# DURALINE
## Durable Test Cable Assembly

Reliability is top-ranked character when comes to choose RF test cable assemblies. Cable assemblies must be durable enough to withstand continuous movement and bending, and maintaining reliable electrical performance while exposure to test environmental conditions.

Its robust structure ensures reliability when frequenct bending, and offers the better shielding effectiveness and stability.

Meanwhile, Maxwellon utilizes the most advanced design for the connectors which match with Duraline. The precise type N connector combines Be-Cu center conductor with gold plating, stainless steel shell and high-strength PEI dielectric which is 100 times of stronger than the PTFE dielectric. That is how Maxwellon makes Duraline the wise choice of long-term reliable applications.

## Typical Applications

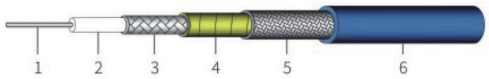
- Mass production test
- OEM port test line
- RF test platform
- Lab and R&D test
- Environmental test chamber
- Field test

## Features

- Superior mechanical phase & amplitude stability
- Durable and reliable
- Tri-shielding cable
- A variety of armors to meet different application needs
- Spiral tailpipe & Three-layer heat shrink sleeve protection

| Duraline | | | |
|---|---|---|---|
| **Physical & Mechanical Specification** | | | |
| Dimension | mm | Inch | |
| Center Conductor | 0.94 | 0.037 | |
| Dielectric | 2.98 | 0.117 | |
| Outer Conductor | 3.30 | 0.130 | |
| Jacket | 4.85 | 0.191 | |
| Minimum Bending Radius:Installation | 25 | 0.984 | |
| Minimum Bending Radius:Repeated | 50 | 1.969 | |
| Weight | 58g/m | | |
| Cycle Times | >5000 | | |
| Temperature Range | -55~+125°C(-67~+257°F) | | |
| **Electrical Specification** | | | |
| Frequency | 26.5GHz | | |
| VSWR | 1.30 | | |
| Impedance | 50Ω | | |
| Velocity of Propagation | 70% | | |
| Shielding Effectiveness | > 90 dB | | |
| Typical Mechanical Phase | ±5°@DC-26.5GHz | | |
| Typical Mechanical Amplitude | ±0.1dB@DC-26.5GHz | | |
| Attenuation & Power Handling | Attenuation (+25°C Ambient) & Power Handling (+40°C Ambient; Sea Level; cable only) | | |
| Frequency (GHz) | dB/100 m | dB/100 Ft | kW |
| 1 | 40.03 | 12.20 | 0.522 |
| 2 | 58.92 | 17.96 | 0.355 |
| 3 | 74.33 | 22.66 | 0.281 |
| 6 | 112.03 | 34.16 | 0.187 |
| 8 | 133.58 | 40.73 | 0.156 |
| 12 | 172.27 | 52.52 | 0.121 |
| 18 | 223.99 | 68.29 | 0.093 |
| 26.5 | 290.12 | 88.45 | 0.072 |
| Attenuation at Frequency | dB/100 m=K1×sqrt(FMHz)+K2×FMHz | | |
| K1 | 1.1414400 | | |
| K2 | 0.0039360 | | |

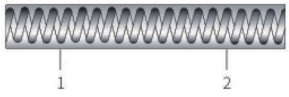
## Cable Structure




| | | |
|---|---|---|
| 1 | Center conductor | Silver Plated Copper Clad Steel |
| 2 | Dielectric | Solid PTFE |
| 3 | Outer conductor | Flat wire silver plated |
| 4 | Innerlayer | Aluminum Laminate |
| 5 | Outer shield | Silver Plated Copper |
| 6 | Jacket | Blue FEP |

## Armor Structure

### PVC Armor




| | | |
|---|---|---|
| 1 | Strengthening layer | Galvanized steel wire |
| 2 | Jacket | Transparent Soft PVC |

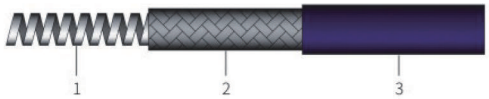
| Diameter | Minimum Bending Radius: Installation | Weight | Temperature Range |
|---|---|---|---|
| 10mm | 50mm | 90g/m | -40~+85°C |

### Stainless Steel Armor


| | | |
|---|---|---|
| 1 | Armored Spring | Stainless Steel Double Tube |
| 2 | Strengthening Net | Tin Plated Copper Wire |
| 3 | Jacket | Black Nylon Sleeve |

| Diameter | Minimum Bending Radius: Installation | Weight | Temperature Range |
|---|---|---|---|
| 10mm | 50mm | 138g/m | -55~+125°C |

