



VIN KAROLA INSTRUMENTS

VACUUM EVAPORATION SOURCE POWER REQUIREMENT TABLE

Part #	Volts	Amps	Watts	Temp.	Part #	Volts	Amps	Watts	Temp.	Part #	Volts	Amps	Watts	Temp.
B1-.040W	3.47	34	118	1800 °C	F3-.040W	3.91	39	152	1800 °C	F16B	1.19	149	177	1500 °C
B1-3x.025W	4.22	43	181	1800 °C	F3-2x.040W	4.00	68	272	1800 °C	F16C	1.30	172	224	1500 °C
B1-3x.030W	3.69	53	196	1800 °C	F3-3x.025W	4.61	48	221	1800 °C	F16D	3.62	223	807	1500 °C
B2-.040W	3.04	36	109	1800 °C	F3-3x.030W	4.15	60	249	1800 °C	FB1-.005Mo	1.65	293	483	1400 °C
B2-3x.025W	3.50	44	154	1800 °C	F3-4x.030W	4.00	77	308	1800 °C	FB1-.005Ta	3.78	339	1281	1600 °C
B2-3x.030W	3.00	54	162	1800 °C	F4-.040W	3.70	38	141	1800 °C	FB1-.010Mo	1.21	413	500	1400 °C
B3-.040W	5.40	33	178	1800 °C	F4-2x.040W	3.97	66	262	1800 °C	FB1-.010Ta	2.93	462	1354	1600 °C
B3-3x.025W	3.51	42	147	1800 °C	F4-3x.025W	5.29	48	254	1800 °C	FB1-.015Mo	1.38	634	875	1400 °C
B4-.060W	4.02	59	237	1800 °C	F4-3x.030W	4.28	62	265	1800 °C	FB1-.015Ta	2.57	641	1647	1600 °C
B4-3x.030W	5.24	52	272	1800 °C	F4-4x.030W	3.63	73	265	1800 °C	FB2-.005Mo	1.90	320	608	1400 °C
B5-.040W	5.50	33	182	1800 °C	F5-.040W	6.90	37	255	1800 °C	FB2-.005Ta	3.88	348	1350	1600 °C
B5-3x.025W	5.83	37	216	1800 °C	F5-2x.040W	6.82	64	436	1800 °C	FB2-.010Mo	1.38	448	618	1400 °C
B6-.040W	6.62	32	212	1800 °C	F5-3x.025W	8.05	45	362	1800 °C	FB2-.010Ta	2.77	491	1360	1600 °C
B6-3x.025W	7.04	39	275	1800 °C	F5-3x.030W	6.58	57	375	1800 °C	FB2-.015Mo	1.16	547	635	1400 °C
B7-.040W	6.22	32	199	1800 °C	F5-3x.040W	5.60	83	465	1800 °C	FB2-.015Ta	2.56	657	1682	1600 °C
B7-3x.025W	6.84	38	260	1800 °C	F5-4x.030W	6.10	69	421	1800 °C	FB3-.005Mo	2.23	303	676	1400 °C
B8A-3x.025W	6.28	47	295	1800 °C	F6-2x.040W	7.20	64	461	1800 °C	FB3-.005Ta	4.60	301	1385	1600 °C
B8A-3x.030W	6.06	55	333	1800 °C	F6-3x.025W	8.72	44	384	1800 °C	FB3-.010Mo	1.60	431	690	1400 °C
B8B-3x.025W	5.80	43	249	1800 °C	F6-3x.030W	8.25	58	478	1800 °C	FB3-.010Ta	3.89	521	2027	1600 °C
B8B-3x.030W	5.15	57	294	1800 °C	F6-3x.040W	6.42	84	539	1800 °C	FB3-.015Mo	1.38	536	740	1400 °C
B9-3x.030W	8.42	57	480	1800 °C	F6-4x.030W	7.29	71	518	1800 °C	FB3-.015Ta	3.73	736	2745	1600 °C
B9-3x.040W	7.18	85	610	1800 °C	F7-2x.040W	10.97	55	603	1800 °C	FB4-.005Mo	2.18	300	654	1400 °C
B9-4x.030W	7.76	70	543	1800 °C	F7-3x.030W	11.65	52	606	1800 °C	FB4-.005Ta	4.14	277	1147	1600 °C
B10-3x.040W	8.73	85	742	1800 °C	F7-3x.040W	9.40	78	733	1800 °C	FB4-.010Mo	1.60	413	661	1400 °C
B10-4x.030W	9.76	71	693	1800 °C	F7-4x.030W	10.31	65	670	1800 °C	FB4-.010Ta	3.64	495	1802	1600 °C
B11-3x.040W	19.70	84	1655	1800 °C	F8-2x.040W	5.00	66	330	1800 °C	FB4-.015Mo	1.72	663	1140	1400 °C
