GeoFurnace Manufacturing

Magnum

Water Source Heat Pump

Water to Water
Large Commercial
Submittal Data

All Standard Models
60 Hz - R410A

Revision: 27 May, 2010 - AJS

GeoFurnace Manufacturing

Magnum

Water Source Heat Pump

(MW-D) Dual Compressor
Large Commercial Water to Water
Submittal Data

Models MW 180-720D
60 Hz - R410A

Revision: 26 May, 2010 - AJS

Reference Abbreviations & Calculations

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

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Abbreviations and Definitions

COP = Coefficient of Performance EAT = Entering Air Temperature EER = Energy Efficiency Ratio ELT = Entering Load Fluid Temperature EST = Entering Source Fluid Temperature EWT = Entering Water Temperature FLA = Full Load Amps FT = Feet of Head GPM = Gallons per Minute HC = Heating Capacity HE = Heat of Extraction HR = Heat of Rejection HWG = Hot Water Generator (Desuperheater) kBtu/hr = 1000 BTU/hour	LAT = Leaving Air Temperature LC = Latent Cooling capacity LGPM = Load Flow in Gallons Per Minute LLT = Leaving Load Temperature LRA = Locked Rotor Amps LST = Leaving Source Temperature LWPD = Load Heat Exchanger Water Pressure Drop Mbtuh = kBtu/hr = 1000 BTU/hour PD = Pressure Drop PSI = Pounds per Square Inch RLA = Rated Load Amps SC = Sensible Cooling Capacity S/T = Sensible to Total cooling ratio TC = Total Cooling Capacity

Notes to Performance Tables
This note applys to all performance data tables

LWT should always be computed to ensure that water will not freeze. If the LWT is near 40 degrees farenheit, it is recommended to use a water/glycol mixture or consult the factory in open loop applications. Without antifreeze, flow must be maintained so that LWT is above 40 deg Farenheit because the refrigerant may be low as 32 deg and cause icing to occur on the inside of the heat exchanger.

Heating Calculations:	**Cooling Calculations:**
$LST = EST - \frac{HE}{GPM \times 500}$	$LLT = ELT - \frac{TC}{GPM \times 500}$
$LLT = ELT + \frac{HC}{GPM \times 500}$	$LST = EST + \frac{HR}{GPM \times 500}$

Notes on Pressure Drop Calculations
On performance data sheets, the pressure drop below 40 degrees is based on a 15% methonal antifreeze solution (to match ISO standards).
On performance summary sheets, the pressure drop below 40 degrees has been adjusted based on a Propylene Glycol mixture of 23% (by weight) for your convience.

A Propylene Glycol mixture of 23% by weight (22% by volume) will give freeze protection down to 17°F (ave loop temperature should be 27°F with an EWT of 30°F). For other Entering Water Temperatures, the pressure drop correction factor should be adjusted. Take the listed pressure drop from the summary sheet and divide by the correction factor, CF, of 1.32 (for 23% PG), multiply the result by the correction factor for the the concentration and type of antifreeze actually used. For EWT of 25°F, the average loop temperature would be 22°F. A recommended freeze point of 12 degrees results requiring 28% PG so use 1.40 for the CF.

Notes on Electrical Tables
This note applys to all electrical data tables

All loads connected into main supply line or HP contactor must be added into the unit FLA, MCA, and MOP calculations to correctly select wire gauge and circuit breaker size. Loads not included in data tables should be added in and computed according to the following calculations based on NFPA 70, NEC, & CSA standards. At all times, the actual standards should be referenced for calculations as GFM does NOT imply any such warranty or liability for errors/omissions in the equations below.

For main feed to HP unit:
Unit FLA = RLA compressor + ΣFLA all other motors
MCA = 1.25 x RLA largest compressor + ΣFLA all other motors
MOP* = 2.25 x RLA largest compressor + 1.00 x ΣFLA all other motors

For feeds to electric resistance heaters:
FLA = FLA heater
MCA = 1.25 x FLA heater
MOP* = 2.25 x FLA heater

*Where MOP is adjusted according to the following filters.
1). If MOP is not an even multiple of 5, then round down to nearest standard breaker size. 2). MOP must be greater than MCA 3). MOP is a minimum of 15 amps.

HACR circuit breaker is for use in USA only. All fuses Class RK-5

Rev: 8 April, 2010 - GFM--AJS

15 - 60 Ton - Large Commercial - Dual Compressor Water to Water Performance Summary

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

Water to Water - R410A
Performace ISO 13256-2

Magnum Series
Water Source Heat Pump

Model	Loading/ Capacity	Water Loop				Ground Water				Ground Loop			
		Heating		Cooling		Heating		Cooling		Heating		Cooling	
		104°F ELT 68°F EST		53.6°F ELT 86°F EST		104°F ELT 50°F EST		53.6°F ELT 59°F EST		104°F ELT 32°F EST Full 41°F EST Part		53.6°F ELT 77°F EST Full 68°F EST Part	
		Mbtuh	COP	Mbtuh	EER	Mbtuh	COP	Mbtuh	EER	Mbtuh	COP	Mbtuh	EER
180	Full	245.9	4.8	179.2	14.6	212.1	4.3	196.6	21.4	166.8	3.4	185.9	16.8
	Part	132.6	5.5	98.8	16.6	114.0	4.8	108.6	24.1	99.4	4.3	111.8	27.4
240	Full	328.3	4.9	241.6	14.8	281.8	4.3	269.0	21.1	220.0	3.5	251.7	16.8
	Part	177.6	5.4	133.1	16.6	152.3	4.8	147.8	23.2	132.3	4.3	152.9	25.9
300	Full	386.9	4.9	283.0	14.8	333.0	4.4	301.7	20.7	260.7	3.6	291.7	16.7
	Part	208.7	5.5	155.4	16.6	179.4	4.9	164.7	23.3	156.1	4.4	166.0	26.2
360	Full	461.9	5.0	339.9	15.1	397.2	4.4	370.6	23.4	310.5	3.5	352.6	17.4
	Part	233.2	5.6	174.9	16.9	200.7	4.9	186.9	23.7	174.6	4.4	189.1	26.5
480	Full	643.2	4.9	472.1	14.8	554.0	4.4	507.4	20.8	433.7	3.5	488.1	16.8
	Part	233.2	5.6	174.9	16.9	200.7	4.9	186.9	23.7	174.6	4.4	189.1	26.5
600	Full	764.2	4.9	560.4	14.9	658.2	4.4	603.0	21.1	515.4	3.5	579.5	16.9
	Part	363.4	5.6	272.3	17.1	312.7	4.9	292.2	24.3	272.2	4.4	296.4	27.4
720	Full	931.0	4.9	682.5	14.7	801.5	4.3	733.9	20.9	627.6	3.5	705.8	16.7
	Part	460.7	5.5	344.6	16.7	396.5	4.9	368.2	23.9	345.1	4.3	372.6	27.0

Operation below 40°F EWT is based upon a 15% antifreeze solution. 3/12/2010

All performance data is based upon the lower voltage of dual voltage rated units.

Electrical Specifications

Model	Voltage	Elect. Symbol	Compressor*		Total Unit FLA	1 Supply Circ	
			RLA	LRA		Min. Ampacity*	Max. Fuse/HACR*
180	208/230-3-60	2	26.6	235.0	53.2	59.9	80
	460-3-60	3	12.2	110.0	24.4	27.5	35
	575-3-60	4	10.9	95.0	21.8	24.5	35
240	208/230-3-60	2	35.2	250.0	70.4	79.2	110
	460-3-60	3	19.2	140.0	38.4	43.2	60
	575-3-60	4	14.5	100.0	29.0	32.6	45
300	208/230-3-60	2	45.7	304.0	91.4	102.8	125
	460-3-60	3	21.4	147.0	42.8	48.2	60
	575-3-60	4	18.6	122.0	37.2	41.9	60
	380-3-60	6	26.4	168.0	80.0	59.4	80
360	208/230-3-60	2	55.7	320.0	111.4	125.3	150
	460-3-60	3	27.0	180.0	54.0	60.8	80
	575-3-60	4	21.4	135.0	42.8	48.2	60
	380-3-60	6	32.9	210.0	100.0	74.0	100
480	208/230-3-60	2	75.0	485.0	150.0	168.8	225
	460-3-60	3	36.4	215.0	72.8	81.9	110
	575-3-60	4	29.3	175.0	58.6	65.9	90
	380-3-60	6	42.9	260.0	125.0	96.5	125
600	208/230-3-60	2	94.3	460.0	188.6	212.2	300
	460-3-60	3	46.4	260.0	92.8	104.4	150
	575-3-60	4	37.9	210.0	75.8	85.3	110
	380-3-60	6	60.7	310.0	150.0	136.6	150
720	460-3-60	3	56.4	320.0	112.8	126.9	150
	575-3-60	4	42.9	235.0	85.8	96.5	125
	380-3-60	6	64.3	382.0	128.6	144.7	200

**Where calculations are based on:* 5/27/2010

MCA = 1.25 x RLA compressor + FLA other motors

MOP = 2.25 x RLA largest compressor + 1.00 x FLA other motors

Ensure that all loads on the supply line are added into the equations above if some of the cells in the above table are blank

HACR circuit breaker for use in USA only. All fuses Class RK-5

For #N/A, the specified voltage is NOT available

Pressure Drop Specifications

Model	GPM	Pressure Drop (psi)* Entering Water Temperature °F						
		20	30	50	70	90	110	120
180	11.3	2.5	2.4	1.7	1.6	1.5	1.4	1.4
	16.9	3.8	3.7	2.7	2.5	2.3	2.2	2.1
	22.5	5.5	5.4	3.8	3.6	3.4	3.1	3.0
240	15.0	3.4	3.3	2.3	2.2	2.0	1.9	1.8
	22.5	6.4	6.2	4.4	4.1	3.9	3.6	3.5
	30.0	10.1	9.8	7.0	6.5	6.1	5.7	5.4
300	18.8	3.5	3.4	2.4	2.3	2.1	2.0	1.9
	28.1	5.6	5.4	3.9	3.6	3.4	3.1	3.0
	37.5	8.8	8.6	6.1	5.7	5.3	5.0	4.8
360	22.5	2.9	2.8	2.0	1.9	1.7	1.6	1.6
	33.8	4.4	4.3	3.1	2.9	2.7	2.5	2.4
	45.0	6.2	6.0	4.3	4.0	3.7	3.5	3.3
480	30.0	3.6	3.5	2.5	2.3	2.2	2.0	2.0
	45.0	6.8	6.6	4.7	4.4	4.1	3.8	3.7
	60.0	10.7	10.4	7.4	6.9	6.5	6.0	5.8
600	37.5	3.8	3.7	2.7	2.5	2.3	2.2	2.1
	56.3	5.9	5.7	4.1	3.8	3.6	3.3	3.2
	75.0	9.4	9.2	6.5	6.1	5.7	5.3	5.1
720	45.0	4.4	4.3	3.1	2.9	2.7	2.5	2.4
	67.5	7.9	7.7	5.5	5.1	4.8	4.4	4.3
	90.0	13.6	13.2	9.4	8.9	8.3	7.7	7.4

*Pressure drop thru each coaxial heat exchanger - below 40°F based on 23% PG 3/12/2010

15 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW180D Series - R410A **Magnum Series**
Full Load Cooling (Two Compressors) **Water Source Heat Pump**

Source				Load	Load Flow 11.3 GPM						Load Flow 16.9 GPM						Load Flow 22.5 GPM					
EST	Flow	WPD		ELT	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				50	159	7.2	184	22	36	66	172	7.5	198	23	40	68	178	7.8	204	23	42	68
				60	180	7.8	207	23	44	68	193	8.1	221	24	49	70	199	8.3	227	24	51	70
	11.3	1.7	4.0	70	195	8.2	223	24	53	70	208	8.5	237	25	58	71	215	8.7	244	25	60	72
				80	204	8.5	233	24	62	71	218	8.7	248	25	67	72	224	8.9	255	25	70	73
				90	207	8.6	237	24	72	71	222	8.9	252	25	77	72	228	9.0	259	25	80	73
				50	168	7.5	194	22	35	62	181	7.8	207	23	39	62	187	8.0	214	23	42	63
				60	187	8.0	214	23	43	63	199	8.3	228	24	48	63	206	8.5	235	24	51	64
50	16.9	2.7	6.1	70	199	8.3	228	24	52	63	213	8.6	242	25	57	64	219	8.8	249	25	60	65
				80	207	8.5	236	24	62	64	221	8.8	251	25	67	65	228	9.0	258	25	70	65
				90	210	8.7	240	24	71	64	224	8.9	254	25	77	65	231	9.1	262	25	80	66
				50	176	7.8	203	23	34	59	189	8.1	217	23	39	60	195	8.3	223	24	41	60
				60	192	8.2	220	23	43	60	206	8.5	235	24	48	60	212	8.7	242	24	51	61
	22.5	3.8	8.9	70	204	8.5	233	24	52	60	218	8.7	247	25	57	61	224	8.9	254	25	60	61
				80	210	8.6	240	24	61	61	224	8.9	255	25	67	61	231	9.1	262	25	70	62
				90	212	8.7	242	24	71	61	226	9.0	257	25	77	61	233	9.2	264	25	80	62
				50	155	9.5	187	16	36	87	164	9.6	197	17	40	87	169	9.8	202	17	43	88
				60	175	9.9	209	18	45	89	186	10.1	220	18	49	90	191	10.2	226	19	52	90
	11.3	1.6	3.8	70	190	10.3	225	19	53	90	202	10.4	238	19	58	91	208	10.6	244	20	61	92
				80	200	10.5	236	19	62	91	212	10.7	249	20	67	92	218	10.9	255	20	70	93
				90	203	10.7	240	19	72	91	216	10.9	253	20	77	93	222	11.0	260	20	80	93
				50	162	9.7	195	17	36	82	172	9.9	205	17	40	82	177	10.0	211	18	42	82
				60	180	10.1	215	18	44	83	192	10.3	227	19	49	83	197	10.4	233	19	51	84
70	16.9	2.5	5.8	70	194	10.4	230	19	53	84	206	10.5	242	20	58	84	212	10.7	249	20	61	85
				80	203	10.6	239	19	62	84	215	10.8	252	20	67	85	222	11.0	259	20	70	85
				90	206	10.8	243	19	72	84	219	11.0	256	20	77	85	225	11.1	263	20	80	86
				50	169	10.0	203	17	35	79	179	10.1	214	18	39	79	184	10.2	219	18	42	80
				60	186	10.3	221	18	44	80	198	10.4	233	19	48	80	203	10.6	239	19	51	81
	22.5	3.6	8.3	70	198	10.5	234	19	52	80	211	10.7	247	20	58	81	217	10.8	254	20	60	81
				80	206	10.7	243	19	62	81	219	10.9	256	20	67	81	225	11.1	263	20	70	82
				90	208	10.9	245	19	72	81	221	11.0	259	20	77	82	227	11.2	266	20	80	82
				50	149	12.2	190	12	37	107	152	12.2	193	13	41	107	155	12.4	197	13	43	108
				60	171	12.4	213	14	45	109	174	12.4	216	14	50	109	177	12.6	220	14	52	110
	11.3	1.5	3.5	70	188	12.6	231	15	53	111	192	12.7	235	15	59	111	196	12.9	239	15	61	111
				80	200	13.0	245	15	62	112	205	13.0	249	16	68	112	208	13.2	254	16	71	113
				90	207	13.3	253	16	72	112	212	13.3	257	16	77	113	216	13.5	262	16	80	113
				50	155	12.4	198	13	36	102	159	12.4	201	13	41	102	162	12.6	205	13	43	102
				60	176	12.6	219	14	44	103	180	12.6	223	14	49	103	183	12.8	227	14	52	103
90	16.9	2.3	5.4	70	192	12.8	236	15	53	104	197	12.8	240	15	58	104	200	13.1	245	15	61	105
				80	204	13.1	249	16	62	105	208	13.1	253	16	68	105	212	13.3	258	16	71	105
				90	210	13.4	256	16	71	105	215	13.5	261	16	77	105	219	13.7	266	16	80	106
				50	162	12.6	205	13	36	99	166	12.6	209	13	40	99	169	12.8	213	13	42	99
				60	182	12.8	225	14	44	100	186	12.8	229	15	49	100	189	13.0	234	15	52	100
	22.5	3.4	7.8	70	197	13.0	241	15	53	101	201	13.0	245	15	58	101	205	13.2	250	16	61	101
				80	207	13.3	252	16	62	101	212	13.3	257	16	67	101	216	13.5	262	16	70	102
				90	213	13.6	260	16	71	102	218	13.6	264	16	77	102	222	13.8	269	16	80	102
				50	136	15.2	188	9	38	127	137	15.2	189	9	42	127	139	15.5	192	9	44	127
				60	158	15.1	209	10	46	129	159	15.1	211	11	51	129	161	15.5	214	10	53	129
	11.3	1.4	3.3	70	178	15.3	230	12	54	130	179	15.3	231	12	59	131	181	15.6	234	12	62	131
				80	194	15.7	248	12	63	132	196	15.7	250	12	68	132	198	16.0	253	12	71	132
				90	207	16.3	262	13	72	133	209	16.3	265	13	78	134	211	16.7	268	13	81	134
				50	142	15.5	195	9	37	122	143	15.5	196	9	42	122	145	15.8	199	9	44	122
				60	163	15.4	216	11	46	123	165	15.4	218	11	50	123	167	15.7	220	11	53	123
110	16.9	2.2	5.0	70	182	15.5	235	12	54	124	184	15.5	237	12	59	124	186	15.8	240	12	62	124
				80	198	15.8	252	12	62	125	200	15.9	254	13	68	125	202	16.2	257	12	71	125
				90	210	16.5	267	13	71	126	213	16.5	269	13	77	126	215	16.9	272	13	80	126
				50	148	15.8	202	9	37	119	149	15.8	203	9	41	119	151	16.2	206	9	43	119
				60	169	15.6	222	11	45	120	170	15.6	224	11	50	120	172	16.0	227	11	52	120
	22.5	3.1	7.2	70	186	15.7	240	12	53	121	188	15.7	242	12	59	121	190	16.1	245	12	62	121
				80	202	16.1	256	13	62	121	204	16.1	259	13	68	121	206	16.4	262	13	71	122
				90	214	16.7	271	13	71	122	216	16.7	273	13	77	122	218	17.1	277	13	80	122
				50	128	17.1	187	7	39	137	129	17.2	188	8	42	137	131	17.5	191	7	44	137
				60	148	17.5	207	8	47	138	149	17.5	209	9	51	139	151	17.9	212	8	53	139
	11.3	1.4	3.1	70	167	17.8	228	9	55	140	168	17.9	229	9	60	140	170	18.3	233	9	62	141
				80	185	18.1	247	10	64	142	187	18.2	249	10	69	142	189	18.6	253	10	72	142
				90	203	18.4	266	11	72	144	205	18.5	268	11	78	144	207	18.9	272	11	81	144
				50	135	17.5	194	8	38	132	136	17.6	196	8	42	132	138	17.9	199	8	44	132
				60	153	17.8	214	9	46	133	155	17.9	216	9	51	133	156	18.3	219	9	53	133
120	16.9	2.1	4.8	70	171	18.1	233	9	55	134	173	18.2	235	10	60	134	175	18.6	239	9	62	134
				80	190	18.4	252	10	63	135	192	18.5	255	10	69	135	194	18.9	258	10	71	135
				90	207	18.7	271	11	72	136	209	18.8	273	11	78	136	212	19.2	277	11	81	136
				50	141	17.9	202	8	38	129	142	18.0	204	8	42	129	144	18.3	207	8	44	129
				60	159	18.2	221	9	46	130	160	18.2	222	9	51	130	162	18.6	226	9	53	130
	22.5	3.0	6.9	70	176	18.4	239	10	54	131	178	18.5	241	10	59	131	180	18.9	245	10	62	131
				80	194	18.7	258	10	63	131	196	18.8	260	10	68	132	198	19.2	263	10	71	132
				90	211	19.0	276	11	71	132	213	19.0	278	11	77	132	216	19.5	282	11	80	133

Flow rates are per circuit - dual compressor units have 2 circuits

15 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW180D Series - R410A **Magnum Series**
Full Load Heating (Two Compressors) **Water Source Heat Pump**

Source				Load	Load Flow 11.3 GPM						Load Flow 16.9 GPM						Load Flow 22.5 GPM					
EST	Flow	WPD		ELT	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				60	141	8.4	112	4.9	72	15	138	7.7	112	5.2	68	15	135	7.3	110	5.4	66	15
20	22.5	4.9	11.2	80	148	11.2	109	3.9	93	15	147	10.6	110	4.0	89	15	146	10.3	111	4.2	86	15
				100	147	14.5	98	3.0	113	16	146	13.8	99	3.1	109	16	145	13.4	99	3.2	106	16
				60	151	8.5	122	5.2	73	19	149	7.9	122	5.5	69	19	146	7.4	120	5.7	66	19
				80	158	11.2	120	4.1	94	19	157	10.6	121	4.4	89	19	156	10.3	121	4.5	87	19
	11.3	2.1	5.0	100	159	14.4	110	3.2	114	20	158	13.7	111	3.4	109	20	157	13.4	111	3.4	107	20
				120	158	18.4	95	2.5	134	22	155	17.5	95	2.6	129	22	153	17.1	95	2.6	127	22
				60	168	8.7	138	5.6	75	22	167	8.2	139	6.0	70	22	165	7.8	139	6.2	67	22
				80	173	11.3	135	4.5	95	22	173	10.7	136	4.7	90	22	172	10.4	137	4.8	88	22
30	16.9	3.3	7.6	100	173	14.6	124	3.5	115	23	172	13.9	125	3.6	110	23	171	13.5	125	3.7	108	23
				120	171	18.6	107	2.7	135	24	168	17.7	107	2.8	130	24	166	17.3	107	2.8	127	24
				60	162	8.7	132	5.5	74	24	160	8.1	133	5.8	69	24	159	7.8	132	6.0	67	24
				80	167	11.3	129	4.3	95	24	167	10.8	130	4.5	90	24	166	10.4	130	4.6	87	24
	22.5	4.7	10.9	100	167	14.6	117	3.3	115	25	165	13.9	118	3.5	110	25	164	13.6	118	3.5	107	25
				120	163	18.6	99	2.6	134	26	159	17.7	99	2.6	129	26	158	17.2	99	2.7	127	26
				60	172	8.8	142	5.7	75	27	171	8.2	143	6.1	70	27	170	7.9	143	6.3	68	27
				80	178	11.3	139	4.6	96	28	177	10.7	141	4.8	90	27	177	10.4	141	5.0	88	27
	11.3	1.8	4.2	100	179	14.6	129	3.6	116	29	177	13.9	130	3.7	110	28	176	13.5	130	3.8	108	28
				120	178	18.7	114	2.8	136	30	175	17.8	114	2.9	130	30	173	17.3	114	2.9	128	30
				60	201	9.1	170	6.5	78	30	202	8.7	172	6.8	72	30	202	8.4	173	7.0	69	30
				80	205	11.6	166	5.2	98	30	205	11.0	168	5.5	92	30	205	10.7	168	5.6	89	30
40	16.9	2.7	6.3	100	204	14.8	153	4.0	118	31	203	14.1	155	4.2	112	31	202	13.7	155	4.3	109	31
				120	201	19.0	136	3.1	138	32	198	18.0	136	3.2	132	32	196	17.5	136	3.3	129	32
				60	183	9.0	153	6.0	76	33	183	8.5	154	6.3	71	33	182	8.2	154	6.5	68	33
				80	187	11.5	148	4.8	97	33	187	10.9	150	5.0	91	33	187	10.7	150	5.1	88	33
	22.5	4.0	9.1	100	186	14.8	135	3.7	116	34	185	14.1	137	3.8	111	34	184	13.7	137	3.9	108	34
				120	181	18.8	117	2.8	136	35	179	17.9	118	2.9	131	35	177	17.4	117	3.0	128	35
				60	193	9.0	162	6.3	77	36	193	8.5	164	6.6	71	35	193	8.3	164	6.8	69	35
				80	198	11.5	159	5.1	98	36	198	10.9	161	5.3	92	36	198	10.6	162	5.5	89	36
	11.3	1.7	4.0	100	198	14.7	148	3.9	118	37	197	14.0	149	4.1	112	37	196	13.6	150	4.2	109	37
				120	197	19.0	133	3.0	137	38	195	18.0	133	3.2	132	38	193	17.5	133	3.2	129	38
				60	205	9.2	173	6.5	78	40	205	8.8	175	6.9	72	40	205	8.5	176	7.1	69	40
				80	208	11.6	168	5.2	98	40	208	11.1	171	5.5	92	40	208	10.8	171	5.7	89	40
50	16.9	2.7	6.1	100	207	14.9	156	4.1	118	41	206	14.2	157	4.3	112	41	205	13.8	158	4.3	109	41
				120	203	19.1	138	3.1	138	42	201	18.1	139	3.3	132	42	199	17.6	139	3.3	129	42
				60	216	9.4	184	6.8	79	42	217	9.0	187	7.1	73	42	217	8.7	187	7.3	70	42
				80	218	11.8	178	5.4	99	42	219	11.3	180	5.7	93	42	219	11.0	181	5.8	90	42
	22.5	3.8	8.9	100	215	15.1	164	4.2	119	43	214	14.3	166	4.4	113	43	214	13.9	166	4.5	110	43
				120	209	19.1	144	3.2	139	44	207	18.2	145	3.3	132	44	205	17.7	145	3.4	129	44
				60	204	9.2	172	6.5	78	45	204	8.8	174	6.8	72	45	204	8.6	175	7.0	69	44
				80	210	11.6	170	5.3	99	45	210	11.0	173	5.6	92	45	210	10.7	173	5.7	89	45
	11.3	1.7	3.9	100	212	14.8	162	4.2	119	46	211	14.0	164	4.4	113	45	211	13.7	164	4.5	109	45
				120	217	19.1	152	3.3	139	47	214	18.1	152	3.5	133	46	213	17.7	152	3.5	129	46
				60	217	9.4	184	6.7	79	49	218	9.0	187	7.1	73	49	218	8.8	188	7.3	70	49
				80	221	11.8	181	5.5	100	49	222	11.2	184	5.8	93	49	222	10.9	184	5.9	90	49
60	16.9	2.6	5.9	100	222	15.0	171	4.3	120	50	222	14.3	173	4.6	113	50	221	13.9	174	4.7	110	50
				120	224	19.3	159	3.4	140	51	222	18.3	159	3.6	133	51	220	17.8	159	3.6	130	51
				60	229	9.6	197	7.0	80	51	231	9.2	200	7.3	74	51	231	9.0	201	7.5	70	51
				80	233	12.0	192	5.7	101	51	234	11.5	195	6.0	94	51	234	11.2	195	6.1	90	51
	22.5	3.7	8.6	100	233	15.2	181	4.5	121	52	232	14.5	183	4.7	114	52	232	14.1	183	4.8	110	52
				120	232	19.4	166	3.5	141	53	229	18.4	167	3.6	134	53	228	17.9	167	3.7	130	53
				60	214	9.4	182	6.7	79	54	215	9.0	184	7.0	73	54	215	8.8	185	7.2	70	54
				80	221	11.7	182	5.6	100	54	222	11.1	184	5.9	93	54	222	10.8	185	6.0	90	54
	11.3	1.6	3.8	100	227	14.8	176	4.5	120	54	226	14.1	178	4.7	113	54	225	13.7	179	4.8	110	54
				120	236	19.3	170	3.6	141	55	234	18.3	171	3.7	134	55	232	17.8	171	3.8	130	55
				60	229	9.7	196	6.9	80	58	230	9.2	199	7.3	74	58	230	9.0	200	7.5	70	58
				80	234	11.9	194	5.8	101	59	236	11.4	197	6.1	94	58	236	11.1	198	6.2	90	58
70	16.9	2.5	5.8	100	238	15.1	187	4.6	121	59	238	14.4	189	4.9	114	59	237	14.0	190	5.0	111	59
				120	245	19.5	179	3.7	142	59	243	18.5	180	3.8	134	59	241	18.0	180	3.9	131	59
				60	243	9.9	209	7.2	81	61	245	9.5	213	7.6	75	61	246	9.3	214	7.7	71	60
				80	247	12.2	206	6.0	102	61	249	11.6	209	6.3	95	61	249	11.4	210	6.4	91	61
	22.5	3.6	8.3	100	250	15.4	198	4.8	122	61	250	14.7	200	5.0	115	61	249	14.3	201	5.1	111	61
				120	255	19.7	187	3.8	143	62	252	18.7	189	4.0	135	62	251	18.2	189	4.0	131	62
				60	225	9.7	192	6.8	80	63	226	9.2	195	7.2	73	63	227	9.0	196	7.4	70	63
				80	233	11.8	193	5.8	101	63	235	11.2	196	6.1	94	63	235	11.0	197	6.3	90	62
	11.3	1.6	3.7	100	241	14.9	190	4.7	121	63	241	14.2	192	5.0	114	63	240	13.8	193	5.1	111	63
				120	255	19.4	189	3.8	143	63	253	18.4	190	4.0	135	63	252	17.9	190	4.1	131	63
				60	240	9.9	207	7.1	81	68	243	9.5	210	7.5	74	68	243	9.3	211	7.7	71	67
				80	248	12.0	206	6.0	102	68	249	11.5	210	6.3	95	68	249	11.2	211	6.5	91	67
80	16.9	2.4	5.6	100	254	15.2	202	4.9	122	68	255	14.5	205	5.1	115	68	254	14.1	206	5.3	111	68
				120	266	19.7	199	4.0	144	68	264	18.7	200	4.1	136	68	263	18.2	201	4.2	132	68
				60	256	10.1	222	7.4	83	70	259	9.7	226	7.8	75	70	260	9.5	227	8.0	72	70
				80	262	12.4	220	6.2	103	70	264	11.8	224	6.5	96	70	264	11.6	225	6.7	92	70
	22.5	3.5	8.0	100	268	15.6	215	5.0	124	70	268	14.8	218	5.3	116	70	268	14.5	218	5.4	112	70
				120	277	20.0	209	4.1	145	71	275	19.0	210	4.3	136	71	274	18.5	211	4.3	132	71

Flow rates are per circuit - dual compressor units have 2 circuits

15 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW180D Series - R410A **Magnum Series**
Part Load Cooling (One Compressor) **Water Source Heat Pump**

Source				Load	Load Flow 11.3 GPM						Load Flow 16.9 GPM						Load Flow 22.5 GPM					
EST	Flow	WPD		ELT	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				50	88	3.5	100	25	34	68	95	3.7	108	26	39	69	98	3.8	111	26	41	70
				60	100	3.8	113	26	42	70	107	4.0	121	27	47	71	110	4.1	124	27	50	72
	11.3	1.7	4.0	70	108	4.0	122	27	51	72	115	4.2	129	28	56	73	119	4.3	133	28	59	74
				80	113	4.2	127	27	60	73	120	4.3	135	28	66	74	124	4.4	139	28	69	75
				90	115	4.2	129	27	70	73	122	4.4	137	28	76	74	126	4.5	141	28	79	75
				50	93	3.7	106	25	33	63	100	3.8	113	26	38	63	103	3.9	117	26	41	64
				60	103	3.9	117	26	42	64	110	4.1	124	27	47	65	114	4.2	128	27	50	65
50	16.9	2.7	6.1	70	110	4.1	124	27	51	65	118	4.3	132	28	56	66	121	4.3	136	28	59	66
				80	114	4.2	129	27	60	65	122	4.4	137	28	66	66	126	4.5	141	28	69	67
				90	116	4.3	131	27	69	65	124	4.4	139	28	75	66	127	4.5	143	28	79	67
				50	98	3.8	111	26	33	60	105	4.0	118	26	38	61	108	4.1	122	26	40	61
				60	106	4.0	120	26	41	61	114	4.2	128	27	47	61	117	4.3	132	27	50	62
	22.5	3.8	8.9	70	113	4.2	127	27	50	61	120	4.3	135	28	56	62	124	4.4	139	28	59	62
				80	116	4.3	131	27	59	62	124	4.4	139	28	65	62	127	4.5	143	28	69	63
				90	117	4.3	132	27	69	62	125	4.4	140	28	75	62	129	4.5	144	28	79	63
				50	85	4.6	101	19	35	88	91	4.7	106	19	39	89	93	4.8	109	20	42	89
				60	97	4.8	113	20	43	90	102	4.9	119	21	48	91	105	5.0	122	21	51	92
	11.3	1.6	3.8	70	105	5.0	122	21	51	92	111	5.1	129	22	57	93	114	5.2	132	22	60	93
				80	110	5.1	128	21	61	93	117	5.2	135	22	66	94	120	5.3	138	23	69	95
				90	112	5.2	130	21	70	93	119	5.3	137	22	76	94	122	5.4	141	23	79	95
				50	89	4.7	105	19	34	82	95	4.8	111	20	39	83	97	4.9	114	20	41	84
				60	100	4.9	116	20	42	84	106	5.0	123	21	47	85	109	5.1	126	21	50	85
70	16.9	2.5	5.8	70	107	5.1	124	21	51	85	114	5.2	131	22	57	86	117	5.3	135	22	60	86
				80	112	5.2	129	22	60	85	119	5.3	137	22	66	86	122	5.4	140	23	69	87
				90	114	5.3	132	21	70	86	120	5.4	139	22	76	86	124	5.5	142	23	79	87
				50	93	4.8	110	19	34	80	99	4.9	116	20	38	80	102	5.0	119	20	41	81
				60	103	5.0	120	20	42	81	109	5.1	126	21	47	81	112	5.2	130	22	50	82
	22.5	3.6	8.3	70	109	5.1	127	21	51	81	116	5.2	134	22	56	82	119	5.3	138	22	59	82
				80	114	5.3	131	22	60	82	121	5.3	139	23	66	82	124	5.4	142	23	69	83
				90	115	5.3	133	22	70	82	122	5.4	140	23	76	82	125	5.5	144	23	79	83
				50	82	5.9	102	14	35	108	84	5.9	104	14	40	108	85	6.0	106	14	42	109
				60	94	6.0	114	16	43	110	96	6.0	116	16	49	111	98	6.1	119	16	51	111
	11.3	1.5	3.5	70	103	6.1	124	17	52	112	106	6.1	127	17	57	113	108	6.2	129	17	60	113
				80	110	6.3	132	18	60	113	113	6.3	134	18	67	114	115	6.4	137	18	70	114
				90	114	6.5	136	18	70	114	117	6.5	139	18	76	115	119	6.6	141	18	79	115
				50	86	6.0	106	14	35	103	88	6.0	108	15	40	103	89	6.1	110	15	42	103
				60	97	6.1	118	16	43	104	99	6.1	120	16	48	104	101	6.2	122	16	51	104
90	16.9	2.3	5.4	70	106	6.2	127	17	51	105	108	6.2	130	17	57	105	110	6.3	132	17	60	106
				80	112	6.4	134	18	60	106	115	6.4	136	18	66	106	117	6.5	139	18	70	106
				90	116	6.5	138	18	70	106	118	6.6	141	18	76	107	121	6.7	143	18	79	107
				50	90	6.1	110	15	34	100	91	6.1	112	15	39	100	93	6.2	114	15	42	100
				60	100	6.2	121	16	42	101	102	6.2	123	17	48	101	104	6.3	126	17	51	101
	22.5	3.4	7.8	70	108	6.3	130	17	51	102	111	6.3	132	18	57	102	113	6.4	135	18	60	102
				80	114	6.4	136	18	60	102	117	6.5	139	18	66	102	119	6.6	141	18	69	103
				90	117	6.6	140	18	69	102	120	6.6	142	18	76	103	122	6.7	145	18	79	103
				50	75	7.3	100	10	37	128	76	7.3	101	10	41	128	77	7.5	102	10	43	128
				60	87	7.3	112	12	45	130	88	7.3	113	12	50	130	89	7.5	115	12	52	130
	11.3	1.4	3.3	70	98	7.4	123	13	53	132	99	7.4	124	13	58	132	100	7.5	126	13	61	132
				80	107	7.6	133	14	61	134	108	7.6	134	14	67	134	109	7.8	136	14	70	134
				90	114	7.9	141	14	70	135	115	7.9	142	15	76	135	116	8.1	144	14	80	136
				50	79	7.5	104	11	36	122	79	7.5	105	11	41	122	80	7.6	106	11	43	123
				60	90	7.4	115	12	44	124	91	7.4	117	12	49	124	92	7.6	118	12	52	124
110	16.9	2.2	5.0	70	100	7.5	126	13	52	125	101	7.5	127	14	58	125	103	7.7	129	13	61	125
				80	109	7.7	135	14	61	126	110	7.7	136	14	67	126	111	7.8	138	14	70	126
				90	116	8.0	143	15	69	127	117	8.0	145	15	76	127	118	8.2	146	14	79	127
				50	82	7.6	108	11	35	120	83	7.6	109	11	40	120	84	7.8	110	11	43	120
				60	93	7.5	119	12	43	121	94	7.6	120	12	49	121	95	7.7	121	12	52	121
	22.5	3.1	7.2	70	103	7.6	129	14	52	121	104	7.6	130	14	58	122	105	7.8	132	14	61	122
				80	111	7.8	138	14	60	122	112	7.8	139	14	67	122	114	8.0	141	14	70	123
				90	118	8.1	146	15	69	123	119	8.1	147	15	76	123	120	8.3	149	15	79	123
				50	71	8.3	100	9	37	138	72	8.3	100	9	41	138	73	8.4	102	9	44	138
				60	82	8.4	111	10	46	140	83	8.4	112	10	50	140	84	8.6	113	10	53	140
	11.3	1.4	3.1	70	92	8.6	122	11	54	142	93	8.6	123	11	59	142	94	8.8	124	11	62	142
				80	103	8.8	132	12	62	144	104	8.8	134	12	68	144	105	9.0	135	12	71	144
				90	112	8.9	143	13	70	145	113	8.9	144	13	77	146	115	9.1	146	13	80	146
				50	75	8.4	104	9	37	132	76	8.5	104	9	41	132	76	8.6	106	9	43	133
				60	85	8.6	114	10	45	134	86	8.6	115	10	50	134	87	8.8	117	10	52	134
120	16.9	2.1	4.8	70	95	8.7	125	11	53	135	96	8.8	126	11	59	135	97	9.0	128	11	61	135
				80	105	8.9	135	12	61	136	106	8.9	136	12	67	136	107	9.1	138	12	70	136
				90	115	9.1	145	13	70	137	116	9.1	147	13	76	137	117	9.3	149	13	80	138
				50	78	8.6	108	9	36	130	79	8.7	109	9	41	130	80	8.8	110	9	43	130
				60	88	8.8	118	10	44	130	89	8.8	119	10	49	131	90	9.0	120	10	52	131
	22.5	3.0	6.9	70	98	8.9	128	11	53	131	99	8.9	129	11	58	131	100	9.1	131	11	61	132
				80	107	9.0	138	12	61	132	108	9.1	139	12	67	132	110	9.3	141	12	70	133
				90	117	9.2	148	13	69	133	118	9.2	149	13	76	133	119	9.4	152	13	79	133

