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Figure 1a Granule size distribution at different L/S based on volume

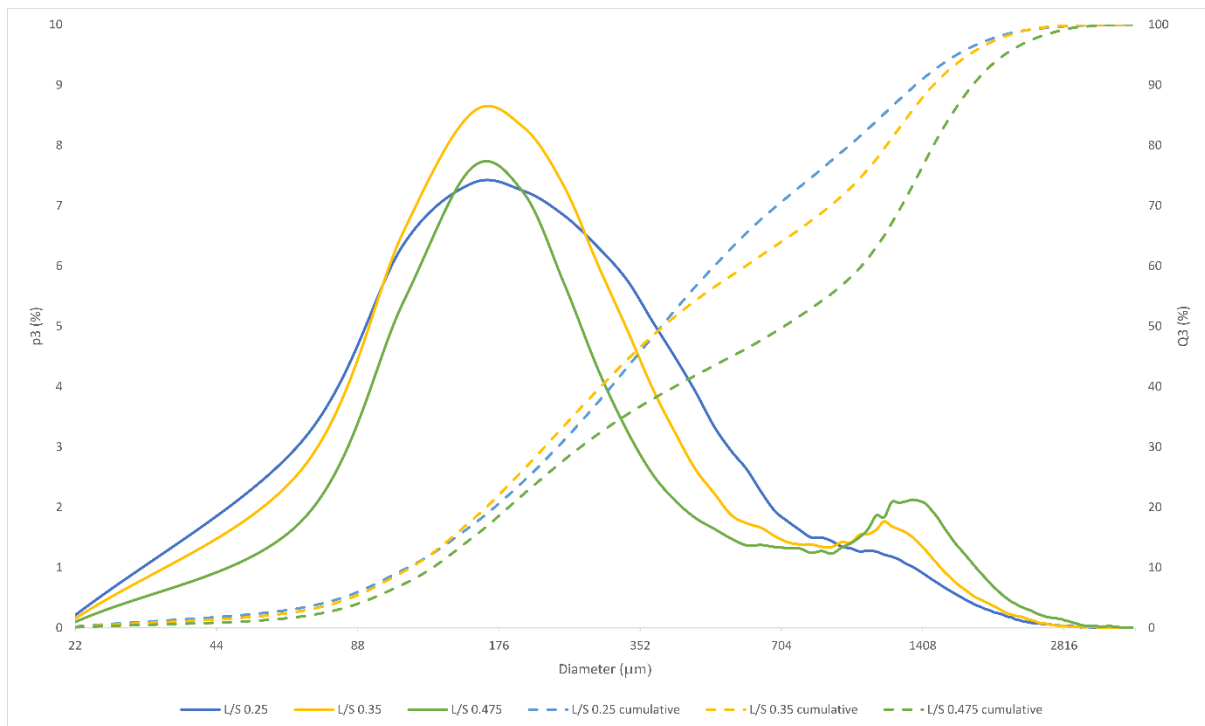