B12A-.040W	5.00	37	185	1800 °C	F8-3x.030W	5.39	62	334	1800 °C	FB4-.015Ta	3.15	646	2035	1600 °C
B12A-3x.025W	5.31	44	234	1800 °C	F8-3x.040W	4.61	87	401	1800 °C	FB10-.005Mo	.753	166	125	1400 °C
B12A-3x.030W	4.80	55	264	1800 °C	F8-4x.030W	5.09	74	377	1800 °C	FB10-.005Ta	1.56	159	248	1600 °C
B12B-.040W	3.96	33	131	1800 °C	F9-2x.040W	6.66	65	433	1800 °C	FB10-.010Mo	.661	265	175	1400 °C
B12B-.060W	2.54	99	251	1800 °C	F9-3x.030W	6.50	57	370	1800 °C	FB10-.010Ta	1.12	242	271	1600 °C
B12B-3x.025W	4.56	41	187	1800 °C	F9-3x.040W	5.43	86	467	1800 °C	FB10-.015Mo	.675	351	237	1400 °C
B12B-3x.030W	3.17	57	181	1800 °C	F9-4x.030W	6.07	71	431	1800 °C	FB10-.015Ta	1.12	341	382	1600 °C
B13-.040W	3.22	37	119	1800 °C	F10-2x.040W	10.62	61	648	1800 °C	FB11-.005Mo	1.11	118	131	1400 °C
B13-3x.025W	4.04	45	182	1800 °C	F10-3x.030W	10.90	55	600	1800 °C	FB11-.005Ta	2.12	137	290	1600 °C
B13-3x.030W	3.36	57	192	1800 °C	F10-3x.040W	9.02	83	749	1800 °C	FB11-.010Mo	.760	186	141	1400 °C
B14-.060W	4.83	54	261	1800 °C	F10-4x.030W	10.00	68	680	1800 °C	FB11-.010Ta	1.69	207	350	1600 °C
B14-3x.030W	6.25	50	312	1800 °C	F11-2x.040W	6.74	65	438	1800 °C	FB11-.015Mo	.713	243	173	1400 °C
B14-4x.030W	5.82	62	361	1800 °C	F11-3x.030W	7.07	58	410	1800 °C	FB11-.015Ta	1.45	253	367	1600 °C
CH-1	1.34	273	366	1600 °C	F11-3x.040W	5.70	87	496	1800 °C	FB12-.005Mo	1.2	143	172	1400 °C
CH-5	1.79	346	619	1600 °C	F11-4x.030W	6.40	70	448	1800 °C	FB12-.005Ta	2.0	141	282	1600 °C
CH-7	1.47	187	275	1600 °C	F12-3x.025W	4.44	46	204	1800 °C	FB12-.010Mo	.875	211	185	1400 °C
CH-8	1.73	199	344	1600 °C	F12-3x.030W	3.82	57	218	1800 °C	FB12-.010Ta	1.63	200	326	1600 °C
CH-9	1.93	191	369	1600 °C	F13-3x.025W	11.00	44	484	1800 °C	FB12-.015Mo	.834	272	227	1400 °C
CH-10	1.70	191	325	1600 °C	F13-3x.030W	9.06	57	516	1800 °C	FB12-.015Ta	1.49	257	383	1600 °C
CH-11	1.70	191	325	1600 °C	F13-4x.030W	8.59	71	610	1800 °C	H1-.040W	7.90	31	245	1800 °C
CH-12	2.19	339	742	1600 °C	F14-3x.030W	9.44	56	529	1800 °C	H1-.060W	6.10	71	433	1800 °C
CH-13	2.19	339	742	1600 °C	F14-3x.040W	8.20	88	722	1800 °C	H2-.040W	4.18	36	150	1800 °C
CH-14	3.82	525	2006	1600 °C	F14-4x.030W	8.80	68	598	1800 °C	H2-.060W	2.83	69	195	1800 °C
F1-.040W	3.07	36	111	1800 °C	F15-3x.030W	11.53	57	657	1800 °C	H3-.040W	7.39	34	251	1800 °C
F1-3x.025W	3.00	42	126	1800 °C	F15-3x.040W	9.66	85	821	1800 °C	H3-.060W	5.22	63	329	1800 °C
F1-3x.030W	2.94	54	159	1800 °C	F15-4x.030W	10.63	70	744	1800 °C	ME-19	1.26	257	324	1600 °C
F2-3x.025W	3.43	49	168	1800 °C	F16-3x.040W	6.26	85	532	1800 °C	ME-20	1.16	169	196	1600 °C
F2-3x.030W	3.08	63	194	1800 °C	F16-4x.030W	6.75	69	466	1800 °C	ME1	1.45	266	386	1600 °C
F2-4x.030W	2.70	77	208	1800 °C	F16A	1.12	148	166	1500 °C	ME2	2.52	141	355	1600 °C