Flow rates are per circuit - dual compressor units have 2 circuits

15 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW180D Series - R410A **Magnum Series**
Part Load Heating (One Compressor) **Water Source Heat Pump**

Source				Load	Load Flow 11.3 GPM						Load Flow 16.9 GPM						Load Flow 22.5 GPM					
EST	Flow	WPD		ELT	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				60	76	4.0	63	5.6	74	14	75	3.7	62	6.0	69	14	73	3.5	61	6.2	67	15
20	22.5	4.9	11.2	80	79	5.4	61	4.3	94	15	79	5.1	62	4.6	89	15	79	4.9	62	4.7	87	15
				100	79	6.9	56	3.4	114	15	78	6.6	56	3.5	109	15	78	6.4	56	3.6	107	15
				60	82	4.1	68	5.9	74	18	81	3.8	68	6.3	70	18	79	3.5	67	6.6	67	18
				80	85	5.3	67	4.7	95	18	85	5.0	67	4.9	90	18	84	4.9	67	5.0	87	18
	11.3	2.1	5.0	100	85	6.9	62	3.6	115	19	84	6.6	62	3.8	110	19	84	6.4	62	3.9	107	19
				120	84	8.8	54	2.8	135	20	83	8.4	54	2.9	130	20	82	8.2	54	2.9	127	20
				60	91	4.2	77	6.4	76	21	91	3.9	77	6.8	71	21	90	3.7	77	7.0	68	21
				80	93	5.4	75	5.1	97	21	93	5.1	76	5.3	91	21	93	5.0	76	5.5	88	21
30	16.9	3.3	7.6	100	93	7.0	69	3.9	116	22	92	6.6	70	4.1	111	22	92	6.4	70	4.2	108	22
				120	91	8.9	61	3.0	136	23	90	8.5	61	3.1	131	23	89	8.2	61	3.2	128	23
				60	88	4.2	74	6.2	76	23	87	3.9	74	6.6	70	23	86	3.7	74	6.8	68	23
				80	90	5.4	71	4.9	96	24	90	5.1	72	5.1	91	24	89	5.0	72	5.2	88	24
	22.5	4.7	10.9	100	89	7.0	65	3.7	116	24	88	6.6	66	3.9	110	24	88	6.5	66	4.0	108	24
				120	87	8.9	57	2.9	135	25	85	8.5	57	3.0	130	25	84	8.2	56	3.0	128	25
				60	93	4.2	79	6.5	76	26	93	3.9	79	6.9	71	26	92	3.8	79	7.2	68	26
				80	96	5.4	77	5.2	97	26	96	5.1	78	5.5	91	26	95	5.0	78	5.6	88	26
	11.3	1.8	4.2	100	96	7.0	72	4.0	117	27	95	6.6	72	4.2	111	27	94	6.4	72	4.3	108	27
				120	95	8.9	65	3.1	137	29	93	8.5	65	3.2	131	29	92	8.3	64	3.3	128	29
				60	110	4.4	95	7.3	79	29	110	4.2	96	7.7	73	29	110	4.1	96	7.9	70	29
				80	111	5.5	92	5.9	100	29	111	5.3	93	6.2	93	29	111	5.1	93	6.3	90	29
40	16.9	2.7	6.3	100	109	7.1	85	4.5	119	30	109	6.7	86	4.8	113	30	109	6.5	86	4.9	110	30
				120	107	9.0	77	3.5	139	31	106	8.6	76	3.6	133	31	105	8.4	76	3.7	129	31
				60	100	4.3	85	6.8	78	32	100	4.1	86	7.2	72	32	99	3.9	86	7.4	69	32
				80	101	5.5	82	5.4	98	33	101	5.2	83	5.7	92	33	101	5.1	83	5.8	89	33
	22.5	4.0	9.1	100	100	7.1	76	4.1	118	33	99	6.7	76	4.3	112	33	99	6.5	76	4.4	109	33
				120	97	9.0	66	3.2	137	34	95	8.5	66	3.3	131	34	95	8.3	66	3.3	128	34
				60	105	4.3	90	7.1	79	34	105	4.1	91	7.5	72	34	105	4.0	91	7.7	69	34
				80	107	5.5	88	5.7	99	34	107	5.2	89	6.0	93	34	107	5.1	90	6.2	90	34
	11.3	1.7	4.0	100	106	7.0	82	4.4	119	35	106	6.7	83	4.6	113	35	105	6.5	83	4.7	109	35
				120	106	9.0	75	3.4	139	37	104	8.6	75	3.6	132	37	103	8.4	75	3.6	129	37
				60	111	4.4	96	7.4	80	39	112	4.2	97	7.8	73	38	112	4.1	98	8.0	70	38
				80	112	5.6	93	5.9	100	39	113	5.3	95	6.2	93	39	113	5.2	95	6.4	90	39
50	16.9	2.7	6.1	100	111	7.1	87	4.6	120	40	111	6.8	87	4.8	113	40	110	6.6	88	4.9	110	40
				120	109	9.1	78	3.5	139	41	107	8.6	78	3.7	133	41	106	8.4	78	3.7	129	41
				60	118	4.5	102	7.6	81	41	118	4.3	104	8.0	74	41	119	4.2	104	8.2	71	41
				80	118	5.7	99	6.1	101	41	118	5.4	100	6.4	94	41	118	5.3	100	6.6	91	41
	22.5	3.8	8.9	100	116	7.2	91	4.7	120	42	115	6.8	92	4.9	114	42	115	6.7	92	5.1	110	42
				120	112	9.1	81	3.6	140	43	111	8.7	81	3.7	133	43	110	8.4	81	3.8	130	43
				60	111	4.4	96	7.3	80	43	111	4.2	97	7.7	73	43	111	4.1	97	7.9	70	43
				80	113	5.5	94	6.0	100	43	114	5.3	96	6.3	93	43	114	5.2	96	6.5	90	43
	11.3	1.7	3.9	100	114	7.0	90	4.7	120	44	114	6.7	91	5.0	113	44	113	6.5	91	5.1	110	44
				120	116	9.1	85	3.7	141	45	115	8.6	85	3.9	134	45	114	8.4	85	4.0	130	45
				60	118	4.6	102	7.6	81	48	119	4.4	104	8.0	74	48	119	4.3	104	8.2	71	48
				80	120	5.6	100	6.2	101	48	120	5.4	102	6.5	94	48	120	5.3	102	6.7	91	48
60	16.9	2.6	5.9	100	120	7.2	95	4.9	121	49	119	6.8	96	5.1	114	49	119	6.6	96	5.3	111	49
				120	120	9.2	89	3.8	141	49	119	8.7	89	4.0	134	49	118	8.5	89	4.1	130	49
				60	125	4.7	109	7.9	82	50	126	4.5	111	8.2	75	50	126	4.4	111	8.5	71	50
				80	126	5.8	106	6.4	102	51	127	5.5	108	6.7	95	50	127	5.4	108	6.9	91	50
	22.5	3.7	8.6	100	125	7.3	100	5.0	122	51	125	6.9	101	5.3	115	51	125	6.7	102	5.4	111	51
				120	124	9.3	93	3.9	142	52	123	8.8	93	4.1	135	52	122	8.5	93	4.2	131	52
				60	117	4.6	101	7.5	81	52	117	4.4	102	7.9	74	52	117	4.3	103	8.1	70	52
				80	120	5.6	101	6.3	101	52	120	5.3	102	6.6	94	52	120	5.2	103	6.8	91	52
	11.3	1.6	3.8	100	122	7.1	98	5.0	122	53	122	6.7	99	5.3	114	52	121	6.6	99	5.4	111	52
				120	127	9.2	95	4.0	142	53	125	8.7	96	4.2	135	53	125	8.5	96	4.3	131	53
				60	125	4.7	109	7.8	82	57	126	4.5	110	8.2	75	57	126	4.4	111	8.4	71	57
				80	127	5.7	107	6.5	102	57	128	5.5	109	6.8	95	57	128	5.4	110	7.0	91	57
70	16.9	2.5	5.8	100	128	7.2	104	5.2	123	58	128	6.9	105	5.5	115	58	128	6.7	105	5.6	111	58
				120	132	9.3	100	4.2	143	58	130	8.8	100	4.3	135	58	130	8.6	100	4.4	132	58
				60	132	4.8	116	8.1	83	60	134	4.6	118	8.5	76	60	134	4.5	119	8.7	72	59
				80	134	5.9	114	6.7	104	60	135	5.6	116	7.1	96	60	135	5.5	117	7.2	92	60
	22.5	3.6	8.3	100	135	7.4	110	5.4	124	60	135	7.0	111	5.6	116	60	135	6.8	111	5.8	112	60
				120	137	9.4	105	4.3	144	61	136	8.9	105	4.5	136	61	135	8.7	105	4.6	132	61
				60	122	4.7	106	7.7	82	61	123	4.5	108	8.1	75	61	124	4.4	109	8.3	71	61
				80	126	5.7	107	6.5	102	61	127	5.4	109	6.9	95	61	127	5.3	109	7.1	91	61
	11.3	1.6	3.7	100	130	7.1	105	5.3	123	61	130	6.8	107	5.6	115	61	130	6.6	107	5.7	112	61
				120	137	9.3	105	4.3	144	61	136	8.8	106	4.5	136	61	135	8.6	106	4.6	132	61
				60	131	4.8	115	8.0	83	66	132	4.6	117	8.4	76	66	133	4.5	117	8.6	72	66
				80	134	5.8	114	6.8	104	66	135	5.6	116	7.1	96	66	136	5.4	117	7.3	92	66
80	16.9	2.4	5.6	100	137	7.3	112	5.5	124	67	137	7.0	114	5.8	116	67	137	6.8	114	5.9	112	66
				120	143	9.4	111	4.5	145	67	142	8.9	112	4.7	137	67	141	8.7	112	4.8	133	67
				60	140	4.9	123	8.3	85	69	142	4.8	125	8.7	77	69	142	4.7	126	8.9	73	69
				80	142	6.0	122	7.0	105	69	143	5.7	124	7.3	97	69	144	5.6	125	7.5	93	69
	22.5	3.5	8.0	100	145	7.5	119	5.7	126	69	145	7.1	121	6.0	117	69	145	7.0	121	6.1	113	69
				120	149	9.5	116	4.6	146	70	148	9.1	117	4.8	138	70	147	8.8	117	4.9	133	70

Flow rates are per circuit - dual compressor units have 2 circuits

15 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW180D Series - R410A **Magnum Series**
Performace ISO 13256-2 **Water Source Heat Pump**

Loading/ Capacity	Water Loop				Ground Water				Ground Loop			
	Heating		Cooling		Heating		Cooling		Heating		Cooling	
	104°F ELT 68°F EST		53.6°F ELT 86°F EST		104°F ELT 50°F EST		53.6°F ELT 59°F EST		104°F ELT 32°F EST Full 41°F EST Part		53.6°F ELT 77°F EST Full 68°F EST Part	
	Mbtuh	COP	Mbtuh	EER	MBtuh	COP	Mbtuh	EER	Mbtuh	COP	Mbtuh	EER
Full	246	4.8	179	14.6	212	4.3	197	21.4	167	3.45	186	16.8
Part	133	5.5	99	16.6	114	4.8	109	24.1	99	4.27	112	27.4

Electrical Specification

Voltage	Elect. Symbol	Compressor*		Total Unit FLA	1 Supply Circ	
		RLA	LRA		Min. Ampacity*	Max. Fuse/ HACR*
208/230-3-60	2	26.6	235	53.2	59.9	80
460-3-60	3	12.2	110	24.4	27.5	35
575-3-60	4	10.9	95	21.8	24.5	35

**Where calculations are based on:*
MCA = 1.25 x RLA compressor + FLA other motors
MOP = 2.25 x RLA largest compressor + 1.00 x FLA other motors.
Ensure that all loads on the supply line are added into the equations above if some of the cells in the above table are blank

HACR circuit breaker for use in USA only. All fuses Class RK-5
Ratings are for each compressor - unit supplied with two
Ratings for pumps are per circuit - dual compressor units have 2 circuits
2 Supply Circuit - Two power feeds / breakers are required for each compressor

GeoFurnace works continually to improve its products. As a result, the design and specifications of each product at the time of order may be changed without notice. Please contact GeoFurnace at 1-605-854-9205 for latest design and specifications. Purchaser's approval of this data set signifies that the equipment is acceptable under the provisions of the job specification. Statements and other information contained herein are not express warranties and do not form the basis of any contract between the parties, but are merely GeoFurnace's opinion or commendation of its products.

20 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW240D Series - R410A **Magnum Series**
Full Load Cooling (Two Compressors) **Water Source Heat Pump**

Source				Load	Load Flow 15 GPM						Load Flow 22.5 GPM						Load Flow 30 GPM					
EST	Flow	WPD		ELT	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				50	226	10.3	262	22	35	67	241	10.8	278	22	39	69	248	11.0	286	23	42	69
				60	252	11.1	289	23	43	69	267	11.5	307	23	48	70	274	11.8	315	23	51	71
	15.0	2.3	5.4	70	269	11.6	309	23	52	71	286	12.0	327	24	57	72	293	12.3	335	24	60	72
				80	280	12.0	321	23	61	71	297	12.4	340	24	67	73	305	12.6	348	24	70	73
				90	284	12.1	326	23	71	72	301	12.6	344	24	77	73	309	12.8	353	24	80	74
				50	237	10.7	274	22	34	62	252	11.1	290	23	39	63	259	11.4	298	23	41	63
				60	259	11.4	298	23	43	63	275	11.7	315	23	48	64	282	12.0	323	23	51	64
50	22.5	4.4	10.2	70	274	11.8	315	23	52	64	291	12.2	333	24	57	65	299	12.5	341	24	60	65
				80	284	12.1	325	23	61	64	301	12.5	344	24	67	65	309	12.8	353	24	70	66
				90	287	12.2	329	23	71	65	304	12.6	347	24	76	65	312	12.9	356	24	80	66
				50	247	11.1	284	22	34	59	262	11.4	301	23	38	60	269	11.7	309	23	41	60
				60	266	11.6	306	23	42	60	283	12.0	324	24	47	61	290	12.3	332	24	50	61
	30.0	7.0	16.1	70	280	12.0	321	23	51	61	297	12.4	339	24	57	61	304	12.6	347	24	60	62
				80	288	12.2	329	24	61	61	305	12.6	348	24	66	62	313	12.9	357	24	70	62
				90	290	12.3	332	24	71	61	307	12.7	351	24	76	62	315	13.0	360	24	79	62
				50	213	12.7	256	17	36	87	225	13.0	269	17	40	88	231	13.2	276	17	42	88
				60	239	13.4	285	18	44	89	253	13.7	300	19	49	90	260	13.9	307	19	51	90
	15.0	2.2	5.0	70	258	13.9	306	19	53	90	274	14.3	322	19	58	91	281	14.5	330	19	61	92
				80	271	14.3	320	19	62	91	287	14.6	337	20	67	92	294	14.9	345	20	70	93
				90	275	14.6	325	19	72	92	291	14.9	342	20	77	93	299	15.1	351	20	80	93
				50	222	13.1	266	17	35	82	235	13.3	280	18	40	82	241	13.5	287	18	42	83
				60	246	13.7	293	18	44	83	261	13.9	309	19	48	84	268	14.2	316	19	51	84
70	22.5	4.1	9.6	70	264	14.1	312	19	52	84	279	14.4	328	19	58	85	287	14.7	337	19	60	85
				80	274	14.5	324	19	62	84	291	14.8	341	20	67	85	299	15.1	350	20	70	86
				90	278	14.7	329	19	71	85	295	15.0	346	20	77	85	303	15.3	355	20	80	86
				50	231	13.4	277	17	35	79	245	13.6	291	18	39	80	251	13.9	298	18	42	80
				60	253	13.9	301	18	43	80	268	14.2	317	19	48	81	275	14.4	325	19	51	81
	30.0	6.5	15.1	70	269	14.4	318	19	52	81	285	14.6	335	19	57	81	292	14.9	343	20	60	81
				80	279	14.7	329	19	61	81	295	15.0	346	20	67	82	303	15.2	354	20	70	82
				90	281	14.9	332	19	71	81	298	15.2	350	20	77	82	306	15.4	358	20	80	82
				50	201	16.0	256	13	37	107	205	16.0	260	13	41	107	209	16.3	264	13	43	108
				60	230	16.4	286	14	45	109	234	16.5	291	14	50	109	239	16.7	296	14	52	110
	15.0	2.0	4.7	70	253	16.9	310	15	53	111	258	17.0	316	15	59	111	263	17.3	322	15	61	111
				80	269	17.4	328	15	62	112	275	17.5	334	16	68	112	280	17.8	340	16	71	113
				90	278	17.9	339	15	71	113	284	18.0	345	16	77	113	289	18.3	352	16	80	113
				50	210	16.3	265	13	36	102	214	16.4	270	13	40	102	218	16.6	275	13	43	102
				60	237	16.7	294	14	44	103	242	16.8	299	14	49	103	247	17.1	305	14	52	104
90	22.5	3.9	8.9	70	259	17.2	317	15	53	104	264	17.2	323	15	58	104	269	17.5	329	15	61	105
				80	273	17.6	334	16	62	105	279	17.7	340	16	68	105	285	18.0	346	16	71	105
				90	282	18.1	343	16	71	105	288	18.2	350	16	77	106	293	18.5	356	16	80	106
				50	219	16.7	276	13	35	99	223	16.7	280	13	40	99	227	17.0	285	13	42	100
				60	245	17.0	303	14	44	100	250	17.1	308	15	49	100	254	17.4	314	15	52	100
	30.0	6.1	14.1	70	264	17.4	324	15	52	101	270	17.5	329	15	58	101	275	17.8	336	15	61	101
				80	278	17.9	339	16	61	101	284	17.9	345	16	67	101	289	18.2	352	16	70	102
				90	286	18.3	348	16	71	102	291	18.4	354	16	77	102	297	18.7	361	16	80	102
				50	180	19.7	247	9	38	126	182	19.7	249	9	42	127	184	20.1	252	9	44	127
				60	210	19.7	278	11	46	129	212	19.8	280	11	51	129	214	20.2	283	11	53	129
	15.0	1.9	4.4	70	237	20.1	306	12	54	130	239	20.2	308	12	59	131	242	20.6	312	12	62	131
				80	259	20.8	330	12	63	132	261	20.9	333	13	68	132	264	21.3	337	12	71	132
				90	276	21.7	350	13	72	133	279	21.8	353	13	78	134	281	22.3	357	13	81	134
				50	188	20.1	257	9	37	121	190	20.2	259	9	42	121	192	20.6	262	9	44	122
				60	217	20.1	286	11	46	123	220	20.2	289	11	50	123	222	20.6	292	11	53	123
110	22.5	3.6	8.3	70	243	20.4	313	12	54	124	245	20.5	315	12	59	124	248	20.9	319	12	62	124
				80	264	21.1	336	13	62	125	266	21.1	339	13	68	125	269	21.6	343	12	71	125
				90	281	22.0	356	13	71	126	284	22.1	359	13	77	126	286	22.6	363	13	80	126
				50	196	20.5	267	10	37	119	198	20.6	268	10	41	119	200	21.0	272	10	43	119
				60	225	20.5	295	11	45	120	227	20.5	297	11	50	120	229	21.0	301	11	52	120
	30.0	5.7	13.1	70	249	20.8	320	12	53	121	251	20.8	322	12	59	121	254	21.3	326	12	62	121
				80	269	21.4	342	13	62	121	272	21.5	345	13	68	122	274	21.9	349	13	71	122
				90	285	22.3	361	13	71	122	288	22.4	365	13	77	122	291	22.9	369	13	80	122
				50	168	22.0	244	8	39	136	170	22.1	245	8	42	136	171	22.5	248	8	44	137
				60	194	22.6	271	9	47	138	196	22.7	274	9	51	138	198	23.1	277	9	53	138
	15.0	1.8	4.2	70	220	23.2	300	10	55	140	223	23.3	302	10	60	140	225	23.8	306	9	63	140
				80	246	23.8	327	10	64	142	248	23.9	330	10	69	142	251	24.4	334	10	72	142
				90	270	24.4	353	11	72	144	273	24.5	356	11	78	144	276	25.1	361	11	81	144
				50	177	22.5	254	8	38	131	178	22.6	255	8	42	131	180	23.0	259	8	44	132
				60	202	23.1	280	9	47	132	204	23.1	283	9	51	133	206	23.6	286	9	53	133
120	22.5	3.5	8.0	70	227	23.7	307	10	55	134	229	23.7	310	10	60	134	231	24.2	314	10	62	134
				80	252	24.2	334	10	63	135	254	24.4	337	10	69	135	257	24.8	342	10	71	135
				90	276	24.9	361	11	72	136	278	24.9	363	11	78	136	282	25.5	369	11	81	136
				50	185	23.1	263	8	38	129	187	23.1	266	8	42	129	189	23.6	269	8	44	129
				60	209	23.6	289	9	46	130	211	23.6	292	9	51	130	213	24.1	296	9	53	130
	30.0	5.4	12.6	70	233	24.1	315	10	54	131	236	24.2	318	10	60	131	238	24.7	322	10	62	131
				80	257	24.6	341	10	63	131	260	24.8	344	10	68	131	263	25.3	349	10	71	132
				90	281	25.3	368	11	71	132	284	25.3	370	11	77	132	287	25.9	376	11	80	133

Flow rates are per circuit - dual compressor units have 2 circuits

20 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW240D Series - R410A **Magnum Series**
Full Load Heating (Two Compressors) **Water Source Heat Pump**

Source				Load	Load Flow 15 GPM						Load Flow 22.5 GPM						Load Flow 30 GPM					
EST	Flow	WPD		ELT	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				60	195	11.0	157	5.2	73	15	193	10.2	158	5.6	69	15	190	9.7	157	5.8	66	15
20	30.0	8.8	20.4	80	198	14.5	148	4.0	93	15	197	13.7	150	4.2	89	15	196	13.3	151	4.3	87	15
				100	194	18.6	130	3.0	113	16	192	17.7	132	3.2	109	16	191	17.3	132	3.2	106	16
				60	209	11.2	170	5.4	74	19	208	10.5	172	5.8	69	19	206	10.0	172	6.0	67	19
				80	212	14.5	163	4.3	94	19	212	13.8	165	4.5	89	19	211	13.4	166	4.6	87	19
	15.0	2.9	6.6	100	209	18.6	146	3.3	114	20	208	17.7	147	3.4	109	20	207	17.3	148	3.5	107	20
				120	203	23.5	123	2.5	134	22	200	22.4	124	2.6	129	22	199	21.8	124	2.7	127	22
				60	232	11.7	193	5.8	75	21	233	11.0	195	6.2	70	21	232	10.7	196	6.4	68	21
				80	233	14.8	183	4.6	96	22	234	14.0	186	4.9	90	22	233	13.7	187	5.0	88	22
30	22.5	5.4	12.6	100	229	18.9	164	3.6	115	23	228	18.0	167	3.7	110	23	227	17.5	167	3.8	108	23
				120	220	23.7	139	2.7	135	24	217	22.6	140	2.8	130	24	216	22.1	140	2.9	127	24
				60	224	11.6	184	5.7	75	24	224	10.9	187	6.0	70	24	223	10.5	187	6.2	67	24
				80	225	14.8	174	4.5	95	24	225	14.1	177	4.7	90	24	224	13.7	178	4.8	87	24
	30.0	8.6	19.8	100	219	18.9	155	3.4	115	25	218	18.0	157	3.5	110	25	217	17.5	157	3.6	107	25
				120	209	23.7	128	2.6	134	26	206	22.6	129	2.7	129	26	205	22.0	129	2.7	127	26
				60	237	11.7	197	5.9	76	27	238	11.1	200	6.3	71	27	238	10.8	201	6.5	68	27
				80	239	14.8	189	4.7	96	27	240	14.1	192	5.0	91	27	240	13.8	193	5.1	88	27
	15.0	2.4	5.5	100	236	18.9	171	3.7	116	29	235	18.0	173	3.8	110	28	234	17.5	174	3.9	108	28
				120	229	23.8	148	2.8	135	30	226	22.7	149	2.9	130	30	225	22.2	149	3.0	127	30
				60	277	12.4	235	6.5	78	30	279	11.9	239	6.9	72	29	280	11.7	240	7.0	69	29
				80	277	15.4	224	5.3	98	30	278	14.7	228	5.6	92	30	278	14.3	229	5.7	89	30
40	22.5	4.6	10.5	100	270	19.3	204	4.1	118	31	270	18.4	207	4.3	112	31	269	18.0	208	4.4	109	31
				120	260	24.3	178	3.1	137	32	258	23.2	179	3.3	131	32	256	22.6	179	3.3	129	32
				60	253	12.1	212	6.1	77	33	254	11.5	215	6.5	71	33	254	11.2	216	6.7	68	33
				80	252	15.2	201	4.9	97	33	253	14.4	204	5.1	91	33	253	14.1	205	5.3	88	33
	30.0	7.2	16.6	100	246	19.2	180	3.8	116	34	245	18.3	182	3.9	111	34	244	17.8	183	4.0	108	34
				120	234	24.0	152	2.9	136	35	231	22.9	153	3.0	130	35	230	22.3	153	3.0	128	35
				60	266	12.2	224	6.4	78	35	268	11.7	228	6.7	72	35	268	11.4	229	6.9	69	35
				80	267	15.2	216	5.2	98	36	269	14.5	219	5.4	92	35	269	14.2	220	5.6	89	35
	15.0	2.3	5.4	100	262	19.2	197	4.0	117	37	262	18.3	199	4.2	112	37	261	17.8	200	4.3	109	37
				120	256	24.3	173	3.1	137	38	253	23.1	175	3.2	131	38	251	22.5	175	3.3	128	38
				60	281	12.5	238	6.6	79	39	283	12.1	242	6.9	73	39	284	11.8	244	7.1	69	39
				80	281	15.5	228	5.3	99	40	282	14.8	231	5.6	93	40	282	14.5	233	5.7	89	40
50	22.5	4.4	10.2	100	274	19.5	208	4.1	118	41	274	18.6	210	4.3	112	41	273	18.1	211	4.4	109	41
				120	264	24.4	181	3.2	138	42	262	23.3	182	3.3	132	42	260	22.7	182	3.4	129	42
				60	296	12.8	252	6.8	80	42	299	12.4	257	7.1	73	41	300	12.1	258	7.2	70	41
				80	294	15.8	240	5.5	100	42	296	15.1	244	5.7	93	42	296	14.7	246	5.9	90	42
	30.0	7.0	16.1	100	286	19.7	218	4.2	119	43	286	18.8	221	4.4	113	43	285	18.4	223	4.6	110	43
				120	272	24.6	188	3.2	138	44	270	23.4	190	3.4	132	44	268	22.8	190	3.4	129	44
				60	280	12.6	237	6.5	79	44	282	12.1	241	6.9	73	44	282	11.8	242	7.0	69	44
				80	283	15.4	230	5.4	99	45	285	14.7	234	5.7	93	44	285	14.4	236	5.8	90	44
	15.0	2.3	5.2	100	282	19.4	216	4.3	119	46	282	18.5	219	4.5	113	45	282	18.0	220	4.6	109	45
				120	283	24.6	199	3.4	139	47	280	23.5	200	3.5	132	47	279	22.9	201	3.6	129	47
				60	297	12.9	253	6.7	80	49	299	12.4	257	7.1	73	49	300	12.2	258	7.2	70	49
				80	298	15.7	245	5.6	100	49	300	15.1	249	5.8	93	49	300	14.7	250	6.0	90	49
60	22.5	4.3	9.9	100	296	19.7	229	4.4	120	50	296	18.8	232	4.6	113	50	295	18.4	233	4.7	110	50
				120	293	24.9	208	3.4	140	51	291	23.7	210	3.6	133	51	289	23.1	210	3.7	130	51
				60	313	13.2	268	6.9	81	51	317	12.8	273	7.3	74	51	317	12.6	275	7.4	71	51
				80	314	16.1	259	5.7	101	51	316	15.5	263	6.0	94	51	316	15.1	264	6.1	91	51
	30.0	6.7	15.6	100	310	20.1	241	4.5	121	52	310	19.2	244	4.7	114	52	310	18.7	246	4.8	110	52
				120	304	25.2	218	3.5	140	53	301	23.9	220	3.7	133	53	300	23.3	220	3.8	130	53
				60	293	12.9	249	6.7	80	53	296	12.4	254	7.0	73	53	297	12.2	255	7.1	70	53
				80	299	15.6	246	5.6	100	54	301	15.0	250	5.9	93	53	301	14.6	251	6.0	90	53
	15.0	2.2	5.0	100	302	19.6	235	4.5	120	54	302	18.7	238	4.7	113	54	302	18.2	239	4.9	110	54
				120	310	25.0	224	3.6	141	55	308	23.8	226	3.8	134	55	306	23.2	227	3.9	130	55
				60	312	13.3	267	6.9	81	58	315	12.8	271	7.2	74	58	316	12.6	273	7.4	71	58
				80	316	16.0	261	5.8	101	58	318	15.4	266	6.1	94	58	319	15.0	267	6.2	91	58
70	22.5	4.1	9.6	100	318	20.0	249	4.7	121	59	318	19.1	253	4.9	114	59	318	18.7	254	5.0	111	59
				120	323	25.4	236	3.7	142	60	321	24.2	238	3.9	134	59	319	23.6	238	4.0	131	59
				60	330	13.6	284	7.1	82	61	334	13.2	289	7.4	75	60	335	13.0	291	7.6	71	60
				80	333	16.4	277	5.9	102	61	336	15.8	282	6.2	95	61	336	15.5	284	6.4	91	61
	30.0	6.5	15.1	100	334	20.5	264	4.8	122	61	334	19.6	267	5.0	115	61	334	19.1	269	5.1	111	61
				120	336	25.8	248	3.8	142	62	334	24.6	250	4.0	135	62	332	23.9	250	4.1	131	62
				60	307	13.2	262	6.8	80	63	310	12.8	266	7.1	74	62	311	12.5	268	7.3	70	62
				80	315	15.8	261	5.8	101	63	317	15.2	265	6.1	94	62	318	14.9	267	6.3	91	62
	15.0	2.1	4.9	100	321	19.8	254	4.8	121	63	322	18.9	258	5.0	114	63	322	18.4	259	5.1	111	63
				120	337	25.5	250	3.9	142	63	335	24.2	253	4.1	135	63	333	23.6	253	4.1	131	63
				60	327	13.6	281	7.0	82	68	331	13.2	286	7.4	75	67	332	13.0	288	7.5	71	67
				80	333	16.3	278	6.0	102	68	336	15.7	283	6.3	95	67	337	15.3	285	6.4	91	67
80	22.5	4.0	9.2	100	339	20.3	270	4.9	123	68	341	19.4	274	5.1	115	68	340	19.0	276	5.3	111	68
				120	352	26.0	264	4.0	143	68	350	24.7	266	4.2	136	68	349	24.1	267	4.2	132	68
				60	347	14.0	300	7.3	83	70	352	13.6	305	7.6	76	70	353	13.4	307	7.7	72	70
				80	353	16.8	295	6.1	104	70	356	16.2	300	6.4	96	70	356	15.8	302	6.6	92	70
	30.0	6.3	14.6	100	358	20.9	287	5.0	124	70	359	20.0	291	5.3	116	70	359	19.5	292	5.4	112	70
				120	368	26.5	277	4.1	145	71	366	25.2	280	4.3	136	71	364	24.6	280	4.3	132	71

Flow rates are per circuit - dual compressor units have 2 circuits

20 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____ Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW240D Series - R410A **Magnum Series**
Part Load Cooling (One Compressor) **Water Source Heat Pump**

