

# HP Series Cable

The HP Series has a long history in the military and aerospace industries as the interconnect cable of choice in ground, sea, and airborne systems. This series also excels in test and measurement applications offering high performance, flexibility, and a wide range of precision connectors for applications up to 50 GHz. The triple shield construction provides connector attachments that exceed \*70 lbs of pull off force, (\* HP190 with SMA connector) and harsh handling (i.e. radial



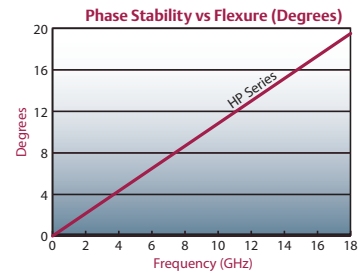
## CABLE PROPERTIES

### Mechanical Properties

	HP120s	HP160s	HP190s	HP305s	HP450
Jacket O.D. (in)	.124	.160	.205	.305	.450
Round Braid O.D. (in)	.104	.145	.188	.273	.403
Shield Interlayer O.D. (in)	.088	.129	.172	.256	.378
Flat Braid O.D. (in)	.080	.120	.163	.248	.369
Dielectric O.D. (in)	.074	.108	.151	.242	.357
Center Conductor O.D. (in)	.025	.036	.051	.078	.129
Center Conductor Type	Solid	Solid	Solid	Solid	Stranded
Inside Min Bend Radius (in)	.6	.9	1.1	1.8	2.5
Operating Temperature (°C)	-65/200	-65/200	-65/200	-65/200	-65/200
Weight (lbs/ft)	.02	.04	.05	.09	.20

### Electrical Properties

	HP120s	HP160s	HP190s	HP305s	HP450
Impedance (ohms)	50	50	50	50	50
Capacitance (pf/ft)	26.7	26.9	26.7	26.2	26
Inductance (nH.ft)	67	66	66	66	62
Shielding Effectiveness (dB)	>90	>90	>90	>90	>90
Cut off Frequency (GHz)	55	40	28	18	12
Velocity of Propagation	74%	75%	75.5%	77%	78%
Breakdown Voltage (KV)	>5	>7	>10	>15	>20
Max Structural VSWR	1.20:1	1.20:1	1.20:1	1.20:1	1.20:1

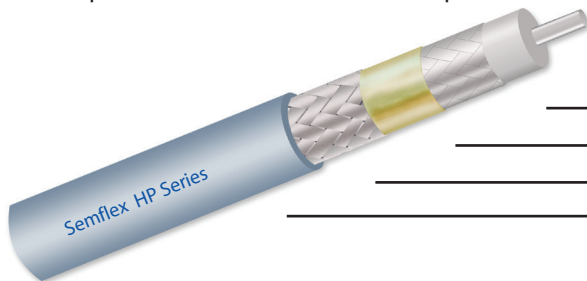


Phase stability is defined as the change in phase when the cable is bent 360 degrees around its minimum bend radius.



## CABLE CONSTRUCTION

The HP Series uses silver plated copper inner and outer conductors for low attenuation. The microporous PTFE dielectrics and FEP jackets provide consistent performance over temperature extremes with better phase performance over temperature compared to solid PTFE dielectrics. Shielding effectiveness >90 dB results from a triple shield construction of woven flat braid, foil, and round braid. This construction also provides substantially better radial torque resistance and connector pull off strength than helically wrapped braid designs.



- Silver Plated Copper
- Low Density Microporous PTFE
- Silver Plated Copper Flat Braid
- Metalized Foil
- Silver Plated Copper Round Braid
- Extruded FEP Jacket - Blue Tint

