



240 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 240 Volt using Nichrome "A" 80%Ni-20%Cr.

WATTS	240 VOLTS	→	80	100	150	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2500	3000					
Amperes		→	0.355	0.444	0.666	0.89	1.33	1.78	2.22	2.66	3.11	3.55	3.99	4.44	5.33	6.21	7.10	7.99	8.88	11.09	13.31					
Hot Ohms		→	676.1	540.8	360.6	270.4	180.3	135.2	108.2	90.1	77.3	67.6	60.1	54.1	45.1	38.6	33.8	30.0	27.0	21.6	18.0					
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																			108.1					
15	0.057	0.2001																			102.9	85.7				
16	0.051	0.2499																			103.0	82.4	68.6			
17	0.045	0.3210																			89.1	80.2	64.1	53.4		
18	0.04	0.4063																			79.2	70.4	63.3	50.7	42.2	
19	0.036	0.5015																			73.3	64.1	57.0	51.3	41.0	
20	0.032	0.6348																			67.6	57.9	50.7	45.0	40.5	
21	0.0285	0.8002																			71.5	64.3	53.6	45.9	40.2	35.7
22	0.0253	1.015																			63.3	56.3	50.7	42.2	36.2	31.7
23	0.0226	1.273																			57.8	50.5	44.9	40.4	33.7	28.9
24	0.0201	1.609																			53.3	45.7	40.0	35.5	32.0	26.7
25	0.0179	2.029																			50.7	42.3	36.2	31.7	28.2	
26	0.0159	2.571																			50.0	40.0	33.4	28.6	25.0	
27	0.0142	3.224																			53.2	39.9	31.9	26.6	22.8	
28	0.0126	4.094																			41.9	31.4	25.1	20.9		
29	0.0113	5.090																			50.5	33.7	25.3	20.2		
30	0.01	6.500																			39.6	26.4	19.8			
31	0.0089	8.21																			41.8	31.4	20.9			
32	0.008	10.16																			33.8	25.3				
33	0.0071	12.89																			39.9	26.6	20.0			
34	0.0063	16.38																			39.3	31.4	20.9	15.7		
35	0.0056	20.73																			31.0	24.8	16.6			

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.