OSU & NBS Updates
2008 October Materials Meeting

Federal Aviation Administration

Materials Working Group

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October 21st & 22nd, 2008

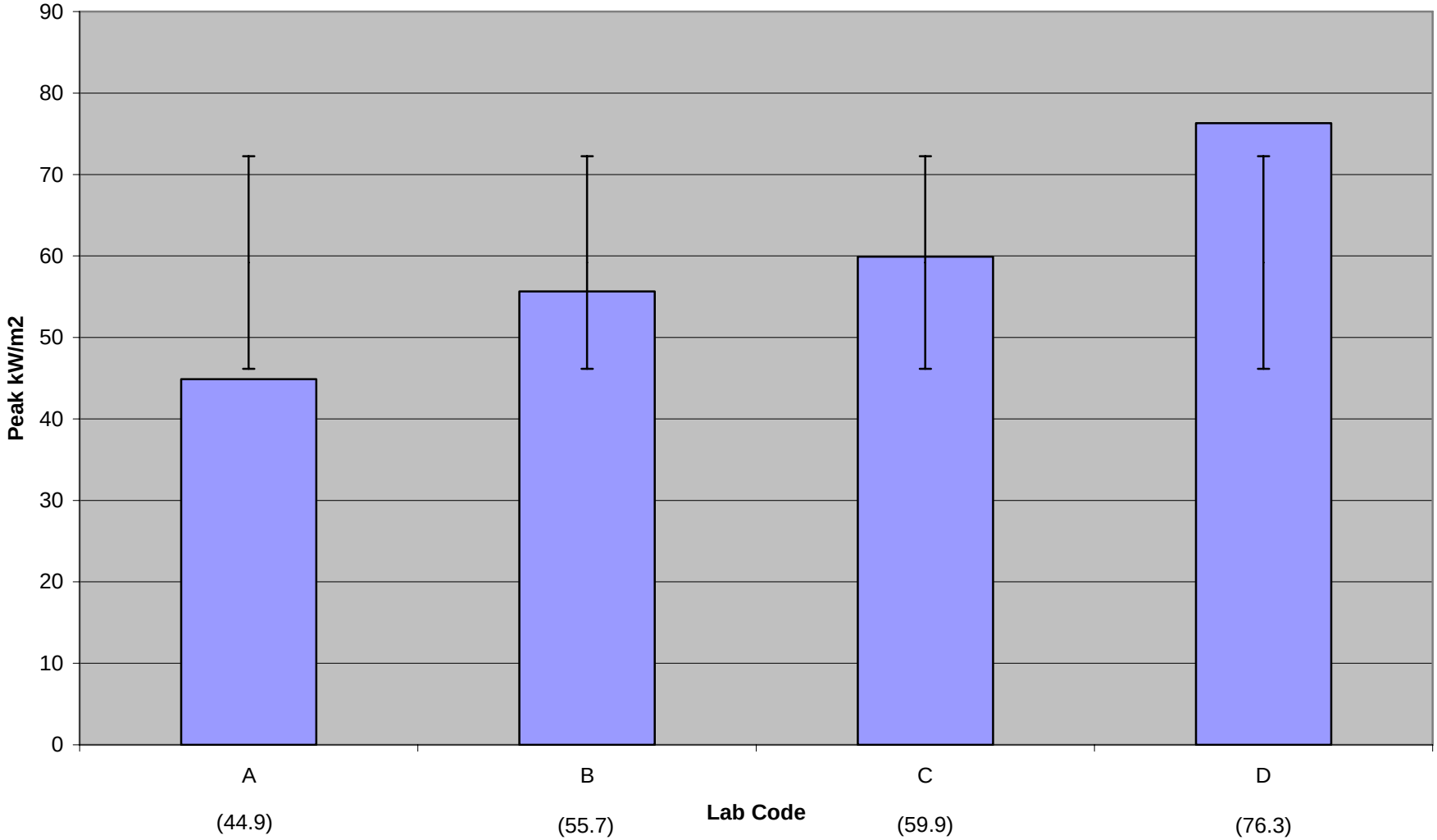
Agenda

1. “Mini” European Round Robin Results
2. NBS Update
   - Photometric System Round Robin
   - Experimental Furnace
3. Visit To Vatell Corp.
   - Calibration Method
   - Recoating Techniques
4. New FAA Equipment
5. Maintenance Tips & Reminders
6. Next Steps

