

Summary of Electrical/Technical Requirements for Aman Group

Date Prepared:		9-May-12		Project: 240558h1		<220 Volt / 3 phase / 50 Hz>					
Item	QTY	Room	Size	Product	Rated Voltage	Power Factor (P 2.0) only	Amps		Phase	Power, kW	
							Each	Total		Each	Total
Starting Load											
1	12	Platinum 2.0 Incubators (Water Heat)	P60	P 2.0	220	0.6	12	144	3	2.74	32.9
2	4	Platinum 1.0 Hatchers (Electric Heat)	P20	P 1.0	120		38	152	1	4.56	18.24
										Total kW	51
Connected Load											
1	12	Platinum 2.0 Incubators (Water Heat)	P120	P 2.0	380	0.94	7	84	3	4.33	52.0
2	4	Multistage Hatchers	PX	MS	220		13	52	1	2.86	11.4
										Total kW	63.4
HVAC UNITS											
3	4	Incubator Room 1	RN-013	AAON	220		15	60	3	5.7	22.9
4	5	Incubator Room 2	RN-015	AAON	220		75	375	3	28.6	142.9
5	2	Hatcher Room 1	RN-015	AAON	220		75	150	3	28.6	57.2
6	2	Hatcher Room 2	RN-015	AAON	220		75	150	3	28.6	57.2
8	2	Transfer Room	RN-009	AAON	220		55	110	3	21.0	41.9
9	7	Chick Room	RN-013	AAON	220		63	441	3	24.0	168.0
10	1	Pull Room	HR-BRA	AAON	220		10	10	3	3.8	3.8
11	4	Egg Handling	RN-010	AAON	220		42	168	3	16.0	64.0
12	2	Egg Storage	RN-013	AAON	220		63	126	3	24.0	48.0
Multi Fans											
13	4	Exhaust Fan	16"	EF	120		2.3	9.2	1	0.3	1.1
13	4	Exhaust Fan		EF			#N/A	#N/A	1	#N/A	#N/A
13	3	Exhaust Fan		EF			#N/A	#N/A	1	#N/A	#N/A
14	4	Hatcher Plenum Multifans		EF			#N/A	#N/A	1	#N/A	#N/A
Humidifiers											
15	4	Humidifiers	#NAME?	EIA	120		2.8	11.2	1	0.3	1.3
15	6	Humidifiers	#NAME?	EIIA	220		1.3	7.8	1	0.3	1.7
		High Pressure Humidification	x HP	HPH				0		no phase	#VALUE!
Chiller											
16	2	Chiller	60 TON	Trane	380		300	600	3	197.4	394.9
Boiler											
17	2	Boiler	CB-2066	BOILER	120		8.4	16.8	1	1.0	2.0
Pumps											
18	4	Primary Pumps	x HP	PUMP	380		78	312	3	51.3	205.3
19	2	Secondary Pumps	x HP	PUMP	380		17	34	3	11.2	22.4
										Electrical Total kW	#N/A
										Total kW	63
NOTE: The total kW listed above assumes all equipment is running under full load at the same time.											

Air compressor:	Room	Qty	Size	Product	Air Req't (scfm)	Total Air (scfm)	Air Req't (m3/hr)	Total Air (m3/hr)
	Platinum 2.0 Incubators (Water Heat)	8	P60	P 2.0	2.7	21.60	4.58	36.67
	Multistage Hatchers	4	PX	MS	0.005	0.02	0.01	0.03
					Total	21.62		36.71
Humidification:	Room	Qty	Size	Product	Water Req't (GPH)	Total Water (GPH)	Water Req't (L/hr)	Total Water (L/hr)

Platinum 2.0 Incubators (Water Heat)	8	P40	P 2.0	1.1	9.2	4.35	34.8
Platinum 1.0 Hatchers (Electric Heat)	4	P20	P 1.0	3.0	12.00528	11.36	45.44
				Total	21.2		80.2

