

**GMW Associates**  
**Electromagnet Excitation Data**  
**Field Vs Current**

Contract No:	Page: 1 of 8	Date: July 02, 2014
Customer: GMW	<b>Fixed Axis:</b>	Engr: Greg Douglas
Model: 3470	Power Supply:	Set Currents: 0 to 8A
Serial No: None	Serial No:	Target Field:
Pole Face: 20mm	Teslameter:	Probe:
Serial No: None	Serial No:	Serial No:
Pole Gap: See table below	Notes: Data taken in Magneto simulation software	
Pole Spacers: none	Coil at Min spacing for 05 to 30mm Pole Gap	
	Coil at Mid spacing for 35 to 40mm Pole Gap	

Current Amps	Field T (Bz) 05 Pole Gap	Field T (Bz) 7.5 Pole Gap	Field T (Bz) 10 Pole Gap	Field T (Bz) 15 Pole Gap	Field T (Bz) 20 Pole Gap	Field T (Bz) 25 Pole Gap	Field T (Bz) 30 Pole Gap
0.0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.5	0.23877	0.15978	0.11999	0.07950	0.05857	0.04566	0.03690
1.0	0.48020	0.32109	0.24099	0.15956	0.11750	0.09157	0.07398
1.5	0.72166	0.48267	0.36225	0.23980	0.17656	0.13757	0.11113
2.0	0.96163	0.64390	0.48341	0.32006	0.23566	0.18360	0.14831
2.5	1.19525	0.80395	0.60418	0.40023	0.29473	0.22964	0.18550
3.0	1.40397	0.95985	0.72371	0.48017	0.35373	0.27564	0.22267
3.5	1.55512	1.10183	0.83951	0.55948	0.41256	0.32158	0.25982
4.0	1.66292	1.21225	0.94404	0.63717	0.47096	0.36738	0.29691
4.5	1.74860	1.29657	1.02719	0.71053	0.52840	0.41287	0.33388
5.0	1.82151	1.36658	1.09354	0.77385	0.58343	0.45768	0.37061
5.5	1.88282	1.42753	1.15026	0.82628	0.63290	0.50093	0.40684
6.0	1.93537	1.48140	1.20052	0.87121	0.67529	0.54071	0.44198
6.5	1.98136	1.52906	1.24553	0.91134	0.71209	0.57574	0.47481
7.0	2.01980	1.57148	1.28590	0.94777	0.74517	0.60660	0.50430
7.5	2.05333	1.60951	1.32235	0.98112	0.77546	0.63462	0.53074
8.0	2.08334	1.64396	1.35563	1.01142	0.80342	0.66045	0.55492

Current Amps	Field T (Bz) 35 Pole Gap	Field T (Bz) 40 Pole Gap	Field T (Bz) 45 Pole Gap	Field T (Bz) 50 Pole Gap	Field T (Bz) 55 Pole Gap	Field T (Bz) 60 Pole Gap	Field T (Bz) 65 Pole Gap
0.0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.5	0.00000	0.02581	0.00000	0.00000	0.00000	0.00000	0.00000
1.0	0.00000	0.05173	0.00000	0.00000	0.00000	0.00000	0.00000
1.5	0.00000	0.07770	0.00000	0.00000	0.00000	0.00000	0.00000
2.0	0.00000	0.10369	0.00000	0.00000	0.00000	0.00000	0.00000
2.5	0.00000	0.12968	0.00000	0.00000	0.00000	0.00000	0.00000
3.0	0.00000	0.15567	0.00000	0.00000	0.00000	0.00000	0.00000
3.5	0.00000	0.18165	0.00000	0.00000	0.00000	0.00000	0.00000
4.0	0.00000	0.20759	0.00000	0.00000	0.00000	0.00000	0.00000
4.5	0.00000	0.23348	0.00000	0.00000	0.00000	0.00000	0.00000
5.0	0.00000	0.25925	0.00000	0.00000	0.00000	0.00000	0.00000
5.5	0.00000	0.28478	0.00000	0.00000	0.00000	0.00000	0.00000
6.0	0.00000	0.30980	0.00000	0.00000	0.00000	0.00000	0.00000
6.5	0.00000	0.33369	0.00000	0.00000	0.00000	0.00000	0.00000
7.0	0.00000	0.35552	0.00000	0.00000	0.00000	0.00000	0.00000
7.5	0.00000	0.37523	0.00000	0.00000	0.00000	0.00000	0.00000
8.0	0.00000	0.39319	0.00000	0.00000	0.00000	0.00000	0.00000

