The turbulent flow generated by inhomogeneous multiscale grids
SHAOKAI ZHENG, PAUL J K BRUCE, J MICHAEL R GRAHAM, JOHN CHRISTOS VASSILICOS, Imperial College London — A group of inhomogeneous multiscale grids have been designed and tested in a low speed wind tunnel in an attempt to generate bespoke turbulent shear flows. Cross-wire anemometry measurements were performed in different planes parallel to the grid and at various streamwise locations to study turbulence development behind each of the different geometry grids. Two spatially separated single hot wires were also used to measure transverse integral length scale at selected locations. Results are compared to previous studies of shearless mixing layer grids and fractal grids, including mean flow profiles and turbulence statistics.