						DOAS application				Trox Active Chilled/Heated Beam Estimator														
space	Sensible Cooling	Latent Cooling	Heating	Latent Removal	Sensible Removal	Latent Removal	Minumum OA (Vbz)	Resultant Sensible Removal	Remaining Sensible	Min SA	SA via Beam	SA w/o Beam	Oversupply Test	Length of Beam	Beam Qty	Beam Cooling	Beam DeltaTw	Beam Water Flow	Heating	Heating Test	Beam Heating	Beam DeltaTw	Beam Water Flow	Balance of Qs (overcooling)
	(BTU/hr)	(BTU/hr)	(BTU/hr)	CFM	CFM	CFM	CFM	(BTU/hr)	(BTU/hr)	(l/s)	(l/s)	l/s		(mm)		(W)/unit	(K)	(l/h)/unit	(W)		(W)/unit	(K)	(l/h)/unit	(W)
BR-B057	12,505		631	0	557	0	30	861	11,644	13.9	135.0	14.0	Oversupply	900	5	193	1.5	110	185					2
B060	801		430	0	36	0	22	630	171	10.2	13.0			900	1				126		130	2.5	56	129
B062	1,068	615	267	53	48	39	10	1,147	79	18.6	18.6			900	1				78		75	1.5	54	52
B064	1,068	615	267	53	48	39	10	1,147	79	18.6	18.6			900	1				78		75	1.5	54	52
B066	218		131	0	10	0	0	0	218	0.0	0.0								38	AddHtg				64
B068	218		131	0	10	0	0	0	218	0.0	0.0								38	AddHtg				64
B070	905	410	267	35	40	26	10	764	141	12.4	15.0			900	1				78		75	1.5	54	69
B072	905	410	267	35	40	26	10	764	141	12.4	15.0			900	1				78		75	1.5	54	69
B074	1,601	1,230	250	106	71	79	9	2,293	692	37.1	37.1			900	1				73		200	3.5	50	(3)
B076	524		315	0	23	0	10	280	244	4.5	8.0			900	1				92		100	2	54	109
B078	1,090	615	267	53	49	39	10	1,147	57	18.6	18.6			900	1				78		75	1.5	54	58
B080	1,090	615	267	53	49	39	10	1,147	57	18.6	18.6			900	1				78		75	1.5	54	58
B082	1,090	615	267	53	49	39	10	1,147	57	18.6	18.6			900	1				78		75	1.5	54	58
B084	1,238	410	444	35	55	26	12	764	474	12.4	13.0			900	1	125	1	110	130					2
MR-B055	792		379	0	35	0	21	624	168	10.1	13.0			900	1				111		100	2	54	97
B056	3,734	1,640		142	166	105	14	3,058	676	49.5	49.5			900	1	193	1.5	110	0					5
B054	1,112	615		53	50	39	11	1,147	35	18.6	18.6								0					(10)
B052	1,112	615		53	50	39	11	1,147	35	18.6	18.6								0					(10)
B061	556			0	25	0	15	437	119	7.1	7.1								0					35
B042	1,207	410		35	54	26	23	764	443	12.4	12.4			900	1	125	1	110	0					5
B039	546	205		18	24	13	7	382	164	6.2	9.0								0					(3)
B040	467			0	21	0	13	367	100	5.9	8.0								0					(8)
B041	1,901	615	528	53	85	39	16	1,147	754	18.6	18.6			900	1	193	1.5	110	155					28
B035	1,068	615		53	48	39	10	1,147	79	18.6	18.6								0					(23)
B033	1,068	615		53	48	39	10	1,147	79	18.6	18.6								0					(23)
B031	2,199	1,640		142	98	105	14	3,058	859	49.5	49.5			900	1				0		269	4.6	50	17
B034	1,068	615		53	48	39	10	1,147	79	18.6	18.6								0					(23)
B032	1,068	615		53	48	39	10	1,147	79	18.6	18.6								0					(23)
B030	1,246	615		53	55	39	13	1,147	99	18.6	18.6								0					29
MES AB	307			0	14	0	8	241	66	3.9	3.9			900	1				0	Units added because of electrical equipmer				19
B051	1,068	615		53	48	39	12	1,147	79	18.6	18.6			900	1				0	Units added because of exterior wall				(23)
B053	1,068	615		53	48	39	12	1,147	79	18.6	18.6			900	1				0	Units added because of exterior wall				(23)
B027	1,090	615		53	49	39	10	1,147	57	18.6	18.6								0					(17)
B025	1,090	615		53	49	39	10	1,147	57	18.6	18.6								0					(17)
B023	1,090	615		53	49	39	10	1,147	57	18.6	18.6								0					(17)
B021	1,090	615		53	49	39	10	1,147	57	18.6	18.6								0					(17)
B026	1,090	615		53	49	39	10	1,147	57	18.6	18.6								0					(17)
B024	1,090	615		53	49	39	10	1,147	57	18.6	18.6								0					(17)
B022	1,090	615		53	49	39	10	1,147	57	18.6	18.6								0					(17)
B020	1,090	615		53	49	39	10	1,147	57	18.6	18.6								0					(17)
B009	2,456	1,080		93	109	69	40	2,014	442	32.6	32.6			900	1	125	1	110	0					5
B019	1,335	615	286	53	59	39	15	1,147	188	18.6	22.0			900	1				84		100	2	54	93
B017	1,112	615	256	53	50	39	11	1,147	35	18.6	18.6			900	1				75		75	1.5	54	65
B015	2,039	1,640	244	142	91	105	11	3,058	1,019	49.5	49.5			900	1				72		269	4.6	50	(30)
B013	2,039	1,640	244	142	91	105	11	3,058	1,019	49.5	49.5			900	1				72		269	4.6	50	(30)
B011	2,039	1,640	244	142	91	105	11	3,058	1,019	49.5	49.5			900	1				72		269	4.6	50	(30)
B000	11,901	4,320		374	530	276	171	8,054	3,847	130.4	130.4	62.0	Oversupply						0					5
CB-4	1,403			0	62	0	28	828	575	13.4	23.0		Oversupply						0					(5)
CB-9,7	1,353			0	60	0	27	798	555	12.9	22.0		Oversupply						0					(2)
CB-3	834			0	37	0	17	491	343	7.9	14.0		Oversupply						0					(9)
CB-1	934			0	42	0	19	551	383	8.9	15.0		Oversupply						0					2
CB-2	703			0	31	0	14	414	289	6.7	11.0		Oversupply						0					7
CB-6	783			0	35	0	16	462	321	7.5	13.0		Oversupply						0					(6)
	83,559	32,050	6,382	2,772	3,720	2,049	851	59,756	23,803															
		115,609			6,492	7,392																		

space	Sensible Cooling (BTU/hr)	Latent Cooling (BTU/hr)	Heating (BTU/hr)	Latent Removal CFM	Sensible Removal CFM	Latent Removal CFM	Minumum OA (Vbz) CFM	Resultant Sensible Removal (BTU/hr)	Remaining Sensible (BTU/hr)	Min SA (l/s)	SA via Beam (l/s)	SA w/o Beam l/s	Oversupply Test	Length of Beam (mm)	Beam Qty	Beam Cooling (W)/unit	Beam DeltaTw (K)	Beam Water Flow (l/h)/unit	Heating (W)	Heating Test	Beam Heating (W)/unit	Beam DeltaTw (K)	Beam Water Flow (l/h)/unit	Balance of Qs (overcooling) (W)
B086	786		457	0	35	0	14	420	366	6.8	12.5		Oversupply	900	1	144	1.1	110	134					(140)
B088	1,616	410	802	35	72	26	11	764	852	12.4	12.4			900	2	125	1	110	235					(0)
B075	905	410		35	40	26	10	764	141	12.4	15.0								0					(6)
B077	905	410		35	40	26	10	764	141	12.4	15.0								0					(6)
B012				0	0	0	0	0	0	0.0	0.0								0					0
B010				0	0	0	0	0	0	0.0	0.0								0					0
