

## Astrolab Minibend K

### High performance, 40 GHz

available as an 'R' ruggedized assembly



The 40 GHz version of the original minibend®

### **Product Description**

minibend K is a 40 GHz version of the minibend® flexible coaxial cable assembly which is designed for use in low profile, internal point-to-point interconnections between RF modules within communications systems. minibend K replaces small custom semi-rigid cable with standard flexible cables eliminating the need for predefined custom lengths and bend configurations. minibend K provides you with a preassembled and tested high performance, cost effective alternative in a variety of standard lengths.

### **Product Features**

- Precision 2.9 mm minibend® plug connectors (Patented - US Patent Office)
- Stock delivery on standard lengths
- Eliminates need for costly right angle connectors
- Guaranteed 15 lbs. pull force
- Triple shielded for high isolation
- Frequency range up to 40 GHz
- Low Cost
- 99.9% lead free

### **Environmental Limits**

Temperature Range: -55°C to +125°C

Thermal Shock: per Mil-Std-202, Method 107, Test Cond. A

Vibration: per Mil-Std-202, Method 214, Test Cond. B

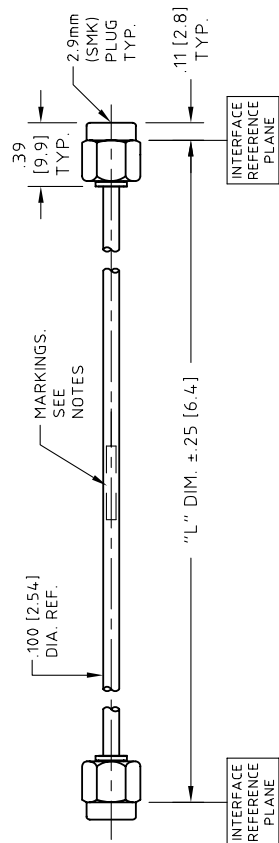
Shock: per Mil-Std-202, Method 213, Test Cond. A, 40Gs

### **Phase Versus Flexure Reference Data**

Astrolab performed phase tests on hundreds of minibend cable assemblies. Following are two standard Astrolab tests with the corresponding data. In test one minibend® K-6 assembly's were flexed 90° in a 0.25 inch radius directly behind the connector. In test two, minibend® K-16 assemblies were flexed 180° with a 0.4 inch radius in the middle. Typical data is recorded here:

	<b>TEST ONE</b>	<b>TEST TWO</b>
40 GHz.	2.0°	6.1°
26.5 GHz.	1.5°	4.1°
18 GHz.	1.2°	2.9°
12.4 GHz.	0.9°	1.8°
1 GHz.	0.1°	0.2°

**CONTROL DRAWING**



minibend K-XX

Z

SHOWN ABOVE IS TYPICAL INSTALLATION.

**NOTES:**

- DESCRIPTION:  
CABLE ASSEMBLY, 2.9mm (SMK) PLUG TO 2.9mm (SMK) PLUG.
- CABLE,  
COAXIAL CABLE ASTROLAB P/N 32081 MEETS OR EXCEEDS MIL-DTL-17 SEE ASTROLAB CONTROL DRAWING FOR MATERIALS AND FINISHES.
- CONNECTOR -A-, 2.9mm (SMK) PLUG:  
ASTROLAB P/N 29094KC-32-81 IAW MIL-STD-348 SEE ASTROLAB CONTROL DRAWING FOR MATERIALS AND FINISHES.
- CONNECTOR -B-, 2.9mm (SMK) PLUG:  
SAME AS CONNECTOR -A-.

**NOTES CONTINUED:**

- MARKING:  
MARKING APPROXIMATELY CENTERED DIRECTLY ON CABLE, ASTROLAB PART NUMBER AND DATE CODE. NO MARKING ON CABLE ASSEMBLIES SHORTER THAN 3.00". MARKING ON PACKING ONLY.
- ELECTRICAL CHARACTERISTICS:  
IMPEDANCE, 50.0 Ohms NOMINAL. FREQUENCY, INSERTION LOSS AND VSWR SEE CHART.
- MECHANICAL:  
OPERATING TEMPERATURE RANGE, -55° C TO +125° C. PULL STRENGTH TO 15.0 LBS (67 N).

