

GMW Associates
Electromagnet Excitation Plot
Field Vs Current

Contract No:		Page: 1 of 2	Date: Nov 25, 2005
Customer:			Engr: G.Douglas
Model:	3473	Power Supply:	Set Current:
Serial No:	None	Serial No:	Target Field:
Pole Face:	25mm	Position:	X=0, Y=0, Z=0
Serial No:	None	Notes:	Data taken in Magneto simulation software
Pole Gap:	05 to 120mm		
Pole Spacers:	None		

Gap [mm]									
Amps	05	10	20	30	40	50	60	70	80
0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
10	2.00100	1.14145	0.56224	0.36115	0.26007	0.20068	0.16236	0.13609	0.11733
20	2.61022	2.05738	1.12689	0.72387	0.52144	0.40244	0.32563	0.27322	0.23552
30	2.94457	2.44441	1.65842	1.08737	0.78552	0.60758	0.49201	0.41370	0.35886
40	3.15616	2.70230	1.97081	1.43496	1.05171	0.81489	0.66235	0.56513	0.48272
50	3.27954	2.85658	2.17103	1.67368	1.29507	1.01881	0.82911	0.70552	0.60684
60	3.35770	2.95125	2.29483	1.82074	1.46721	1.17383	0.97705	0.83058	0.72553
70	3.41153	3.01534	2.38009	1.91319	1.56260	1.28900	1.09783	0.94463	0.83691
80	3.45141	3.06154	2.43949	1.98449	1.63607	1.37528	1.18695	1.03568	0.92935
90	3.49140	3.10335	2.48586	2.03760	1.69216	1.43891	1.25666	1.10560	1.00337
100	3.52123	3.13985	2.52937	2.08353	1.74145	1.48793	1.30843	1.15820	1.05678

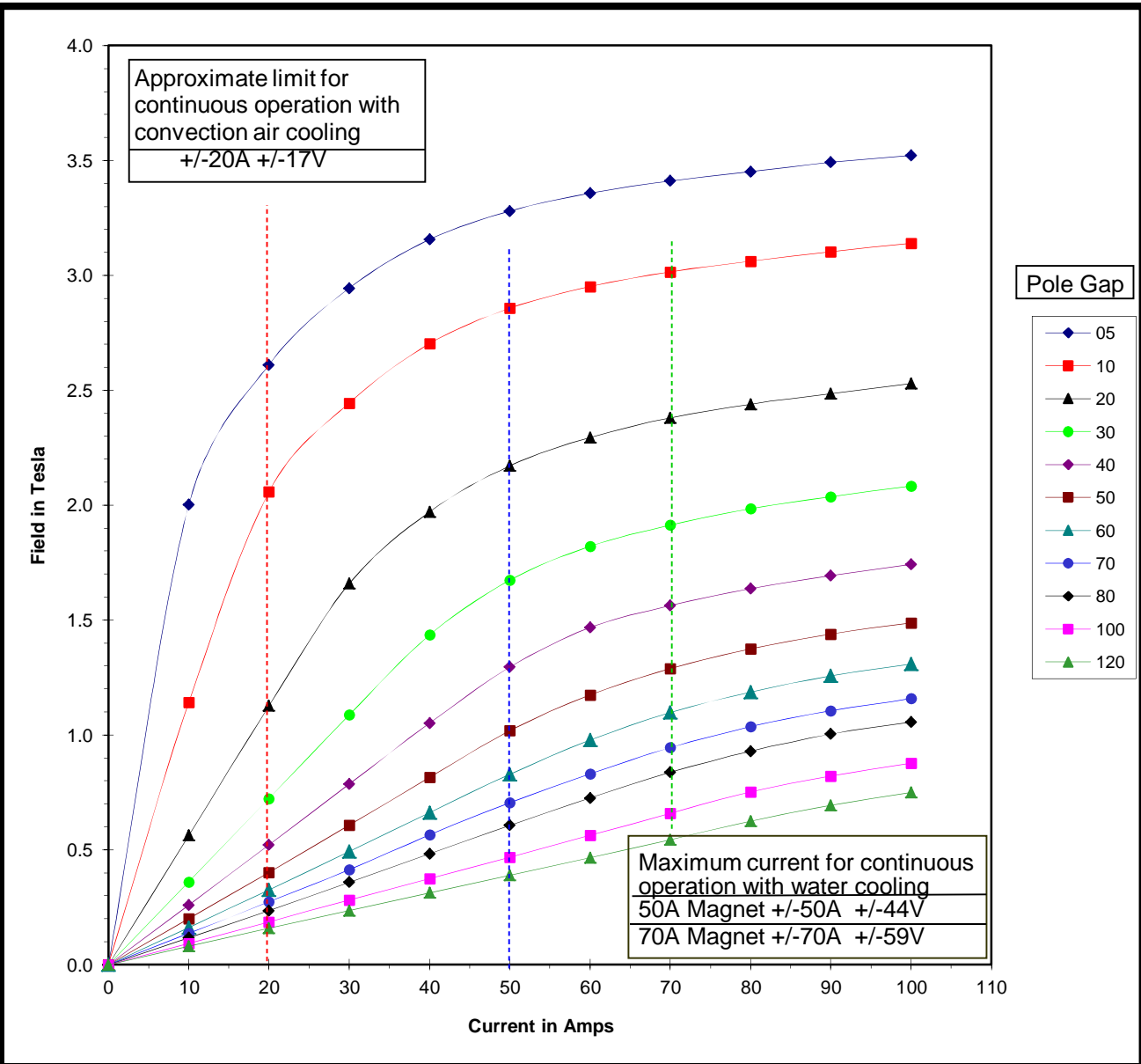
Gap [mm]									
Amps	100	120							
0	0.00000	0.00000	0.00000	0.00000	0.00000				
10	0.09344	0.08007	0.00000	0.00000	0.00000				
20	0.18680	0.15932	0.00000	0.00000	0.00000				
30	0.28177	0.23574	0.00000	0.00000	0.00000				
40	0.37380	0.31234	0.00000	0.00000	0.00000				
50	0.46861	0.38852	0.00000	0.00000	0.00000				
60	0.56272	0.46627	0.00000	0.00000	0.00000				
70	0.65836	0.54446	0.00000	0.00000	0.00000				
80	0.75283	0.62485	0.00000	0.00000	0.00000				
90	0.82116	0.69306	0.00000	0.00000	0.00000				
100	0.87665	0.74938	0.00000	0.00000	0.00000				