Power table for above sources is for reference only.
 With evaporant added the power required could change significantly.
 Sources were tested without evaporant or crucibles installed.

Temperature measurements were taken with an infrared thermometer at the refractory temperature indicated above.
 Part # P8; Power required based on 12" length.

VIN KAROLA INSTRUMENTS

VACUUM EVAPORATION SOURCE POWER REQUIREMENT TABLE

Part #	Volts	Amps	Watts	Temp.	Part #	Volts	Amps	Watts	Temp.	Part #	Volts	Amps	Watts	Temp.
ME2/ME2A	1.74	176	306	1600°C	ME17-3x.025W	4.57	40	183	1800°C	S1-AO-W	1.00	106	106	1200°C
ME3-.005Mo	.94	150	141	1400°C	ME18A-3x.025W	6.56	48	315	1800°C	S2A-.005Mo	1.72	86	148	1400°C
ME3-.005Ta	1.77	138	244	1600°C	ME18A-3x.030W	5.00	55	275	1800°C	S2A-.005Ta	3.37	100	337	1600°C
ME3-.005W	2.00	202	404	1800°C	ME18B-3x.025W	4.70	43	202	1800°C	S2A-.005W	3.85	140	539	1800°C
ME3-AO-Mo	.86	151	130	1200°C	ME18B-3x.030W	4.25	56	238	1800°C	S2A-.010Mo	1.13	130	147	1400°C
ME4-.005Mo	.94	93	87	1400°C	ME19	1.23	242	298	1600°C	S2A-.010Ta	2.27	133	302	1600°C
ME4-.005Ta	1.50	98	147	1600°C	ME20	1.12	159	178	1600°C	S2A-.010W	2.57	185	475	1800°C
ME4-.005W	1.83	143	262	1800°C	ME21-.005Mo	.94	147	138	1400°C	S2A-.015W	2.20	242	532	1800°C
ME4-AO-Mo	.83	116	96	1200°C	ME21-.005Ta	1.75	141	247	1600°C	S2B-.005Mo	1.15	119	137	1400°C
ME5-.005Mo	.85	58	49	1400°C	ME21-.005W	1.96	213	417	1800°C	S2B-.005Ta	3.42	97	332	1600°C
ME5-.005Ta	1.40	55	77	1600°C	ME22	1.87	196	367	1600°C	S2B-.005W	3.87	140	542	1800°C
ME5-.005W	1.69	80	135	1800°C	ME22/ME22A	1.45	265	384	1600°C	S2B-.010Mo	1.10	131	144	1400°C
ME6A-.005Mo	.85	102	87	1400°C	ME22B-AO-Ta	1.30	259	337	1200°C	S2B-.010Ta	2.33	130	303	1600°C
ME6A-.005Ta	1.85	95	176	1600°C	ME22B/ME22A-AO	1.09	293	319	1200°C	S2B-.010W	2.58	187	482	1800°C
ME6A-.005W	1.83	145	265	1800°C	ME23-.005Mo	.79	251	198	1400°C	S2B-.015W	2.06	245	505	1800°C
ME6B-.005Mo	.90	97	87	1400°C	ME23-.005Ta	1.51	215	325	1600°C	S2B-AO-Mo	1.12	141	158	1200°C
ME6B-.005Ta	1.73	96	166	1600°C	ME23-.005W	1.40	327	458	1800°C	S2B-AO-W	1.13	141	159	1200°C
ME6B-.005W	1.88	144	271	1800°C	ME24-.005Mo	.83	248	206	1400°C	S3-.005Mo	.98	64	63	1400°C
ME6B-AO-Mo	.84	106	89	1200°C	ME24-.005Ta	1.47	230	338	1600°C	S3-.005Ta	2.04	64	131	1600°C
ME7-.005Mo	1.12	53	59	1400°C	ME24-.005W	1.66	322	535	1800°C	S3-.005W	1.95	100	195	1800°C
ME7-.005Ta	1.72	49	84	1600°C	P1-.060W	2.08	73	152	1800°C	S3-.010Mo	.77	103	79	1400°C
ME7-.005W	2.03	76	154	1800°C	P1-3x.025W	2.95	50	148	1800°C	S3-.010Ta	1.44	92	132	1600°C
ME8-.005Mo	1.04	79	82	1400°C	P1-3x.030W	2.36	65	153	1800°C	S3-.010W	1.47	158	232	1800°C
ME8-.005Ta	2.16	93	201	1600°C	P1-4x.030W	2.76	80	221	1800°C	S3-.015W	1.96	130	255	1800°C
ME8-.005W	2.57	129	332	1800°C	P2-.060W	1.84	75	138	1800°C	S3-AO-MO	.79	114	90	1200°C