Figure 1b Granule size distribution at different L/S based on surface area

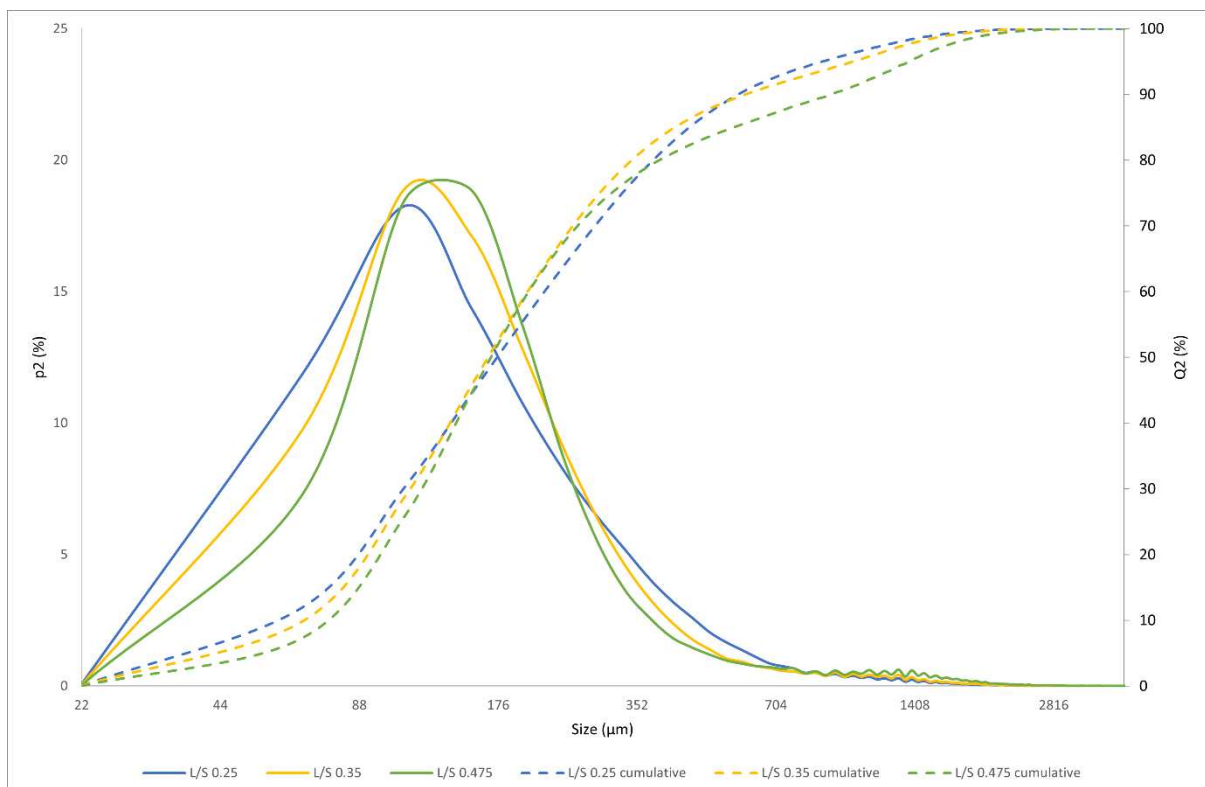


Figure 2 X-ray cross section of granules produced at different L/S

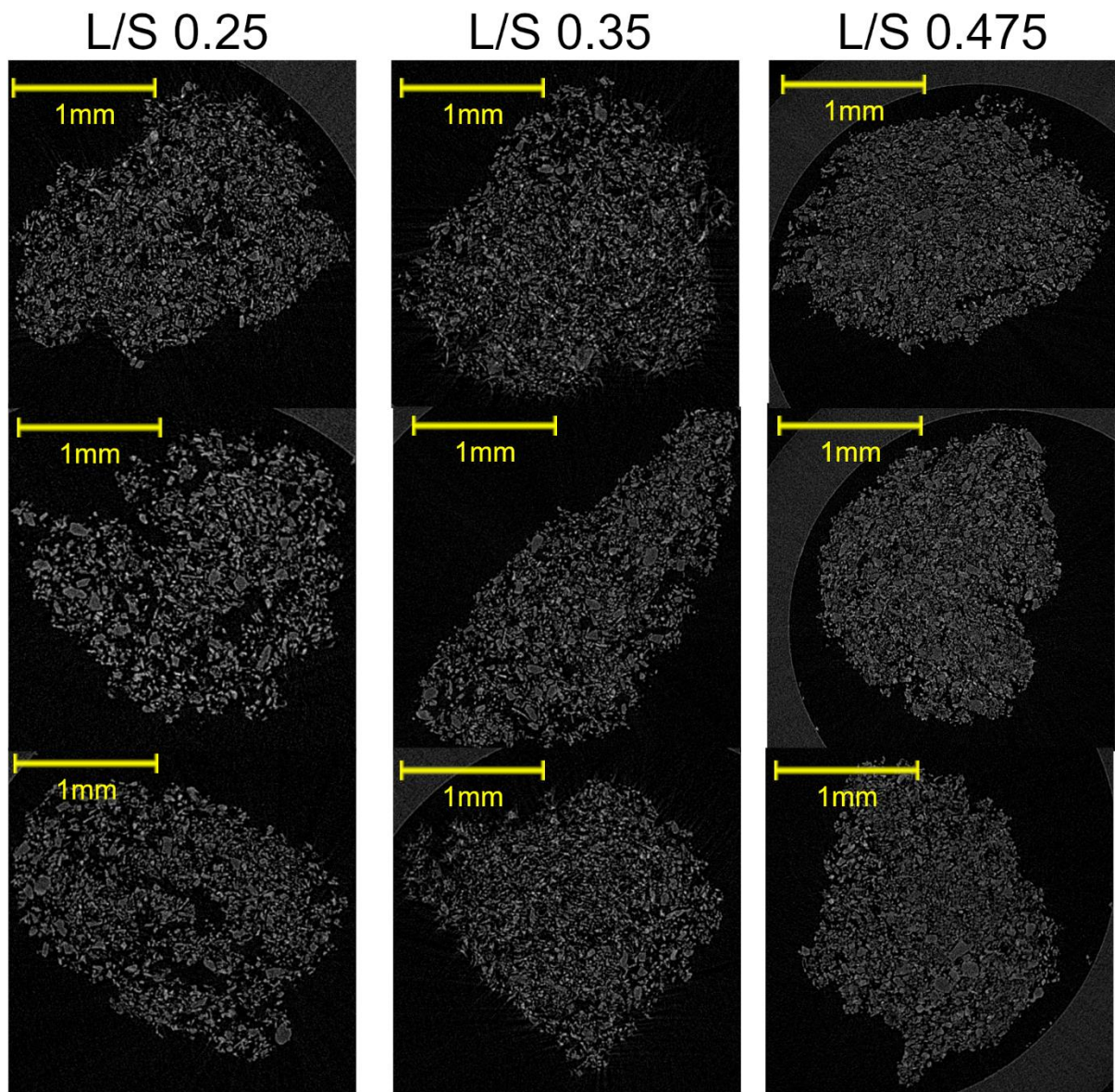


