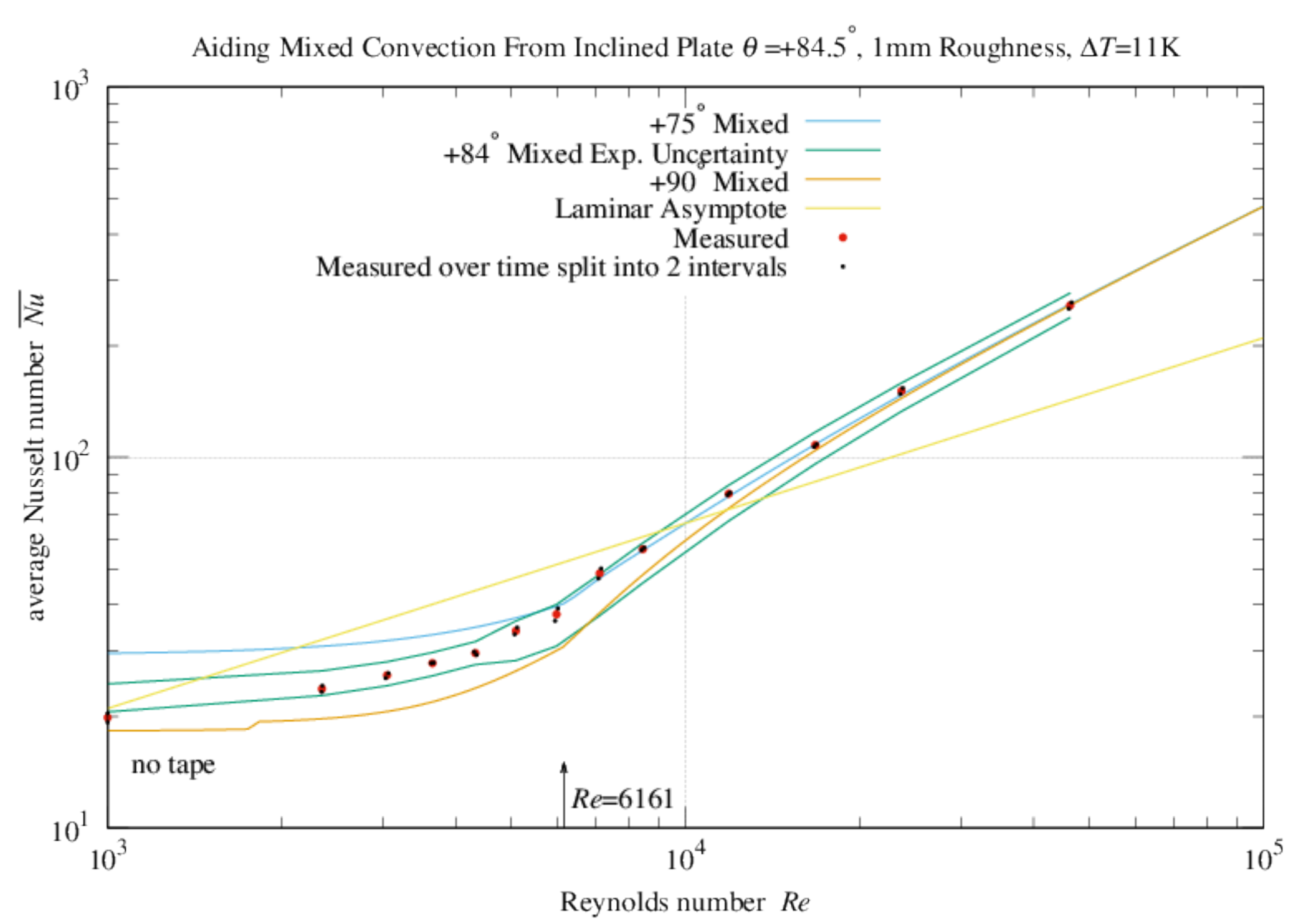
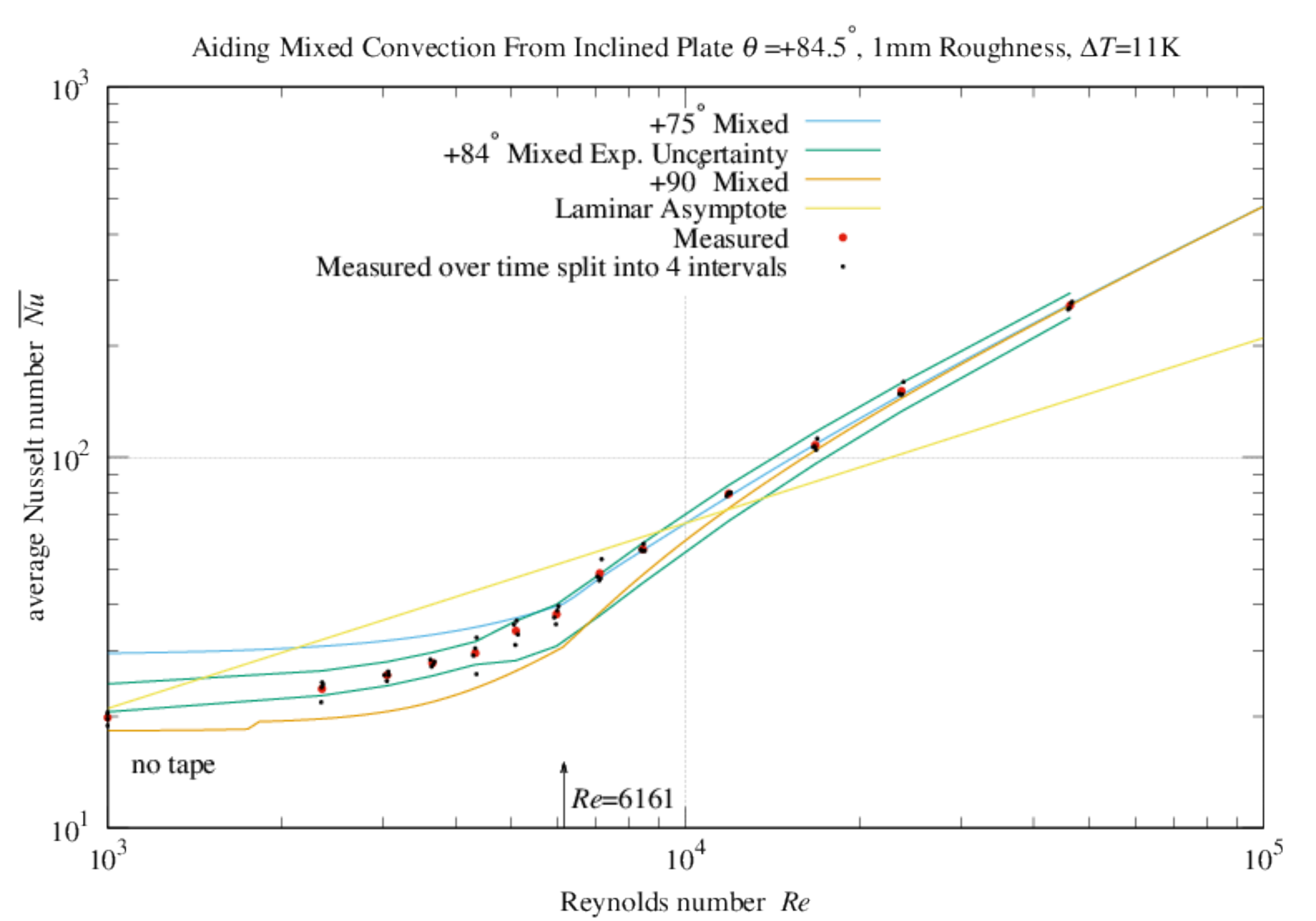