# GMW Associates

## Electromagnet Excitation Plot

### Field Vs Current

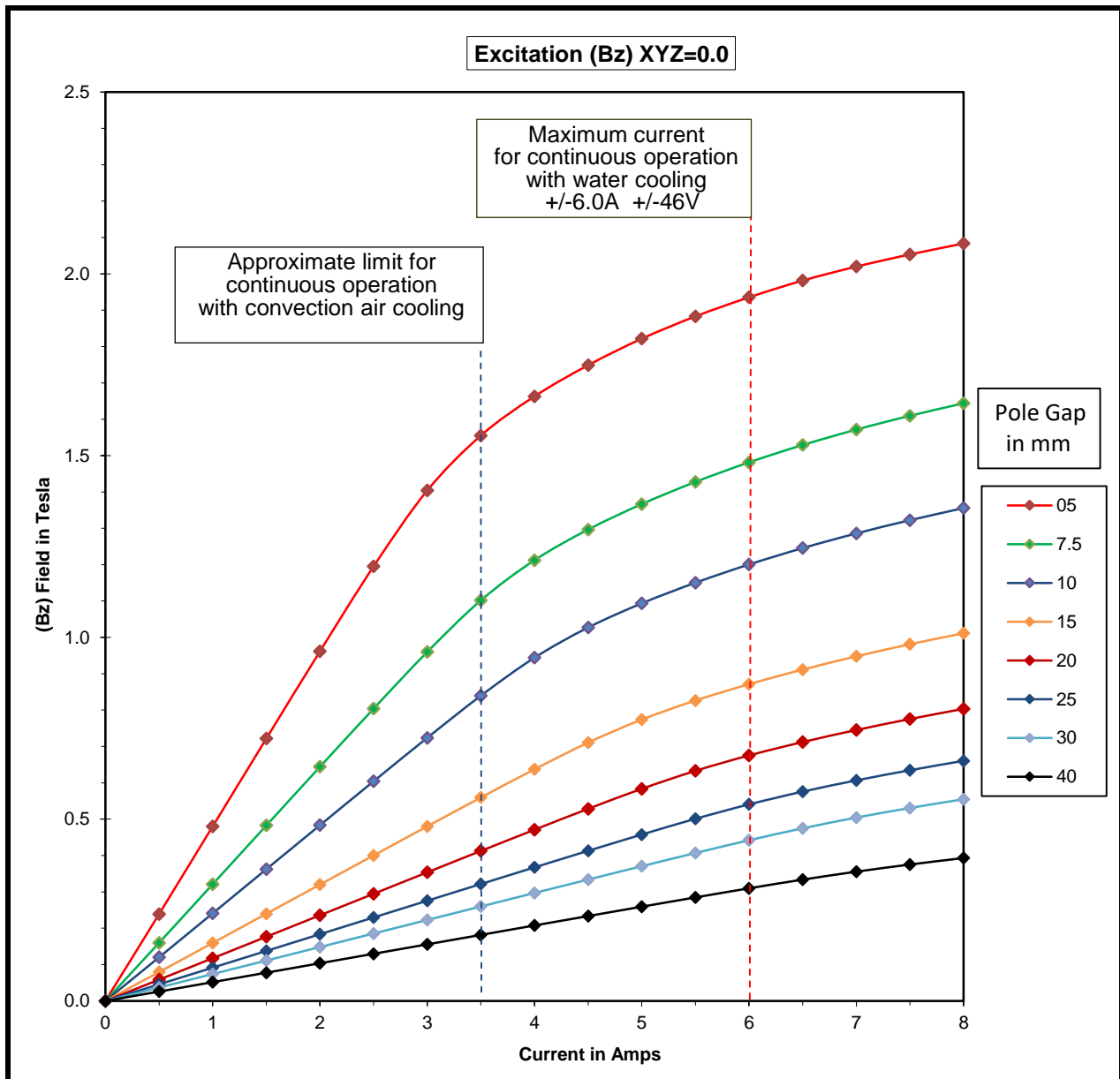
Contract No:  
 Customer: GMW  
 Model: 3470  
 Serial No: None  
 Pole Face: 20mm  
 Serial No: None  
 Pole Gap:  
 Pole Spacers: none

