Platinum
Ventilation

Incubator Room	**General Conditions**
Minimum Temperature, dry bulb	72°F 22°C
Maximum Temperature, dry bulb	78°F 26°C
Optimum Temperature, dry bulb	75°F 24°C
Relative Humidity 40–50%	40–50%
Optimum R.H. 45%	45%

Incubator Room	**Fresh Air Supply per machine**
P20 Cabinets	0–80 cfm 0–136 m3/h
P40 Cabinets	0–160 cfm 0–272 m3/h
P60 Cabinets	0–240 cfm 0–408 m3/h
Room Pressure Differential to Outside	0.005–0.015 in. w.g. 1.2–3.7 Pa
P80 Cabinets	0–350 cfm 0–595 m3/h
P120 Cabinets	0–500 cfm 0–850 m3/h
Room Pressure Differential to Outside	0.010–0.020 in. w.g. 2.5–5.0 Pa

Incubator Exhaust Plenum	**Pressure Differential to Room**
P20 Cabinets negative	(-) 0.015–0.020 in. w.g. 3.7–5.0 Pa
P40 Cabinets negative	(-) 0.020–0.030 in. w.g. 5.0–7.5 Pa
P60 Cabinets negative	(-) 0.020–0.030 in. w.g. 5.0–7.5 Pa
P80 Cabinets negative	(-) 0.025–0.035 in. w.g. 6.2–8.7 Pa
P120 Cabinets negative	(-) 0.030–0.040 in. w.g. 7.5–10.0 Pa

Incubator Exhaust Plenum	**Pressure Differential to Outside**
P20 Cabinets negative	(-) 0.005–0.010 in. w.g. 1.25–2.5 Pa
P40 Cabinets negative	(-) 0.010–0.020 in. w.g. 2.5–5.0 Pa
P60 Cabinets negative	(-) 0.010–0.020 in. w.g. 2.50–5.0 Pa
P80 Cabinets negative	(-) 0.015–0.025 in. w.g. 3.75–6.25 Pa
P120 Cabinets negative	(-) 0.020–0.030 in. w.g. 5.0–7.5 Pa

cfm (cubic feet per minute), in. w. g. (inches water gauge), Pa (Pascals)

Hatcher Room	**General Conditions**
Minimum Temperature,	dry bulb 72°F 22°C
Maximum Temperature,	dry bulb 78°F 26°C
Optimum Temperature,	dry bulb 75°F 24°C
Relative Humidity 40–50%	40–50%
Optimum R.H. 45%	45%

Hatcher Room	**Fresh Air Supply per machine**
P20 Cabinets	25–190 cfm 40–323 m3/h
P30 Cabinets	50–290 cfm 85–493 m3/h
Room Pressure Differential to Outside	0.005–0.015 in. w.g. 1.2–3.7 Pa
P40 Cabinets	75–400 cfm 127–680 m3/h
Room Pressure Differential to Outside	0.010–0.020 in. w.g. 2.5–5.0 Pa

Hatcher Exhaust Plenum	**Pressure Differential to Room**
P20 Cabinets negative	(-) 0.015–0.020 in. w.g. 3.7–5.0 Pa
P30 Cabinets negative	(-) 0.020–0.030 in. w.g. 5.0–7.5 Pa
P40 Cabinets negative	(-) 0.030–0.040 in. w.g. 7.5–10.0 Pa

Hatcher Exhaust Plenum	**Pressure Differential to Outside**
P20 Cabinets negative	(-) 0.005–0.010 in. w.g. 1.25 – 2.5 Pa
P30 Cabinets negative	(-) 0.010–0.020 in. w.g. 2.5 – 5.0 Pa
P40 Cabinets negative	(-) 0.020–0.030 in. w.g. 5.0 – 7.5 Pa

cfm (cubic feet per minute), in. w. g. (inches water gauge), Pa (Pascals)

Water - Humidity

Incubator Humidity Water Supply	**Requirements ***	
Usage per Cabinet, P20–P60	1.15 US gal./h	4.35 L/h
Usage per Cabinet, P80 & P120	2.30 US gal./h	8.70 L/h
Pressure	60–100 psig	415–690 kPa

Note: * Based on number of nozzles and maximum duty cycle.

Hatcher Humidity Water Supply	**Requirements ***	
Usage per Cabinet, P20–P40	3.0 US gal./h	11.36 L/h
Pressure	60–100 psig	415–690 kPa

Note: * Based on number of nozzles and maximum duty cycle.

Compressed Air Requirements

The compressed air requirements in the table below are based on a flow rate of 0.07 to 0.1 scfm at a pressure of 60–90 psig (0.12 to 0.17 Nm3/h at 414–620 kPa) per rack once per hour.