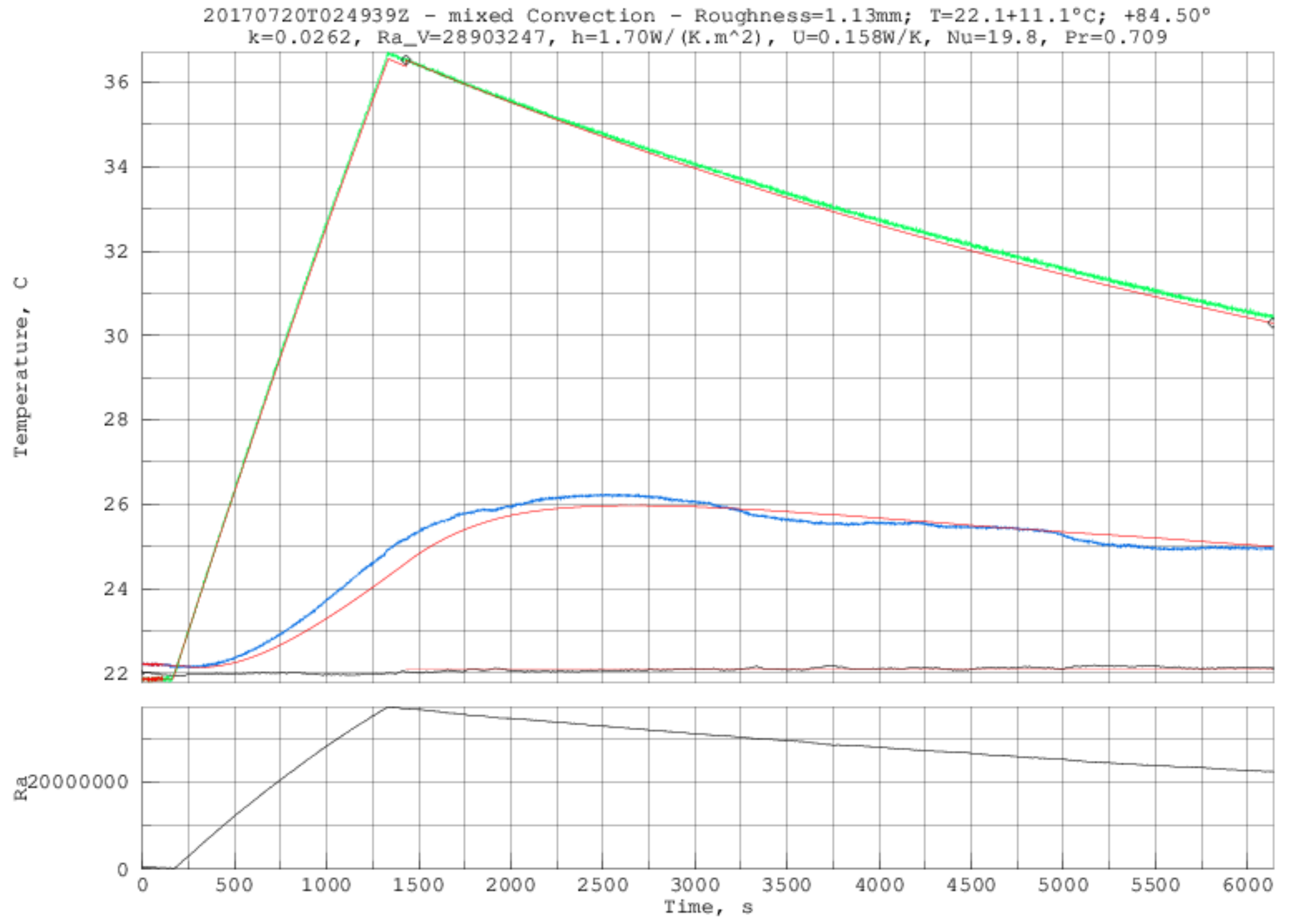
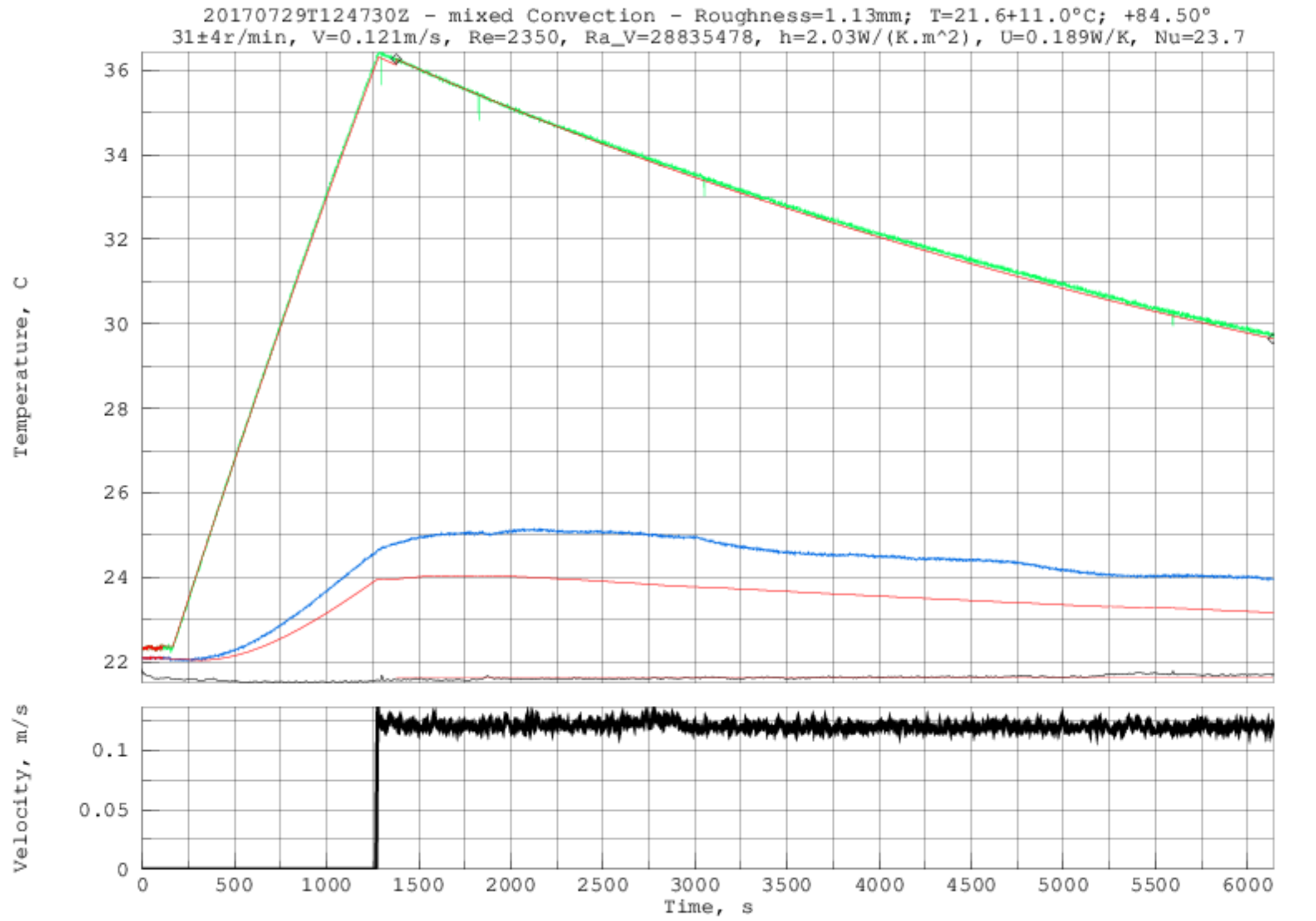