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**Fixed Axis:**  
 Power Supply:  
 Serial No:  
 Teslameter:  
 Serial No:

Date: July 02, 2014  
 Engr: Greg Douglas  
 Set Currents: 0 to 8A  
 Target Field:  
 Probe:  
 Serial No:

Notes: Data taken in Magneto simulation software  
 Coil at Min spacing for 05 to 30mm Pole Gap  
 Coil at Mid spacing for 35 to 40mm Pole Gap



**GMW Associates**  
**Electromagnet Excitation Data**  
**Field Vs Current**

Contract No:	Page: 3 of 8	Date: July 02, 2014
Customer: GMW	<b>Fixed Axis:</b>	Engr: Greg Douglas
Model: 3470	Power Supply:	Set Currents: 0 to 8A
Serial No: None	Serial No:	Target Field:
Pole Face: 40mm	Teslameter:	Probe:
Serial No: None	Serial No:	Serial No:
Pole Gap: See table below	Notes: Data taken in Magneto simulation software	
Pole Spacers: none	Coil at Min spacing for 05 to 30mm Pole Gap	
	Coil at Mid spacing for 35 to 50mm Pole Gap	
	Coil at Max spacing for 60 to 70mm Pole Gap	

Current Amps	Field T (Bz) 05 Pole Gap	Field T (Bz) 7.5 Pole Gap	Field T (Bz) 10 Pole Gap	Field T (Bz) 15 Pole Gap	Field T (Bz) 20 Pole Gap	Field T (Bz) 25 Pole Gap	Field T (Bz) 30 Pole Gap
0.0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.5	0.23649	0.15874	0.11951	0.08005	0.06016	0.04780	0.03939
1.0	0.47591	0.31937	0.24029	0.16077	0.12049	0.09591	0.07900
1.5	0.71195	0.47963	0.36111	0.24164	0.18040	0.14412	0.11869
2.0	0.92320	0.63717	0.48137	0.32242	0.23808	0.19236	0.15841
2.5	1.05583	0.78143	0.59900	0.40288	0.29895	0.24056	0.19812
3.0	1.13733	0.88538	0.70604	0.48223	0.35918	0.28868	0.23779
3.5	1.19991	0.95437	0.78617	0.55799	0.41863	0.33658	0.27738
4.0	1.25042	1.00817	0.84378	0.62318	0.47653	0.38394	0.31678
4.5	1.29291	1.05346	0.89014	0.67374	0.52964	0.42998	0.35576
5.0	1.32972	1.09249	0.92996	0.71448	0.57346	0.47266	0.39373
5.5	1.36200	1.12641	0.96488	0.74961	0.60957	0.50913	0.42932
6.0	1.39057	1.15625	0.99558	0.78080	0.64365	0.54005	0.46060
6.5	1.41633	1.18285	1.02284	0.80871	0.66815	0.56725	0.48775
7.0	1.43952	1.20676	1.04742	0.83378	0.69332	0.59186	0.51189
7.5	1.46078	1.22853	1.06960	0.85650	0.71594	0.61445	0.53390
8.0	1.47965	1.24851	1.08984	0.87714	0.73675	0.63531	0.55418
Current Amps	Field T (Bz) 35 Pole Gap	Field T (Bz) 40 Pole Gap	Field T (Bz) 50 Pole Gap	Field T (Bz) 60 Pole Gap	Field T (Bz) 70 Pole Gap	Field T (Bz) 80 Pole Gap	Field T (Bz)
0.0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.5	0.00000	0.02836	0.02148	0.01675	0.01342	0.01096	0.00000
1.0	0.00000	0.05685	0.04305	0.03357	0.02689	0.02195	0.00000
1.5	0.00000	0.08540	0.06465	0.05041	0.04038	0.03295	0.00000
2.0	0.00000	0.11398	0.08627	0.06727	0.05387	0.04396	0.00000
2.5	0.00000	0.14255	0.10789	0.08413	0.06738	0.05498	0.00000
3.0	0.00000	0.17111	0.12952	0.10099	0.08088	0.06599	0.00000
3.5	0.00000	0.19963	0.15113	0.11784	0.09438	0.07701	0.00000
4.0	0.00000	0.22807	0.17272	0.13468	0.10788	0.08802	0.00000
4.5	0.00000	0.25634	0.19428	0.15149	0.12136	0.09903	0.00000
5.0	0.00000	0.28423	0.21574	0.16824	0.13483	0.11004	0.00000
5.5	0.00000	0.31121	0.23704	0.18487	0.14826	0.12103	0.00000
6.0	0.00000	0.33612	0.25798	0.20125	0.16163	0.13200	0.00000
6.5	0.00000	0.35813	0.27814	0.21706	0.17487	0.14293	0.00000
7.0	0.00000	0.37759	0.29678	0.23176	0.18786	0.15378	0.00000
7.5	0.00000	0.39521	0.31367	0.24512	0.20029	0.16450	0.00000
8.0	0.00000	0.41142	0.32901	0.25733	0.21192	0.17492	0.00000

