

Edl, Michele

From: Shields, Gordon [GORDON.SHIELDS@TRANE.COM]
Sent: Friday, April 20, 2012 12:14 PM
To: Edl, Michele
Subject: Idaho Water Center chiller min / max flow design information
Attachments: EI WPD vs GPM on L03G06179.xls

Michele,

Please review the attached information per your request.

Let me know if you need anything else.

Regards,

Gordon Shields
Account Manager
Trane
Ingersoll Rand Climate Solutions
351 North Mitchell Street, Suite 100
Boise, ID 83704 USA

T:208.373.2102
C:208.484.1967
F:208.362.7463
gordon.shields@trane.com
www.ingersollrand.com

*****NEW Trane Site for Engineers*****

One-stop access for Engineers to keep in touch with new Trane products, systems, and solutions from Trane.

Access the latest technical specifications, control sequences and diagrams, and our design and analysis tools.

<http://www.traneengineer.com/>

The information contained in this message is privileged and intended only for the recipients named. If the reader is not a representative of the intended recipient, any review, dissemination or copying of this message or the information it contains is prohibited. If you have received this message in error, please immediately notify the sender, and delete the original message and attachments.

Water Pressure Drop vs. Gallons per Minute

Predicted New Chiller Performance: B3U082A
L03G06179

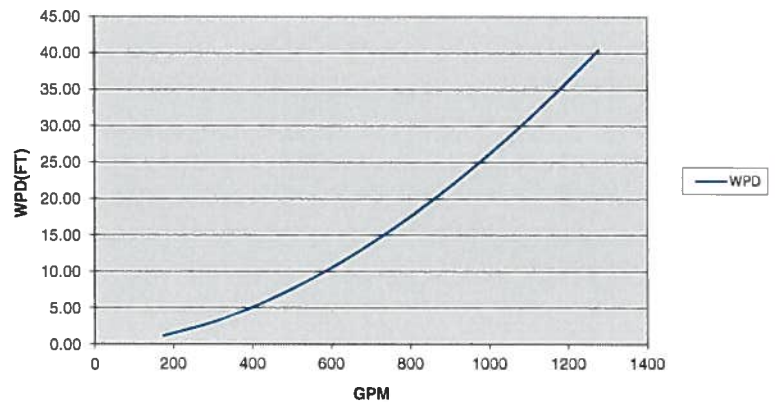
Evaporator WPD Coefficient 1	1.18E-04	
Evaporator WPD Coefficient 2	1.78E+00	
Evaporator Minimum Fluid Flow	174.4	GPM
Evaporator Maximum Fluid Flow	1278.8	GPM

GPM	WPD
174.4	1.16
284.84	2.79
395.28	5.00
505.72	7.75
616.16	11.02
726.6	14.78
837.04	19.02
947.48	23.72
1057.92	28.87
1168.36	34.46
1278.8	40.48

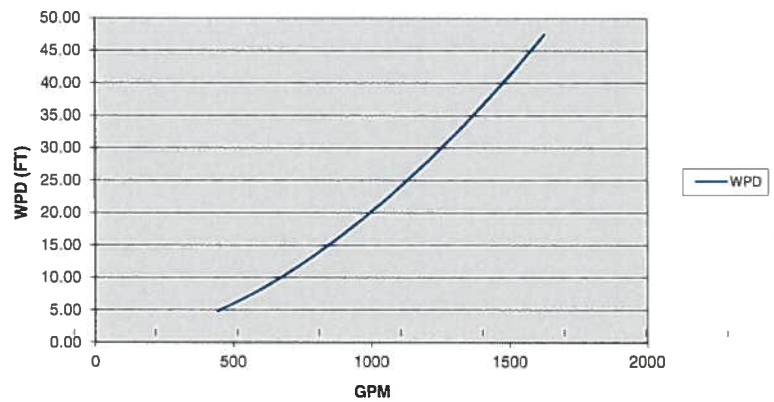
Condenser WPD Coefficient 1	1.08E-04	
Condenser WPD Coefficient 2	1.76E+00	
Condenser Minimum Fluid Flow	444.2	GPM
Condenser Maximum Fluid Flow	1628.6	GPM

GPM	WPD
444.2	4.85
562.64	7.34
681.08	10.27
799.52	13.61
917.96	17.35
1036.4	21.47
1154.84	25.96
1273.28	30.82
1391.72	36.03
1510.16	41.59
1628.6	47.49

Evaporator WPD



Condenser WPD



BOISE WSFO AIRPORT, IDAHO

Period of Record General Climate Summary - Cooling Degree Days

Station:(101022) BOISE WSFO AIRPORT													
From Year=1940 To Year=2012													
Cooling Degree Days for Selected Base Temperature (F)													
Base	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
55	0	0	3	34	153	335	614	560	281	63	1	0	2043
57	0	0	1	22	117	281	552	498	231	43	1	0	1747
60	0	0	0	10	76	208	460	408	165	22	0	0	1349
65	0	0	0	2	31	112	311	265	81	5	0	0	807
70	0	0	0	0	8	49	179	142	29	1	0	0	409

Cooling Degree Day units are computed as the difference between the daily average temperature and the base temperature. (Daily Ave. Temp. - Base Temp.) One unit is accumulated for each degree Fahrenheit the average temperature is above the base temperature. Negative numbers are discarded. Example: If the days high temperature was 95 and the low temperature was 51, the base 60 heating degree day units is $((95 + 51) / 2) - 60 = 13$. This is done for each day of the month and summed.

Table updated on Feb 17, 2012

Months with 5 or more missing days are not considered

Years with 1 or more missing months are not considered

Western Regional Climate Center, wrcc@dri.edu

History for Boise, ID

June 15, 2004 through June 8, 2005

June 15, 2004 through June 8, 2005

June 15 2004 - TO - June 8 2005

	Max	Avg	Min	Sum
Temperature				
Max Temperature	104 °F	63 °F	26 °F	
Mean Temperature	88 °F	53 °F	22 °F	
Min Temperature	75 °F	43 °F	16 °F	
Degree Days				
Heating Degree Days (base 65)	44	15	0	5309
Cooling Degree Days (base 65)	24	3	0	917
Growing Degree Days (base 50)	38	8	0	2984
Dew Point				
Dew Point	65 °F	35 °F	7 °F	
Precipitation				
Precipitation	0.88 in	0.03 in	0.00 in	11.71 in
Snowdepth	0.0 in	0.0 in	0.0 in	-
Wind				
Wind	44 mph	7 mph	0 mph	
Gust Wind	67 mph	24 mph	16 mph	
Sea Level Pressure				
Sea Level Pressure	30.76 in	30.01 in	29.28 in	