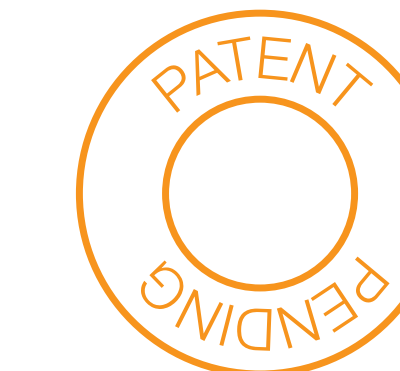


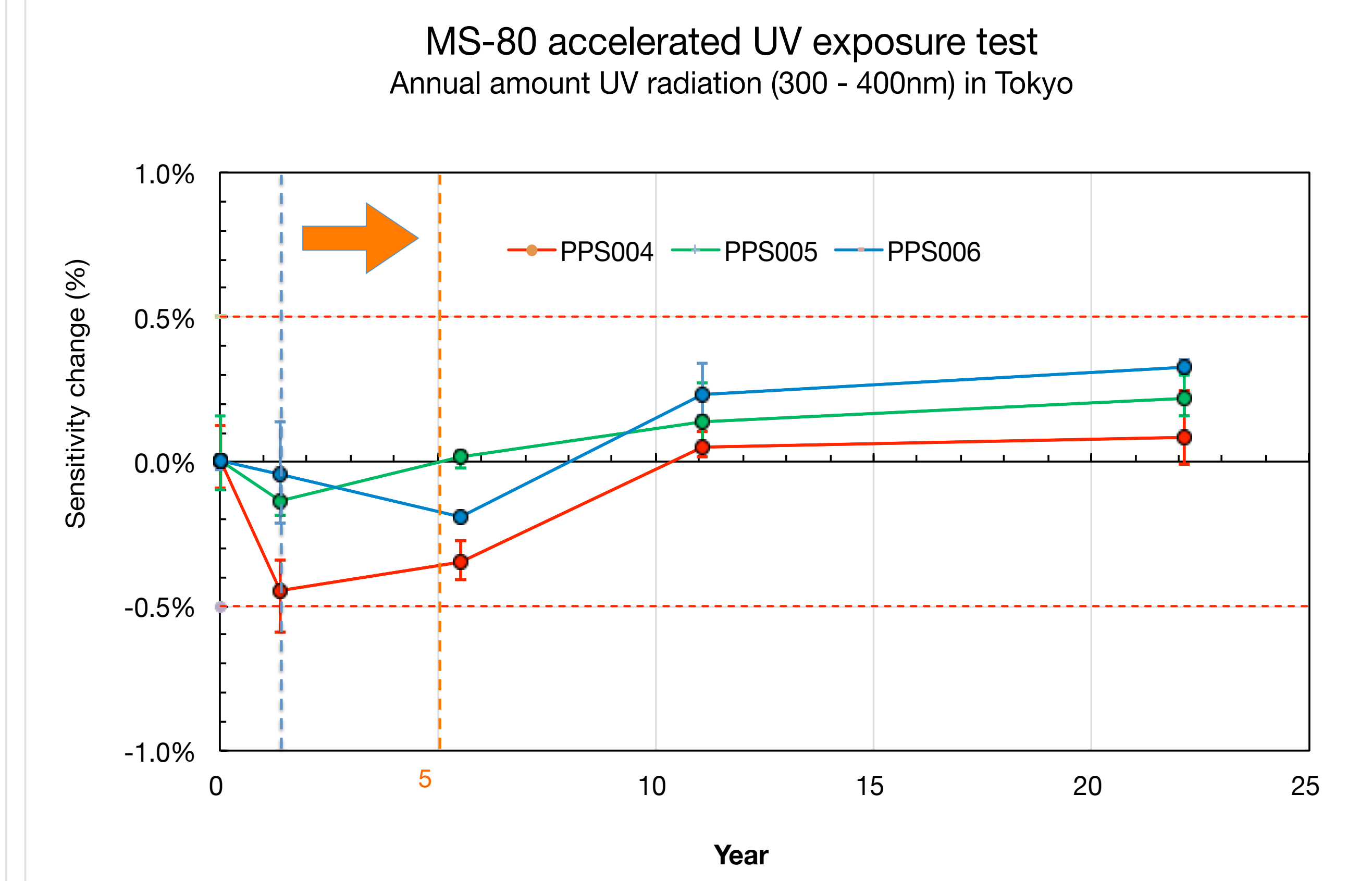