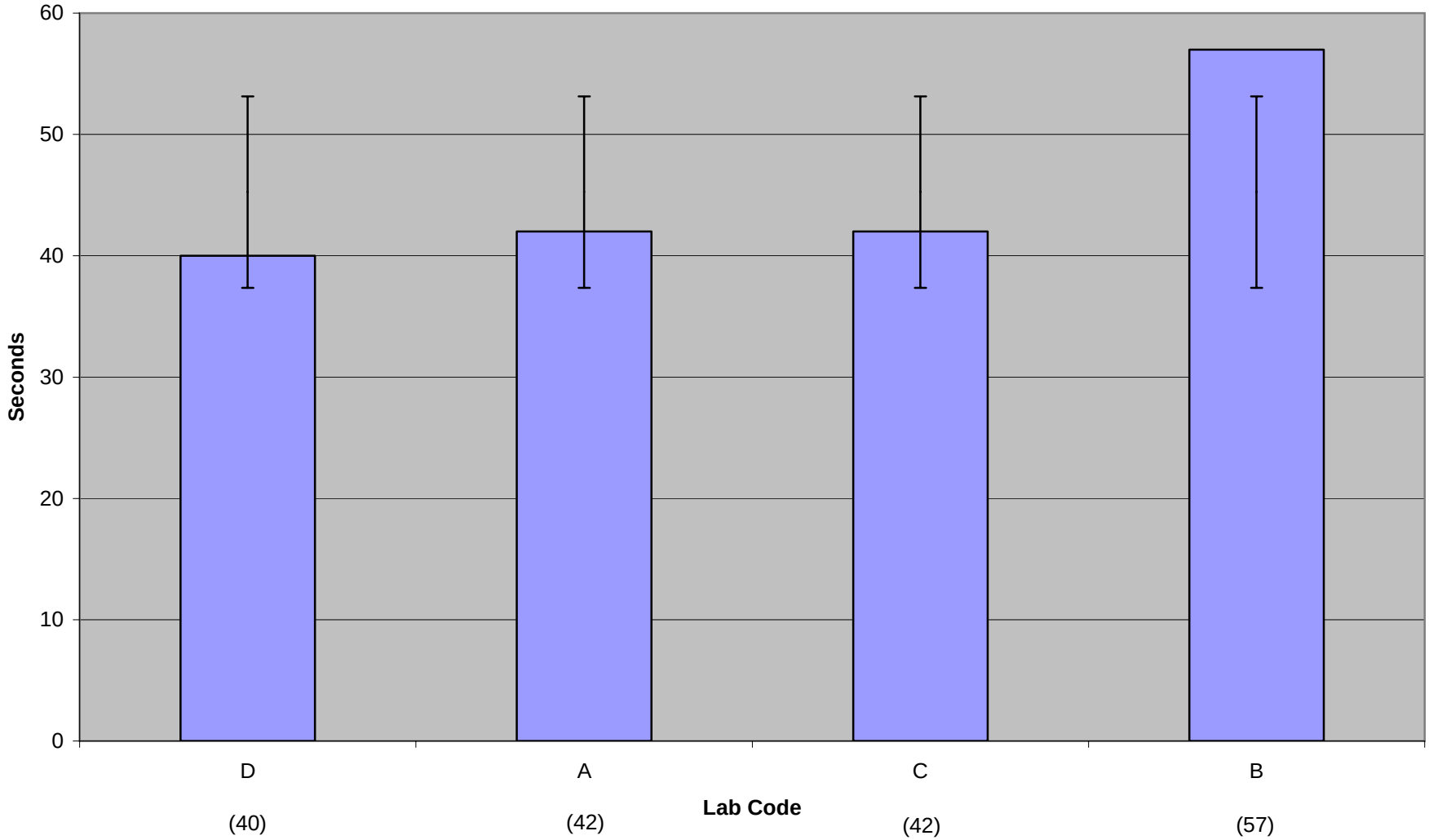
2008 Mini-Study

- 'Mini-Study' Complete
  - 4 Labs In All
  - Two Honeycomb Panels
    - S-SCCP (Brown)
    - Marker Panel (White)
- OSU
  - Peak Heat Release Rate