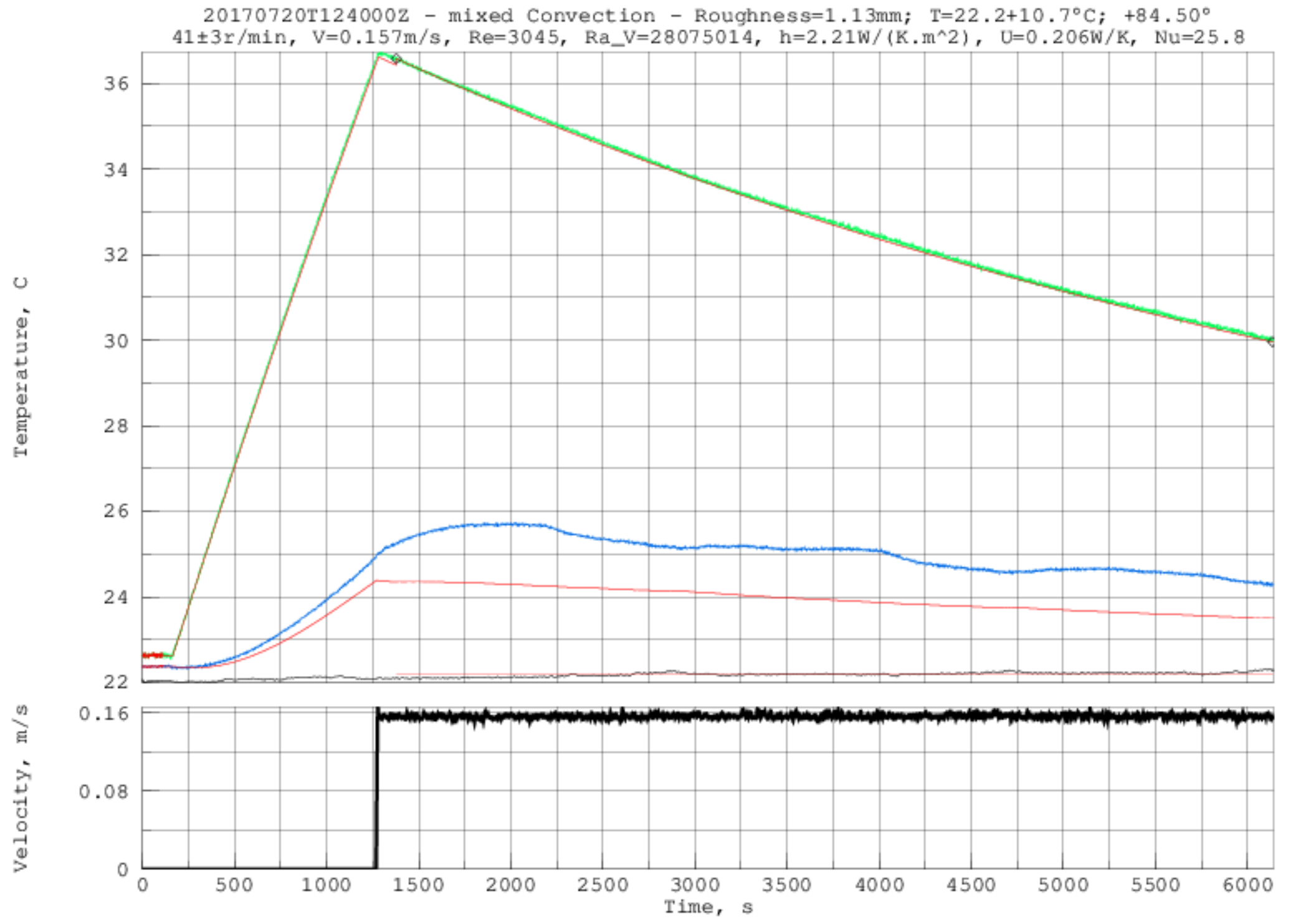
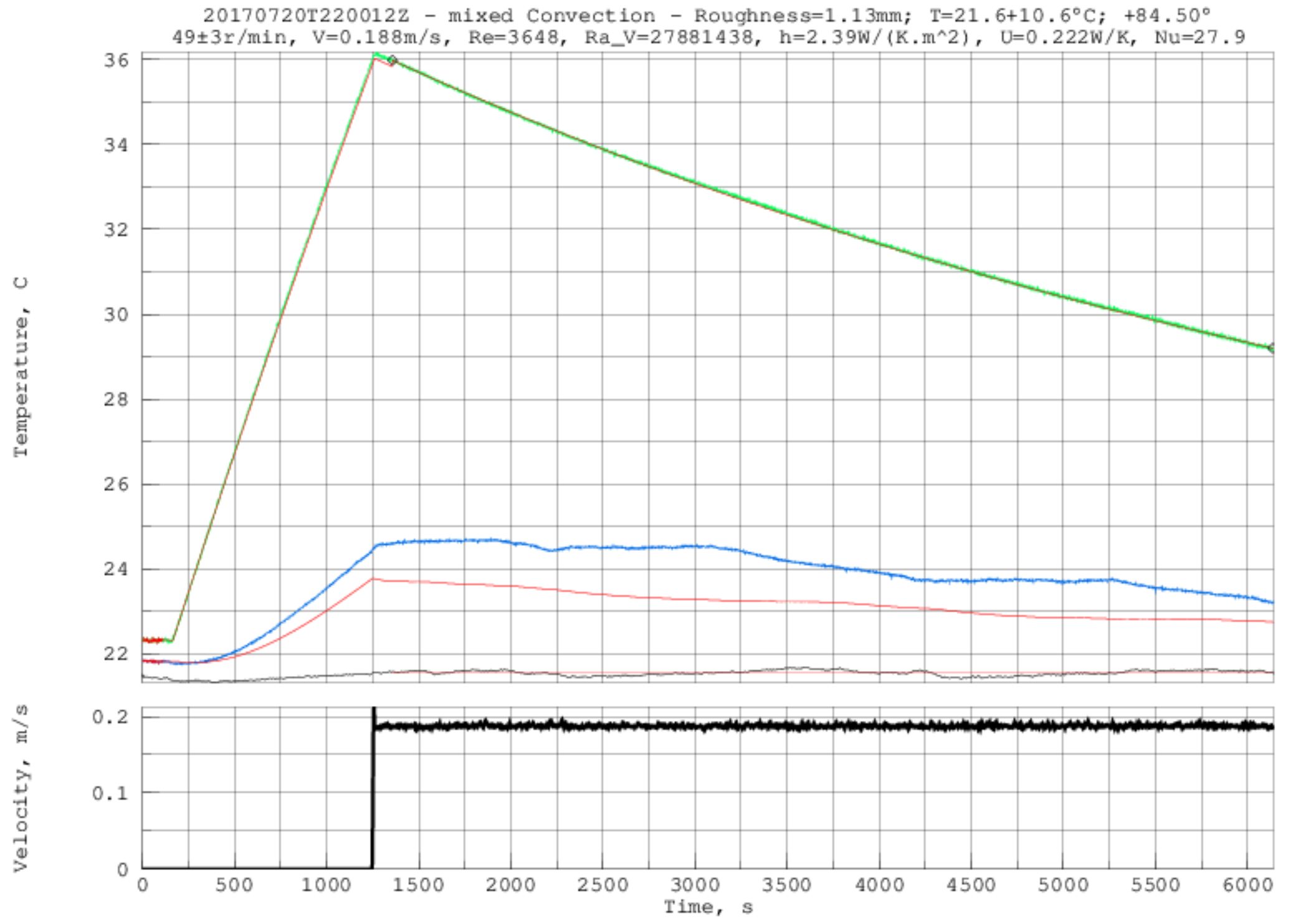

