

OSU & NBS March Materials Meeting

Materials Working Group

Michael Burns, FAA Tech Center

June 17th & 18th, 2008



Federal Aviation
Administration



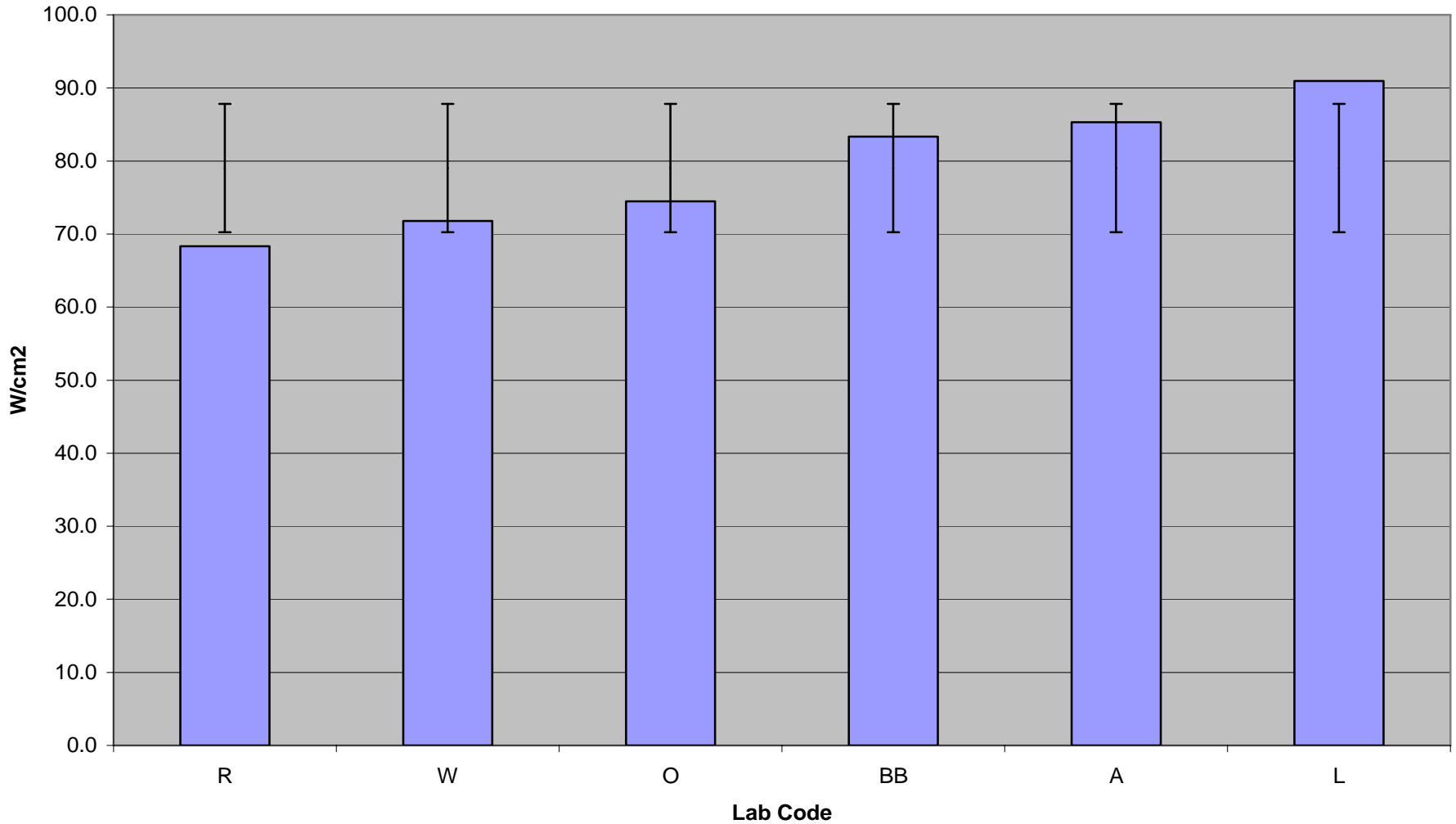
Agenda

- Present results of mini round robin
- Any progress to inspection of equipment?
- NBS furnace update
- Photometric System Round Robin
- Next steps