ME9-.005Mo	.80	72	58	1400°C	P2-3x.025W	2.83	48	136	1800°C	S3-AO-W	.83	117	97	1200°C
ME9-.005Ta	1.48	67	99	1600°C	P2-3x.030W	3.56	78	278	1800°C	S4-.005Mo	1.31	63	83	1400°C
ME9-.005W	1.55	97	150	1800°C	P2-4x.030W	2.04	82	167	1800°C	S4-.005Ta	2.62	64	168	1600°C
ME9-AO-Mo	.80	83	66	1200°C	P3-.060W	1.39	79	110	1800°C	S4-.005W	2.76	96	265	1800°C
ME10-.005Ta	1.07	131	140	1600°C	P3-3x.025W	2.26	50	113	1800°C	S4-.010Mo	.97	93	90	1400°C
ME11-.030W	3.59	25	90	1800°C	P3-3x.030W	1.94	64	124	1800°C	S4-.010Ta	1.83	93	170	1600°C
ME11-3x.025W	3.13	44	138	1800°C	P3-4x.030W	1.59	84	134	1800°C	S4-.010W	2.03	138	280	1800°C
ME12-.030W	2.47	27	67	1800°C	P4-.060W	2.04	74	151	1800°C	S4-.015W	1.51	191	288	1800°C
ME12-3x.025W	2.30	47	108	1800°C	P4-3x.025W	3.20	51	163	1800°C	S5-.005Mo	1.59	133	211	1400°C
ME13A-.030W	1.25	33	41	1800°C	P4-3x.030W	2.04	64	131	1800°C	S5-.005Ta	3.29	149	490	1600°C
ME13A-3x.025W	1.08	61	66	1800°C	P4-4x.030W	2.69	80	215	1800°C	S5-.010Mo	1.02	208	212	1400°C
ME13B-.030W	1.95	27	53	1800°C	P5-.040W	3.44	40	138	1800°C	S5-.010Ta	2.09	220	460	1600°C
ME13B-3x.025W	1.68	52	87	1800°C	P5-.060W	3.09	71	219	1800°C	S6-.005Mo	1.46	123	180	1400°C
ME13C-.030W	1.95	26	51	1800°C	P5-3x.025W	3.80	51	194	1800°C	S6-.005Ta	2.77	133	368	1600°C
ME13C-3x.025W	1.56	53	83	1800°C	P5-3x.030W	3.50	66	231	1800°C	S6-.005W	3.04	199	605	1800°C
ME14-.030W	3.21	24	77	1800°C	P5-4x.030W	3.13	79	247	1800°C	S6-.010Mo	.99	181	179	1400°C
ME14-.040W	2.90	36	104	1800°C	P6-.040W	1.94	42	81	1800°C	S6-.010Ta	2.00	186	372	1600°C
ME15-.030W	4.18	23	96	1800°C	P6-.060W	1.46	75	109	1800°C	S6-.010W	2.14	263	563	1800°C
ME15-.040W	3.63	34	123	1800°C	P6-3x.025W	2.08	51	106	1800°C	S7-.005Mo	1.21	108	131	1400°C
ME16A-.030W	2.48	23	57	1800°C	P7-3x.030W	2.78	69	192	1800°C	S7-.005Ta	2.48	138	342	1600°C
ME16A-3x.025W	2.30	39	90	1800°C	P7-4x.030W	2.42	87	211	1800°C	S7-.010Mo	.96	180	173	1400°C
ME16B-.030W	2.90	23	67	1800°C	P8-3x.025W	9.48	54	512	1800°C	S7-.010Ta	1.80	155	279	1600°C
ME16B-3x.025W	2.66	42	112	1800°C	P8-3x.030W	8.28	72	596	1800°C	S7-.010W	1.92	258	495	1800°C
ME16C-.030W	3.77	23	87	1800°C	S1-.005Mo	1.29	63	81	1400°C	S8A-.005Mo	1.95	78	152	1400°C
ME16C-3x.025W	3.54	43	152	1800°C	S1-.005Ta	2.72	64	174	1600°C	S8A-.005Ta	4.44	92	408	1600°C
ME16D-.030W	5.96	21	125	1800°C	S1-.010Mo	.96	96	92	1400°C	S8A-.005W	4.96	136	675	1800°C
ME16D-3x.025W	5.51	40	220	1800°C	S1-.010Ta	1.91	96	183	1600°C	S8A-.010Mo	1.33	112	149	1400°C
ME16E-.040W	4.25	32	136	1800°C	S1-.010W	1.79	144	258	1800°C	S8A-.010Ta	2.92	129	377	1600°C
ME16E-3x.025W	5.00	44	220	1800°C	S1-.015W	1.50	184	276	1800°C	S8A-.010W	3.11	185	575	1800°C
ME17-.030W	4.93	22	108	1800°C	S1-AO-Mo	.95	105	100	1200°C	S8A-.015W	2.37	234	555	1800°C