# GMW Associates

## Electromagnet Excitation Plot

### Field Vs Current

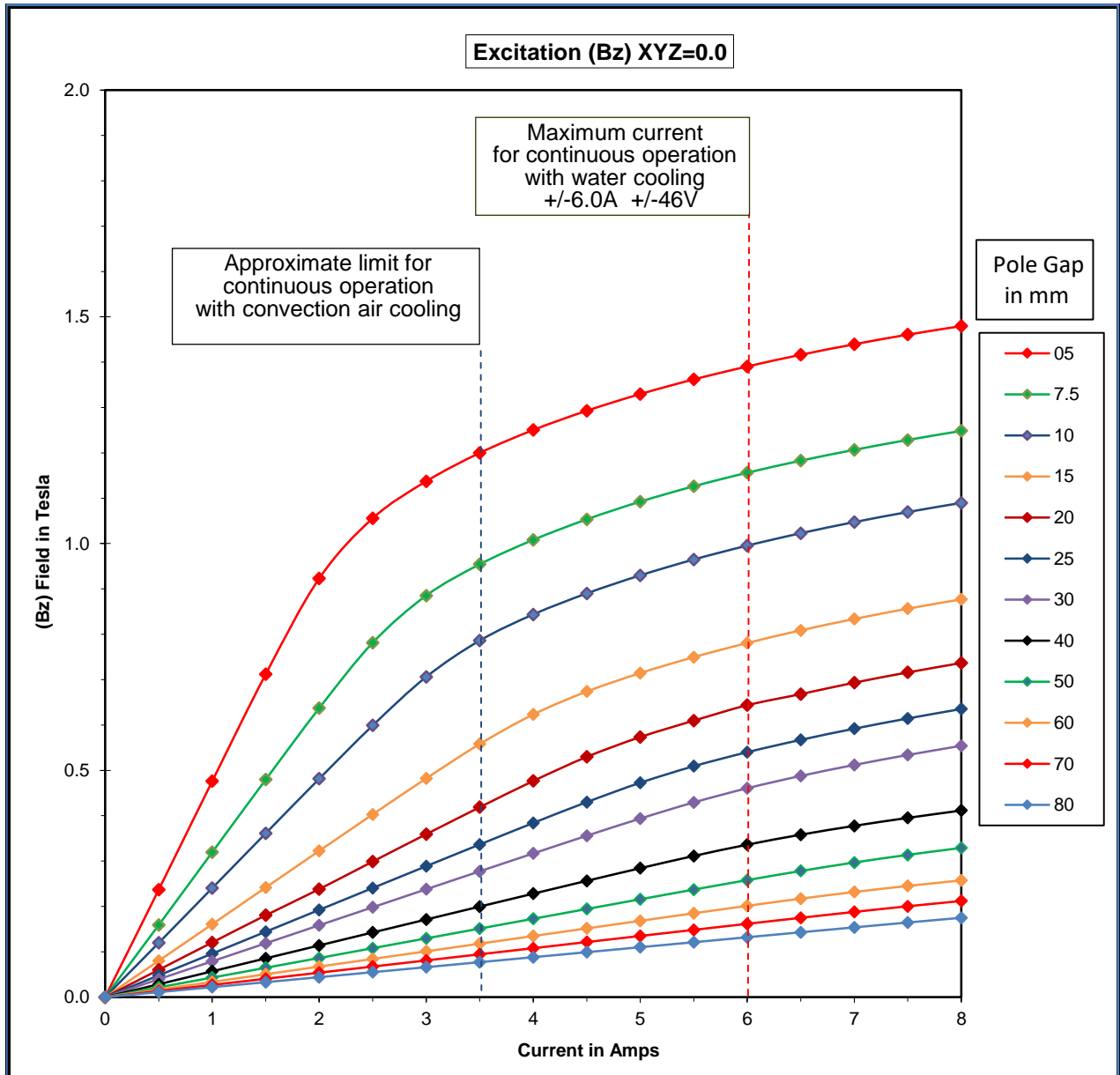
Contract No:  
 Customer: GMW  
 Model: 3470  
 Serial No: None  
 Pole Face: 40mm  
 Serial No: None  
 Pole Gap:  
 Pole Spacers: none