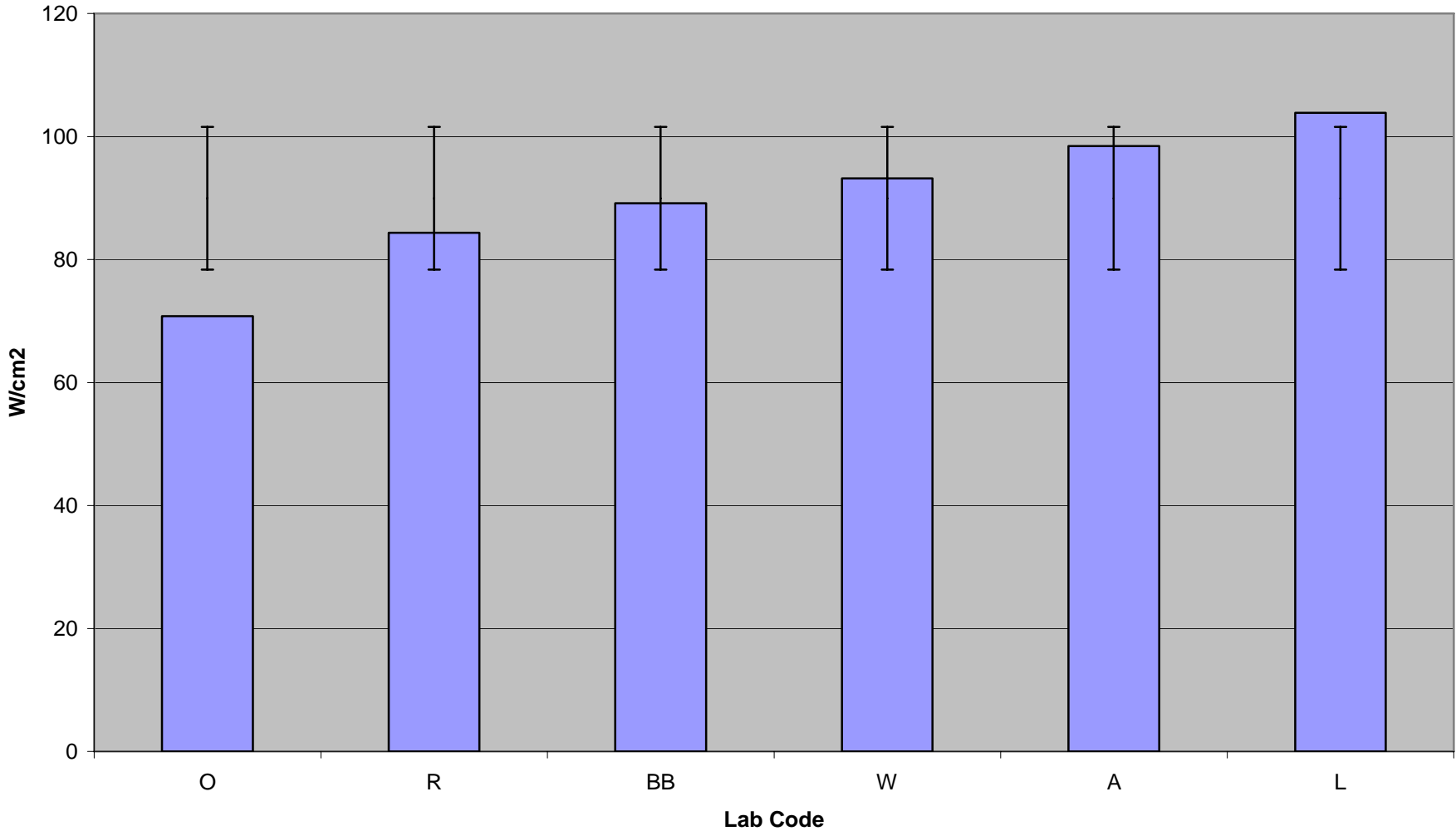
2007 Independent Mini-Study

- **The follow-on 'Mini-Study' has been completed**
- **Review included an on site visit as well as the testing of two honeycomb panels identified as 7800 and S-SCCP for the OSU and 7700, 7800 for the NBS**
- **Data presented are tests made prior to repairing any discrepancies that were found during visit**
 - One Lab was able to complete repairs and run panel S-SCCP (OSU) a second time
- **OSU data is presented as Peak Heat Release Rate, 2 minute Total Heat Release Rate, Time to Peak and a one standard deviation bracket**
- **NBS data is presented as maximum optical density observed during the four minute test and a one standard deviation bracket**