Power table for above sources is for reference only.
 With evaporant added the power required could change significantly.
 Sources were tested without evaporant or crucibles installed.

Temperature measurements were taken with an infrared thermometer at the refractory temperature indicated above.
 Part # P8; Power required based on 12" length.

VIN KAROLA INSTRUMENTS

VACUUM EVAPORATION SOURCE POWER REQUIREMENT TABLE

Part #	Volts	Amps	Watts	Temp.	Part #	Volts	Amps	Watts	Temp.	Part #	Volts	Amps	Watts	Temp.
S8B-.005Mo	1.92	123	236	1400°C	S9F-.010Ta	3.12	601	1875	1600°C	S19C-Ta	2.64	132	348	1600°C
S8B-.005Ta	4.44	139	617	1600°C	S9F-.015Mo	1.44	682	982	1400°C	S20A-.005Mo	1.84	81	149	1400°C
S8B-.010Mo	1.40	170	238	1400°C	S9F-.015Ta	2.70	721	1947	1600°C	S20A-.005Ta	3.40	94	320	1600°C
S8B-.010Ta	2.86	190	543	1600°C	S9F-.025Ta	2.50	948	2370	1600°C	S20A-.005W	3.95	140	553	1800°C
S8B-.010W	2.85	292	832	1800°C	S9F-AO-Mo	1.50	586	879	1200°C	S20A-.010Mo	1.27	129	164	1400°C
S8B-.015W	2.24	374	838	1800°C	S9F-AO-W	1.40	635	889	1200°C	S20A-.010Ta	2.61	129	337	1600°C
S8C-.010Mo	1.27	241	306	1400°C	S10-.005Mo	2.03	170	345	1400°C	S20A-.010W	2.90	196	568	1800°C
S8C-.010Ta	2.97	276	820	1600°C	S10-.005Ta	4.26	193	822	1600°C	S20A-.015W	2.10	250	525	1800°C
S8C-.010W	2.99	387	1157	1800°C	S10-.010Mo	1.34	247	331	1400°C	S21-.005Mo	2.11	123	260	1400°C
S8C-.015Mo	1.07	300	321	1400°C	S10-.010Ta	4.24	194	823	1600°C	S21-.005Ta	4.50	138	621	1600°C
S8C-.015Ta	2.37	337	799	1600°C	S10-.010W	3.35	381	1276	1800°C	S21-.005W	3.26	144	469	1800°C
S8C-AO-Mo	1.31	253	331	1200°C	S11-.005Mo	1.95	165	322	1400°C	S21-.010Mo	1.47	184	270	1400°C
S8C-AO-W	1.27	257	326	1200°C	S11-.005Ta	4.10	180	738	1600°C	S21-.010Ta	2.87	198	568	1600°C
S8D-.010Mo	1.27	241	306	1400°C	S11-.010Mo	1.29	236	304	1400°C	S21-.010W	3.28	300	984	1800°C
S8D-.010Ta	2.97	262	778	1600°C	S11-.010Ta	2.86	262	749	1600°C	S21-AO-Mo	1.34	207	277	1200°C
S8D-.010W	2.94	378	1111	1800°C	S11-.010W	3.03	372	1127	1800°C	S21-AO-W	1.47	204	300	1200°C
S8D-.015Mo	1.11	300	333	1400°C	S12A-.005Mo	1.46	181	264	1400°C	S22-.005Mo	1.54	122	188	1400°C
S8D-.015Ta	2.37	325	770	1600°C	S12A-.005Ta	2.97	197	585	1600°C	S22-.005Ta	2.94	150	441	1600°C
S9A-.005Mo	1.70	87	148	1400°C	S12A-.010Mo	1.11	267	296	1400°C	S22-.010Mo	1.09	190	207	1400°C
S9A-.005Ta	3.80	93	353	1600°C	S12A-.010Ta	2.22	273	606	1600°C	S22-.010Ta	2.28	209	477	1600°C
S9A-.005W	3.95	185	731	1800°C	S12B-.005Mo	.96	196	188	1400°C	S22-.010W	2.55	283	722	1800°C
S9A-.010Mo	1.25	121	151	1400°C	S12B-.005Ta	1.82	203	369	1600°C	S23-.010Mo	.88	301	265	1400°C
S9A-.010Ta	2.69	135	363	1600°C	S12B-.010Mo	.78	320	250	1400°C	S23-.010Ta	1.68	295	496	1600°C
S9A-.010W	2.84	194	551	1800°C	S12B-.010Ta	1.48	298	441	1600°C	S23-.010W	1.50	375	562	1800°C
S9A-.015W	2.29	253	579	1800°C	S13-.005Mo	1.32	106	140	1400°C	S24-.005Mo	1.24	202	250	1400°C