B079				0	0	0	0	0	0	0.0	0.0								0					0
B081				0	0	0	0	0	0	0.0	0.0								0					0
B083				0	0	0	0	0	0	0.0	0.0								0					0
B008	369			0	16	0	5	144	225	2.3	6.0								0					(0)
B085	1,191	820		71	53	52	6	1,529	338	24.7	24.7			900	1				0		100	2	50	1
B000	23,290	8,520	2,418	737	1,037	545	332	15,885	7,405	257.1	180.0	121.0	Oversupply	1800	4	344	2.7	110	709					(0)
B087A	905	410		35	40	26	17	764	141	12.4	15.0								0					(6)
B087	1,025	410		35	46	26	13	764	261	12.4	17.0		Oversupply						0					(7)
B089				0	0	0	3	99	99	1.6	12.0		Oversupply	900	1				0		200	3.5	62	(17)
B087B	320			0	14	0	17	483	163	7.8	12.0		Oversupply	900	1				0		130	2.5	50	7
B101	699			0	31	0	9	274	425	4.4	12.0		Oversupply	900	1				0	Unit added for cooling capacity				(12)
B103	1,605	820		71	71	52	16	1,529	76	24.7	26.0			900	1				0	Unit added for cooling capacity				(0)
B150				0	0	0	28	815	815	13.2	13.2			900	1				0		240	2	110	1
B153	2,420	1,080	468	93	108	69	37	2,014	406	32.6	12.0	20.6		900	1	125	1	110	137					(6)
B148	1,605	820		71	71	52	16	1,529	76	24.7	26.0			900	1				0	Unit added for cooling capacity				(0)
B151				0	0	0	5	144	144	2.3	12.0		Oversupply	900	1				0		220	2	110	3
B149	1,143	615	266	53	51	39	11	1,147	4	18.6	18.6			900	1				78		75	1.5	54	74
B147	1,143	615	266	53	51	39	11	1,147	4	18.6	18.6			900	1				78		75	1.5	54	74
B145	1,143	615	266	53	51	39	11	1,147	4	18.6	18.6			900	1				78		75	1.5	54	74
B143	1,143	615	266	53	51	39	11	1,147	4	18.6	18.6			900	1				78		75	1.5	54	74
B141	614		295	0	27	0	17	483	131	7.8	10.0			900	1				86		75	1.5	54	74
B109	1,139	615		53	51	39	11	1,147	8	18.6	18.6								0					(2)
B107	1,139	615		53	51	39	11	1,147	8	18.6	18.6								0					(2)
B105	1,139	615		53	51	39	11	1,147	8	18.6	18.6								0					(2)
B110	10,639	1,640	4,995	142	474	105	81	3,058	7,581	49.5	108.0		Oversupply	900	6	193	1.5	110	1,464					5
B111	1,094	615		53	49	39	10	1,147	53	18.6	23.0		Oversupply	900	1				0		100	2	50	4
B106	1,094	615		53	49	39	10	1,147	53	18.6	23.0		Oversupply	900	1				0		100	2	50	4
B108	1,650	1,230		106	73	79	10	2,293	643	37.1	12.0	25.1		900	1				0		200	3.5	50	12
B113	307			0	14	0	8	241	66	3.9	5.0			900	1				0	Unit added for cooling capacity				(1)
B135	4,015	3,280		284	179	210	54	6,115	2,100	99.0	36.0	62.0		900	3				0		200	3.5	50	2
B137	231			0	10	0	6	181	50	2.9	4.0								0					(5)
B118	10,591	1,640	4,995	142	471	105	81	3,058	7,533	49.5	108.0		Oversupply	900	6	193	1.5	110	1,464					(10)
B115				0	0	0	0	0	0	0.0	0.0								0					0
B134				0	0	0	0	0	0	0.0	0.0								0					0
B117				0	0	0	0	0	0	0.0	0.0								0					0
B119				0	0	0	0	0	0	0.0	0.0								0					0
B132	1,891	615		53	84	39	26	1,147	744	18.6	12.0	8.0		900	1	193	1.5	110	0					(1)
MES BB	303			0	13	0	8	238	65	3.9	12.0		Oversupply	900	1				0		130	2.5	56	2
B123	142			0	6	0	4	112	30	1.8	2.5								0					(4)
B30				0	0	0	0	0	0	0.0	0.0								0					0
B127	3,833	1,680	618	145	171	107	86	3,132	701	50.7	27.0	24.0		900	1	193	1.5	110	181					7
B126A	1,424	205	1,180	18	63	13	9	382	1,042	9.2	15.0		Oversupply	900	2	144	1.1	110	346		second unit added for htg capabil			#VALUE!
B126	1,861	410	1,048	35	83	26	13	764	1,097	12.4	18.0	3.0	Oversupply	900	1	159	1.2	110	307	AddHtg	heating capable			#VALUE!
B124	630	205	197	18	28	13	9	382	248	6.2	10.0			900	1				58		heating capable			#VALUE!
B122	2,912	410	995	35	130	26	11	764	2,148	12.4	31.0		Oversupply	900	2	144	1.1	110	292					4
B120	3,731	410	2,016	35	166	26	11	764	2,967	12.4	40.0		Oversupply	900	3	125	1	110	591					(6)
CB-9,7	1,525			0	68	0	31	899	626	14.6	25.0		Oversupply	900	2				0					(6)
CB-10	1,584		597	0	71	0	32	933	651	15.1	26.0		Oversupply	900	2				175		heating capable			#VALUE!
CB-14	1,584			0	71	0	29	834	750	13.5	26.0		Oversupply						0					(7)
CB-15	540			0	24	0	11	318	222	5.1	9.0								0					(5)
CB-13	768			0	34	0	16	452	316	7.3	13.0		Oversupply						0					(10)
CB-11	279			0	12	0	6	164	115	2.7	5.0								0					(9)
	98,872	31,370	22,145	2,714	4,401	2,006	1,205	58,488	40,384		SA SUI	5,848	Beam Sum	900 mm	82	cold water	(l/h)	4,400	8,360		hot water	(l/h)	1,908	
		130,242			7,115						cfm /\			1800 mm	4		gpm	19	SUM of			gpm	8	
																Clg Cap	(BTU/hr)	25,361	Heating		Htg Cap	(BTU/hr)	16,040	

						DOAS application				Trox Active Chilled/Heated Beam Estimator																
space	Sensible Cooling (BTU/hr)	Latent Cooling (BTU/hr)	Heating (BTU/hr)	Latent Removal CFM	Sensible Removal CFM	Latent Removal CFM	Minumum OA (Vbz) CFM	Resultant Sensible Removal (BTU/hr)	Remaining Sensible (BTU/hr)	Min SA (l/s)	SA via Beam (l/s)	SA w/o Beam l/s	Oversupply Test	Length of Beam (mm)	Beam Qty	Beam Cooling (W)/unit	Beam DeltaTw (K)	Beam Water Flow (l/h)/unit	Heating (W)	Heating Test	Beam Heating (W)/unit	Beam DeltaTw (K)	Beam Water Flow (l/h)/unit	Balance of Qs (overcooling) (W)
1058	3,008	410	1,095	35	134	26	14	764	2,244	12.4	33.0		Oversupply	900	2	144	1.1	110	321					(4)
1057	5,999	410	1,960	35	267	26	17	764	5,235	12.4	68.0		Oversupply	900	3	172	1.3	110	574					11
1055	4,266	410	1,296	35	190	26	17	764	3,502	12.4	36.0	12	Oversupply	900	3	125	1	110	380					6
1053	4,266	410	1,296	35	190	26	17	764	3,502	12.4	36.0	12	Oversupply	900	3	125	1	110	380					6
1051	6,225	410	2,964	35	277	26	17	764	5,461	12.4	54.0	18	Oversupply	900	3	172	1.3	110	869	Add Htg	htg capable			#VALUE!
1056	1,158	1,025		89	52	66	11	1,911	753	30.9	30.9			900	1				0		220	2	110	(1)
1060	1,217	615	83	53	54	39	11	1,147	70	18.6	20.0			900	1				24	Units added because of exterior wall				#VALUE!