  - 2 minute Total Heat Release Rate
  - Time To Peak
- NBS
  - Maximum Specific Optical Density (4 Minute)

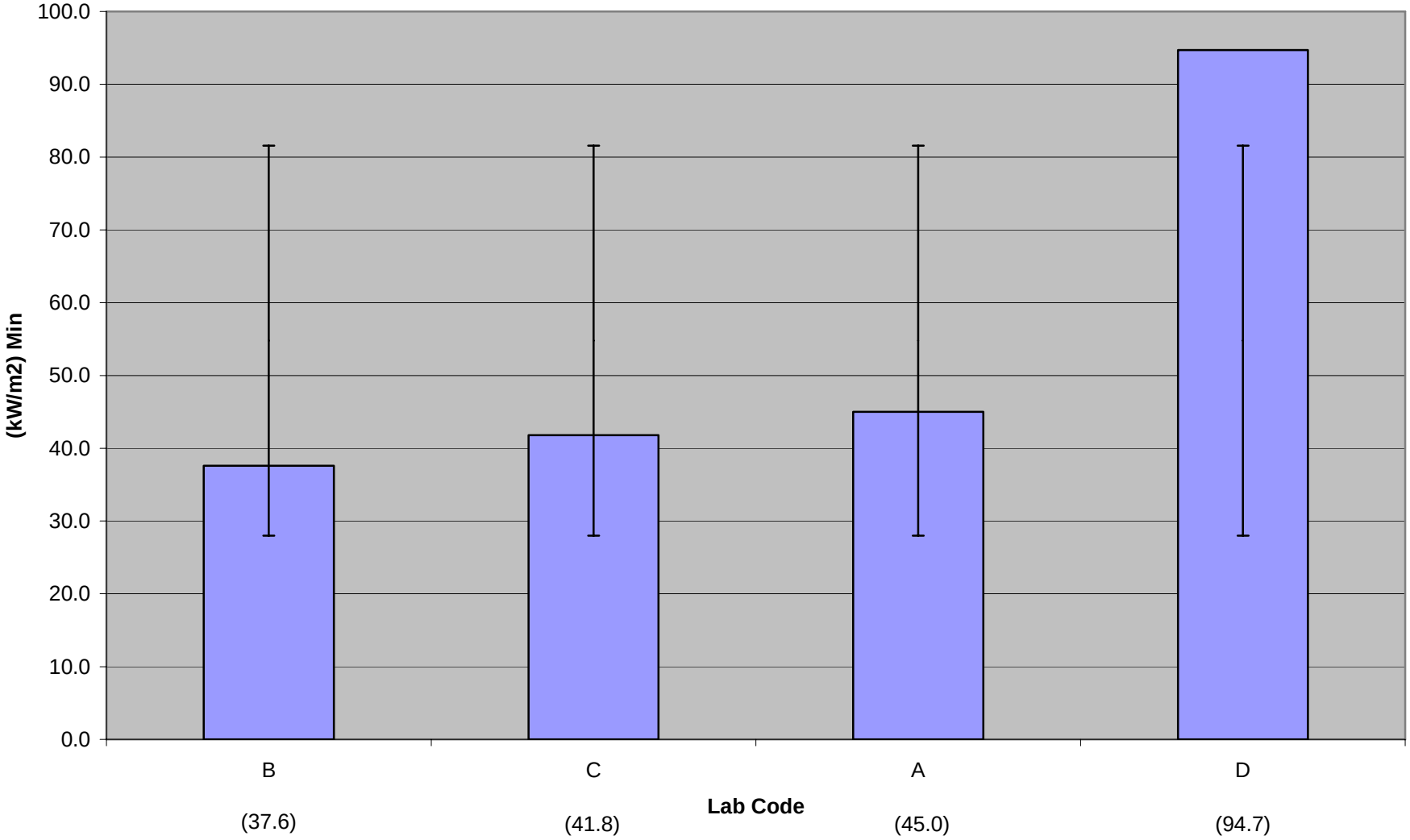
Schneller Panel - Peak HRR
% Standard Deviation = 22.0%