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Field Vs Current

Contract No:	Page: 2 of 2	Date: Nov 25, 2005
Customer:		Engr: G.Douglas
Model: 3473	Power Supply:	Set Current:
Serial No: None	Serial No:	Target Field:
Pole Face: 25mm	Position: X=0, Y=0, Z=0	
Serial No: None	Notes: Data taken in Magneto simulation software	
Pole Gap: 05 to 120mm		
Pole Spacers: None		



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Contract No:		Page: 1 of 2	Date: Nov 25, 2005
Customer:			Engr: G.Douglas
Model:	3473	Power Supply:	Set Current:
Serial No:	None	Serial No:	Target Field:
Pole Face:	50mm	Position:	X=0, Y=0, Z=0
Serial No:	None	Notes:	Data taken in Magneto simulation software
Pole Gap:	05 to 120mm		
Pole Spacers:	None		

Gap [mm]									
Amps	05	10	20	30	40	50	60	70	80
0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
10	2.00005	1.13921	0.57102	0.37939	0.28134	0.22120	0.18060	0.15158	0.13014
20	2.43637	2.07918	1.14377	0.76022	0.56391	0.44344	0.36207	0.30394	0.26107
30	2.64900	2.37023	1.69520	1.13943	0.84639	0.66694	0.54587	0.45897	0.39540
40	2.77050	2.52918	2.00783	1.50004	1.12667	0.89173	0.73199	0.61670	0.53572
50	2.84633	2.61649	2.14873	1.75187	1.37240	1.10338	0.91432	0.76973	0.67286
60	2.90169	2.67557	2.22320	1.86698	1.53625	1.27417	1.06558	0.90240	0.79665
70	2.93799	2.71754	2.28693	1.95101	1.64957	1.39139	1.17347	1.01169	0.90183
80	2.96740	2.75386	2.32659	2.00191	1.72246	1.47856	1.25876	1.10220	0.98865
90	2.99569	2.78734	2.36791	2.03722	1.77675	1.53949	1.32511	1.17181	1.05704
100	3.03066	2.81519	2.40386	2.07900	1.82492	1.58900	1.38188	1.22707	1.11239