Aiding Mixed Convection From Inclined Plate θ =+84.5°, 1mm Roughness, ΔT=11K
+75° Mixed
+84° Mixed Exp. Uncertainty
+90° Mixed
Laminar Asymptote
Measured
Measured over time split into 2 intervals
no tape
Re=6161
average Nusselt number Nu
Reynolds number Re
10^3
10^2
10^1
10^4
10^5

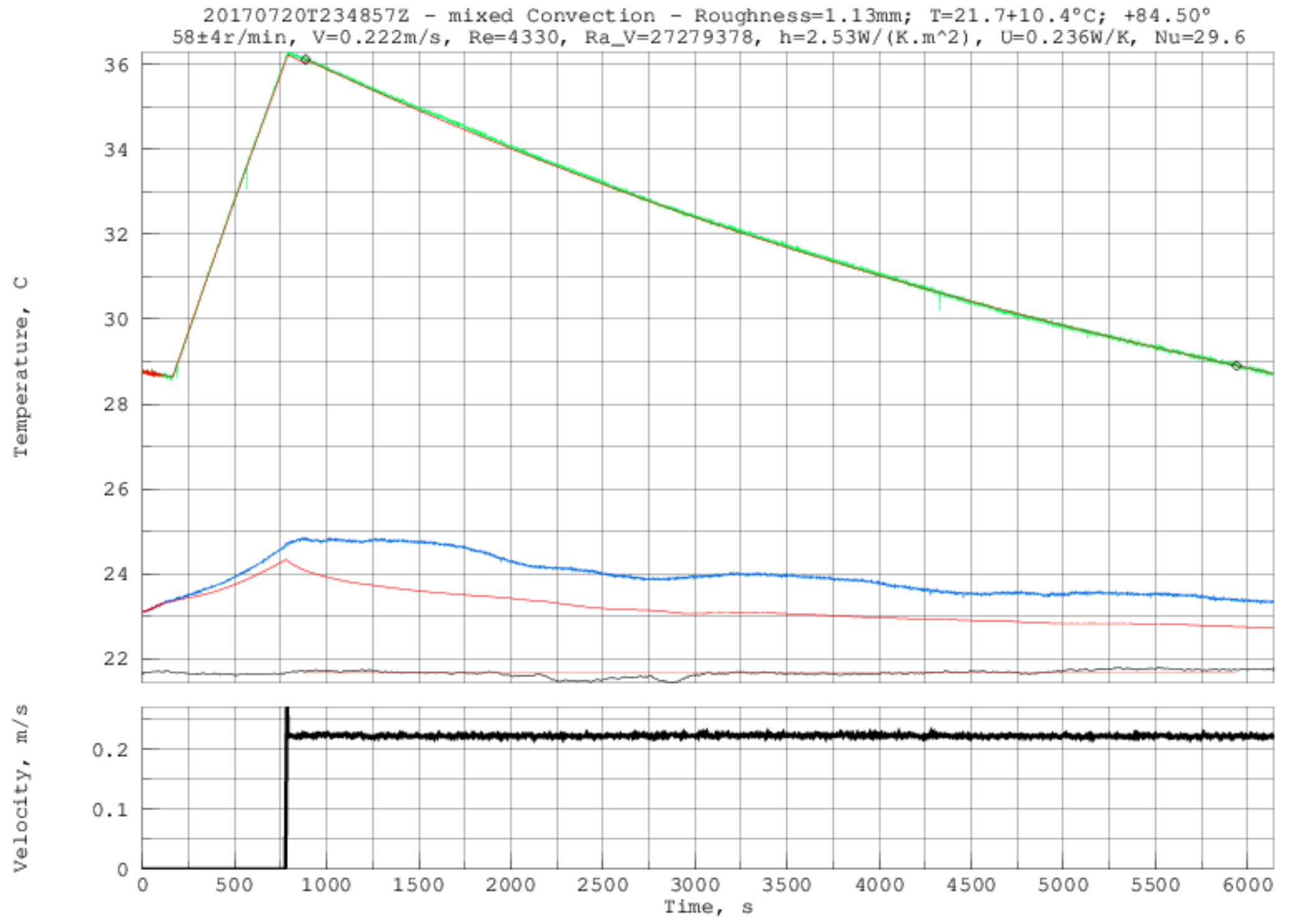

Aiding Mixed Convection From Inclined Plate θ =+84.5°, 1mm Roughness, ΔT=11K
+75° Mixed
+84° Mixed Exp. Uncertainty
+90° Mixed
Laminar Asymptote
Measured
Measured over time split into 4 intervals
no tape
Re=6161
average Nusselt number Nu
Reynolds number Re
10^3
10^2
10^1
10^3
10^4
10^5