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**Fixed Axis:**  
 Power Supply:  
 Serial No:  
 Teslameter:  
 Serial No:

Date: July 02, 2014  
 Engr: Greg Douglas  
 Set Currents: 0 to 8A  
 Target Field:  
 Probe:  
 Serial No:

Notes: Data taken in Magneto simulation software  
 Coil at Min spacing for 05 to 30mm Pole Gap  
 Coil at Mid spacing for 35 to 50mm Pole Gap  
 Coil at Max spacing for 60 to 70mm Pole Gap





# GMW Associates

## Electromagnet Excitation Plot

### Field Vs Current

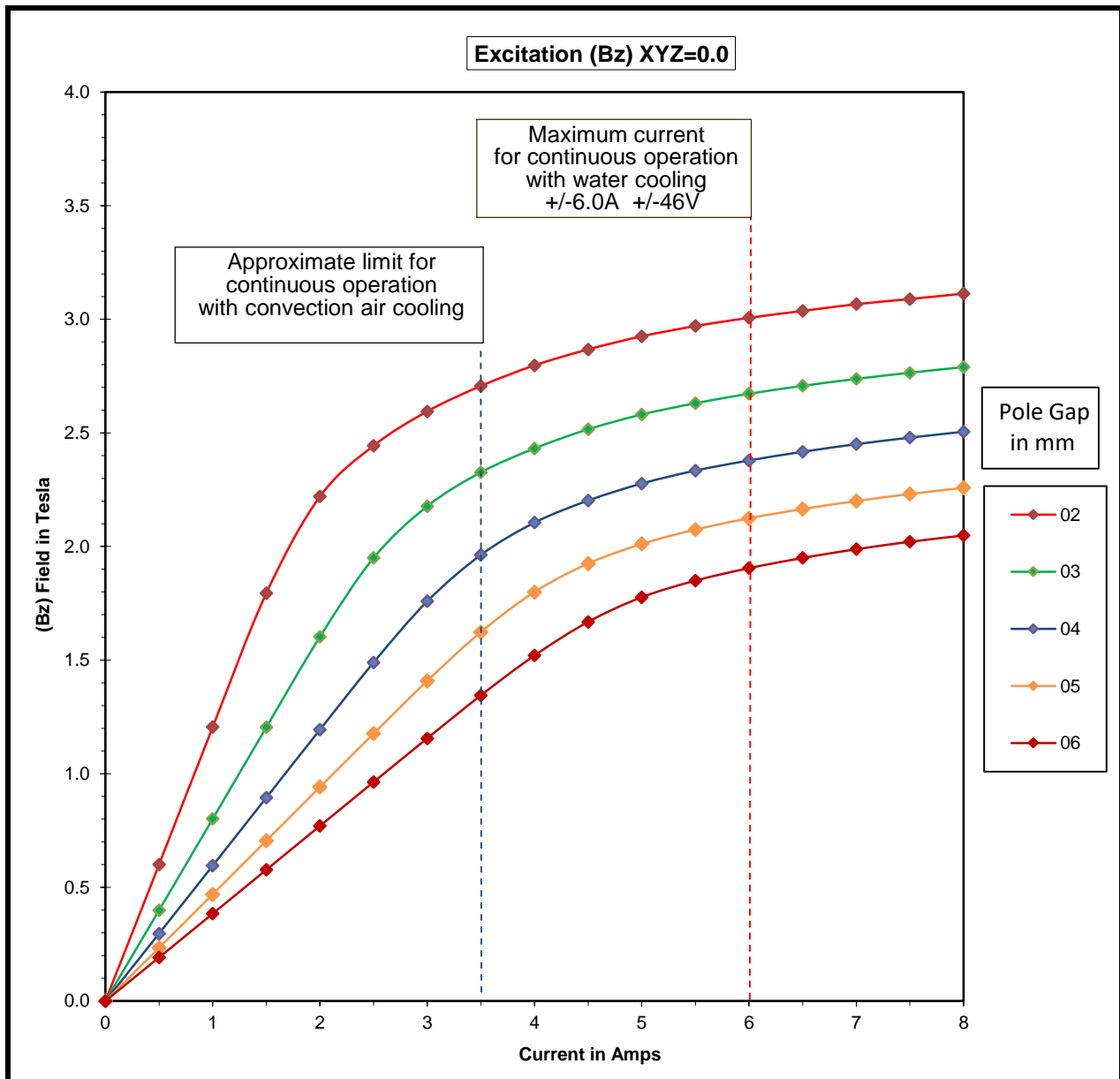
Contract No:  
 Customer: GMW  
 Model: 3470  
 Serial No: None  
 Pole Face: 05mm  
 Serial No: None  
 Pole Gap:  
 Pole Spacers: none

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**Fixed Axis:**  
 Power Supply:  
 Serial No:  
 Teslameter:  
 Serial No:

Date: July 02, 2014  
 Engr: Greg Douglas  
 Set Currents: 0 to 8A  
 Target Field:  
 Probe:  
 Serial No:

Notes: Data taken in Magneto simulation software  
 Coil at Min spacing for 05 to 30mm Pole Gap  
 Coil at Mid spacing for 35 to 40mm Pole Gap





# GMW Associates

## Electromagnet Excitation Plot

### Field Vs Current

Contract No:	Page: 8 of 8	Date: July 04, 2014
Customer: GMW	<b>Fixed Axis:</b>	Engr: Greg Douglas
Model: 3470	Power Supply:	Set Currents: 0 to 8A
Serial No: None	Serial No:	Target Field:
Pole Face: 05 [ VP Poles ]	Teslameter:	Probe:
Serial No: None	Serial No:	Serial No:
Pole Gap:	Notes: Data taken in Magneto simulation software	
Pole Spacers: none	Coil at Min spacing for 05 to 30mm Pole Gap	
	VP Poles = Vanadium Permendur (Hyperco 50)	