1062	1,090	615		53	49	39	10	1,147	57	18.6	18.6			900	1				0	Units added because of exterior wall				(17)
1064	1,090	615		53	49	39	10	1,147	57	18.6	18.6			900	1				0	Units added because of exterior wall				(17)
1066				0	0	0	0	0	0	0.0	0.0			900	1				0	Units added because of exterior wall				0
1068				0	0	0	0	0	0	0.0	0.0			900	1				0	Units added because of exterior wall				0
1070	1,090	615		53	49	39	10	1,147	57	18.6	18.6			900	1				0	Units added because of exterior wall				(17)
1072	1,090	615		53	49	39	10	1,147	57	18.6	18.6			900	1				0	Units added because of exterior wall				(17)
1074	1,090	615		53	49	39	10	1,147	57	18.6	18.6			900	1				0	Units added because of exterior wall				(17)
1076	1,090	615		53	49	39	10	1,147	57	18.6	18.6			900	1				0	Units added because of exterior wall				(17)
1078	1,090	615		53	49	39	10	1,147	57	18.6	18.6			900	1				0	Units added because of exterior wall				(17)
1080	1,090	615		53	49	39	10	1,147	57	18.6	18.6			900	1				0	Units added because of exterior wall				(17)
1082	1,090	615		53	49	39	28	1,147	57	18.6	18.6			900	1				0	Units added because of exterior wall				(17)
1084	267			0	12	0	7	210	57	3.4	4.0			900	1				0	Units added because of exterior wall				6
1086	1,562	410	990	35	70	26	8	764	798	12.4	15.0	2	Oversupply	900	1	144	1.1	110	290	Add Htg	htg capable			#VALUE!
1061	1,117	615		53	50	39	11	1,147	30	18.6	18.6								0					(9)
1054	1,223	615		53	54	39	13	1,147	76	18.6	20.0								0					(4)
1042	1,170	615		53	52	39	12	1,147	23	18.6	18.6								0					7
1040	1,068	615		53	48	39	10	1,147	79	18.6	18.6								0					(23)
1031	1,094	615		53	49	39	10	1,147	53	18.6	18.6								0					(15)
1035	2,862	1,440		125	127	92	37	2,685	177	43.5	46.0			900	2				0	Units added to increase cooling capacity				6
1035A	507			0	23	0	14	399	108	6.5	6.5								0					32
1063	1,090	615		53	49	39	10	1,147	57	18.6	18.6								0					(17)
1037	1,117	615		53	50	39	11	1,147	30	18.6	18.6								0					(9)
1041	11,366	1,920	4,232	166	506	123	65	3,580	7,786	57.9	127.0		Oversupply	900	6	172	1.3	110	1,240					(0)
1019	1,427	720		62	64	46	18	1,342	85	21.7	23.0								0					2
1019A	3,374	615	1,268	53	150	39	9	1,147	2,227	18.6	37.0		Oversupply	900	2	159	1.2	110	372					1
1017	3,387	615	1,213	53	151	39	10	1,147	2,240	18.6	37.0		Oversupply	900	2	159	1.2	110	355					5
1015	3,420	615	1,228	53	152	39	10	1,147	2,273	18.6	38.0		Oversupply	900	2	159	1.2	110	360					(4)
1013	3,444	615	1,228	53	153	39	11	1,147	2,297	18.6	38.0		Oversupply	900	2	159	1.2	110	360					3
1011	11,017	2,400	3,352	208	490	153	23	4,475	6,542	72.4	128.0		Oversupply	900	5	183	1.4	110	982					(4)
1029	2,196	820	190	71	98	52	24	1,529	667	24.7	18.0	9		900	1	159	1.2	110	56					(4)
1034	1,134	615		53	50	39	11	1,147	13	18.6	18.6								0					(4)
1032	1,108	615		53	49	39	10	1,147	39	18.6	18.6								0					(11)
MES A1	307			0	14	0	8	241	66	3.9	3.9			900	1				0	Units added to increase cooling capacity				19
1027	334			0	15	0	9	262	72	4.2	4.2								0					21
1025	503			0	22	0	14	394	109	6.4	8.0								0					3
1023	360			0	16	0	10	284	76	4.6	6.0								0					(3)
1028	1,117	615		53	50	39	11	1,147	30	18.6	18.6								0					(9)
1026	1,072	615		53	48	39	10	1,147	75	18.6	18.6								0					(22)
1024	1,072	615		53	48	39	10	1,147	75	18.6	18.6								0					(22)
1014	1,072	615		53	48	39	10	1,147	75	18.6	18.6								0					(22)
1075	5,150	1,230	399	106	229	79	246	7,173	2,023	116.1	117.0			900	2				117		308	5.3	50	7
1012				0	0	0	0	0	0	0.0	0.0								0					0
1010				0	0	0	0	0	0	0.0	0.0								0					0
1081				0	0	0	0	0	0	0.0	0.0								0					0
1083				0	0	0	0	0	0	0.0	0.0								0					0
CRI-002	776	410		35	35	26	8	764	12	12.4	12.4			900	1				0	Units added to increase cooling capacity				3
1009	962	410		35	43	26	11	764	198	12.4	16.0			900	1				0	Units added to increase cooling capacity				(8)
1091	2,034	1,640		142	91	105	27	3,058	1,024	49.5	50.0			900	1				0		308	5.3	50	(1)
1093	1,414	615	133	53	63	39	13	1,147	267	18.6	23.0		Oversupply	900	1				39	Units added to increase cooling capacity				(2)
1095	262		66	0	12	0	3	99	163	1.6	5.0			900	1				19	Units added to increase cooling capacity				(14)
1093A	534		133	0	24	0	18	537	3	8.7	12.0			900	1				39		75	1.5	54	14
1098	1,352	615	334	53	60	39	13	1,147	205	18.6	22.0			900	1				98		htg capable			#VALUE!
1001	570			0	25	0	8	224	346	3.6	50.0		Oversupply	1800	1				0		726	12.5	50	(12)
1000	45,819	12,000	10,024	1,038	2,040	767	298	22,373	23,446	362.1	500.0	42	Oversupply	1800	10	361	2.8	110	2,938	Add Htg	htg capable			#VALUE!
C1-5	3,544		1,117	0	158	0	26	751	2,793	12.1	58.0		Oversupply	900	1				327	Add Htg	339	5.8	63	328
C1-6	4,203		1,341	0	187	0	63	1,843	2,360	29.8	68.0		Oversupply	900	1				393	Add Htg	387	6.7	63	388
C1-3	934		86	0	42	0	17	486	448	7.9	15.0		Oversupply						25	Add Htg	htg capable			#VALUE!

C1-4	566		182	0	25		0	10	284	282		4.6	9.0		Oversupply	900	1				53	htg capable			#VALUE!
