

## Calibration Record of the RSR using LI-COR PY21090

This page shows the calibration history of the Rotating Shadowband Radiometer (RSR) using LI-COR pyranometer PY21090. 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.

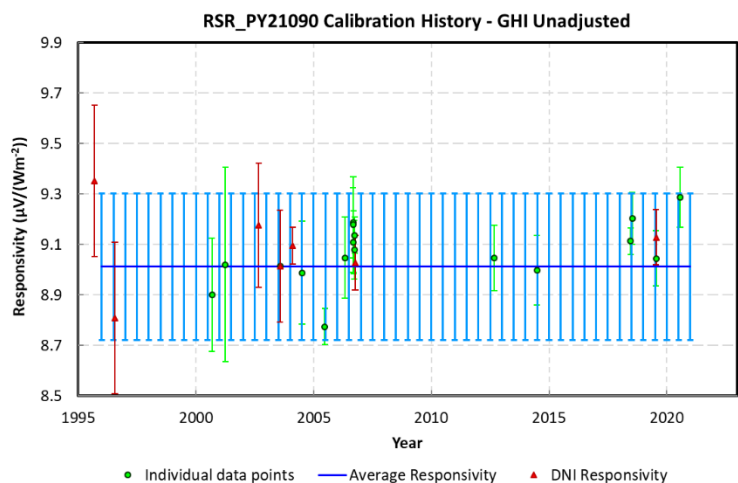


Figure 1: All calibration data plotted against time with long-term trend

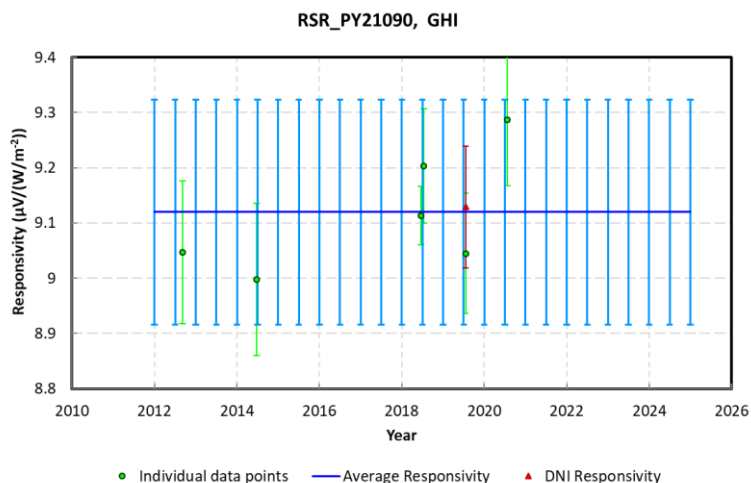


Figure 2: Calibration data plotted against time for 10 year trend

### 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\_PY21090

	Calibration Date	Responsivity ( $\mu V/Wm^{-2}$ )	Uncertainty ( $\mu V/Wm^{-2}$ )	Average SZA ( $^{\circ}$ )	Temperature (C)	Reference Instruments	Location	Notes
1	1995/09/11	9.3530	0.3000			LICOR_PY21284 R=11.895? PSP_18550F3 R=8.3640?, NIP_17009E6 R=8.334	Eugene, OR	unadjusted

2	1996/07/20	8.8110	0.3000			PSP_13365F3 R=7.749, NIP_17009E6 R=8.334, PSP_18560F3 R=8.3486?	Eugene, OR	
3	2000/09/06	8.8997	0.2243	45.30	20.70	NIP_17668E6 R=8.6373, PSP_13365F3 R=7.7118	Hermiston, OR	
4	2001/04/04	9.0206	0.3857	44.94	12.21	NIP_17668E6 R=8.6373, PSP_13365F3 R=7.6971	Hermiston, OR	
5	2002/09/03	9.1755	0.2462	53.35	17.00	NIP_17668E6 R=8.6373, PSP_13365F3 R=7.6825	Hermiston, OR	
6	2003/07/30	9.0144	0.2226	44.93	34.96	NIP_17668E6 R=8.6373, PSP_13365F3 R=7.5945	Hermiston, OR	
7	2004/02/11	9.0961	0.0730	57.82	11.39	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
8	2004/07/04	8.9883	0.2049	44.98	25.75	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
9	2005/06/25	8.7750	0.0703	45.28	24.43	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
10	2006/04/27	9.0473	0.1608	45.03	16.97	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
11	2006/09/01	9.1871	0.1393	45.05	25.32	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	

12	2006/09/05	9.1786	0.1894	44.97	26.15	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
13	2006/09/08	9.1094	0.1239	44.89	24.37	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
14	2006/09/22	9.0794	0.1160	45.22	23.30	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
15	2006/09/29	9.1371	0.0718	46.76	24.17	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
16	2006/10/07	9.0287	0.1085	50.30	19.76	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
17	2012/09/05	9.0467	0.1291	44.81	23.45	Licor_PY22978 R=14.6629	Ashland, OR	
18	2014/06/24	8.9980	0.1381	42.21	19.39	Licor_PY22978 R=14.6629	Ashland, OR	
19	2018/06/19	9.1138	0.0528	45.15	27.49	ACR R=1.0002, CMP22_110265 R=8.9179	Eugene, OR	
20	2018/07/12	9.2032	0.1031	44.96	29.47	CMP22_120363 R=9.6939	Hermiston, OR	
21	2019/07/19	9.1290	0.1100	44.97	-	NIP_17668E6 R=8.6121, CMP22_120363 R=9.6981	Hermiston, OR	
22	2019/07/20	9.0449	0.1089	44.97	-	NIP_17668E6 R=8.6121, CMP22_120363 R=9.6981	Hermiston, OR	
23	2020/07/23	9.2873	0.1201	44.97	27.70	NIP_17668E6 R=8.6121, CMP22_120363 R=9.6981	Hermiston, OR	