ME 552

Report for Lab 3: Turbulent Flame Speed Measurements

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1. Introduction

A controlled flame was observed Using the same test apparatus as a previous experiment, The objective of this experiment was to familiarize the student with (NAME OF CATEGORY OF EQUIPMENT) and to introduce the student to some of the basic principles regarding combustion physics.

2. Methodology

2.1. Experiment Description

2.2. Equipment Used

A list of all of the equipment used can be found in Appendix A.

2.3. Data Analysis

3. Assumptions

4. Results

5. Conclusion

APPENDIX A EQUIPMENT TOLERANCES

Instrument	Model	Tolerance
Orifice	O'Keefe Type H	See Table **??**
Rotameter	Omega FL4611-V	+/- 2.5% of Full Scale (0.2125 scfm)
Pressure Transducer	Omega PX309	+/- 0.25% Full Scale (.25 psi)
Thermocouple	Type K	+/- 2.2°C
Dry Test Meter	Singer DTM-200[1]	+/- 0.01 standard cubic foot
Pump	Isco-pump Series D	+/- 0.1%
Scale	AND FX-6000	+/- 0.1 gram
Bubble Calibrator	Gilian Gilibrator D800268	+/- 1% of reading accuracy
Thermal Flow Controller	MKS GM50A	+/- 1% of set point

Table 1: Equipment Used

Re = 5,000 High Turbulence Intensity	Re = 5,000 Low Turbulence Intensity	Re = 10,000 High Turbulence Intensity	Re = 10,000 Low Turbulence Intensity
3.29	3.54	6.81	7.22

Table 2: Apparent Flame Area (cm^2)