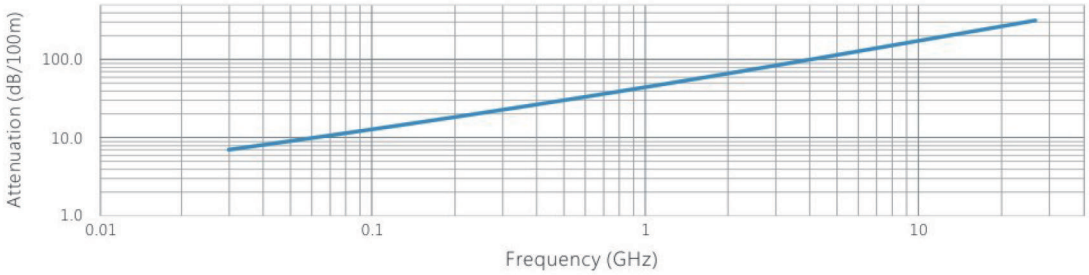
### PUR Armor



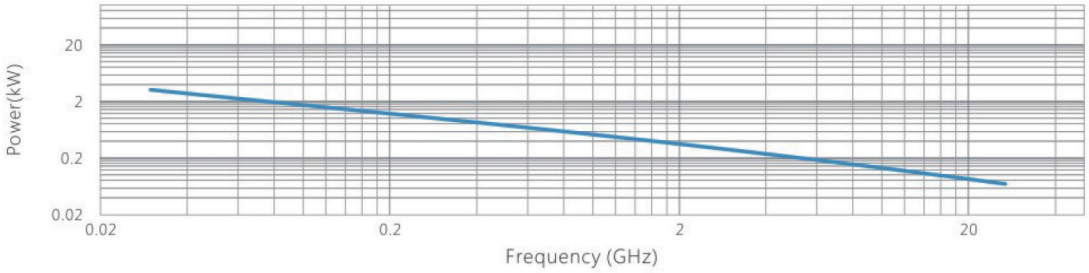

| | | |
|---|---|---|
| 1 | Armored spring | Stainless Steel Strips |
| 2 | Strengthening Net | Tin plated copper wire |
| 3 | Jacket | Blue PUR |

| Diameter | Minimum Bending Radius: Installation | Weight | Temperature Range |
|---|---|---|---|
| 10mm | 50mm | 138g/m | -40~+85°C |

## Frequency& Attenuation

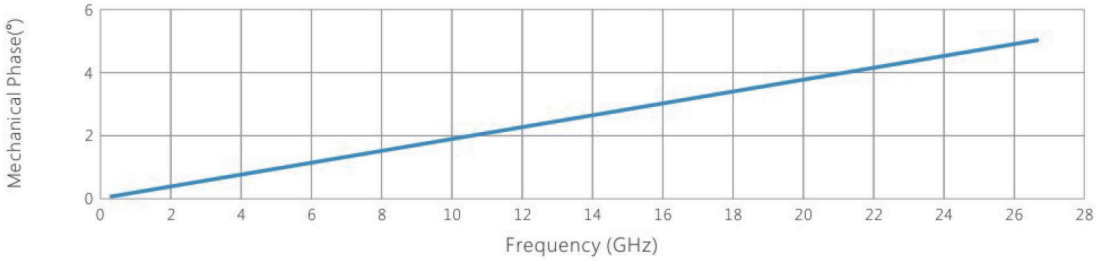



## Frequency& Power



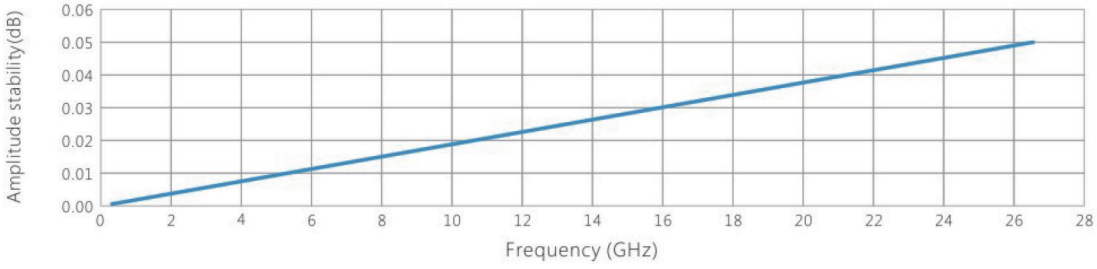

## Typical Value Of Mechanical Phase Stability

Rotate for one cycle along the minimum repeated bending diameter




## Typical Value Of Mechanical Amplitude Stability

Rotate for one cycle along the minimum repeated bending diameter



## Assembly Selection Information

| 1 | 2 | 3 | 4 | 5 | - | 6 | 7 | 8 | 9 | 10 | 11 | - | 12 | 13 | 14 | 15 | 16 | 17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Digit 1-2: Fixed letter "DL", which stands for Duraline for short

Digit 3: P-PVC Armor; S-Stainless Steel Armor; R-PUR Armor; non-Armored, without digit

Digit 4-5: Fixed number 18, which does not represent frequency

Digit 6-8: Left connector, code as follows, three digits maximum, less than three digits are indented according to the actual code

Digit 9-11: Right connector, code as follows, three digits maximum, less than three digits are indented according to the actual code

Digit 12-15: Customized length. e.g.: 1-"01.00"

Digit 16-17: Unit: M-meter/IN-inch/F-feet, less than two digits, indent by one

For example: FLN18-SMSM-01.00M

**Note: For other armored, please consult Focusimple sales team**

## Optional Connectors

| Connector Code | Connector Type | Operating Frequency | DLN18 | DLP18/DLS18/DLR18 | Typical VSWR | Maximum VSWR |
|---|---|---|---|---|---|---|
| 35M | 3.5mm Male | 26.5GHz | ● | | 1.25 | 1.3 |
| SM | SMA Male | 26.5GHz | ● | ● | 1.25 | 1.3 |
| SF | SMA Female | 18GHz | ● | ● | 1.25 | 1.3 |
| NM | N Male | 18GHz | ● | ● | 1.25 | 1.3 |
| TM | TNC Male | 11GHz | ● | | 1.25 | 1.3 |

**Note: For other connectors, please consult Focusimple sales team**

N Male Connector Structure
Center Pin: Berylium Copper With Gold Plating
Dielectric: Solid PTEE
Solder Cup: Split Optimized Solder Cup
Outer Conductor: Stainless Steel Passivated
Nut: Stainless Steel Passivated

## Contact us

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