C1-2	534			0	24		0	11	315	219		5.1	9.0								0				(6)
C1-1	1,163			0	52		0	24	686	477		11.1	19.0		Oversupply						0				(3)
C1-10	350			0	16		0	7	206	144		3.3	6.0								0				(6)
A-1				0	0		0	0	0	0		0.0	0.0								0				0
B-1				0	0		0	0	0	0		0.0	0.0								0				0
	166,903	44,310	36,210	3,833	7,430		2,833	1,428	82,614	84,289															48,914
		211,213			11,263		13,505	0	393,796	393,796															0

space	Sensible Cooling (BTU/hr)	Latent Cooling (BTU/hr)	Heating (BTU/hr)	Latent Removal CFM	Sensible Removal CFM		Latent Removal CFM	Minumum OA (Vbz) CFM	Resultant Sensible Removal (BTU/hr)	Remaining Sensible (BTU/hr)		Min SA (l/s)	SA via Beam (l/s)	SA w/o Beam l/s	Oversupply Test	Length of Beam (mm)	Beam Qty	Beam Cooling (W)/unit	Beam DeltaTw (K)	Beam Water Flow (l/h)/unit	Heating (W)	Heating Test	Beam Heating (W)/unit	Beam DeltaTw (K)	Beam Water Flow (l/h)/unit	Balance of Qs (overcooling) (W)
1097	1,157	615		53	52		39	11	1,147	10		18.6	18.6			900	1				0	Unit added to increase cooling capacity				3
1100	1,769	615	1,072	53	79		39	9	1,147	622		18.6	12.0	10		900	1	125	1	110	314	Add Htg				(5)
1102	7,359	2,160	2,929	187	328		138	118	4,027	3,332		65.2	72.0	12	Oversupply	900	4	159	1.2	110	858					(0)
1114	3,237	615	1,209	53	144		39	11	1,147	2,090		18.6	36.0		Oversupply	900	2	144	1.1	110	354					9
1116	1,219	615	269	53	54		39	11	1,147	72		18.6	20.0			900	1				79	unit added because of exterior wall				(5)
1118	1,967	615	1,263	53	88		39	11	1,147	820		18.6	22.0			900	1	172	1.3	110	370	Add Htg				6
1161	1,037	615		53	46		39	9	1,147	110		18.6	18.6								0					(32)
1159	1,090	615		53	49		39	10	1,147	57		18.6	18.6								0					(17)
1157	1,117	615		53	50		39	11	1,147	30		18.6	18.6								0					(9)
1155	3,576	615	1,199	53	159		39	14	1,147	2,429		18.6	40.0		Oversupply	900	2	159	1.2	110	351					6
1153	3,404	615	1,199	53	152		39	10	1,147	2,257		18.6	36.0		Oversupply	900	3	125	1	110	351					(29)
1151	2,666	615	886	53	119		39	10	1,147	1,519		18.6	29.0		Oversupply	900	2	125	1	110	260					6
1149	2,672	615	901	53	119		39	10	1,147	1,525		18.6	29.0		Oversupply	900	2	125	1	110	264					8
1147	2,672	615	901	53	119		39	10	1,147	1,525		18.6	29.0		Oversupply	900	2	125	1	110	264					8
1145	2,672	615	901	53	119		39	10	1,147	1,525		18.6	29.0		Oversupply	900	2	125	1	110	264					8
1144	1,094	615		53	49		39	129	3,774	2,680		61.1	62.0			900	3				0		269	4.6	50	5
1143	2,672	615	901	53	119		39	10	1,147	1,525		18.6	29.0		Oversupply	900	2	125	1	110	264					8
1141	2,672	615	901	53	119		39	10	1,147	1,525		18.6	29.0		Oversupply	900	2	125	1	110	264					8
1101	1,709	820	151	71	76		52	15	1,529	180		24.7	28.0			900	1				44	Unit added to increase cooling capacity				(6)
1158	427			0	19		0	12	336	91		5.4	5.4								0					27
1103	1,775			0	79		0	48	1,396	379		22.6	22.6			900	1	125	1	110	0					(14)
1105	727	410		35	32		26	-69	764	37		12.4	12.4								0					(11)
1148	1,094	615		53	49		39	10	1,147	53		18.6	18.6								0					(15)
1146	1,094	615		53	49		39	10	1,147	53		18.6	18.6								0					(15)
1133	1,094	615		53	49		39	10	1,147	53		18.6	18.6								0					(15)
1135	587			0	26		0	160	4,672	4,085		75.6	60.0	24	Oversupply	900	5				0		269	4.6	50	(4)
1138				0	0		0	0	0	0		0.0	0.0								0					0
1139	402		69	0	18		0	0	0	402		0.0	7.0		Oversupply						20	Add Htg				(9)
1136				0	0		0	0	0	0		0.0	0.0								0					0
1113				0	0		0	0	0	0		0.0	0.0								0					0
1115				0	0		0	0	0	0		0.0	0.0								0					0
1134	1,502	820		71	67		52	14	1,529	27		24.7	24.7			900	2				0	Units added to increase cooling capacity				(8)
1123	601			0	27		0	8	236	365		3.8	10.0		Oversupply						0					(5)
1120	4,527	615	2,441	53	202		39	8	1,147	3,380		18.6	49.0		Oversupply	900	3	144	1.1	110	715					8
1122	1,030	615	203	53	46		39	8	1,147	117		18.6	18.6			900	1				59					(34)
1124	1,808	615	901	53	80		39	10	1,147	661		18.6	12.0	10		900	1	125	1	110	264					7
1126	1,838	615	913	53	82		39	11	1,147	691		18.6	12.0	11	Oversupply	900	1	125	1	110	268					(3)
1128	4,017	615	2,327	53	179		39	15	1,147	2,870		18.6	36.0	8	Oversupply	900	3	125	1	110	682					6
1129	8,728	1,920	3,193	166	389		123	21	3,580	5,148		57.9	90.0	7	Oversupply	900	5	159	1.2	110	936					7
1130				0	0		0	0	0	0		0.0	0.0								0					0
1150	2,146	1,640		142	96		105	46	3,058	912		49.5	12.0	38		900	1				0		269	4.6	50	(7)
C1-8	5,470		2,289	0	244		0	36	1,059	4,411		17.1	89.0		Oversupply	900	4				671	Units added to increase heating capacity				(8)
C1-12	991			0	44		0	20	583	408		9.4	16.0		Oversupply						0					1
C1-11	1,795			0	80		0	36	1,059	736		17.1	29.0		Oversupply						0					1
C1-15	608		72	0	27		0	10	303	305		4.9	10.0		Oversupply						21	Add Htg				(3)
C1-9	605			0	27		0	12	356	249		5.8	10.0		Oversupply						0					(4)
C1-13	627		87	0	28		0	10	303	324		4.9	10.0		Oversupply						25	Add Htg				3
C-1				0	0		0	0	0	0		0.0	0.0													0
	89,254	23,145	27,177	2,002	3,973		1,480	877	43,153	46,101			SA SUM	7,635	Beam Sum	900 mm	122	cold water		(l/h)	9,240	18,577		hot water	(l/h)	940
		112,399			5,975									cfm /\		1800 mm	11			gpm	41	SUM of			gpm	4
																		Clg Cap		(BTU/hr)	49,791	Heating		Htg Cap	(BTU/hr)	17,374

DOAS application

Trox Active Chilled/Heated Beam Estimator

space	Latent Cooling (BTU/hr)	Heating (BTU/hr)	Latent Removal (CFM)	Sensible Removal (CFM)	Latent Removal CFM	Minumum OA (Vbz) CFM	Resultant Sensible Removal (BTU/hr)	Remaining Sensible (BTU/hr)	Min SA (l/s)	SA via Beam (l/s)	SA w/o Beam l/s	Oversupply Test	Length of Beam (mm)	Beam Qty	Beam Cooling (W)/unit	Beam DeltaTw (K)	Beam Water Flow (l/h)/unit	Heating (W)	Heating Test	Beam Heating (W)/unit	Beam DeltaTw (K)	Beam Water Flow (l/h)/unit	Balance of Qs (overcooling) (W)
2055	820	2,536	71	91	52	15	1,529	526	24.7	63.0	5	Oversupply	900	3	172	1.3	110	743					(1,145)
2053	410	1,268	35	91	26	10	764	1,289	12.4	36.0	7	Oversupply	900	3	125	1	110	372					(552)
2051	410	2,399	35	91	26	9	764	1,287	12.4	54.0	7	Oversupply	900	3	159	1.2	110	703					(980)
2056	410	1,519	35	92	26	14	764	1,292	12.4	36.0	4	Oversupply	900	3	125	1	110	445					(497)
2063	410	589	35	92	26	10	764	1,299	12.4	26.0		Oversupply	900	1	183	1.4	110	173					(49)
2061	410		35	92	26	10	764	1,297	12.4	14.0								0					351
2062	410	1,213	35	92	26	10	764	1,298	12.4	21.0		Oversupply	900	1	172	1.3	110	355	Add Htg	htg capable			#VALUE!
2060	410	1,213	35	92	26	10	764	1,296	12.4	21.0		Oversupply	900	1	172	1.2	110	355	Add Htg	htg capable			#VALUE!