Source				Load	Load Flow 15 GPM						Load Flow 22.5 GPM						Load Flow 30 GPM					
EST	Flow	WPD		ELT	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
50	15.0	2.3	5.4	50	125	5.2	143	24	33	69	133	5.4	152	25	38	70	137	5.5	156	25	41	71
				60	139	5.6	158	25	42	71	147	5.8	167	25	47	72	151	5.9	171	26	50	73
				70	148	5.8	168	25	50	72	157	6.0	178	26	56	74	161	6.2	182	26	59	74
				80	154	6.0	174	26	59	73	163	6.2	184	26	66	75	167	6.4	189	26	69	75
				90	156	6.1	177	26	69	74	165	6.3	187	26	75	75	170	6.4	192	26	79	76
	22.5	4.4	10.2	50	131	5.4	149	24	33	63	139	5.6	158	25	38	64	143	5.7	162	25	40	64
				60	143	5.7	162	25	41	64	151	5.9	171	26	47	65	155	6.0	176	26	50	66
				70	151	5.9	171	25	50	65	160	6.1	181	26	56	66	164	6.3	185	26	59	66
				80	156	6.1	177	26	59	66	165	6.3	187	26	65	67	169	6.4	191	26	69	67
				90	158	6.1	179	26	69	66	167	6.3	189	26	75	67	171	6.5	193	26	79	67
	30.0	7.0	16.1	50	136	5.5	155	25	32	60	144	5.7	164	25	37	61	148	5.9	168	25	40	61
				60	146	5.8	166	25	40	61	155	6.0	176	26	46	62	159	6.2	180	26	49	62
				70	154	6.0	174	26	50	62	163	6.2	184	26	56	62	167	6.3	189	26	59	63
				80	158	6.1	179	26	59	62	167	6.4	189	26	65	63	171	6.5	194	26	69	63
				90	159	6.2	180	26	69	62	168	6.4	190	26	75	63	173	6.5	195	26	78	63
70	15.0	2.2	5.0	50	118	6.3	139	19	34	89	124	6.4	146	19	39	89	127	6.5	150	20	42	90
				60	132	6.6	154	20	42	91	139	6.8	162	21	48	92	143	6.9	166	21	50	92
				70	142	6.9	166	21	51	92	150	7.1	174	21	57	93	154	7.2	179	21	60	94
				80	149	7.1	173	21	60	93	157	7.3	182	22	66	94	161	7.4	187	22	69	95
				90	151	7.2	176	21	70	93	160	7.4	185	22	76	95	164	7.5	190	22	79	95
	22.5	4.1	9.6	50	122	6.4	144	19	34	83	129	6.6	152	20	38	83	133	6.7	156	20	41	84
				60	136	6.7	159	20	42	84	143	6.9	167	21	47	85	147	7.0	171	21	50	85
				70	145	7.0	169	21	51	85	153	7.1	178	21	56	86	157	7.3	182	22	60	86
				80	151	7.2	175	21	60	86	160	7.3	185	22	66	86	164	7.5	189	22	69	87
				90	153	7.3	178	21	70	86	162	7.5	187	22	76	87	166	7.6	192	22	79	87
	30.0	6.5	15.1	50	127	6.6	150	19	33	80	135	6.7	158	20	38	81	138	6.8	161	20	41	81
				60	139	6.9	163	20	41	81	147	7.0	171	21	47	81	151	7.1	176	21	50	82
				70	148	7.1	172	21	50	81	156	7.3	181	22	56	82	160	7.4	186	22	59	82
				80	153	7.3	178	21	60	82	162	7.4	187	22	66	82	166	7.6	192	22	69	83
				90	154	7.4	180	21	69	82	163	7.5	189	22	75	83	168	7.7	194	22	79	83
90	15.0	2.0	4.7	50	111	7.8	138	14	35	108	113	7.8	140	15	40	109	115	7.9	143	15	42	109
				60	127	8.0	154	16	43	111	129	8.1	157	16	49	111	132	8.2	160	16	51	111
				70	139	8.3	167	17	51	112	142	8.3	170	17	57	113	145	8.5	174	17	60	113
				80	148	8.6	177	17	60	114	151	8.6	180	18	67	114	154	8.8	184	18	70	114
				90	153	8.8	183	17	70	114	156	8.9	186	18	76	115	159	9.0	190	18	79	115
	22.5	3.9	8.9	50	116	8.0	143	15	35	103	118	8.0	146	15	39	103	121	8.1	148	15	42	103
				60	131	8.2	159	16	43	104	134	8.2	162	16	48	104	136	8.4	164	16	51	105
				70	142	8.4	171	17	51	105	145	8.5	174	17	57	105	148	8.6	177	17	60	106
				80	150	8.7	180	17	60	106	154	8.7	183	18	66	106	156	8.9	187	18	70	107
				90	155	8.9	185	17	69	106	158	9.0	189	18	76	107	161	9.1	192	18	79	107
	30.0	6.1	14.1	50	121	8.2	149	15	34	100	123	8.2	151	15	39	100	125	8.3	154	15	42	100
				60	135	8.3	163	16	42	101	138	8.4	166	16	48	101	140	8.5	169	16	51	101
				70	146	8.6	175	17	51	102	148	8.6	178	17	57	102	151	8.7	181	17	60	102
				80	153	8.8	183	17	60	102	156	8.8	186	18	66	102	159	9.0	190	18	69	103
				90	157	9.0	188	17	69	103	160	9.1	191	18	76	103	163	9.2	195	18	79	103
110	15.0	1.9	4.4	50	100	9.6	133	10	37	128	101	9.6	134	11	41	128	102	9.8	136	10	43	128
				60	117	9.6	149	12	44	130	118	9.6	151	12	50	130	119	9.8	153	12	52	130
				70	131	9.8	165	13	53	132	132	9.9	166	13	58	132	134	10.1	168	13	61	132
				80	143	10.2	178	14	61	134	144	10.2	179	14	67	134	146	10.4	181	14	70	134
				90	152	10.7	189	14	70	135	154	10.7	190	14	76	135	155	10.9	193	14	80	136
	22.5	3.6	8.3	50	105	9.8	138	11	36	122	106	9.8	139	11	41	122	107	10.0	141	11	43	123
				60	120	9.8	154	12	44	124	122	9.8	155	12	49	124	123	10.0	157	12	52	124
				70	134	10.0	168	13	52	125	136	10.0	170	14	58	125	137	10.2	172	13	61	125
				80	146	10.3	181	14	61	126	147	10.4	182	14	67	126	149	10.6	185	14	70	126
				90	155	10.8	192	14	69	127	157	10.9	194	14	76	127	158	11.1	196	14	79	127
	30.0	5.7	13.1	50	109	10.0	143	11	35	120	110	10.0	144	11	40	120	111	10.2	146	11	43	120
				60	125	10.0	159	12	43	121	126	10.0	160	13	49	121	127	10.2	162	12	52	121
				70	137	10.2	172	14	52	121	139	10.2	174	14	58	122	140	10.4	176	13	61	122
				80	149	10.5	184	14	60	122	150	10.5	186	14	67	122	152	10.7	188	14	70	123
				90	157	11.0	195	14	69	123	159	11.0	197	14	76	123	161	11.2	199	14	79	123
120	15.0	1.8	4.2	50	94	10.7	131	9	37	137	95	10.7	132	9	42	138	96	10.9	133	9	44	138
				60	108	11.0	146	10	46	139	110	11.0	147	10	50	140	111	11.2	149	10	53	140
				70	123	11.3	161	11	54	142	124	11.3	163	11	59	142	125	11.6	165	11	62	142
				80	137	11.6	176	12	62	144	138	11.7	178	12	68	144	139	11.9	180	12	71	144
				90	150	12.0	191	13	70	145	151	12.0	192	13	77	146	153	12.3	195	12	80	146
	22.5	3.5	8.0	50	99	10.9	136	9	37	132	100	11.0	137	9	41	132	101	11.2	139	9	43	132
				60	112	11.2	151	10	45	133	114	11.3	152	10	50	134	115	11.5	154	10	52	134
				70	126	11.5	165	11	53	135	127	11.6	167	11	59	135	129	11.8	169	11	61	135
				80	140	11.8	180	12	61	136	141	11.9	182	12	67	136	143	12.2	184	12	70	136
				90	153	12.2	194	13	70	137	154	12.2	196	13	76	137	156	12.5	199	12	80	138
	30.0	5.4	12.6	50	103	11.2	142	9	36	129	105	11.2	143	9	41	130	106	11.5	145	9	43	130
				60	116	11.5	156	10	44	130	118	11.5	157	10	50	130	119	11.8	159	10	52	131
				70	130	11.7	170	11	53	131	131	11.8	171	11	58	131	132	12.1	174	11	61	132
				80	143	12.1	184	12	61	132	144	12.1	186	12	67	132	146	12.4	188	12	70	133
				90	156	12.4	198	13	69	133	157	12.4	200	13	76	133	159	12.7	203	13	79	134

Flow rates are per circuit - dual compressor units have 2 circuits

20 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW240D Series - R410A **Magnum Series**
Part Load Heating (One Compressor) **Water Source Heat Pump**

Source				Load	Load Flow 15 GPM						Load Flow 22.5 GPM						Load Flow 30 GPM					
EST	Flow	WPD		ELT	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				60	107	5.4	88	5.8	74	14	106	5.0	89	6.2	69	14	105	4.8	89	6.4	67	14
20	30.0	8.8	20.4	80	107	7.0	83	4.5	94	14	107	6.6	84	4.7	90	14	107	6.4	85	4.9	87	14
				100	104	8.9	74	3.4	114	15	104	8.5	75	3.6	109	15	103	8.3	75	3.6	107	15
				60	114	5.5	95	6.1	75	17	114	5.1	97	6.5	70	17	113	4.9	96	6.7	68	17
				80	115	7.0	91	4.8	95	18	115	6.6	92	5.1	90	18	115	6.5	93	5.2	88	18
	15.0	2.9	6.6	100	113	8.9	82	3.7	115	19	112	8.5	83	3.9	110	19	112	8.3	83	3.9	107	19
				120	109	11.2	71	2.8	135	21	108	10.7	71	2.9	130	21	107	10.5	71	3.0	127	21
				60	127	5.7	107	6.5	77	20	127	5.4	109	6.9	71	20	127	5.3	109	7.1	68	20
				80	126	7.1	102	5.2	97	21	127	6.8	104	5.5	91	21	127	6.6	104	5.6	88	21
30	22.5	5.4	12.6	100	123	9.1	92	4.0	116	22	123	8.6	93	4.2	111	22	122	8.4	94	4.3	108	22
				120	118	11.4	80	3.1	136	23	117	10.9	80	3.2	130	23	116	10.6	80	3.2	128	23
				60	122	5.6	103	6.4	76	23	123	5.4	104	6.7	71	23	122	5.2	105	6.9	68	23
				80	122	7.1	97	5.0	96	24	122	6.8	99	5.3	91	23	122	6.6	99	5.4	88	23
	30.0	8.6	19.8	100	118	9.1	87	3.8	116	24	118	8.6	88	4.0	110	24	117	8.4	88	4.1	108	24
				120	113	11.3	74	2.9	135	25	111	10.8	74	3.0	130	25	110	10.6	74	3.1	127	25
				60	130	5.7	110	6.6	77	25	130	5.5	112	7.0	72	25	130	5.3	112	7.2	69	25
				80	130	7.2	105	5.3	97	26	130	6.8	107	5.6	92	26	130	6.7	107	5.7	89	26
	15.0	2.4	5.5	100	127	9.1	96	4.1	117	27	127	8.6	97	4.3	111	27	126	8.4	97	4.4	108	27
				120	123	11.4	84	3.2	136	29	122	10.9	85	3.3	131	29	121	10.6	85	3.3	128	29
				60	151	6.1	130	7.2	80	28	152	5.9	132	7.6	74	28	153	5.8	133	7.8	70	28
				80	150	7.4	125	5.9	100	29	151	7.1	127	6.2	93	29	151	7.0	127	6.3	90	29
40	22.5	4.6	10.5	100	146	9.3	114	4.6	119	30	146	8.9	115	4.8	113	30	145	8.7	116	4.9	110	30
				120	141	11.7	101	3.5	139	31	139	11.1	101	3.7	132	31	138	10.8	101	3.7	129	31
				60	138	5.9	118	6.8	78	32	139	5.7	120	7.2	72	32	139	5.5	120	7.4	69	32
				80	137	7.3	112	5.5	98	33	137	7.0	113	5.8	92	32	137	6.8	114	5.9	89	32
	30.0	7.2	16.6	100	132	9.2	101	4.2	118	33	132	8.8	102	4.4	112	33	132	8.6	102	4.5	109	33
				120	126	11.5	87	3.2	137	34	125	11.0	87	3.3	131	34	124	10.7	87	3.4	128	34
				60	145	6.0	124	7.1	79	33	146	5.8	127	7.4	73	33	147	5.7	127	7.6	70	33
				80	145	7.4	120	5.8	99	34	146	7.1	122	6.1	93	34	146	6.9	122	6.2	90	34
	15.0	2.3	5.4	100	142	9.2	110	4.5	119	35	141	8.8	111	4.7	113	35	141	8.6	112	4.8	109	35
				120	138	11.7	98	3.5	138	37	137	11.1	99	3.6	132	37	136	10.8	99	3.7	129	37
				60	153	6.2	132	7.3	80	38	155	5.9	134	7.6	74	38	155	5.8	135	7.8	70	38
				80	152	7.5	126	5.9	100	39	153	7.2	128	6.2	94	39	153	7.0	129	6.4	90	39
50	22.5	4.4	10.2	100	148	9.4	116	4.6	120	40	148	8.9	117	4.8	113	40	147	8.7	118	4.9	110	40
				120	142	11.7	102	3.6	139	41	141	11.2	103	3.7	133	41	140	10.9	103	3.8	129	41
				60	161	6.3	140	7.5	81	41	163	6.1	142	7.8	74	41	163	6.0	143	8.0	71	40
				80	159	7.7	133	6.1	101	41	160	7.4	135	6.4	94	41	161	7.2	136	6.5	91	41
	30.0	7.0	16.1	100	154	9.5	122	4.8	121	42	154	9.1	123	5.0	114	42	154	8.9	124	5.1	110	42
				120	147	11.8	107	3.6	140	43	146	11.3	107	3.8	133	43	145	11.0	107	3.9	130	43
				60	152	6.2	131	7.2	80	42	154	6.0	134	7.6	74	42	154	5.8	134	7.7	70	42
				80	153	7.5	128	6.0	100	43	154	7.2	130	6.3	94	43	155	7.0	131	6.5	90	43
	15.0	2.3	5.2	100	152	9.3	120	4.8	120	44	152	8.9	122	5.0	114	44	152	8.7	122	5.1	110	44
				120	153	11.9	112	3.8	140	45	151	11.3	113	3.9	133	45	151	11.0	113	4.0	130	45
				60	161	6.4	140	7.4	82	48	163	6.1	142	7.8	74	47	164	6.0	143	7.9	71	47
				80	162	7.7	135	6.2	102	48	163	7.4	138	6.5	94	48	163	7.2	138	6.6	91	48
60	22.5	4.3	9.9	100	160	9.5	127	4.9	121	49	160	9.1	129	5.2	114	49	160	8.9	129	5.3	111	48
				120	158	12.0	118	3.9	141	50	157	11.4	118	4.0	134	49	156	11.1	118	4.1	130	49
				60	170	6.5	148	7.7	83	50	172	6.3	151	8.0	75	50	173	6.2	152	8.1	72	50
				80	170	7.8	143	6.4	103	50	171	7.5	146	6.7	95	50	171	7.4	146	6.8	91	50
	30.0	6.7	15.6	100	167	9.7	134	5.0	122	51	168	9.3	136	5.3	115	51	167	9.1	136	5.4	111	51
				120	164	12.1	123	4.0	142	52	163	11.5	124	4.1	134	52	162	11.3	124	4.2	131	52
				60	160	6.3	138	7.4	81	52	161	6.1	140	7.7	74	51	162	6.0	141	7.9	71	51
				80	162	7.6	136	6.3	102	52	163	7.3	138	6.6	94	52	163	7.1	139	6.7	91	51
	15.0	2.2	5.0	100	163	9.5	131	5.1	122	53	163	9.0	132	5.3	115	52	163	8.8	133	5.4	111	52
				120	168	12.1	126	4.1	142	53	166	11.5	127	4.2	135	53	165	11.2	127	4.3	131	53
				60	170	6.5	147	7.6	83	57	172	6.3	150	7.9	75	57	172	6.2	151	8.1	71	57
				80	171	7.8	145	6.4	103	57	173	7.5	147	6.7	95	57	173	7.4	148	6.9	92	57
70	22.5	4.1	9.6	100	172	9.7	139	5.2	123	58	172	9.3	140	5.4	115	58	172	9.1	141	5.6	111	57
				120	175	12.3	133	4.2	143	58	173	11.7	133	4.3	135	58	172	11.4	134	4.4	131	58
				60	180	6.7	157	7.8	84	60	182	6.5	160	8.2	76	59	183	6.5	161	8.3	72	59
				80	180	8.0	153	6.6	104	60	182	7.7	156	6.9	96	60	182	7.6	157	7.1	92	60
	30.0	6.5	15.1	100	181	9.9	147	5.3	124	60	181	9.5	148	5.6	116	60	181	9.3	149	5.7	112	60
				120	182	12.5	139	4.3	144	61	181	11.9	140	4.5	136	61	180	11.6	140	4.5	132	61
				60	167	6.5	145	7.5	82	61	169	6.3	147	7.8	75	60	169	6.2	148	8.0	71	60
				80	171	7.7	144	6.5	103	61	172	7.4	147	6.8	95	60	172	7.3	148	6.9	91	60
	15.0	2.1	4.9	100	174	9.6	141	5.3	123	61	174	9.2	143	5.6	115	61	174	8.9	143	5.7	112	61
				120	182	12.3	140	4.3	144	61	181	11.7	141	4.5	136	61	180	11.4	141	4.6	132	61
				60	178	6.7	155	7.7	84	66	180	6.5	158	8.1	76	66	181	6.4	159	8.2	72	66
				80	181	8.0	154	6.6	104	66	182	7.7	156	7.0	96	66	183	7.5	157	7.1	92	66
80	22.5	4.0	9.2	100	184	9.9	150	5.5	124	67	184	9.4	152	5.7	116	66	184	9.2	153	5.8	112	66
				120	191	12.6	148	4.4	145	67	190	12.0	149	4.6	137	67	189	11.7	149	4.7	133	67
				60	189	6.9	165	8.0	85	69	191	6.8	168	8.3	77	69	192	6.7	169	8.5	73	69
				80	191	8.2	163	6.8	105	69	193	7.9	166	7.1	97	69	193	7.8	167	7.3	93	69
	30.0	6.3	14.6	100	194	10.2	159	5.6	126	69	194	9.7	161	5.9	117	69	194	9.5	162	6.0	113	69
				120	199	12.9	155	4.5	147	70	198	12.2	156	4.7	138	70	197	11.9	157	4.8	133	70

Flow rates are per circuit - dual compressor units have 2 circuits

20 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

MW240D Series - R410A **Magnum Series**
Performace ISO 13256-2 **Water Source Heat Pump**

Loading/ Capacity	Water Loop				Ground Water				Ground Loop			
	Heating		Cooling		Heating		Cooling		Heating		Cooling	
	104°F ELT 68°F EST		53.6°F ELT 86°F EST		104°F ELT 50°F EST		53.6°F ELT 59°F EST		104°F ELT 32°F EST Full 41°F EST Part		53.6°F ELT 77°F EST Full 68°F EST Part	
	Mbtuh	COP	Mbtuh	EER	MBtuh	COP	Mbtuh	EER	Mbtuh	COP	Mbtuh	EER
Full	328	4.9	242	14.8	282	4.3	269	21.1	220	3.52	252	16.8
Part	178	5.4	133	16.6	152	4.8	148	23.2	132	4.34	153	25.9

Electrical Specification

Voltage	Elect. Symbol	Compressor*		Total Unit FLA	1 Supply Circ	
		RLA	LRA		Min. Ampacity*	Max. Fuse/ HACR*
208/230-3-60	2	35.2	250	70.4	79.2	110
460-3-60	3	19.2	140	38.4	43.2	60
575-3-60	4	14.5	100	29.0	32.6	45

**Where calculations are based on:*
MCA = 1.25 x RLA compressor + FLA other motors
MOP = 2.25 x RLA largest compressor + 1.00 x FLA other motors.
Ensure that all loads on the supply line are added into the equations above if some of the cells in the above table are blank

HACR circuit breaker for use in USA only. All fuses Class RK-5
Ratings are for each compressor - unit supplied with two
Ratings for pumps are per circuit - dual compressor units have 2 circuits
2 Supply Circuit - Two power feeds / breakers are required for each compressor

GeoFurnace works continually to improve its products. As a result, the design and specifications of each product at the time of order may be changed without notice. Please contact GeoFurnace at 1-605-854-9205 for latest design and specifications. Purchaser's approval of this data set signifies that the equipment is acceptable under the provisions of the job specification. Statements and other information contained herein are not express warranties and do not form the basis of any contract between the parties, but are merely GeoFurnace's opinion or commendation of its products.

25 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW300D Series - R410A **Magnum Series**
Full Load Cooling (Two Compressors) **Water Source Heat Pump**

Source				Load	Load Flow 18.8 GPM						Load Flow 28.1 GPM						Load Flow 37.5 GPM					
EST	Flow	WPD		ELT	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				50	237	11.2	275	21	37	65	257	11.9	298	22	41	66	267	12.2	309	22	43	66
				60	271	12.3	313	22	46	67	291	12.8	335	23	50	68	301	13.1	345	23	52	68
	18.8	2.4	5.6	70	294	13.0	338	23	54	68	314	13.4	360	24	59	69	325	13.7	372	24	61	70
				80	308	13.4	354	23	64	69	329	13.8	376	24	68	70	339	14.0	387	24	71	71
				90	314	13.6	360	23	73	69	335	14.0	383	24	78	70	345	14.2	394	24	81	71
				50	253	11.9	293	21	37	60	271	12.3	314	22	40	61	281	12.7	324	22	43	62
				60	281	12.7	324	22	45	62	301	13.1	345	23	49	62	311	13.4	357	23	52	63
50	28.1	3.9	8.9	70	301	13.2	346	23	54	62	322	13.6	368	24	59	63	332	13.9	379	24	61	63
				80	313	13.5	359	23	63	63	334	13.9	382	24	68	64	345	14.2	393	24	71	64
				90	318	13.7	365	23	73	63	339	14.0	387	24	78	64	349	14.3	398	24	81	64
				50	266	12.3	308	22	36	58	285	12.8	329	22	40	59	295	13.1	340	22	42	59
				60	291	13.0	335	22	45	59	311	13.4	357	23	49	60	321	13.7	368	23	51	60
	37.5	6.1	14.1	70	308	13.4	354	23	54	59	329	13.8	376	24	58	60	339	14.0	387	24	61	60
				80	318	13.6	365	23	63	60	339	14.0	387	24	68	60	350	14.3	398	24	71	61
				90	321	13.8	368	23	73	60	343	14.1	391	24	78	60	353	14.4	402	24	81	61
				50	242	15.0	293	16	37	86	256	15.2	308	17	41	86	264	15.5	317	17	43	87
				60	273	15.7	327	17	45	87	290	16.0	344	18	50	88	298	16.2	353	18	52	89
	18.8	2.3	5.3	70	297	16.3	352	18	54	89	315	16.6	372	19	59	90	324	16.8	381	19	61	90
				80	312	16.7	369	19	63	90	331	17.0	389	19	68	91	340	17.3	399	20	71	91
				90	318	17.0	376	19	73	90	337	17.3	396	20	78	91	347	17.5	406	20	81	92
				50	253	15.3	305	16	37	81	268	15.6	322	17	40	81	276	15.9	330	17	43	82
				60	282	16.0	337	18	45	82	300	16.3	355	18	49	83	308	16.5	364	19	52	83
70	28.1	3.6	8.4	70	303	16.5	360	18	54	83	322	16.8	379	19	59	83	331	17.1	389	19	61	84
				80	317	16.9	374	19	63	83	336	17.2	394	20	68	84	345	17.4	405	20	71	84
				90	322	17.2	381	19	73	84	341	17.4	400	20	78	84	351	17.6	411	20	81	85
				50	264	15.8	318	17	36	78	280	16.0	335	18	40	79	288	16.2	343	18	42	79
				60	291	16.3	347	18	45	79	309	16.5	365	19	49	80	318	16.8	375	19	52	80
	37.5	5.7	13.2	70	310	16.7	367	19	54	80	329	17.0	387	19	58	80	338	17.2	397	20	61	81
				80	322	17.1	380	19	63	80	341	17.3	401	20	68	81	350	17.6	410	20	71	81
				90	326	17.3	385	19	73	80	345	17.5	405	20	78	81	355	17.8	415	20	81	81
				50	236	18.8	300	13	37	106	241	18.8	305	13	41	106	245	19.1	310	13	43	107
				60	270	19.2	336	14	46	108	275	19.3	341	14	50	108	281	19.6	348	14	53	109
	18.8	2.1	4.9	70	297	19.8	364	15	54	109	303	19.8	371	15	59	110	309	20.2	378	15	62	110
				80	316	20.3	386	16	63	111	323	20.4	393	16	69	111	329	20.7	400	16	71	111
				90	327	20.9	398	16	73	111	334	20.9	405	16	78	112	341	21.3	413	16	81	112
				50	246	19.1	312	13	37	101	252	19.2	317	13	41	101	257	19.5	323	13	43	101
				60	279	19.6	346	14	45	102	285	19.6	352	14	50	103	290	20.0	358	15	52	103
90	28.1	3.4	7.8	70	304	20.1	373	15	54	103	311	20.1	379	15	59	103	316	20.5	386	15	62	104
				80	322	20.6	392	16	63	104	329	20.6	399	16	68	104	335	20.9	406	16	71	104
				90	332	21.1	403	16	72	104	339	21.1	411	16	78	105	345	21.5	418	16	81	105
				50	257	19.6	324	13	36	99	263	19.6	329	13	41	99	268	19.9	335	13	43	99
				60	288	19.9	356	14	45	99	294	20.0	362	15	50	100	300	20.3	369	15	52	100
	37.5	5.3	12.3	70	311	20.3	381	15	53	100	317	20.4	387	16	59	100	324	20.7	394	16	61	101
				80	327	20.8	398	16	63	101	334	20.8	405	16	68	101	341	21.2	413	16	71	101
				90	336	21.3	409	16	72	101	343	21.3	416	16	78	101	350	21.7	424	16	81	101
				50	215	22.9	293	9	39	126	217	22.9	295	9	42	126	219	23.4	299	9	44	126
				60	250	23.0	328	11	47	128	252	23.1	331	11	51	128	255	23.5	335	11	53	128
	18.8	2.0	4.6	70	281	23.4	361	12	55	129	284	23.5	364	12	60	129	287	24.0	368	12	62	130
				80	307	24.2	389	13	64	131	310	24.2	392	13	69	131	313	24.7	397	13	72	131
				90	326	25.2	412	13	73	132	329	25.3	416	13	78	132	332	25.8	420	13	81	132
				50	225	23.4	304	10	38	121	227	23.4	306	10	42	121	229	23.9	311	10	44	121
				60	258	23.4	338	11	46	122	261	23.5	341	11	51	122	264	24.0	346	11	53	122
110	28.1	3.1	7.3	70	288	23.8	369	12	55	123	291	23.9	372	12	60	123	294	24.4	377	12	62	123
				80	313	24.5	396	13	63	124	315	24.5	399	13	69	124	319	25.0	404	13	71	124
				90	332	25.5	419	13	72	125	335	25.6	422	13	78	125	338	26.1	427	13	81	125
				50	234	23.9	316	10	38	118	236	23.9	318	10	42	118	239	24.5	322	10	44	119
				60	267	23.8	348	11	46	119	270	23.9	351	11	50	119	272	24.4	355	11	53	119
	37.5	5.0	11.4	70	295	24.1	377	12	54	120	298	24.2	380	12	59	120	301	24.7	385	12	62	120
				80	318	24.8	403	13	63	121	322	24.9	407	13	69	121	325	25.4	411	13	71	121
				90	337	25.8	425	13	72	121	340	25.9	429	13	78	121	344	26.4	434	13	81	122
				50	203	25.6	290	8	39	135	204	25.6	292	8	43	136	206	26.1	296	8	44	136
				60	233	26.3	322	9	48	137	235	26.4	325	9	52	137	237	26.9	329	9	54	138
	18.8	1.9	4.4	70	263	27.0	355	10	56	139	265	27.1	358	10	61	139	268	27.7	362	10	63	139
				80	292	27.7	386	11	64	141	295	27.8	390	11	70	141	297	28.3	394	10	72	141
				90	319	28.3	416	11	73	142	322	28.4	419	11	79	142	326	29.0	425	11	81	143
				50	213	26.2	302	8	39	131	214	26.2	304	8	42	131	217	26.8	308	8	44	131
				60	241	26.9	333	9	47	132	244	26.9	335	9	51	132	246	27.5	340	9	53	132
120	28.1	3.0	7.0	70	270	27.5	364	10	56	133	273	27.6	367	10	60	133	275	28.2	372	10	63	133
				80	298	28.1	394	11	64	134	301	28.3	397	11	69	134	304	28.8	403	11	72	134
				90	325	28.7	424	11	73	135	328	28.8	427	11	78	135	332	29.5	432	11	81	135
				50	222	26.8	313	8	38	128	224	26.9	316	8	42	128	227	27.5	320	8	44	129
				60	250	27.4	343	9	47	129	252	27.5	346	9	51	129	255	28.1	351	9	53	129
	37.5	4.8	11.0	70	277	28.0	373	10	55	130	280	28.1	376	10	60	130	283	28.7	381	10	62	130
				80	305	28.6	402	11	64	131	307	28.7	405	11	69	131	311	29.3	411	11	72	131
				90	332	29.2	431	11	72	131	335	29.3	434	11	78	132	338	29.9	440	11	81	132

Flow rates are per circuit - dual compressor units have 2 circuits

25 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW300D Series - R410A **Magnum Series**
Full Load Heating (Two Compressors) **Water Source Heat Pump**

Source				Load	Load Flow 18.8 GPM						Load Flow 28.1 GPM						Load Flow 37.5 GPM					
EST	Flow	WPD		ELT	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				60	219	12.9	175	5.0	72	15	212	11.8	171	5.3	68	15	205	11.0	167	5.4	65	16
20	37.5	7.7	17.9	80	231	16.9	174	4.0	92	15	230	16.1	175	4.2	88	15	228	15.6	175	4.3	86	15
				100	230	21.5	157	3.1	112	16	228	20.5	158	3.3	108	16	226	20.0	158	3.3	106	16
				60	234	13.2	189	5.2	72	20	228	12.1	187	5.5	68	20	222	11.4	183	5.7	66	20
				80	248	17.0	190	4.3	93	20	246	16.2	191	4.5	89	20	245	15.8	191	4.6	87	20
	18.8	3.0	6.9	100	248	21.5	175	3.4	113	21	246	20.5	176	3.5	109	21	245	20.0	177	3.6	107	21
				120	246	27.2	153	2.6	133	22	241	25.9	153	2.7	129	22	239	25.2	153	2.8	126	22
				60	261	13.6	215	5.6	74	22	257	12.8	214	5.9	69	22	253	12.2	212	6.1	67	22
				80	273	17.4	213	4.6	95	22	272	16.5	215	4.8	90	22	270	16.1	215	4.9	87	22
30	28.1	4.8	11.0	100	271	21.9	196	3.6	114	23	269	20.9	198	3.8	110	23	268	20.3	198	3.9	107	23
				120	265	27.6	171	2.8	134	24	260	26.3	171	2.9	129	24	258	25.6	171	3.0	127	24
				60	252	13.5	206	5.4	73	25	248	12.6	204	5.7	69	25	243	12.1	202	5.9	66	25
				80	263	17.4	203	4.4	94	25	262	16.5	205	4.6	89	25	260	16.1	205	4.7	87	25
	37.5	7.5	17.4	100	260	21.9	185	3.5	114	25	258	20.9	187	3.6	109	25	257	20.4	187	3.7	107	25
				120	253	27.5	159	2.7	133	26	248	26.2	159	2.8	129	26	246	25.5	159	2.8	127	26
				60	267	13.7	220	5.7	74	28	264	12.9	220	6.0	69	28	260	12.4	218	6.2	67	28
				80	280	17.4	220	4.7	95	28	279	16.6	222	4.9	90	28	278	16.2	222	5.0	87	28
	18.8	2.5	5.8	100	279	21.9	204	3.7	115	29	277	20.9	206	3.9	110	29	276	20.4	206	4.0	107	29
				120	275	27.7	180	2.9	135	30	271	26.4	181	3.0	130	30	268	25.7	181	3.1	127	30
				60	313	14.5	264	6.3	77	31	312	13.8	265	6.6	71	31	310	13.4	264	6.8	68	31
				80	324	18.1	262	5.3	97	31	324	17.3	265	5.5	92	31	323	16.9	265	5.6	89	31
40	28.1	4.0	9.2	100	319	22.5	242	4.2	117	31	319	21.5	245	4.3	111	31	318	21.0	246	4.4	108	31
				120	311	28.3	214	3.2	137	32	307	27.0	215	3.3	131	32	305	26.2	215	3.4	128	32
				60	286	14.1	237	5.9	75	34	283	13.4	238	6.2	70	34	280	12.9	236	6.4	67	34
				80	295	17.8	234	4.8	96	34	295	17.0	237	5.1	90	34	294	16.6	237	5.2	88	34
	37.5	6.3	14.5	100	291	22.3	215	3.8	115	34	289	21.3	217	4.0	110	34	288	20.8	217	4.1	108	34
				120	280	27.9	185	2.9	135	35	277	26.6	186	3.1	130	35	274	25.9	186	3.1	127	35
				60	300	14.3	252	6.2	76	37	299	13.5	253	6.5	71	37	296	13.1	252	6.6	68	37
				80	312	17.9	251	5.1	97	37	313	17.1	254	5.4	91	36	311	16.7	255	5.5	88	36
	18.8	2.4	5.6	100	310	22.4	234	4.1	117	38	309	21.4	236	4.2	111	37	308	20.8	237	4.3	108	37
				120	305	28.3	209	3.2	136	39	302	26.9	210	3.3	131	39	299	26.2	210	3.3	128	39
				60	318	14.6	269	6.4	77	40	317	13.9	270	6.7	71	40	315	13.5	269	6.8	68	40
				80	328	18.2	266	5.3	97	41	328	17.4	269	5.5	92	40	328	17.0	270	5.7	89	40
50	28.1	3.9	8.9	100	324	22.7	247	4.2	117	41	323	21.7	249	4.4	112	41	322	21.2	250	4.5	109	41
				120	315	28.5	218	3.2	137	42	311	27.1	219	3.4	131	42	309	26.4	219	3.4	128	42
				60	336	14.9	285	6.6	78	42	336	14.2	287	6.9	72	42	334	13.9	287	7.1	69	42
				80	344	18.5	281	5.4	98	43	345	17.7	284	5.7	92	42	344	17.3	285	5.8	89	42
	37.5	6.1	14.1	100	338	23.0	259	4.3	118	43	337	22.0	262	4.5	112	43	337	21.5	263	4.6	109	43
				120	324	28.6	227	3.3	137	44	321	27.2	228	3.5	131	44	319	26.5	228	3.5	128	44
				60	317	14.6	267	6.3	77	46	316	13.9	268	6.6	71	46	314	13.6	268	6.8	68	46
				80	331	18.1	269	5.4	98	46	331	17.3	272	5.6	92	45	331	16.9	273	5.7	89	45
	18.8	2.4	5.5	100	333	22.6	256	4.3	118	46	333	21.6	259	4.5	112	46	332	21.1	260	4.6	109	46
				120	336	28.7	238	3.4	138	47	333	27.3	240	3.6	132	47	331	26.6	240	3.6	129	47
				60	337	15.0	286	6.6	78	50	336	14.3	288	6.9	72	50	335	14.0	288	7.0	69	50
				80	349	18.5	286	5.5	99	50	350	17.7	289	5.8	92	50	349	17.3	290	5.9	89	50
60	28.1	3.7	8.7	100	350	23.0	271	4.5	119	50	349	22.0	274	4.7	112	50	349	21.5	275	4.8	109	50
				120	348	29.0	249	3.5	139	51	345	27.6	251	3.7	132	51	343	26.9	251	3.7	129	51
				60	357	15.3	304	6.8	79	52	357	14.7	307	7.1	73	52	356	14.3	307	7.3	70	52
				80	367	18.8	303	5.7	100	52	368	18.1	307	6.0	93	52	367	17.7	307	6.1	90	52
	37.5	5.9	13.6	100	366	23.4	286	4.6	119	52	366	22.4	289	4.8	113	52	365	21.8	291	4.9	110	52
				120	360	29.3	260	3.6	139	53	357	27.9	262	3.8	133	53	355	27.2	262	3.8	129	53
				60	334	15.0	282	6.5	78	55	333	14.3	284	6.8	72	55	332	14.0	284	7.0	69	55
				80	349	18.3	287	5.6	99	55	350	17.6	290	5.8	92	55	349	17.1	291	6.0	89	54
	18.8	2.3	5.3	100	356	22.8	279	4.6	119	55	356	21.8	282	4.8	113	55	355	21.3	283	4.9	109	55
				120	367	29.2	267	3.7	140	56	364	27.7	270	3.9	133	56	362	27.0	270	3.9	130	56
				60	356	15.4	303	6.8	79	59	356	14.7	306	7.1	73	59	355	14.4	306	7.2	69	59
				80	369	18.7	305	5.8	100	59	371	18.0	309	6.0	93	59	370	17.6	310	6.2	90	59
70	28.1	3.6	8.4	100	375	23.3	295	4.7	120	59	375	22.3	299	4.9	113	59	374	21.8	300	5.0	110	59
				120	381	29.6	280	3.8	140	60	379	28.1	283	3.9	133	60	377	27.4	283	4.0	130	60
				60	377	15.7	324	7.0	80	61	378	15.1	327	7.4	73	61	378	14.8	327	7.5	70	61
				80	389	19.2	324	6.0	101	61	391	18.4	329	6.2	94	61	391	18.0	330	6.4	90	61
	37.5	5.7	13.2	100	394	23.8	312	4.8	121	62	394	22.8	316	5.1	114	62	393	22.2	317	5.2	110	62
				120	396	30.0	293	3.9	141	62	394	28.5	296	4.0	134	62	392	27.8	297	4.1	130	62
				60	350	15.4	298	6.7	79	64	350	14.7	300	7.0	72	64	349	14.4	300	7.1	69	64
				80	368	18.5	304	5.8	100	64	369	17.8	308	6.1	93	64	369	17.4	309	6.2	90	64
	18.8	2.2	5.1	100	379	23.0	301	4.8	120	64	379	22.0	304	5.1	114	64	379	21.5	305	5.2	110	64
				120	397	29.6	296	3.9	141	64	395	28.1	299	4.1	134	64	393	27.4	300	4.2	130	64
				60	374	15.8	320	7.0	80	69	375	15.1	323	7.3	73	68	374	14.8	324	7.4	70	68
				80	390	19.0	325	6.0	101	68	392	18.2	330	6.3	94	68	391	17.8	331	6.4	90	68
80	28.1	3.5	8.1	100	400	23.6	320	5.0	121	69	401	22.6	324	5.2	114	68	401	22.1	325	5.3	111	68
				120	414	30.1	311	4.0	142	69	412	28.6	314	4.2	135	69	411	27.9	315	4.3	131	69
				60	397	16.1	343	7.2	81	71	399	15.5	347	7.6	74	71	399	15.1	347	7.7	71	71
				80	412	19.5	346	6.2	102	71	414	18.7	350	6.5	95	71	414	18.3	352	6.6	91	71
	37.5	5.5	12.8	100	421	24.2	339	5.1	122	71	422	23.1	343	5.4	115	71	422	22.6	345	5.5	111	71
				120	431	30.6	326	4.1	143	71	429	29.1	330	4.3	135	71	428	28.4	331	4.4	131	71