Figure 3 Top down scheme of 6 cells segmented fluidised bed dryer

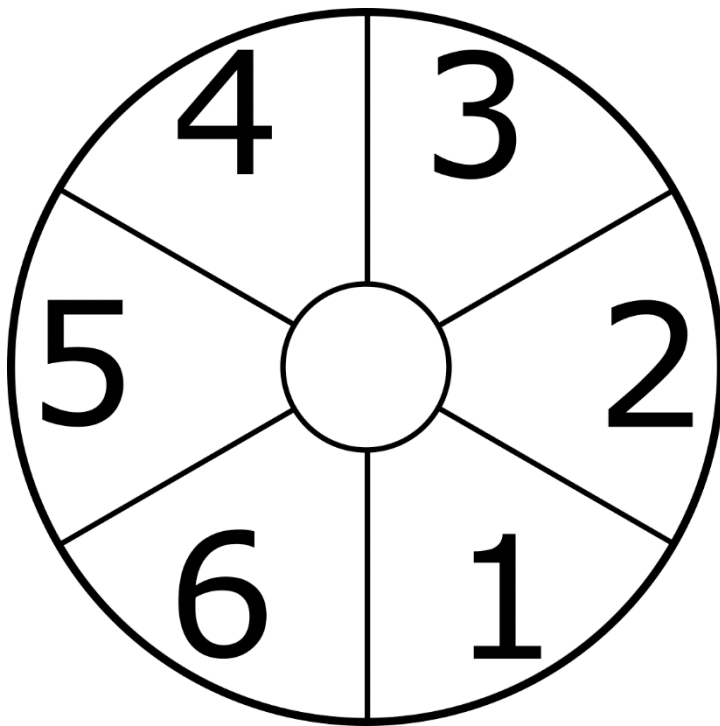


Figure 4 Temperature and moisture content profiles at different L/S