2065	410	729	35	92	26	11	764	1,301	12.4	27.0		Oversupply	900	1	193	1.5	110	214					(77)
2064	410	1,005	35	92	26	11	764	1,300	12.4	19.0		Oversupply	900	1	159	1.2	110	295	Add Htg	htg capable			#VALUE!
2054	410		35	91	26	8	764	1,290	12.4	12.4								0					378
2044	410		35	91	26	8	764	1,280	12.4	12.4			900	1				0	Units added to increase cooling capacity				375
2033	410		35	91	26	7	764	1,269	12.4	12.4								0					372
2042	410		35	91	26	8	764	1,278	12.4	12.4			900	1				0	Units added to increase cooling capacity				374
2032	410		35	90	26	10	764	1,268	12.4	14.0								0					342
2030	410		35	90	26	10	764	1,266	12.4	14.0								0					341
2067	410		35	92	26	7	764	1,303	12.4	12.4								0					382
2071	410		35	92	26	7	764	1,307	12.4	12.4								0					383
2075	410	1,096	35	92	26	10	764	1,311	12.4	36.0		Oversupply	900	3	125	1	110	321					(419)
2073	410	1,068	35	92	26	10	764	1,309	12.4	36.0		Oversupply	900	3	125	1	110	313					(419)
2074	410	1,096	35	92	26	10	764	1,310	12.4	20.0		Oversupply	900	1	159	1.2	110	321	Add Htg	htg capable			#VALUE!
2072	410	1,068	35	92	26	10	764	1,308	12.4	20.0		Oversupply	900	1	159	1.2	110	313	Add Htg	htg capable			#VALUE!
2077	410	1,018	35	92	26	11	764	1,313	12.4	36.0		Oversupply	900	2	159	1.2	110	298					(361)
2076	410	990	35	92	26	11	764	1,312	12.4	19.0		Oversupply	900	1	159	1.2	110	290	Add Htg	htg capable			#VALUE!
MES A2			0	#VALUE!	0	8	231	#VALUE!	3.7	3.7			900	1				0	Unit added because of electrical equipmer				#VALUE!
2022	615		53	90	39	11	1,147	875	18.6	18.6								0					257
2018	3,360		291	90	215	134	6,265	4,247	101.4	101.4			900	2	172	1.3	110	0					(1,589)
2026	410		35	90	26	12	764	1,262	12.4	16.0								0					304
2023	410	1,240	35	90	26	9	764	1,259	12.4	30.0	6	Oversupply	900	2	144	1.1	110	363					(347)
2021	410	1,240	35	90	26	9	764	1,257	12.4	30.0	6	Oversupply	900	2	144	1.1	110	363					(348)
2019	820	2,314	71	90	52	12	1,529	490	24.7	60.0	7	Oversupply	900	4	144	1.1	110	678					(1,197)
2017	410	1,240	35	90	26	9	764	1,253	12.4	30.0	6	Oversupply	900	2	144	1.1	110	363					(349)
2015	410	1,435	35	90	26	10	764	1,251	12.4	36.0		Oversupply	900	2	159	1.2	110	421					(379)
2125	615		53	95	39	9	1,147	978	18.6	18.6			900	1				0	Unit added because of exterior wall				287
2127	615	1,848	53	95	39	12	1,147	980	18.6	33.0		Oversupply	900	2	144	1.1	110	542	Add Htg	htg capable			#VALUE!
C2-2			0	#VALUE!	0	6	177	#VALUE!	2.9	2.9								0					#VALUE!
C2-6			0	#VALUE!	0	9	254	#VALUE!	4.1	7.0			900	1				0	Unit added because of exterior wall				#VALUE!
C2-7		1,290	0	#VALUE!	0	38	1,094	#VALUE!	17.7	45.0		Oversupply	900	4				378		387	6.8	63	#VALUE!
C2-4		1,324	0	#VALUE!	0	8	240	#VALUE!	3.9	47.0		Oversupply	900	1				388	Add Htg	387	6.8	63	#VALUE!
C2-5			0	#VALUE!	0	6	183	#VALUE!	3.0	4.0			900	1				0	Unit added because of exterior wall				#VALUE!
C2-8			0	#VALUE!	0	8	231	#VALUE!	3.7	6.0								0					#VALUE!
	18,325	30,738	1,585	0	1,172	543	34,166	34,166															
	18,325			1,585	1,172	0	34,166	34,166															

space	Latent Cooling (BTU/hr)	Heating (BTU/hr)	Latent Removal (CFM)	Sensible Removal (CFM)	Latent Removal CFM	Minumum OA (Vbz) CFM	Resultant Sensible Removal (BTU/hr)	Remaining Sensible (BTU/hr)	Min SA (l/s)	SA via Beam (l/s)	SA w/o Beam l/s	Oversupply Test	Length of Beam (mm)	Beam Qty	Beam Cooling (W)/unit	Beam DeltaTw (K)	Beam Water Flow (l/h)/unit	Heating (W)	Heating Test	Beam Heating (W)/unit	Beam DeltaTw (K)	Beam Water Flow (l/h)/unit	Balance of Qs (overcooling) (W)
2041	1,230	3,851	106	91	79	14	2,293	252	37.1	105.0	1	Oversupply	900	5	172	1.3	110	1,129					(2,181)
2027	410	1,200	35	90	26	8	764	1,263	12.4	30.0	5	Oversupply	900	2	144	1.1	110	352					(328)
2025	410	1,200	35	90	26	8	764	1,261	12.4	30.0	5	Oversupply	900	2	144	1.1	110	352					(328)
2079			0	93	0	0	0	2,079	0.0	0.0								0					609
2013			0	90	0	0	0	2,013	0.0	0.0								0					590
2085	1,230	1,905	106	93	79	17	2,293	208	37.1	72.0	1	Oversupply	900	4	159	1.2	110	558					(1,347)
2083	820	1,096	71	93	52	12	1,529	554	24.7	42.0	4	Oversupply	900	2	172	1.3	110	321					(566)
2086			0	93	0	9	252	1,834	4.1	4.1								0					538
2088	2,460	1,262	213	93	157	32	4,587	2,499	74.2	77.0			900	4				370	Units added to increase cooling capacity				(782)

2082			0	93		0	11	325	1,757		5.3	5.3									0				515
2002	5,400	3,208	467	89		345	195	10,068	8,066		163.0	162.0	5	Oversupply	900	6	193	1.5	110	940					(3,595)
2012	410		35	90		26	10	764	1,248		12.4	14.0								0					336
2081			0	93		0	19	558	1,523		9.0	12.0								0					393
2011	4,100	3,074	355	90		262	55	7,644	5,633		123.7	108.0	22	Oversupply	900	4	193	1.5	110	901					(2,536)
2095	410	1,554	35	93		26	10	764	1,331		12.4	36.0	5	Oversupply	900	2	159	1.2	110	455					(446)
2093	410	1,043	35	93		26	7	764	1,329		12.4	36.0	2	Oversupply	900	2	159	1.2	110	306					(393)
2091	615	1,123	53	93		39	11	1,147	944		18.6	42.0	1	Oversupply	900	2	172	1.3	110	329					(510)
2089	2,870		248	93		184	64	5,351	3,262		86.6	24.0	63		900	2				0		269	4.6	110	(418)
2057	1,230		106	92		79	21	2,293	236		37.1	37.1			900	3				0	Units added to increase cooling capacity				(69)
1094	615	1,549	53	49		39	12	1,147	53		18.6	24.0		Oversupply	900	2	125	1	110	454					(364)
2096	2,050	2,193	177	93		131	20	3,822	1,726		61.9	24.0	39		900	2	125	1	110	643	Add Htg				(776)
2153	615	1,227	53	96		39	10	1,147	1,006		18.6	36.0	2	Oversupply	900	2	159	1.2	110	360					(375)
2151	615	1,215	53	96		39	9	1,147	1,004		18.6	36.0	1	Oversupply	900	2	159	1.2	110	356					(358)
2149	615	1,200	53	96		39	9	1,147	1,002		18.6	36.0	1	Oversupply	900	2	159	1.2	110	352					(358)
2147	615	1,200	53	96		39	9	1,147	1,000		18.6	36.0	1	Oversupply	900	2	159	1.2	110	352					(359)
2145	820	2,238	71	95		52	12	1,529	616		24.7	63.0	7	Oversupply	900	3	172	1.3	110	656					(1,155)
2143	615	1,200	53	95		39	9	1,147	996		18.6	36.0	1	Oversupply	900	2	159	1.2	110	352					(360)
2141	615	1,254	53	95		39	11	1,147	994		18.6	36.0	2	Oversupply	900	2	159	1.2	110	368					(379)
2158	1,230		106	96		79	23	2,293	135		37.1	37.1			900	3				0	Units added to increase cooling capacity				(40)
2158A	205		18	#VALUE!		13	15	434	#VALUE!		7.0	16.0		Oversupply						0					#VALUE!