S9A-AO-Mo	1.21	130	157	1200°C	S13-.005Ta	2.87	110	316	1600°C	S24-.005Ta	2.28	190	433	1600°C
S9A-AO-W	1.17	125	146	1200°C	S13-.010Mo	.97	156	151	1400°C	S24-.010Mo	.83	297	247	1400°C
S9B-.005Mo	2.01	132	265	1400°C	S13-.010Ta	1.92	158	303	1600°C	S24-.010Ta	1.77	329	582	1600°C
S9B-.005Ta	4.43	146	647	1600°C	S14-.005Mo	1.71	170	291	1400°C	S24-.010W	1.70	386	656	1800°C
S9B-.010Mo	1.30	186	242	1400°C	S14-.005Ta	3.92	179	702	1600°C	S25-.010Mo	1.14	300	342	1400°C
S9B-.010Ta	2.98	207	617	1600°C	S14-.005W	4.21	283	1191	1800°C	S25-.010Ta	2.16	272	588	1600°C
S9B-.010W	3.10	325	1008	1800°C	S14-.010Mo	1.19	240	286	1400°C	S25-.010W	2.30	375	862	1800°C
S9B-.015W	2.76	386	1065	1800°C	S14-.010Ta	2.53	259	655	1600°C	S26-.010Mo	1.10	278	306	1400°C
S9B-AO-Mo	1.34	201	269	1200°C	S14-.010W	2.52	402	1013	1800°C	S26-.010Ta	2.40	293	703	1600°C
S9B-AO-W	1.29	190	245	1200°C	S14-.015W	2.40	459	1102	1800°C	S26-.010W	2.14	383	820	1800°C
S9C-.010Mo	1.36	257	350	1400°C	S15-.005Mo	1.76	86	151	1400°C	S27-.005Mo	.94	94	88	1600°C
S9C-.010Ta	3.27	281	919	1600°C	S15-.005Ta	3.80	90	342	1600°C	S27-.005Ta	2.09	99	207	1600°C
S9C-.010W	3.08	407	1254	1800°C	S15-.005W	4.08	144	588	1800°C	S27-.010Mo	.75	148	111	1600°C
S9C-.015Mo	1.09	315	343	1400°C	S15-.010Mo	1.23	129	159	1400°C	S27-.010Ta	1.48	137	203	1600°C
S9C-.015Ta	2.31	333	769	1600°C	S15-.010Ta	2.86	133	380	1600°C	S28-.005Mo	1.92	86	165	1400°C
S9C-AO-Mo	1.14	248	283	1200°C	S15-.010W	3.04	200	608	1800°C	S28-.005Ta	3.74	92	344	1600°C
S9C-AO-W	1.35	268	362	1200°C	S15-.015W	2.23	249	555	1800°C	S28-.010Mo	1.27	127	161	1400°C
S9D-.010Mo	1.34	260	348	1400°C	S16-.005Mo	.87	73	64	1400°C	S28-.010Ta	2.69	132	355	1600°C
S9D-.010Ta	2.89	262	757	1600°C	S16-.005Ta	1.49	65	97	1600°C	S28-.010W	2.93	187	548	1800°C
S9D-.010W	3.06	411	1258	1800°C	S16-.005W	1.58	110	174	1800°C	S29-.005Mo	2.10	198	416	1400°C
S9D-.015Mo	1.12	318	356	1400°C	S16-.010Mo	.72	131	94	1400°C	S29-.005Ta	4.50	221	994	1600°C
S9D-.015Ta	2.35	333	783	1600°C	S16-.010Ta	1.17	115	135	1600°C	S29-.010Mo	1.43	281	402	1400°C
S9D-.025Ta	1.86	431	802	1600°C	S17A-.005Ta	2.15	158	340	1600°C	S29-.010Ta	3.36	322	1082	1600°C
S9E-.010Mo	1.36	316	430	1400°C	S17A-.010Ta	1.40	183	256	1600°C	S29-.010W	3.30	451	1488	1800°C
S9E-.010Ta	2.97	340	1010	1600°C	S17B-.005Ta	1.93	125	241	1600°C	S29-.015Ta	2.56	406	1039	1600°C
S9E-.010W	3.21	525	1685	1800°C	S17B-.010Ta	1.43	187	267	1600°C	S29-AO-Mo	1.41	220	310	1200°C
S9E-.015Mo	1.12	417	467	1400°C	S18-C	11.35	317	3598	2000°C	S29-AO-W	1.34	294	394	1200°C
S9E-.015Ta	2.00	366	732	1600°C	S18-Mo	.78	983	767	1400°C	S30-.010Mo	1.05	286	300	1400°C
S9E-.025Ta	1.93	539	1040	1600°C	S19A-Ta	1.71	130	222	1600°C	S30-.010Ta	2.32	311	722	1600°C
S9F-.010Mo	1.61	559	900	1400°C	S19B-Ta	1.83	134	245	1600°C	S30-.010W	2.06	404	832	1800°C