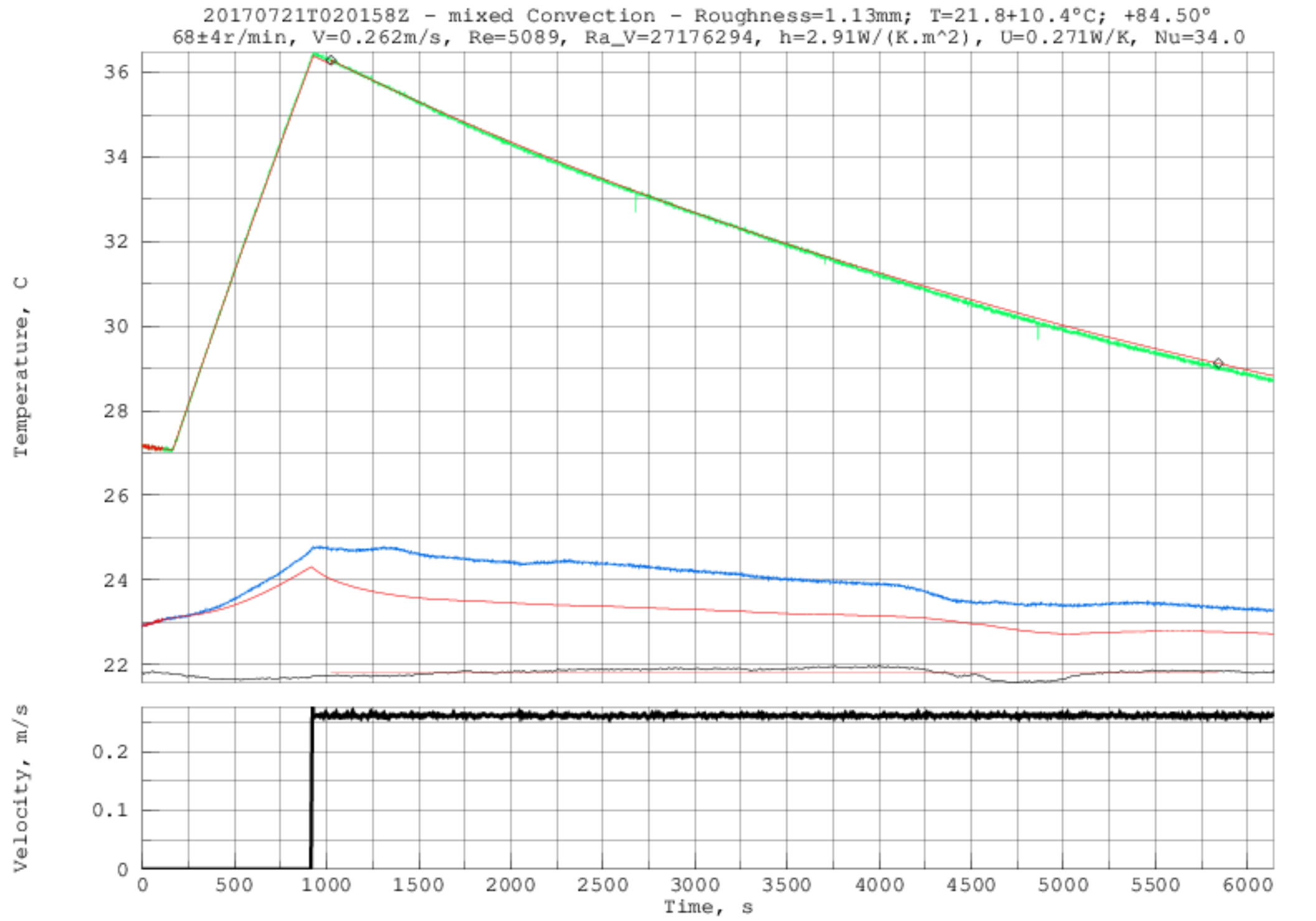

20170720T024939Z - mixed Convection - Roughness=1.13mm; T=22.1+11.1°C; +84.50°
k=0.0262, Ra_V=28903247, h=1.70W/(K.m^2), U=0.158W/K, Nu=19.8, Pr=0.709
Temperature, C
36
34
32
30
28
26
24
22
Ra
20000000
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
Time, s

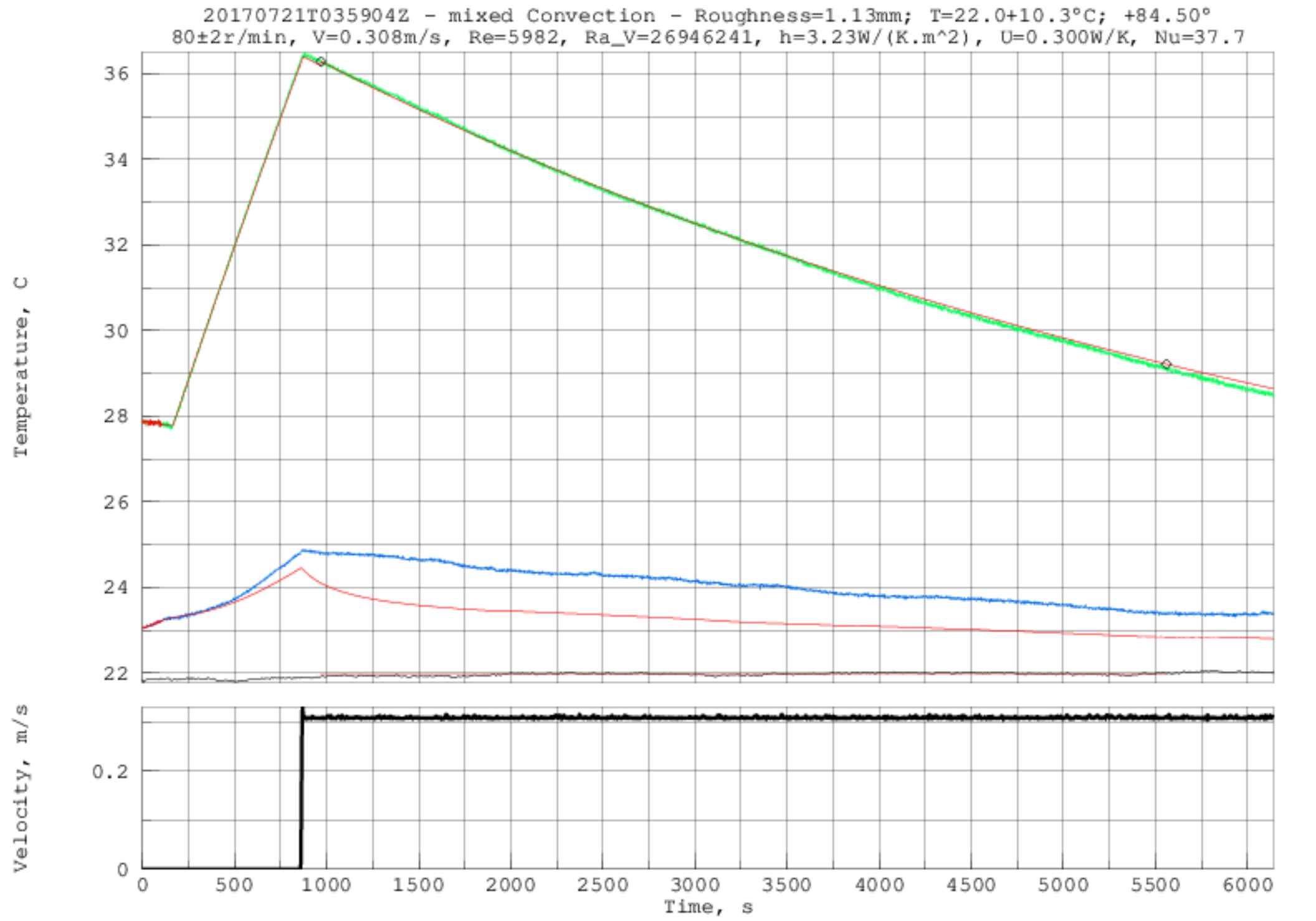

20170729T124730Z - mixed Convection - Roughness=1.13mm; T=21.6+11.0°C; +84.50°
31±4r/min, V=0.121m/s, Re=2350, Ra_V=28835478, h=2.03W/(K.m^2), U=0.189W/K, Nu=23.7
Temperature, C
36
34
32
30
28
26
24
22
Velocity, m/s
0.1
0.05
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
Time, s