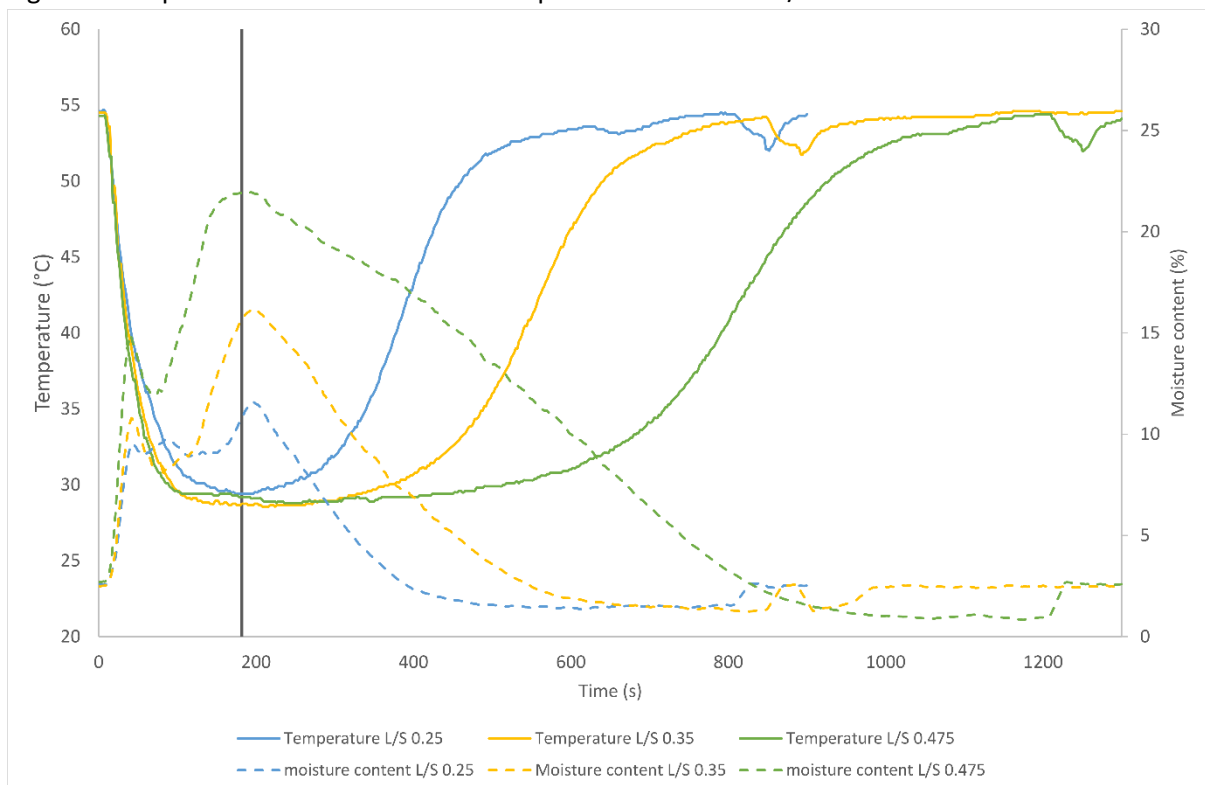


Figure 5 Product presence results obtained from the FP710e probe

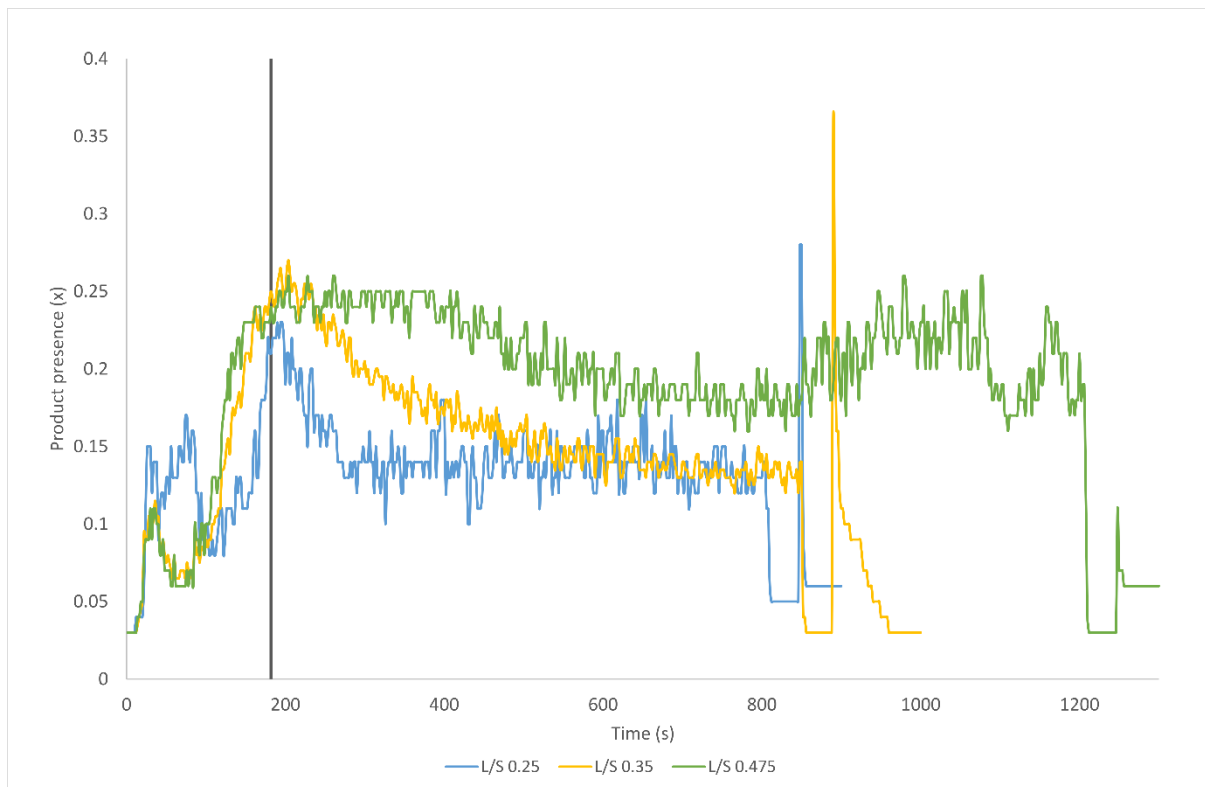


Figure 6 Product presence and