

Temperature Measurements on La Spaziale S1 (Updated Circuit Board)

Master Temp

										Lights On During Fine Temperature Adjustment							
Fine Temp	Setting	Reading 1	Reading 2	Reading 3	Reading 4	Reading 5	Average	Avg Error	Reading 1 Err	85	90	95	100	105	110	120	ECON
90C	-3	87	88.4	88.4	88.2	89.4	88.7	88.6	1.6	1.4	●	●	●	●	●	●	●
	-2	88	88.0	89.2	89.0	88.3	88.7	88.6	0.6	0.0	●	●	●	●	●	●	●
	-1	89	89.5	90.4	90.0	90.3	91.0	90.2	1.2	0.5	●	●	●	●	●	●	●
	0	90	90.1	91.3	91.1	91.6	89.5	90.7	0.7	0.1	●	●	●	●	●	●	●
	+1	91	91.1	91.4	92.3	91.7	92.0	91.7	0.7	0.1	●	●	●	●	●	●	●
	+2	92	92.4	91.7	93.3	93.4	92.7	92.7	0.7	0.4	●	●	●	●	●	●	●
	+3	93	93.0	94.1	93.8	93.6	93.6	93.6	0.6	0.0	●	●	●	●	●	●	●
95C	-3	92	90.9	92.2	92.4	92.4	92.5	92.1	0.1	-1.1	●	●	●	●	●	●	●
	-2	93	92.7	92.4	94.3	93.7	94.3	93.5	0.5	-0.3	●	●	●	●	●	●	●
	-1	94	93.1	93.1	94.6	95.1	94.4	94.1	0.1	-0.9	●	●	●	●	●	●	●
	0	95	94.4	95.2	95.2	94.6	95.7	95.0	0.0	-0.6	●	●	●	●	●	●	●
	+1	96	94.5	95.7	96.2	96.3	97.0	95.9	-0.1	-1.5	●	●	●	●	●	●	●
	+2	97	97.0	97.1	97.1	97.2	97.9	97.3	0.3	0.0	●	●	●	●	●	●	●
	+3	98	97.0	97.6	98.2	97.9	97.7	97.7	-0.3	-1.0	●	●	●	●	●	●	●
100C	-3	97	96.3	97.1	96.8	97.9	98.6	97.3	0.3	-0.7	●	●	●	●	●	●	●
	-2	98	97.1	97.5	97.6	98.8	98.8	98.0	0.0	-0.9	●	●	●	●	●	●	●
	-1	99	98.1	98.5	98.4	98.5	98.7	98.4	-0.6	-0.9	●	●	●	●	●	●	●
	0	100	98.8	98.8	98.6	99.7	99.2	99.0	-1.0	-1.2	●	●	●	●	●	●	●
	+1										●	●	●	●	●	●	●
	+2										●	●	●	●	●	●	●
	+3										●	●	●	●	●	●	●

Notes:

- First reading always 3-5°C low & thrown out as a PF warm up cycle; i.e. took six readings about 45 seconds apart but only recording the last five.
- Recorded reading is highest observed during a 2oz volumetric pull.
- Always waited after each shot for light to stop blinking so temp stable and boiler off during reading (about 45 sec)
- Always waited at least 15 minutes after temp change for group temp to stabilize before taking new reading set
- Drilled hole in basket and ran TC probe up through PF spout. Cylindrical piece of sponge simulated coffee puck with TC tip flush with top of sponge
- Thermomcouple accuracy validated with ice water and boiling water before readings taken
- Values for 101°C, 102°C, and 103°C were not recorded as they are meaningless since water can't get above 100°C at 1 atm of pressure

Conclusion:

The conclusion I reach from this data is to determine the temperature at which you wish to pull your shot. Find the reading above whose average is closest to your desired temperature. Set the master temperature and the fine temperature adjustment for this desired temperature. 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 45seconds 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.