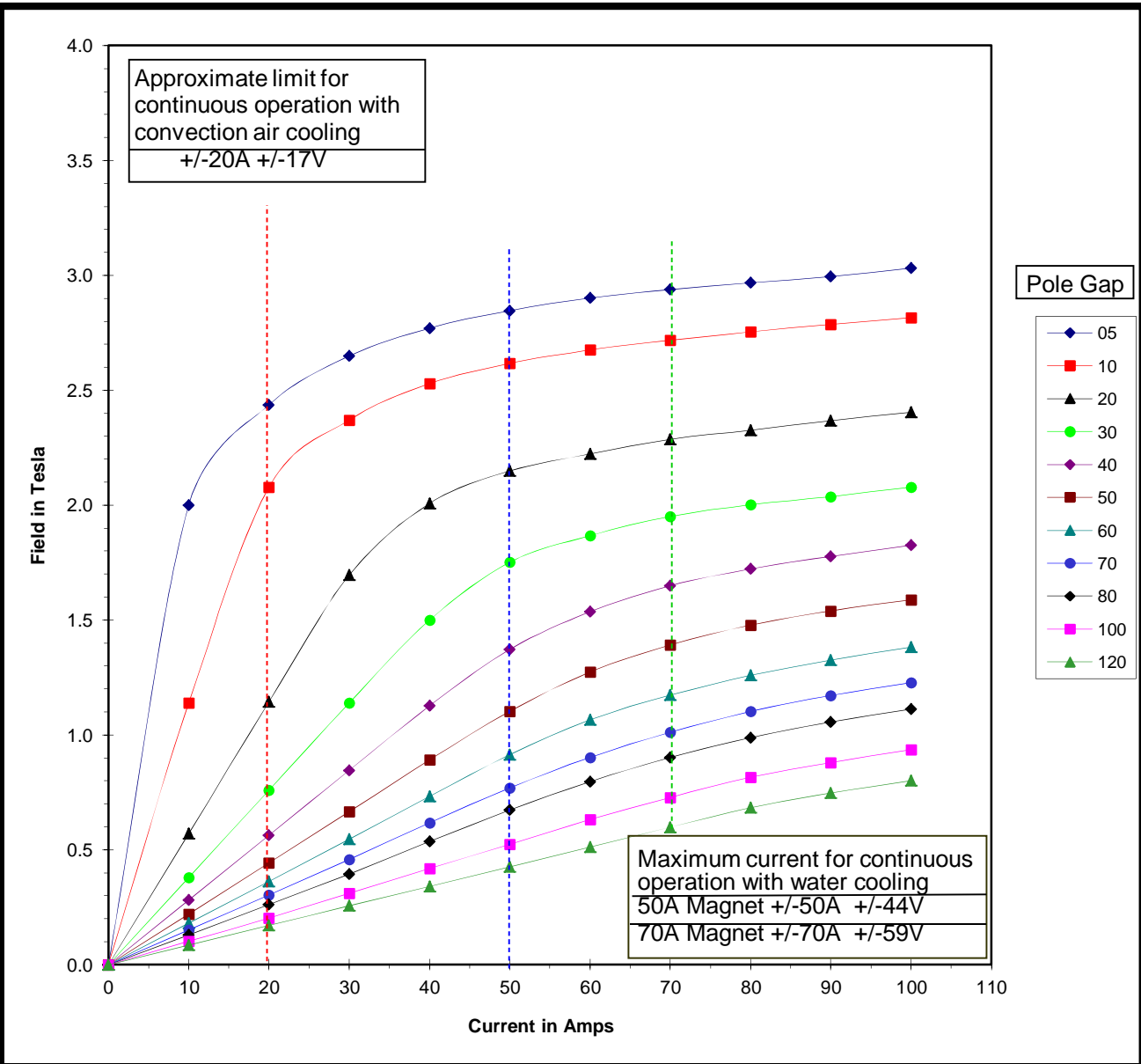
Gap [mm]									
Amps	100	120							
0	0.00000	0.00000	0.00000	0.00000	0.00000				
10	0.10168	0.08513	0.00000	0.00000	0.00000				
20	0.20423	0.17067	0.00000	0.00000	0.00000				
30	0.31155	0.25664	0.00000	0.00000	0.00000				
40	0.41776	0.34052	0.00000	0.00000	0.00000				
50	0.52531	0.42619	0.00000	0.00000	0.00000				
60	0.63170	0.51255	0.00000	0.00000	0.00000				
70	0.72837	0.59893	0.00000	0.00000	0.00000				
80	0.81612	0.68285	0.00000	0.00000	0.00000				
90	0.88069	0.74775	0.00000	0.00000	0.00000				
100	0.93490	0.80111	0.00000	0.00000	0.00000				

