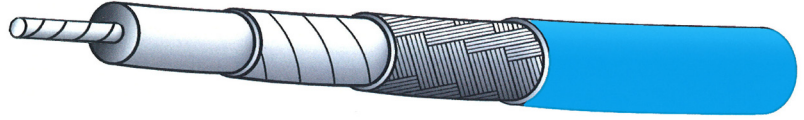# SFL (Spiral Flex™) Coaxial Cable

Construction:
Center conductor: Stranded silver plated copper or copperweld
Dielectric: Solid PTFE
Inner shield: Spiral strip of silver plated copper
Outer braid: Round silver plated copper
Jacket: Solid light blue polyurethane

Operating temperature: -55 +85° C
Velocity of Propagation: 70%
Shielding Effectiveness: <-110 dB

	SFL402	**SFL405**
Center conductor	SPC	SPCW
Center conductor diameter	.0376″ (7/28)	.0210″ (7/33)
Dielectric diameter	.117″	.063″
Diameter over inner shield	.124″	.071″
Diameter over outer braid	.138″	.085″
Overall diameter	.180″	.115″
Weights (lbs/mft)	29	14
Bend radius	0.9″	0.6″
Impedance (Ohms)	50	50
Capacitance (pF/ft)	29.4	29.4
Attenuation (dB/100ft)@	**Typ/Max**	**Typ/Max**
400 MHz	7.4 / 9.0	13.1 / 14.8
1 GHz	11.9 / 14.5	21.5 / 23.7
2 GHz	18.0 / 21.9	30.8 / 35.4
2.4 GHz	20.0 / 23.3	34.0 / 39.1
3 GHz	21.0 / 24.1	38.2 / 47.9
5 GHz	28.5 / 32.8	50.6 / 58.2
10 GHz	43.7 / 50.0	75.1 / 86.4
18 GHz	64.0 / 73.5	106.1 / 113.9
Cut-off frequency GHz	34.0	63.0

Additional constructions available - check with the factory for details
All figures referenced are nominal

SFL (Spiral Flex™) Coaxial Cable

Harbour's SFL Spiral Flex™ coaxial cables, more flexible and supple versions of the industry standard SS Spiral Strip constructions, have been designed with a specially formulated polyurethane jacket compound and stranded silver plated copper and copperweld center conductors. These 50 ohm versions exhibit VSWR levels that meet or exceed similar size flexible constructions, and just like their SS cable counterparts, offer excellent shielding effectiveness with readily available connectors.

The solid light blue polyurethane jackets offer excellent braid-to-jacket adhesion and electrical stability during usage. The polyurethane jackets also provide excellent cut-through, tear, and abrasion performance combined with resistance to chemicals.

Although the insertion loss is slightly higher than their SS cable counterparts, SFL attenuation levels through 18 GHz are substantially lower than comparable MIL-C-17 constructions.

Attenuation Calculation and K Factors
Although typical and maximum attenuation values are given for discrete frequencies, typical attenuation values may be calculated by using K1 and K2 factors for each construction. The K1 factor is calculated by taking into consideration the type, strand factor, and diameter of the center conductor, and the impedance of the cable. The K2 factor is calculated by taking into consideration the velocity of propogation and the dissipation factor of the dielectric.

Formula for Calculating Attenuation using K Factors:

Attenuation (dB/100 ft) at any frequency (**MHz**) =
(K1 x $\sqrt{\text{frequency}}$) + (K2 x frequency)

	SFL402	SFL405
K1	.319	.675
K2	.0001179	.0001179