ASTROLAB PART NUMBER	DIMENSION "L" IN [mm]	2.0 GHz		26.5 GHz		40.0 GHz	
		VSWR	IL, dB	VSWR	IL, dB	VSWR	IL, dB
minibend K-2.5	2.50±.13 [63.5±3.3]	1.20:1	0.18	1.45:1	0.62	1.50:1	0.88
minibend K-3	3.00±.13 [76.2±3.3]	1.20:1	0.19	1.45:1	0.68	1.50:1	0.96
minibend K-3.5	3.50±.13 [88.9±3.3]	1.20:1	0.21	1.45:1	0.74	1.50:1	1.03
minibend K-4	4.00±.13 [101.6±3.3]	1.20:1	0.23	1.45:1	0.80	1.50:1	1.10
minibend K-4.5	4.50±.13 [114.3±3.3]	1.20:1	0.24	1.45:1	0.86	1.50:1	1.17
minibend K-5	5.00±.13 [127.0±3.3]	1.20:1	0.26	1.45:1	0.92	1.50:1	1.25
minibend K-5.5	5.50±.13 [139.7±3.3]	1.20:1	0.27	1.45:1	0.98	1.50:1	1.32
minibend K-6	6.00±.13 [152.4±3.3]	1.20:1	0.29	1.45:1	1.04	1.50:1	1.39
minibend K-7	7.00±.13 [177.8±3.3]	1.20:1	0.32	1.45:1	1.17	1.50:1	1.54
minibend K-8	8.00±.13 [203.2±3.3]	1.20:1	0.35	1.45:1	1.29	1.50:1	1.68
minibend K-9	9.00±.13 [228.6±3.3]	1.20:1	0.38	1.45:1	1.41	1.50:1	1.83
minibend K-10	10.00±.13 [254.0±3.3]	1.20:1	0.41	1.45:1	1.53	1.50:1	1.97
minibend K-11	11.00±.13 [279.4±3.3]	1.20:1	0.44	1.45:1	1.65	1.50:1	2.12
minibend K-12	12.00±.13 [304.8±3.3]	1.20:1	0.47	1.45:1	1.78	1.50:1	2.26
minibend K-13	13.00±.13 [330.2±3.3]	1.20:1	0.50	1.45:1	1.90	1.50:1	2.41
minibend K-14	14.00±.13 [355.6±3.3]	1.20:1	0.53	1.45:1	2.02	1.50:1	2.55
minibend K-15	15.00±.13 [381.0±3.3]	1.20:1	0.57	1.45:1	2.14	1.50:1	2.70
minibend K-16	16.00±.13 [406.4±3.3]	1.20:1	0.60	1.45:1	2.26	1.50:1	2.84
minibend K-							

**ROHS 5/6 COMPLIANT**

NAME	DATE	PREP.	DATE	REV
M.P	06/20/97	M.P	06/20/97	Z
R.F	06/20/97	ELEC.	06/20/97	
G.S.G	06/20/97	MECH.	06/20/97	
		Q.C.		
TITLE		CABLE ASSEMBLY, 2.9mm PLUG TO 2.9mm PLUG		
FRACTIONS		± 1/32		
X		± .015		
XX		± .010		
XXX		± .005		
ANGLES		± 1°		
DO NOT SCALE DRAWING				
SCALE		1:1		
CODE IDENT.		16301		
DWG NO.		minibend K-XX		
THIS DRAWING CONTAINS PATENTABLE AND PROPRIETARY INFORMATION. THE DESIGN CANNOT BE USED WITHOUT WRITTEN PERMISSION OF ASTROLAB				
ASTROLAB <sup>®</sup> INC. WARREN, NJ				