

Standard Units

Hot Zone

	VF-20	VF-30	VF-40
Size id x h (inch)	10 x 10	11 x 12	12 x 17
Volume (cu ft)	0.45	0.66	1.11
Max Operating Temperature (F)	3200	3200	2100
Temperature Uniformity (F)	+/- 15 at 2200	+/- 15 at 2200	+/- 25 at 2000
Time to 1900 F (min)	12	15	15
Graphite	•	•	•
Type - K thermocouples	•	•	•
Type - S thermocouples	•	•	•
Type - OVERTEMP	•	•	•
Thermocouple Calibration System	•	•	•
Max Wt. Of Parts (lb)	40	60	110

Vacuum Pumping

* Turbo Pump	•	•	•
* Diffusion Pump	□	□	□
Typical Ultimate			
Typical Leak Rate			

* Pump Selection Based on Process

Process Data Out

Compact Flash - CSV file	•	•	•
Ethernet - CSV file	□	□	□
Paper Chart Recorder	□	□	□
Digital Chart Recorder	□	□	□

Vacuum Gauging

Pirani Gage	□	□	□
Thermocouple - Low Vac sensing	•	•	•
Convection	□	□	□
Diaphragm - Inert gas backfill	•	•	•
Cold Cathode - High Vac	•	•	•
Hot Ion - High Vac	□	□	□

Part Cooling (Std. Cooling Time from 2000°- 1200°)

300 cfm	4.5 min		
600 cfm		4.5 min	5.5 min

Required Utilities

Compressed Air (psi)			
Inert Gas (psi)			80
Water Temperature			
Water Quality			
Water (gpm @ 40 psi differential)	20	25	30
Electrical			
Circuit Breaker Size (amp)	100	100	150
Peak Current Draw (amp)	80	80	135

Cost Per Run

*** If the Furnace is running a recipe with a fast ramp to near max temp of furnace, holding for 5 minutes, then rapid cooling the furnace down

Power Usage (kwh)	12	17	33
Gas Usage (cu ft)	8	12	16
Typical hourly running cost (based on \$0.15/kwh \$0.40/ft ³ Ar)	\$1.99/hr	\$2.69/hr	\$5.13/hr

PLC

GE Fanuc	•	•	•
Allen Bradley	□	□	□

HMI

8 inch touchscreen	□	□	□
12 inch touchscreen	•	•	•

Operator Safety

Light Curtain	•	•	•
CE Marked	□	□	□
Light Tree	•	•	•
E-Stop	•	•	•
Chamber access interlocks	•	•	•
Over-Temp safety latch	•	•	•

Protected by US Patents 6649887 & 7724045 - others pending

• Option □