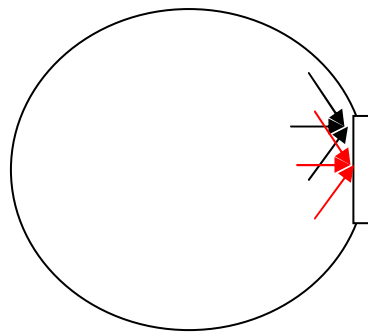


# Irradiance calibration with a sphere

## First configuration

Detector is on the output port of the sphere

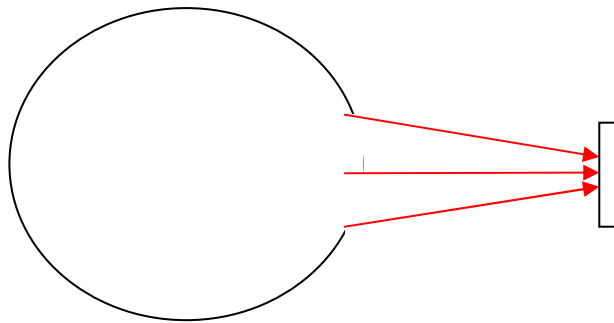


Flux is arriving on the detector with a  $180^\circ$  FOV, so irradiance of the sphere is calculated as being the flux in a  $180^\circ$  FOV per unit surface.

Now if the detector does not have a  $180^\circ$  FOV, or if its response is dependant of incident light angle, the flux received by the detector is less so the irradiance on the detector is not the same as the sphere irradiance.

## Irradiance calibration with a sphere

### Second configuration



Now the detector is placed at a certain distance of the sphere. It is possible to measure or to calculate the irradiance at the level of the detector.

The distance between detector and sphere has to be enough big so that the irradiance on the detector is uniform.

Now the detector is calibrated with a light which is quite collimated. This calibration will be valid for measurement of light quite collimated, because this set-up does not calibrate the fact that the response of the detector can be different depending on angle.

Conclusion :

Measurement set-up has to be as near as possible from calibration set-up to be 100% valid.