2148	820		71	96		52	15	1,529	619		24.7	24.7								0					181
2109	615		53	94		39	11	1,147	962		18.6	18.6								0					282
2146	615		53	96		39	11	1,147	999		18.6	18.6								0					293
2144	615		53	95		39	11	1,147	997		18.6	18.6								0					292
2157	615	3,047	53	96		39	21	1,147	1,010		18.6	84.0	9	Oversupply	900	4	172	1.3	110	893					(1,740)
2134			0	95		0	0	0	2,134		0.0	0.0								0					625
2132			0	95		0	0	0	2,132		0.0	0.0								0					625
2030			0	90		0	0	0	2,030		0.0	0.0								0					595
2107	615	1,500	53	94		39	10	1,147	960		18.6	36.0	5	Oversupply	900	3	125	1	110	440					(500)
2105	615	1,069	53	94		39	9	1,147	958		18.6	36.0	3	Oversupply	900	3	125	1	110	313					(464)
2103	615	1,084	53	94		39	11	1,147	956		18.6	42.0		Oversupply	900	2	172	1.3	110	318					(488)
2106	615	1,488	53	94		39	10	1,147	959		18.6	24.0	1	Oversupply	900	1	183	1.4	110	436	Add Htg				(18)
2102	1,230	2,193	106	94		79	20	2,293	191		37.1	42.0	4	Oversupply	900	2	172	1.3	110	643	Add Htg				(561)
2115	615	1,500	53	94		39	10	1,147	968		18.6	42.0	1	Oversupply	900	2	172	1.3	110	440					(503)
2114	615	1,488	53	94		39	10	1,147	967		18.6	21.0	5	Oversupply	900	1	172	1.3	110	436	Add Htg				(23)
2113	615	1,069	53	94		39	9	1,147	966		18.6	36.0	3	Oversupply	900	3	125	1	110	313					(462)
2111	615	1,084	53	94		39	11	1,147	964		18.6	36.0	5	Oversupply	900	3	125	1	110	318					(499)
2112	615		53	94		39	11	1,147	965		18.6	18.6								0					283
MES B2			0	#VALUE!		0	8	223	#VALUE!		3.6	5.0			900	1				0	Units added because of electrical equipme				#VALUE!
2118			0	94		0	5	134	1,984		2.2	2.2								0					581
2120	2,050	4,120	177	94		131	22	3,822	1,702		61.9	84.0	8	Oversupply	900	4	172	1.3	110	1,207	Add Htg				(1,732)
2122			0	94		0	9	252	1,870		4.1	5.0			900	1				0	Units added because of exterior wall				531
2124	615	1,215	53	95		39	11	1,147	977		18.6	24.0	1	Oversupply	900	1	183	1.4	110	356	Add Htg				(13)
2126	615	2,948	53	95		39	11	1,147	979		18.6	54.0	5	Oversupply	900	3	159	1.2	110	864	Add Htg				(922)
C2-19			0	#VALUE!		0	5	157	#VALUE!		2.5	19.0		Oversupply						0					#VALUE!
C2-18			0	#VALUE!		0	24	691	#VALUE!		11.2	12.0	3		900	1				0		200	3.5	50	#VALUE!
C2-2			0	#VALUE!		0	15	432	#VALUE!		7.0	7.0								0					#VALUE!
C2-3			0	#VALUE!		0	7	203	#VALUE!		3.3									0					#VALUE!
C2-1/2010	960		83	#VALUE!		61	53	1,790	#VALUE!		29.0	30.0	4	Oversupply	900	2	144	1.1	110	0					#VALUE!
C2-9A			0	#VALUE!		0	7	218	#VALUE!		3.5	6.0								0					#VALUE!
2000	1,230		106	89		79	82	2,380	380		38.5	45.0	3	Oversupply	900	3	144	1.1	110	0					(715)
C2-11		861	0	#VALUE!		0	39	1,133	#VALUE!		18.3	37.0		Oversupply						252	Add Htg				#VALUE!
C2-12			0	#VALUE!		0	8	219	#VALUE!		3.5	6.0								0					#VALUE!
C2-13			0	#VALUE!		0	7	197	#VALUE!		3.2	5.0								0					#VALUE!
C2-14			0	#VALUE!		0	7	197	#VALUE!		3.2	5.0								0					#VALUE!
C2-15		1,065	0	#VALUE!		0	2	66	#VALUE!		1.1	41.0		Oversupply						312	Add Htg				#VALUE!
C2-16			0	#VALUE!		0	10	283	#VALUE!		4.6	8.0								0					#VALUE!
C2-17			0	#VALUE!		0	2	57	#VALUE!		0.9	2.0								0					#VALUE!
C2-9B			0	#VALUE!		0	8	231	#VALUE!		3.7	6.0								0					#VALUE!
A-2			0	#VALUE!		0	0	0	#VALUE!		0.0	0.0								0					#VALUE!
	46,130	59,523	3,990	0		2,949	1,165	86,007	86,007			SA SUM	7,354	Beam Sum	900 mm	157	cold wate		(l/h)	14,410	26,453	hot water		(l/h)	585	
	46,130			3,990								cfm /\							gpm	63	SUM of			gpm	3	
																	Clg Cap	(BTU/hr)		69,775	Heating	Htg Cap	(BTU/hr)		9,120	

						DOAS application				Trox Active Chilled/Heated Beam Estimator															
space	Sensible Cooling BTU/hr	Latent Cooling BTU/hr	Heating BTU/hr	Latent Removal (CFM)	Sensible Removal (CFM)	Latent Removal CFM	Minumum OA (Vbz) CFM	Resultant Sensible Removal (BTU/hr)	Remaining Sensible (BTU/hr)	Min SA (l/s)	SA via Beam (l/s)	SA w/o Beam l/s	Oversupply Test	Length of Beam (mm)	Beam Qty	Beam Cooling (W)/unit	Beam DeltaTw (K)	Beam Water Flow (l/h)/unit	Heating (W)	Heating Test	Beam Heating (W)/unit	Beam DeltaTw (K)	Beam Water Flow (l/h)/unit	Balance of Qs (overcooling) (W)
3073	3,567	615	1,172	53	159	39	10	1,147	2,420	18.6	36.0	4	Oversupply	900	2	159	1.2	110	343					3
3074	2,163	615	1,172	53	96	39	10	1,147	1,016	18.6	25.0		Oversupply	900	1	183	1.4	110	343	Add Htg	htg capable			#VALUE!
3071	7,667	1,230	2,486	106	341	79	19	2,293	5,374	37.1	72.0	17	Oversupply	900	4	159	1.2	110	729					(0)
3072	2,201	615	1,258	53	98	39	10	1,147	1,054	18.6	24.0	2	Oversupply	900	1	183	1.4	110	369	Add Htg	htg capable			#VALUE!
3070	2,190	615	1,216	53	97	39	10	1,147	1,043	18.6	24.0	1	Oversupply	900	1	183	1.4	110	356	Add Htg	htg capable			#VALUE!