Air compressor: to produce 36.5 cum/hr (21 CFM) compressed air
see design manual for other details

Boiler Specification For 36 Incubators and 12 hatchers: 146 kW, (500,000 BTU/hr)
to produce 60 C hot water

Boiler Specification to heat rooms as supplied by Jamesway: 388 kW (1,325,000 BTU/hr)
to produce 82 C water

Exhaust Fans 120 V		Exhaust Fans 220 V	
Size	Amps	Size	Amps
10"	0.9	10"	0.4
12"	1.1	12"	0.6
14"	1.7	14"	1
16"	2.3	16"	1.2
18"	3	18"	1.6
20"	4.4	20"	2
24"	5.6	24"	3.1
		36"	3.2

Humidifier 120 V		Humidifier 220 V	
Size	Amps	Size	Amps
EIA	2.8	EIA	1.3
EIIA	2.8	EIIA	1.3
HR	3.2	HR	1.85

Boilers 120 V	
Size	Amps
CB-045	2
CB-0495	8
CB-0645	8
CB-0745	8
CB-075	2
CB-090	2
CB-0986	8
CB-1256	8
CB-135	2
CB-1436	8.4
CB-1796	8.4
CB-180	2
CB-2066	8.4
CB-215	2
CB-260	2
CB-315	2
CB-360	2
CB-399	2
CB-500	2

MS
P 1.0
P 2.0

P20
P40
P60
P80
P120
Big J
Super J
HC

P20
P30
P40
PX
CW

Incubators 220 V (Water Heat) Platinum 2.0						Hatchers 220 V (Water heat) Platinum 2.0					
Size	Starting Amps	Connected Amps	Compressed Air SCFM	Humidification L/hr		Size	Starting Amps	Connected Amps	Compressed Air SCFM	Humidification L/hr	
P120	24	15	5.4	8.7		P20	12	7.5	1.5	11.36	
P20	12	7.5	1.9	4.35		P30	12	7.5	1.5	11.36	
P40	12	7.5	2.3	4.35		P40	12	7.5	1.5	11.36	
P60	12	7.5	2.7	4.35							
P80	24	15	4.6	8.7							
Incubators 220 V (Electric Heat) Platinum 2.0						Hatchers 220 V (Electric heat) Platinum 2.0					
Size	Starting Amps	Connected Amps	Compressed Air SCFM	Humidification L/hr		Size	Starting Amps	Connected Amps	Compressed Air	Humidification	
P120	48	46.1	5.4	8.7		P20	32	23.3	1.5	11.36	
P20	32	23.3	1.9	4.35		P30	32	23.3	1.5	11.36	
P40	32	23.3	2.3	4.35		P40	32	23.3	1.5	11.36	
P60	32	23.3	2.7	4.35							
P80	48	46.1	4.6	8.7							

Incubators 380 V (Water Heat) Platinum 2.0						Hatchers 380 V (Water heat) Platinum 2.0					
Size	Starting Amps	Connected Amps	Compressed Air SCFM	Humidification L/hr		Size	Starting Amps	Connected Amps	Compressed Air SCFM	Humidification L/hr	
P120	12	7	5.4	8.7		P20	8	3.3	1.5	11.36	
P20	8	3.3	1.9	4.35		P30	8	3.3	1.5	11.36	
P40	8	3.3	2.3	4.35		P40	8	3.3	1.5	11.36	
P60	8	3.3	2.7	4.35							
P80	12	7	4.6	8.7							
Incubators 380 V (Electric Heat) Platinum 2.0						Hatchers 380 V (Electric heat) Platinum 2.0					
Size	Starting Amps	Connected Amps	Compressed Air SCFM	Humidification L/hr		Size	Starting Amps	Connected Amps	Compressed Air SCFM	Humidification L/hr	
P120	32	25	5.4	8.7		P20	16	12.5	1.5	11.36	
P20	16	12.5	1.9	4.35		P30	16	12.5	1.5	11.36	
P40	16	12.5	2.3	4.35		P40	16	12.5	1.5	11.36	
P60	16	12.5	2.7	4.35							
P80	32	35	4.6	8.7							