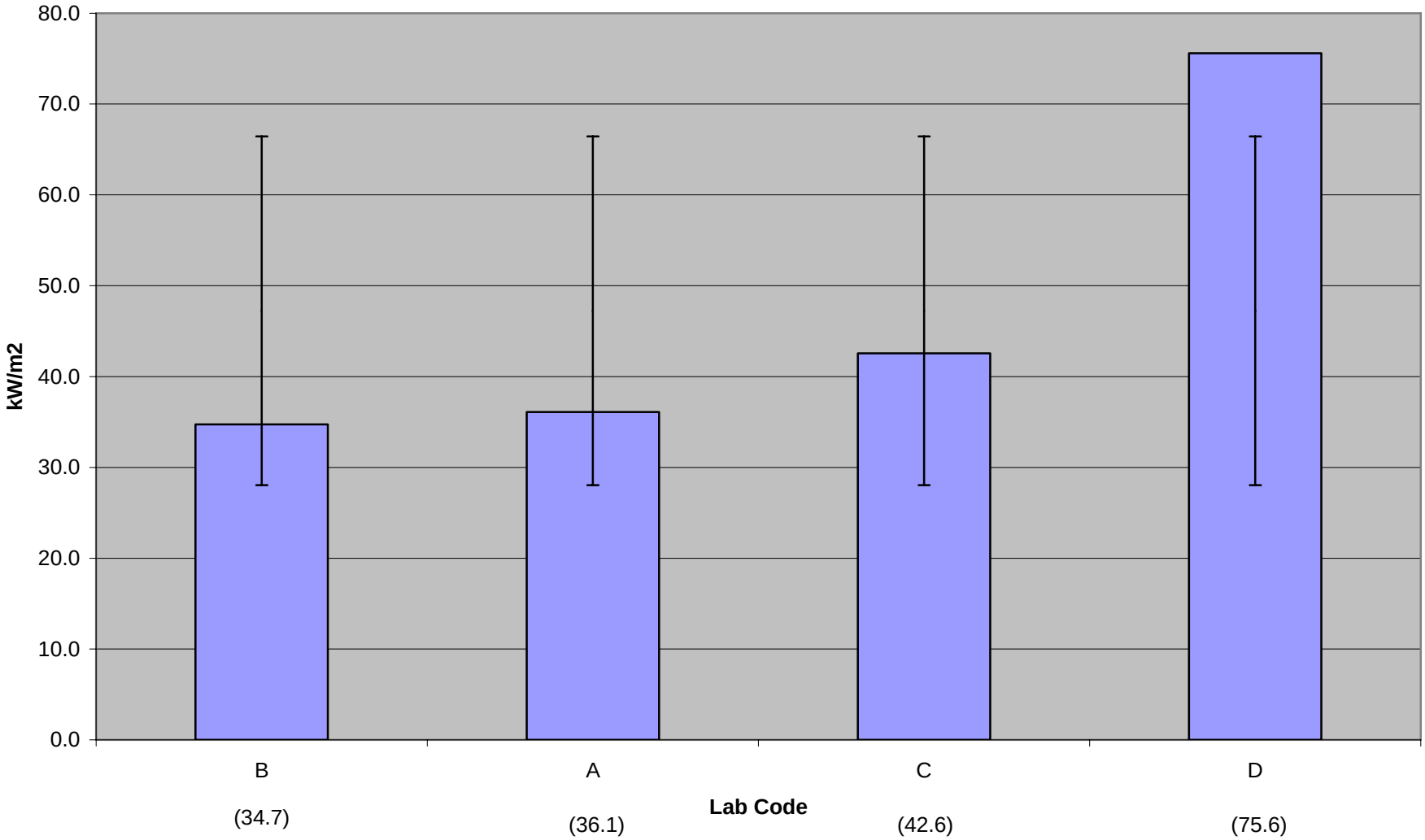
Schneller Panel - Time to Peak HRR
% Standard Deviation = 17.4%