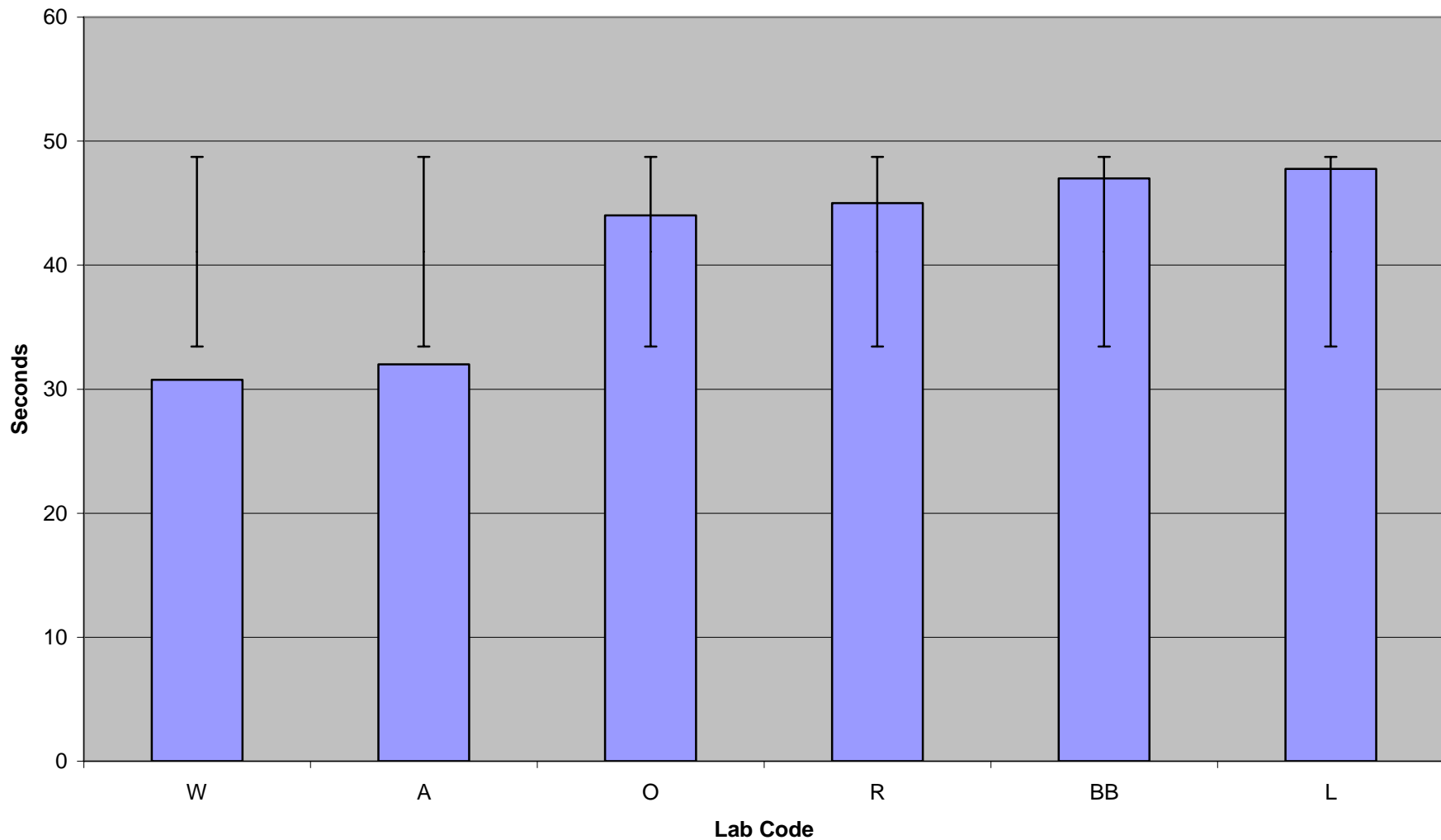
7800 Panel - PEAK HR
AVG 79, %STDEV 11.1%



