
| 70084NH | Coax RG11/U LSNH HDTV Precision Video | 1.63/7.11 PHYS 180T 10.3 | – | FS11BNC | CPLCCT-11BNC | SDT11-250 | – | – | – | – | – |
| **LSNH IEC 60332-3-25** | **DESCR 1 LSNH** | **DESCR 2** | **1-piece Locking** | **1-piece** | **Compression Tool** | **Strip Tool** | **Boot** | **3-piece Crimp** | **Crimp Tool** | **Strip Tool** | **Boot** |
| 70080CH | Coax mini RG59/U LSNH HDTV Precision Video | 0.65/2.9 PHYS 180T 4.3 | 1855ABHDL | 1855ABHD1 | CPLCRBC-BR | LDT-Mini | SLS-RGB/color | 1855ABHD3-ENH | BB3PHCT | BB3PST | SLS-RGB |
| 70081CH | Coax RG59/U LSNH HDTV Precision Video | 0.81/3.68 PHYS 180T 5.94 | 1505ABHDL | 1505ABHD1 | CPLCRBC-BR | LDT596-250 | SLS-59/6-color | 1505ABHD3 | BB3PHCT | BB3PST | SLS-59/6 |
| 70082CH | Coax RG6/U LSNH HDTV Precision Video | 1.02/4.57 PHYS 180T 6.99 | 1694ABHDL | 1694ABHD1 | CPLCRBC-BR | LDT596-250 | SLS-59/6-color | 1694ABHD3 | BB3PHCT | BB3PST | SLS-59/6 |
| 70084CH | Coax RG11/U LSNH HDTV Precision Video | 1.63/7.11 PHYS 180T 10.3 | – | FSNS11HBNC | CPLCCT-11BNC | SDT11-250 | – | – | – | – | – |

For more information, visit us at **www.beldensolutions.com** and follow us on **Twitter@BeldenInc.**



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