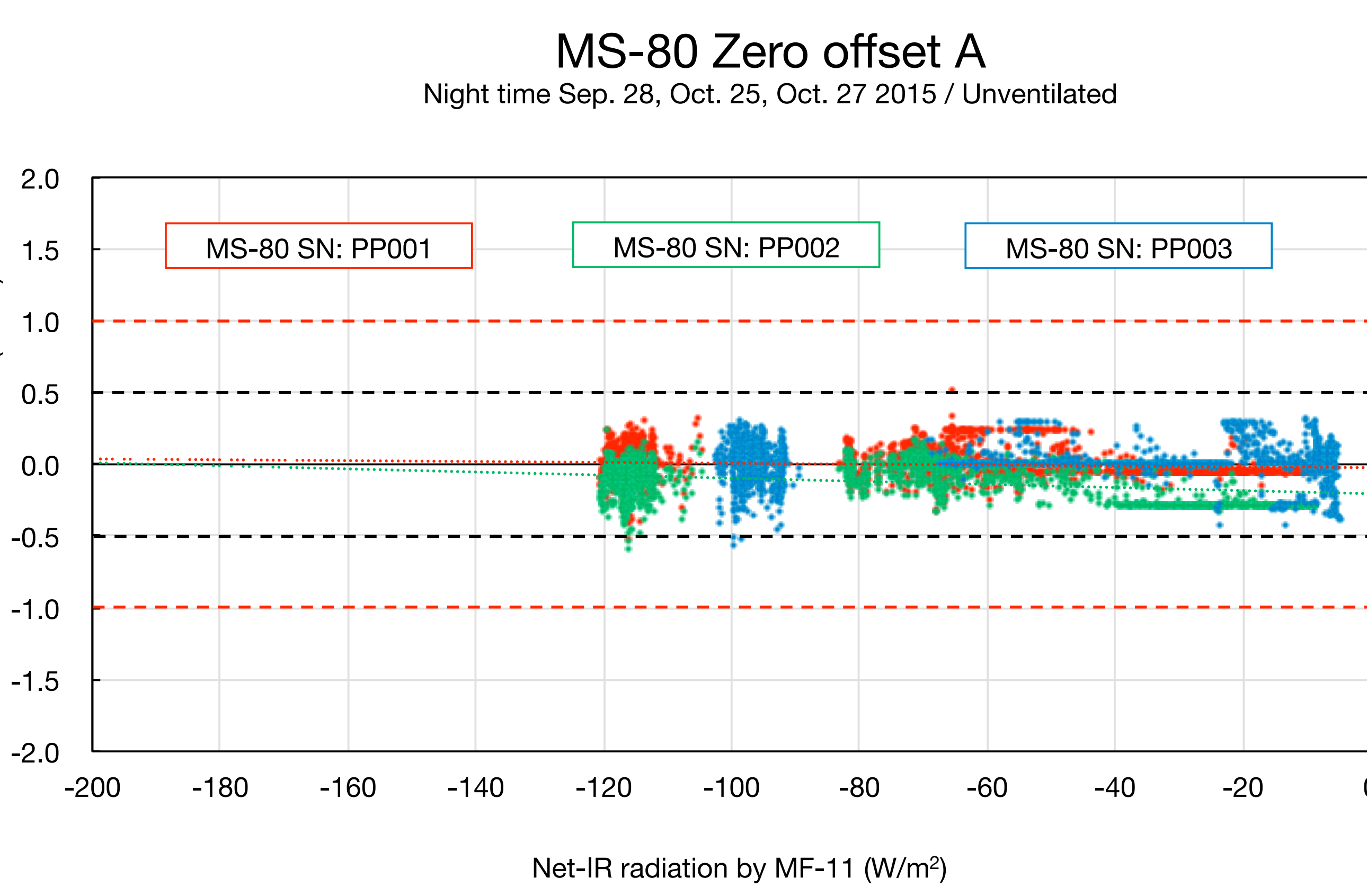