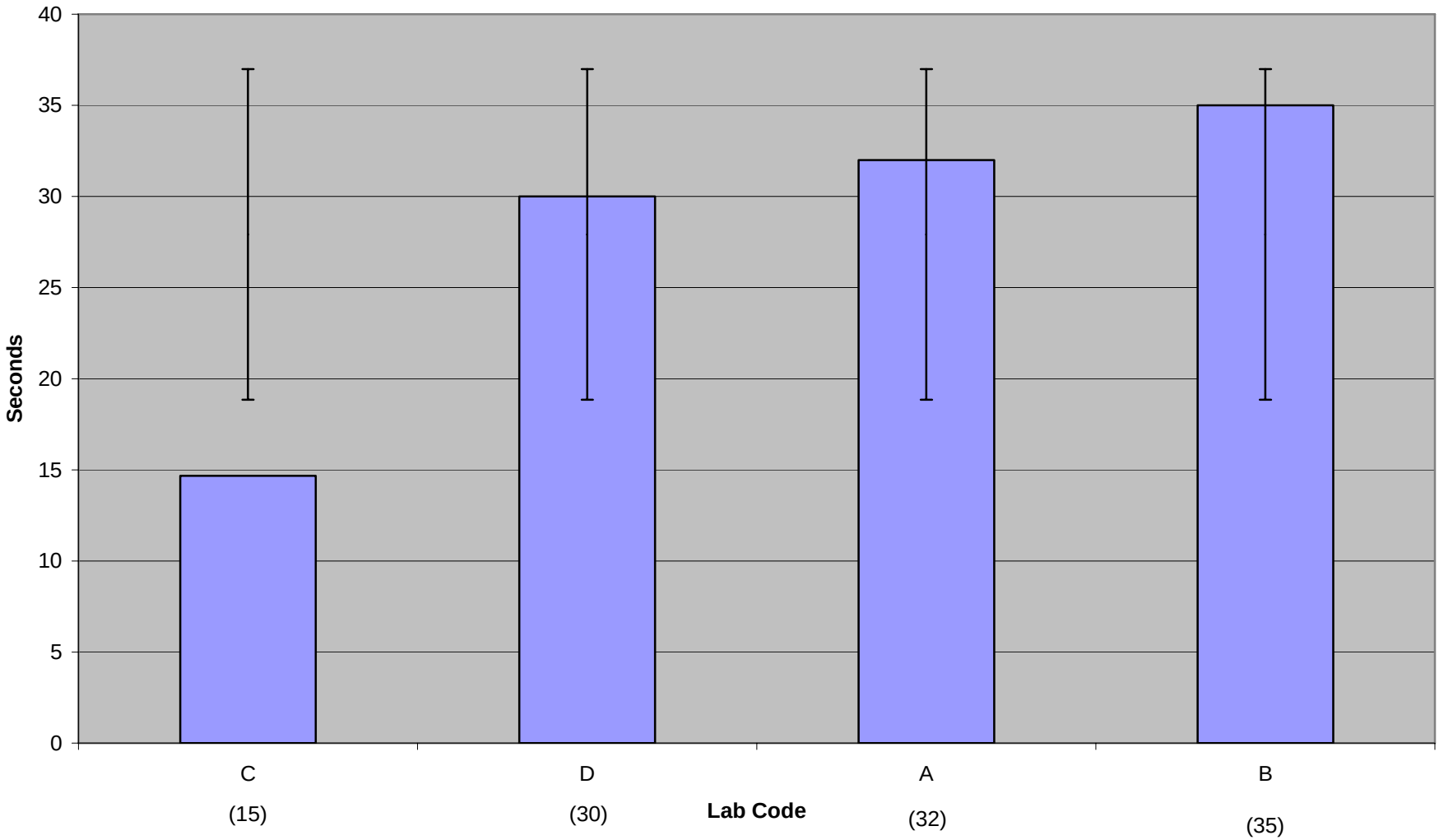
Schneller - 2 minute Total HRR
% Standard Deviation = 48.9%



