

1/2 inch 50 Ohm, HJ4-50 HELIAX®



Attenuation and Average Power Ratings

Frequency MHz	Attenuation, dB/100 ft	Attenuation, dB/100 m	Average Power, kW
0.5	0.0560	0.184	21.0
1	0.0792	0.260	21.0
1.5	0.0971	0.319	20.0
2	0.112	0.37	17.3
10	0.253	0.83	7.69
20	0.359	1.18	5.41
30	0.442	1.45	4.40
50	0.574	1.88	3.38
88	0.768	2.52	2.53
100	0.821	2.69	2.37
108	0.854	2.80	2.27
150	1.01	3.33	1.91
174	1.10	3.60	1.77
200	1.18	3.87	1.65
300	1.46	4.80	1.33
400	1.71	5.60	1.14
450	1.82	5.96	1.07
500	1.92	6.31	1.01
512	1.95	6.39	1.00
600	2.12	6.97	0.914
700	2.31	7.58	0.840
800	2.49	8.16	0.781
824	2.53	8.29	0.768
894	2.64	8.68	0.734
960	2.75	9.03	0.706
1000	2.81	9.23	0.690
1250	3.19	10.5	0.609
1500	3.53	11.6	0.549
1700	3.80	12.5	0.512
2000	4.17	13.7	0.466
2300	4.52	14.8	0.430
3000	5.28	17.3	0.368
4000	6.27	20.6	0.310
5000†	7.17	23.5	0.271
6000	8.03	26.3	0.242
8000	9.61	31.5	0.202
10000	11.1	36.4	0.175
10900	11.7	38.4	0.166

Cable Ordering Information

Standard and Fire Retardant Cables

1/2" Standard Cable, Standard Jacket	HJ4-50
1/2" Fire Retardant Jacket (CATVR)	HJ4RN-50

Low VSWR and Specialized Cables

1/2" Low VSWR, specify operating band	HJ4P-50-(**)
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** Insert suffix number from "Low VSWR Specifications" table, page 189.

Characteristics

Electrical

Impedance, ohms	50 ± 1
Maximum Frequency, GHz	10.9
Velocity, percent	91.4
Peak Power Rating, kW	21.0
dc Resistance, ohms/1000 ft (1000 m)	
Inner	0.45 (1.48)
Outer	0.40 (1.31)
dc Breakdown, volts	2900
Jacket Spark, volts RMS	8000
Capacitance, pF/ft (m)	22.2 (73.0)
Inductance, μH/ft (m)	0.056 (0.182)

Mechanical

Outer Conductor	Copper
Inner Conductor	Copper
Diameter over Jacket, in (mm)	0.58 (14.7)
Diameter over Copper Outer Conductor, in (mm)	0.50 (12.7)
Diameter Inner Conductor, in (mm)	0.165 (4.2)
Nominal Inside Transverse Dimensions, cm	0.90
Minimum Bending Radius, in (mm)	5 (125)
Number of Bends, minimum (typical)	15 (20)
Bending Moment, lb-ft (N·m)	8 (10.9)
Cable Weight, lb/ft (kg/m)	0.25 (0.37)
Tensile Strength, lb (kg)	700 (320)
Flat Plate Crush, lb/in (kg/mm)	250 (4.5)

Standard Conditions:

For Attenuation, VSWR 1.0 ambient temperature 20°C (68°F), atmospheric pressure, dry air.
For Average Power, VSWR 1.0, inner temperature 100°C (212°F), ambient temperature 40°C (104°F), atmospheric pressure, dry air, no solar loading.

† Operation of this cable in the 5350-5500 MHz band is not recommended because of VSWR spikes produced by the dielectric section spacing.

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Low VSWR Specifications, Type HJ4P-50-()

Frequency Band, GHz	Type No.	Using Connector Type**	Assembly VSWR, Maximum (R.L., dB)	
			1-20 ft (0.3-6 m)	Above 20 ft (6 m)
0.94-1.45 *	HJ4P-50-1	N Male: H4PNM, N Female: H4PNF	1.20 (20.8)	1.25 (19.9)
		N Male: H4PNM	1.10 (26.4)	1.15 (23.1)
1.7-2.3	HJ4P-50-4	N Female: H4PNF	1.15 (23.1)	1.20 (20.8)
		7/8" EIA: H4MPB-014	1.10 (26.4)	1.15 (23.1)
3.625-4.2 *	HJ4P-50-2	N Male: H4PNM, N Female: H4PNF	1.30 (17.7)	1.35 (16.6)

* Specify operating band

** Connectors ordered separately.

VSWR values are guaranteed for factory fit assemblies and are typical for cut lengths. If two different connector interfaces are selected, the higher VSWR value is guaranteed.

Components and Accessories



N Male



N Female



7/8" EEA Flange



Splice

Connectors

Interface	Description	Type Number	Reference*	Inner Contact Attachment	Outer Contact Attachment	Plating Code	Max. Length in (mm)	Max. Dia. in (mm)
N Male		H4PNM		Solder	Self-Flare	SG	2.8 (71)	1.0 (25)
N Female		H4PNF		Solder	Self-Flare	SG	2.8 (71)	1.0 (25)
7-16 DIN Male		H4PDM		Spring Finger	Self-Flare	SS	2.6 (66)	1.3 (33)
7/8" EIA Flange	Gas Pass/ Barrier Option	H4MPB-014	74ARG	Solder	Self-Flare	BB	3.3 (84)	2.25 (57)
End Terminal		74T		Solder	Self-Flare	BB	4.6 (117)	0.9 (23)
Splice		74Z		Solder	Self-Flare	BB	4.9 (124)	1.1 (28)

Plating Codes:

BB - Brass Body and Pin, SG - Silver Plated Body and Gold Plated Pin, SS - Silver Plated Body and Pin

* Previous Type Number.

Connector Accessories

	Type Number
Connector Reattachment Kit for H4PNF, H4PNM, 74PN, 74PW	34767A-22
Bulkhead Adapter, for N Females	26016-2
7/8" EIA Gas Barrier	1260A

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Components and Accessories

Hangers

For more hangers, adapters and mounting hardware see pages 214-221

Standard Hangers Kit of 10. Recommended maximum spacing is 3-ft (1 m). For different spacing recommendations, refer to Cable Hanger Spacing, pages 209-213.	43211A
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Hardware Kit of 10. 3/8" bolts, lockwashers, nuts	
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3/4" (19mm) long	31769-5
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1" (25mm) long	31769-1
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Snap-In Hangers Kit of 10. For pre-punched 3/4" (19mm) holes on tower member or adapters. Recommended maximum spacing is 3-ft (1 m). For different spacing recommendations, refer to Cable Hanger Spacing, pages 209-213.	206706-1
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Standard Hoisting Grip	43094
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Grounding and Surge Protection

For additional grounding kits and our surge protection offerings, see pages 222.

Standard Grounding Kit with standard weatherproofing	
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Factory attached one-hole lug, 600 mm (24") lead	204989-1
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Factory attached two-hole lug, 600 mm (24") lead	241088-1
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Field attached two-hole lug, 1500 mm (60") lead	241545
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Weatherproofing

For additional weatherproofing information contact ERI.

Connector/Splice Weatherproofing Kit	221213
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Entry Systems

For entry systems offerings contact ERI.

Standard Cable Entry Boots	4" Boots	5" Boots
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One Hole:	204679A-6	48939A-7
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Three Hole:	204679A-1	48939A-5
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