

PS420LS-31G-F

Flexible Low Loss Phase Stable RF Cable (31 GHz)



- **Frequency Range:** DC to 31 GHz
- **Inner Conductor:** 19 / 0.204 mm Stranded Silver Copper
- **Dielectric:** Low Density PTFE (77% VP)
- **Phase Stability:** ± 0.3 °/GHz under bending
- **Protective Jacket:** High Temp Aqua FEP (-55~+165°C)

1. MECHANICAL & STRUCTURAL SPECIFICATIONS

Layer	Material	Construction Details	Nom. O.D. (mm)
Inner Conductor	Silver Plated Copper	19 / 0.204 mm (Stranded)	1.02 mm
Insulation	LD-PTFE	Low Density Dielectric	3.00 mm
Inner Shield	Flat Silver Plated Copper Tape	100% Coverage Wrapping	3.20 mm
Outer Shield	Round Silver Plated Copper Braid	High Shielding Braiding	3.65 mm
Outer Jacket	Aqua FEP	High Temp Fluoropolymer	4.20 mm

2. PHYSICAL & ENVIRONMENTAL CHARACTERISTICS

Min. Static Bending Radius	15.00 mm	Cable Weight	0.048 kg/m
Min. Dynamic Bending Radius	42.00 mm	Operating Temp Range	-55 °C to +165 °C

3. ELECTRICAL PERFORMANCE PARAMETERS

Impedance	50 Ω	Max Operating Frequency	31 GHz
Velocity of Propagation	77%	Screening Effectiveness	> 90 dB
Capacitance	88 pF/m	Dielectric Withstanding Voltage	1500 V @ DC
Phase Stability vs. Bending	± 0.3 °/GHz	Phase Stability vs. Temp (-45~+85°C)	≤ 1500 PPM

4. ATTENUATION & POWER HANDLING CHART (@25°C & SEA LEVEL)

Insertion Loss Calculation: $IL = K1 * \sqrt{F_MHz} + K2 * F_MHz$
Constants: K1 = 0.941656209 | K2 = 0.001712613

Frequency (MHz)	Nom. Attenuation (dB/m)	Nom. Attenuation (dB/100m)	Max Power Handling (W)
500	0.22	21.91	
1000	0.31	31.48	598
2400	0.50	50.21	375
3000	0.57	56.70	332
6000	0.83	83.27	226
8000	0.98	97.89	192
10000	1.11	111.29	169
12400	1.26	126.15	149
18000	1.57	157.19	120
20000	1.67	167.38	112
26500	1.99	198.88	98