3088	3,675	615	1,179	53	164	39	12	1,147	2,528	18.6	36.0	6	Oversupply	900	2	159	1.2	110	346					(1)
3086	2,947	1,230	450	106	131	79	34	2,293	654	37.1	37.1			900	1	193	1.5	110	132					(1)
3084				0	0	0	9	262	-262	4.2	0.0								0					0
3083	3,873	615	1,279	53	172	39	10	1,147	2,726	18.6	42.0	2	Oversupply	900	2	172	1.3	110	375					(6)
3081	3,830	615	1,228	53	170	39	10	1,147	2,683	18.6	42.0	1	Oversupply	900	2	172	1.3	110	360					(0)
CR3-082	2,078	820	328	71	93	52	17	1,529	549	24.7	21.0	4		900	1	172	1.3	110	96					(16)
3080	4,055	2,050	540	177	181	131	80	3,822	233	61.9	66.0		Oversupply	900	1				158		130	2.5	56	123
3011	10,189	3,280	3,464	284	454	210	55	6,115	4,074	99.0	150.0	1	Oversupply	900	3	125	1	110	1,015	Add Htg	third unit added for htg capacity			#VALUE!
3008	2,714	820	1,323	71	121	52	15	1,529	1,185	24.7	24.7	5	Oversupply	900	2	125	1	110	388					7
3006	2,281	615	1,414	53	102	39	10	1,147	1,134	18.6	27.0		Oversupply	900	1	193	1.5	110	414	Add Htg	htg capable			#VALUE!
3004	2,021	615	1,187	53	90	39	9	1,147	874	18.6	21.0	2	Oversupply	900	1	172	1.3	110	348	Add Htg	htg capable			#VALUE!
3157	8,365	820	3,452	71	372	52	23	1,529	6,836	24.7	90.0	2	Oversupply	900	5	159	1.2	110	1,012					(9)
3109	1,421	615	212	53	63	39	11	1,147	274	18.6	23.0		Oversupply	900	1				62		75	1.5	54	75
3054	7,208	615	3,129	53	321	39	15	1,147	6,061	18.6	75.0	2	Oversupply	900	5	144	1.1	110	917					(2)
3061	2,087	1,230	215	106	93	79	17	2,293	-206	37.1	40.0			900	1				63		100	2	50	(13)
3065	2,935	615	973	53	131	39	10	1,147	1,788	18.6	30.0	2	Oversupply	900	2	144	1.1	110	285					(7)
3064	2,163	615	1,172	53	96	39	10	1,147	1,016	18.6	24.0	1	Oversupply	900	2	183	1.4	110	343		second unit added for htg capaci			#VALUE!
3063	7,066	1,230	2,360	106	315	79	10	2,293	4,773	37.1	72.0	7	Oversupply	900	4	159	1.2	110	692					4
3062	3,838	615	1,258	53	171	39	10	1,147	2,691	18.6	42.0	1	Oversupply	900	2	172	1.3	110	369					2
3060	3,827	615	1,216	53	170	39	10	1,147	2,680	18.6	42.0	1	Oversupply	900	2	172	1.3	110	356					(1)
3050	1,139	615	143	53	51	39	8	1,147	-8	18.6	22.0			900	1				42		75	1.5	54	10
3031	1,139	615	143	53	51	39	8	1,147	-8	18.6	22.0			900	1				42		75	1.5	54	10
3041	6,465	820	3,258	71	288	52	18	1,529	4,936	24.7	72.0	2	Oversupply	900	3	183	1.4	110	955	Add Htg	htg capable			#VALUE!
3032	1,251	615	170	53	56	39	9	1,147	104	18.6	24.0		Oversupply	900	1				50		75	1.5	54	7
3030	1,251	615	170	53	56	39	9	1,147	104	18.6	24.0		Oversupply	900	1				50		75	1.5	54	7
3069	1,670	615	273	53	74	39	14	1,147	523	18.6	12.0	8		900	1	125	10	110	80					2
MES A3	989	615	106	53	44	39	8	1,147	-158	18.6	20.0			900	1				31		75	1.5	54	3
3029	3,382	615	1,326	53	151	39	8	1,147	2,235	18.6	36.0	1	Oversupply	900	2	159	1.2	110	389					3
3027	3,382	615	1,326	53	151	39	8	1,147	2,235	18.6	36.0	1	Oversupply	900	2	159	1.2	110	389					3
3025	3,382	615	1,326	53	151	39	8	1,147	2,235	18.6	36.0	1	Oversupply	900	2	159	1.2	110	389					3
3023	3,412	615	1,349	53	152	39	8	1,147	2,265	18.6	36.0	2	Oversupply	900	2	159	1.2	110	395					(6)
3021	3,382	615	1,326	53	151	39	8	1,147	2,235	18.6	36.0	1	Oversupply	900	2	159	1.2	110	389					3
3019	3,382	615	1,326	53	151	39	8	1,147	2,235	18.6	36.0	1	Oversupply	900	2	159	1.2	110	389					3
3017	3,382	615	1,326	53	151	39	8	1,147	2,235	18.6	36.0	1	Oversupply	900	2	159	1.2	110	389					3
3015	3,421	615	1,460	53	152	39	8	1,147	2,274	18.6	36.0	2	Oversupply	900	2	159	1.2	110	428					(3)
3075	2,772		680	0	123	0	36	1,047	1,725	17.0	30.0		Oversupply	900	2	144	1.1	110	199					(19)
3022	1,539	615	241	53	69	39	13	1,147	392	18.6	12.0	7		900	1	125	1	110	71					(18)
3077	1,428	615	214	53	64	39	11	1,147	281	18.6	23.0		Oversupply	900	1				63		75	1.5	54	77
3018	1,428	615	214	53	64	39	8	1,147	281	18.6	23.0		Oversupply	900	1				63		75	1.5	54	77
3155	3,436	615	1,357	53	153	39	9	1,147	2,289	18.6	30.0	10	Oversupply	900	2	144	1.1	110	398					(5)
3153	3,436	615	1,357	53	153	39	9	1,147	2,289	18.6	30.0	10	Oversupply	900	2	144	1.1	110	398					(5)
3151	6,064	615	3,175	53	270	39	9	1,147	4,917	18.6	60.0	6	Oversupply	900	4	144	1.1	110	930					6
C3-6	4,236	615	1,725	53	189	39	9	1,147	3,089	18.6	48.0		Oversupply	900	2	183	1.4	110	506					6
C3-7	4,448		3,208	0	198	0	31	892	3,556	14.4	48.0		Oversupply	900	4	110	1	110	940					(6)
C3-4	727		403	0	32	0	7	217	510	3.5	12.0		Oversupply	900	1				118		100	2	54	96
C3-5	436		138	0	19	0	5	150	286	2.4	7.0		Oversupply	900	1				40		75	1.5	54	76
C3-8	669		212	0	30	0	8	231	438	3.7	11.0		Oversupply	900	1				62		75	1.5	54	72
C3-3	629		199	0	28	0	7	217	412	3.5	10.0		Oversupply	900	1				58		75	1.5	54	78
C3-2	1,765		560	0	79	0	21	608	1,157	9.8	29.0		Oversupply	900	1				164		150	3	54	142
3009	5,093	2,255	749	195	227	144	98	4,204	889	68.1	24.0	44		900	2	125	1	110	220					11
C3-11	634		201	0	28	0	8	219	415	3.5	10.0		Oversupply	900	1				59					5
B-3				0	0	0	0	0	0	0.0	0.0								0					0
	174,130	37,925	63,344	3,281	7,752	2,425	863																	
		212,055			11,032	13,559	0																	

space	Sensible Cooling BTU/hr	Latent Cooling BTU/hr	Heating BTU/hr	Latent Removal (CFM)	Sensible Removal (CFM)	Latent Removal CFM	Minumum OA (Vbz) CFM	Resultant Sensible Removal (BTU/hr)	Remaining Sensible (BTU/hr)	Min SA (l/s)	SA via Beam (l/s)	SA w/o Beam l/s	Oversupply Test	Length of Beam (mm)	Beam Qty	Beam Cooling (W)/unit	Beam DeltaTw (K)	Beam Water Flow (l/h)/unit	Heating (W)	Heating Test	Beam Heating (W)/unit	Beam DeltaTw (K)	Beam Water Flow (l/h)/unit	Balance of Qs (overcooling) (W)
3057	1,139	615	143	53	51	39	8	1,147	-8	18.6	18.6			900	1				42		75	1.5	54	73
3053	1,415	615		53	63	39	9	1,147	268	18.6	18.6			900	1	80	1	80	0					(1)
3051	1,415	615		53	63	39	17	1,147	268	18.6	18.6			900	1	80	1	80	0					(1)
3146	865		212	0	39	0	16	461	404	7.5	7.5			900	1	125	1	110	62					(7)
3144	1,415	615	211	53	63	39	11	1,147	268	18.6	18.6			900	1	80	1	80	62					(1)
3107	3,891	615	1,590	53	173	39	10	1,147	2,744	18.6	36.0	6	Oversupply	900	3	125	1	110	466					5
3105	3,832	615	1,243	53	171	39	9	1,147	2,685	18.6	36.0	5	Oversupply	900	3	125	1	110	364					6
3103	3,934	615	1,287	53	175	39	11	1,147	2,787	18.6	36.0	7	Oversupply	900	3	125	1	110	377					(1)
3106	2,583	615	1,772	53	115	39	12	1,147	1,436	18.6	24.0	4	Oversupply	900	2	125	1	110	519					0
3102	4,500	1,230	2,552	106	200	79	20	2,293	2,207	37.1	48.0	5	Oversupply	900	2	183	1.4	110	748	Add Htg	htg capable			#VALUE!