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Contract No:	Page: 2 of 2	Date: Nov 25, 2005
Customer:		Engr: G.Douglas
Model: 3473	Power Supply:	Set Current:
Serial No: None	Serial No:	Target Field:
Pole Face: 50mm	Position: X=0, Y=0, Z=0	
Serial No: None	Notes: Data taken in Magneto simulation software	
Pole Gap: 05 to 120mm		
Pole Spacers: None		



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Contract No:	Page: 1 of 2	Date: Nov 25, 2005
Customer:		Engr: G.Douglas
Model: 3473	Power Supply:	Set Current:
Serial No: None	Serial No:	Target Field:
Pole Face: 75mm	Position: X=0, Y=0, Z=0	
Serial No: None	Notes: Data taken in Magneto simulation software	
Pole Gap: 05 to 120mm		
Pole Spacers: None		

Gap [mm]									
Amps	05	10	20	30	40	50	60	70	80
0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
10	1.99279	1.13578	0.57045	0.38082	0.28525	0.22708	0.18760	0.15891	0.13717
20	2.34522	2.08609	1.14094	0.76277	0.57154	0.45503	0.37595	0.31856	0.27501
30	2.42276	2.28398	1.64512	1.13931	0.85650	0.68271	0.56437	0.47963	0.41498
40	2.48615	2.35137	1.92754	1.45867	1.12583	0.90737	0.75403	0.64210	0.55705
50	2.53429	2.40203	2.04006	1.65134	1.33288	1.10306	0.93054	0.80104	0.69762
60	2.56710	2.43060	2.10421	1.77811	1.46170	1.24082	1.06607	0.93776	0.81369
70	2.60370	2.46562	2.15091	1.84915	1.56235	1.33796	1.17038	1.03195	0.90714
80	2.62576	2.49221	2.18077	1.90507	1.63227	1.41550	1.24801	1.10479	0.98399
90	2.65033	2.51608	2.20448	1.93986	1.69544	1.47378	1.30777	1.16459	1.04634
100	2.67281	2.54470	2.22570	1.97482	1.74292	1.53180	1.35949	1.21492	1.09543