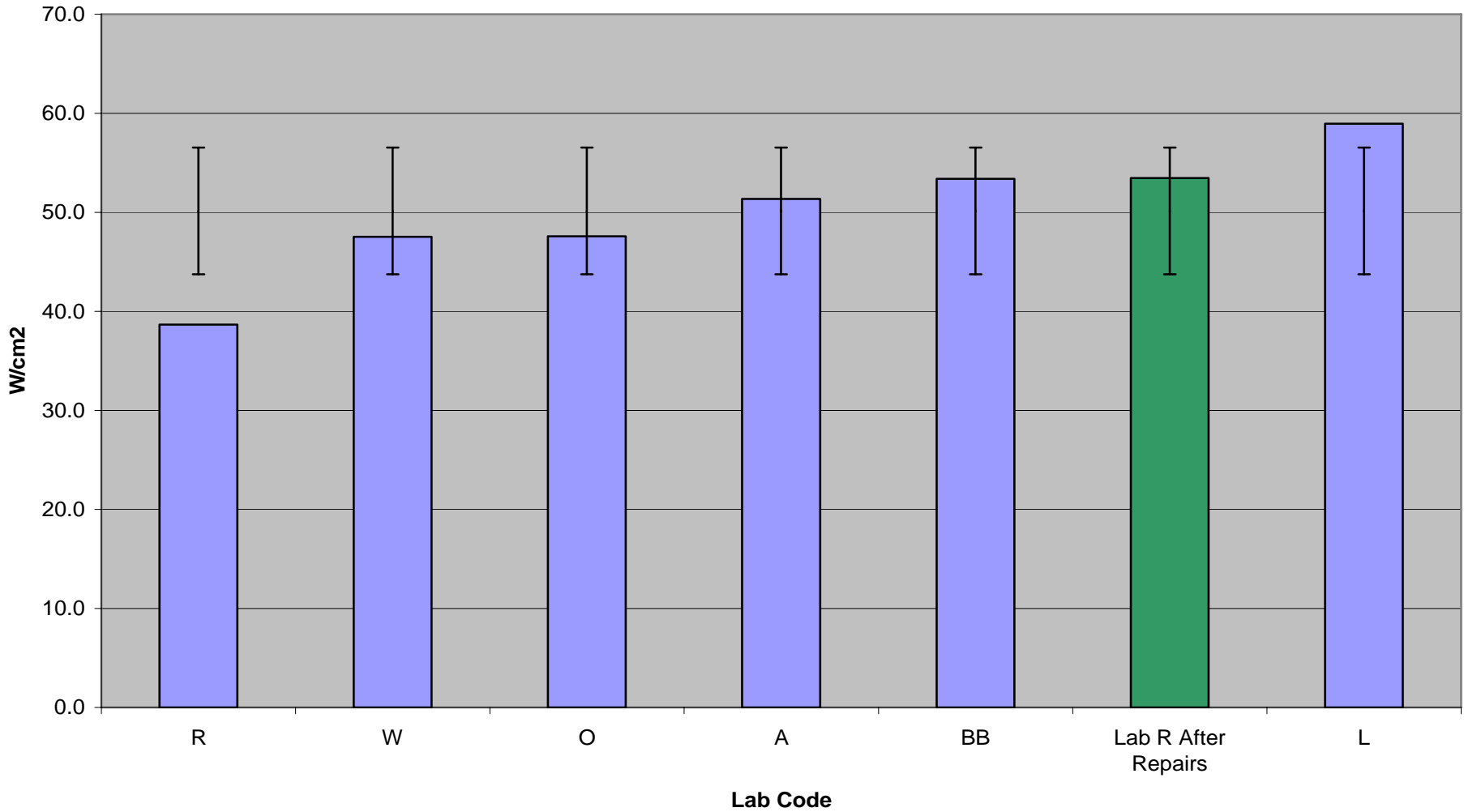
7800 Panel - TOTAL HRR
AVG 90, %STDEV 12.9%



