

# Calibration Record of the RSR using LI-COR PY19771

This page shows the calibration history of the Rotating Shadowband Radiometer (RSR) using LI-COR pyranometer PY19771. The responsivity used to transform the irradiance voltage data into  $Wm^{-2}$  is a running average of the responsivity obtained over the years. This reduces the variation of the responsivities associated with the random uncertainty of a given calibration (See Figs. 1 & 2). The rate of change of the pyranometer responsivity is related to exposure to UV radiation. The responsivity values used are in the comprehensive format files or the site files. The responsivities measured during specific calibrations are listed in Table 1.

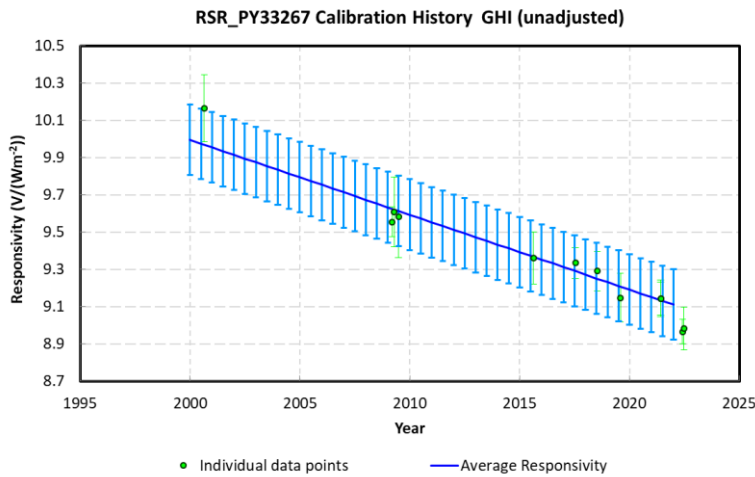


Figure 1: All calibration data plotted against time with long-term trend

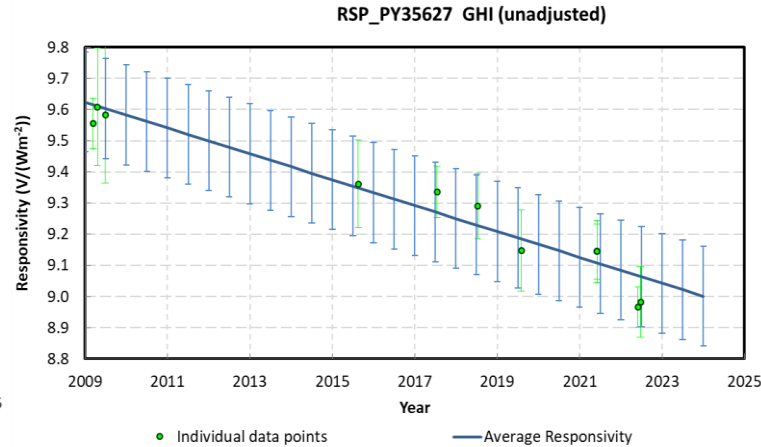


Figure 2: Calibration data plotted against time for 10 year trend

### Information provided in the Table 1 are:

- Date of calibration
- Responsivity value
- Uncertainty at the 95% level of confidence
- Average SZA over which the calibration value was obtained
- Average temperature during the calibration
- Type of calibration and instruments used
- Location of calibration
- Notes

Table 1: Calibration History for RSR\_PY19771

	Calibration Date	Responsivity ( $\mu V/Wm^{-2}$ )	Uncertainty ( $\mu V/Wm^{-2}$ )	Average SZA ( $^{\circ}$ )	Temperature (C)	Calibration Type	Location	Notes
1	2017/07/29	9.5684736	0.0877437	44.98905	27.10302	CMP22_120363 R=9.6916	CYW	Unadjusted mV
2	2018/07/25	9.633509254	0.147294202	44.91031729	31.31634684	CMP22_120363 R=9.6939	CYW	Unadjusted mV

3	2021/07/28	9.582658983	0.093983298	44.87510569	27.93847565	NIP_17668E6 R=8.621, CMP22_120363 R=9.7005	HEO	Unadjusted mV
4	2021/07/28	9.422740974	0.092669946	44.87510569	27.93847565	NIP_17668E6 R=8.621, CMP22_120363 R=9.7005	HEO	Adjusted mV
5	2022/07/23	9.462561942	0.120901449	43.95048026	-	NIP_17668E6 R=8.621, CMP22_120363 R=9.7005	HEO	Adjusted mV
6	2022/08/13	9.665161532	0.214308563	45.08711486	30.30837838	NIP_23385E6 R=8.5247, Shenk_1330 R=14.3501	HEO	Adjusted mV