

# Calibration History of the Eppley PSP # 13365F3 Pyranometer

This page shows the calibration history of the PSP 13365F3. 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.

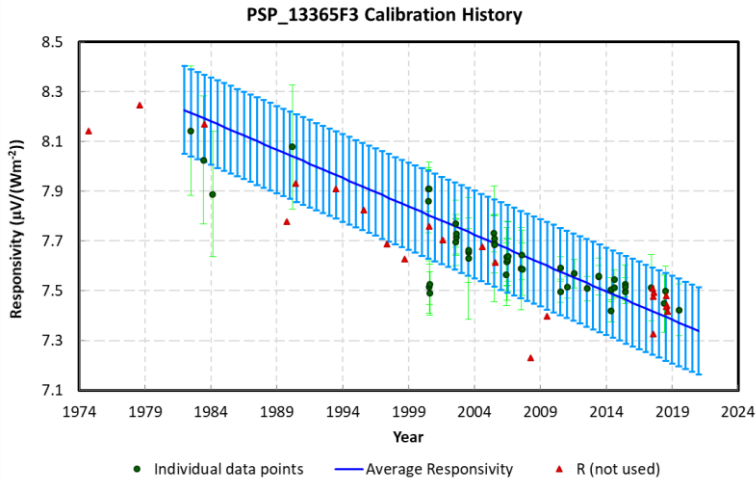


Figure 1: All calibration data plotted against time with long-term trend

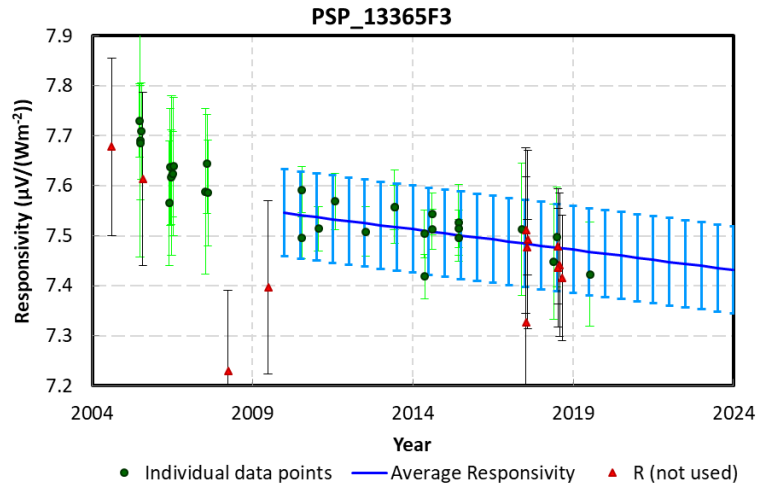


Figure 2: Calibration data plotted against time for 10 year trend

## 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 information for PSP 13365F3 (P1)**

	Calibration Date	Responsivity ( $\mu V/Wm^{-2}$ )	Uncertainty ( $\mu V/Wm^{-2}$ )	Average SZA ( $^{\circ}$ )	Temperature (C)	Reference Instruments	Location	Notes
1	1974/09/14	8.3300	0.2606		24.00	Factory	Factory	
2	1978/07/21 to 1978/08/11	8.3300	0.3299			PSP_14886F3	Boulder, CO	Sum of 10 minute intervals throughout the day

3	1982/06/23	8.3600	0.2605			PSP_21698F3 R=11.04 factory	Eugene, OR	
4	1983/06/03 to 1983/06/06	8.0254	0.2568			PSP_23621F3_R=9.49, PSP_23620F3_10 R=8.99	Eugene, OR	
5	1983/06/25 to 1983/07/07	8.2500	0.3267			PSP	Boulder, CO	
6	1984/02/21	7.8886	0.2524			PSP_24041F3 R=9.99	Eugene, OR	
7	1989/10/01	7.8630	0.3889			BORCAL	NREL, SRRL	
8	1990/02/27 to 1990/03/01	8.0780	0.2500			PSP_17853F3 R=7.47	Eugene, OR	
9	1990/06/01	7.9300	0.3172			BORCAL	NREL, SRRL	
10	1993/06/13 to 1993/06/20	7.8630	0.3006	50.00		BORCAL	NREL, SRRL	
11	1995/07/26 to 1995/07/27	7.7490	0.3130	50.00		BORCAL	NREL, SRRL	
12	1997/05/09	7.6870	0.4227		15.00	BORCAL	NREL, SRRL	
13	1998/09/03	7.6280	0.3508		29.30	BORCAL	NREL, SRRL	
14	2000/07/24 to 2000/07/31	7.7600	0.2085		26.80	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
15	2000/06/29	7.8603	0.1262	44.85	26.42	NIP_18948E6 R=8.1358, PSP_18560F3 R=8.5134	Eugene, OR	
16	2000/07/02	7.9081	0.0866	45.09	24.08	NIP_18948E6 R=8.1358, PSP_18560F3 R=8.5134	Eugene, OR	
17	2000/07/18	7.9093	0.1085	44.98	26.71	NIP_18948E6 R=8.1358, PSP_18560F3 R=8.5134	Eugene, OR	
18	2000/07/24	7.5153	0.1048	44.95	27.36	NIP_18948E6 R= 8.1358, Schenk_1315 R=14.89	Eugene, OR	
19	2000/08/01	7.5254	0.0813	45.13	27.98	NIP_18948E6 R= 8.1358, Schenk_1315 R=14.89	Eugene, OR	
20	2000/08/08	7.4896	0.0868	45.26	22.72	NIP_18948E6 R= 8.1358, Schenk_1315 R=14.89	Eugene, OR	
21	2001/07/28	7.5166	0.1657	45.00	30.18	BORCAL	NREL, SRRL	
22	2002/07/25	7.6950	0.0950	-	27.30	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
23	2002/07/24	7.7704	0.0950	44.95	29.01	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
24	2002/08/06	7.7145	0.0719	44.73	22.54	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
25	2002/01/22	7.7273	0.0798	44.72	22.69	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	