Incubators 460 V (Water Heat) Platinum 2.0						Hatchers 460 V (Water heat) Platinum 2.0					
Size	Starting Amps	Connected Amps	Compressed Air SCFM	Humidification L/hr		Size	Starting Amps	Connected Amps	Compressed Air SCFM	Humidification L/hr	
P120	12	5.6	5.4	8.7		P20	8	2.9	1.5	11.36	
P20	8	2.9	1.9	4.35		P30	8	2.9	1.5	11.36	
P40	8	2.9	2.3	4.35		P40	8	2.9	1.5	11.36	
P60	8	2.9	2.7	4.35							
P80	12	5.6	4.6	8.7							
Incubators 460 V (Electric Heat) Platinum 2.0						Hatchers 460 V (Electric heat) Platinum 2.0					
Size	Starting Amps	Connected Amps	Compressed Air SCFM	Humidification L/hr		Size	Starting Amps	Connected Amps	Compressed Air SCFM	Humidification L/hr	
P120	24	20	5.4	8.7		P20	16	11	1.5	11.36	
P20	16	11	1.9	4.35		P30	16	11	1.5	11.36	
P40	16	11	2.3	4.35		P40	16	11	1.5	11.36	
P60	16	11	2.7	4.35							
P80	24	20	4.6	8.7							

Incubators 220 V (Water Heat) Platinum					Hatchers 220 V (Water heat) Platinum				
Size	Starting Amps	Connected Amps	Compressed Air SCFM	Humidification L/hr	Size	Starting Amps	Connected Amps	Humidification L/hr	
P120		30	19	2.4	8.7	P20	17	9.6	11.36
P20		17	9.6	0.4	4.35	P30	17	9.6	11.36
P40		17	9.6	0.8	4.35	P40	17	9.6	11.36
P60		17	9.6	1.2	4.35				
P80		30	19	1.6	8.7				
Incubators 220 V (Electric Heat) Platinum					Hatchers 220 V (Electric heat) Platinum				
Size	Starting Amps	Connected Amps	Compressed Air SCFM	Humidification L/hr	Size	Starting Amps	Connected Amps	Humidification	
P20		44	37	0.4	4.35	P20	38	32	11.36
P40		44	37	0.8	4.35	P30	38	32	11.36
P60		44	37	1.2	4.35	P40	38	32	11.36

WITH DEHUMIDIFIER

Incubators 220 V (Water Heat) Platinum				
Size	Starting Amps	Connected Amps	Compressed Air SCFM	Humidification L/hr
P120		36	25	2.4
P20		23	15.6	0.4
P40		23	15.6	0.8
P60		23	15.6	1.2
P80		36	25	1.6
Incubators 220 V (Electric Heat) Platinum				
Size	Starting Amps	Connected Amps	Compressed Air SCFM	Humidification L/hr
P20		50	43	0.4
P40		50	43	0.8
P60		50	43	1.2

Incubators 120 V Multi-Stage					
Size	Starting Amps	Connected Amps	Compressed Air SCFM	Humidification L/hr	
Space Saver		53	38	0.61	10
Hatch Commander		48	33	0.305	10
Hatchers 120 V Multi-Stage					
Size	Starting Amps	Connected Amps	Compressed Air SCFM	Humidification L/hr	
CW		20	17	0.005	6
PX		20	17	0.005	6

Incubators 220 V Multi-Stage					
Size	Starting Amps	Connected Amps	Compressed Air SCFM	Humidification L/hr	
Space Saver		42	27	0.61	10
Hatch Commander		37	22	0.305	10
Hatchers 220 V Multi-Stage					
Size	Starting Amps	Connected Amps	Compressed Air SCFM	Humidification L/hr	
CW		20	13	0.005	6
PX		20	13	0.005	6