

## 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

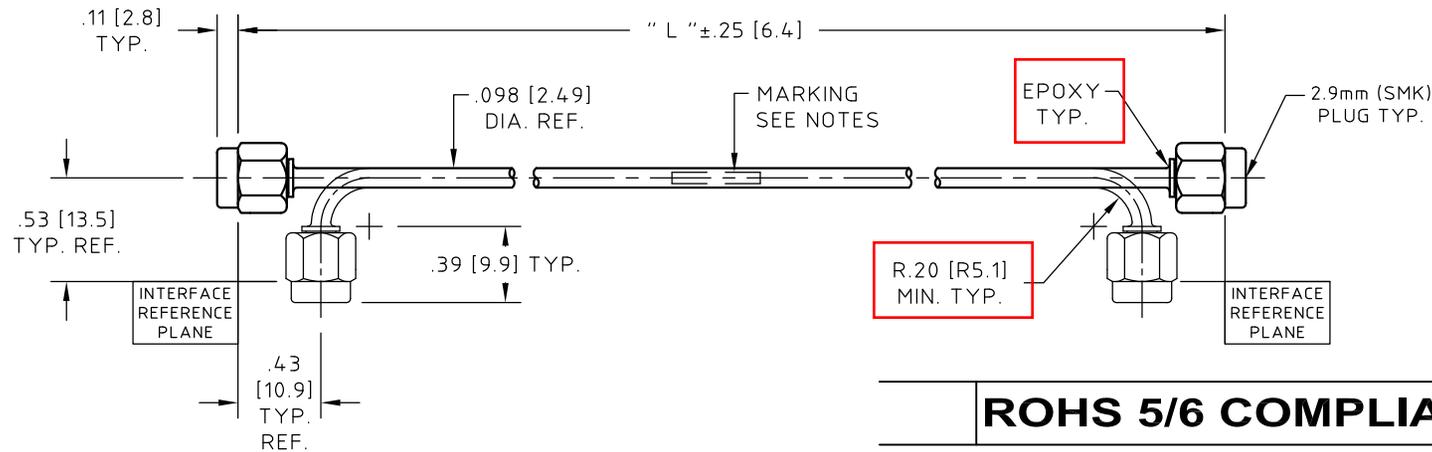
Vibration: per Mil-Std-202, Method 214, Test Cond. B

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:

	TEST ONE	TEST TWO
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°



**ROHS 5/6 COMPLIANT**

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

NOTES:

- DESCRIPTION,  
CABLE ASSEMBLY, 2.9mm (SMK) PLUG TO 2.9mm (SMK) PLUG, RUGGEDIZED AND SUITABLE FOR COMPLEX, CONGESTED INSTALLATIONS.  
WHEN INSTALLED AND BEND AT THE MINIMUM BEND RADIUS, CABLE ASSEMBLY WILL TOLERATE MULTIPLE ±90° ROTATIONS AT THE CABLE CONNECTOR JUNCTION.
- CABLE,  
COAXIAL CABLE HUBER+SUHNER Astrolab P/N 32081E MEETS OR EXCEEDS MIL-DTL-17.  
SEE HUBER+SUHNER Astrolab CONTROL DRAWING FOR MATERIALS AND FINISHES.
- CONNECTOR -A-, 2.9mm (SMK) PLUG:  
HUBER+SUHNER Astrolab P/N 29094KCR-32-81  
INTERFACE DIMENSIONS IAW MIL-STD-348.  
SEE HUBER+SUHNER 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 AS FOLLOWS:  
**MINIBEND KR-xx YYWW**  
WHERE xx DENOTES THE LENGTH OF THE CABLE ASSEMBLY AND YYWW THE DATE CODE FOR DATE OF MANUFACTURE.  
NO MARKING ON CABLE ASSEMBLIES SHORTER THAN 3.00 [76.2].  
MARKING ON PACKAGING 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 25.0 LBS [111.2 N].
- ATTENUATION FORMULAS:  
8A. CALCULATE AT 26.5 GHz  
(dB) = 1.45 dB/FT. X L(ft.)+.31 dB  
8B. CALCULATE AT 40.0 GHz  
(dB) = 1.84 dB/FT. X L(ft.)+.50 dB

SEE NOTE 8

UNLESS OTHERWISE SPECIFIED  
CONCENTRICITY .004 T.I.R.  
CORNERS AND FILLETS .005  
MAX. RADIUS OR CHAMFER.  
SURFACE FINISH 63 RMS  
MICROINCHES OR BETTER.

FRACTIONS	± 1/32
X	± .015
XX	± .010
XXX	± .005
ANGLES	± 1°
DO NOT SCALE DRAWING	

NAME	DATE
PREP. EF	05/07/01
ELEC. RF	05/07/01
MECH. GSG	05/07/01
Q.C.	

**HUBER+SUHNER**  
**Astrolab**

THIS DRAWING CONTAINS PATENTABLE AND PROPRIETARY INFORMATION. THE DESIGN CANNOT BE USED WITHOUT WRITTEN PERMISSION OF HUBER + SUHNER ASTROLAB.

TITLE	<b>CABLE ASSEMBLY, 2.9mm PLUG TO 2.9mm PLUG, RUGGEDIZED</b>		
THDS. TO BE IN ACCORD WITH U.S. DEPT. OF COMM. SCREW THD. STDS. FOR FEDERAL SERVICES 1950 SUPL. TO HANDBOOK H 28.	SCALE	CODE IDENT.	DWG NO.
	1:1	16301	minibend KR-XX
			REV S

S	ECN No. 15490	04/18/13	EB	
REV.	DESCRIPTION	DATE	BY	APPROVED