

## References

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**Appendix – A**

**RW 80 Nickel-Chrome Resistance Band**

An alloy wire used at operating temperatures up to 1200°C. Its chemical composition gives good oxidation resistance especially under conditions of frequent switching or wide temperature fluctuations.

Applications include heating elements in both domestic and industrial appliances and in control resistors.

Approximate Chemical Composition		Properties	
Ni	80%	DENSITY	8.31 g/cm <sup>3</sup>
Cr	20%	ELECTRICAL RESISTIVITY	
		AT 20 °C (microhm • cm)	108
		AT 20 °C (ohm. Circ. Mil/ft)	650
		MAXIMUM OPERATING TEMPERATURE For use as a Heating Element	1200 °C    2200 °F
		MAXIMUM OPERATING TEMPERATURE For use in Hot Cutting, Fabrication - Line Bending	300 °C    572 °F
		MELTING POINT	1400 °C    2550 °F
		COEFFICIENT OF EXPANSION	12.5 µm/m °C (20 - 100°C)

Temperature-Resistance Factor (F) At:												
20°C	100°C	200°C	300°C	400°C	500°C	600°C	700°C	800°C	900°C	1000°C	1100°C	1200°C
1.00	1.006	1.015	1.028	1.045	1.065	1.068	1.057	1.051	1.052	1.062	1.071	1.080

Source : [http://www.alloywire.com/products\\_RW80.html](http://www.alloywire.com/products_RW80.html)

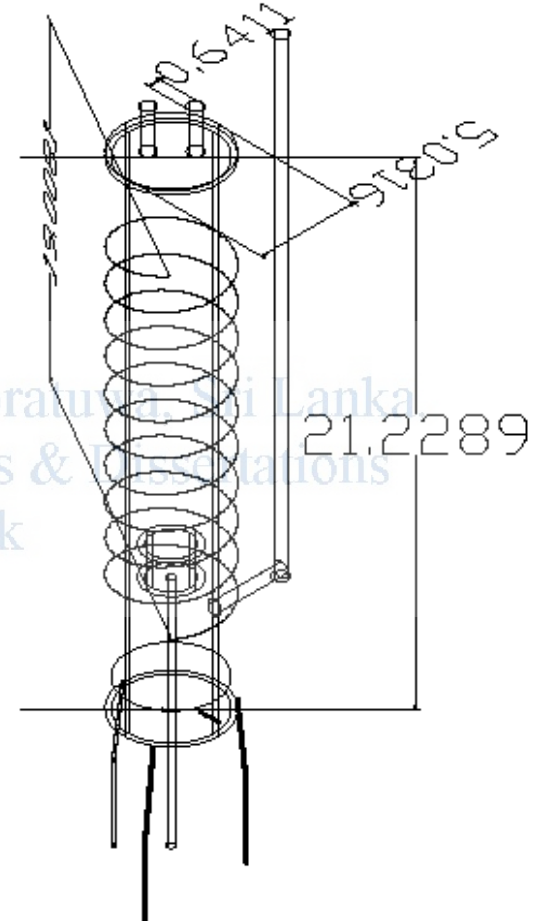
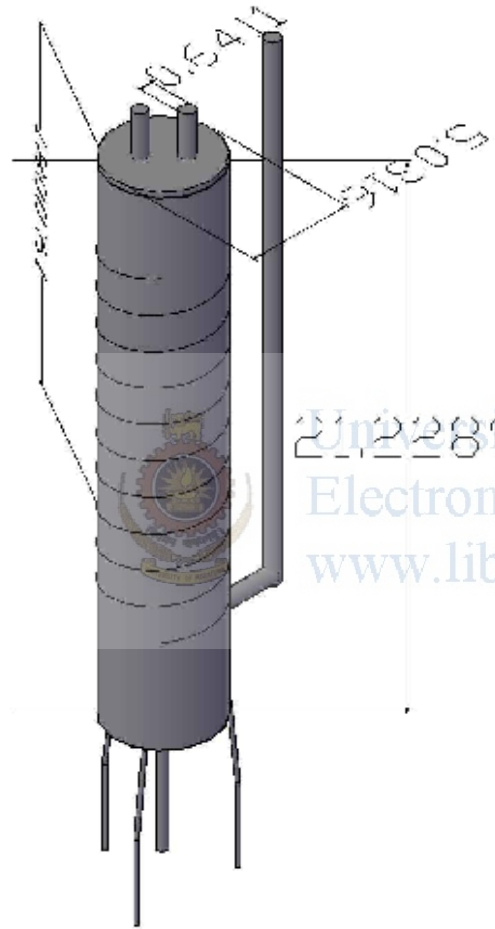
**Appendix – B**

**Resistance Wire - Stock Sizes – tape Sizes (mm)**

Resistance Wire - Stock Sizes - Tape Sizes (mm)					
<a href="#">Contact Us...</a>					
<a href="#">Round Wire</a>   <a href="#">Tape Sizes (mm)</a>   <a href="#">Tape Sizes (inch)</a>					
Width (mm)	Thickness (mm)	Ohms/m	Ohms/ft	m/kg	ft/lb
5.000	1.0000	0.23	0.07	25	37
5.000	0.4700	0.47	0.14	52	77
5.000	0.3000	0.73	0.22	81	119
5.000	0.2000	1.09	0.33	121	180
4.000	0.1200	2.26	0.69	252	375
4.000	0.3000	0.91	0.28	102	152
4.000	0.2000	1.36	0.41	152	226
3.600	0.1800	1.68	0.51	188	280
3.000	0.3810	0.97	0.30	108	161
3.000	0.4700	0.79	0.24	88	131
3.000	0.2500	1.47	0.45	163	243
3.000	0.1500	2.43	0.74	270	402
3.000	0.3000	1.23	0.37	137	204
3.000	0.2000	1.83	0.56	203	302
2.500	0.3500	1.27	0.39	142	211
2.500	0.2500	1.77	0.54	197	293
2.500	0.1900	2.31	0.70	258	384
2.500	0.1000	4.36	1.33	486	723
2.400	0.1500	3.04	0.93	339	505
2.360	0.3200	1.47	0.45	164	244
2.000	0.0730	7.46	2.27	831	1237
2.000	0.1500	3.66	1.11	408	607
2.000	0.0500	10.86	3.31	1210	1801
2.000	0.2000	2.76	0.84	307	457
2.000	0.1000	5.46	1.66	608	905
1.800	0.1500	4.07	1.24	454	676
1.800	0.0900	6.74	2.05	751	1117

Source: [http://www.alloywire.com/stock\\_sizes\\_tape\\_mm.h](http://www.alloywire.com/stock_sizes_tape_mm.h)

Appendix – C  
Reactor Design



(All Dimension  
in cm)

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