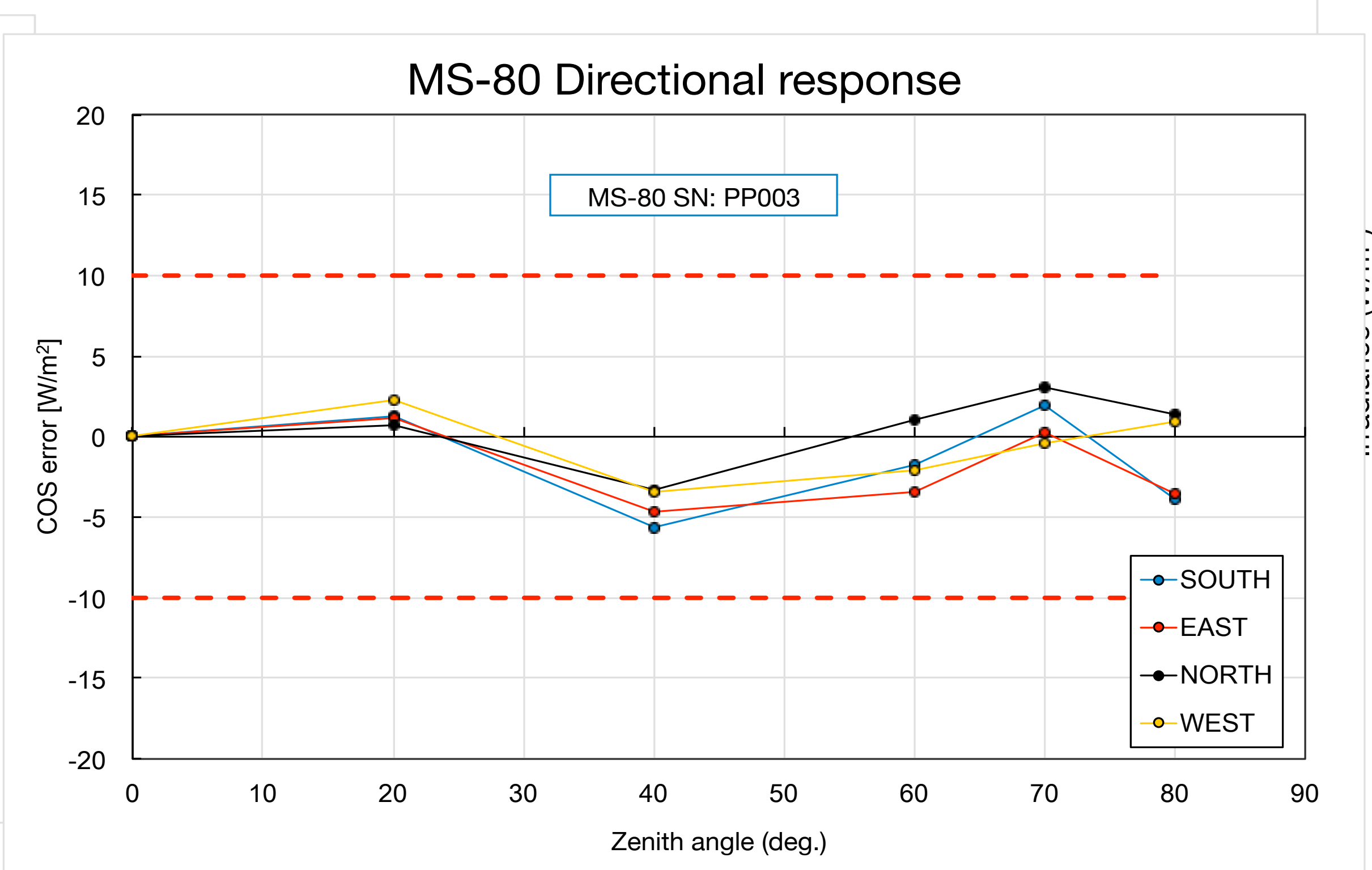
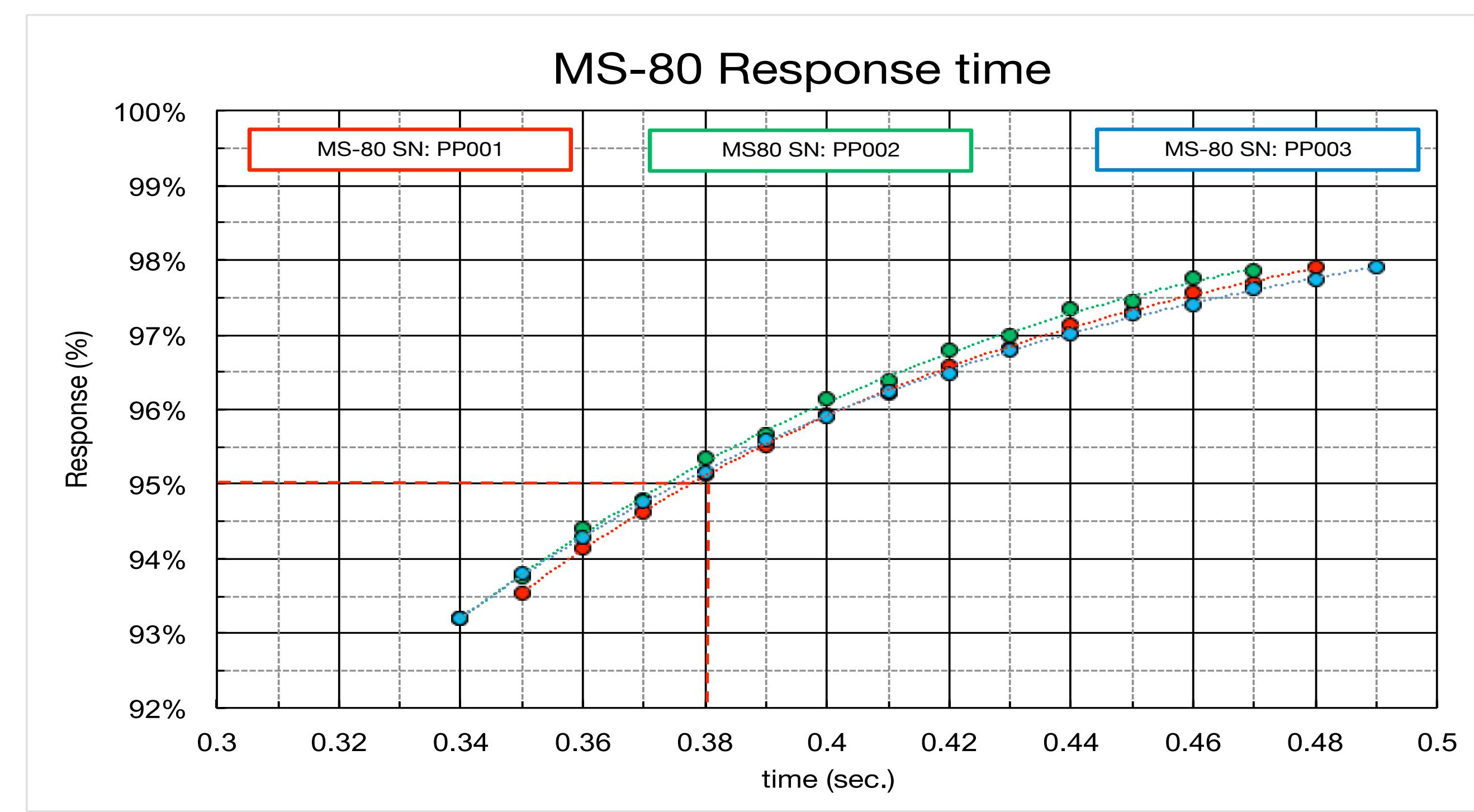