Flow rates are per circuit - dual compressor units have 2 circuits

25 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW300D Series - R410A **Magnum Series**
Part Load Cooling (One Compressor) **Water Source Heat Pump**

Source				Load	Load Flow 18.8 GPM						Load Flow 28.1 GPM						Load Flow 37.5 GPM					
EST	Flow	WPD		ELT	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				50	129	5.4	148	24	36	66	140	5.7	160	24	40	67	146	5.9	166	25	42	68
				60	148	6.0	168	25	44	68	159	6.2	180	26	49	69	164	6.4	186	26	51	70
	18.8	2.4	5.6	70	160	6.3	182	25	53	69	171	6.5	193	26	58	71	177	6.7	200	27	61	71
				80	168	6.5	190	26	62	70	179	6.7	202	27	67	72	185	6.8	208	27	70	72
				90	171	6.6	194	26	72	71	182	6.8	206	27	77	72	188	6.9	212	27	80	73
				50	138	5.7	157	24	35	61	148	6.0	168	25	39	62	153	6.1	174	25	42	62
				60	153	6.1	174	25	44	62	164	6.3	186	26	48	63	169	6.5	192	26	51	64
50	28.1	3.9	8.9	70	164	6.4	186	26	53	63	175	6.6	198	27	58	64	181	6.7	204	27	60	64
				80	171	6.6	193	26	62	64	182	6.8	205	27	67	65	188	6.9	211	27	70	65
				90	173	6.6	196	26	72	64	184	6.8	208	27	77	65	190	7.0	214	27	80	65
				50	145	6.0	165	24	35	59	155	6.2	177	25	39	59	161	6.4	182	25	41	60
				60	159	6.3	180	25	43	60	169	6.5	192	26	48	60	175	6.6	197	26	51	61
	37.5	6.1	14.1	70	168	6.5	190	26	52	60	179	6.7	202	27	57	61	184	6.8	208	27	60	61
				80	173	6.6	196	26	62	60	185	6.8	208	27	67	61	190	6.9	214	27	70	61
				90	175	6.7	198	26	71	61	186	6.9	210	27	77	61	192	7.0	216	27	80	62
				50	133	7.3	158	18	36	87	140	7.4	166	19	40	88	144	7.6	170	19	42	88
				60	150	7.7	176	19	44	89	159	7.8	185	20	49	90	163	7.9	190	21	51	90
	18.8	2.3	5.3	70	162	8.0	189	20	53	90	172	8.1	200	21	58	91	177	8.2	205	22	61	92
				80	171	8.2	198	21	62	91	181	8.3	209	22	67	92	186	8.4	214	22	70	93
				90	174	8.3	202	21	72	92	184	8.4	213	22	77	93	189	8.6	218	22	80	93
				50	139	7.5	164	18	35	82	147	7.6	173	19	40	82	151	7.8	178	19	42	83
				60	154	7.8	181	20	44	83	164	8.0	191	21	48	84	168	8.1	196	21	51	84
70	28.1	3.6	8.4	70	166	8.1	194	21	52	84	176	8.2	204	21	57	84	181	8.3	209	22	60	85
				80	173	8.2	201	21	62	84	183	8.4	212	22	67	85	189	8.5	218	22	70	85
				90	176	8.4	205	21	71	85	186	8.5	215	22	77	85	191	8.6	221	22	80	86
				50	145	7.7	171	19	35	79	153	7.8	180	20	39	80	158	7.9	185	20	42	80
				60	159	8.0	186	20	43	80	169	8.1	196	21	48	80	174	8.2	202	21	51	81
	37.5	5.7	13.2	70	170	8.2	197	21	52	81	180	8.3	208	22	57	81	185	8.4	213	22	60	81
				80	176	8.3	204	21	61	81	186	8.5	215	22	67	81	191	8.6	221	22	70	82
				90	178	8.4	207	21	71	81	188	8.6	218	22	77	82	194	8.7	223	22	80	82
				50	130	9.2	161	14	36	107	133	9.2	164	14	41	107	135	9.3	167	14	43	108
				60	148	9.4	180	16	44	109	151	9.4	183	16	49	110	154	9.6	187	16	52	110
	18.8	2.1	4.9	70	163	9.7	196	17	53	111	166	9.7	199	17	58	111	170	9.8	203	17	61	112
				80	174	9.9	207	17	62	112	177	9.9	211	18	67	113	180	10.1	215	18	70	113
				90	179	10.2	214	18	71	113	183	10.2	218	18	77	113	187	10.4	222	18	80	114
				50	136	9.4	168	15	36	102	139	9.4	171	15	40	102	141	9.5	174	15	42	102
				60	153	9.6	186	16	44	103	156	9.6	189	16	49	103	159	9.8	193	16	51	104
90	28.1	3.4	7.8	70	167	9.8	200	17	52	104	170	9.8	204	17	58	104	174	10.0	208	17	61	105
				80	176	10.0	211	18	61	105	180	10.1	214	18	67	105	184	10.2	218	18	70	106
				90	182	10.3	217	18	71	105	186	10.3	221	18	77	106	189	10.5	225	18	80	106
				50	142	9.6	174	15	35	99	144	9.6	177	15	40	99	147	9.7	180	15	42	100
				60	158	9.7	191	16	43	100	161	9.8	194	17	49	100	164	9.9	198	17	51	101
	37.5	5.3	12.3	70	171	9.9	205	17	52	101	174	10.0	208	17	58	101	178	10.1	212	18	61	101
				80	179	10.2	214	18	61	101	183	10.2	218	18	67	102	187	10.3	222	18	70	102
				90	184	10.4	220	18	70	102	188	10.4	224	18	77	102	192	10.6	228	18	80	102
				50	119	11.1	157	11	37	127	120	11.2	158	11	41	127	122	11.4	161	11	44	127
				60	138	11.2	176	12	45	129	139	11.3	178	12	50	129	141	11.5	180	12	52	129
	18.8	2.0	4.6	70	155	11.4	194	14	54	131	156	11.5	196	14	59	131	158	11.7	198	14	62	131
				80	169	11.8	209	14	62	132	171	11.8	211	14	68	132	172	12.1	213	14	71	133
				90	179	12.3	221	15	71	134	181	12.3	223	15	77	134	183	12.6	226	15	80	134
				50	124	11.4	163	11	37	122	126	11.4	164	11	41	122	127	11.6	167	11	43	122
				60	143	11.4	182	13	45	123	144	11.5	183	13	50	123	146	11.7	186	12	52	123
110	28.1	3.1	7.3	70	159	11.6	198	14	53	124	160	11.6	200	14	59	124	162	11.9	203	14	61	124
				80	172	11.9	213	14	62	125	174	12.0	215	15	68	125	176	12.2	217	14	71	125
				90	183	12.4	225	15	71	126	184	12.5	227	15	77	126	186	12.7	229	15	80	126
				50	130	11.6	170	11	36	119	131	11.7	171	11	41	119	132	11.9	173	11	43	119
				60	148	11.6	187	13	44	120	149	11.7	189	13	49	120	150	11.9	191	13	52	120
	37.5	5.0	11.4	70	163	11.8	203	14	53	121	164	11.8	204	14	58	121	166	12.0	207	14	61	121
				80	175	12.1	217	14	61	122	177	12.1	219	15	67	122	179	12.4	221	14	70	122
				90	186	12.6	228	15	70	122	187	12.6	230	15	77	122	189	12.9	233	15	80	122
				50	113	12.4	155	9	38	137	114	12.5	156	9	42	137	115	12.7	158	9	44	137
				60	129	12.8	173	10	46	138	131	12.8	174	10	51	139	132	13.1	176	10	53	139
	18.8	1.9	4.4	70	146	13.1	190	11	55	140	147	13.2	192	11	60	140	149	13.5	194	11	62	141
				80	161	13.5	207	12	63	142	163	13.5	209	12	68	142	165	13.8	212	12	71	143
				90	176	13.8	223	13	71	144	178	13.8	225	13	77	144	180	14.1	228	13	80	144
				50	118	12.7	162	9	37	131	119	12.8	163	9	42	132	121	13.0	165	9	44	132
				60	134	13.1	178	10	46	133	135	13.1	180	10	50	133	137	13.4	182	10	53	133
120	28.1	3.0	7.0	70	149	13.4	195	11	54	134	151	13.4	197	11	59	134	153	13.7	199	11	62	134
				80	165	13.7	212	12	62	135	167	13.8	213	12	68	135	168	14.0	216	12	71	135
				90	180	14.0	228	13	71	136	181	14.0	229	13	77	136	183	14.3	232	13	80	137
				50	123	13.0	168	9	37	129	125	13.1	169	10	41	129	126	13.4	172	9	43	129
				60	139	13.3	184	10	45	130	140	13.4	186	10	50	130	141	13.7	188	10	52	130
	37.5	4.8	11.0	70	154	13.6	200	11	54	131	155	13.7	202	11	59	131	157	14.0	204	11	62	131
				80	168	13.9	216	12	62	132	170	14.0	218	12	68	132	172	14.3	221	12	71	132
				90	183	14.2	232	13	71	132	185	14.2	233	13	77	132	187	14.6	237	13	80	133

Flow rates are per circuit - dual compressor units have 2 circuits

25 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW300D Series - R410A **Magnum Series**
Part Load Heating (One Compressor) **Water Source Heat Pump**

Source				Load	Load Flow 18.8 GPM						Load Flow 28.1 GPM						Load Flow 37.5 GPM					
EST	Flow	WPD		ELT	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				60	118	6.2	97	5.5	73	15	114	5.7	94	5.9	68	15	110	5.3	92	6.1	66	15
20	37.5	7.7	17.9	80	125	8.2	97	4.5	93	15	124	7.8	97	4.7	89	15	123	7.6	97	4.8	87	15
				100	124	10.3	88	3.5	113	15	122	9.9	89	3.6	109	15	122	9.6	89	3.7	106	15
				60	126	6.4	104	5.8	73	19	123	5.8	103	6.2	69	19	119	5.5	101	6.4	66	19
				80	134	8.2	106	4.8	94	19	133	7.8	106	5.0	89	19	132	7.6	106	5.1	87	19
	18.8	3.0	6.9	100	133	10.4	98	3.8	114	20	132	9.9	99	3.9	109	19	132	9.7	99	4.0	107	19
				120	131	13.0	86	2.9	134	21	129	12.4	86	3.0	129	21	127	12.1	86	3.1	127	21
				60	141	6.6	118	6.3	75	22	138	6.2	117	6.6	70	22	136	5.9	116	6.8	67	22
				80	147	8.4	118	5.1	96	22	146	8.0	119	5.4	90	22	146	7.8	119	5.5	88	22
30	28.1	4.8	11.0	100	146	10.5	110	4.0	115	22	145	10.1	111	4.2	110	22	144	9.8	111	4.3	108	22
				120	141	13.2	96	3.1	135	23	139	12.6	96	3.2	130	23	138	12.3	96	3.3	127	23
				60	136	6.5	113	6.1	74	24	133	6.1	112	6.4	69	24	131	5.8	111	6.6	67	24
				80	142	8.4	113	4.9	95	24	141	8.0	114	5.2	90	24	140	7.8	114	5.3	87	24
	37.5	7.5	17.4	100	140	10.5	104	3.9	115	24	139	10.1	104	4.0	110	24	138	9.8	105	4.1	107	24
				120	135	13.2	90	3.0	134	25	133	12.5	90	3.1	129	25	131	12.2	90	3.1	127	25
				60	144	6.6	121	6.4	75	27	142	6.2	121	6.7	70	27	140	5.9	120	6.9	67	27
				80	151	8.4	122	5.2	96	27	150	8.0	123	5.5	91	27	150	7.9	123	5.6	88	27
	18.8	2.5	5.8	100	150	10.6	114	4.2	116	28	149	10.1	115	4.3	111	28	148	9.8	115	4.4	108	28
				120	147	13.3	102	3.2	136	29	145	12.6	102	3.4	130	29	144	12.3	102	3.4	128	29
				60	169	7.0	145	7.1	78	30	168	6.6	145	7.4	72	30	167	6.4	145	7.6	69	30
				80	174	8.7	145	5.9	99	30	175	8.4	146	6.1	92	30	174	8.2	146	6.2	89	30
40	28.1	4.0	9.2	100	172	10.9	135	4.6	118	30	172	10.4	136	4.8	112	30	171	10.1	137	4.9	109	30
				120	167	13.6	120	3.6	138	31	165	13.0	121	3.7	132	31	164	12.6	121	3.8	129	31
				60	154	6.8	131	6.6	76	33	152	6.4	130	6.9	71	33	151	6.2	130	7.1	68	33
				80	159	8.6	130	5.4	97	33	159	8.2	131	5.7	91	33	158	8.0	131	5.8	88	33
	37.5	6.3	14.5	100	156	10.8	120	4.3	117	34	156	10.3	121	4.4	111	34	155	10.0	121	4.5	108	34
				120	150	13.4	105	3.3	136	34	148	12.7	105	3.4	131	34	147	12.4	105	3.5	128	34
				60	162	6.9	138	6.9	77	35	161	6.5	139	7.2	71	35	160	6.3	138	7.4	69	35
				80	168	8.7	139	5.7	98	35	169	8.3	140	6.0	92	35	168	8.1	140	6.1	89	35
	18.8	2.4	5.6	100	167	10.8	130	4.5	118	36	167	10.3	131	4.7	112	36	166	10.1	132	4.8	109	36
				120	164	13.6	118	3.5	137	37	162	12.9	118	3.7	132	37	161	12.6	118	3.7	129	37
				60	171	7.1	147	7.1	78	40	171	6.7	148	7.5	72	39	170	6.5	148	7.7	69	40
				80	177	8.8	147	5.9	99	40	177	8.4	148	6.2	93	39	177	8.2	149	6.3	89	39
50	28.1	3.9	8.9	100	175	10.9	137	4.7	119	40	174	10.5	139	4.9	112	40	174	10.2	139	5.0	109	40
				120	169	13.7	122	3.6	138	41	167	13.0	123	3.8	132	41	166	12.7	123	3.8	129	41
				60	181	7.2	156	7.4	79	42	181	6.9	157	7.7	73	42	180	6.7	157	7.9	70	42
				80	186	9.0	155	6.1	100	42	186	8.6	156	6.3	93	42	185	8.4	157	6.5	90	42
	37.5	6.1	14.1	100	182	11.1	144	4.8	119	42	182	10.6	146	5.0	113	42	181	10.4	146	5.1	110	42
				120	174	13.7	127	3.7	139	43	172	13.1	128	3.9	132	43	171	12.8	128	3.9	129	43
				60	171	7.1	147	7.1	78	44	170	6.7	147	7.4	72	44	169	6.5	147	7.6	69	44
				80	178	8.8	148	6.0	99	44	179	8.4	150	6.2	93	44	178	8.2	150	6.4	90	44
	18.8	2.4	5.5	100	179	10.9	142	4.8	119	45	179	10.4	144	5.0	113	45	179	10.2	144	5.1	110	45
				120	181	13.8	134	3.8	139	46	179	13.1	134	4.0	133	46	178	12.8	134	4.1	129	46
				60	182	7.2	157	7.3	79	49	181	6.9	158	7.7	73	49	181	6.7	158	7.9	70	49
				80	188	8.9	158	6.2	100	49	188	8.6	159	6.4	93	49	188	8.4	160	6.6	90	49
60	28.1	3.7	8.7	100	188	11.1	151	5.0	120	49	188	10.6	152	5.2	113	49	188	10.4	153	5.3	110	49
				120	187	14.0	140	3.9	140	50	186	13.3	140	4.1	133	50	185	12.9	141	4.2	130	50
				60	192	7.4	167	7.6	80	51	192	7.1	168	8.0	74	51	192	6.9	168	8.1	70	51
				80	198	9.1	167	6.4	101	51	199	8.8	169	6.6	94	51	198	8.6	169	6.8	91	51
	37.5	5.9	13.6	100	197	11.3	159	5.1	121	52	197	10.8	160	5.3	114	51	197	10.5	161	5.5	110	51
				120	194	14.1	146	4.0	141	52	192	13.4	147	4.2	134	52	191	13.1	147	4.3	130	52
				60	180	7.2	155	7.3	79	53	179	6.9	156	7.6	73	53	179	6.7	156	7.8	70	53
				80	188	8.9	158	6.2	100	53	189	8.5	160	6.5	93	53	188	8.3	160	6.7	90	53
	18.8	2.3	5.3	100	192	11.0	155	5.1	120	54	192	10.5	156	5.3	114	53	192	10.3	157	5.5	110	53
				120	198	14.0	150	4.1	141	54	196	13.3	151	4.3	134	54	195	13.0	151	4.4	130	54
				60	192	7.4	166	7.6	80	58	192	7.1	167	7.9	74	58	191	6.9	167	8.1	70	58
				80	199	9.1	168	6.4	101	58	200	8.7	170	6.7	94	58	200	8.5	171	6.9	91	58
70	28.1	3.6	8.4	100	202	11.2	164	5.3	122	58	202	10.8	166	5.5	114	58	202	10.5	166	5.6	111	58
				120	206	14.2	157	4.2	142	59	204	13.5	158	4.4	135	59	203	13.2	158	4.5	131	59
				60	203	7.6	177	7.9	82	61	204	7.3	179	8.2	74	60	203	7.1	179	8.4	71	60
				80	210	9.3	178	6.6	102	60	211	8.9	181	6.9	95	60	211	8.7	181	7.1	91	60
	37.5	5.7	13.2	100	212	11.5	173	5.4	123	61	212	11.0	175	5.7	115	61	212	10.7	175	5.8	111	61
				120	213	14.4	164	4.3	143	61	212	13.7	165	4.5	135	61	211	13.4	166	4.6	131	61
				60	189	7.4	163	7.5	80	63	189	7.1	164	7.8	73	62	188	6.9	165	8.0	70	62
				80	198	9.0	168	6.5	101	62	199	8.6	170	6.8	94	62	199	8.4	170	6.9	91	62
	18.8	2.2	5.1	100	204	11.1	167	5.4	122	62	205	10.6	168	5.6	115	62	204	10.4	169	5.8	111	62
				120	214	14.2	166	4.4	143	62	213	13.5	167	4.6	135	62	212	13.2	167	4.7	131	62
				60	201	7.6	175	7.8	81	68	202	7.3	177	8.1	74	67	201	7.1	177	8.3	71	67
				80	210	9.2	179	6.7	102	67	211	8.8	181	7.0	95	67	211	8.6	181	7.2	91	67
80	28.1	3.5	8.1	100	216	11.4	177	5.6	123	67	216	10.9	179	5.8	115	67	216	10.7	180	5.9	112	67
				120	223	14.5	174	4.5	144	68	222	13.8	175	4.7	136	68	221	13.4	176	4.8	132	68
				60	214	7.8	188	8.1	83	70	215	7.4	190	8.5	75	70	215	7.3	190	8.6	71	70
				80	222	9.4	190	6.9	104	70	223	9.1	192	7.2	96	70	223	8.9	193	7.4	92	70
	37.5	5.5	12.8	100	227	11.7	187	5.7	124	70	228	11.2	190	6.0	116	70	228	10.9	190	6.1	112	70
				120	233	14.7	182	4.6	145	70	232	14.0	184	4.8	136	70	231	13.7	184	4.9	132	70

Flow rates are per circuit - dual compressor units have 2 circuits

25 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW300D Series - R410A **Magnum Series**
Performace ISO 13256-2 **Water Source Heat Pump**

Loading/ Capacity	Water Loop				Ground Water				Ground Loop			
	Heating		Cooling		Heating		Cooling		Heating		Cooling	
	104°F ELT 68°F EST		53.6°F ELT 86°F EST		104°F ELT 50°F EST		53.6°F ELT 59°F EST		104°F ELT 32°F EST Full 41°F EST Part		53.6°F ELT 77°F EST Full 68°F EST Part	
	Mbtuh	COP	Mbtuh	EER	MBtuh	COP	Mbtuh	EER	Mbtuh	COP	Mbtuh	EER
Full	387	4.9	283	14.8	333	4.4	302	20.7	261	3.59	292	16.7
Part	209	5.5	155	16.6	179	4.9	165	23.3	156	4.38	166	26.2

Electrical Specification

Voltage	Elect. Symbol	Compressor*		Total Unit FLA	1 Supply Circ	
		RLA	LRA		Min. Ampacity*	Max. Fuse/ HACR*
208/230-3-60	2	45.7	304	91.4	102.8	125
460-3-60	3	21.4	147	42.8	48.2	60
575-3-60	4	18.6	122	37.2	41.9	60
380-3-60	6	26.4	168	52.8	59.4	80

**Where calculations are based on:*

MCA = 1.25 x RLA compressor + FLA other motors

MOP = 2.25 x RLA largest compressor + 1.00 x FLA other motors.

Ensure that all loads on the supply line are added into the equations above if some of the cells in the above table are blank

HACR circuit breaker for use in USA only. All fuses Class RK-5
Ratings are for each compressor - unit supplied with two
Ratings for pumps are per circuit - dual compressor units have 2 circuits
2 Supply Circuit - Two power feeds / breakers are required for each compressor

GeoFurnace works continually to improve its products. As a result, the design and specifications of each product at the time of order may be changed without notice. Please contact GeoFurnace at 1-605-854-9205 for latest design and specifications. Purchaser's approval of this data set signifies that the equipment is acceptable under the provisions of the job specification. Statements and other information contained herein are not express warranties and do not form the basis of any contract between the parties, but are merely GeoFurnace's opinion or commendation of its products.

30 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW360D Series - R410A **Magnum Series**
Full Load Cooling (Two Compressors) **Water Source Heat Pump**

Source				Load	Load Flow 22.5 GPM						Load Flow 33.8 GPM						Load Flow 45 GPM					
EST	Flow	WPD		ELT	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				50	302	10.5	338	29	37	65	324	11.7	364	28	40	66	335	12.3	377	27	43	67
				60	340	12.5	382	27	45	67	363	13.3	408	27	49	68	373	13.8	420	27	52	69
	22.5	2.0	4.6	70	366	13.6	412	27	54	68	390	14.1	438	28	58	69	401	14.6	451	27	61	70
				80	382	14.1	430	27	63	69	407	14.8	457	28	68	70	418	15.1	470	28	71	71
				90	389	14.5	438	27	73	69	413	15.0	465	27	78	71	425	15.4	478	28	81	71
				50	319	11.7	359	27	36	61	340	12.5	383	27	40	61	351	13.1	396	27	42	62
				60	351	13.1	396	27	44	62	374	13.7	421	27	49	62	385	14.2	434	27	51	63
50	33.8	3.1	7.1	70	374	13.9	421	27	53	62	398	14.5	448	27	58	63	410	14.9	460	28	61	64
				80	388	14.4	437	27	63	63	413	15.0	464	28	68	64	425	15.3	477	28	71	64
				90	393	14.6	443	27	73	63	418	15.1	469	28	78	64	430	15.6	483	28	80	64
				50	333	12.5	376	27	35	58	356	13.2	401	27	39	59	366	13.8	413	27	42	59
				60	362	13.6	408	27	44	59	386	14.1	434	27	49	60	397	14.6	447	27	51	60
	45.0	4.3	9.9	70	382	14.2	430	27	53	60	406	14.7	457	28	58	60	418	15.1	469	28	61	60
				80	394	14.6	443	27	63	60	418	15.1	470	28	68	60	430	15.5	483	28	70	61
				90	397	14.8	448	27	72	60	422	15.3	474	28	78	61	434	15.7	488	28	80	61
				50	295	17.1	354	17	37	86	313	17.3	372	18	41	87	321	17.7	382	18	43	87
				60	333	18.0	394	18	45	88	352	18.3	415	19	50	88	362	18.6	426	19	52	89
	22.5	1.9	4.3	70	360	18.7	424	19	54	89	383	19.0	447	20	59	90	393	19.3	459	20	61	90
				80	378	19.2	444	20	63	90	401	19.5	468	21	68	91	412	19.8	480	21	71	91
				90	385	19.6	452	20	73	90	408	19.9	476	21	78	91	420	20.2	488	21	81	92
				50	308	17.6	368	18	36	81	327	17.9	388	18	40	81	336	18.2	398	18	43	82
				60	343	18.4	406	19	45	82	364	18.7	428	19	49	83	374	19.0	438	20	52	83
70	33.8	2.9	6.6	70	368	19.0	433	19	54	83	390	19.2	456	20	58	84	401	19.6	468	20	61	84
				80	384	19.4	450	20	63	83	407	19.7	474	21	68	84	418	20.0	487	21	71	84
				90	390	19.8	457	20	73	84	413	20.0	481	21	78	84	424	20.3	494	21	81	85
				50	322	18.1	383	18	36	79	341	18.3	403	19	40	79	350	18.6	413	19	42	79
				60	353	18.8	417	19	44	79	375	19.0	440	20	49	80	385	19.3	451	20	51	80
	45.0	4.0	9.3	70	376	19.3	442	20	53	80	399	19.5	465	20	58	80	409	19.8	477	21	61	81
				80	390	19.7	457	20	63	80	414	19.9	482	21	68	81	424	20.2	493	21	71	81
				90	394	19.9	462	20	72	80	418	20.2	487	21	78	81	429	20.5	499	21	80	81
				50	283	22.3	359	13	37	106	288	22.3	365	13	41	106	294	22.7	371	13	43	106
				60	324	22.7	401	14	46	108	330	22.8	408	14	50	108	337	23.1	416	15	53	108
	22.5	1.7	4.0	70	356	23.3	436	15	54	109	364	23.3	443	16	59	110	371	23.7	452	16	62	110
				80	380	23.9	461	16	63	110	388	23.9	469	16	69	111	395	24.3	478	16	71	111
				90	393	24.5	476	16	73	111	401	24.5	484	16	78	112	409	24.9	494	16	81	112
				50	295	22.7	373	13	37	101	301	22.8	379	13	41	101	307	23.2	386	13	43	101
				60	334	23.1	413	14	45	102	341	23.2	421	15	50	102	348	23.6	428	15	52	103
90	33.8	2.7	6.2	70	365	23.6	446	15	54	103	373	23.7	453	16	59	103	380	24.0	462	16	62	104
				80	386	24.2	469	16	63	104	394	24.2	477	16	68	104	402	24.6	486	16	71	104
				90	398	24.7	482	16	72	104	407	24.8	491	16	78	105	414	25.2	500	16	81	105
				50	308	23.2	387	13	36	99	314	23.2	394	14	41	99	320	23.6	401	14	43	99
				60	345	23.5	425	15	45	99	352	23.5	432	15	50	100	359	23.9	441	15	52	100
	45.0	3.7	8.6	70	373	23.9	455	16	53	100	381	23.9	463	16	59	100	388	24.3	471	16	61	100
				80	393	24.4	476	16	63	101	401	24.4	484	16	68	101	409	24.8	494	16	71	101
				90	404	25.0	489	16	72	101	412	25.0	497	16	78	101	420	25.5	507	16	81	101
				50	255	27.6	349	9	39	126	257	27.7	351	9	42	126	260	28.2	356	9	44	126
				60	297	27.5	391	11	47	127	300	27.6	395	11	51	128	304	28.2	400	11	53	128
	22.5	1.6	3.7	70	335	27.9	431	12	55	129	338	28.0	434	12	60	129	342	28.5	439	12	62	130
				80	366	28.7	464	13	64	131	370	28.7	468	13	69	131	374	29.3	474	13	72	131
				90	390	29.8	491	13	73	132	394	29.9	496	13	78	132	397	30.5	502	13	81	132
				50	266	28.2	362	9	38	121	269	28.2	365	10	42	121	272	28.8	370	9	44	121
				60	308	28.0	403	11	46	122	311	28.1	407	11	51	122	314	28.6	412	11	53	122
110	33.8	2.5	5.7	70	344	28.3	440	12	55	123	347	28.4	444	12	60	123	351	29.0	450	12	62	123
				80	373	29.0	472	13	63	124	377	29.1	476	13	69	124	381	29.7	482	13	72	124
				90	397	30.1	500	13	72	125	401	30.3	504	13	78	125	404	30.9	510	13	81	125
				50	278	28.7	376	10	38	118	281	28.8	379	10	42	118	284	29.4	384	10	44	119
				60	318	28.5	415	11	46	119	321	28.5	418	11	50	119	324	29.2	424	11	53	119
	45.0	3.5	8.0	70	352	28.7	450	12	54	120	355	28.8	454	12	59	120	359	29.4	459	12	62	120
				80	381	29.4	481	13	63	121	385	29.5	485	13	69	121	388	30.1	491	13	71	121
				90	403	30.5	507	13	72	121	407	30.6	512	13	78	121	411	31.2	518	13	81	122
				50	239	31.1	345	8	39	135	241	31.1	347	8	43	135	244	31.7	352	8	45	136
				60	276	31.7	384	9	48	137	279	31.8	387	9	52	137	282	32.5	392	9	54	137
	22.5	1.6	3.6	70	313	32.4	423	10	56	139	316	32.5	427	10	61	139	319	33.2	432	10	63	139
				80	348	33.1	461	11	65	140	352	33.2	465	11	70	141	355	33.9	471	10	72	141
				90	382	33.7	497	11	73	142	385	33.8	500	11	79	142	389	34.5	507	11	81	143
				50	251	31.8	360	8	39	131	254	31.8	362	8	42	131	256	32.5	367	8	44	131
				60	286	32.4	397	9	47	132	289	32.5	400	9	51	132	292	33.2	405	9	54	132
120	33.8	2.4	5.5	70	321	33.0	434	10	56	133	325	33.1	438	10	60	133	328	33.8	444	10	63	133
				80	356	33.6	471	11	64	134	359	33.8	475	11	69	134	363	34.4	481	11	72	134
				90	389	34.2	506	11	73	135	393	34.3	510	11	78	135	397	35.1	517	11	81	135
				50	263	32.5	374	8	38	128	266	32.6	377	8	42	128	269	33.3	382	8	44	128
				60	296	33.1	409	9	47	129	299	33.1	412	9	51	129	303	33.9	418	9	53	129
	45.0	3.3	7.7	70	330	33.6	445	10	55	130	334	33.7	449	10	60	130	337	34.5	455	10	63	130
				80	364	34.2	480	11	64	131	367	34.3	484	11	69	131	371	35.1	491	11	72	131
				90	397	34.7	515	11	72	131	400	34.8	519	11	78	132	405	35.7	526	11	81	132

Flow rates are per circuit - dual compressor units have 2 circuits

30 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW360D Series - R410A **Magnum Series**
Full Load Heating (Two Compressors) **Water Source Heat Pump**

Source				Load	Load Flow 22.5 GPM						Load Flow 33.8 GPM						Load Flow 45 GPM					
EST	Flow	WPD		ELT	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				60	266	14.1	218	5.5	72	15	259	12.0	218	6.3	68	15	252	10.5	216	7.0	66	15
20	45.0	5.4	12.5	80	277	20.2	208	4.0	92	15	276	19.1	211	4.2	88	15	275	18.4	212	4.4	86	15
				100	274	26.3	184	3.1	112	16	271	25.0	186	3.2	108	16	270	24.3	187	3.2	106	16
				60	285	14.4	235	5.8	73	20	279	12.6	236	6.5	68	20	272	11.3	234	7.1	66	20
				80	297	20.3	228	4.3	93	20	296	19.1	231	4.5	89	20	295	18.5	232	4.7	87	20
	22.5	2.5	5.7	100	295	26.2	206	3.3	113	21	293	24.9	208	3.4	109	21	292	24.3	209	3.5	106	21
				120	292	33.6	177	2.5	133	22	287	32.0	178	2.6	128	22	284	31.1	178	2.7	126	22
				60	317	15.1	265	6.1	74	22	313	13.6	267	6.7	69	22	310	12.7	266	7.2	67	22
				80	327	20.6	257	4.6	95	22	326	19.5	260	4.9	90	22	325	18.9	261	5.0	87	22
30	33.8	3.8	8.7	100	322	26.5	232	3.6	114	23	321	25.2	235	3.7	109	23	319	24.6	235	3.8	107	23
				120	315	33.9	200	2.7	134	24	310	32.2	200	2.8	129	24	307	31.3	200	2.9	127	24
				60	306	15.0	254	6.0	74	24	302	13.4	256	6.6	69	24	298	12.4	255	7.0	67	24
				80	315	20.7	244	4.5	94	25	314	19.5	247	4.7	89	25	313	18.9	248	4.8	87	24
	45.0	5.3	12.2	100	309	26.6	219	3.4	114	25	307	25.3	221	3.6	109	25	306	24.6	222	3.6	107	25
				120	301	33.9	185	2.6	133	26	295	32.2	185	2.7	129	26	292	31.3	185	2.7	126	26
				60	324	15.2	272	6.2	74	28	321	13.8	274	6.8	69	28	318	12.9	274	7.2	67	28
				80	335	20.6	265	4.8	95	28	335	19.5	268	5.0	90	28	334	19.0	269	5.2	87	28
	22.5	2.1	4.7	100	332	26.5	242	3.7	115	29	331	25.2	245	3.8	110	29	329	24.6	245	3.9	107	29
				120	328	34.0	212	2.8	135	31	322	32.2	212	2.9	130	31	319	31.4	212	3.0	127	31
				60	379	16.2	324	6.9	77	30	379	15.1	328	7.4	71	30	377	14.4	328	7.7	68	30
				80	388	21.2	315	5.3	97	31	388	20.2	320	5.6	91	31	388	19.6	321	5.8	89	31
40	33.8	3.2	7.3	100	380	27.0	288	4.1	117	31	380	25.7	292	4.3	111	31	379	25.1	293	4.4	108	31
				120	371	34.4	253	3.2	136	32	366	32.7	254	3.3	131	32	363	31.8	255	3.3	128	32
				60	346	15.8	292	6.4	75	34	344	14.5	295	7.0	70	33	341	13.7	295	7.3	68	33
				80	354	21.1	282	4.9	96	34	354	20.0	285	5.2	90	34	353	19.5	286	5.3	88	34
	45.0	4.4	10.2	100	346	26.9	254	3.8	115	34	345	25.6	257	3.9	110	34	343	25.0	258	4.0	108	34
				120	334	34.2	218	2.9	135	35	329	32.5	219	3.0	130	35	326	31.6	219	3.0	127	35
				60	364	16.0	309	6.7	76	36	363	14.7	313	7.2	71	36	361	14.0	313	7.5	68	36
				80	374	21.1	302	5.2	97	37	375	20.0	307	5.5	91	36	374	19.4	308	5.6	88	36
	22.5	2.0	4.6	100	370	26.9	278	4.0	116	38	369	25.6	282	4.2	111	37	368	24.9	283	4.3	108	37
				120	364	34.4	247	3.1	136	39	360	32.7	248	3.2	131	39	357	31.8	248	3.3	128	39
				60	385	16.4	329	6.9	77	40	385	15.3	333	7.4	71	40	383	14.6	333	7.7	69	40
				80	393	21.4	320	5.4	97	41	394	20.4	324	5.7	92	40	394	19.8	326	5.8	89	40
50	33.8	3.1	7.1	100	386	27.1	294	4.2	117	41	386	25.9	297	4.4	111	41	384	25.3	298	4.5	109	41
				120	376	34.6	258	3.2	137	42	371	32.8	259	3.3	131	42	368	31.9	259	3.4	128	42
				60	406	16.7	349	7.1	78	42	407	15.7	353	7.6	72	42	406	15.1	354	7.9	69	42
				80	412	21.8	338	5.5	98	42	413	20.7	343	5.8	92	42	413	20.2	344	6.0	89	42
	45.0	4.3	9.9	100	402	27.5	309	4.3	118	43	402	26.2	313	4.5	112	43	402	25.5	314	4.6	109	43
				120	387	34.7	268	3.3	137	44	382	33.0	270	3.4	131	44	380	32.1	270	3.5	128	44
				60	383	16.4	327	6.8	77	45	383	15.3	331	7.3	71	45	382	14.7	331	7.6	68	45
				80	396	21.3	323	5.5	98	46	398	20.2	328	5.8	92	45	397	19.7	330	5.9	89	45
	22.5	1.9	4.5	100	397	27.0	305	4.3	118	46	397	25.7	309	4.5	112	46	396	25.1	311	4.6	109	46
				120	401	34.8	282	3.4	138	47	397	33.0	285	3.5	132	47	395	32.1	285	3.6	129	47
				60	407	16.9	350	7.1	78	50	408	15.8	354	7.6	72	50	407	15.2	355	7.8	69	49
				80	418	21.7	344	5.6	99	50	419	20.7	349	5.9	92	50	419	20.1	351	6.1	89	50
60	33.8	3.0	6.8	100	417	27.4	323	4.5	119	50	416	26.1	327	4.7	112	50	416	25.5	329	4.8	109	50
				120	416	35.1	296	3.5	138	51	412	33.3	298	3.6	132	51	409	32.3	299	3.7	129	51
				60	431	17.3	372	7.3	79	52	432	16.3	377	7.8	73	52	432	15.7	378	8.0	70	52
				80	439	22.1	364	5.8	100	52	442	21.1	370	6.1	93	52	441	20.5	371	6.3	90	52
	45.0	4.1	9.6	100	436	27.8	341	4.6	119	52	436	26.5	346	4.8	113	52	436	25.9	347	4.9	110	52
				120	430	35.4	310	3.6	139	53	426	33.5	312	3.7	133	53	423	32.6	312	3.8	129	53
				60	403	16.9	345	7.0	78	55	403	15.9	349	7.5	72	54	403	15.3	351	7.7	69	54
				80	418	21.5	345	5.7	99	55	420	20.4	350	6.0	92	54	420	19.9	352	6.2	89	54
	22.5	1.9	4.3	100	425	27.1	332	4.6	119	55	425	25.9	337	4.8	113	55	424	25.2	338	4.9	109	55
				120	438	35.1	318	3.7	139	56	435	33.3	321	3.8	133	56	432	32.4	321	3.9	130	56
				60	429	17.4	370	7.2	79	59	431	16.3	375	7.7	73	59	430	15.8	376	8.0	70	59
				80	442	21.9	368	5.9	100	59	445	21.0	373	6.2	93	59	445	20.4	375	6.4	90	59
70	33.8	2.9	6.6	100	447	27.6	353	4.7	120	60	447	26.4	358	5.0	113	59	447	25.8	359	5.1	110	59
				120	456	35.5	334	3.8	140	60	452	33.7	337	3.9	133	60	449	32.8	338	4.0	130	60
				60	455	17.8	395	7.5	80	61	458	16.8	400	8.0	74	61	457	16.3	402	8.2	70	61
				80	466	22.4	390	6.1	101	61	469	21.4	396	6.4	94	61	469	20.9	398	6.6	90	61
	45.0	4.0	9.3	100	470	28.2	374	4.9	121	62	470	26.9	378	5.1	114	62	469	26.2	380	5.2	110	62
				120	473	36.0	350	3.8	141	62	470	34.1	354	4.0	134	62	467	33.2	354	4.1	130	62
				60	423	17.4	363	7.1	79	64	424	16.4	368	7.6	73	64	423	15.8	369	7.8	69	64
				80	441	21.7	367	6.0	100	64	443	20.7	372	6.3	93	63	443	20.1	374	6.4	90	63
	22.5	1.8	4.2	100	452	27.3	359	4.9	120	64	453	26.0	364	5.1	113	64	452	25.4	366	5.2	110	64
				120	475	35.5	354	3.9	141	64	472	33.6	357	4.1	134	64	469	32.7	358	4.2	130	64
				60	451	17.8	390	7.4	80	68	453	16.9	396	7.9	73	68	453	16.3	397	8.1	70	68
				80	467	22.2	391	6.2	101	68	470	21.2	398	6.5	94	68	470	20.6	399	6.7	90	68
80	33.8	2.8	6.4	100	477	27.9	382	5.0	121	69	479	26.6	388	5.3	114	69	478	26.0	390	5.4	111	68
				120	495	36.0	372	4.0	142	69	492	34.1	376	4.2	135	69	490	33.2	377	4.3	131	69
				60	479	18.2	417	7.7	81	71	482	17.3	424	8.2	74	71	482	16.8	425	8.4	71	71
				80	494	22.7	416	6.4	102	71	497	21.7	423	6.7	95	71	497	21.2	425	6.9	91	71
	45.0	3.9	8.9	100	503	28.6	405	5.2	122	71	504	27.2	411	5.4	115	71	504	26.6	413	5.6	111	71
				120	515	36.6	391	4.1	143	71	513	34.7	395	4.3	135	71	511	33.8	396	4.4	131	71