Power table for above sources is for reference only.
 With evaporant added the power required could change significantly.
 Sources were tested without evaporant or crucibles installed.

Temperature measurements were taken with an infrared thermometer at the refractory temperature indicated above.
 Part # P8; Power required based on 12" length.



VIN KAROLA INSTRUMENTS

VACUUM EVAPORATION SOURCE POWER REQUIREMENT TABLE

Part #	Volts	Amps	Watts	Temp.	Part #	Volts	Amps	Watts	Temp.	Part #	Volts	Amps	Watts	Temp.
S30A-.005W	2.6	400	1040	1800 °C	S39-.010Ta	1.95	165	322	1600 °C	SB-2	3.70	388	1436	1600 °C
S30A-.010W	1.5	444	666	1800 °C	S40-.005Mo	1.39	105	146	1400 °C	SB-2/SB-2A	2.91	398	1158	1600 °C
S31-.010Mo	1.08	305	329	1400 °C	S40-.005Ta	2.61	120	313	1600 °C	SB-3	2.08	366	761	1600 °C
S31-.010Ta	2.37	323	766	1600 °C	S40-.005W	2.71	155	420	1800 °C	SB-3/SB-3A	1.63	380	619	1600 °C
S31-.010W	1.92	392	753	1800 °C	S40-.010Ta	2.01	156	314	1600 °C	SB3-AO-Ta	1.54	295	454	1200 °C
S31A-.005Mo	.66	75	50	1400 °C	S42-.010Mo	1.58	249	393	1400 °C	SB3/SB3A-AO	1.49	345	514	1200 °C
S31A-.005Ta	1.24	83	103	1600 °C	S42-.010Ta	3.35	281	941	1600 °C	SB-4	3.57	438	1564	1600 °C
S31A-.005W	2.00	166	332	1800 °C	S42-.010W	2.82	269	759	1800 °C	SB-4/SB-4A	2.83	479	1356	1600 °C
S31A-.010Mo	.53	129	68	1400 °C	S42-.015Mo	1.27	310	394	1400 °C	SB-5	2.96	371	1098	1600 °C
S31A-.010Ta	.98	119	117	1600 °C	S42-.015Ta	2.61	328	856	1600 °C	SB-5/SB-5A	2.12	380	806	1600 °C
S31A-.010W	1.63	214	349	1800 °C	S42-.015W	2.57	508	1306	1800 °C	SB5-AO-Ta	2.20	314	691	1200 °C
S31A-.015Mo	.55	173	95	1400 °C	S42B-AO-Mo	1.35	262	354	1200 °C	SB5/SB5A-AO	1.63	334	544	1200 °C
S31A-.015Ta	1.07	155	166	1600 °C	S42B-AO-W	1.41	245	345	1200 °C	SB-6	3.58	280	1002	1600 °C
S31A-.015W	1.40	261	365	1800 °C	S43-.010Mo	1.52	317	482	1400 °C	SB-6/SB-6A	2.69	310	834	1600 °C
S32-.010W	2.38	738	1756	2000 °C	S43-.010Ta	3.48	338	1176	1600 °C	SB7-A,B,C-.005Mo	1.21	547	662	1400 °C
S33-.005Mo	1.46	94	137	1400 °C	S43-.010W	3.53	531	1874	1800 °C	SB7-A,B,C-.005Ta	2.28	572	1304	1600 °C
S33-.005Ta	3.27	94	307	1600 °C	S43-.015Mo	1.22	389	475	1400 °C	SB7-A,B,C-.010Mo	1.08	705	761	1400 °C
S33-.005W	3.26	144	469	1800 °C	S43-.015Ta	2.83	416	1177	1600 °C	SB7-A,B,C-.010Ta	2.10	680	1428	1600 °C
S34-.005Mo	1.70	123	209	1400 °C	S43-.015W	2.91	654	1903	1800 °C	SB8-A,B,C-.005Mo	1.44	850	1224	1400 °C
S34-.005Ta	3.82	135	516	1600 °C	S44-.005Mo	2.05	117	240	1400 °C	SB8-A,B,C-.005Ta	2.51	880	2209	1600 °C
S34-.010Mo	1.25	169	211	1400 °C	S44-.005Ta	3.80	115	437	1600 °C	SB8-A,B,C-.010Mo	1.39	1042	1448	1400 °C
S34-.010Ta	2.75	177	487	1600 °C	S44-.010Mo	1.33	170	226	1400 °C	SB8-A,B,C-.010Ta	2.36	1115	2631	1600 °C
S34-.010W	2.66	259	689	1800 °C	S44-.010Ta	2.90	178	516	1600 °C	SB9-A,B,C-.005Mo	1.87	731	1367	1400 °C
S35-.005Mo	1.44	87	125	1400 °C	S44-.010W	2.87	260	746	1800 °C	SB9-A,B,C-.005Ta	3.44	750	2580	1600 °C
S35-.005Ta	3.10	91	282	1600 °C	S44-.015Mo	1.06	207	219	1400 °C	SB9-A,B,C-.010Mo	1.62	890	1442	1400 °C
S35-.005W	3.37	140	472	1800 °C	S44-.015Ta	2.38	220	524	1600 °C	SB9-A,B,C-.010Ta	3.40	998	3393	1600 °C