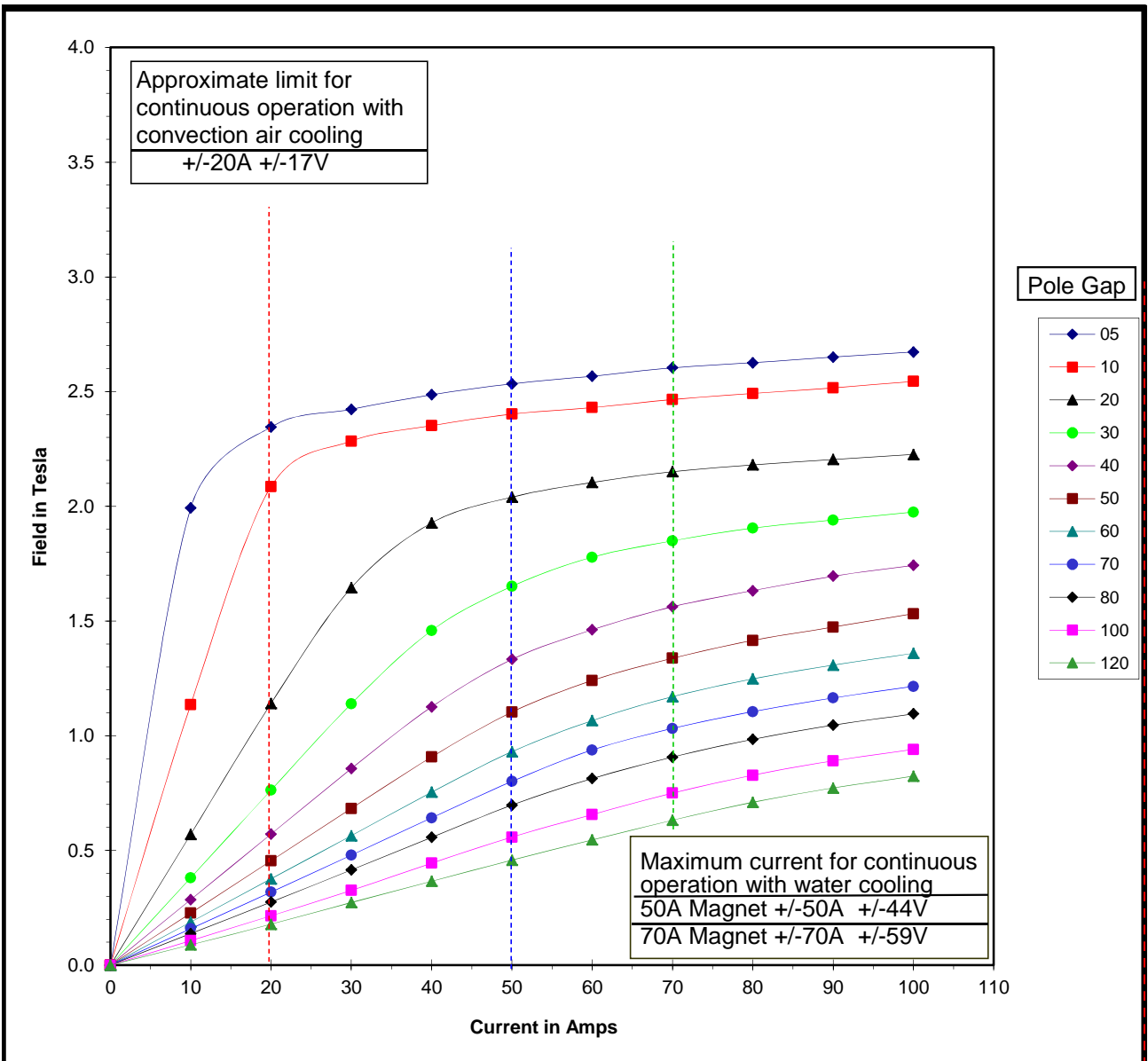
Gap [mm]									
Amps	100	120							
0	0.00000	0.00000	0.00000	0.00000	0.00000				
10	0.10713	0.08873	0.00000	0.00000	0.00000				
20	0.21494	0.17830	0.00000	0.00000	0.00000				
30	0.32576	0.27323	0.00000	0.00000	0.00000				
40	0.44469	0.36528	0.00000	0.00000	0.00000				
50	0.55817	0.45791	0.00000	0.00000	0.00000				
60	0.65641	0.54616	0.00000	0.00000	0.00000				
70	0.75049	0.63173	0.00000	0.00000	0.00000				
80	0.82779	0.71032	0.00000	0.00000	0.00000				
90	0.89070	0.77213	0.00000	0.00000	0.00000				
100	0.94022	0.82399	0.00000	0.00000	0.00000				

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Contract No:	Page: 2 of 2	Date: Nov 25, 2005
Customer:		Engr: G.Douglas
Model: 3473	Power Supply:	Set Current:
Serial No: None	Serial No:	Target Field:
Pole Face: 75mm	Position: X=0, Y=0, Z=0	
Serial No: None	Notes: Data taken in Magneto simulation software	
Pole Gap: 05 to 120mm		
Pole Spacers: None		



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Contract No:	Page: 1 of 2	Date: Nov 25, 2005
Customer:		Engr: G.Douglas
Model: 3473	Power Supply:	Set Current:
Serial No: None	Serial No:	Target Field:
Pole Face: 100mm	Position: X=0, Y=0, Z=0	
Serial No: None	Notes: Data taken in Magneto simulation software	
Pole Gap: 05 to 120mm		
Pole Spacers: None		

Gap [mm]									
Amps	05	10	20	30	40	50	60	70	80
0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
10	1.96675	1.13054	0.56951	0.38054	0.28571	0.22843	0.18982	0.16183	0.14051
20	2.22000	1.93640	1.13437	0.76186	0.57232	0.45764	0.38033	0.32428	0.28160
30	2.27522	2.14731	1.56886	1.12591	0.85532	0.68592	0.57058	0.48677	0.42289
40	2.30852	2.20218	1.75393	1.37661	1.09973	0.90234	0.75765	0.64932	0.56624
50	2.32447	2.22231	1.87516	1.51760	1.25827	1.07111	0.92084	0.80118	0.70540
60	2.35069	2.24546	1.93777	1.60563	1.36371	1.18271	1.03479	0.92304	0.82460
70	2.36500	2.25653	1.97799	1.67504	1.43968	1.26107	1.12066	1.00698	0.90928
80	2.38000	2.27689	2.00624	1.73316	1.49189	1.32140	1.18396	1.07445	0.97967
90	2.40000	2.29864	2.04223	1.77821	1.54400	1.37347	1.23609	1.12853	1.03045
100	2.42000	2.30900	2.07265	1.81139	1.59095	1.42442	1.28459	1.17393	1.07326