Compressed Air Requirements for Turning Actuators

Incubator	# Racks	SCFM / Cabinet	Nm^3/h / Cabinet
P20 Cabinets	4	0.30–0.40	0.51–0.68
P40 Cabinets	8	0.60–0.80	1.02–1.36
P60 Cabinets	12	0.80–1.20	1.36–2.04
P80 Cabinets	16	1.20–1.60	2.04–2.72
P120 Cabinets	24	1.60–2.40	2.72–4.08

Water Heating & Cooling

Heating Water System – Incubators	**General Conditions**	
Temperature at ECU	138–145°F	59–63°C
Optimum Temperature at ECU	140°F	60°C
Optimum Flow per Machine, P20–P40	3 US gal./min.	11.4 L/min
Optimum Flow per Machine, P60	4 US gal./min.	15.1 L/min
Optimum Flow per Machine, P80 *	8 US gal./min.	30.3 L/min
Optimum Flow per Machine, P120 **	10 US gal./min.	37.9 L/min
Pressure at point of use, i.e., the ECU	30–40 PSI	207–275 kPa
Pressure Drop through ECU	10–15 psig @ 3–5 US gal./min.	
	69–103.4 kPa @11.4–18.9 L/min	

Note: * 4 US gal./min. (15.1 L/min) per ECU; ** 5 US gal./min. (18.9 L/min) per ECU

Heating Water System - Hatchers	**General Conditions**	
Temperature at ECU	138–145°F	59–63°C
Optimum Temperature at ECU	140°F	60°C
Optimum Flow per Machine, P20–P30	3 US gal./min.	11.4 L/min
Optimum Flow per Machine, P40	4 US gal./min.	15.1 L/min
Pressure at point of use, i.e., the ECU	30–40 PSI	207–275 kPa
Pressure Drop through ECU	10–15 psig @ 3–5 US gal./min.	
	69–103.4 kPa @11.4–18.9 L/min	

Cooling Water System - Incubators	**General Conditions**	
Temperature at ECU	55–60°F	13–16°C
Optimum Temperature at ECU	58°F	14°C
Optimum Flow per Machine, P20–P40	3 US gal./min.	11.4 L/min
Optimum Flow per Machine, P60	4 US gal./min.	15.1 L/min
Optimum Flow per Machine, P80 *	8 US gal./min.	30.3 L/min
Optimum Flow per Machine, P120 **	10 US gal./min.	37.9 L/min
Pressure at point of use, i.e., the ECU	30–40 PSI	207–275 kPa
Pressure Drop through ECU	10–15 psig @ 3–5 US gal./min.	
	69–103.4 kPa @11.4–18.9 L/min	

Note: * 4 US gal./min. (15.1 L/min) per ECU; ** 5 US gal./min. (18.9 L/min) per ECU

Cooling Water System - Hatchers	**General Conditions**	
Temperature at ECU	55–60°F	13–16°C
Optimum Temperature at ECU	58°F	14°C
Optimum Flow per Machine, P20–P30	3 US gal./min.	11.4 L/min
Optimum Flow per Machine, P40	4 US gal./min.	15.1 L/min
Pressure at point of use, i.e., the ECU	30–40 PSI	207–275 kPa
Pressure Drop through ECU	10–15 psig @ 3–5 US gal./min.	
	69–103.4 kPa @11.4–18.9 L/min	

Electrical Requirements

Incubators with Optional Dehumidifier

Water Heated	Circuit Breaker	Voltage	Connected Load	Starting Load
P20 Cabinets	30 A	230 V	15.6 A	23 A
P40 Cabinets	30 A	230 V	15.6 A	23 A
P60 Cabinets	30 A	230 V	15.6 A	23 A
P80 Cabinets	40 A	230 V	25 A	36 A
P120 Cabinets	40 A	230 V	25 A	36 A

Electric Heat	Circuit Breaker	Voltage	Connected Load	Starting Load
P20 Cabinets	60 A	230 V	43 A	50 A
P40 Cabinets	60 A	230 V	43 A	50 A
P60 Cabinets	60 A	230 V	43 A	50 A

Note: Electrically heated incubators include 2 x 3000 W heaters

Incubators without Dehumidifier

Water Heated	Circuit Breaker	Voltage	Connected Load	Starting Load
P20 Cabinets	20 A	230 V	9.6 A	17 A
P40 Cabinets	20 A	230 V	9.6 A	17 A
P60 Cabinets	20 A	230 V	9.6 A	17 A
P80 Cabinets	30 A	230 V	19 A	30 A
P120 Cabinets	30 A	230 V	19 A	30 A

Electric Heat	Circuit Breaker	Voltage	Connected Load	Starting Load
P20 Cabinets	50 A	230 V	37 A	44 A
P40 Cabinets	50 A	230 V	37 A	44 A
P60 Cabinets	50 A	230 V	37 A	44 A

Hatchers

Water Heated	Circuit Breaker	Voltage	Connected Load	Starting Load
P20 Cabinets	20 A	230 V	9.6 A	17 A
P30 Cabinets	20 A	230 V	9.6 A	17 A
P40 Cabinets	20 A	230 V	9.6 A	17 A

Electric Heat	Circuit Breaker	Voltage	Connected Load	Starting Load
P20 Cabinets	40 A	230 V	32 A	38 A
P40 Cabinets	40 A	230 V	32 A	38 A
P60 Cabinets	40 A	230 V	32 A	38 A

Note: Electrically heated hatchers include 2 x 3000 W heaters