pressure drop obtained during drying

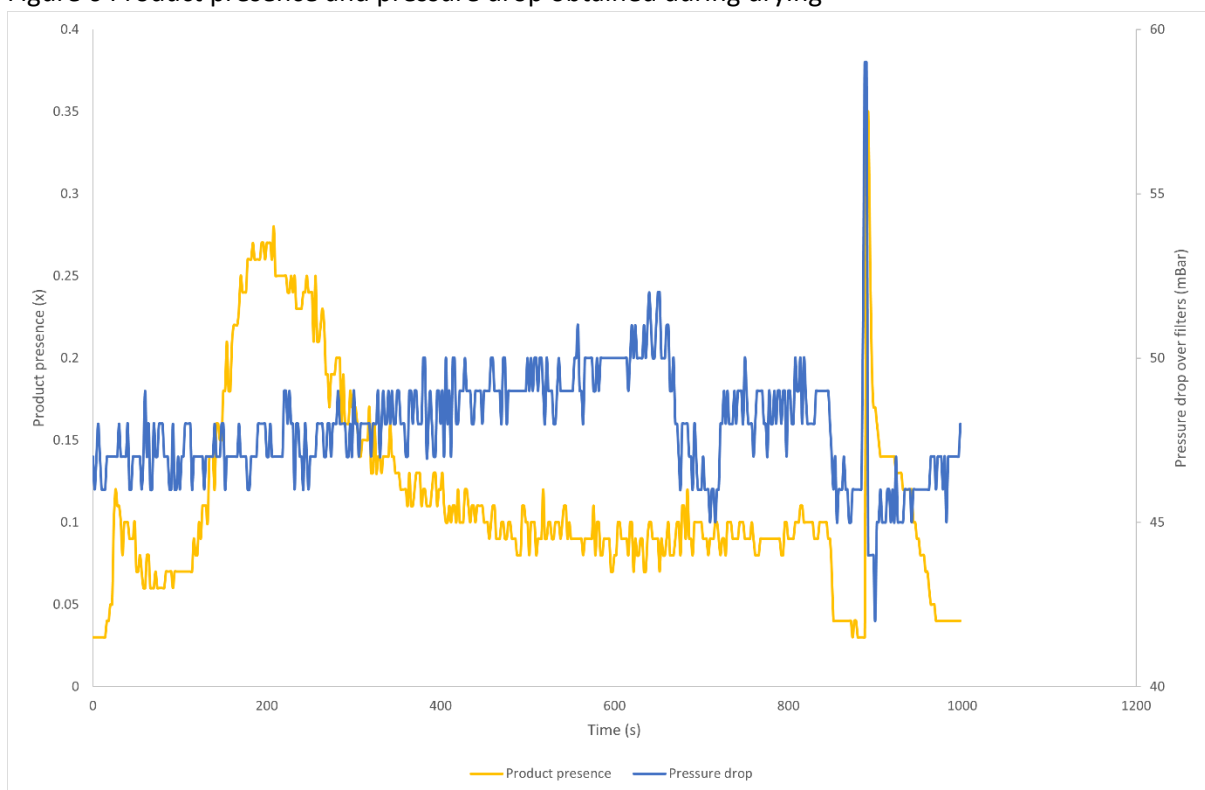


Figure 7 Product presence results obtained from the FP710e probe using different filling times at L/S 0.35

