

# Resistance Heating Ribbon Wire



## Nickel-Chromium Alloy 80% Nickel/20% Chromium

NCCR Series  
30 m (100') Spool

- ✓ Uniformity of Resistance
- ✓ Mechanical Stability
- ✓ Fine Surface Finish

✓ Nickel-Chromium Wire (80Ni-20Cr) is Proven to Deliver Outstanding Performance Over Extended Periods of Time and is the Same Wire OMEGA Uses in Our Own Electrical Heating Elements



100' spool of NCCR-15-100 shown smaller than actual size.

### Resistance Wire—Current vs. Temperature

Current Carrying Capacity of Straight Nickel Chromium Wire

Approximate amperes to heat a straight, oxidized wire in quiet air to given temperature

		°F	400	600	800	1000	1200	1400
		°C	205	315	427	538	649	760
AWG or B & S	Inches Diameter	Amperes						
15	0.057	7.2	10.0	12.8	16.1	20.0	24.5	
16	0.051	6.4	8.7	10.9	13.7	17.0	20.9	
17	0.045	5.5	7.5	9.5	11.7	14.5	17.6	
18	0.040	4.8	6.5	8.2	10.1	12.2	14.8	
19	0.036	4.3	5.8	7.2	8.7	10.6	12.7	
20	0.032	3.8	5.1	6.3	7.6	9.1	11.0	
21	0.0285	3.3	4.3	5.3	6.5	7.8	9.4	
22	0.0253	2.9	3.7	4.5	5.6	6.8	8.2	
23	0.0226	2.58	3.3	4.0	4.9	5.9	7.0	
24	0.0201	2.21	2.9	3.4	4.2	5.1	6.0	
25	0.0179	1.92	2.52	3.0	3.6	4.3	5.2	
26	0.0159	1.67	2.14	2.60	3.2	3.8	4.5	
27	0.0142	1.44	1.84	2.25	2.73	3.3	3.9	
28	0.0126	1.24	1.61	1.95	2.38	2.85	3.4	
29	0.0113	1.08	1.41	1.73	2.10	2.51	2.95	
30	0.0100	0.92	1.19	1.47	1.78	2.14	2.52	
31	0.0089	0.77	1.03	1.28	1.54	1.84	2.17	
32	0.0080	0.68	0.90	1.13	1.36	1.62	1.89	
33	0.0071	0.59	0.79	0.97	1.17	1.40	1.62	
34	0.0063	0.50	0.68	0.83	1.00	1.20	1.41	
35	0.0056	0.43	0.57	0.72	0.87	1.03	1.21	
36	0.0050	0.38	0.52	0.63	0.77	0.89	1.04	
37	0.0045	0.35	0.46	0.57	0.68	0.78	0.90	
38	0.0040	0.30	0.41	0.50	0.59	0.68	0.78	
39	0.0035	0.27	0.36	0.42	0.49	0.58	0.66	
40	0.0031	0.24	0.31	0.36	0.43	0.50	0.57	

## Current Carrying Capacity of Ribbon Nickel Chromium Wire

At 648°C (1200°F) Approximate

Thickness in Inches	Width-Inches					
	1/64	1/32	1/16	3/32	1/8	3/16
	Amps					
0.0063	1.56	2.89	5.5	8.2	10.1	16.6
0.0056	1.45	2.69	5.2	7.2	9.5	15.6
0.0050	1.35	2.52	4.9	6.8	9.0	14.7
0.0045	1.26	2.38	4.6	6.4	8.5	14.0
0.0040	1.18	2.23	4.1	6.0	8.0	13.1
0.0035	1.09	2.07	3.8	5.6	7.5	12.3
0.0031	1.01	1.94	3.6	5.3	7.0	11.5
0.0020	—	—	—	—	—	—
0.0015	4	—	—	—	—	—

The current values above are based on actual tests of single strands of oxidized wire mounted in quiet air and operated at 648°C (1200°F). The tables are calculated for wire having a resistivity at 648°C (1200°F) and a total surface watts-density of 28 W per square inch.

To Order			
Model No.	Thickness	Width	Ω/ft*
NCRR-1-100	0.0015"	1/64"	22.75
NCRR-2-100	0.002"	1/64"	17.36
NCRR-3-100	0.0031"	1/64"	11.20
NCRR-4-100	0.0035"	1/64"	9.99
NCRR-5-100	0.004"	1/64"	8.68
NCRR-6-100	0.0045"	1/64"	7.12
NCRR-7-100	0.005"	1/64"	6.95
NCRR-8-100	0.0056"	1/64"	6.20
NCRR-9-100	0.0063"	1/64"	5.51
NCRR-10-100	0.002"	1/32"	9.83
NCRR-11-100	0.0031"	1/32"	5.60
NCRR-12-100	0.0035"	1/32"	4.96
NCRR-13-100	0.004"	1/32"	4.34
NCRR-14-100	0.0045"	1/32"	3.86
NCRR-15-100	0.005"	1/32"	3.47
NCRR-16-100	0.0063"	1/32"	2.76
NCRR-17-100	0.0031"	1/16"	3.17
NCRR-18-100	0.0035"	1/16"	2.81
NCRR-19-100	0.004"	1/16"	2.46
NCRR-20-100	0.0045"	1/16"	1.93
NCRR-21-100	0.005"	1/16"	1.74
NCRR-22-100	0.0056"	1/16"	1.55
NCRR-23-100	0.0063"	1/16"	1.38
NCRR-25-100	0.0031"	3/32"	2.11
NCRR-26-100	0.0035"	3/32"	1.87
NCRR-27-100	0.0045"	3/32"	1.46
NCRR-28-100	0.0063"	3/32"	0.91
NCRR-29-100	0.0031"	1/8"	1.59
NCRR-30-100	0.0035"	1/8"	1.40
NCRR-31-100	0.004"	1/8"	1.23
NCRR-32-100	0.0045"	1/8"	1.09
NCRR-33-100	0.005"	1/8"	0.98
NCRR-34-100	0.0056"	1/8"	0.88
NCRR-35-100	0.0031"	3/16"	0.88
NCRR-36-100	0.0035"	3/16"	0.78
NCRR-37-100	0.004"	3/16"	0.68
NCRR-38-100	0.0045"	3/16"	0.60
NCRR-39-100	0.005"	3/16"	0.54

\* Resistance tolerance: ±5%

Ordering Example: NCRR-15-100, 100' spool of 0.0035" thickness of heating ribbon wire.