



120 Volt Wire Lengths for Coil Elements

Reference the table below to determine the lineal length of straight wire required to produce helically coiled elements for various common wattages. The lengths shown are for 120 Volt using Nichrome "A" 80%Ni-20%Cr.

WATTS	120 VOLTS	→	40	60	80	100	150	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	
Amperes		→	0.355	0.533	0.710	0.89	1.33	2.66	3.55	4.44	5.33	6.21	7.10	7.99	8.88	9.76	10.65	11.54	12.43	13.31	14.20	
Hot Ohms		→	338.0	225.4	169.0	135.2	90.1	45.1	33.8	27.0	22.5	19.3	16.9	15.0	13.5	12.3	11.3	10.4	9.7	9.0	8.5	
A.W.G.	Decimal	Ohms																				
or	Inches	per Ft.	LINEAL FEET OF STRAIGHT WIRE TO MAKE HELICAL COILS FOR ABOVE WATTAGES																			
B. & S.		at 68°F																				
14	0.064	0.1587																			50.7	
15	0.057	0.2001																			42.9	40.2
16	0.051	0.2499																	36.8	34.3	32.2	
17	0.045	0.3210																30.8	28.6	26.7	25.0	
18	0.04	0.4063															26.4	24.4	22.6	21.1	19.8	
19	0.036	0.5015														23.3	21.4	19.7	18.3	17.1		
20	0.032	0.6348													20.3	18.4	16.9	15.6	14.5			
21	0.0285	0.8002														20.1	17.9	16.1	14.6	13.4	12.4	
22	0.0253	1.015											18.1	15.8	14.1	12.7	11.5	10.6				
23	0.0226	1.273												16.8	14.4	12.6	11.2	10.1	9.2			
24	0.0201	1.609								16.0	13.3	11.4	10.0	8.9	8.0							
25	0.0179	2.029							15.9	12.7	10.6	9.1	7.9									
26	0.0159	2.571						16.7	12.5	10.0	8.3	7.1										
27	0.0142	3.224					26.6	13.3	10.0	8.0	6.7											
28	0.0126	4.094					20.9	10.5	7.9	6.3												
29	0.0113	5.090				25.3	16.8	8.4	6.3													
30	0.01	6.500				19.8	13.2	6.6														
31	0.0089	8.21			19.6	15.7	10.5															
32	0.008	10.16			15.8	12.7																
33	0.0071	12.89		16.6	12.5	10.0																
34	0.0063	16.38	19.6	13.1	9.8	7.9																
35	0.0056	20.73	15.5	10.3	7.8																	

The Middle size in each group will operate at about 1400°F in open air depending on coil diameter and stretch ratio. Coil inside diameter should be 3 times the wire diameter, stretched to minimum of twice the close wound length.

In a device, the coil temperature will be higher. Thus the heavier wire will usually make a more satisfactory heating element.