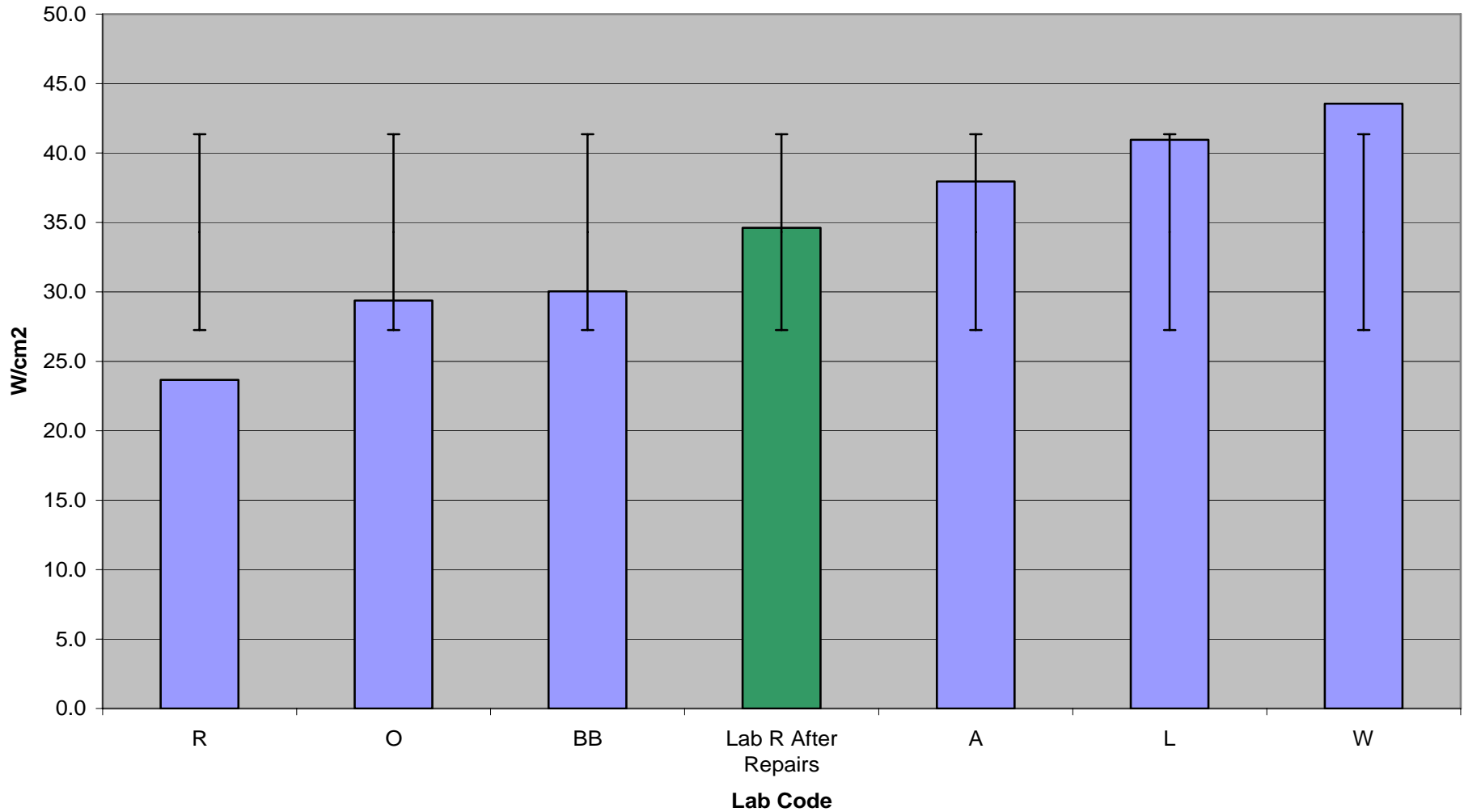
7800 Panel - TIME TO PEAK
AVG 41, %STDEV 18.6%