S35-.010Mo	1.05	124	130	1400 °C	S44-.015W	2.31	327	755	1800 °C	SB10-A,B,C-.005Mo	2.11	1222	2578	1400 °C
S35-.010Ta	2.13	134	285	1600 °C	S45-.005Mo	2.11	176	371	1400 °C	SB10-A,B,C-.005Ta	3.66	1220	4465	1600 °C
S35-.010W	2.26	207	468	1800 °C	S45-.005Ta	4.60	189	869	1600 °C	SB10-A,B,C-.010Mo	2.02	1530	3091	1400 °C
S35A-AO-Mo	1.05	144	151	1200 °C	S45-.010Mo	1.45	249	361	1400 °C	SB10-A,B,C-.010Ta	3.37	1550	5224	1600 °C
S35A-AO-W	.95	136	129	1200 °C	S45-.010Ta	3.16	257	812	1600 °C	SM-8	1.08	255	275	1200 °C
S35B-AO-Mo	.90	137	123	1200 °C	S45-.010W	3.39	394	1336	1800 °C	SM-9	1.00	242	242	1200 °C
S35B-AO-W	.89	130	116	1200 °C	S45-.015Mo	1.29	310	400	1400 °C	SM-10	1.25	226	282	1200 °C
S36-.010Mo	1.33	251	334	1400 °C	S45-.015Ta	2.55	320	816	1600 °C	SM-11	1.26	236	297	1200 °C
S36-.010Ta	2.98	250	745	1600 °C	S45-.015W	2.72	503	1368	1800 °C	SM-12	1.36	283	385	1200 °C
S36-.010W	3.01	391	1177	1800 °C	S45B-AO-Mo	1.27	264	335	1200 °C	SM-13	1.60	318	509	1200 °C
S36-.015Ta	2.27	322	731	1600 °C	S45B-AO-W	1.43	264	378	1200 °C	SM-14	1.66	340	564	1200 °C
S36-AO-Mo	1.34	289	387	1200 °C	S46-.005Mo	2.10	207	435	1400 °C	SM-15	1.70	349	593	1200 °C
S36-AO-W	1.25	268	335	1200 °C	S46-.005Ta	4.87	221	1076	1600 °C	SM-16	2.06	357	735	1200 °C
S37-.005Mo	1.84	201	370	1400 °C	S46-.010Mo	1.49	293	437	1400 °C	SM-17	1.86	327	608	1200 °C
S37-.005Ta	4.26	222	946	1600 °C	S46-.010Ta	3.20	306	979	1600 °C	SO-10	1.40	257	360	1200 °C
S37-.010Mo	1.30	289	376	1400 °C	S46-.010W	3.34	485	1620	1800 °C	SO-11	1.40	256	358	1200 °C
S37-.010Ta	3.21	319	1024	1600 °C	S47-.010Mo	1.18	142	168	1400 °C	SO-20	.86	333	286	1200 °C
S37-AO-Mo	1.23	326	401	1200 °C	S47-.010Ta	2.59	144	373	1600 °C	SO-21	.91	328	298	1200 °C
S38-.005Mo	1.77	114	202	1400 °C	S47-.010W	2.87	212	608	1800 °C	SO-22	1.34	246	330	1200 °C
S38-.005Ta	4.01	114	457	1600 °C	S47-.015Mo	1.00	179	179	1400 °C	SO-23	1.31	236	309	1200 °C
S38-.010Mo	1.26	164	207	1400 °C	S47-.015Ta	2.06	190	391	1600 °C	SO-24	1.67	264	441	1200 °C
S38-.010Ta	2.70	197	532	1600 °C	S47-.015W	2.18	287	626	1800 °C	SO-25	1.58	272	430	1200 °C
S38-.010W	2.77	254	704	1800 °C	S47-.020Ta	1.91	210	401	1600 °C	SO-26	1.62	271	439	1200 °C
S38A-AO-Mo	1.22	181	221	1200 °C	S47-.020W	2.00	333	666	1800 °C	SO-32	1.23	217	267	1200 °C
S38A-AO-W	1.20	169	203	1200 °C	S48-.010Mo	1.24	75	93	1400 °C	SO-34	1.27	289	367	1200 °C
S38B-AO-Mo	1.04	167	174	1200 °C	S48-.010Ta	2.41	81	195	1600 °C	SO-36	1.30	373	485	1200 °C
S38B-AO-W	1.04	156	162	1200 °C	S48-.010W	2.82	115	324	1800 °C	CRW-1	1.05	78	82	1800 °C
S39-.005Mo	1.32	100	132	1400 °C	SB-1	4.14	707	2927	1600 °C	CRW-2	2.02	78	158	1800 °C
S39-.005Ta	2.72	106	288	1600 °C	SB-1/SB-1A	3.20	749	2397	1600 °C	CRW-3	2.40	77	185	1800 °C

Power table for above sources is for reference only.
 With evaporant added the power required could change significantly.
 Sources were tested without evaporant or crucibles installed.

Temperature measurements were taken with an infrared thermometer at the refractory temperature indicated above.
 Part # P8; Power required based on 12" length.