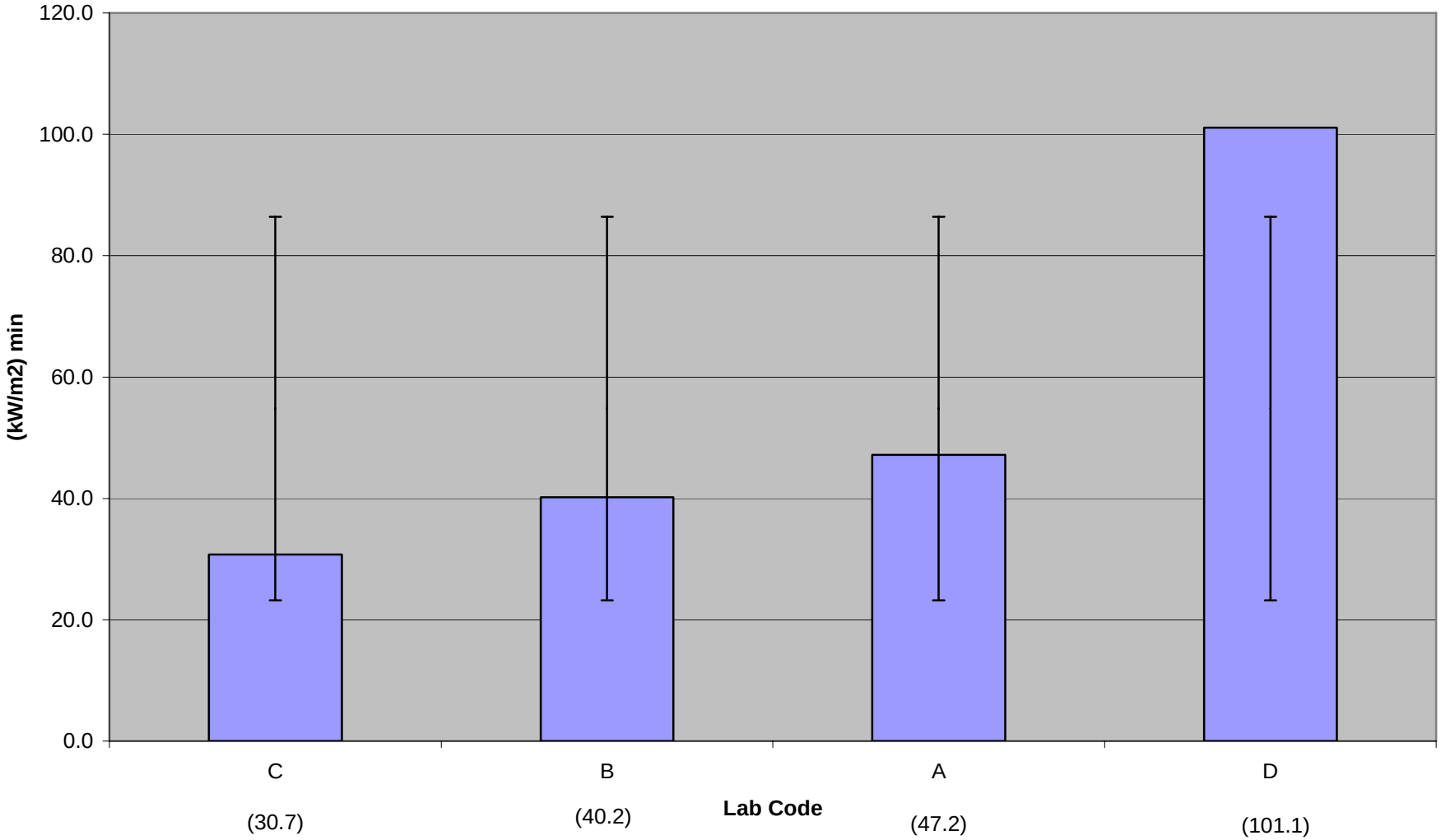
Marker Panel - Peak HRR
% Standard Deviation = 40.7%



