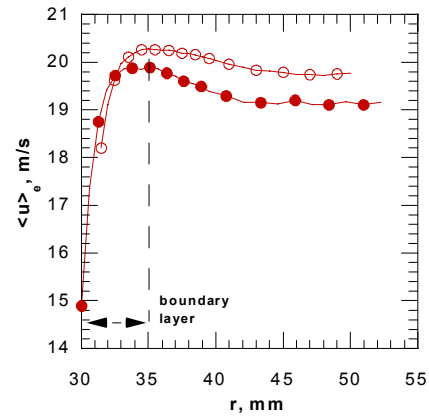


## Tunnel Co-Flow

The profile of secondary axial velocity,  $U_e$ , in the wind tunnel was measured using LDV and by hot wire. From this data, the boundary layer on the swirl burner's outer surface (radius=30mm) was found to be approximately 5mm thick.

The data is presented below with all radial distances being from the centreline of the burner ( $r=0\text{mm}$ ).



○ Hot wire data      ● LDV data

**LDV data**

Radial Pos (mm)	$\langle u \rangle_e$ (m/s)	$u'_e$ (m/s)
30.0	14.9	3.2
30.6	17.4	2.6
31.3	18.8	2.0
31.9	19.4	1.7
32.5	19.7	1.5
33.2	19.9	1.4
33.8	19.9	1.3
34.4	19.8	1.3
35.1	19.9	1.3
35.7	19.9	1.3
36.4	19.8	1.3
37.0	19.7	1.3
37.6	19.6	1.3
38.3	19.6	1.3
38.9	19.5	1.3
39.5	19.4	1.3
40.8	19.3	1.3
42.1	19.2	1.4
43.3	19.2	1.3
44.6	19.1	1.3
45.9	19.2	1.3
47.1	19.1	1.3
48.4	19.1	1.2
49.7	19.2	1.2
51.0	19.1	1.2
52.2	19.2	1.1

**Hot Wire data**

Radial Pos (mm)	$\langle u \rangle_e$ (m/s)
31.5	18.2
32.0	19.1
32.5	19.6
33.0	20.0
33.5	20.1
34.0	20.2
34.5	20.3
35.0	20.3
35.5	20.3
36.0	20.3
36.5	20.2
37.0	20.2
37.5	20.2
38.0	20.2
38.5	20.2
39.0	20.1
39.5	20.1
40.0	20.0
41.0	20.0
42.0	19.9
43.0	19.8
44.0	19.8
45.0	19.8
46.0	19.8
47.0	19.8
48.0	19.7
49.0	19.8
50.0	19.8