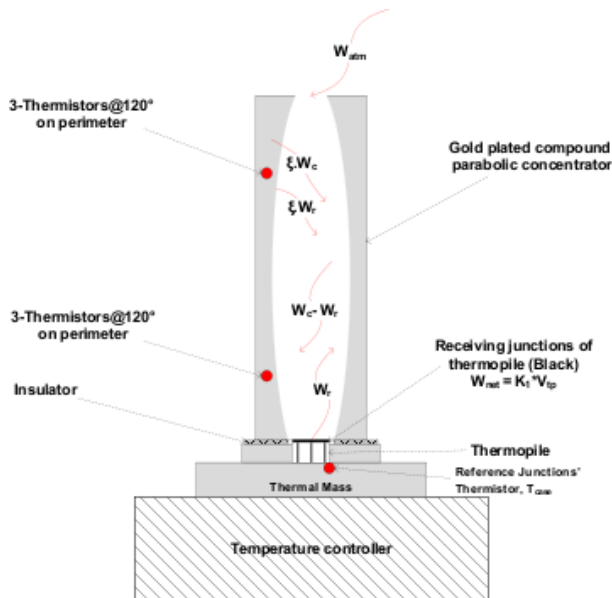


Results of Second Outdoor Comparison Between Absolute Cavity Pyrgeometer (ACP) and Infrared Integrating Sphere (IRIS) Radiometer at Physikalisch-Meteorologisches Observatorium Davos (PMOD)

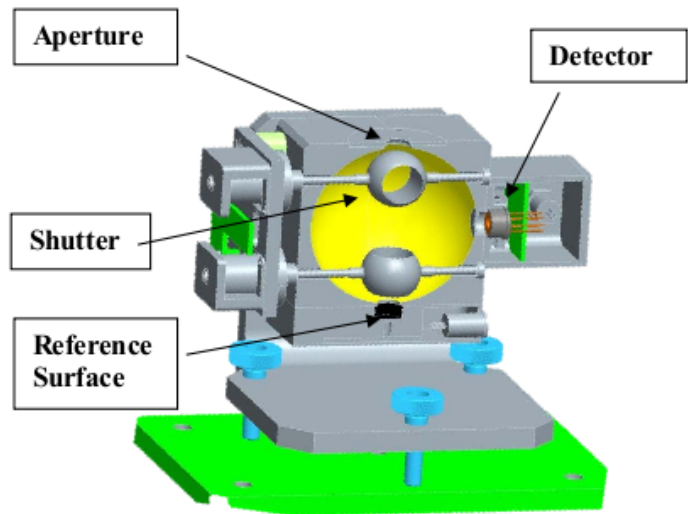
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The Absolute Cavity Pyrgeometer (ACP) and InfraRed Integrating Sphere radiometer (IRIS) are developed to establish a world reference for calibrating pyrgeometers with traceability to International System of Units (SI). The two radiometers are un-windowed with negligible spectral dependence, and traceable to SI units through the temperature scale (ITS-90). The second outdoor comparison between the two designs was held from September 30 to October 11, 2013 at the Physikalisch-Meteorologisches Observatorium Davos (PMOD). The difference between the irradiance measured by ACP and that of the IRIS was within 1 W/m^2 (3 IRISs: PMOD + Australia + Germany). From the first and second comparisons, a difference of $4\text{-}6 \text{ W/m}^2$ was observed between the irradiance measured by ACP and IRIS and that of the interim World Infrared Standard Group. This presentation includes results from the first and second comparison in an effort to establish the world reference for pyrgeometer calibrations, a key deliverable for the World Meteorological Organization, NOAA, and the Department of Energy-Atmospheric System Research.



Absolute Cavity Pyrgeometer (ACP)



InfraRed Integrating Sphere (IRIS) Radiometer

Figure 1. Left: ACP. Right: IRIS Radiometer.