Flow rates are per circuit - dual compressor units have 2 circuits

30 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW360D Series - R410A **Magnum Series**
Part Load Cooling (One Compressor) **Water Source Heat Pump**

Source				Load	Load Flow 22.5 GPM						Load Flow 33.8 GPM						Load Flow 45 GPM					
EST	Flow	WPD		ELT	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
50	22.5	2.0	4.6	50	148	6.1	169	24	37	65	160	6.4	182	25	41	66	166	6.6	189	25	43	67
				60	169	6.7	191	25	45	67	181	7.0	205	26	49	68	187	7.1	211	26	52	69
				70	183	7.1	207	26	54	68	195	7.3	220	27	58	70	201	7.5	227	27	61	70
				80	191	7.3	216	26	63	69	204	7.5	230	27	68	70	210	7.7	236	27	71	71
				90	195	7.4	220	26	73	70	207	7.6	233	27	78	71	214	7.8	240	27	81	71
	33.8	3.1	7.1	50	157	6.4	179	24	36	61	169	6.7	192	25	40	61	175	6.9	198	25	42	62
				60	175	6.9	198	25	44	62	187	7.1	211	26	49	63	193	7.3	218	26	51	63
				70	187	7.2	211	26	53	63	199	7.4	225	27	58	63	205	7.6	231	27	61	64
				80	194	7.4	219	26	63	63	207	7.6	233	27	68	64	213	7.7	240	28	71	64
				90	197	7.5	223	26	72	63	210	7.7	236	27	78	64	216	7.8	243	28	80	64
	45.0	4.3	9.9	50	165	6.7	188	25	35	58	177	6.9	201	26	40	59	183	7.1	207	26	42	59
				60	181	7.1	205	26	44	59	193	7.3	218	26	49	60	199	7.5	224	27	51	60
				70	191	7.3	216	26	53	60	204	7.5	229	27	58	60	210	7.7	236	27	61	60
				80	197	7.4	223	27	62	60	210	7.7	236	27	68	60	216	7.8	243	28	70	61
				90	199	7.5	225	26	72	60	212	7.7	238	27	77	61	218	7.9	245	28	80	61
70	22.5	1.9	4.3	50	150	8.1	178	19	37	86	159	8.2	187	19	41	87	164	8.4	192	20	43	87
				60	170	8.5	198	20	45	88	179	8.6	209	21	49	89	184	8.7	214	21	52	89
				70	184	8.8	214	21	54	89	195	8.9	225	22	58	90	200	9.1	231	22	61	91
				80	193	9.0	224	21	63	90	204	9.2	235	22	68	91	210	9.3	242	23	71	91
				90	196	9.2	228	21	73	90	208	9.3	240	22	78	91	214	9.5	246	23	81	92
	33.8	2.9	6.6	50	157	8.3	185	19	36	81	166	8.4	195	20	40	82	171	8.6	200	20	42	82
				60	175	8.6	204	20	44	82	185	8.8	215	21	49	83	190	8.9	221	21	52	83
				70	188	8.9	218	21	53	83	199	9.0	230	22	58	84	204	9.2	236	22	61	84
				80	196	9.1	227	22	63	83	207	9.3	239	22	68	84	213	9.4	245	23	71	85
				90	199	9.3	230	21	72	84	210	9.4	242	22	78	84	216	9.5	249	23	80	85
	45.0	4.0	9.3	50	164	8.5	193	19	35	79	174	8.6	203	20	40	79	178	8.7	208	20	42	79
				60	180	8.8	210	21	44	79	191	8.9	221	21	49	80	196	9.1	227	22	51	80
				70	192	9.0	223	21	53	80	203	9.2	234	22	58	80	209	9.3	240	22	61	81
				80	199	9.2	230	22	62	80	211	9.3	243	23	68	81	216	9.5	248	23	70	81
				90	201	9.3	233	22	72	80	213	9.5	245	22	77	81	219	9.6	251	23	80	81
90	22.5	1.7	4.0	50	146	10.1	181	14	37	106	149	10.1	184	15	41	106	152	10.3	187	15	43	107
				60	167	10.4	202	16	45	108	170	10.4	206	16	50	108	174	10.6	210	16	52	109
				70	183	10.7	220	17	54	110	187	10.7	224	18	59	110	191	10.8	228	18	62	110
				80	195	10.9	232	18	63	111	199	11.0	237	18	68	111	203	11.2	241	18	71	111
				90	202	11.2	240	18	72	111	206	11.3	244	18	78	112	210	11.4	249	18	81	112
	33.8	2.7	6.2	50	153	10.3	188	15	36	101	156	10.4	191	15	41	101	159	10.5	195	15	43	102
				60	172	10.5	208	16	45	102	176	10.6	212	17	50	103	179	10.8	216	17	52	103
				70	188	10.8	225	17	53	103	192	10.8	229	18	59	104	195	11.0	233	18	61	104
				80	198	11.1	236	18	62	104	202	11.1	240	18	68	104	206	11.3	245	18	71	104
				90	204	11.3	243	18	72	104	209	11.4	247	18	78	105	212	11.6	252	18	81	105
	45.0	3.7	8.6	50	159	10.6	195	15	36	99	162	10.6	198	15	40	99	165	10.7	202	15	43	99
				60	178	10.7	214	17	44	100	181	10.8	218	17	49	100	185	10.9	222	17	52	100
				70	192	11.0	229	18	53	100	196	11.0	233	18	58	100	200	11.1	238	18	61	101
				80	202	11.2	240	18	62	101	206	11.2	244	18	68	101	210	11.4	249	18	71	101
				90	207	11.5	246	18	72	101	211	11.5	250	18	78	101	215	11.7	255	18	80	101
110	22.5	1.6	3.7	50	133	12.4	176	11	38	126	134	12.4	177	11	42	126	136	12.7	179	11	44	126
				60	155	12.5	197	12	46	128	156	12.5	199	12	51	128	158	12.7	201	12	53	128
				70	174	12.7	217	14	55	129	175	12.7	218	14	60	129	177	12.9	221	14	62	130
				80	189	13.0	233	14	63	131	191	13.1	235	15	69	131	193	13.3	238	14	71	131
				90	201	13.6	247	15	72	132	203	13.6	249	15	78	132	204	13.9	252	15	81	132
	33.8	2.5	5.7	50	139	12.7	182	11	38	121	140	12.7	184	11	42	121	142	13.0	186	11	44	121
				60	160	12.7	203	13	46	122	161	12.7	205	13	50	122	163	13.0	207	13	53	122
				70	178	12.8	222	14	54	123	179	12.9	223	14	59	123	181	13.2	226	14	62	123
				80	193	13.2	238	15	63	124	194	13.2	239	15	69	124	196	13.5	242	15	71	124
				90	204	13.7	251	15	72	125	206	13.8	253	15	78	125	208	14.1	256	15	81	125
	45.0	3.5	8.0	50	145	13.0	189	11	37	118	146	13.0	191	11	41	118	148	13.3	193	11	43	119
				60	165	12.9	209	13	45	119	166	12.9	211	13	50	119	168	13.2	213	13	53	119
				70	182	13.0	226	14	54	120	184	13.1	228	14	59	120	185	13.3	231	14	62	120
				80	196	13.4	242	15	63	121	198	13.4	244	15	68	121	200	13.7	246	15	71	121
				90	207	13.9	255	15	72	121	209	13.9	257	15	78	121	211	14.2	260	15	81	122
120	22.5	1.6	3.6	50	126	13.9	173	9	39	135	127	14.0	174	9	43	135	128	14.2	177	9	44	136
				60	144	14.3	193	10	47	137	145	14.3	194	10	51	137	147	14.6	197	10	53	137
				70	162	14.7	212	11	56	139	164	14.7	214	11	60	139	165	15.0	217	11	63	139
				80	180	15.0	231	12	64	141	182	15.0	233	12	69	141	183	15.3	236	12	72	141
				90	196	15.3	249	13	73	142	198	15.3	250	13	78	142	200	15.7	254	13	81	143
	33.8	2.4	5.5	50	132	14.3	180	9	38	131	133	14.3	182	9	42	131	134	14.6	184	9	44	131
				60	149	14.6	199	10	47	132	151	14.6	201	10	51	132	152	15.0	203	10	53	132
				70	167	14.9	217	11	55	133	168	15.0	219	11	60	133	170	15.3	222	11	62	133
				80	184	15.2	236	12	64	134	185	15.3	238	12	69	134	187	15.6	241	12	72	134
				90	200	15.5	253	13	72	135	202	15.6	255	13	78	135	204	15.9	258	13	81	135
	45.0	3.3	7.7	50	137	14.6	187	9	38	128	139	14.7	189	9	42	128	140	15.0	191	9	44	129
				60	154	14.9	205	10	46	129	156	15.0	207	10	51	129	157	15.3	210	10	53	129
				70	171	15.2	223	11	55	130	173	15.2	225	11	60	130	174	15.6	228	11	62	130
				80	188	15.5	240	12	63	131	189	15.5	242	12	69	131	191	15.9	245	12	72	131
				90	204	15.8	258	13	72	131	206	15.8	260	13	78	132	208	16.2	263	13	81	132

Flow rates are per circuit - dual compressor units have 2 circuits

30 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW360D Series - R410A **Magnum Series**
Part Load Heating (One Compressor) **Water Source Heat Pump**

Source				Load	Load Flow 22.5 GPM						Load Flow 33.8 GPM						Load Flow 45 GPM					
EST	Flow	WPD		ELT	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				60	133	6.9	110	5.7	72	15	129	6.2	108	6.1	68	15	125	5.8	105	6.3	66	15
20	45.0	5.4	12.5	80	140	9.0	109	4.5	92	15	139	8.6	110	4.7	88	15	138	8.3	110	4.9	86	15
				100	138	11.6	99	3.5	112	16	137	11.0	99	3.6	108	16	136	10.7	99	3.7	106	16
				60	143	7.0	119	6.0	73	19	139	6.4	117	6.3	68	20	136	6.1	115	6.6	66	20
				80	150	9.1	119	4.8	93	19	149	8.6	120	5.1	89	19	149	8.4	120	5.2	87	19
	22.5	2.5	5.7	100	149	11.6	109	3.8	113	20	148	11.0	110	3.9	109	20	147	10.8	111	4.0	107	20
				120	146	14.8	96	2.9	133	21	144	14.0	96	3.0	129	21	142	13.7	96	3.1	126	21
				60	159	7.3	134	6.4	74	22	157	6.8	134	6.8	69	22	155	6.5	133	7.0	67	22
				80	165	9.3	133	5.2	95	22	165	8.8	135	5.5	90	22	164	8.6	135	5.6	87	22
30	33.8	3.8	8.7	100	163	11.7	123	4.1	114	23	162	11.2	124	4.2	110	23	161	10.9	124	4.3	107	23
				120	158	14.9	107	3.1	134	24	156	14.2	107	3.2	129	24	154	13.8	107	3.3	127	24
				60	153	7.2	129	6.2	74	24	151	6.7	128	6.6	69	24	149	6.4	127	6.8	67	24
				80	159	9.3	127	5.0	94	24	158	8.8	128	5.3	89	24	158	8.6	129	5.4	87	24
	45.0	5.3	12.2	100	156	11.8	116	3.9	114	25	155	11.2	117	4.1	109	25	155	10.9	117	4.1	107	25
				120	150	14.9	100	3.0	133	26	148	14.2	100	3.1	129	26	147	13.8	100	3.1	127	26
				60	163	7.3	138	6.5	74	28	161	6.9	137	6.9	70	28	159	6.6	136	7.1	67	28
				80	169	9.3	138	5.3	95	28	169	8.9	139	5.6	90	28	169	8.6	139	5.7	87	28
	22.5	2.1	4.7	100	168	11.8	128	4.2	115	29	167	11.2	129	4.4	110	29	166	10.9	129	4.5	107	29
				120	164	15.0	113	3.2	135	30	162	14.2	113	3.3	130	30	161	13.9	113	3.4	127	30
				60	191	7.7	165	7.2	77	30	191	7.4	165	7.6	71	30	189	7.2	165	7.8	68	30
				80	196	9.6	163	6.0	97	30	196	9.2	165	6.2	92	30	196	9.0	165	6.4	89	30
40	33.8	3.2	7.3	100	192	12.1	151	4.7	117	31	192	11.5	153	4.9	111	31	192	11.2	153	5.0	109	31
				120	186	15.3	134	3.6	137	32	184	14.5	134	3.7	131	32	183	14.1	135	3.8	128	32
				60	174	7.5	148	6.8	75	33	173	7.1	148	7.1	70	33	171	6.9	148	7.3	68	33
				80	179	9.5	146	5.5	96	34	179	9.1	148	5.8	91	33	178	8.9	148	5.9	88	33
	45.0	4.4	10.2	100	175	12.0	134	4.3	116	34	174	11.4	135	4.5	110	34	174	11.1	136	4.6	108	34
				120	168	15.1	116	3.3	135	35	166	14.3	117	3.4	130	35	164	14.0	116	3.4	127	35
				60	183	7.6	157	7.0	76	36	182	7.2	158	7.4	71	36	181	7.0	157	7.6	68	36
				80	189	9.5	157	5.8	97	36	190	9.1	158	6.1	91	36	189	8.9	159	6.2	88	36
	22.5	2.0	4.6	100	187	12.0	146	4.6	117	37	186	11.4	147	4.8	111	37	186	11.1	148	4.9	108	37
				120	183	15.3	131	3.5	136	38	181	14.5	131	3.7	131	38	179	14.1	131	3.7	128	38
				60	194	7.8	167	7.3	77	40	194	7.4	168	7.6	71	40	193	7.2	168	7.8	69	40
				80	199	9.7	166	6.0	98	40	199	9.3	167	6.3	92	40	199	9.1	168	6.4	89	40
50	33.8	3.1	7.1	100	195	12.1	154	4.7	117	41	195	11.6	155	4.9	112	41	194	11.3	156	5.0	109	41
				120	188	15.4	136	3.6	137	42	187	14.6	137	3.8	131	42	185	14.2	137	3.8	128	42
				60	205	8.0	177	7.5	78	42	205	7.6	179	7.9	72	42	204	7.4	179	8.0	69	42
				80	208	9.9	175	6.2	99	42	209	9.5	177	6.5	92	42	209	9.2	177	6.6	89	42
	45.0	4.3	9.9	100	203	12.3	161	4.8	118	43	203	11.7	163	5.1	112	43	203	11.5	164	5.2	109	43
				120	194	15.4	142	3.7	137	44	192	14.7	142	3.8	131	44	191	14.3	142	3.9	128	44
				60	193	7.8	166	7.2	77	45	193	7.5	167	7.6	71	45	192	7.3	167	7.7	69	45
				80	200	9.6	167	6.1	98	45	201	9.2	169	6.4	92	45	201	9.0	170	6.5	89	45
	22.5	1.9	4.5	100	201	12.1	159	4.9	118	46	201	11.5	161	5.1	112	46	200	11.3	162	5.2	109	46
				120	201	15.5	149	3.8	138	47	200	14.7	150	4.0	132	47	199	14.3	150	4.1	129	47
				60	205	8.0	178	7.5	78	49	205	7.7	179	7.9	72	49	205	7.5	179	8.0	69	49
				80	211	9.8	178	6.3	99	49	212	9.4	180	6.6	93	49	212	9.2	180	6.7	89	49
60	33.8	3.0	6.8	100	211	12.3	169	5.0	119	50	211	11.7	171	5.3	112	50	210	11.5	171	5.4	109	50
				120	209	15.6	155	3.9	139	51	207	14.8	156	4.1	132	51	206	14.4	157	4.2	129	51
				60	217	8.2	189	7.8	79	52	218	7.9	191	8.1	73	52	217	7.7	191	8.3	70	52
				80	222	10.0	188	6.5	100	52	223	9.6	190	6.8	93	52	223	9.4	191	6.9	90	52
	45.0	4.1	9.6	100	220	12.5	178	5.2	120	52	220	11.9	180	5.4	113	52	220	11.6	180	5.5	110	52
				120	216	15.8	162	4.0	139	53	214	15.0	163	4.2	133	53	213	14.6	163	4.3	129	53
				60	203	8.0	176	7.4	78	54	203	7.7	177	7.8	72	54	203	7.5	177	7.9	69	54
				80	211	9.8	178	6.4	99	54	212	9.4	180	6.6	93	54	212	9.1	181	6.8	89	54
	22.5	1.9	4.3	100	215	12.2	173	5.2	119	55	215	11.6	175	5.4	113	54	215	11.4	176	5.5	110	54
				120	220	15.7	167	4.1	140	55	219	14.9	168	4.3	133	55	217	14.5	168	4.4	130	55
				60	217	8.2	188	7.7	79	59	217	7.9	190	8.1	73	59	217	7.7	190	8.2	70	59
				80	224	10.0	190	6.6	100	59	225	9.6	192	6.9	93	59	225	9.4	193	7.0	90	59
70	33.8	2.9	6.6	100	226	12.4	183	5.3	120	59	226	11.9	186	5.6	113	59	226	11.6	186	5.7	110	59
				120	229	15.9	175	4.2	140	60	227	15.1	176	4.4	133	60	226	14.7	176	4.5	130	60
				60	230	8.4	201	8.0	80	61	231	8.1	203	8.4	74	61	230	7.9	203	8.5	70	61
				80	236	10.2	201	6.8	101	61	237	9.8	204	7.1	94	61	237	9.6	204	7.2	91	61
	45.0	4.0	9.3	100	237	12.7	194	5.5	121	61	237	12.1	196	5.7	114	61	237	11.9	197	5.9	111	61
				120	237	16.1	183	4.3	141	62	236	15.3	184	4.5	134	62	235	14.9	184	4.6	130	62
				60	213	8.2	185	7.6	79	64	214	7.9	187	7.9	73	63	213	7.7	187	8.1	69	63
				80	223	9.9	189	6.6	100	63	224	9.5	191	6.9	93	63	224	9.3	192	7.1	90	63
	22.5	1.8	4.2	100	229	12.3	187	5.5	120	63	229	11.7	189	5.7	114	63	229	11.5	190	5.8	110	63
				120	238	15.9	184	4.4	141	64	237	15.0	186	4.6	134	63	236	14.7	186	4.7	130	63
				60	228	8.4	199	7.9	80	68	229	8.1	201	8.3	74	68	228	7.9	201	8.4	70	68
				80	236	10.1	201	6.8	101	68	238	9.7	204	7.2	94	68	237	9.5	205	7.3	91	68
80	33.8	2.8	6.4	100	241	12.6	198	5.6	121	68	242	12.0	201	5.9	114	68	242	11.8	202	6.0	111	68
				120	248	16.1	193	4.5	142	69	247	15.3	195	4.7	135	68	247	14.9	196	4.8	131	68
				60	242	8.6	212	8.2	82	71	243	8.3	215	8.6	74	70	243	8.1	215	8.7	71	70
				80	250	10.4	214	7.0	102	70	251	10.0	217	7.4	95	70	251	9.8	218	7.5	91	70
	45.0	3.9	8.9	100	254	12.9	210	5.8	123	71	255	12.3	213	6.1	115	71	254	12.0	213	6.2	111	71
				120	259	16.4	203	4.6	143	71	258	15.6	205	4.9	135	71	257	15.2	205	5.0	131	71

Flow rates are per circuit - dual compressor units have 2 circuits

30 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

MW360D Series - R410A **Magnum Series**
Performace ISO 13256-2 **Water Source Heat Pump**

Loading/ Capacity	Water Loop				Ground Water				Ground Loop			
	Heating		Cooling		Heating		Cooling		Heating		Cooling	
	104°F ELT 68°F EST		53.6°F ELT 86°F EST		104°F ELT 50°F EST		53.6°F ELT 59°F EST		104°F ELT 32°F EST Full 41°F EST Part		53.6°F ELT 77°F EST Full 68°F EST Part	
	Mbtuh	COP	Mbtuh	EER	MBtuh	COP	Mbtuh	EER	Mbtuh	COP	Mbtuh	EER
Full	462	5.0	340	15.1	397	4.4	371	23.4	311	3.53	353	17.4
Part	233	5.6	175	16.9	201	4.9	187	23.7	175	4.41	189	26.5

Electrical Specification

Voltage	Elect. Symbol	Compressor*		Total Unit FLA	1 Supply Circ	
		RLA	LRA		Min. Ampacity*	Max. Fuse/ HACR*
208/230-3-60	2	55.7	320	111.4	125.3	150
460-3-60	3	27	180	54.0	60.8	80
575-3-60	4	21.4	135	42.8	48.2	60
380-3-60	6	32.9	210	65.8	74.0	100

**Where calculations are based on:*

MCA = 1.25 x RLA compressor + FLA other motors

MOP = 2.25 x RLA largest compressor + 1.00 x FLA other motors.

Ensure that all loads on the supply line are added into the equations above if some of the cells in the above table are blank

HACR circuit breaker for use in USA only. All fuses Class RK-5
Ratings are for each compressor - unit supplied with two
Ratings for pumps are per circuit - dual compressor units have 2 circuits
2 Supply Circuit - Two power feeds / breakers are required for each compressor

GeoFurnace works continually to improve its products. As a result, the design and specifications of each product at the time of order may be changed without notice. Please contact GeoFurnace at 1-605-854-9205 for latest design and specifications. Purchaser's approval of this data set signifies that the equipment is acceptable under the provisions of the job specification. Statements and other information contained herein are not express warranties and do not form the basis of any contract between the parties, but are merely GeoFurnace's opinion or commendation of its products.

40 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW480D Series - R410A **Magnum Series**
Full Load Cooling (Two Compressors) **Water Source Heat Pump**

Source				Load	Load Flow 30 GPM						Load Flow 45 GPM						Load Flow 60 GPM					
EST	Flow	WPD		ELT	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				50	399	19.1	464	21	37	65	433	20.2	502	21	40	67	450	20.7	520	22	43	67
				60	456	20.9	528	22	45	68	491	21.7	565	23	49	69	507	22.1	582	23	52	69
	30.0	2.5	5.8	70	496	21.9	571	23	53	69	530	22.6	607	23	58	70	548	23.1	627	24	61	71
				80	520	22.5	596	23	63	70	556	23.2	635	24	68	71	572	23.6	653	24	70	72
				90	530	22.8	607	23	72	70	565	23.5	646	24	77	72	583	23.9	664	24	80	72
				50	425	20.1	494	21	36	61	457	20.9	529	22	40	62	474	21.4	547	22	42	62
				60	474	21.4	547	22	44	62	507	22.1	582	23	49	63	524	22.6	601	23	51	63
50	45.0	4.7	10.9	70	507	22.2	583	23	53	63	543	22.9	621	24	58	64	560	23.4	639	24	61	64
				80	528	22.7	606	23	62	63	564	23.4	644	24	67	64	581	23.8	663	24	70	65
				90	536	23.0	615	23	72	64	571	23.6	652	24	77	64	589	24.1	671	24	80	65
				50	447	20.8	519	21	35	59	480	21.5	554	22	39	59	497	22.1	572	22	42	60
				60	490	21.9	565	22	44	59	525	22.5	601	23	48	60	541	23.0	620	23	51	60
	60.0	7.4	17.1	70	519	22.6	596	23	53	60	555	23.2	634	24	58	61	571	23.6	652	24	60	61
				80	537	23.0	615	23	62	60	572	23.6	653	24	67	61	590	24.0	672	25	70	61
				90	542	23.2	621	23	72	60	578	23.8	659	24	77	61	595	24.3	678	25	80	61
				50	405	25.0	490	16	37	86	429	25.3	515	17	40	87	442	25.8	530	17	43	88
				60	458	26.2	547	18	45	88	486	26.5	576	18	49	89	500	26.9	592	19	52	90
	30.0	2.3	5.4	70	498	27.0	590	18	53	90	529	27.4	622	19	58	91	543	27.8	638	20	61	91
				80	523	27.7	618	19	63	91	555	28.0	651	20	68	92	570	28.5	668	20	70	92
				90	533	28.1	629	19	72	91	566	28.5	663	20	77	92	581	28.9	680	20	80	93
				50	423	25.6	510	17	36	81	449	26.0	538	17	40	82	463	26.4	553	18	42	82
				60	473	26.6	564	18	44	83	503	27.0	595	19	49	83	516	27.4	610	19	51	84
70	45.0	4.4	10.3	70	509	27.4	602	19	53	83	540	27.7	634	19	58	84	555	28.2	651	20	61	84
				80	531	27.9	626	19	62	84	564	28.3	660	20	67	85	580	28.7	678	20	70	85
				90	540	28.4	637	19	72	84	572	28.7	670	20	77	85	588	29.1	687	20	80	85
				50	443	26.2	532	17	35	79	470	26.5	560	18	40	79	483	26.9	574	18	42	80
				60	488	27.0	580	18	44	80	518	27.4	611	19	48	80	533	27.8	627	19	51	80
	60.0	6.9	16.0	70	520	27.7	615	19	53	80	552	28.1	648	20	58	81	567	28.4	664	20	61	81
				80	540	28.2	636	19	62	81	573	28.6	671	20	67	81	588	29.0	687	20	70	81
				90	546	28.6	643	19	72	81	579	28.9	678	20	77	81	595	29.4	695	20	80	82
				50	393	31.5	500	12	37	107	401	31.4	508	13	41	107	408	31.9	517	13	43	107
				60	450	32.1	559	14	45	109	459	32.1	569	14	50	109	468	32.6	579	14	52	109
	30.0	2.2	5.0	70	495	32.8	607	15	53	110	506	32.8	618	15	59	111	516	33.3	630	15	61	111
				80	528	33.6	643	16	62	111	540	33.6	654	16	68	112	549	34.2	666	16	71	112
				90	546	34.5	664	16	72	112	557	34.5	675	16	78	113	569	35.0	688	16	81	113
				50	410	32.0	519	13	36	102	419	32.1	528	13	41	102	427	32.6	539	13	43	102
				60	465	32.5	576	14	45	103	475	32.6	586	15	49	103	484	33.1	597	15	52	103
90	45.0	4.1	9.6	70	508	33.2	621	15	53	104	518	33.3	632	16	58	104	528	33.8	643	16	61	104
				80	537	33.9	653	16	62	105	548	34.0	664	16	68	105	559	34.5	677	16	71	105
				90	553	34.7	672	16	72	105	565	34.8	684	16	77	105	576	35.4	697	16	80	105
				50	428	32.7	540	13	36	99	437	32.7	549	13	40	99	446	33.2	559	13	43	99
				60	480	33.1	593	14	44	100	490	33.1	603	15	49	100	500	33.6	614	15	52	100
	60.0	6.5	15.0	70	519	33.7	634	15	53	101	530	33.7	645	16	58	101	540	34.2	657	16	61	101
				80	546	34.3	663	16	62	101	557	34.3	675	16	68	101	569	34.9	688	16	71	101
				90	561	35.1	681	16	71	101	573	35.1	693	16	77	102	584	35.7	706	16	80	102
				50	355	38.7	487	9	38	126	358	38.8	491	9	42	126	363	39.5	498	9	44	127
				60	414	38.6	546	11	46	128	419	38.7	551	11	51	128	423	39.5	557	11	53	129
	30.0	2.0	4.7	70	467	39.1	600	12	54	130	471	39.2	605	12	60	130	476	39.9	612	12	62	130
				80	510	40.1	647	13	63	132	514	40.2	652	13	69	132	519	41.0	659	13	71	132
				90	542	41.7	684	13	72	133	547	41.8	690	13	78	133	552	42.7	697	13	81	133
				50	372	39.4	506	9	38	121	375	39.5	510	9	42	121	379	40.3	517	9	44	121
				60	428	39.2	562	11	46	122	433	39.3	567	11	50	123	437	40.1	574	11	53	123
110	45.0	3.8	8.9	70	478	39.6	614	12	54	124	483	39.7	619	12	59	124	488	40.5	626	12	62	124
				80	519	40.6	658	13	63	125	524	40.7	663	13	68	125	530	41.5	671	13	71	125
				90	551	42.1	695	13	72	125	557	42.3	701	13	78	126	561	43.1	708	13	81	126
				50	388	40.2	525	10	37	119	391	40.3	529	10	41	119	395	41.2	536	10	43	119
				60	443	39.9	579	11	45	120	447	40.0	583	11	50	120	451	40.8	591	11	52	120
	60.0	6.0	13.9	70	490	40.2	627	12	54	120	494	40.3	632	12	59	121	499	41.1	639	12	62	121
				80	529	41.1	669	13	62	121	534	41.2	675	13	68	121	539	42.0	683	13	71	121
				90	560	42.7	705	13	71	122	565	42.8	711	13	77	122	571	43.6	719	13	80	122
				50	334	43.3	482	8	39	136	337	43.4	485	8	43	136	340	44.3	491	8	44	136
				60	384	44.3	536	9	47	138	388	44.4	540	9	51	138	392	45.3	547	9	53	138
	30.0	2.0	4.5	70	435	45.3	589	10	56	140	439	45.4	594	10	60	140	443	46.3	601	10	63	140
				80	483	46.1	641	10	64	141	488	46.3	646	11	69	142	492	47.2	653	10	72	142
				90	529	47.0	689	11	72	143	533	47.1	694	11	78	143	539	48.1	703	11	81	143
				50	350	44.3	502	8	38	131	354	44.4	505	8	42	131	357	45.3	512	8	44	131
				60	398	45.2	553	9	47	132	402	45.3	557	9	51	132	406	46.3	564	9	53	133
120	45.0	3.7	8.5	70	446	46.1	603	10	55	133	451	46.2	609	10	60	134	455	47.2	616	10	62	134
				80	494	46.9	653	11	64	135	498	47.1	659	11	69	135	503	48.0	667	10	72	135
				90	539	47.7	702	11	72	136	544	47.8	707	11	78	136	549	48.8	716	11	81	136
				50	366	45.3	521	8	38	129	370	45.4	525	8	42	129	374	46.4	532	8	44	129
				60	412	46.1	570	9	46	129	416	46.2	574	9	51	130	421	47.2	582	9	53	130
	60.0	5.8	13.4	70	458	46.8	618	10	55	130	463	47.0	624	10	60	130	467	48.0	631	10	62	131
				80	504	47.6	666	11	63	131	509	47.8	672	11	69	131	514	48.8	680	11	71	131
				90	549	48.4	714	11	72	132	554	48.5	719	11	78	132	559	49.6	729	11	81	132

Flow rates are per circuit - dual compressor units have 2 circuits

40 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW480D Series - R410A **Magnum Series**
Full Load Heating (Two Compressors) **Water Source Heat Pump**