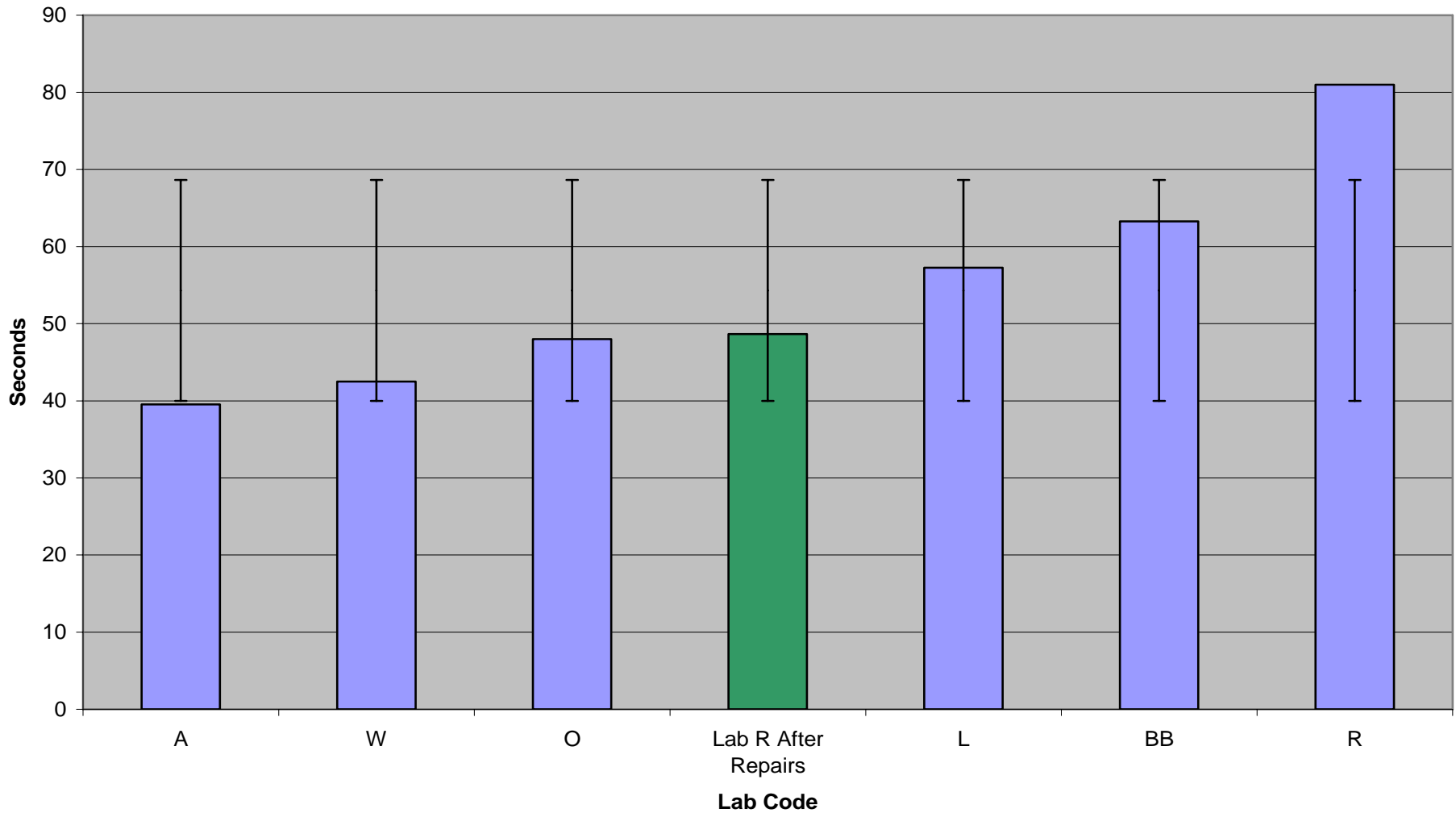
S-SSCP Panel - PEAK HR
AVG 50, %STDEV 13.8%