3091	3,289	2,050	352	177	146	131	68	3,822	-533	61.9	68.0		Oversupply	900	1				103		269	4.6	50	2
3094	2,535	615	1,652	53	113	39	12	1,147	1,388	18.6	24.0	3	Oversupply	900	2	125	1	110	484					4
3096	5,619	2,460	2,579	213	250	157	74	4,587	1,032	74.2	74.2	3		900	2	125	1	110	756	Add Htg	htg capable			#VALUE!
3097A	1,198	615	158	53	53	39	8	1,147	51	18.6	19.0			900	1				46		htg capable			#VALUE!
3150	2,534	1,230	349	106	113	79	18	2,293	241	37.1	41.0			900	1				102		htg capable			#VALUE!
3101	1,421	615	212	53	63	39	11	1,147	274	18.6	23.0		Oversupply	900	1				62		htg capable			#VALUE!
3148	1,336	615	191	53	59	39	48	1,405	-69	22.7	22.7			900	1				56		htg capable			#VALUE!
3089	3,522	2,460	318	213	157	157	61	4,587	-1,065	74.2	74.2			900	1				93		308	5.3	50	(4)
3095	4,278	615	1,752	53	190	39	10	1,147	3,131	18.6	45.0	4	Oversupply	900	3	125	1	110	513					(8)
3093	7,331	820	2,519	71	326	52	19	1,529	5,802	24.7	75.0	4	Oversupply	900	5	144	1.1	110	738					(2)
3055	1,139	615	143	53	51	39	8	1,147	-8	18.6	18.6			900	1				42		htg capable			#VALUE!
3026	1,460	615	222	53	65	39	12	1,147	313	18.6	24.0		Oversupply	900	1				65		htg capable			#VALUE!
3079				0	0	0	0	0	0	0.0	0.0								0					0
3013				0	0	0	0	0	0	0.0	0.0								0					0
3000	6,225	1,920	844	166	277	123	58	3,580	2,645	57.9	60.0	6	Oversupply	900	5	125	1	110	247					4
3149	3,436	615	1,357	53	153	39	9	1,147	2,289	18.6	36.0	2	Oversupply	900	2	159	1.2	110	398					1
3147	3,412	615	1,349	53	152	39	8	1,147	2,265	18.6	36.0	2	Oversupply	900	2	159	1.2	110	395					(6)
3145	3,412	615	1,349	53	152	39	8	1,147	2,265	18.6	36.0	2	Oversupply	900	2	159	1.2	110	395					(6)
3143	3,436	615	1,357	53	153	39	9	1,147	2,289	18.6	36.0	2	Oversupply	900	2	159	1.2	110	398					1
3141	3,412	615	1,349	53	152	39	8	1,147	2,265	18.6	36.0	2	Oversupply	900	2	159	1.2	110	395					(6)
3115	3,952	615	1,687	53	176	39	10	1,147	2,805	18.6	42.0	3	Oversupply	900	2	172	1.3	110	494					(1)
3113	3,832	615	1,243	53	171	39	9	1,147	2,685	18.6	42.0	1	Oversupply	900	2	172	1.3	110	364					0
3111	3,934	615	1,287	53	175	39	11	1,147	2,787	18.6	42.0	3	Oversupply	900	2	172	1.3	110	377					(6)
3114	2,808	615	1,892	53	125	39	14	1,147	1,661	18.6	30.0		Oversupply	900	2	144	1.1	110	554	Add Htg	htg capable			#VALUE!
3120	8,878	1,640	4,733	142	395	105	31	3,058	5,820	49.5	96.0	7	Oversupply	900	4	183	1.4	110	1,387	Add Htg	htg capable			#VALUE!
MES B3	419		103	0	19	0	8	223	196	3.6	7.0			900	1				30		htg capable			#VALUE!
3118				0	0	0	0	0	0	0.0	0.0								0					0
3134				0	0	0	0	0	0	0.0	0.0								0					0
3132				0	0	0	0	0	0	0.0	0.0								0					0
3130				0	0	0	0	0	0	0.0	0.0								0					0
3124	2,716	820	1,485	71	121	52	12	1,529	1,187	24.7	24.7	5	Oversupply	900	2	125	1	110	435					7
3125	12,310	2,050	6,720	177	548	131	107	3,822	8,488	61.9	135.0	11	Oversupply	900	5	193	1.5	110	1,969	Add Htg	htg capable			#VALUE!
C3-10	548		174	0	24	0	6	188	360	3.0	9.0		Oversupply	900	1				51		htg capable			#VALUE!
C3-12	634		201	0	28	0	8	219	415	3.5	10.0		Oversupply	900	1				59		htg capable			#VALUE!
C3-1	1,749		555	0	78	0	21	604	1,145	9.8	28.0		Oversupply	900	1				163		htg capable			#VALUE!
C3-15	7,439		3,408	0	331	0	33	971	6,468	15.7	75.0	6	Oversupply	900	5	144	1.1	110	999					(6)
C3-20/30	2,053	480	333	42	91	31	12	895	1,158	14.5	21.0	3	Oversupply	900	1	172	1.3	110	98					(5)
C3-19	1,876		595	0	84	0	22	647	1,229	10.5	21.0		Oversupply	900	1	172	1.3	110	174					(2)
C3-18	406		129	0	18	0	5	140	266	2.3	7.0		Oversupply						38	Add Htg				(8)
C3-17	629		199	0	28	0	7	217	412	3.5	10.0		Oversupply						58	Add Htg				3
C3-14	700		222	0	31	0	8	241	459	3.9	11.0		Oversupply						65	Add Htg				6
C3-16	193		61	0	9	0	2	66	127	1.1	3.0								18	Add Htg				2
C3-13	700		222	0	31	0	8	241	459	3.9	11.0		Oversupply						65	Add Htg				6
3009	3,171	840	479	73	141	54	62	1,820	1,351	29.5	30.0	5	Oversupply	900	2	144	1.1	110	140					8
A-3				0	0	0	0	0	0	0.0	0.0								0					0
				0	0	0	0	0	0	0.0	0.0								0					0
	142,931	32,760	52,790	2,834	6,363	2,095	972				SA SUM	8,270	Beam Sum	900 mm	186	cold wate	(l/h)	17,180	34,035		hot water	(l/h)	962	
		175,691			9,197							cfm /\					gpm	76	SUM of			gpm	4	
																Clg Cap	(BTU/hr)	80,970	Heating		Htg Cap	(BTU/hr)	6,677	