

# Temperature Measurements

## La Spaziale S1 Vivaldi II

Offset	Temp	Reading 1	Reading 2	Reading 3	Reading 4	Reading 5	Average	Avg Error	Reading 1 Err
0	91	92.8	93.6	93.0	93.1	93.4	93.2	2.2	1.8
0	92	93.0	94.0	94.4	94.4	94.0	94.0	2.0	1.0
0	93	94.8	95.8	96.1	95.4	95.8	95.6	2.6	1.8
0	94	96.2	95.6	96.8	96.8	96.8	96.4	2.4	2.2
0	95	95.6	96.6	97.0	97.8	97.0	96.8	1.8	0.6
0	96	98.3	98.4	98.6	97.8	99.1	98.4	2.4	2.3
0	97	99.6	99.4	99.6	99.9	99.0	99.5	2.5	2.6

Factory Default on Test Machine	-1	91	91.4	91.5	91.4	92.1	91.5	91.6	0.6	0.4
	-1	92	92.4	93.0	94.0	92.9	93.4	93.1	1.1	0.4
	-1	93	93.3	94.0	94.7	95.0	94.3	94.3	1.3	0.3
	-1	94	93.8	94.8	94.8	94.9	94.5	94.6	0.6	-0.2
	-1	95	95.5	95.8	96.0	95.8	96.3	95.9	0.9	0.5
	-1	96	96.3	96.0	96.6	96.5	97.3	96.5	0.5	0.3
	-1	97	98.0	97.3	98.6	97.8	97.9	97.9	0.9	1.0

-2	91	90.3	90.1	90.7	91.1	91.3	90.7	-0.3	-0.7
-2	92	91.4	91.4	92.2	92.3	92.7	92.0	0.0	-0.6
-2	93	93.2	92.7	93.2	93.3	93.9	93.3	0.3	0.2
-2	94	94.3	94.1	95.3	94.3	94.3	94.5	0.5	0.3
-2	95	94.5	95.4	94.8	95.6	95.2	95.1	0.1	-0.5
-2	96	95.2	96.3	95.2	97.0	96.2	96.0	0.0	-0.8
-2	97	96.0	96.2	96.5	97.2	96.7	96.5	-0.5	-1.0

### Notes:

The first reading after a long idle period is usually 2-3°C low & thrown out as a PF warm up cycle; i.e. at each temperature I took six readings about 40 seconds apart but only recorded the last five. The recorded reading is the highest observed during a 2oz volumetric pull. I always waited after each shot for the temperature light to stop blinking so the temperature was stable and both boilers were off before taking a reading (about 40 sec). (Note: The PF was left in place between readings. Consequently, these readings do not represent a real-world test.) I always waited at least 15 minutes after a temperature change for the group temp to stabilize before taking a new reading set. A Fluke 179 MM was used with the thermocouple wire run under up through the hole in the bottom of the portafilter then through a small hole in the center of a single basket and finally through the middle of a tight fitting cylindrical piece of sponge. This simulates a temperature reading taken at top dead center of a coffee puck.

### Conclusion:

These results show a respectable level of stability and shot-to-shot linearity of the S1 Vivaldi II. They also validate that the offset temperature is performing as stated in the manufacturer's documentation. However, the offset value for each VII is set by Chris Coffee using better equipment and a more real world scenario that was used in capturing the measurements documented above. In addition, Chris Coffee sets the required offset for each machine which is usually 0C, -1C, or -2C. It is best for the end user to assume that the offset value is already optimized for their specific machine.

**RECOMMENDATION:** Set the temperature as desired to your taste - usually 92-95°C. While you are grinding your coffee, hit the 2 cup button and run a double through the empty PF. Then immediately dry it off, load and tamp the coffee, reattach the PF and pull the shot. After this first shot, you can continue to pull additional shots every 40 seconds and continue to rely on a stable temperature. However, once 5+ minutes have elapsed since the last shot repeat the above procedure before pulling another shot.