S-SSCP Panel - TOTAL HRR
AVG 34, %STDEV 22.6%



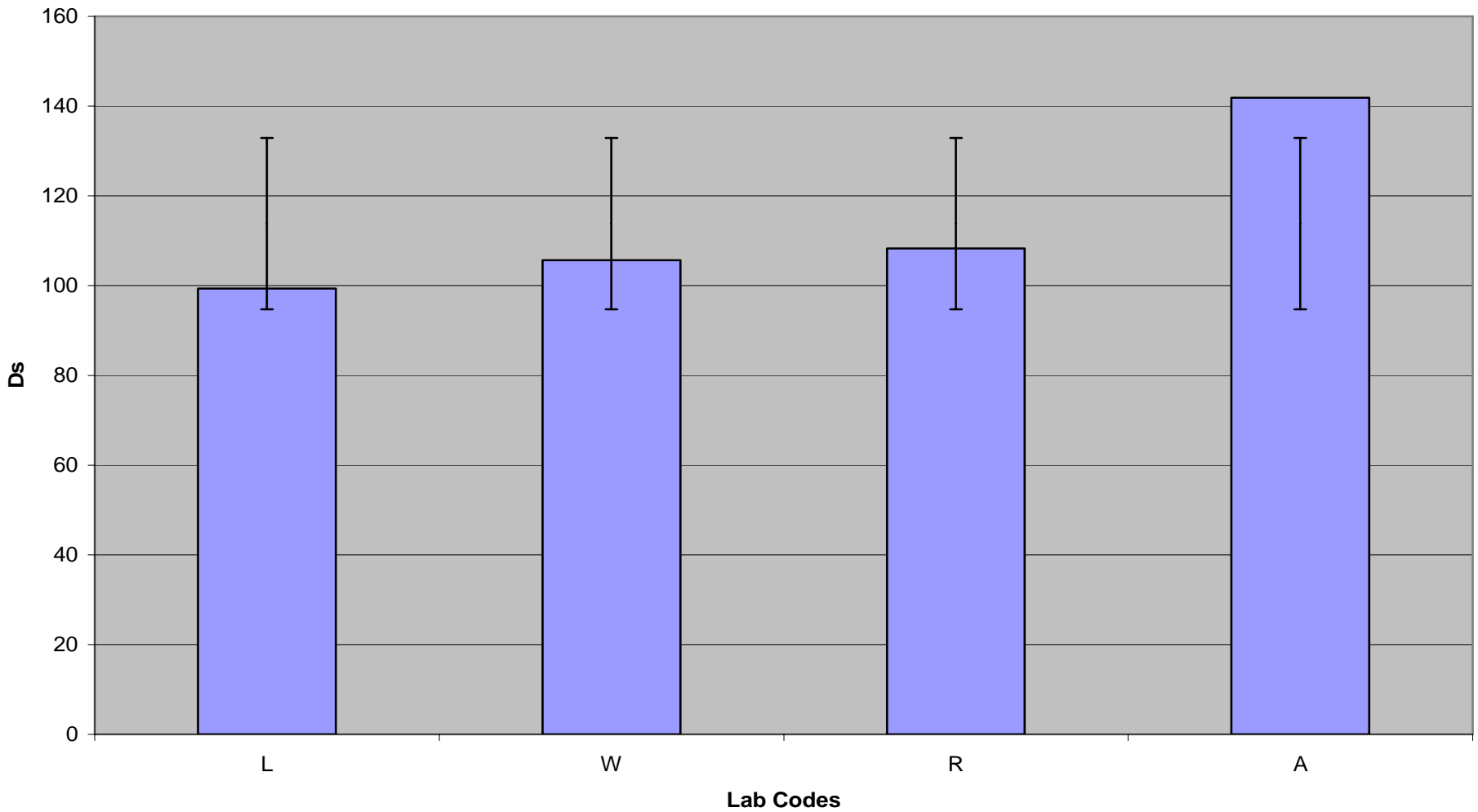
S-SSCP Panel - TIME TO PEAK
AVG 55, %STDEV 28.0%



