

Appendix H

Equipment List

Appendix H provides a list of the main hardware components implemented in the experiments described in this thesis.

Mie Scattering Flow Visualization

- Laser: Spectra-Physics, model 2020, argon
- Mirrors 1 and 2: flat, front surface, 2 inch diameter
- First lens: 1 inch diameter, 190mm focal length, fused silica, plano-convex
- Second lens: 1 ¼ inch diameter, 126mm focal length, Bi-convex
- Third mirror: 1 inch by 1 ¼ inch, flat, front surface
- First cylindrical lens: 40x25.4, 254.3mm focal length
- Second cylindrical lens: 40x25.4, 19.1mm focal length
- Sheet mirrors: Edmund Optics, 4 inch by 5 inch, flat, front surface, industrial grade
- Video capture card: National Instruments, IMAQ 1405
- ‘Image processing computer’: Micron PC, running Win XP and LabVIEW 7.1
- ‘LDV computer’: Micron PC, running Win 98 and LabVIEW 6.1
- Smoke generator power supply: 0-130 Volt AC VARIAC transformer
- Smoke flow meter: Matheson, model 603 rotameter
- Intensified camera: Stanford Optics, 4Quick05
- Camera lens: Tamron SP, 90mm, 1:2.5, Ø55

Schlieren Flow Visualization

- Camera: Nikon D-100, 6.1 Mega pixel, digital
- Camera lens: Tamron SP, 90mm, 1:2.5, Ø55

- Vivitar 3x-3 Automatic Tele Converter (ATC)
- First mirror: 9 5/8 inch diameter, 2.1 meter focal length, parabolic front surface mirror
- Second mirror: Edmund Scientific, 8 inch diameter, 39 7/8 inch focal length, parabolic front surface mirror
- Arc lamp housing: Oriel, model 66058
- Arc lamp power supply: Oriel, model 68806
- Arc lamp: OSRAM, 150 Watt, Xenon

LDV

- Laser: Spectra-Physics, model 2020, argon
- Atomizer: TSI Inc. model 9306 6-jet
- PMTs: Hamamatsu R6357
- Op-amp power supplies: HP E3631A, triple output DC
- Counter timers: TSI Inc. 1990C Counter-type signal processors
- High voltage supply: Pacific Instruments, Model 204
- ‘LDV computer’: Micron PC, running Win 98 and LabVIEW 6.1
- DAQ boards: National Instruments PSI-6034E, Data Translation, CompuScope
- All optics: refer to [x]

Air Supply System

- Pressure regulators: Wilkerson, ER2-06-0000, 0-125psi; Kaye & MacDonald ZG 093
- Mass flow measurement: Eldridge Products Inc. NH8600, thermal mass flow meter
- Wilkerson pressure regulator power supply: HP E3631A, triple output DC