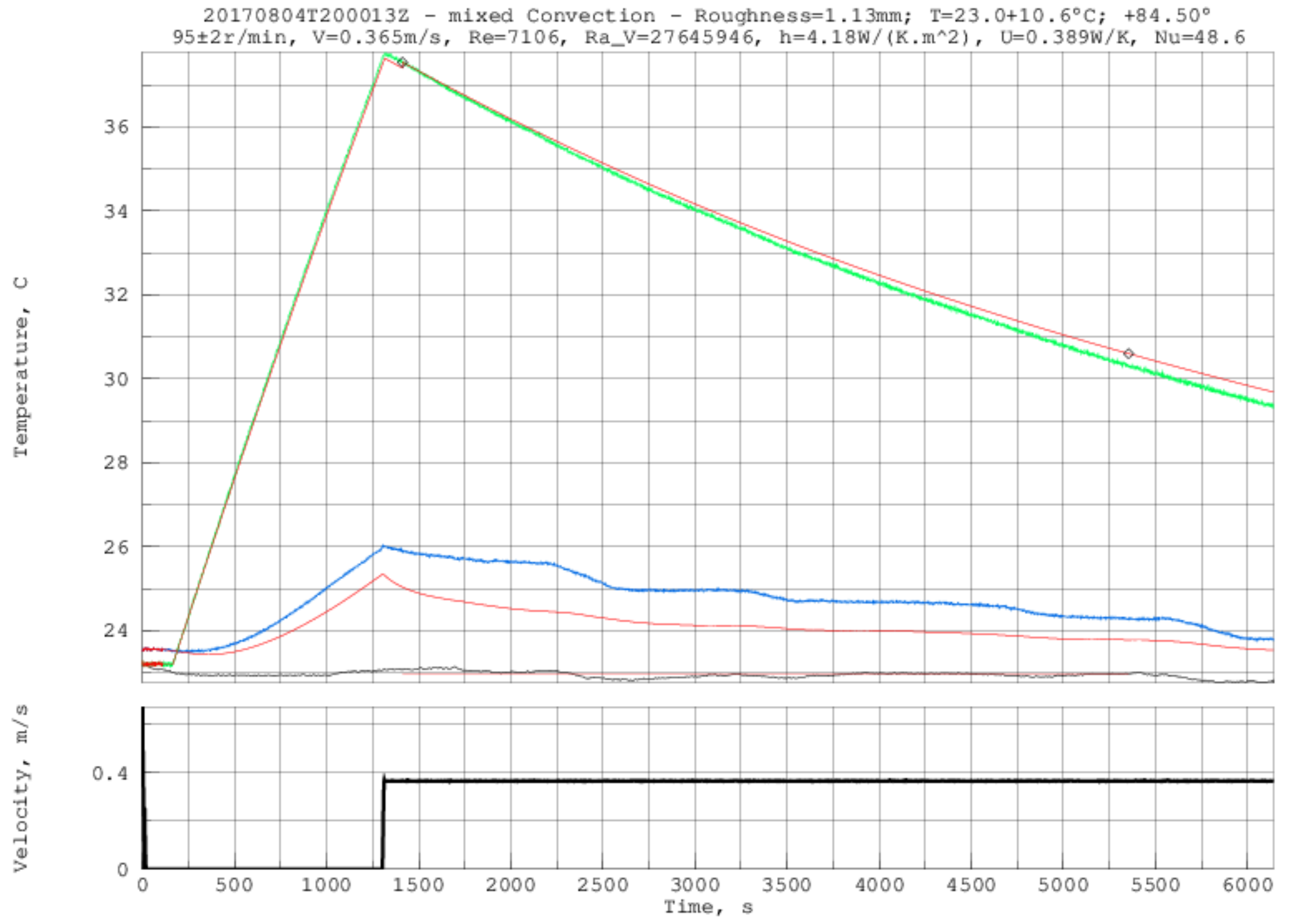

20170720T124000Z - mixed Convection - Roughness=1.13mm; T=22.2+10.7°C; +84.50°
41±3r/min, V=0.157m/s, Re=3045, Ra_V=28075014, h=2.21W/(K.m^2), U=0.206W/K, Nu=25.8
Temperature, C
36
34
32
30
28
26
24
22
Velocity, m/s
0.16
0.08
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
Time, s

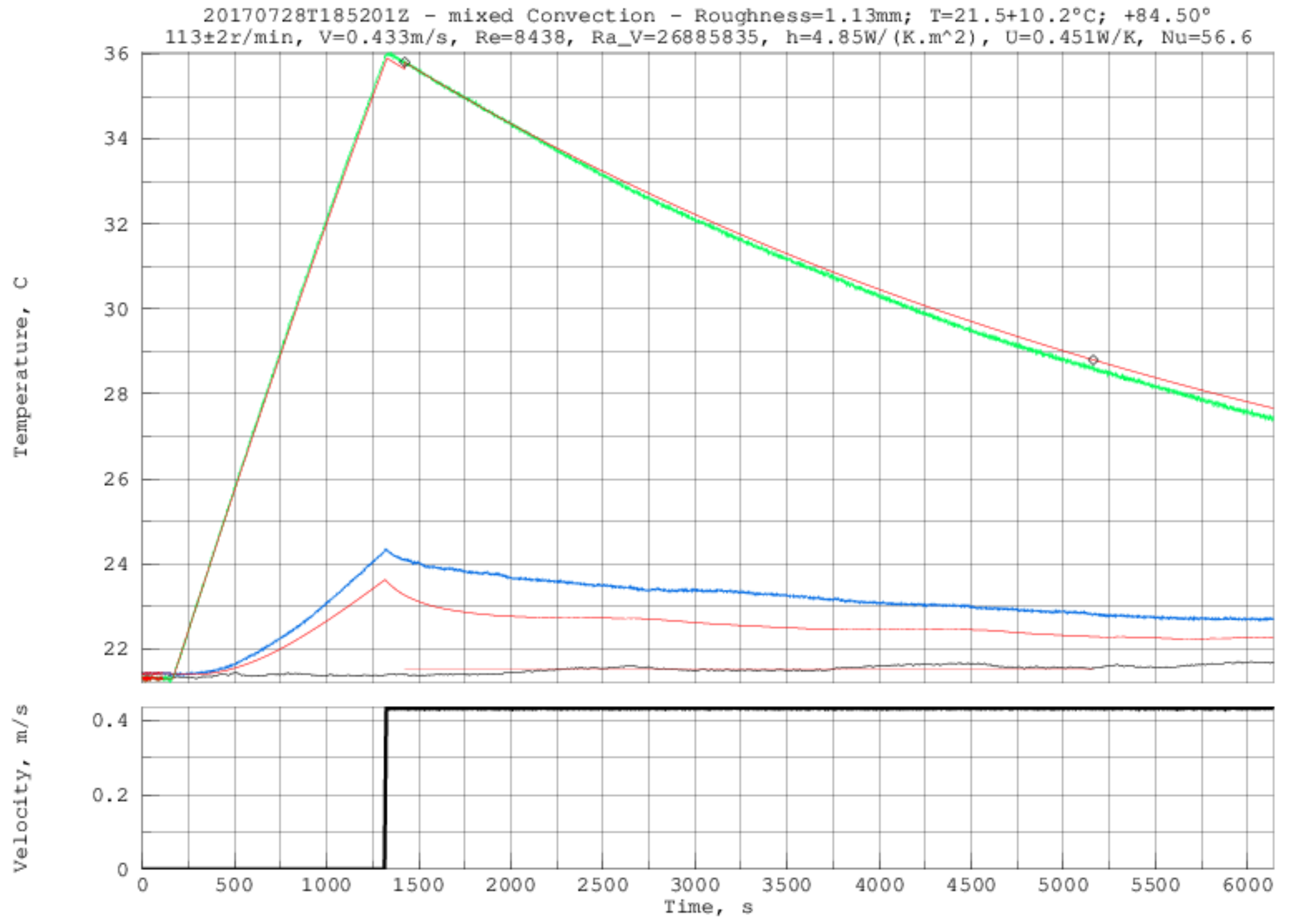

20170720T220012Z - mixed Convection - Roughness=1.13mm; T=21.6+10.6°C; +84.50°
49±3r/min, V=0.188m/s, Re=3648, Ra_V=27881438, h=2.39W/(K.m^2), U=0.222W/K, Nu=27.9
Temperature, C
36
34
32
30
28
26
24
22
Velocity, m/s
0.2
0.1
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
Time, s

