

SPECIFICATIONS FOR PR# _____

Large Area Black Body Target

PERFORMANCE:

Total clear area of black body surface: 14 inches by 14 inches square

Usable/stable area: >80% of total area (> 156 square inches) in a single zone centered on target

Emissivity: > 0.95

Absolute temperature range: 10 to 80 degrees Celsius or better

Differential temperature range: -15 to 50 degrees Celsius or better

Temperature accuracy : <0.01 degrees Celsius for settings within 25 degrees C of ambient temperature

Temperature uniformity: <0.025 degrees Celsius across active/stable area for each degree difference from ambient

Stability: better than 0.005 degrees Celsius when operated within 10 degrees Celsius of ambient temperature

OTHER requirements:

Calibrated (to NIST standards) radiation heads that are not dependent on controller properties. Calibration can be easily accomplished via removal and replacement of sensors with no need to send entire head for calibration. This is VERY IMPORTANT since the unit may eventually be combined with other instruments/sensors and removal of entire head would lead to significant impacts on experiments.

Portability, with weight < 50kg

Separate controller, with cable length at least 8 feet from controller to black body head and with both ethernet and RS232 communication ports.