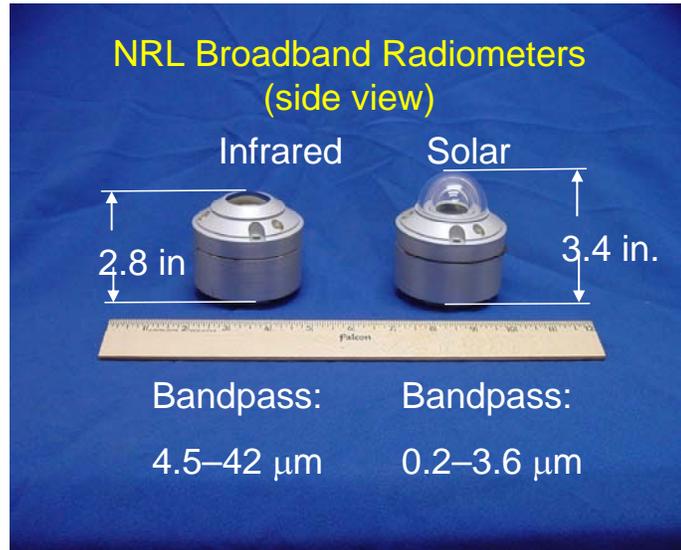


Broadband Radiometers (BBR)



Description:

The **Broadband Radiometers (BBR)** consist of modified **Kipp & Zonen CM-22 pyranometers** (to measure solar irradiance) and **CG-4 pyrgeometers** (to measure IR irradiance) (see <http://www.kippzonen.com/>). The modifications to make these instruments more suitable for aircraft use include new instrument housings and amplification of the signal at the sensor. The instruments are run in current-loop mode to minimize the effects of noise in long signal cables. The housing is sealed and evacuated to prevent condensation or freezing inside the instrument. **A solar and IR radiometer pair will be mounted on both the top and the bottom of the NASA P-3 for ARCTAS.** Each BBR has the following properties:

Field-of-view:	Hemispheric
Temperature Range:	-65C to +80C
Estimated Accuracy:	3-5%
Data Rate:	10Hz

Measured Quantities:

Directly measured:	Down- and Up-welling Solar and IR Irradiance (W/m²)
Derived quantities:	Net Irradiance, Radiative Forcing, Absorption, Heating Rates, Albedo

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