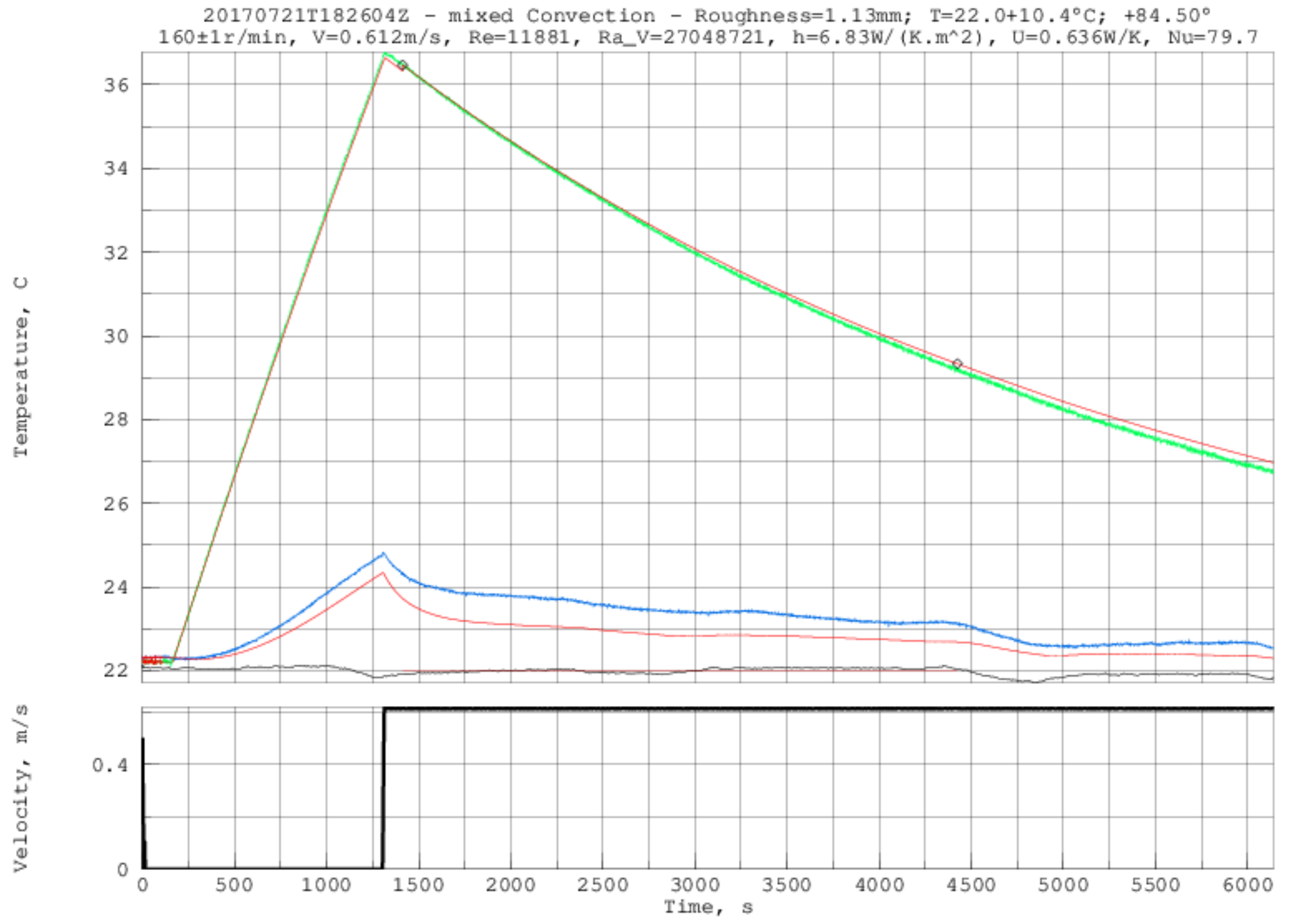

20170720T234857Z - mixed Convection - Roughness=1.13mm; T=21.7+10.4°C; +84.50°
58±4r/min, V=0.222m/s, Re=4330, Ra_V=27279378, h=2.53W/(K.m^2), U=0.236W/K, Nu=29.6
Temperature, C
36
34
32
30
28
26
24
22
Velocity, m/s
0.2
0.1
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
Time, s

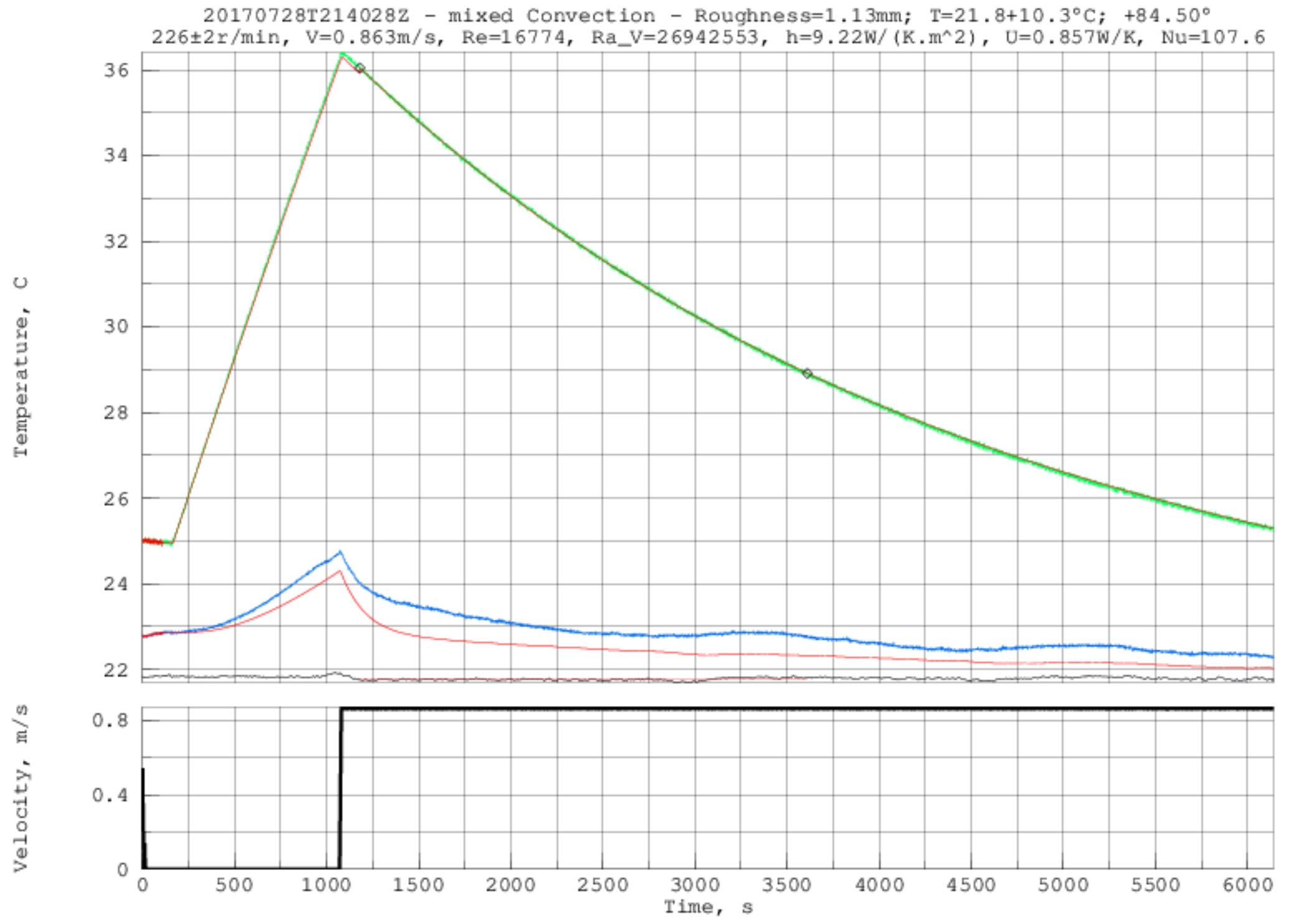

20170721T020158Z - mixed Convection - Roughness=1.13mm; T=21.8+10.4°C; +84.50°
68±4r/min, V=0.262m/s, Re=5089, Ra_V=27176294, h=2.91W/(K.m^2), U=0.271W/K, Nu=34.0
Temperature, C
36
34
32
30
28
26
24
22
Velocity, m/s
0.2
0.1
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
Time, s