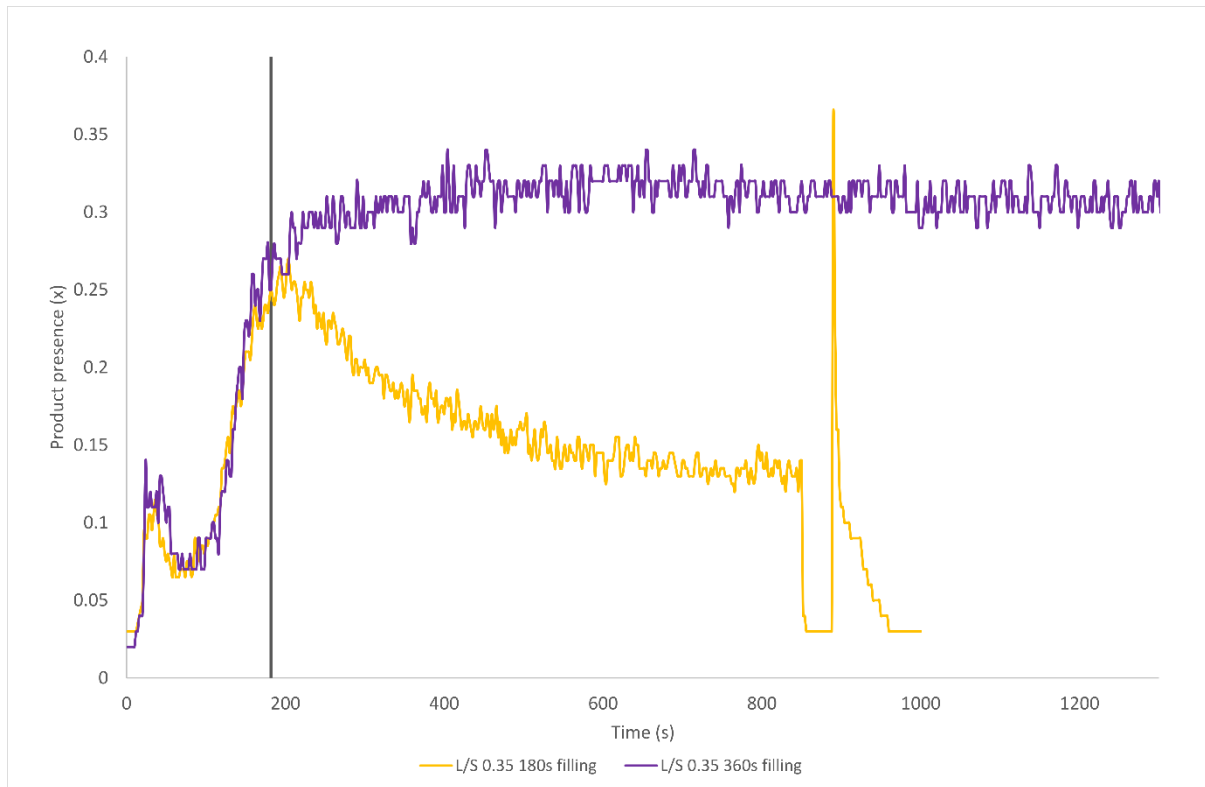


Figure 8 Temperature profile at L/S 0.35 and 10kg/h (in yellow) and its derivative (in grey)