Source				Load	Load Flow 30 GPM						Load Flow 45 GPM						Load Flow 60 GPM					
EST	Flow	WPD		ELT	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				60	366	21.9	291	4.9	72	15	354	20.0	286	5.2	68	15	343	18.8	278	5.3	66	15
20	60.0	9.4	21.7	80	386	28.8	287	3.9	93	15	383	27.4	289	4.1	89	15	381	26.6	290	4.2	86	15
				100	383	36.7	258	3.1	113	16	379	35.0	260	3.2	108	16	377	34.2	260	3.2	106	16
				60	391	22.3	316	5.2	73	19	382	20.6	312	5.4	68	20	372	19.4	306	5.6	66	20
				80	414	28.9	315	4.2	94	19	411	27.4	317	4.4	89	19	409	26.7	318	4.5	87	19
	30.0	3.1	7.1	100	413	36.7	287	3.3	114	20	410	35.0	290	3.4	109	20	408	34.2	291	3.5	107	20
				120	407	46.3	250	2.6	134	22	400	44.1	250	2.7	129	22	396	43.0	250	2.7	127	22
				60	437	22.9	359	5.6	75	22	431	21.5	358	5.9	70	22	425	20.7	355	6.0	67	22
				80	455	29.3	355	4.5	95	22	453	27.8	358	4.8	90	22	451	27.1	359	4.9	88	22
30	45.0	5.8	13.5	100	450	37.1	324	3.6	115	23	448	35.4	327	3.7	110	23	446	34.5	328	3.8	107	23
				120	439	46.8	280	2.8	135	24	433	44.6	280	2.8	130	24	429	43.5	280	2.9	127	24
				60	421	22.8	343	5.4	74	24	415	21.3	342	5.7	69	24	408	20.4	338	5.9	67	24
				80	438	29.3	338	4.4	95	24	436	27.9	341	4.6	90	24	434	27.2	342	4.7	87	24
	60.0	9.1	21.1	100	432	37.2	305	3.4	114	25	429	35.5	308	3.5	110	25	427	34.6	309	3.6	107	25
				120	419	46.7	260	2.6	134	26	412	44.5	260	2.7	129	26	408	43.4	260	2.8	127	26
				60	447	23.1	368	5.7	75	28	442	21.7	368	6.0	70	28	436	20.9	365	6.1	67	28
				80	466	29.3	366	4.7	96	28	466	27.9	370	4.9	90	28	464	27.2	371	5.0	88	28
	30.0	2.6	5.9	100	464	37.2	337	3.7	115	29	462	35.4	341	3.8	110	29	459	34.5	341	3.9	108	29
				120	457	47.1	296	2.8	135	30	450	44.8	297	2.9	130	30	446	43.7	297	3.0	127	30
				60	526	24.2	443	6.4	78	30	524	23.1	446	6.7	72	30	521	22.4	445	6.8	69	30
				80	540	30.1	437	5.3	98	30	540	28.8	442	5.5	92	30	539	28.0	443	5.6	89	30
40	45.0	4.9	11.3	100	531	37.9	402	4.1	118	31	530	36.1	407	4.3	112	31	529	35.2	409	4.4	109	31
				120	516	47.9	353	3.2	137	32	510	45.6	354	3.3	131	32	506	44.4	355	3.3	128	32
				60	478	23.6	398	5.9	76	33	475	22.4	398	6.2	71	33	471	21.7	397	6.4	68	33
				80	492	29.9	390	4.8	96	33	492	28.5	395	5.1	91	33	490	27.8	395	5.2	88	33
	60.0	7.6	17.6	100	484	37.7	355	3.8	116	34	481	36.0	359	3.9	111	34	480	35.1	360	4.0	108	34
				120	466	47.4	304	2.9	136	35	460	45.1	306	3.0	130	35	456	44.0	306	3.0	128	35
				60	503	23.9	422	6.2	77	36	501	22.6	424	6.5	71	36	498	22.0	423	6.6	68	36
				80	521	29.9	419	5.1	97	36	522	28.5	424	5.4	92	36	520	27.8	425	5.5	89	36
	30.0	2.5	5.8	100	516	37.7	388	4.0	117	37	515	35.9	392	4.2	111	37	513	35.0	394	4.3	109	37
				120	507	47.8	344	3.1	137	39	502	45.5	347	3.2	131	38	498	44.3	346	3.3	128	38
				60	534	24.4	451	6.4	78	40	533	23.3	453	6.7	72	40	530	22.6	453	6.9	69	40
				80	547	30.3	444	5.3	98	40	548	29.0	449	5.5	92	40	547	28.3	451	5.7	89	40
50	45.0	4.7	10.9	100	539	38.1	409	4.2	118	41	538	36.3	414	4.3	112	41	536	35.5	415	4.4	109	41
				120	523	48.1	359	3.2	137	42	517	45.7	361	3.3	131	42	513	44.6	361	3.4	129	42
				60	563	24.8	478	6.7	79	42	564	23.8	483	6.9	73	42	562	23.2	483	7.1	69	42
				80	574	30.8	469	5.5	99	42	575	29.4	475	5.7	93	42	575	28.7	477	5.9	90	42
	60.0	7.4	17.1	100	561	38.5	430	4.3	119	43	561	36.8	436	4.5	112	43	560	35.8	438	4.6	109	43
				120	538	48.3	374	3.3	138	44	533	46.0	376	3.4	132	44	529	44.7	377	3.5	129	44
				60	531	24.4	448	6.4	78	45	530	23.3	451	6.7	72	45	528	22.7	450	6.8	69	45
				80	551	30.1	449	5.4	98	45	553	28.8	455	5.6	92	45	552	28.1	456	5.8	89	45
	30.0	2.4	5.6	100	554	37.8	425	4.3	118	46	554	36.1	430	4.5	112	46	553	35.2	432	4.6	109	46
				120	558	48.4	393	3.4	139	47	553	46.0	396	3.5	132	47	550	44.8	397	3.6	129	47
				60	565	25.0	480	6.6	79	49	565	23.9	483	6.9	73	49	564	23.4	484	7.1	69	49
				80	582	30.6	477	5.6	99	49	584	29.4	484	5.8	93	49	583	28.7	485	6.0	90	49
60	45.0	4.6	10.6	100	581	38.4	450	4.4	119	50	581	36.6	456	4.6	113	50	580	35.8	458	4.7	110	50
				120	578	48.8	411	3.5	139	51	573	46.4	415	3.6	133	51	569	45.1	415	3.7	129	51
				60	598	25.5	511	6.9	80	51	600	24.5	517	7.2	73	51	599	23.9	517	7.3	70	51
				80	612	31.2	506	5.8	100	52	615	29.9	513	6.0	94	51	614	29.2	514	6.2	90	51
	60.0	7.2	16.6	100	608	39.0	475	4.6	120	52	608	37.2	481	4.8	114	52	607	36.3	483	4.9	110	52
				120	597	49.2	430	3.6	140	53	592	46.7	433	3.7	133	53	589	45.5	434	3.8	130	53
				60	559	25.0	474	6.6	79	54	559	23.9	478	6.9	72	54	558	23.3	478	7.0	69	54
				80	583	30.4	479	5.6	99	54	584	29.1	485	5.9	93	54	584	28.4	487	6.0	90	54
	30.0	2.3	5.4	100	593	38.0	463	4.6	120	55	592	36.3	468	4.8	113	54	591	35.4	471	4.9	110	54
				120	608	48.9	441	3.6	140	55	604	46.4	446	3.8	133	55	601	45.2	447	3.9	130	55
				60	596	25.6	509	6.8	80	59	598	24.5	514	7.1	73	59	597	24.0	515	7.3	70	59
				80	616	31.0	510	5.8	101	59	619	29.7	518	6.1	94	58	619	29.1	520	6.2	90	58
70	45.0	4.4	10.3	100	623	38.7	491	4.7	121	59	624	37.0	498	4.9	114	59	623	36.1	500	5.1	110	59
				120	632	49.4	463	3.7	141	60	628	47.0	468	3.9	134	60	625	45.7	469	4.0	130	60
				60	633	26.1	544	7.1	81	61	636	25.1	550	7.4	74	61	635	24.6	551	7.6	71	61
				80	650	31.6	542	6.0	102	61	654	30.3	550	6.3	95	61	654	29.7	552	6.5	91	61
	60.0	6.9	16.0	100	654	39.4	519	4.9	122	61	655	37.7	526	5.1	115	61	654	36.8	529	5.2	111	61
				120	656	50.1	485	3.8	142	62	653	47.6	490	4.0	135	62	649	46.3	491	4.1	131	62
				60	587	25.5	500	6.7	80	63	588	24.5	505	7.0	73	63	587	24.0	506	7.2	70	63
				80	614	30.6	509	5.9	100	63	616	29.4	516	6.1	94	63	616	28.7	518	6.3	90	63
	30.0	2.3	5.2	100	630	38.2	500	4.8	121	63	631	36.5	507	5.1	114	63	630	35.6	509	5.2	111	63
				120	658	49.4	490	3.9	142	64	655	46.9	495	4.1	135	63	652	45.6	496	4.2	131	63
				60	627	26.1	538	7.0	81	68	630	25.1	544	7.3	74	68	629	24.6	545	7.5	70	68
				80	651	31.4	543	6.1	102	68	655	30.1	552	6.4	95	68	654	29.4	554	6.5	91	68
80	45.0	4.3	9.9	100	665	39.0	531	5.0	122	68	667	37.3	540	5.2	115	68	666	36.5	542	5.4	111	68
				120	686	50.1	515	4.0	143	69	683	47.6	521	4.2	135	68	680	46.4	522	4.3	131	68
				60	667	26.7	576	7.3	82	70	671	25.7	583	7.6	75	70	671	25.2	585	7.8	71	70
				80	688	32.1	578	6.3	103	70	692	30.8	587	6.6	95	70	692	30.2	589	6.7	92	70
	60.0	6.7	15.5	100	700	40.0	563	5.1	123	71	702	38.1	572	5.4	116	70	702	37.2	574	5.5	112	70
				120	713	50.9	540	4.1	144	71	711	48.3	546	4.3	136	71	709	47.1	548	4.4	132	71

Flow rates are per circuit - dual compressor units have 2 circuits

40 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW480D Series - R410A **Magnum Series**
Part Load Cooling (One Compressor) **Water Source Heat Pump**

Source				Load	Load Flow 30 GPM						Load Flow 45 GPM						Load Flow 60 GPM					
EST	Flow	WPD		ELT	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				50	148	6.1	169	24	40	61	160	6.4	182	25	43	62	166	6.6	189	25	44	63
				60	169	6.7	191	25	49	63	181	7.0	205	26	52	64	187	7.1	211	26	54	64
	30.0	2.5	5.8	70	183	7.1	207	26	58	64	195	7.3	220	27	61	65	201	7.5	227	27	63	65
				80	191	7.3	216	26	67	64	204	7.5	230	27	71	65	210	7.7	236	27	73	66
				90	195	7.4	220	26	77	65	207	7.6	233	27	81	66	214	7.8	240	27	83	66
				50	157	6.4	179	24	40	58	169	6.7	192	25	42	59	175	6.9	198	25	44	59
				60	175	6.9	198	25	48	59	187	7.1	211	26	52	59	193	7.3	218	26	54	60
50	45.0	4.7	10.9	70	187	7.2	211	26	58	59	199	7.4	225	27	61	60	205	7.6	231	27	63	60
				80	194	7.4	219	26	67	60	207	7.6	233	27	71	60	213	7.7	240	28	73	61
				90	197	7.5	223	26	77	60	210	7.7	236	27	81	60	216	7.8	243	28	83	61
				50	165	6.7	188	25	39	56	177	6.9	201	26	42	57	183	7.1	207	26	44	57
				60	181	7.1	205	26	48	57	193	7.3	218	26	51	57	199	7.5	224	27	53	57
	60.0	7.4	17.1	70	191	7.3	216	26	57	57	204	7.5	229	27	61	58	210	7.7	236	27	63	58
				80	197	7.4	223	27	67	57	210	7.7	236	27	71	58	216	7.8	243	28	73	58
				90	199	7.5	225	26	77	57	212	7.7	238	27	81	58	218	7.9	245	28	83	58
				50	150	8.1	178	19	40	82	159	8.2	187	19	43	82	164	8.4	192	20	45	83
				60	170	8.5	198	20	49	83	179	8.6	209	21	52	84	184	8.7	214	21	54	84
	30.0	2.3	5.4	70	184	8.8	214	21	58	84	195	8.9	225	22	61	85	200	9.1	231	22	63	85
				80	193	9.0	224	21	67	85	204	9.2	235	22	71	86	210	9.3	242	23	73	86
				90	196	9.2	228	21	77	85	208	9.3	240	22	81	86	214	9.5	246	23	83	86
				50	157	8.3	185	19	40	78	166	8.4	195	20	43	79	171	8.6	200	20	44	79
				60	175	8.6	204	20	48	79	185	8.8	215	21	52	80	190	8.9	221	21	54	80
70	45.0	4.4	10.3	70	188	8.9	218	21	57	80	199	9.0	230	22	61	80	204	9.2	236	22	63	80
				80	196	9.1	227	22	67	80	207	9.3	239	22	71	81	213	9.4	245	23	73	81
				90	199	9.3	230	21	77	80	210	9.4	242	22	81	81	216	9.5	249	23	83	81
				50	164	8.5	193	19	39	76	174	8.6	203	20	42	77	178	8.7	208	20	44	77
				60	180	8.8	210	21	48	77	191	8.9	221	21	52	77	196	9.1	227	22	53	78
	60.0	6.9	16.0	70	192	9.0	223	21	57	77	203	9.2	234	22	61	78	209	9.3	240	22	63	78
				80	199	9.2	230	22	67	78	211	9.3	243	23	71	78	216	9.5	248	23	73	78
				90	201	9.3	233	22	77	78	213	9.5	245	22	81	78	219	9.6	251	23	83	78
				50	146	10.1	181	14	40	102	149	10.1	184	15	43	102	152	10.3	187	15	45	102
				60	167	10.4	202	16	49	103	170	10.4	206	16	52	104	174	10.6	210	16	54	104
	30.0	2.2	5.0	70	183	10.7	220	17	58	105	187	10.7	224	18	62	105	191	10.8	228	18	64	105
				80	195	10.9	232	18	67	105	199	11.0	237	18	71	106	203	11.2	241	18	73	106
				90	202	11.2	240	18	77	106	206	11.3	244	18	81	106	210	11.4	249	18	83	107
				50	153	10.3	188	15	40	98	156	10.4	191	15	43	98	159	10.5	195	15	45	99
				60	172	10.5	208	16	49	99	176	10.6	212	17	52	99	179	10.8	216	17	54	100
90	45.0	4.1	9.6	70	188	10.8	225	17	57	100	192	10.8	229	18	61	100	195	11.0	233	18	63	100
				80	198	11.1	236	18	67	100	202	11.1	240	18	71	101	206	11.3	245	18	73	101
				90	204	11.3	243	18	76	101	209	11.4	247	18	81	101	212	11.6	252	18	83	101
				50	159	10.6	195	15	39	97	162	10.6	198	15	43	97	165	10.7	202	15	44	97
				60	178	10.7	214	17	48	97	181	10.8	218	17	52	97	185	10.9	222	17	54	97
	60.0	6.5	15.0	70	192	11.0	229	18	57	98	196	11.0	233	18	61	98	200	11.1	238	18	63	98
				80	202	11.2	240	18	67	98	206	11.2	244	18	71	98	210	11.4	249	18	73	98
				90	207	11.5	246	18	76	98	211	11.5	250	18	81	98	215	11.7	255	18	83	99
				50	133	12.4	176	11	41	122	134	12.4	177	11	44	122	136	12.7	179	11	45	122
				60	155	12.5	197	12	50	123	156	12.5	199	12	53	123	158	12.7	201	12	55	123
	30.0	2.0	4.7	70	174	12.7	217	14	58	124	175	12.7	218	14	62	125	177	12.9	221	14	64	125
				80	189	13.0	233	14	67	126	191	13.1	235	15	72	126	193	13.3	238	14	74	126
				90	201	13.6	247	15	77	126	203	13.6	249	15	81	127	204	13.9	252	15	83	127
				50	139	12.7	182	11	41	118	140	12.7	184	11	44	118	142	13.0	186	11	45	118
				60	160	12.7	203	13	49	119	161	12.7	205	13	53	119	163	13.0	207	13	55	119
110	45.0	3.8	8.9	70	178	12.8	222	14	58	120	179	12.9	223	14	62	120	181	13.2	226	14	64	120
				80	193	13.2	238	15	67	121	194	13.2	239	15	71	121	196	13.5	242	15	73	121
				90	204	13.7	251	15	76	121	206	13.8	253	15	81	121	208	14.1	256	15	83	121
				50	145	13.0	189	11	40	116	146	13.0	191	11	44	116	148	13.3	193	11	45	116
				60	165	12.9	209	13	49	117	166	12.9	211	13	53	117	168	13.2	213	13	54	117
	60.0	6.0	13.9	70	182	13.0	226	14	58	118	184	13.1	228	14	62	118	185	13.3	231	14	64	118
				80	196	13.4	242	15	67	118	198	13.4	244	15	71	118	200	13.7	246	15	73	118
				90	207	13.9	255	15	76	118	209	13.9	257	15	81	119	211	14.2	260	15	83	119
				50	126	13.9	173	9	42	132	127	14.0	174	9	44	132	128	14.2	177	9	46	132
				60	144	14.3	193	10	50	133	145	14.3	194	10	54	133	147	14.6	197	10	55	133
	30.0	2.0	4.5	70	162	14.7	212	11	59	134	164	14.7	214	11	63	134	165	15.0	217	11	64	134
				80	180	15.0	231	12	68	135	182	15.0	233	12	72	136	183	15.3	236	12	74	136
				90	196	15.3	249	13	77	137	198	15.3	250	13	81	137	200	15.7	254	13	83	137
				50	132	14.3	180	9	41	128	133	14.3	182	9	44	128	134	14.6	184	9	46	128
				60	149	14.6	199	10	50	129	151	14.6	201	10	53	129	152	15.0	203	10	55	129
120	45.0	3.7	8.5	70	167	14.9	217	11	59	130	168	15.0	219	11	63	130	170	15.3	222	11	64	130
				80	184	15.2	236	12	68	130	185	15.3	238	12	72	131	187	15.6	241	12	74	131
				90	200	15.5	253	13	77	131	202	15.6	255	13	81	131	204	15.9	258	13	83	131
				50	137	14.6	187	9	41	126	139	14.7	189	9	44	126	140	15.0	191	9	45	126
				60	154	14.9	205	10	50	127	156	15.0	207	10	53	127	157	15.3	210	10	55	127
	60.0	5.8	13.4	70	171	15.2	223	11	59	127	173	15.2	225	11	62	127	174	15.6	228	11	64	128
				80	188	15.5	240	12	67	128	189	15.5	242	12	72	128	191	15.9	245	12	74	128
				90	204	15.8	258	13	76	129	206	15.8	260	13	81	129	208	16.2	263	13	83	129

Flow rates are per circuit - dual compressor units have 2 circuits

40 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW480D Series - R410A **Magnum Series**
Part Load Heating (One Compressor) **Water Source Heat Pump**

Source				Load	Load Flow 30 GPM						Load Flow 45 GPM						Load Flow 60 GPM					
EST	Flow	WPD		ELT	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				60	133	6.9	110	5.7	69	16	129	6.2	108	6.1	66	16	125	5.8	105	6.3	64	17
20	60.0	9.4	21.7	80	140	9.0	109	4.5	89	16	139	8.6	110	4.7	86	16	138	8.3	110	4.9	85	16
				100	138	11.6	99	3.5	109	17	137	11.0	99	3.6	106	17	136	10.7	99	3.7	105	17
				60	143	7.0	119	6.0	70	22	139	6.4	117	6.3	66	22	136	6.1	115	6.6	65	22
				80	150	9.1	119	4.8	90	22	149	8.6	120	5.1	87	22	149	8.4	120	5.2	85	22
	30.0	3.1	7.1	100	149	11.6	109	3.8	110	23	148	11.0	110	3.9	107	23	147	10.8	111	4.0	105	23
				120	146	14.8	96	2.9	130	24	144	14.0	96	3.0	126	24	142	13.7	96	3.1	125	24
				60	159	7.3	134	6.4	71	24	157	6.8	134	6.8	67	24	155	6.5	133	7.0	65	24
				80	165	9.3	133	5.2	91	24	165	8.8	135	5.5	87	24	164	8.6	135	5.6	85	24
30	45.0	5.8	13.5	100	163	11.7	123	4.1	111	25	162	11.2	124	4.2	107	24	161	10.9	124	4.3	105	24
				120	158	14.9	107	3.1	131	25	156	14.2	107	3.2	127	25	154	13.8	107	3.3	125	25
				60	153	7.2	129	6.2	70	26	151	6.7	128	6.6	67	26	149	6.4	127	6.8	65	26
				80	159	9.3	127	5.0	91	26	158	8.8	128	5.3	87	26	158	8.6	129	5.4	85	26
	60.0	9.1	21.1	100	156	11.8	116	3.9	110	26	155	11.2	117	4.1	107	26	155	10.9	117	4.1	105	26
				120	150	14.9	100	3.0	130	27	148	14.2	100	3.1	127	27	147	13.8	100	3.1	125	27
				60	163	7.3	138	6.5	71	31	161	6.9	137	6.9	67	31	159	6.6	136	7.1	65	31
				80	169	9.3	138	5.3	91	31	169	8.9	139	5.6	88	31	169	8.6	139	5.7	86	31
	30.0	2.6	5.9	100	168	11.8	128	4.2	111	31	167	11.2	129	4.4	107	31	166	10.9	129	4.5	106	31
				120	164	15.0	113	3.2	131	32	162	14.2	113	3.3	127	32	161	13.9	113	3.4	125	32
				60	191	7.7	165	7.2	73	33	191	7.4	165	7.6	68	33	189	7.2	165	7.8	66	33
				80	196	9.6	163	6.0	93	33	196	9.2	165	6.2	89	33	196	9.0	165	6.4	87	33
40	45.0	4.9	11.3	100	192	12.1	151	4.7	113	33	192	11.5	153	4.9	109	33	192	11.2	153	5.0	106	33
				120	186	15.3	134	3.6	132	34	184	14.5	134	3.7	128	34	183	14.1	135	3.8	126	34
				60	174	7.5	148	6.8	72	35	173	7.1	148	7.1	68	35	171	6.9	148	7.3	66	35
				80	179	9.5	146	5.5	92	35	179	9.1	148	5.8	88	35	178	8.9	148	5.9	86	35
	60.0	7.6	17.6	100	175	12.0	134	4.3	112	36	174	11.4	135	4.5	108	35	174	11.1	136	4.6	106	35
				120	168	15.1	116	3.3	131	36	166	14.3	117	3.4	127	36	164	14.0	116	3.4	125	36
				60	183	7.6	157	7.0	72	40	182	7.2	158	7.4	68	39	181	7.0	157	7.6	66	40
				80	189	9.5	157	5.8	93	40	190	9.1	158	6.1	88	39	189	8.9	159	6.2	86	39
	30.0	2.5	5.8	100	187	12.0	146	4.6	112	40	186	11.4	147	4.8	108	40	186	11.1	148	4.9	106	40
				120	183	15.3	131	3.5	132	41	181	14.5	131	3.7	128	41	179	14.1	131	3.7	126	41
				60	194	7.8	167	7.3	73	43	194	7.4	168	7.6	69	43	193	7.2	168	7.8	66	43
				80	199	9.7	166	6.0	93	43	199	9.3	167	6.3	89	43	199	9.1	168	6.4	87	43
50	45.0	4.7	10.9	100	195	12.1	154	4.7	113	43	195	11.6	155	4.9	109	43	194	11.3	156	5.0	106	43
				120	188	15.4	136	3.6	133	44	187	14.6	137	3.8	128	44	185	14.2	137	3.8	126	44
				60	205	8.0	177	7.5	74	44	205	7.6	179	7.9	69	44	204	7.4	179	8.0	67	44
				80	208	9.9	175	6.2	94	44	209	9.5	177	6.5	89	44	209	9.2	177	6.6	87	44
	60.0	7.4	17.1	100	203	12.3	161	4.8	114	45	203	11.7	163	5.1	109	45	203	11.5	164	5.2	107	45
				120	194	15.4	142	3.7	133	45	192	14.7	142	3.8	129	45	191	14.3	142	3.9	126	45
				60	193	7.8	166	7.2	73	49	193	7.5	167	7.6	69	49	192	7.3	167	7.7	66	49
				80	200	9.6	167	6.1	93	49	201	9.2	169	6.4	89	49	201	9.0	170	6.5	87	49
	30.0	2.4	5.6	100	201	12.1	159	4.9	113	49	201	11.5	161	5.1	109	49	200	11.3	162	5.2	107	49
				120	201	15.5	149	3.8	133	50	200	14.7	150	4.0	129	50	199	14.3	150	4.1	127	50
				60	205	8.0	178	7.5	74	52	205	7.7	179	7.9	69	52	205	7.5	179	8.0	67	52
				80	211	9.8	178	6.3	94	52	212	9.4	180	6.6	89	52	212	9.2	180	6.7	87	52
60	45.0	4.6	10.6	100	211	12.3	169	5.0	114	53	211	11.7	171	5.3	109	52	210	11.5	171	5.4	107	52
				120	209	15.6	155	3.9	134	53	207	14.8	156	4.1	129	53	206	14.4	157	4.2	127	53
				60	217	8.2	189	7.8	74	54	218	7.9	191	8.1	70	54	217	7.7	191	8.3	67	54
				80	222	10.0	188	6.5	95	54	223	9.6	190	6.8	90	54	223	9.4	191	6.9	87	54
	60.0	7.2	16.6	100	220	12.5	178	5.2	115	54	220	11.9	180	5.4	110	54	220	11.6	180	5.5	107	54
				120	216	15.8	162	4.0	134	55	214	15.0	163	4.2	130	55	213	14.6	163	4.3	127	55
				60	203	8.0	176	7.4	74	58	203	7.7	177	7.8	69	58	203	7.5	177	7.9	67	58
				80	211	9.8	178	6.4	94	58	212	9.4	180	6.6	89	58	212	9.1	181	6.8	87	58
	30.0	2.3	5.4	100	215	12.2	173	5.2	114	58	215	11.6	175	5.4	110	58	215	11.4	176	5.5	107	58
				120	220	15.7	167	4.1	135	59	219	14.9	168	4.3	130	59	217	14.5	168	4.4	127	59
				60	217	8.2	188	7.7	74	62	217	7.9	190	8.1	70	62	217	7.7	190	8.2	67	62
				80	224	10.0	190	6.6	95	62	225	9.6	192	6.9	90	61	225	9.4	193	7.0	87	61
70	45.0	4.4	10.3	100	226	12.4	183	5.3	115	62	226	11.9	186	5.6	110	62	226	11.6	186	5.7	108	62
				120	229	15.9	175	4.2	135	62	227	15.1	176	4.4	130	62	226	14.7	176	4.5	128	62
				60	230	8.4	201	8.0	75	63	231	8.1	203	8.4	70	63	230	7.9	203	8.5	68	63
				80	236	10.2	201	6.8	96	63	237	9.8	204	7.1	91	63	237	9.6	204	7.2	88	63
	60.0	6.9	16.0	100	237	12.7	194	5.5	116	64	237	12.1	196	5.7	111	63	237	11.9	197	5.9	108	63
				120	237	16.1	183	4.3	136	64	236	15.3	184	4.5	131	64	235	14.9	184	4.6	128	64
				60	213	8.2	185	7.6	74	68	214	7.9	187	7.9	69	68	213	7.7	187	8.1	67	68
				80	223	9.9	189	6.6	95	67	224	9.5	191	6.9	90	67	224	9.3	192	7.1	87	67
	30.0	2.3	5.2	100	229	12.3	187	5.5	115	68	229	11.7	189	5.7	110	67	229	11.5	190	5.8	108	67
				120	238	15.9	184	4.4	136	68	237	15.0	186	4.6	131	68	236	14.7	186	4.7	128	68
				60	228	8.4	199	7.9	75	71	229	8.1	201	8.3	70	71	228	7.9	201	8.4	68	71
				80	236	10.1	201	6.8	96	71	238	9.7	204	7.2	91	71	237	9.5	205	7.3	88	71
80	45.0	4.3	9.9	100	241	12.6	198	5.6	116	71	242	12.0	201	5.9	111	71	242	11.8	202	6.0	108	71
				120	248	16.1	193	4.5	137	71	247	15.3	195	4.7	131	71	247	14.9	196	4.8	128	71
				60	242	8.6	212	8.2	76	73	243	8.3	215	8.6	71	73	243	8.1	215	8.7	68	73
				80	250	10.4	214	7.0	97	73	251	10.0	217	7.4	91	73	251	9.8	218	7.5	88	73
	60.0	6.7	15.5	100	254	12.9	210	5.8	117	73	255	12.3	213	6.1	111	73	254	12.0	213	6.2	108	73
				120	259	16.4	203	4.6	137	73	258	15.6	205	4.9	131	73	257	15.2	205	5.0	129	73

Flow rates are per circuit - dual compressor units have 2 circuits

40 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

MW480D Series - R410A **Magnum Series**
Performace ISO 13256-2 **Water Source Heat Pump**

Loading/ Capacity	Water Loop				Ground Water				Ground Loop			
	Heating		Cooling		Heating		Cooling		Heating		Cooling	
	104°F ELT 68°F EST		53.6°F ELT 86°F EST		104°F ELT 50°F EST		53.6°F ELT 59°F EST		104°F ELT 32°F EST Full 41°F EST Part		53.6°F ELT 77°F EST Full 68°F EST Part	
	Mbtuh	COP	Mbtuh	EER	MBtuh	COP	Mbtuh	EER	Mbtuh	COP	Mbtuh	EER
Full	643	4.9	472	14.8	554	4.4	507	20.8	434	3.52	488	16.8
Part	233	5.6	175	16.9	201	4.9	187	23.7	175	4.41	189	26.5

Electrical Specification

Voltage	Elect. Symbol	Compressor*		Total Unit FLA	1 Supply Circ	
		RLA	LRA		Min. Ampacity*	Max. Fuse/ HACR*
208/230-3-60	2	75	485	150.0	168.8	225
460-3-60	3	36.4	215	72.8	81.9	110
575-3-60	4	29.3	175	58.6	65.9	90
380-3-60	6	42.9	260	85.8	96.5	125

**Where calculations are based on:*
MCA = 1.25 x RLA compressor + FLA other motors
MOP = 2.25 x RLA largest compressor + 1.00 x FLA other motors.
Ensure that all loads on the supply line are added into the equations above if some of the cells in the above table are blank

HACR circuit breaker for use in USA only. All fuses Class RK-5
Ratings are for each compressor - unit supplied with two
Ratings for pumps are per circuit - dual compressor units have 2 circuits
2 Supply Circuit - Two power feeds / breakers are required for each compressor

GeoFurnace works continually to improve its products. As a result, the design and specifications of each product at the time of order may be changed without notice. Please contact GeoFurnace at 1-605-854-9205 for latest design and specifications. Purchaser's approval of this data set signifies that the equipment is acceptable under the provisions of the job specification. Statements and other information contained herein are not express warranties and do not form the basis of any contract between the parties, but are merely GeoFurnace's opinion or commendation of its products.

50 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW600D Series - R410A **Magnum Series**
Full Load Cooling (Two Compressors) **Water Source Heat Pump**

Source				Load	Load Flow 37.5 GPM						Load Flow 56.3 GPM						Load Flow 75 GPM					
EST	Flow	WPD		ELT	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				50	475	22.4	551	21	37	65	515	23.6	596	22	41	66	535	24.3	618	22	43	66
				60	543	24.5	626	22	46	67	584	25.4	671	23	50	68	603	25.9	692	23	52	68
	37.5	2.7	6.1	70	590	25.7	678	23	54	68	631	26.4	721	24	59	69	652	27.1	744	24	61	70
				80	618	26.4	708	23	64	69	661	27.2	754	24	68	70	681	27.7	775	25	71	71
				90	630	26.8	721	24	73	69	673	27.6	767	24	78	70	693	28.0	789	25	81	71
				50	506	23.6	586	21	37	60	544	24.5	628	22	40	61	564	25.1	649	22	42	62
				60	564	25.1	649	22	45	62	603	25.9	692	23	49	62	624	26.5	714	24	52	63
50	56.3	4.1	9.4	70	604	26.0	692	23	54	62	646	26.9	738	24	59	63	666	27.4	759	24	61	63
				80	628	26.7	719	24	63	63	671	27.5	765	24	68	64	692	27.9	787	25	71	64
				90	638	27.0	730	24	73	63	680	27.7	774	25	78	64	701	28.2	797	25	81	64
				50	532	24.4	616	22	36	58	572	25.2	658	23	40	59	591	25.9	680	23	42	59
				60	583	25.7	670	23	44	59	624	26.4	714	24	49	60	644	27.0	736	24	51	60
	75.0	6.5	15.1	70	618	26.5	708	23	54	59	660	27.2	753	24	58	60	680	27.7	774	25	61	60
				80	638	26.9	730	24	63	60	681	27.7	775	25	68	60	701	28.2	798	25	71	61
				90	645	27.2	737	24	73	60	688	27.9	783	25	78	60	708	28.4	805	25	81	61
				50	480	29.6	581	16	37	85	509	29.9	611	17	41	86	524	30.5	628	17	43	87
				60	544	30.9	649	18	46	87	577	31.2	684	18	50	88	594	31.7	702	19	52	89
	37.5	2.5	5.7	70	591	31.8	700	19	54	89	628	32.3	738	19	59	90	645	32.8	757	20	61	90
				80	622	32.6	733	19	63	90	659	33.0	772	20	68	91	678	33.5	792	20	71	91
				90	633	33.2	746	19	73	90	672	33.6	786	20	78	91	691	34.0	807	20	81	92
				50	502	30.2	605	17	37	81	533	30.7	638	17	41	81	549	31.1	655	18	43	82
				60	561	31.3	668	18	45	82	597	31.8	705	19	49	83	613	32.3	723	19	52	83
70	56.3	3.8	8.8	70	604	32.3	714	19	54	83	641	32.6	753	20	59	83	660	33.2	773	20	61	84
				80	631	32.9	743	19	63	83	670	33.4	783	20	68	84	689	33.8	804	20	71	84
				90	641	33.4	755	19	73	83	680	33.8	795	20	78	84	699	34.3	816	20	81	85
				50	525	31.0	631	17	36	78	557	31.3	664	18	40	79	573	31.7	681	18	42	79
				60	579	31.9	688	18	45	79	615	32.3	725	19	49	80	633	32.7	744	19	52	80
	75.0	6.1	14.1	70	618	32.7	729	19	54	80	656	33.1	768	20	58	80	674	33.5	788	20	61	81
				80	641	33.2	754	19	63	80	681	33.7	796	20	68	81	699	34.1	815	20	71	81
				90	648	33.7	763	19	73	80	688	34.1	804	20	78	81	707	34.6	825	20	81	81
				50	465	37.4	593	12	38	106	475	37.4	603	13	42	106	484	38.0	614	13	44	106
				60	534	38.0	664	14	46	108	545	38.1	675	14	50	108	556	38.6	688	14	53	108
	37.5	2.3	5.4	70	588	38.9	721	15	54	109	601	38.9	733	15	59	110	613	39.5	747	16	62	110
				80	627	39.8	763	16	63	110	641	39.8	776	16	69	111	652	40.5	790	16	71	111
				90	649	40.8	788	16	73	111	662	40.8	801	16	78	111	676	41.4	817	16	81	112
				50	486	38.1	616	13	37	101	497	38.2	627	13	41	101	507	38.8	639	13	43	101
				60	552	38.6	684	14	45	102	564	38.7	696	15	50	102	574	39.3	709	15	52	103
90	56.3	3.6	8.2	70	603	39.3	737	15	54	103	615	39.4	750	16	59	103	627	40.0	764	16	62	104
				80	638	40.2	775	16	63	104	651	40.2	789	16	68	104	664	40.8	803	16	71	104
				90	657	41.1	798	16	72	104	672	41.2	812	16	78	104	684	41.8	827	16	81	105
				50	508	38.8	641	13	36	99	519	38.8	651	13	41	99	529	39.4	663	13	43	99
				60	570	39.3	704	15	45	99	581	39.3	715	15	50	100	593	39.9	729	15	52	100
	75.0	5.7	13.2	70	616	39.9	752	15	54	100	629	39.9	765	16	59	100	642	40.5	780	16	61	100
				80	649	40.6	787	16	63	100	662	40.6	801	16	68	101	676	41.3	816	16	71	101
				90	667	41.5	809	16	72	101	680	41.6	822	16	78	101	694	42.3	838	16	81	101
				50	422	46.1	579	9	39	125	426	46.2	583	9	42	126	431	47.1	592	9	44	126
				60	492	46.0	649	11	47	127	497	46.1	654	11	51	127	502	47.0	663	11	53	128
	37.5	2.2	5.0	70	555	46.5	713	12	55	129	560	46.6	719	12	60	129	566	47.4	728	12	62	129
				80	606	47.6	768	13	64	130	612	47.8	775	13	69	131	617	48.7	784	13	72	131
				90	644	49.4	813	13	73	132	651	49.6	820	13	78	132	656	50.6	829	13	81	132
				50	441	47.0	602	9	38	121	445	47.1	606	9	42	121	450	48.0	614	9	44	121
				60	509	46.7	668	11	46	122	515	46.8	675	11	51	122	520	47.7	683	11	53	122
110	56.3	3.3	7.7	70	568	47.1	729	12	55	123	574	47.2	735	12	60	123	580	48.2	745	12	62	123
				80	617	48.2	782	13	64	124	623	48.3	788	13	69	124	630	49.2	798	13	72	124
				90	655	50.0	826	13	73	125	662	50.2	833	13	78	125	668	51.1	842	13	81	125
				50	461	47.9	624	10	38	118	465	48.0	629	10	42	118	470	49.0	637	10	44	118
				60	527	47.4	688	11	46	119	531	47.5	694	11	51	119	536	48.6	702	11	53	119
	75.0	5.3	12.3	70	582	47.7	745	12	54	120	588	47.9	751	12	60	120	594	48.8	760	12	62	120
				80	629	48.8	795	13	63	121	635	48.9	802	13	69	121	641	49.9	811	13	71	121
				90	666	50.6	838	13	72	121	672	50.7	845	13	78	121	679	51.7	855	13	81	121
				50	398	51.7	574	8	39	135	400	51.8	577	8	43	135	405	52.8	585	8	45	136
				60	457	52.8	638	9	48	137	462	52.9	643	9	52	137	467	53.9	651	9	54	137
	37.5	2.1	4.8	70	517	53.8	701	10	56	139	522	54.0	706	10	61	139	528	55.1	716	10	63	139
				80	575	54.8	762	10	65	140	581	55.0	769	11	70	140	586	56.1	778	10	72	141
				90	629	55.7	820	11	73	142	635	55.9	826	11	79	142	642	57.1	837	11	81	142
				50	417	52.8	597	8	39	131	421	52.9	601	8	43	131	426	54.0	610	8	44	131
				60	474	53.8	658	9	47	132	479	54.0	663	9	51	132	484	55.1	672	9	54	132
120	56.3	3.2	7.4	70	531	54.8	718	10	56	133	537	54.9	724	10	60	133	542	56.1	734	10	63	133
				80	588	55.7	778	11	64	134	593	55.9	784	11	69	134	600	57.0	794	11	72	134
				90	642	56.6	835	11	73	135	647	56.7	841	11	79	135	654	57.9	852	11	81	135
				50	436	54.0	620	8	38	128	441	54.1	625	8	42	128	445	55.2	634	8	44	128
				60	491	54.9	678	9	47	129	496	55.0	683	9	51	129	501	56.1	693	9	53	129
	75.0	5.1	11.8	70	546	55.6	736	10	55	130	552	55.9	742	10	60	130	557	57.0	752	10	63	130
				80	600	56.5	793	11	64	131	606	56.7	799	11	69	131	612	57.9	810	11	72	131
				90	654	57.4	850	11	73	131	659	57.5	856	11	78	131	666	58.8	867	11	81	132