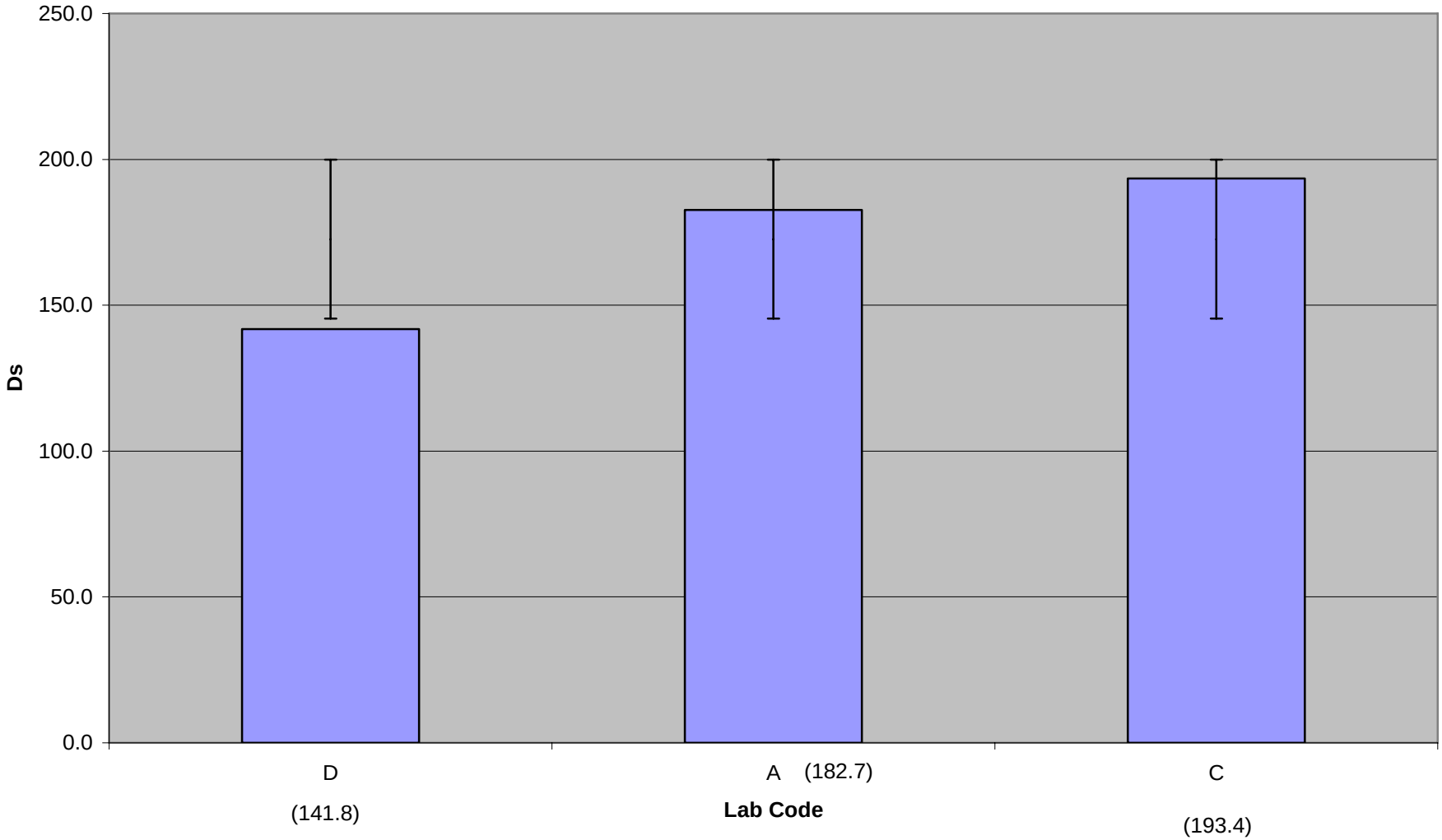
Marker Panel - Time to Peak HRR
% Standard Deviation = 32.5%