# Test & Measurement Interconnects - Robust Construction

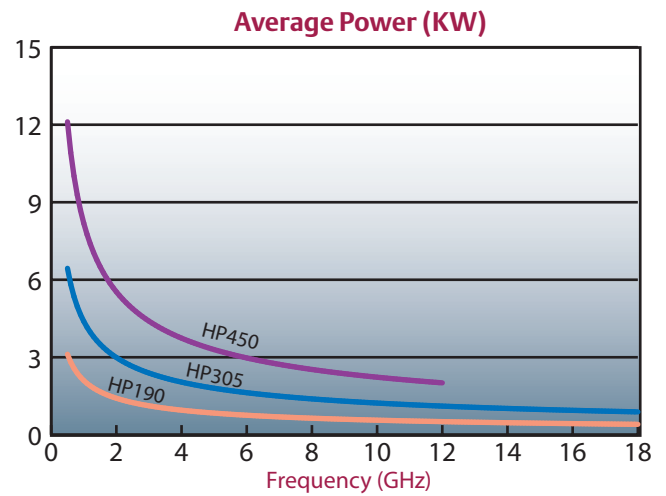
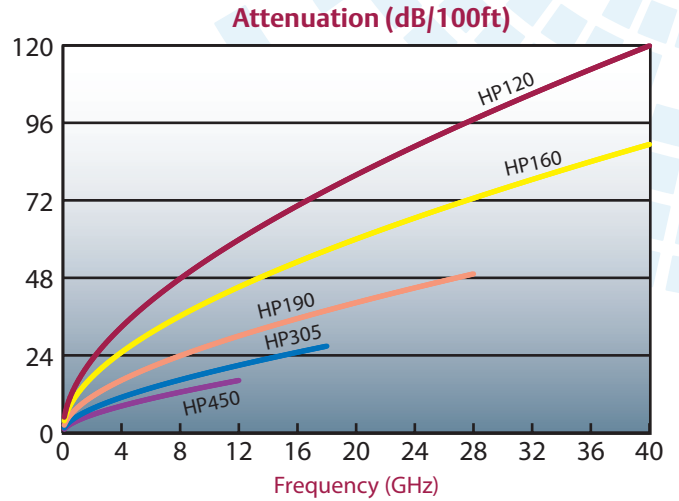
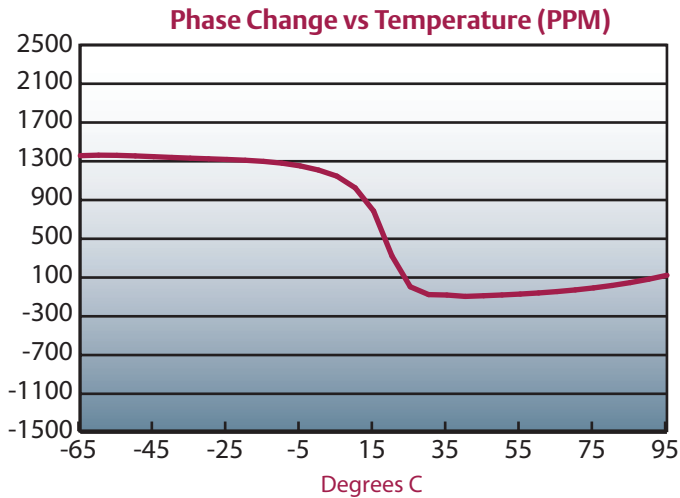
## Attenuation (dB/100 ft)

GHz	HP120s	HP160s	HP190s	HP305s	HP450
.5	11.06	8.48	5.44	3.55	2.61
2	22.71	17.34	11.24	7.47	5.58
12	59.82	45.15	30.01	20.89	16.20
18	75.22	56.55	37.91	26.80	-
26	92.98	69.61	47.09	-	-
40	119.90	89.27	-	-	-
*k1	15.22	11.72	7.45	4.76	3.44
*k2	0.59	0.38	0.35	0.37	0.36

\* Attenuation at any frequency  
 $= (k1 \times \sqrt{\text{freq(GHz)}}) + (k2 \times \text{freq(GHz)})$

## Average Power (KW)

GHz	HP120s	HP160s	HP190s	HP305s	HP450
.5	-	-	3.1	6.4	12.1
1	-	-	2.1	4.4	8.2
2	-	-	1.4	3.0	5.5
6	-	-	.8	1.6	3.0
12	-	-	.5	1.1	2.0
18	-	-	.4	.9	-



## Cable Cross Reference

Semflex	Replacement
HP120	IW140x, UFB142, LL120
HP160	IW150x
HP190	IW180x, UFB197C, UFB205A
	LL142 (Triple Shield)
HP305	LL392-2

## HP Series VSWR Chart\*\*

Configuration	Connector Type	0-8 GHz	8-18 GHz	18-26.5 GHz	26.5-40 GHz
2 Straights	SMA/2.2/2.9/3.5/7mm (7mm 0-18 only)	1.10:1*	1.20:1*	1.25:1*	1.40*
	Type N, TNC	1.15:1*	1.30:1*	N/A	N/A
Straight ; Rt. Angle	Mixed	1.20:1*	1.30:1*	1.35:1	1.45:1*
2 Rt. Angle	Mixed	1.20:1*	1.35:1*	1.40:1	1.55:1*

\*Tighter spec available, special order  
 \*\*Assembly VSWR for HP Series only