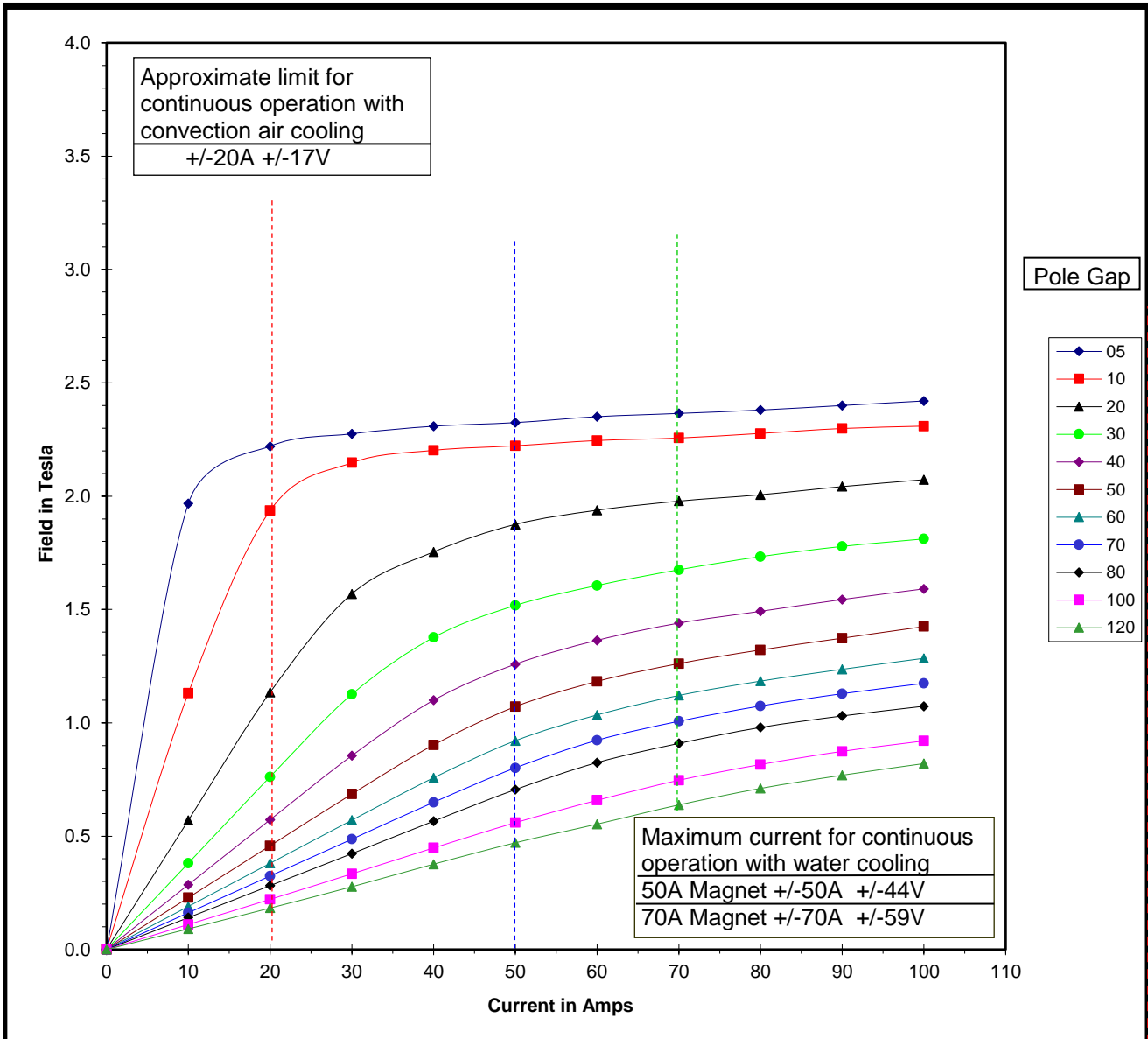
Gap [mm]									
Amps	100	120							
0	0.00000	0.00000	0.00000	0.00000	0.00000				
10	0.11027	0.09096	0.00000	0.00000	0.00000				
20	0.22108	0.18271	0.00000	0.00000	0.00000				
30	0.33382	0.27682	0.00000	0.00000	0.00000				
40	0.44816	0.37647	0.00000	0.00000	0.00000				
50	0.55939	0.47083	0.00000	0.00000	0.00000				
60	0.65822	0.55311	0.00000	0.00000	0.00000				
70	0.74670	0.63798	0.00000	0.00000	0.00000				
80	0.81618	0.71079	0.00000	0.00000	0.00000				
90	0.87430	0.76914	0.00000	0.00000	0.00000				
100	0.92035	0.82039	0.00000	0.00000	0.00000				

