

Heat Dissipations for Priorclave Autoclaves



These figures are calculated using the following formula: $D = ((ah+0.5ap) \times 0.75) / t$

Where: **D** = Heat dissipation kW/Hr
a = Heater power
h = Heat up time to process temperature from cold (hrs)
p = process time (hrs)
t = Total cycle time to thermal lock opening temperature

Applying the above formula to known cycle times for a 121°C, 15 minute cycle with cooling & 10 minutes free-steaming the overall dissipations for Priorclave models are as follows:

Model	Phase	Heater Power (a) kW	Heat up time (h) (Empty Chamber)	Process Time (p)	Total Cycle Time (t)	Dissipation (D) (kWhr)	Total Heat Input (kW)
Compact Priorclave Range							
Compact 40 Bench Top - PS/MID/C40	1	3	0.3	0.25	3	0.3	1.0
Compact 60 Bench Top - PS/MID/H60	1	3	0.6	0.25	3.5	0.5	1.6
Compact 60 Top Loader - PS/MID/C60	1	3	0.6	0.25	3.5	0.5	1.6
Top and Front Loading Priorclave Range							
100L Capacity – Electrically Heated - PS/QCS/EV100 & PS/QCS/EH100	1	7	0.4	0.25	3.1	0.9	2.8
	3	10.5	0.3	0.25	3	1.1	3.3
150L Capacity– Electrically Heated - PS/QCS/EV150 & PS/QCS/EH150	1	7	0.45	0.25	3.1	1.0	3.0
	3	10.5	0.35	0.25	3	1.2	3.7
200L Capacity - PS/QCS/EH200	3	10.5	0.4	0.25	3.25	1.3	4.1
Q63 Large Capacity Range							
320L Capacity, Electrically Heated - PS/QCS/EH320	3	18	0.3	0.25	3	1.9	5.7
400L Capacity , Electrically Heated - PS/QCS/EH400	3	18	0.4	0.25	3.25	2.2	7.1
Rectangular (RSC) Range							
230L Capacity, Electrically Heated - PS/RSC/EH230	3	21	0.35	0.25	3	2.5	7.5
350L Capacity, Electrically Heated - PS/RSC/EH350	3	21	0.5	0.25	3.25	3.0	9.8
450L Capacity , Electrically Heated - PS/RSC/EH450	3	31.5	0.35	0.25	3	3.7	11.2
700L Capacity , Electrically Heated - PS/RSC/EH700	3	42	0.75	0.25	3	9.2	27.6

For steam heated autoclaves the figures will be roughly similar, assuming that steam inlet pipework is properly insulated.

Figures will be altered by options such as prolonged free-steaming times pre-cycle vacuum and vacuum drying which will increase the total amount of heat input.

Heat-up times are dependent on load mass and cooling times will be affected by room temperature.

Heat dissipation will not be constant over the entire cycle