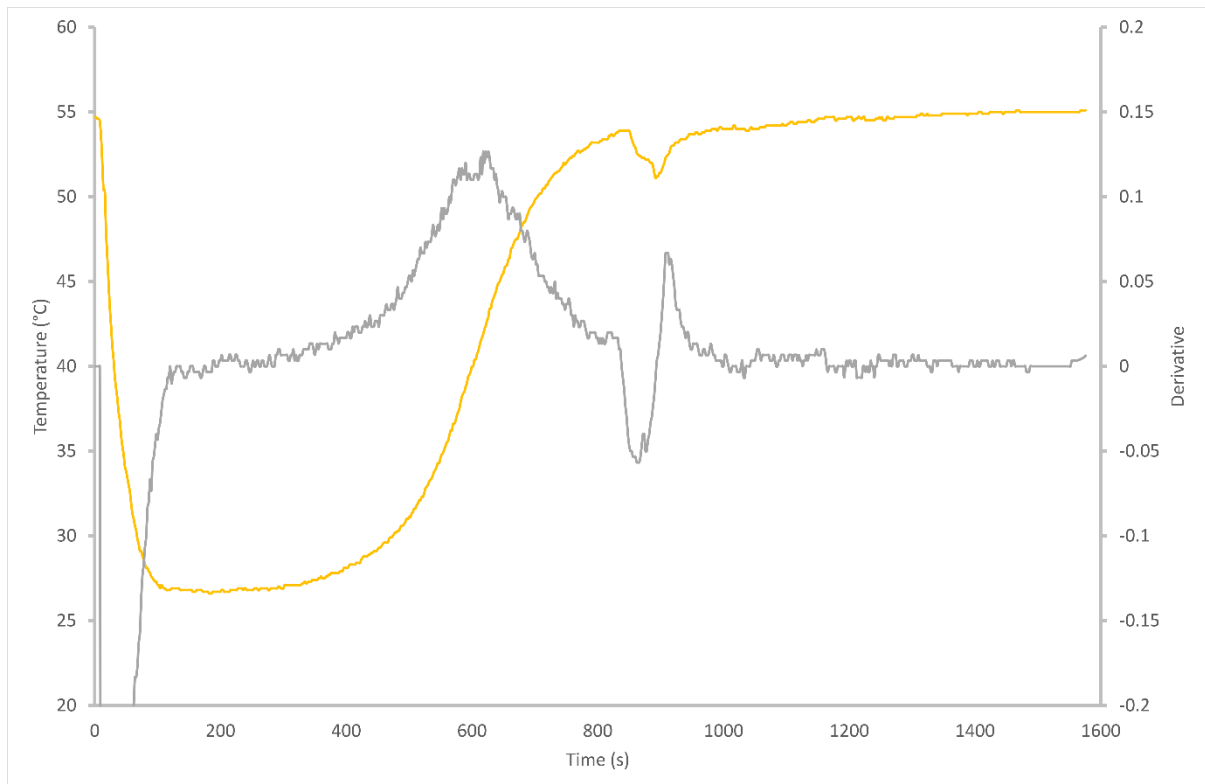


Figure 9 Drying times from different methods in relation to the L/S

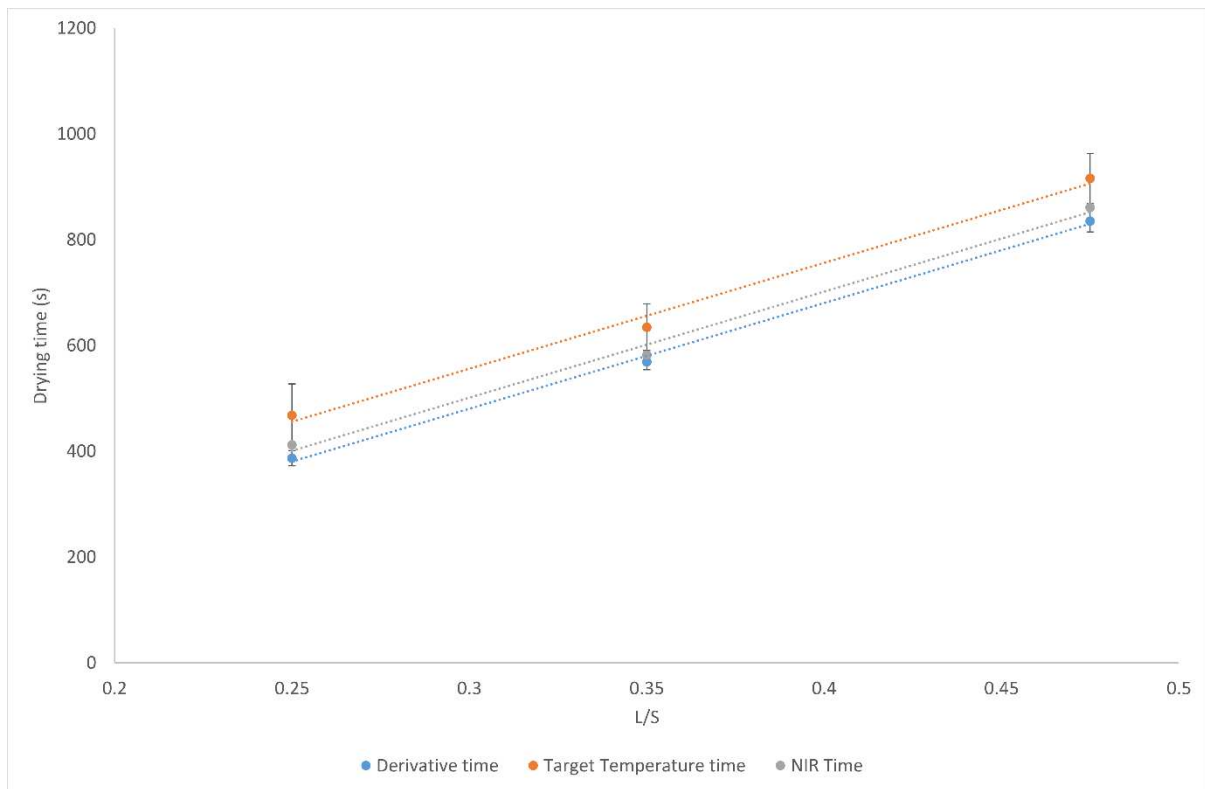


Table 1 Operating parameters for the Consigma 25 line

Variable	Set point
Screw speed	500 rpm
Screw configuration	2 kneading zones (6 elements each, 60° Stagger)
Barrel Temperature	25°C
Drying air temperature	60°C
Drying air flow rate	360 m ³ /h
Drying air humidity	1.5%
Cell filling time	180s
Powder feed rate	10 kg/h
Ambient temperature	22°C
Drying air superficial velocity	≈1m/s

Table 2 Table showing the average drying time and moisture detected by 2 different method at different L/S and the average drying rate (\pm indicates 95% confidence interval)

L/S	Average drying time via NIR (s) Moisture target 2%	Average drying time derivative (s)	Average moisture content derivative (%)	Average drying rate (g/s)
0.25	411±5	387±9	2.5±0.1	0.30±0.008
0.35	580±6	569±18	2.2±0.1	0.29±0.01
0.475	860±5	835±4	2.4±0.2	0.26±0.004