26	2003/07/17	7.6310	0.2454	-	28.40	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
27	2003/07/11	7.6540	0.0952	45.03	29.81	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
28	2003/07/16	7.6618	0.1303	45.04	29.01	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
29	2004/08/09	7.4904	0.1771	45.00	23.74	BORCAL	NREL, SRRL	
30	2005/06/29 to 2005/07/04	7.6900	0.2330	-	24.50	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
31	2005/07/28	7.4278	0.1729	45.00	25.04	BORCAL	NREL, SRRL	
32	2005/06/23	7.7301	0.0738	45.28	24.43	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
33	2005/06/30	7.6854	0.1145	44.88	25.83	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
34	2005/07/13	7.7095	0.0962	44.96	26.72	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
35	2006/06/22	7.6203	0.1600	-	-	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
36	2006/05/29	7.5651	0.1252	45.78	22.33	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
37	2006/06/06	7.6369	0.1172	44.95	27.22	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
38	2006/06/17	7.6167	0.0953	44.94	20.05	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
39	2006/07/07	7.6235	0.0855	45.02	26.57	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
40	2006/07/16	7.6387	0.1387	44.97	26.15	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
41	2007/07/12	7.5887	0.1650	45.18	26.52	NIP_23928E6 R=8.26, Schenk_1315 R=14.89	Eugene, OR	
42	2007/07/31	7.6438	0.0988	45.15	25.29	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
43	2007/08/10	7.5861	0.1058	45.05	23.11	NIP_18948E6 R=8.1358, Schenk_1315 R=14.89	Eugene, OR	
44	2008/03/26	7.2300	0.1600	-		Factory	Factory	
45	2009/06/26	7.3961	0.1732	-	23.43	BORCAL	NREL, SRRL	
46	2010/07/14	7.5916	0.0463	44.81	28.55	ACR, Schenk_1315 R=14.89	Eugene, OR	
47	2010/07/15	7.4958	0.0424	45.05	28.36	ACR, Schenk_1315 R=14.89	Eugene, OR	
48	2011/01/21	7.5138	0.0437	44.51	26.42	ACR, Schenk_1315 R=14.89	Eugene, OR	
49	2011/07/28	7.5686	0.0565	45.05	30.74	ACR, Schenk_1315 R=14.89	Eugene, OR	
50	2012/07/11	7.5083	0.0499	44.89	25.00	ACR, Schenk_1315 R=14.89	Eugene, OR	

51	2013/06/04	7.5567	0.0441	45.29	25.41	ACR, Schenk_1315 R=14.89	Eugene, OR	
52	2013/06/05	7.5575	0.0732	44.90	20.91	ACR, Schenk_1315 R=14.89	Eugene, OR	
53	2014/05/13	7.5039	0.0480	44.92	25.58	ACR, Schenk_1315 R=14.89	Eugene, OR	
54	2014/05/14	7.4183	0.0447	45.45	21.38	ACR, Schenk_1315 R=14.89	Eugene, OR	
55	2014/08/06	7.5439	0.0418	44.63	29.05	ACR, Schenk_1315 R=14.89	Eugene, OR	
56	2014/08/07	7.5128	0.0400	45.15	21.78	ACR, Schenk_1315 R=14.89	Eugene, OR	
57	2015/06/05	7.5261	0.0771	44.77	23.32	ACR, CMP22_120363 R=9.68217	Eugene, OR	
58	2015/06/06	7.4966	0.0358	44.73	21.63	ACR, CMP22_120363 R=9.68217	Eugene, OR	
59	2015/06/07	7.5139	0.0375	47.02	30.72	ACR, CMP22_120363 R=9.68217	Eugene, OR	
60	2017/05/26	7.5132	0.1326	45.01	22.79	ACR R=1.0005, CMP22_120363 R=9.68217	Eugene, OR	
61	2017/07/27	7.4769	0.0559	45.02	28.96	CMP22_120363 R=9.6916	Hermiston, OR	
62	2017/07/11	7.5104	0.1661	45.00	28.88	NIP_17668E6 R=8.630302026, CMP22_120363 R=9.691603485	Twin Falls, ID	
63	2017/07/14	7.3267	0.2919	49.76	24.34	NIP_17668E6 R=8.6303, CMP22_120363 R=9.6916	Dillon, MT	
64	2017/07/31	7.4919	0.1781	45.06	26.94	CMP22_120363 R=9.6916	Seattle, WA	
65	2018/05/22	7.4481	0.1150	45.00	22.00	ACR R=1.0002, SCHENK_1315 R=14.9111	Eugene, OR	
66	2018/06/26	7.4974	0.1006	45.34	23.04	ACR R=1.0002, SCHENK_1315 R=14.9111	Eugene, OR	
67	2018/07/10	7.4789	0.1154	45.01	24.82	CMP22_120363 R=9.6939	Burns, OR	
68	2018/07/28	7.4417	0.1434	45.01	20.82	NIP_17668E6 R=8.6091, CMP22_120363 R=9.6939	Dillon, MT	
69	2018/07/12	7.4368	0.1186	44.94	33.90	CMP22_120363 R=9.6939	Hermiston, OR	
70	2018/08/28	7.4155	0.1250	45.00	25.50	CMP22_120363 R=9.6939	Seattle, WA	

71	2019/07/08	7.4228	0.1045	44.85	26.63	ACR R=1.00034, CMP22_120363 R=9.6981	Eugene, OR	
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