Novel architecture and detector technology used in a next generation pyranometer

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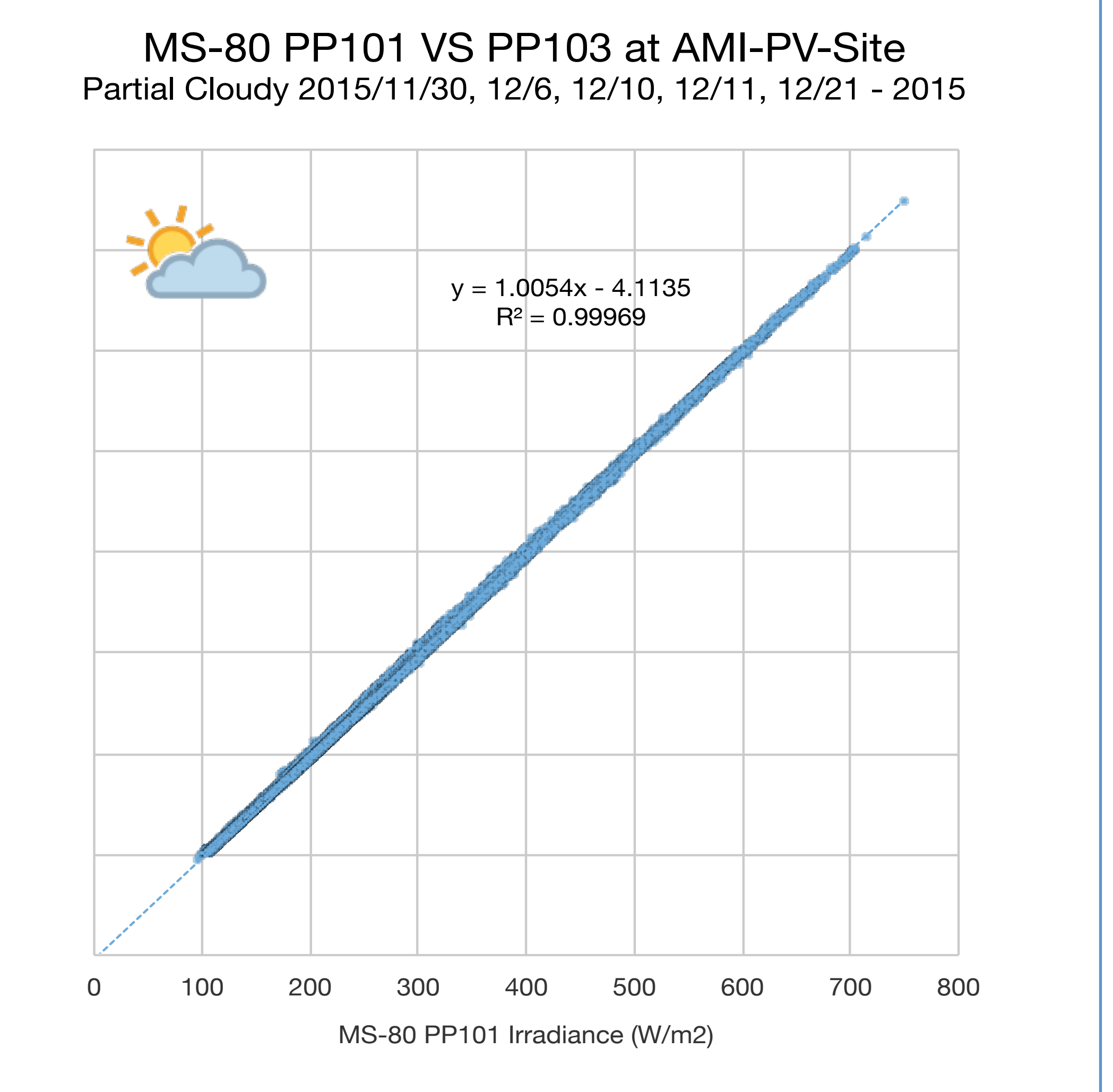