Marker Panel - 2 Min Total HRR
% Standard Deviation = 57.6%

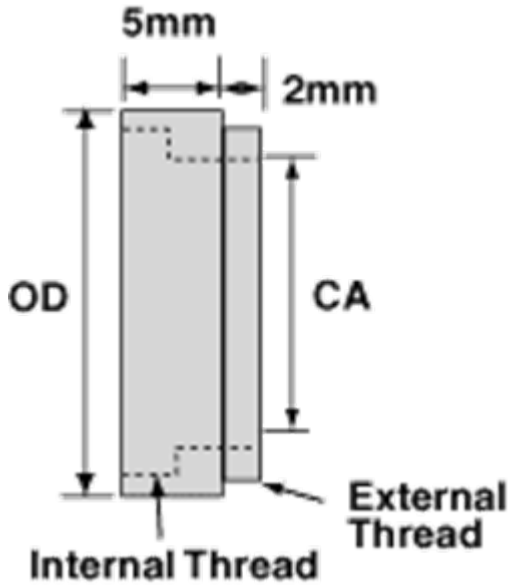


Schneller Panel - Max Ds during 4 minutes
% Standard Deviation = 15.8%



NBS Photometric System Round Robin

- FAA Is Currently Conducting A Round Robin Check Out Of The NBS Photometric System Using Neutral Density Light Filters
- These Filters Provide A Linearity Check Of Five Data Points



NBS Photometric System Round Robin

- No Furnace Heat Or Pilot Burner Required
- Zero Then Span system
  - Gradually Slide Filter Over Lower Glass Window
- 12 Domestic Labs Have Participated To Date
- Filter Information:
  - Edmund Optics
  - http://www.edmundoptics.com/onlinecatalog/DisplayProduct.cfm?productid=1523
- Filters Available For International Lab Testing Within The Next Few Weeks.

NBS Furnace

- NBS Furnace Upgrade
  - Longer Service Life Of Heating Element.
- Experimental Furnace Endurance Testing Progress
  - Incoloy Vs. Inconel
  - Approx. 742 Hours Of Operation
  - 43 Cycles
  - 28 Samples

Visit To Vatell Corp.

- Calibration Method
  - Differed From What The FAA Has Been Doing
    - ❖ Ramping Heat Up During Calibration Vs. Down
  - New Study In Progress To Measure Any Differences Between Procedures
- Observed Re-Coating Techniques
  - 1000 - 1B's (Lower Range, Most Common)
    - Black Velvet
  - 1000 - 1A's
    - Krylon
- Visit To Medtherm Corp. Slated For Early 2009

New FAA Equipment

- FAA Has Recently Purchased A New:
  OSU Heat Release Rate Apparatus
  – Fire Test Technology Ltd.
  NBS Smoke Chamber
  – Newport Scientific, Inc.
- Due To Arrive In the Next Few Weeks
- Facility Being Painted
- Installed Once Complete
- Original Equipment Will Remain Available For Special Testing And Occasional Training

Maintenance Tips & Reminders

- **OSU**
  - Inspect And Clean Lower Air Distribution Plate On A Regular Basis
  - Keep The Upper Cone Walls And Chimney Clean
- **NBS**
  - Remember To Clean Windows Before Each Test (Top Then Bottom)
  - Ensure Proper Alignment Of Pilot Tubes To Sample Face

Next Steps

- International Labs Who Would Like To Participate In The NBS Photometric System Round Robin Please Contact The FAA
- Complete Study To Measure Any Differences Between Heat Flux Gage Calibrating Procedures
- FAA Remains In The Process Of Updating Chapter 6 Of The FAA Handbook (NBS)
    - Thank You For Comments On Chapter 6 Updates
- FAA Contact Information:

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