20170721T035904Z - mixed Convection - Roughness=1.13mm; T=22.0+10.3°C; +84.50°
80±2r/min, V=0.308m/s, Re=5982, Ra_V=26946241, h=3.23W/(K.m^2), U=0.300W/K, Nu=37.7
Temperature, C
36
34
32
30
28
26
24
22
Velocity, m/s
0.2
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
Time, s

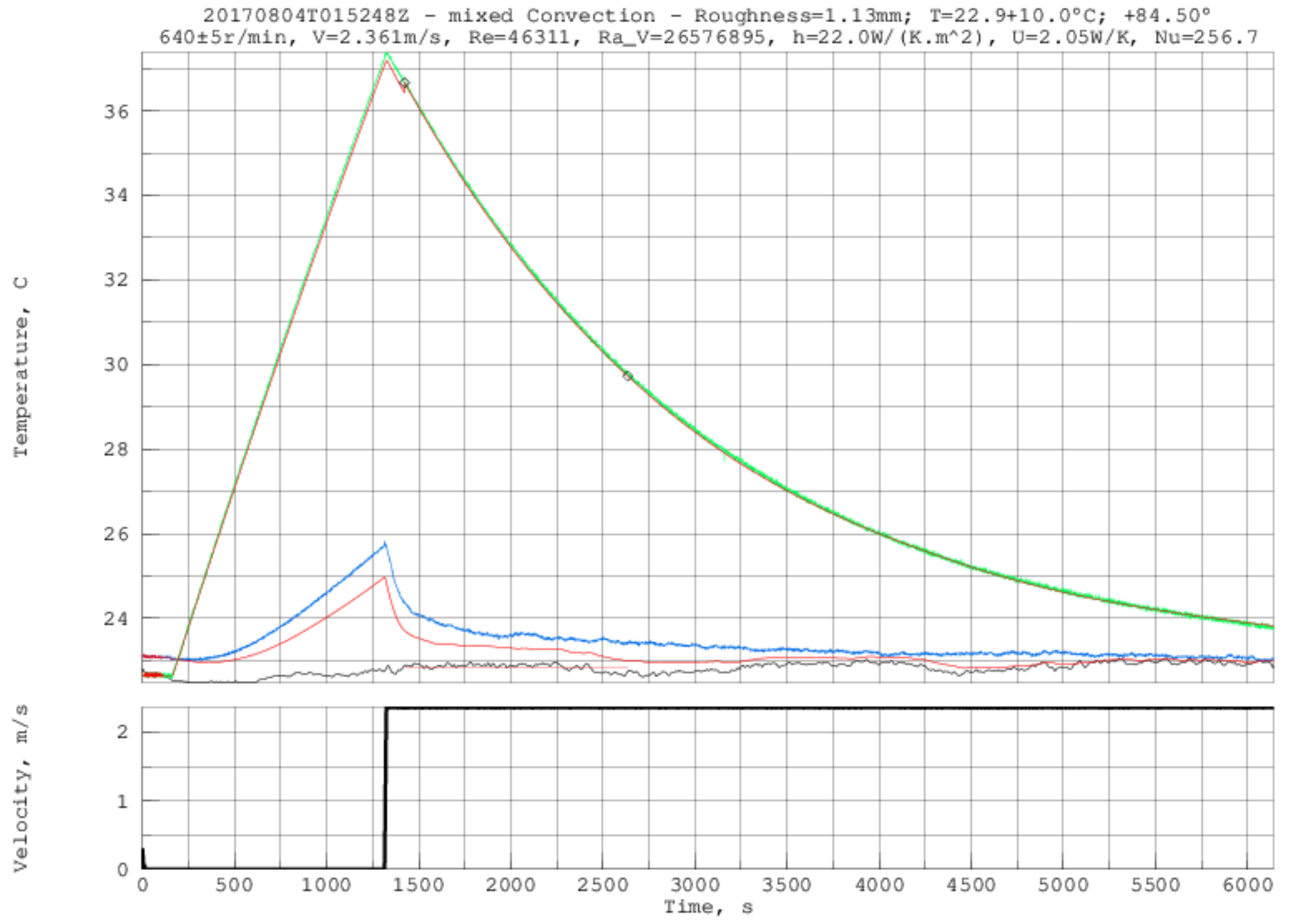

20170804T200013Z - mixed Convection - Roughness=1.13mm; T=23.0+10.6°C; +84.50°
95±2r/min, V=0.365m/s, Re=7106, Ra_V=27645946, h=4.18W/(K.m^2), U=0.389W/K, Nu=48.6
Temperature, C
36
34
32
30
28
26
24
Velocity, m/s
0.4
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
Time, s


20170728T185201Z - mixed Convection - Roughness=1.13mm; T=21.5+10.2°C; +84.50°
113±2r/min, V=0.433m/s, Re=8438, Ra_V=26885835, h=4.85W/(K.m^2), U=0.451W/K, Nu=56.6
Temperature, C
36
34
32
30
28
26
24
22
Velocity, m/s
0.4
0.2
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
Time, s


20170721T182604Z - mixed Convection - Roughness=1.13mm; T=22.0+10.4°C; +84.50°
160±1r/min, V=0.612m/s, Re=11881, Ra_V=27048721, h=6.83W/(K.m^2), U=0.636W/K, Nu=79.7
Temperature, C
36
34
32
30
28
26
24
22
Velocity, m/s
0.4
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
Time, s


20170728T214028Z - mixed Convection - Roughness=1.13mm; T=21.8+10.3°C; +84.50°
226±2r/min, V=0.863m/s, Re=16774, Ra_V=26942553, h=9.22W/(K.m^2), U=0.857W/K, Nu=107.6
Temperature, C
36
34
32
30
28
26
24
22
Velocity, m/s
0.8
0.4
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
Time, s


20170721T211436Z - mixed Convection - Roughness=1.13mm; T=21.5+10.2°C; +84.50°
320±1r/min, V=1.216m/s, Re=23648, Ra_V=26760876, h=12.9W/(K.m^2), U=1.20W/K, Nu=151.0
Temperature, C
36
34
32
30
28
26
24
22
Velocity, m/s
1
0.5
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
Time, s


20170804T015248Z - mixed Convection - Roughness=1.13mm; T=22.9+10.0°C; +84.50°
640±5r/min, V=2.361m/s, Re=46311, Ra_V=26576895, h=22.0W/(K.m^2), U=2.05W/K, Nu=256.7
Temperature, C
36
34
32
30
28
26
24
Velocity, m/s
2
1
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
Time, s