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Contract No:	Page: 2 of 2	Date: Nov 25, 2005
Customer:		Engr: G.Douglas
Model: 3473	Power Supply:	Set Current:
Serial No: None	Serial No:	Target Field:
Pole Face: 100mm	Position: X=0, Y=0, Z=0	
Serial No: None	Notes: Data taken in Magneto simulation software	
Pole Gap: 05 to 120mm		
Pole Spacers: None		



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Contract No:	Page: 1 of 2	Date: Dec 02, 2005
Customer:		Engr: G.Douglas
Model: 3473	Power Supply:	Set Current:
Serial No: None	Serial No:	Target Field:
Pole Face: 150mm	Position: X=0, Y=0, Z=0	
Serial No: None	Notes: Data taken in Magneto simulation software	
Pole Gap: 05 to 120mm		
Pole Spacers: None		

Gap [mm]									
Amps	05	10	20	30	40	50	60	70	80
0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
10	1.51000	1.07343	0.56681	0.37986	0.28546	0.22863	0.19059	0.16322	0.14249
20	1.81294	1.54198	1.08366	0.73353	0.56368	0.45660	0.38137	0.32689	0.28547
30	1.94134	1.68137	1.32752	1.05282	0.83825	0.67018	0.55972	0.48237	0.42454
40	1.99645	1.75259	1.43972	1.20451	1.02014	0.87041	0.74830	0.64632	0.56406
50	2.02519	1.80157	1.51337	1.29504	1.12527	0.99042	0.87789	0.78190	0.69845
60	2.04494	1.83345	1.54996	1.34697	1.19539	1.07526	0.96712	0.87586	0.79313
70	2.06221	1.86029	1.58491	1.38807	1.24795	1.12730	1.02657	0.94612	0.86754
80	2.07260	1.89048	1.61726	1.42806	1.29142	1.17679	1.07672	0.99401	0.92152
90	2.08715	1.91146	1.64761	1.46387	1.32906	1.22155	1.12173	1.03660	0.96688
100	2.10000	1.92805	1.67667	1.49721	1.36602	1.25766	1.16413	1.08206	1.00825

Gap [mm]									
Amps	100	120							
0	0.00000	0.00000	0.00000	0.00000	0.00000				
10	0.11288	0.09271	0.00000	0.00000	0.00000				
20	0.22617	0.18583	0.00000	0.00000	0.00000				
30	0.33907	0.28000	0.00000	0.00000	0.00000				
40	0.44695	0.37407	0.00000	0.00000	0.00000				
50	0.56420	0.46827	0.00000	0.00000	0.00000				
60	0.66565	0.55133	0.00000	0.00000	0.00000				
70	0.74059	0.62653	0.00000	0.00000	0.00000				
80	0.80033	0.68692	0.00000	0.00000	0.00000				
90	0.84667	0.73785	0.00000	0.00000	0.00000				
100	0.87717	0.77934	0.00000	0.00000	0.00000				

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Electromagnet Excitation Plot

Field Vs Current

Contract No:	Page: 2 of 2	Date: Dec 02, 2005
Customer:		Engr: G.Douglas
Model: 3473	Power Supply:	Set Current:
Serial No: None	Serial No:	Target Field:
Pole Face: 150mm	Position: X=0, Y=0, Z=0	
Serial No: None	Notes: Data taken in Magneto simulation software	
Pole Gap: 05 to 120mm		
Pole Spacers: None		