Flow rates are per circuit - dual compressor units have 2 circuits

50 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW600D Series - R410A **Magnum Series**
Full Load Heating (Two Compressors) **Water Source Heat Pump**

Source				Load	Load Flow 37.5 GPM						Load Flow 56.3 GPM						Load Flow 75 GPM					
EST	Flow	WPD		ELT	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				60	433	26.0	344	4.9	72	15	419	23.7	338	5.2	67	15	406	22.2	330	5.4	65	16
20	75.0	8.3	19.1	80	457	34.5	340	3.9	92	15	454	32.7	342	4.1	88	15	451	31.7	343	4.2	86	15
				100	455	43.9	305	3.0	112	16	451	41.9	307	3.1	108	16	447	40.9	308	3.2	106	16
				60	464	26.3	374	5.2	72	20	453	24.3	370	5.5	68	20	441	22.9	363	5.6	66	20
				80	490	34.5	373	4.2	93	20	487	32.6	376	4.4	89	20	484	31.8	376	4.5	86	20
	37.5	3.3	7.5	100	490	43.9	341	3.3	113	21	487	41.8	344	3.4	109	21	484	40.9	345	3.5	106	21
				120	485	55.1	297	2.6	133	22	477	52.7	297	2.7	128	22	472	51.3	297	2.7	126	22
				60	518	27.1	426	5.6	74	22	511	25.4	424	5.9	69	22	504	24.3	421	6.1	67	23
				80	539	34.9	420	4.5	94	23	537	33.1	424	4.8	90	22	535	32.2	425	4.9	87	22
30	56.3	5.0	11.6	100	535	44.4	384	3.5	114	23	533	42.3	388	3.7	109	23	529	41.2	389	3.8	107	23
				120	524	55.8	333	2.8	134	24	515	53.2	334	2.8	129	24	510	51.9	333	2.9	127	24
				60	499	27.0	407	5.4	73	25	491	25.2	405	5.7	69	25	484	24.1	402	5.9	66	25
				80	519	35.0	400	4.4	94	25	517	33.2	404	4.6	89	25	515	32.3	405	4.7	87	25
	75.0	8.0	18.6	100	514	44.5	362	3.4	114	25	510	42.4	365	3.5	109	25	508	41.4	366	3.6	107	25
				120	500	55.6	310	2.6	133	26	491	53.1	309	2.7	129	26	486	51.8	309	2.7	126	26
				60	530	27.2	437	5.7	74	28	524	25.6	437	6.0	69	28	517	24.6	434	6.2	67	28
				80	553	34.9	434	4.6	95	28	552	33.2	439	4.9	90	28	550	32.3	439	5.0	87	28
	37.5	2.7	6.3	100	552	44.4	400	3.6	115	29	549	42.3	404	3.8	110	29	545	41.2	405	3.9	107	29
				120	545	56.1	353	2.8	135	31	536	53.4	354	2.9	130	31	531	52.1	353	3.0	127	31
				60	623	28.5	526	6.4	77	31	622	27.1	529	6.7	71	31	618	26.3	528	6.9	68	31
				80	640	35.7	518	5.3	97	31	641	34.1	525	5.5	91	31	639	33.2	526	5.6	89	31
40	56.3	4.2	9.7	100	631	45.1	477	4.1	117	32	630	43.0	483	4.3	111	31	628	41.9	485	4.4	108	31
				120	615	57.0	421	3.2	136	33	607	54.3	422	3.3	131	32	603	52.9	423	3.3	128	32
				60	567	27.9	472	6.0	75	34	563	26.4	473	6.3	70	34	558	25.5	471	6.4	67	34
				80	584	35.6	462	4.8	96	34	583	33.8	468	5.1	90	34	581	33.0	469	5.2	88	34
	75.0	6.7	15.6	100	575	45.0	421	3.7	115	34	572	42.9	426	3.9	110	34	570	41.8	427	4.0	108	34
				120	555	56.4	363	2.9	135	35	548	53.8	364	3.0	130	35	543	52.4	364	3.0	127	35
				60	597	28.2	501	6.2	76	37	594	26.6	504	6.5	71	37	591	25.9	502	6.7	68	37
				80	618	35.4	497	5.1	96	37	619	33.8	503	5.4	91	37	617	32.9	504	5.5	88	37
	37.5	2.7	6.1	100	613	44.9	460	4.0	116	38	612	42.8	466	4.2	111	38	609	41.7	467	4.3	108	38
				120	604	57.0	410	3.1	136	39	598	54.2	413	3.2	131	39	592	52.8	412	3.3	128	39
				60	633	28.7	535	6.5	77	40	632	27.3	539	6.8	71	40	628	26.6	538	6.9	68	40
				80	649	35.9	527	5.3	97	41	650	34.3	533	5.6	92	41	649	33.4	535	5.7	89	40
50	56.3	4.1	9.4	100	641	45.3	486	4.1	117	41	639	43.2	492	4.3	111	41	637	42.2	493	4.4	108	41
				120	623	57.2	428	3.2	137	42	616	54.5	430	3.3	131	42	611	53.1	430	3.4	128	42
				60	668	29.2	568	6.7	78	42	669	27.9	573	7.0	72	42	667	27.2	574	7.2	69	42
				80	681	36.5	557	5.5	98	43	682	34.8	564	5.7	92	42	682	34.0	566	5.9	89	42
	75.0	6.5	15.1	100	667	45.8	511	4.3	118	43	667	43.7	517	4.5	112	43	665	42.6	520	4.6	109	43
				120	641	57.5	445	3.3	137	44	634	54.7	448	3.4	131	44	630	53.3	448	3.5	128	44
				60	630	28.7	532	6.4	77	46	629	27.4	536	6.7	71	46	626	26.7	535	6.9	68	46
				80	654	35.7	532	5.4	97	46	656	34.1	540	5.6	92	46	655	33.2	542	5.8	89	46
	37.5	2.6	5.9	100	658	45.0	505	4.3	118	47	658	42.9	511	4.5	112	46	656	41.9	513	4.6	109	46
				120	664	57.5	468	3.4	138	48	658	54.7	472	3.5	132	47	654	53.3	472	3.6	129	47
				60	670	29.4	570	6.7	78	50	670	28.0	574	7.0	72	50	669	27.4	575	7.1	69	50
				80	690	36.3	566	5.6	98	50	692	34.7	574	5.8	92	50	692	33.9	576	6.0	89	50
60	56.3	4.0	9.1	100	690	45.6	535	4.4	118	50	690	43.5	541	4.6	112	50	689	42.5	544	4.7	109	50
				120	688	58.1	490	3.5	138	51	682	55.2	494	3.6	132	51	678	53.7	494	3.7	129	51
				60	710	29.9	608	6.9	79	52	712	28.7	614	7.3	73	52	711	28.1	615	7.4	69	52
				80	726	36.9	600	5.8	99	52	730	35.3	609	6.1	93	52	728	34.5	610	6.2	90	52
	75.0	6.3	14.6	100	722	46.3	564	4.6	119	52	722	44.2	572	4.8	113	52	721	43.1	574	4.9	110	52
				120	712	58.5	512	3.6	139	53	705	55.6	516	3.7	133	53	701	54.2	516	3.8	129	53
				60	663	29.4	563	6.6	78	55	663	28.1	567	6.9	72	55	662	27.4	568	7.1	69	55
				80	691	36.0	568	5.6	98	55	693	34.4	576	5.9	92	55	692	33.5	578	6.0	89	55
	37.5	2.5	5.7	100	704	45.2	550	4.6	119	55	704	43.1	556	4.8	112	55	702	42.0	559	4.9	109	55
				120	724	58.1	526	3.7	139	56	719	55.2	531	3.8	133	56	715	53.8	532	3.9	130	56
				60	707	30.1	605	6.9	79	59	709	28.8	611	7.2	73	59	708	28.1	612	7.4	69	59
				80	731	36.7	606	5.8	99	59	735	35.1	615	6.1	93	59	734	34.3	617	6.3	90	59
70	56.3	3.8	8.8	100	740	46.0	583	4.7	120	60	741	43.9	591	4.9	113	59	740	42.9	593	5.1	110	59
				120	753	58.7	552	3.8	140	60	748	55.9	557	3.9	133	60	744	54.4	558	4.0	130	60
				60	751	30.6	646	7.2	80	61	755	29.4	654	7.5	73	61	754	28.9	655	7.6	70	61
				80	771	37.4	643	6.0	101	61	776	35.8	653	6.3	94	61	775	35.0	656	6.5	90	61
	75.0	6.1	14.1	100	777	46.8	617	4.9	121	62	778	44.7	625	5.1	114	62	777	43.6	628	5.2	110	62
				120	781	59.5	578	3.8	141	62	777	56.5	584	4.0	134	62	773	55.0	585	4.1	130	62
				60	696	30.0	594	6.8	79	64	698	28.8	600	7.1	72	64	697	28.1	601	7.3	69	64
				80	728	36.2	604	5.9	99	64	731	34.7	613	6.2	93	64	731	33.9	615	6.3	90	64
	37.5	2.4	5.5	100	749	45.4	594	4.8	120	64	750	43.3	602	5.1	113	64	748	42.3	604	5.2	110	64
				120	784	58.6	584	3.9	141	64	780	55.6	590	4.1	134	64	776	54.2	591	4.2	130	64
				60	744	30.7	639	7.1	80	69	748	29.5	647	7.4	73	68	747	28.9	648	7.6	70	68
				80	772	37.1	645	6.1	101	69	777	35.5	655	6.4	94	68	776	34.7	658	6.6	90	68
80	56.3	3.7	8.5	100	790	46.3	632	5.0	121	69	792	44.2	641	5.3	114	69	791	43.2	644	5.4	111	69
				120	816	59.5	613	4.0	142	69	813	56.5	620	4.2	134	69	810	55.0	622	4.3	131	69
				60	791	31.3	685	7.4	81	71	797	30.2	694	7.7	74	71	796	29.6	695	7.9	71	71
				80	816	37.9	687	6.3	102	71	821	36.4	697	6.6	95	71	821	35.6	700	6.8	91	71
	75.0	5.9	13.7	100	831	47.4	669	5.1	122	71	834	45.2	680	5.4	115	71	833	44.1	683	5.5	111	71
				120	849	60.3	643	4.1	143	71	846	57.3	650	4.3	135	71	843	55.8	652	4.4	131	71

Flow rates are per circuit - dual compressor units have 2 circuits

50 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW600D Series - R410A **Magnum Series**
Part Load Cooling (One Compressor) **Water Source Heat Pump**

Source				Load	Load Flow 37.5 GPM						Load Flow 56.3 GPM						Load Flow 75 GPM					
EST	Flow	WPD		ELT	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				50	232	9.3	263	25	38	64	251	9.8	284	26	41	65	260	10.1	295	26	43	66
				60	264	10.2	299	26	46	66	283	10.6	320	27	50	67	292	10.9	329	27	52	68
	37.5	2.7	6.1	70	286	10.7	323	27	55	67	306	11.1	343	28	59	68	315	11.4	354	28	62	69
				80	299	11.1	337	27	64	68	320	11.4	359	28	69	69	329	11.6	369	28	71	70
				90	305	11.2	343	27	74	68	325	11.6	365	28	78	69	335	11.8	375	28	81	70
				50	246	9.8	280	25	37	60	264	10.2	299	26	41	61	274	10.5	309	26	43	61
				60	274	10.5	309	26	45	61	292	10.8	329	27	50	62	302	11.1	340	27	52	62
50	56.3	4.1	9.4	70	293	10.9	330	27	54	62	313	11.3	351	28	59	62	322	11.5	361	28	61	63
				80	304	11.2	342	27	64	62	324	11.5	364	28	68	63	334	11.8	374	28	71	63
				90	309	11.3	347	27	74	62	329	11.6	368	28	78	63	338	11.9	379	28	81	63
				50	259	10.2	294	25	36	58	277	10.5	313	26	40	58	287	10.8	324	26	42	59
				60	283	10.7	319	26	45	59	302	11.1	340	27	49	59	311	11.3	350	27	52	59
	75.0	6.5	15.1	70	299	11.1	337	27	54	59	319	11.4	358	28	59	60	329	11.6	368	28	61	60
				80	309	11.3	348	27	64	59	329	11.6	369	28	68	60	339	11.9	379	29	71	60
				90	312	11.4	351	27	73	59	332	11.7	372	28	78	60	342	12.0	383	29	81	60
				50	234	12.4	276	19	38	85	247	12.6	290	20	41	85	255	12.8	298	20	43	86
				60	264	13.0	308	20	46	86	280	13.2	325	21	50	87	288	13.4	333	22	52	88
	37.5	2.5	5.7	70	286	13.4	332	21	55	88	304	13.7	350	22	59	89	312	13.8	359	23	62	89
				80	301	13.8	348	22	64	89	319	14.0	366	23	69	90	327	14.2	376	23	71	90
				90	306	14.0	354	22	74	89	325	14.2	373	23	78	90	334	14.4	383	23	81	90
				50	244	12.7	287	19	37	80	259	12.9	303	20	41	81	267	13.1	311	20	43	81
				60	272	13.2	317	21	45	81	289	13.4	335	22	50	82	297	13.6	343	22	52	82
70	56.3	3.8	8.8	70	293	13.6	339	22	54	82	310	13.8	357	22	59	83	319	14.0	367	23	61	83
				80	305	13.9	353	22	64	83	324	14.1	372	23	69	83	333	14.3	381	23	71	84
				90	310	14.1	358	22	73	83	328	14.3	377	23	78	83	337	14.5	387	23	81	84
				50	255	13.0	300	20	36	78	270	13.2	315	21	40	78	278	13.4	323	21	43	79
				60	281	13.4	327	21	45	79	298	13.6	344	22	49	79	306	13.8	353	22	52	79
	75.0	6.1	14.1	70	299	13.8	346	22	54	79	317	14.0	365	23	59	80	326	14.2	374	23	61	80
				80	310	14.0	358	22	63	80	329	14.2	377	23	68	80	337	14.4	387	23	71	80
				90	314	14.2	362	22	73	80	332	14.4	381	23	78	80	341	14.6	391	23	81	80
				50	227	15.8	281	14	38	105	232	15.8	286	15	42	105	236	16.1	291	15	44	106
				60	260	16.1	315	16	46	107	265	16.1	320	16	51	107	270	16.4	326	17	53	107
	37.5	2.3	5.4	70	285	16.5	342	17	55	108	291	16.5	348	18	60	109	297	16.7	354	18	62	109
				80	304	16.9	362	18	64	109	310	16.9	368	18	69	110	316	17.2	375	18	72	110
				90	314	17.3	373	18	73	110	321	17.3	380	19	79	110	327	17.6	387	19	81	111
				50	237	16.1	292	15	37	100	242	16.1	297	15	41	101	247	16.4	303	15	43	101
				60	268	16.3	324	16	46	102	274	16.4	330	17	50	102	279	16.6	336	17	53	102
90	56.3	3.6	8.2	70	292	16.7	349	18	54	102	298	16.7	355	18	59	103	304	17.0	362	18	62	103
				80	309	17.0	367	18	64	103	316	17.1	374	19	69	103	322	17.3	381	19	71	104
				90	318	17.5	378	18	73	103	325	17.5	385	19	78	104	331	17.8	392	19	81	104
				50	248	16.4	304	15	37	98	253	16.4	309	15	41	98	257	16.7	314	15	43	98
				60	277	16.6	334	17	45	99	282	16.6	339	17	50	99	288	16.9	346	17	52	99
	75.0	5.7	13.2	70	299	16.9	357	18	54	100	305	16.9	363	18	59	100	311	17.2	370	18	62	100
				80	314	17.2	373	18	63	100	321	17.2	380	19	69	100	327	17.5	387	19	71	100
				90	323	17.6	383	18	73	100	329	17.6	390	19	78	100	336	17.9	397	19	81	101
				50	207	19.6	274	11	39	125	209	19.6	276	11	43	125	212	20.0	280	11	44	125
				60	241	19.5	307	12	47	126	243	19.6	310	12	51	127	246	20.0	314	12	53	127
	37.5	2.2	5.0	70	271	19.7	338	14	56	128	273	19.8	341	14	60	128	276	20.1	345	14	63	128
				80	295	20.2	364	15	64	129	298	20.3	367	15	69	130	301	20.7	371	15	72	130
				90	313	21.0	385	15	73	131	317	21.1	388	15	79	131	319	21.5	393	15	81	131
				50	217	20.0	285	11	38	120	219	20.0	287	11	42	120	221	20.4	291	11	44	120
				60	249	19.8	317	13	47	121	252	19.9	319	13	51	121	254	20.3	323	13	53	121
110	56.3	3.3	7.7	70	277	20.0	345	14	55	122	280	20.1	348	14	60	122	283	20.5	353	14	62	123
				80	301	20.5	370	15	64	123	303	20.5	373	15	69	123	307	20.9	378	15	72	123
				90	319	21.2	391	15	73	124	322	21.3	395	15	79	124	325	21.7	399	15	81	124
				50	226	20.4	296	11	38	118	228	20.4	298	11	42	118	231	20.8	302	11	44	118
				60	257	20.1	326	13	46	119	260	20.2	329	13	51	119	262	20.6	333	13	53	119
	75.0	5.3	12.3	70	284	20.3	353	14	55	119	286	20.3	356	14	60	119	289	20.7	360	14	62	120
				80	306	20.7	377	15	64	120	309	20.8	380	15	69	120	312	21.2	384	15	72	120
				90	324	21.5	397	15	73	121	327	21.6	401	15	78	121	330	22.0	405	15	81	121
				50	196	22.0	271	9	40	134	198	22.0	273	9	43	135	200	22.5	277	9	45	135
				60	225	22.5	302	10	48	136	227	22.5	304	10	52	136	230	22.9	308	10	54	136
	37.5	2.1	4.8	70	254	22.9	332	11	56	138	256	23.0	335	11	61	138	259	23.4	339	11	63	138
				80	282	23.3	361	12	65	139	284	23.4	364	12	70	139	287	23.9	368	12	72	140
				90	308	23.7	389	13	74	141	310	23.8	391	13	79	141	314	24.3	397	13	82	141
				50	206	22.5	282	9	39	130	208	22.5	284	9	43	130	210	23.0	288	9	44	130
				60	233	22.9	311	10	48	131	236	22.9	314	10	52	131	238	23.4	318	10	54	131
120	56.3	3.2	7.4	70	261	23.3	340	11	56	132	263	23.4	343	11	61	132	266	23.8	348	11	63	132
				80	288	23.7	369	12	65	133	291	23.8	372	12	70	133	294	24.2	376	12	72	133
				90	314	24.1	396	13	73	134	316	24.1	399	13	79	134	320	24.6	404	13	81	134
				50	215	23.0	293	9	39	128	217	23.0	296	9	42	128	220	23.5	300	9	44	128
				60	241	23.3	321	10	47	129	244	23.4	324	10	51	129	247	23.9	328	10	53	129
	75.0	5.1	11.8	70	268	23.7	349	11	56	129	271	23.8	352	11	60	129	273	24.3	356	11	63	129
				80	294	24.0	376	12	64	130	297	24.1	379	12	69	130	300	24.6	384	12	72	130
				90	320	24.4	403	13	73	131	322	24.5	406	13	79	131	326	25.0	411	13	81	131

Flow rates are per circuit - dual compressor units have 2 circuits

50 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW600D Series - R410A **Magnum Series**
Part Load Heating (One Compressor) **Water Source Heat Pump**

Source				Load	Load Flow 37.5 GPM						Load Flow 56.3 GPM						Load Flow 75 GPM					
EST	Flow	WPD		ELT	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				60	206	10.7	170	5.7	71	15	200	9.7	167	6.1	67	16	193	9.0	163	6.3	65	16
20	75.0	8.3	19.1	80	217	14.3	168	4.4	92	16	215	13.6	169	4.6	88	15	214	13.2	169	4.8	86	15
				100	215	18.5	152	3.4	111	16	213	17.6	153	3.6	108	16	212	17.1	153	3.6	106	16
				60	221	10.8	184	6.0	72	20	216	9.9	182	6.4	68	20	210	9.3	179	6.6	66	20
				80	233	14.4	184	4.8	92	20	231	13.6	185	5.0	88	20	230	13.2	185	5.1	86	20
	37.5	3.3	7.5	100	232	18.4	169	3.7	112	21	231	17.5	171	3.9	108	21	229	17.1	171	3.9	106	21
				120	229	23.3	150	2.9	132	22	225	22.2	149	3.0	128	22	223	21.7	149	3.0	126	22
				60	247	11.2	209	6.5	73	23	244	10.4	208	6.9	69	23	240	10.0	206	7.1	66	23
				80	256	14.5	207	5.2	94	23	255	13.8	208	5.4	89	23	254	13.4	209	5.6	87	23
30	56.3	5.0	11.6	100	254	18.6	190	4.0	114	23	253	17.7	192	4.2	109	23	251	17.3	192	4.3	107	23
				120	248	23.5	167	3.1	133	24	244	22.4	167	3.2	129	24	242	21.9	167	3.2	126	24
				60	238	11.1	200	6.3	73	25	234	10.3	199	6.6	68	25	231	9.8	197	6.9	66	25
				80	247	14.6	197	5.0	93	25	246	13.8	199	5.2	89	25	245	13.4	199	5.3	87	25
	75.0	8.0	18.6	100	243	18.7	180	3.8	113	25	242	17.8	181	4.0	109	25	241	17.3	182	4.1	106	25
				120	236	23.5	156	2.9	133	26	232	22.4	155	3.0	128	26	230	21.8	155	3.1	126	26
				60	252	11.2	214	6.6	73	29	250	10.5	214	7.0	69	29	247	10.1	212	7.2	67	29
				80	263	14.5	213	5.3	94	29	262	13.8	215	5.6	89	29	261	13.4	216	5.7	87	29
	37.5	2.7	6.3	100	262	18.6	198	4.1	114	29	260	17.7	200	4.3	109	29	259	17.3	200	4.4	107	29
				120	258	23.6	177	3.2	134	31	254	22.5	177	3.3	129	31	251	21.9	177	3.4	127	31
				60	297	11.8	257	7.4	76	31	297	11.2	258	7.7	71	31	295	10.9	258	7.9	68	31
				80	304	14.9	254	6.0	96	31	305	14.2	256	6.3	91	31	304	13.8	257	6.4	88	31
40	56.3	4.2	9.7	100	300	18.9	235	4.6	116	32	299	18.0	238	4.9	111	32	298	17.6	238	5.0	108	32
				120	292	24.0	210	3.6	136	33	288	22.8	210	3.7	130	33	286	22.2	210	3.8	128	33
				60	270	11.5	231	6.9	74	34	268	10.9	231	7.2	70	34	266	10.5	230	7.4	67	34
				80	277	14.8	227	5.5	95	34	277	14.1	229	5.8	90	34	276	13.7	229	5.9	87	34
	75.0	6.7	15.6	100	273	18.9	208	4.2	115	34	271	18.0	210	4.4	110	34	270	17.5	211	4.5	107	34
				120	263	23.8	182	3.2	134	35	259	22.6	182	3.4	129	35	257	22.1	182	3.4	127	35
				60	284	11.7	245	7.1	75	37	283	11.0	246	7.5	70	37	282	10.7	245	7.7	68	37
				80	294	14.8	243	5.8	96	37	294	14.1	246	6.1	90	37	293	13.7	247	6.3	88	37
	37.5	2.7	6.1	100	291	18.8	227	4.5	116	38	290	17.9	229	4.7	110	38	289	17.5	230	4.9	108	38
				120	287	24.0	205	3.5	135	39	283	22.8	206	3.6	130	39	281	22.2	205	3.7	127	39
				60	302	11.9	261	7.4	76	41	301	11.3	263	7.8	71	41	300	11.0	262	8.0	68	41
				80	309	15.0	258	6.0	96	41	309	14.3	260	6.3	91	41	309	14.0	261	6.5	88	41
50	56.3	4.1	9.4	100	304	19.0	239	4.7	116	41	304	18.1	242	4.9	111	41	303	17.7	242	5.0	108	41
				120	296	24.1	213	3.6	136	42	292	22.9	214	3.7	130	42	290	22.3	214	3.8	128	42
				60	318	12.1	277	7.7	77	43	319	11.6	279	8.1	71	43	318	11.3	279	8.3	68	43
				80	324	15.3	272	6.2	97	43	325	14.5	275	6.5	92	43	324	14.2	276	6.7	89	43
	75.0	6.5	15.1	100	317	19.2	251	4.8	117	43	317	18.3	254	5.1	111	43	316	17.9	255	5.2	108	43
				120	304	24.2	222	3.7	136	44	301	23.0	223	3.8	131	44	299	22.4	223	3.9	128	44
				60	300	11.9	259	7.4	76	46	300	11.4	261	7.7	71	46	299	11.1	261	7.9	68	46
				80	311	14.9	260	6.1	97	46	312	14.2	263	6.4	91	46	312	13.9	264	6.6	88	46
	37.5	2.6	5.9	100	313	18.9	248	4.9	117	47	312	18.0	251	5.1	111	47	312	17.6	252	5.2	108	47
				120	316	24.2	233	3.8	137	48	313	23.0	234	4.0	131	48	311	22.4	234	4.1	128	48
				60	319	12.2	278	7.7	77	50	319	11.6	280	8.0	71	50	319	11.4	280	8.2	69	50
				80	328	15.2	276	6.3	98	50	329	14.5	280	6.7	92	50	329	14.2	281	6.8	89	50
60	56.3	4.0	9.1	100	328	19.2	263	5.0	118	51	328	18.3	266	5.3	112	51	327	17.8	266	5.4	109	51
				120	327	24.4	244	3.9	137	51	324	23.2	245	4.1	132	51	322	22.6	245	4.2	129	51
				60	338	12.5	296	7.9	78	52	339	12.0	298	8.3	72	52	339	11.7	299	8.5	69	52
				80	345	15.5	293	6.6	98	52	347	14.8	297	6.9	92	52	346	14.4	297	7.0	89	52
	75.0	6.3	14.6	100	343	19.5	277	5.2	118	53	343	18.5	280	5.4	112	53	343	18.1	281	5.6	109	53
				120	338	24.6	254	4.0	138	53	335	23.4	256	4.2	132	53	333	22.8	256	4.3	129	53
				60	316	12.2	274	7.6	77	55	316	11.7	276	7.9	71	55	315	11.4	277	8.1	68	55
				80	329	15.0	277	6.4	98	55	330	14.4	281	6.7	92	55	329	14.0	282	6.9	89	55
	37.5	2.5	5.7	100	335	19.0	270	5.2	118	56	334	18.1	273	5.4	112	55	334	17.6	274	5.6	109	55
				120	344	24.4	261	4.1	138	56	342	23.2	263	4.3	132	56	340	22.6	263	4.4	129	56
				60	337	12.5	294	7.9	78	60	338	12.0	297	8.3	72	59	337	11.7	298	8.5	69	59
				80	348	15.4	295	6.6	99	59	349	14.7	299	7.0	92	59	349	14.4	300	7.1	89	59
70	56.3	3.8	8.8	100	352	19.3	286	5.3	119	60	352	18.4	289	5.6	113	60	352	18.0	290	5.7	109	60
				120	358	24.7	274	4.2	139	60	356	23.5	275	4.4	133	60	354	22.9	276	4.5	129	60
				60	358	12.8	314	8.2	79	62	359	12.3	318	8.6	73	62	359	12.0	318	8.7	70	62
				80	367	15.7	313	6.9	100	62	369	15.0	318	7.2	93	62	369	14.7	319	7.4	90	61
	75.0	6.1	14.1	100	370	19.7	302	5.5	120	62	370	18.8	306	5.8	113	62	369	18.3	307	5.9	110	62
				120	372	25.0	286	4.4	140	62	370	23.8	289	4.6	133	62	368	23.1	289	4.7	130	62
				60	332	12.5	289	7.8	78	65	333	12.0	292	8.1	72	64	332	11.7	292	8.3	69	64
				80	346	15.2	295	6.7	98	64	348	14.5	298	7.0	92	64	348	14.2	299	7.2	89	64
	37.5	2.4	5.5	100	356	19.0	291	5.5	119	64	356	18.2	294	5.8	113	64	356	17.7	295	5.9	109	64
				120	373	24.6	289	4.4	140	65	371	23.4	291	4.6	133	64	369	22.8	291	4.7	130	64
				60	354	12.8	311	8.1	79	69	356	12.3	314	8.5	73	69	356	12.0	315	8.7	69	69
				80	367	15.5	314	6.9	100	69	369	14.9	319	7.3	93	69	369	14.5	320	7.5	90	69
80	56.3	3.7	8.5	100	376	19.5	309	5.7	120	69	377	18.6	313	5.9	113	69	376	18.1	314	6.1	110	69
				120	389	25.0	303	4.6	141	69	387	23.7	306	4.8	134	69	385	23.1	306	4.9	130	69
				60	377	13.1	332	8.4	80	71	379	12.6	336	8.8	73	71	379	12.4	337	9.0	70	71
				80	388	15.9	334	7.2	101	71	391	15.2	339	7.5	94	71	391	14.9	340	7.7	90	71
	75.0	5.9	13.7	100	395	19.9	327	5.8	121	71	397	19.0	332	6.1	114	71	396	18.5	333	6.3	111	71
				120	404	25.4	318	4.7	142	72	403	24.1	321	4.9	134	71	401	23.5	321	5.0	131	71

Flow rates are per circuit - dual compressor units have 2 circuits

50 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW600D Series - R410A **Magnum Series**
Performace ISO 13256-2 **Water Source Heat Pump**

Loading/ Capacity	Water Loop				Ground Water				Ground Loop			
	Heating		Cooling		Heating		Cooling		Heating		Cooling	
	104°F ELT 68°F EST		53.6°F ELT 86°F EST		104°F ELT 50°F EST		53.6°F ELT 59°F EST		104°F ELT 32°F EST Full 41°F EST Part		53.6°F ELT 77°F EST Full 68°F EST Part	
	Mbtuh	COP	Mbtuh	EER	MBtuh	COP	Mbtuh	EER	Mbtuh	COP	Mbtuh	EER
Full	764	4.9	560	14.9	658	4.4	603	21.1	515	3.50	580	16.9
Part	363	5.6	272	17.1	313	4.9	292	24.3	272	4.36	296	27.4

Electrical Specification

Voltage	Elect. Symbol	Compressor*		Total Unit FLA	1 Supply Circ	
		RLA	LRA		Min. Ampacity*	Max. Fuse/ HACR*
208/230-3-60	2	94.3	460	188.6	212.2	300
460-3-60	3	46.4	260	92.8	104.4	150
575-3-60	4	37.9	210	75.8	85.3	110
380-3-60	6	60.7	310	121.4	136.6	150

**Where calculations are based on:*

MCA = 1.25 x RLA compressor + FLA other motors

MOP = 2.25 x RLA largest compressor + 1.00 x FLA other motors.

Ensure that all loads on the supply line are added into the equations above if some of the cells in the above table are blank

HACR circuit breaker for use in USA only. All fuses Class RK-5
Ratings are for each compressor - unit supplied with two
Ratings for pumps are per circuit - dual compressor units have 2 circuits
2 Supply Circuit - Two power feeds / breakers are required for each compressor

GeoFurnace works continually to improve its products. As a result, the design and specifications of each product at the time of order may be changed without notice. Please contact GeoFurnace at 1-605-854-9205 for latest design and specifications. Purchaser's approval of this data set signifies that the equipment is acceptable under the provisions of the job specification. Statements and other information contained herein are not express warranties and do not form the basis of any contract between the parties, but are merely GeoFurnace's opinion or commendation of its products.

