



Suggested Capillary Tube Data for Domestic/Commercial Refrigeration and Air Conditioning Applications

The following capillary tube selections listed in Table 1 and the correction factors listed in Table 2 assume a 120°F condensing temperature, 5°F subcooling, 10°F return gas superheat, and 3 ft of heat exchange length with the suction line.

Capillary tube capacity data was generated using the Wolf and Pate 2002 correlation (ASHRAE Research Project, RP-948) and NIST RefProp v8.

Example: select the capillary required for a Tecumseh R-134a compressor model AJA7461YXA rated at 6,110 Btu/h at 20°F evaporator. From Table A-1, we find 8 ft length of 0.064 in capillary tube.

**Table 1**

Refrigerant	Btu/h per circuit	Capillary Tube, Length - OD Evaporator Temperature, °F		
		-10	25	45
22	500	---	---	---
	750	0.028" - 15 ft	0.028" - 14 ft	0.028" - 13½ ft
	1,000	0.028" - 8 ft	0.028" - 7½ ft	0.028" - 7 ft
	1,250	0.028" - 5 ft	0.028" - 4½ ft	0.028" - 4½ ft
	1,500	0.031" - 6 ft	0.031" - 5½ ft	0.031" - 5 ft
	2,000	0.040" - 13 ft	0.040" - 12½ ft	0.040" - 12 ft
	3,000	0.040" - 5½ ft	0.040" - 5 ft	0.040" - 5 ft
	4,000	0.052" - 13 ft	0.052" - 12 ft	0.052" - 11½ ft
	6,000	0.052" - 5½ ft	0.052" - 5 ft	0.052" - 5 ft
	8,000	0.064" - 9 ft	0.064" - 8½ ft	0.064" - 8½ ft
	10,000	0.064" - 5½ ft	0.064" - 5½ ft	0.064" - 5 ft
12,000	0.064" - 4 ft	0.052" - 5 ft (2)	0.052" - 5 ft (2)	
134a	500	0.028" - 17 ft	0.028" - 17 ft	0.028" - 17 ft
	750	0.028" - 7 ft	0.028" - 7 ft	0.028" - 7 ft
	1,000	0.031" - 6½ ft	0.031" - 6½ ft	0.031" - 6½ ft
	1,250	0.040" - 17½ ft	0.040" - 17½ ft	0.040" - 17½ ft
	1,500	0.040" - 12 ft	0.040" - 12 ft	0.040" - 12 ft
	2,000	0.040" - 6½ ft	0.040" - 6½ ft	0.040" - 6½ ft
	3,000	0.052" - 11½ ft	0.052" - 11½ ft	0.052" - 11½ ft
	4,000	0.052" - 6 ft	0.052" - 6 ft	0.052" - 6 ft
	6,000	0.064" - 8 ft	0.064" - 8 ft	0.064" - 8 ft
	8,000	0.064" - 4½ ft	0.064" - 4½ ft	0.064" - 4½ ft



	10,000	0.064" - 12½ ft (2)	0.064" - 12½ ft (2)	0.064" - 12½ ft (2)
	12,000	0.064" - 8 ft (2)	0.064" - 8 ft (2)	0.064" - 8 ft (2)
404A/507	500	0.028" - 11½ ft	0.028" - 12½ ft	0.028" - 13 ft
	750	0.028" - 5 ft	0.028" - 5 ft	0.028" - 5½ ft
	1,000	0.031" - 4½ ft	0.031" - 5 ft	0.031" - 5 ft
	1,250	0.040" - 12 ft	0.040" - 13 ft	0.040" - 13½ ft
	1,500	0.040" - 8 ft	0.040" - 8½ ft	0.040" - 9 ft
	2,000	0.040" - 4½ ft	0.040" - 4½ ft	0.040" - 5 ft
	3,000	0.052" - 8 ft	0.052" - 8½ ft	0.052" - 9 ft
	4,000	0.064" - 13½ ft	0.052" - 4½ ft	0.052" - 4½ ft
	6,000	0.064" - 5½ ft	0.064" - 6 ft	0.064" - 6½ ft
	8,000	0.064" - 13½ ft (2)	0.052" - 4½ ft (2)	0.052" - 4½ ft (2)
	10,000	0.064" - 8½ ft (2)	0.064" - 9 ft (2)	0.064" - 9½ ft (2)
	12,000	0.064" - 5½ ft (2)	0.064" - 6 ft (2)	0.064" - 6½ ft (2)

**Table 2**

		Capillary Tube Size from Table				
Desired Capillary Tube Size	Tube ID (in)	0.028	0.031	0.040	0.052	0.064
	0.026	0.66				
	0.028	1.00	0.56			
	0.031	1.78	1.00			
	0.036		2.34	0.55		
	0.040			1.00		
	0.042			1.32	0.30	
	0.044			1.72	0.39	
	0.049				0.71	
	0.050				0.80	
	0.052				1.00	0.31
	0.054				1.24	0.38
	0.055				1.38	0.42
	0.059				2.05	0.63
	0.064					1.00
	0.070					1.66
0.075					2.46	

Example: to convert 11 ft of 0.031" capillary to 0.028", multiply length by 0.56, i.e., 11 ft \* 0.56 = 6 ft. As a result, 6 ft of 0.028" capillary has approximately the same capacity as 11 ft of 0.031" capillary.