# Thermal Vacuum Phase Stable Low Loss Cable

**TVAC-PL380P** Rev1

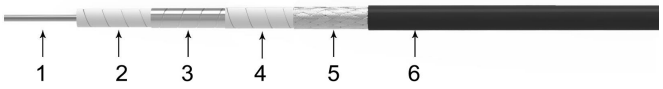
## Features & Benefits

- Ultra low loss, 2.2dB/meter to 40 GHz
- Excellent phase stability with temp & flexure
- Extended temperature range -55～165 ºC
- Low outgassing materials:TML<1%,CVCM<0.1%
- Vented connectors to allow rapid pressurization test
- Thermally conditioned for reliability over temp extremes

## Applications

- Satellite TVAC Chambers
- RF connections in high vacuum conditions
- High-Altitude and Space Simulation Systems
- Aerospace ATE & Ground Support Systems

## Cable Construction




| No. | Construction | Size（mm） | Materials |
|---|---|---|---|
| 1 | Center Conductor | 1.02 | Solid silver-plated copper |
| 2 | Dielectric | 2.85 | Ultra-low density PTFE |
| 3 | Outer Conductor | 3.06 | Silver-plated copper tape wrap |
| 4 | Interlayer | 3.22 | Low density PTFE |
| 5 | Outer Shield | 3.67 | Silver-plated copper wire braid |
| 6 | Jacket | 3.80 | Black FEP (ETFE available) |

## Electrical

| | |
|---|---|
| Frequency | DC-40 GHz |
| Impedance | 50 Ω |
| Velocity of Propagation | 82% |
| Shielding Effectiveness | >90 dB |
| Withstanding Voltage | 1000 V |
| Temp Phase Stability <680ppm(-40℃ to +85℃) | |
| Amplitude Stability vs Shaking | <±0.1dB |
| Mechanical Phase Stability | <±5º(Wrapped 360˚ around a 38mm radius mandrel) |

Phase matching available in ±0.3-0.5°/GHz or better

## Mechanical & Environmental

| | |
|---|---|
| Min.Bending Radius Static | 19mm |
| Min. Bending Radius Repeated | 38mm |
| Weight | 37g/m |
| Temperature(Operation)* | -55～165 ºC |
| Temperature(Storage) | -60～165 ºC |

*Temperature for ETFE jacket is to 150 ºC.

## Attenuation(Typical@25℃&VSWR=1.0) & Power(VSWR=1.0; 40℃; Sea level)

| Frequency MHz | 300 | 1000 | 2000 | 4000 | 6000 | 8000 | 10000 | 12000 | 14000 | 18000 | 26500 | 40000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| dB/100 Meter | 17.3 | 31.9 | 45.5 | 64.9 | 80.1 | 93.1 | 104.7 | 115.3 | 125.1 | 143.0 | 176.1 | 220.5 |
| Avg.Power kW | 0.940 | 0.511 | 0.359 | 0.251 | 0.203 | 0.175 | 0.156 | 0.141 | 0.130 | 0.114 | 0.093 | 0.074 |

Attenuation at any frequency＝[0.991549×SQRT(FMHz)]+[0.0005555×FMHz]

## Available connectors

| Cable P/N | Connectors | Gender | Orientation | Mounting | Max Freq.(GHz) | VSWR Max |
|---|---|---|---|---|---|---|
| TVAC-PL380P | SMA | Male | Straight | Standard | 26.5 | 1.3 |
| TVAC-PL380P | 3.5mm | Male | Straight | Standard | 33 | 1.3 |
| TVAC-PL380P | 2.92mm | Male | Straight | Standard | 40 | 1.3 |

Other connectors available upon request.