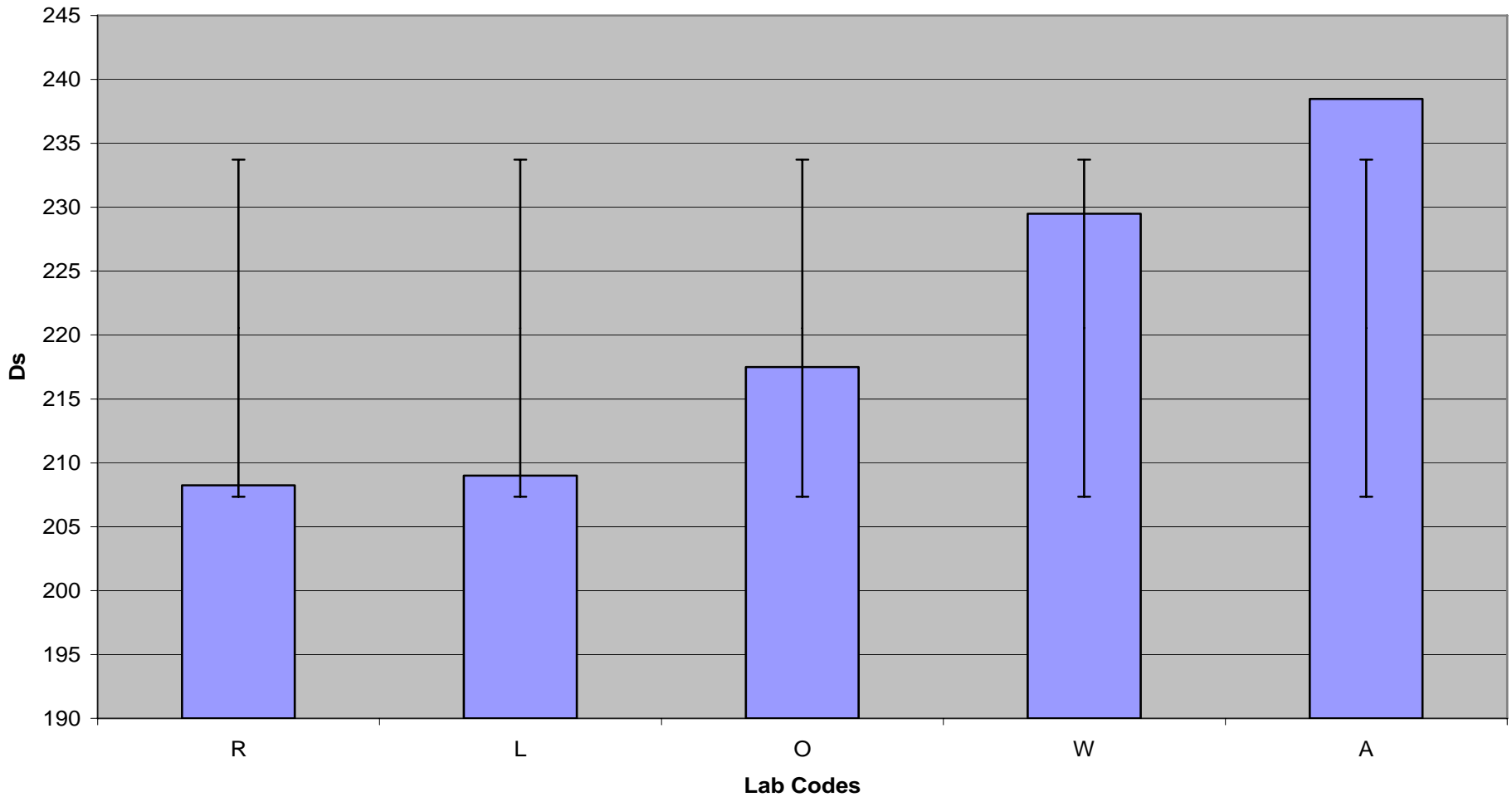
NBS Test Results



Sample 7700 Ds Max during 4 minutes
Avg 114, % STD 16.8



Sample 7800 Ds Max during 4 minutes
Avg 221, % STD 6.0



Following Mini Study, FAA Requested All Participating Labs to:

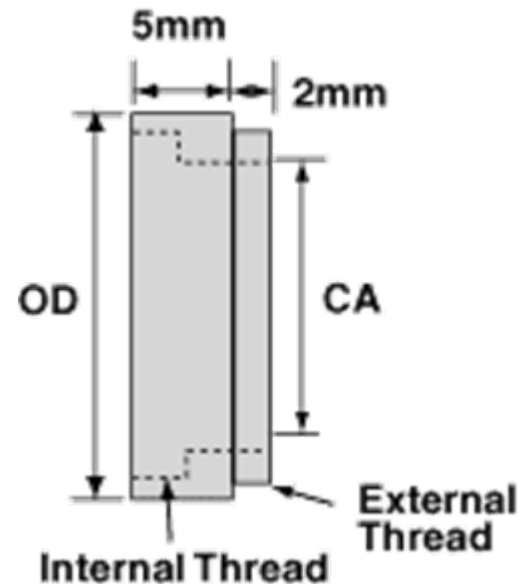
- **Review mini-study findings posted on the FAA Fire Safety web site**
 - Do you have similar problems (OSU & NBS)?
- **Conduct thorough internal review of equipment and procedures**
- **Review must address the following issues:**
 - List discrepancies found during inspection
 - Course of action
 - Estimated completion date for all necessary repairs
- **Notify FAA once review is complete**

NBS Furnace

- **FAA has been informed that any manufacturing defect previously noted has been corrected and that there is no longer a dark eye observed in the center of the furnace**
- **Updated furnace drawing specifications are nearly complete and will be in the next update of Chapter 6.**
- **FAA is working with manufacturers of the NBS furnace elements to research better materials that can be used for longer service life**

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

- **Tests are conducted without furnace heat or pilot burner operation**
- **After zeroing then spanning the system, optical density readings are obtained by gradually sliding the filter over the lower glass panel in the chamber**
- **Information on the light filters can be found on the following web site through Edmund Optics**
 - <http://www.edmundoptics.com/onlinecatalog/DisplayProduct.cfm?productid=1523>
- **Please contact me if your Lab would like to participate**

Next Steps

- **FAA is in the process of updating Chapter 6 of the FAA Handbook (NBS)**
 - Main focus will address such issues as furnace specification, Heat flux gage/Radiometer use and photometric system
 - Comments on Chapter 6 will be accepted through 8/1/2008
 - Chapter 5 (OSU) to follow
- **FAA Contact Information:**
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 - +1 (609) 485-4985

QUESTION & ANSWER

**ANY QUESTIONS, COMMENTS OR
SUGGESTIONS?**