60 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW720D Series - R410A **Magnum Series**
Full Load Cooling (Two Compressors) **Water Source Heat Pump**

Source				Load	Load Flow 45 GPM						Load Flow 67.5 GPM						Load Flow 90 GPM					
EST	Flow	WPD		ELT	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				50	578	27.5	671	21	37	65	627	29.0	726	22	41	66	651	29.8	753	22	43	67
				60	661	30.0	763	22	45	67	710	31.2	817	23	49	68	733	31.9	842	23	52	69
	45.0	3.1	7.1	70	717	31.6	825	23	54	68	767	32.5	878	24	59	70	793	33.3	906	24	61	70
				80	752	32.4	862	23	63	69	804	33.4	918	24	68	70	828	34.0	944	24	71	71
				90	766	32.9	878	23	73	70	818	33.9	933	24	78	71	843	34.5	961	24	81	71
				50	616	29.0	714	21	36	61	662	30.1	765	22	40	61	686	30.8	791	22	42	62
				60	686	30.8	791	22	45	62	734	31.8	842	23	49	62	758	32.6	869	23	52	63
50	67.5	5.5	12.6	70	734	32.0	843	23	54	62	785	33.0	898	24	58	63	810	33.6	925	24	61	64
				80	764	32.8	876	23	63	63	816	33.7	931	24	68	64	841	34.3	958	24	71	64
				90	776	33.2	889	23	73	63	827	34.0	943	24	78	64	852	34.7	971	25	81	64
				50	648	30.0	750	22	36	58	695	31.0	801	22	40	59	719	31.8	828	23	42	59
				60	709	31.5	817	22	44	59	759	32.5	870	23	49	60	783	33.2	896	24	51	60
	90.0	9.4	21.8	70	751	32.5	862	23	53	60	803	33.4	917	24	58	60	827	34.0	943	24	61	60
				80	776	33.1	889	23	63	60	828	34.0	944	24	68	60	853	34.6	971	25	71	61
				90	784	33.4	898	23	73	60	836	34.3	953	24	78	61	861	35.0	981	25	80	61
				50	585	36.4	709	16	37	86	620	36.8	746	17	41	87	639	37.5	767	17	43	87
				60	662	38.0	792	17	45	88	703	38.5	834	18	50	89	723	39.1	856	19	52	89
	45.0	2.9	6.7	70	720	39.2	854	18	54	89	765	39.9	901	19	59	90	786	40.4	924	19	61	91
				80	757	40.2	894	19	63	90	803	40.7	942	20	68	91	825	41.3	966	20	71	91
				90	771	40.9	911	19	73	90	818	41.4	959	20	78	91	841	41.9	984	20	81	92
				50	612	37.2	739	16	36	81	650	37.8	779	17	40	82	669	38.3	800	17	43	82
				60	684	38.6	816	18	45	82	727	39.2	861	19	49	83	747	39.8	882	19	52	83
70	67.5	5.1	11.8	70	736	39.8	872	19	54	83	781	40.2	918	19	58	84	803	40.9	943	20	61	84
				80	768	40.5	906	19	63	83	815	41.1	956	20	68	84	839	41.7	981	20	71	85
				90	781	41.2	922	19	73	84	828	41.7	970	20	78	84	851	42.2	995	20	81	85
				50	640	38.1	770	17	36	79	679	38.6	811	18	40	79	698	39.1	831	18	42	79
				60	705	39.3	840	18	44	79	749	39.8	885	19	49	80	770	40.3	908	19	51	80
	90.0	8.9	20.5	70	752	40.2	890	19	53	80	798	40.7	937	20	58	80	820	41.3	961	20	61	81
				80	781	41.0	921	19	63	80	829	41.5	970	20	68	81	851	42.0	994	20	71	81
				90	790	41.5	931	19	72	80	838	42.0	981	20	78	81	861	42.6	1006	20	80	81
				50	567	45.9	724	12	37	106	579	45.8	735	13	41	106	590	46.6	749	13	43	107
				60	650	46.7	810	14	46	108	664	46.8	823	14	50	108	677	47.4	839	14	52	109
	45.0	2.7	6.2	70	716	47.7	879	15	54	110	732	47.8	895	15	59	110	746	48.5	911	15	62	110
				80	764	48.9	930	16	63	111	780	48.9	947	16	68	111	795	49.7	964	16	71	111
				90	790	50.1	961	16	72	111	806	50.2	977	16	78	112	823	50.9	996	16	81	112
				50	592	46.7	752	13	37	101	605	46.8	765	13	41	101	617	47.5	780	13	43	102
				60	672	47.4	834	14	45	102	686	47.5	848	14	50	103	700	48.2	864	15	52	103
90	67.5	4.8	11.0	70	734	48.3	899	15	54	103	749	48.4	915	15	59	104	764	49.2	932	16	62	104
				80	777	49.4	945	16	63	104	793	49.4	962	16	68	104	809	50.2	980	16	71	105
				90	800	50.5	973	16	72	104	818	50.7	991	16	78	105	833	51.4	1009	16	81	105
				50	619	47.6	781	13	36	99	632	47.6	794	13	41	99	644	48.3	809	13	43	99
				60	694	48.2	858	14	45	100	708	48.2	872	15	50	100	722	49.0	889	15	52	100
	90.0	8.3	19.1	70	751	49.0	918	15	53	100	766	49.0	933	16	59	100	782	49.7	951	16	61	101
				80	790	49.9	960	16	62	101	806	49.9	977	16	68	101	823	50.7	996	16	71	101
				90	812	51.0	986	16	72	101	829	51.1	1003	16	78	101	845	51.9	1022	16	81	101
				50	513	56.3	705	9	39	126	517	56.4	710	9	42	126	524	57.5	720	9	44	126
				60	599	56.2	790	11	47	128	604	56.3	797	11	51	128	611	57.4	807	11	53	128
	45.0	2.5	5.8	70	675	56.9	869	12	55	129	681	57.0	875	12	60	129	688	58.0	886	12	62	130
				80	737	58.3	936	13	64	131	744	58.5	943	13	69	131	751	59.6	954	13	72	131
				90	783	60.5	990	13	73	132	791	60.7	998	13	78	132	798	61.9	1009	13	81	132
				50	536	57.4	732	9	38	121	541	57.5	737	9	42	121	547	58.6	747	9	44	121
				60	619	57.1	813	11	46	122	626	57.2	821	11	51	122	632	58.3	831	11	53	122
110	67.5	4.4	10.2	70	691	57.6	888	12	55	123	698	57.8	895	12	60	123	705	58.9	906	12	62	123
				80	751	59.0	952	13	63	124	758	59.1	959	13	69	124	766	60.3	971	13	71	124
				90	797	61.2	1006	13	72	125	805	61.4	1015	13	78	125	812	62.6	1025	13	81	125
				50	560	58.5	759	10	38	118	564	58.7	765	10	42	118	571	59.9	775	10	44	119
				60	640	58.0	838	11	46	119	646	58.1	844	11	50	119	652	59.4	854	11	53	119
	90.0	7.7	17.7	70	708	58.4	907	12	54	120	715	58.6	914	12	59	120	722	59.7	925	12	62	120
				80	765	59.7	968	13	63	121	773	59.9	977	13	69	121	780	61.0	988	13	71	121
				90	809	61.9	1021	13	72	121	817	62.1	1029	13	78	121	825	63.3	1041	13	81	122
				50	482	63.0	697	8	39	135	485	63.2	701	8	43	136	490	64.3	710	8	45	136
				60	554	64.4	774	9	48	137	560	64.6	781	9	52	137	565	65.8	790	9	54	138
	45.0	2.4	5.6	70	627	65.7	852	10	56	139	633	65.9	858	10	61	139	640	67.3	869	10	63	139
				80	698	66.9	926	10	64	141	705	67.2	934	10	70	141	711	68.5	945	10	72	141
				90	764	68.1	996	11	73	142	771	68.3	1004	11	79	142	779	69.7	1017	11	81	143
				50	505	64.4	725	8	39	131	510	64.5	730	8	42	131	515	65.9	740	8	44	131
				60	575	65.7	799	9	47	132	580	65.8	805	9	51	132	586	67.2	815	9	53	132
120	67.5	4.3	9.9	70	644	66.9	872	10	56	133	651	67.1	880	10	60	133	657	68.4	891	10	63	133
				80	713	68.0	945	10	64	134	720	68.3	953	11	69	134	727	69.6	964	10	72	134
				90	779	69.1	1015	11	73	135	786	69.3	1022	11	78	135	794	70.7	1035	11	81	135
				50	528	65.9	753	8	38	128	534	66.0	759	8	42	128	539	67.4	769	8	44	129
				60	595	67.0	823	9	47	129	601	67.1	830	9	51	129	607	68.5	841	9	53	129
	90.0	7.4	17.0	70	662	67.9	893	10	55	130	669	68.2	901	10	60	130	675	69.6	912	10	63	130
				80	728	69.0	963	11	64	131	735	69.3	971	11	69	131	742	70.7	983	10	72	131
				90	794	70.1	1033	11	72	131	800	70.2	1040	11	78	132	809	71.8	1054	11	81	132

Flow rates are per circuit - dual compressor units have 2 circuits

60 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW720D Series - R410A **Magnum Series**
Full Load Heating (Two Compressors) **Water Source Heat Pump**

Source				Load	Load Flow 45 GPM						Load Flow 67.5 GPM						Load Flow 90 GPM					
EST	Flow	WPD		ELT	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				60	530	31.9	421	4.9	72	15	513	29.1	414	5.2	68	15	497	27.2	404	5.3	66	16
20	90.0	12.0	27.7	80	559	42.1	415	3.9	92	15	555	40.0	418	4.1	88	15	551	38.8	419	4.2	86	15
				100	554	53.6	372	3.0	112	16	549	51.1	375	3.1	108	16	545	49.8	375	3.2	106	16
				60	567	32.3	457	5.1	73	20	554	29.8	452	5.4	68	20	539	28.1	443	5.6	66	20
				80	599	42.2	455	4.2	93	20	595	39.9	459	4.4	89	20	592	38.9	459	4.5	87	20
	45.0	3.8	8.8	100	597	53.5	415	3.3	113	21	593	51.0	419	3.4	109	21	590	49.8	420	3.5	107	21
				120	589	67.4	359	2.6	133	22	579	64.3	359	2.6	129	22	573	62.7	359	2.7	126	22
				60	633	33.3	519	5.6	74	22	624	31.2	518	5.9	69	22	615	29.9	513	6.0	67	22
				80	658	42.7	513	4.5	95	22	656	40.5	518	4.7	90	22	653	39.5	518	4.8	87	22
30	67.5	6.7	15.5	100	652	54.1	467	3.5	114	23	649	51.6	473	3.7	110	23	645	50.3	473	3.8	107	23
				120	635	68.1	402	2.7	134	24	625	65.0	404	2.8	129	24	620	63.3	404	2.9	127	24
				60	610	33.2	497	5.4	74	24	600	30.9	495	5.7	69	25	591	29.6	490	5.9	67	25
				80	634	42.8	488	4.3	94	25	632	40.7	493	4.5	89	25	629	39.6	494	4.7	87	25
	90.0	11.6	26.9	100	625	54.2	440	3.4	114	25	621	51.8	445	3.5	109	25	619	50.5	446	3.6	107	25
				120	606	67.9	374	2.6	133	26	595	64.8	374	2.7	129	26	590	63.2	374	2.7	127	26
				60	647	33.5	533	5.7	74	28	640	31.4	532	6.0	69	28	632	30.2	529	6.1	67	28
				80	675	42.7	529	4.6	95	28	674	40.7	535	4.9	90	28	671	39.7	536	5.0	87	28
	45.0	3.2	7.3	100	671	54.1	487	3.6	115	29	668	51.7	492	3.8	110	29	665	50.3	493	3.9	107	29
				120	660	68.4	427	2.8	135	31	650	65.1	428	2.9	130	30	645	63.5	428	3.0	127	30
				60	760	35.1	641	6.4	77	31	759	33.4	645	6.7	71	30	754	32.4	643	6.8	68	30
				80	781	43.8	632	5.2	97	31	782	41.9	639	5.5	92	31	780	40.8	641	5.6	89	31
40	67.5	5.6	13.0	100	768	55.1	580	4.1	117	31	768	52.6	588	4.3	111	31	765	51.3	590	4.4	109	31
				120	745	69.5	508	3.1	137	32	737	66.2	511	3.3	131	32	732	64.5	512	3.3	128	32
				60	692	34.3	575	5.9	75	34	687	32.4	576	6.2	70	34	681	31.4	574	6.4	68	34
				80	713	43.6	564	4.8	96	34	712	41.5	570	5.0	91	34	710	40.5	571	5.1	88	34
	90.0	9.7	22.5	100	700	54.9	512	3.7	116	34	697	52.4	518	3.9	110	34	694	51.1	520	4.0	108	34
				120	673	68.9	438	2.9	135	35	664	65.6	441	3.0	130	35	659	64.0	440	3.0	127	35
				60	728	34.7	610	6.2	76	36	725	32.8	613	6.5	71	36	720	31.9	612	6.6	68	36
				80	754	43.5	606	5.1	97	37	755	41.5	614	5.3	91	36	753	40.5	615	5.5	88	36
	45.0	3.1	7.1	100	747	54.9	560	4.0	117	38	745	52.3	566	4.2	111	37	742	51.0	568	4.3	108	37
				120	732	69.5	495	3.1	136	39	725	66.1	499	3.2	131	39	719	64.5	499	3.3	128	39
				60	772	35.3	652	6.4	77	40	771	33.7	656	6.7	71	40	766	32.7	655	6.9	69	40
				80	792	44.1	642	5.3	98	40	793	42.2	649	5.5	92	40	792	41.1	652	5.6	89	40
50	67.5	5.5	12.6	100	780	55.4	591	4.1	117	41	778	52.9	598	4.3	112	41	776	51.7	600	4.4	109	41
				120	755	69.8	517	3.2	137	42	747	66.4	521	3.3	131	42	741	64.8	520	3.4	128	42
				60	815	36.0	692	6.6	78	42	815	34.4	698	6.9	72	42	813	33.5	699	7.1	69	42
				80	831	44.8	678	5.4	98	42	833	42.8	687	5.7	92	42	832	41.8	689	5.8	89	42
	90.0	9.4	21.8	100	812	56.0	621	4.2	118	43	812	53.5	629	4.4	112	43	811	52.2	633	4.6	109	43
				120	777	70.1	538	3.3	137	44	770	66.8	542	3.4	131	44	765	65.0	543	3.4	129	44
				60	769	35.4	648	6.4	77	46	767	33.7	652	6.7	71	46	764	32.9	651	6.8	68	46
				80	798	43.8	649	5.3	98	46	800	41.9	657	5.6	92	45	799	40.9	660	5.7	89	45
	45.0	3.0	6.9	100	801	55.1	614	4.3	118	46	801	52.5	622	4.5	112	46	800	51.3	625	4.6	109	46
				120	806	70.2	566	3.4	138	47	799	66.8	571	3.5	132	47	794	65.1	572	3.6	129	47
				60	818	36.2	694	6.6	78	50	817	34.5	699	6.9	72	50	815	33.8	700	7.1	69	50
				80	842	44.6	690	5.5	99	50	845	42.7	699	5.8	93	50	844	41.7	702	5.9	89	50
60	67.5	5.3	12.2	100	841	55.8	650	4.4	119	50	841	53.3	659	4.6	112	50	839	52.1	662	4.7	109	50
				120	834	70.8	593	3.5	139	51	828	67.3	598	3.6	132	51	823	65.6	599	3.7	129	51
				60	866	36.9	740	6.9	79	52	868	35.4	747	7.2	73	52	866	34.6	748	7.3	70	52
				80	886	45.4	731	5.7	100	52	890	43.5	742	6.0	93	52	889	42.5	744	6.1	90	52
	90.0	9.1	21.1	100	880	56.7	686	4.5	120	52	880	54.1	695	4.8	113	52	879	52.8	699	4.9	110	52
				120	863	71.4	620	3.5	139	53	856	67.8	625	3.7	133	53	852	66.1	626	3.8	129	53
				60	809	36.2	686	6.5	78	55	809	34.6	691	6.8	72	55	807	33.8	691	7.0	69	55
				80	843	44.2	692	5.6	99	55	846	42.3	701	5.9	93	54	845	41.3	704	6.0	89	54
	45.0	2.9	6.7	100	857	55.4	669	4.5	119	55	857	52.8	677	4.8	113	55	856	51.5	680	4.9	110	55
				120	879	70.9	637	3.6	140	56	874	67.4	644	3.8	133	56	869	65.7	645	3.9	130	56
				60	863	37.1	736	6.8	79	59	865	35.5	744	7.1	73	59	863	34.7	745	7.3	70	59
				80	892	45.1	738	5.8	100	59	896	43.3	749	6.1	93	59	896	42.3	751	6.2	90	59
70	67.5	5.1	11.8	100	902	56.3	710	4.7	120	59	903	53.8	719	4.9	113	59	902	52.6	722	5.0	110	59
				120	913	71.7	669	3.7	140	60	908	68.2	675	3.9	133	60	903	66.4	677	4.0	130	60
				60	916	37.8	787	7.1	80	61	920	36.3	796	7.4	74	61	919	35.6	798	7.6	70	61
				80	941	46.0	784	6.0	101	61	946	44.1	796	6.3	94	61	946	43.1	799	6.4	91	61
	90.0	8.9	20.5	100	947	57.3	751	4.8	121	62	948	54.8	761	5.1	114	62	947	53.5	764	5.2	111	62
				120	947	72.6	700	3.8	141	62	943	69.0	708	4.0	134	62	939	67.1	710	4.1	130	62
				60	849	37.0	723	6.7	79	64	851	35.5	730	7.0	73	64	850	34.7	731	7.2	69	64
				80	888	44.6	736	5.8	100	64	892	42.7	747	6.1	93	63	892	41.7	749	6.3	90	63
	45.0	2.8	6.5	100	912	55.6	723	4.8	120	64	914	53.1	733	5.0	114	64	913	51.8	736	5.2	110	64
				120	951	71.5	707	3.9	141	64	947	68.0	716	4.1	134	64	943	66.2	717	4.2	130	64
				60	908	37.9	778	7.0	80	68	911	36.4	787	7.3	74	68	910	35.6	789	7.5	70	68
				80	942	45.6	786	6.0	101	68	947	43.7	798	6.4	94	68	947	42.7	801	6.5	91	68
80	67.5	4.9	11.4	100	962	56.7	768	5.0	121	69	966	54.2	781	5.2	114	68	965	53.0	784	5.3	111	68
				120	991	72.6	744	4.0	142	69	987	69.0	752	4.2	135	69	984	67.2	755	4.3	131	69
				60	965	38.6	833	7.3	81	71	971	37.2	844	7.7	74	71	970	36.4	846	7.8	71	71
				80	996	46.7	837	6.3	102	71	1002	44.8	849	6.6	95	71	1002	43.8	853	6.7	91	71
	90.0	8.6	19.8	100	1013	58.0	815	5.1	123	71	1017	55.4	828	5.4	115	71	1016	54.1	831	5.5	111	71
				120	1031	73.6	780	4.1	143	71	1028	70.0	790	4.3	135	71	1025	68.2	792	4.4	131	71

Flow rates are per circuit - dual compressor units have 2 circuits

60 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW720D Series - R410A **Magnum Series**
Part Load Cooling (One Compressor) **Water Source Heat Pump**

Source				Load	Load Flow 45 GPM						Load Flow 67.5 GPM						Load Flow 90 GPM					
EST	Flow	WPD		ELT	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST	TC	Power	HR	EER	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
50	45.0	3.1	7.1	50	290	11.7	330	25	37	65	315	12.5	357	25	41	66	327	12.9	371	25	43	66
				60	332	13.0	376	26	45	67	356	13.5	402	26	49	68	367	13.9	415	27	52	68
				70	360	13.7	406	26	54	68	384	14.1	432	27	59	69	397	14.5	446	27	61	70
				80	377	14.1	425	27	63	69	402	14.6	452	28	68	70	414	14.9	465	28	71	71
				90	384	14.3	433	27	73	69	409	14.8	460	28	78	70	421	15.1	473	28	81	71
	67.5	5.5	12.6	50	309	12.5	352	25	36	60	332	13.0	376	26	40	61	344	13.4	390	26	42	62
				60	344	13.4	390	26	45	62	368	13.8	415	27	49	62	380	14.2	428	27	52	63
				70	368	13.9	415	26	54	62	393	14.4	442	27	58	63	405	14.7	455	28	61	63
				80	383	14.3	431	27	63	63	408	14.7	459	28	68	64	421	15.0	472	28	71	64
				90	388	14.5	438	27	73	63	414	14.9	464	28	78	64	426	15.2	478	28	81	64
	90.0	9.4	21.8	50	325	13.0	369	25	36	58	349	13.4	395	26	40	59	360	13.8	408	26	42	59
				60	355	13.7	402	26	44	59	380	14.1	428	27	49	60	392	14.5	441	27	51	60
				70	376	14.2	425	27	53	59	402	14.6	451	28	58	60	414	14.9	464	28	61	60
				80	389	14.4	438	27	63	60	414	14.9	465	28	68	60	426	15.1	478	28	71	61
				90	393	14.6	442	27	73	60	418	15.0	469	28	78	60	431	15.3	483	28	80	61
70	45.0	2.9	6.7	50	295	16.1	350	18	37	86	312	16.3	368	19	41	86	322	16.6	378	19	43	87
				60	333	16.9	391	20	45	87	353	17.1	411	21	50	88	363	17.3	422	21	52	89
				70	362	17.4	421	21	54	89	384	17.7	444	22	59	90	394	17.9	456	22	61	90
				80	380	17.8	441	21	63	90	403	18.0	464	22	68	91	414	18.3	476	23	71	91
				90	387	18.1	449	21	73	90	410	18.3	473	22	78	91	422	18.6	485	23	81	92
	67.5	5.1	11.8	50	308	16.5	365	19	36	81	327	16.7	384	20	40	81	337	17.0	395	20	43	82
				60	344	17.1	402	20	45	82	365	17.4	425	21	49	83	375	17.6	435	21	52	83
				70	370	17.6	430	21	54	83	392	17.8	453	22	58	83	403	18.1	465	22	61	84
				80	386	18.0	447	21	63	83	409	18.2	471	22	68	84	420	18.5	484	23	71	84
				90	392	18.3	454	21	73	83	415	18.5	478	22	78	84	427	18.7	491	23	81	85
	90.0	8.9	20.5	50	322	16.9	380	19	36	78	342	17.1	400	20	40	79	351	17.3	410	20	42	79
				60	355	17.4	414	20	44	79	376	17.6	437	21	49	80	387	17.9	448	22	51	80
				70	378	17.9	439	21	53	80	401	18.1	462	22	58	80	411	18.3	474	22	61	81
				80	392	18.2	454	22	63	80	416	18.4	478	23	68	81	427	18.6	490	23	71	81
				90	396	18.4	459	22	72	80	420	18.6	484	23	78	81	432	18.9	496	23	80	81
90	45.0	2.7	6.2	50	287	20.4	357	14	37	106	293	20.4	363	14	41	106	299	20.7	370	14	43	106
				60	329	20.8	400	16	45	108	335	20.8	406	16	50	108	342	21.1	414	16	52	108
				70	361	21.2	434	17	54	109	369	21.2	441	17	59	110	376	21.6	450	17	62	110
				80	385	21.7	459	18	63	110	393	21.7	467	18	68	111	400	22.1	476	18	71	111
				90	398	22.3	474	18	72	111	406	22.3	482	18	78	111	414	22.6	491	18	81	112
	67.5	4.8	11.0	50	300	20.8	371	14	37	101	307	20.8	378	15	41	101	313	21.1	385	15	43	101
				60	340	21.1	411	16	45	102	347	21.1	419	16	50	102	353	21.4	426	16	52	103
				70	370	21.5	443	17	54	103	378	21.5	451	18	59	103	385	21.8	460	18	61	104
				80	391	21.9	466	18	63	104	400	21.9	474	18	68	104	407	22.3	483	18	71	104
				90	403	22.4	480	18	72	104	412	22.5	489	18	78	104	419	22.8	497	18	81	105
	90.0	8.3	19.1	50	313	21.2	386	15	36	99	320	21.2	392	15	41	99	326	21.5	399	15	43	99
				60	350	21.4	423	16	44	99	357	21.4	430	17	49	100	365	21.8	439	17	52	100
				70	379	21.8	453	17	53	100	386	21.8	460	18	59	100	394	22.1	469	18	61	100
				80	398	22.2	474	18	62	101	406	22.2	482	18	68	101	414	22.5	491	18	71	101
				90	409	22.7	486	18	72	101	417	22.7	494	18	78	101	425	23.0	504	18	81	101
110	45.0	2.5	5.8	50	262	25.0	347	10	38	125	264	25.1	350	11	42	126	267	25.6	355	10	44	126
				60	305	25.0	390	12	46	127	307	25.0	393	12	51	127	311	25.5	398	12	53	128
				70	342	25.2	428	14	55	129	345	25.3	432	14	60	129	349	25.7	437	14	62	129
				80	373	25.8	461	14	63	131	377	25.9	465	15	69	131	380	26.4	470	14	72	131
				90	396	26.8	488	15	72	132	400	26.9	492	15	78	132	404	27.4	497	15	81	132
	67.5	4.4	10.2	50	274	25.5	361	11	38	121	276	25.6	363	11	42	121	279	26.0	368	11	44	121
				60	315	25.3	401	12	46	122	318	25.4	405	13	51	122	321	25.9	410	12	53	122
				70	351	25.6	438	14	54	123	354	25.6	442	14	60	123	358	26.1	447	14	62	123
				80	380	26.1	469	15	63	124	384	26.2	473	15	69	124	388	26.7	479	15	71	124
				90	403	27.1	496	15	72	125	407	27.2	500	15	78	125	411	27.7	505	15	81	125
	90.0	7.7	17.7	50	286	26.0	374	11	37	118	288	26.1	377	11	41	118	291	26.6	382	11	44	118
				60	325	25.7	413	13	46	119	328	25.8	416	13	50	119	331	26.3	421	13	53	119
				70	359	25.9	447	14	54	120	362	26.0	451	14	59	120	366	26.5	456	14	62	120
				80	387	26.5	477	15	63	121	391	26.5	482	15	68	121	395	27.0	487	15	71	121
				90	410	27.4	503	15	72	121	413	27.5	507	15	78	121	418	28.0	513	15	81	121
120	45.0	2.4	5.6	50	247	28.0	343	9	39	135	249	28.0	345	9	43	135	252	28.6	349	9	44	136
				60	284	28.6	381	10	47	137	287	28.6	384	10	52	137	289	29.2	389	10	54	137
				70	320	29.1	420	11	56	139	323	29.2	423	11	60	139	326	29.8	428	11	63	139
				80	355	29.6	456	12	64	140	359	29.7	460	12	69	140	362	30.3	465	12	72	141
				90	388	30.1	491	13	73	142	392	30.2	494	13	78	142	396	30.8	501	13	81	142
	67.5	4.3	9.9	50	259	28.6	357	9	38	131	261	28.6	359	9	42	131	264	29.2	364	9	44	131
				60	294	29.1	393	10	47	132	297	29.2	396	10	51	132	300	29.8	401	10	53	132
				70	329	29.6	430	11	55	133	332	29.7	433	11	60	133	335	30.3	439	11	63	133
				80	363	30.1	465	12	64	134	366	30.2	469	12	69	134	370	30.7	475	12	72	134
				90	396	30.5	500	13	72	135	399	30.6	503	13	78	135	403	31.2	510	13	81	135
	90.0	7.4	17.0	50	271	29.2	370	9	38	128	274	29.3	373	9	42	128	276	29.9	378	9	44	128
				60	304	29.7	405	10	46	129	307	29.7	408	10	51	129	310	30.3	414	10	53	129
				70	337	30.1	440	11	55	130	341	30.2	444	11	60	130	344	30.8	449	11	62	130
				80	370	30.5	475	12	64	131	374	30.6	478	12	69	131	378	31.2	484	12	72	131
				90	403	30.9	509	13	72	131	406	31.0	512	13	78	131	411	31.7	519	13	81	132

Flow rates are per circuit - dual compressor units have 2 circuits

60 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

GFM GeoFurnace Manufacturing

MW720D Series - R410A **Magnum Series**
Part Load Heating (One Compressor) **Water Source Heat Pump**

Source				Load	Load Flow 45 GPM						Load Flow 67.5 GPM						Load Flow 90 GPM					
EST	Flow	WPD		ELT	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST	HC	Power	HE	COP	LLT	LST
°F	GPM	PSI	FT	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F	Mbtuh	kW	Mbtuh		°F	°F
				60	262	13.9	214	5.5	72	15	253	12.5	210	5.9	67	15	245	11.6	205	6.2	65	15
20	90.0	12.0	27.7	80	276	18.5	213	4.4	92	15	274	17.6	214	4.6	88	15	272	17.1	214	4.7	86	15
				100	273	23.6	192	3.4	112	16	271	22.5	194	3.5	108	16	269	22.0	194	3.6	106	16
				60	280	14.1	232	5.8	72	20	273	12.9	229	6.2	68	20	266	12.0	225	6.5	66	20
				80	296	18.6	233	4.7	93	20	294	17.6	234	4.9	89	20	293	17.1	234	5.0	87	20
	45.0	3.8	8.8	100	294	23.5	214	3.7	113	20	292	22.5	216	3.8	109	20	291	21.9	216	3.9	106	20
				120	289	29.6	188	2.9	133	22	284	28.3	188	2.9	128	22	281	27.6	187	3.0	126	22
				60	313	14.5	263	6.3	74	22	308	13.5	262	6.7	69	22	304	12.8	260	6.9	67	22
				80	326	18.8	261	5.1	94	22	324	17.8	264	5.3	90	22	323	17.4	264	5.4	87	22
30	67.5	6.7	15.5	100	322	23.8	241	4.0	114	23	320	22.7	243	4.1	109	23	319	22.2	243	4.2	107	23
				120	312	29.9	210	3.1	134	24	308	28.5	210	3.2	129	24	305	27.8	210	3.2	127	24
				60	301	14.4	252	6.1	73	24	296	13.4	251	6.5	69	24	291	12.7	248	6.7	66	24
				80	314	18.8	249	4.9	94	24	312	17.9	251	5.1	89	24	311	17.4	252	5.2	87	24
	90.0	11.6	26.9	100	309	23.9	227	3.8	114	25	307	22.8	229	3.9	109	25	305	22.2	230	4.0	107	25
				120	297	29.9	195	2.9	133	26	292	28.5	195	3.0	129	26	290	27.8	195	3.1	126	26
				60	320	14.6	270	6.4	74	28	316	13.6	269	6.8	69	28	312	13.0	267	7.0	67	28
				80	334	18.8	270	5.2	95	28	333	17.9	272	5.5	90	28	332	17.5	272	5.6	87	28
	45.0	3.2	7.3	100	332	23.8	250	4.1	115	29	330	22.7	253	4.3	110	29	328	22.2	253	4.3	107	29
				120	325	30.0	222	3.2	134	30	320	28.6	223	3.3	129	30	317	27.9	222	3.3	127	30
				60	376	15.3	324	7.2	77	30	375	14.5	325	7.6	71	30	372	14.0	324	7.8	68	30
				80	387	19.3	321	5.9	97	30	387	18.4	324	6.2	91	30	386	17.9	325	6.3	89	30
40	67.5	5.6	13.0	100	380	24.2	297	4.6	117	31	380	23.1	301	4.8	111	31	379	22.6	302	4.9	108	31
				120	368	30.5	264	3.5	136	32	364	29.1	264	3.7	131	32	361	28.3	265	3.7	128	32
				60	342	15.0	291	6.7	75	34	339	14.1	291	7.1	70	34	336	13.5	290	7.3	67	34
				80	353	19.2	287	5.4	96	34	352	18.3	290	5.7	90	34	351	17.8	290	5.8	88	34
	90.0	9.7	22.5	100	346	24.2	263	4.2	115	34	344	23.1	266	4.4	110	34	343	22.5	266	4.5	108	34
				120	331	30.2	228	3.2	135	35	327	28.8	229	3.3	130	35	324	28.1	229	3.4	127	35
				60	360	15.1	308	7.0	76	36	358	14.2	310	7.4	71	36	356	13.8	309	7.6	68	36
				80	373	19.2	308	5.7	97	36	374	18.3	311	6.0	91	36	372	17.8	312	6.1	88	36
	45.0	3.1	7.1	100	369	24.1	287	4.5	116	37	369	23.0	290	4.7	111	37	367	22.5	291	4.8	108	37
				120	361	30.5	257	3.5	136	39	358	29.0	259	3.6	131	39	355	28.3	258	3.7	128	39
				60	382	15.4	329	7.3	77	40	381	14.6	331	7.6	71	40	378	14.2	330	7.8	68	40
				80	392	19.4	326	5.9	97	40	393	18.6	329	6.2	92	40	392	18.1	330	6.4	89	40
50	67.5	5.5	12.6	100	386	24.3	303	4.6	117	41	385	23.3	306	4.9	111	41	384	22.7	306	5.0	109	41
				120	373	30.6	268	3.6	137	42	369	29.1	269	3.7	131	42	366	28.4	269	3.8	128	42
				60	403	15.7	349	7.5	78	42	403	15.0	352	7.9	72	42	401	14.5	352	8.1	69	42
				80	411	19.7	344	6.1	98	42	412	18.8	348	6.4	92	42	412	18.4	349	6.6	89	42
	90.0	9.4	21.8	100	402	24.6	318	4.8	118	43	402	23.5	322	5.0	112	43	401	23.0	323	5.1	109	43
				120	384	30.7	279	3.7	137	44	380	29.3	280	3.8	131	44	378	28.5	281	3.9	128	44
				60	380	15.5	327	7.2	77	45	379	14.7	329	7.6	71	45	377	14.2	328	7.8	68	45
				80	395	19.3	329	6.0	98	45	396	18.4	333	6.3	92	45	396	18.0	334	6.4	89	45
	45.0	3.0	6.9	100	396	24.2	314	4.8	118	46	396	23.1	318	5.0	112	46	396	22.6	319	5.1	109	46
				120	398	30.8	293	3.8	138	47	395	29.3	295	4.0	132	47	393	28.5	295	4.0	129	47
				60	404	15.8	350	7.5	78	50	404	15.0	352	7.9	72	50	403	14.6	353	8.1	69	50
				80	417	19.6	350	6.2	99	50	418	18.8	354	6.5	92	50	418	18.3	355	6.7	89	49
60	67.5	5.3	12.2	100	416	24.5	332	5.0	118	50	416	23.4	336	5.2	112	50	415	22.9	337	5.3	109	50
				120	412	31.0	306	3.9	138	51	409	29.5	309	4.1	132	51	407	28.7	309	4.2	129	51
				60	428	16.1	373	7.8	79	52	429	15.4	376	8.1	73	52	428	15.0	377	8.3	70	52
				80	438	20.0	370	6.4	99	52	440	19.1	375	6.7	93	52	440	18.7	376	6.9	90	52
	90.0	9.1	21.1	100	435	24.9	350	5.1	119	52	436	23.8	354	5.4	113	52	435	23.2	356	5.5	110	52
				120	427	31.2	320	4.0	139	53	423	29.7	322	4.2	133	53	421	29.0	322	4.3	129	53
				60	400	15.8	346	7.4	78	55	400	15.1	348	7.8	72	55	398	14.6	348	8.0	69	55
				80	417	19.5	351	6.3	99	54	418	18.6	355	6.6	92	54	418	18.2	356	6.7	89	54
	45.0	2.9	6.7	100	424	24.3	341	5.1	119	55	424	23.2	345	5.4	113	55	424	22.7	346	5.5	109	55
				120	434	31.0	329	4.1	139	55	432	29.5	331	4.3	133	55	430	28.8	332	4.4	130	55
				60	426	16.2	371	7.7	79	59	427	15.4	374	8.1	73	59	426	15.0	375	8.3	69	59
				80	441	19.8	374	6.5	100	59	443	19.0	378	6.8	93	59	443	18.6	380	7.0	90	59
70	67.5	5.1	11.8	100	446	24.7	362	5.3	120	59	447	23.6	366	5.5	113	59	446	23.1	367	5.7	110	59
				120	452	31.3	345	4.2	140	60	449	29.9	347	4.4	133	60	447	29.1	348	4.5	130	60
				60	453	16.5	396	8.0	80	61	454	15.8	400	8.4	73	61	454	15.5	401	8.6	70	61
				80	465	20.2	396	6.7	101	61	468	19.4	402	7.1	94	61	468	18.9	403	7.2	90	61
	90.0	8.9	20.5	100	469	25.2	383	5.5	121	61	469	24.1	387	5.7	114	61	469	23.5	389	5.8	110	61
				120	469	31.7	360	4.3	141	62	467	30.2	364	4.5	134	62	464	29.4	364	4.6	130	62
				60	420	16.2	365	7.6	79	64	420	15.5	368	8.0	72	64	420	15.1	368	8.2	69	64
				80	440	19.6	373	6.6	100	63	441	18.8	377	6.9	93	63	441	18.3	378	7.0	90	63
	45.0	2.8	6.5	100	452	24.4	368	5.4	120	64	452	23.3	373	5.7	113	63	452	22.8	374	5.8	110	63
				120	471	31.3	364	4.4	141	64	469	29.7	367	4.6	134	64	467	29.0	368	4.7	130	64
				60	448	16.6	392	7.9	80	68	450	15.9	396	8.3	73	68	449	15.5	397	8.5	70	68
				80	466	20.1	397	6.8	101	68	469	19.2	403	7.1	94	68	468	18.8	404	7.3	90	68
80	67.5	4.9	11.4	100	476	24.9	391	5.6	121	68	478	23.8	397	5.9	114	68	478	23.3	398	6.0	111	68
				120	490	31.7	382	4.5	142	69	489	30.1	386	4.8	134	69	487	29.4	387	4.9	131	69
				60	477	16.9	419	8.3	81	71	479	16.2	424	8.7	74	71	479	15.9	425	8.9	71	71
				80	493	20.5	423	7.0	102	71	496	19.7	428	7.4	95	70	495	19.2	430	7.5	91	70
	90.0	8.6	19.8	100	501	25.4	414	5.8	122	71	503	24.3	420	6.1	115	71	503	23.7	422	6.2	111	71
				120	510	32.1	400	4.7	143	71	509	30.5	405	4.9	135	71	507	29.8	406	5.0	131	71

Flow rates are per circuit - dual compressor units have 2 circuits

60 Ton - Dual Compressor Water to Water Submittal/Performance Data

Project:_____ Date._____
Engineer:_____Unit No._____
Contractor:_____ PO._____

MW720D Series - R410A **Magnum Series**
Performace ISO 13256-2 **Water Source Heat Pump**

Loading/ Capacity	Water Loop				Ground Water				Ground Loop			
	Heating		Cooling		Heating		Cooling		Heating		Cooling	
	104°F ELT 68°F EST		53.6°F ELT 86°F EST		104°F ELT 50°F EST		53.6°F ELT 59°F EST		104°F ELT 32°F EST Full 41°F EST Part		53.6°F ELT 77°F EST Full 68°F EST Part	
	Mbtuh	COP	Mbtuh	EER	MBtuh	COP	Mbtuh	EER	Mbtuh	COP	Mbtuh	EER
Full	931	4.9	682	14.7	802	4.3	734	20.9	628	3.49	706	16.7
Part	461	5.5	345	16.7	397	4.9	368	23.9	345	4.32	373	27.0

Electrical Specification

Voltage	Elect. Symbol	Compressor*		Total Unit FLA	1 Supply Circ	
		RLA	LRA		Min. Ampacity*	Max. Fuse/ HACR*
460-3-60	3	56.4	320	112.8	126.9	150
575-3-60	4	42.9	235	85.8	96.5	125
380-3-60	6	64.3	382	128.6	144.7	200

**Where calculations are based on:*

MCA = 1.25 x RLA compressor + FLA other motors

MOP = 2.25 x RLA largest compressor + 1.00 x FLA other motors.

Ensure that all loads on the supply line are added into the equations above if some of the cells in the above table are blank

HACR circuit breaker for use in USA only. All fuses Class RK-5
Ratings are for each compressor - unit supplied with two
Ratings for pumps are per circuit - dual compressor units have 2 circuits
2 Supply Circuit - Two power feeds / breakers are required for each compressor

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