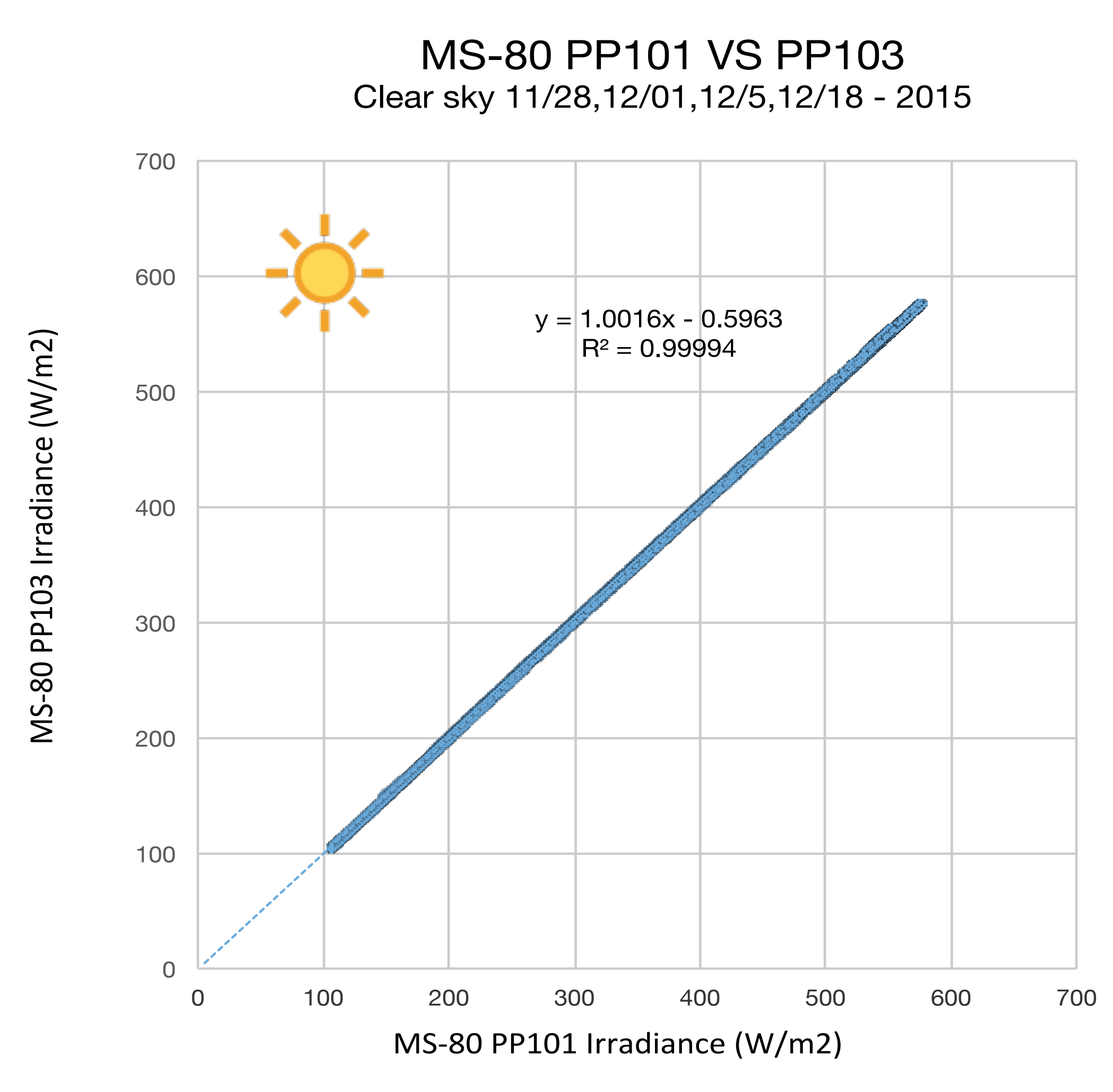
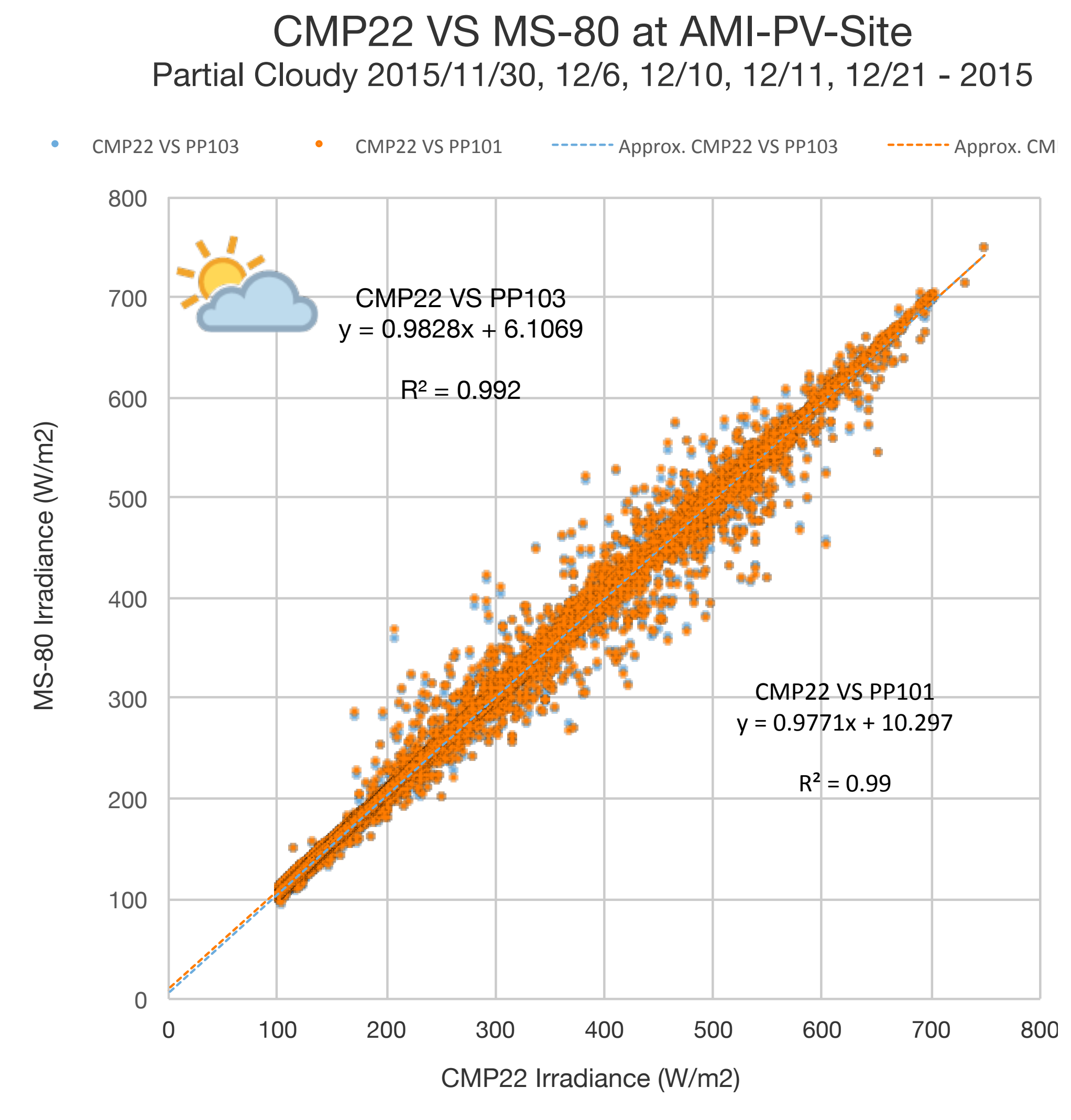
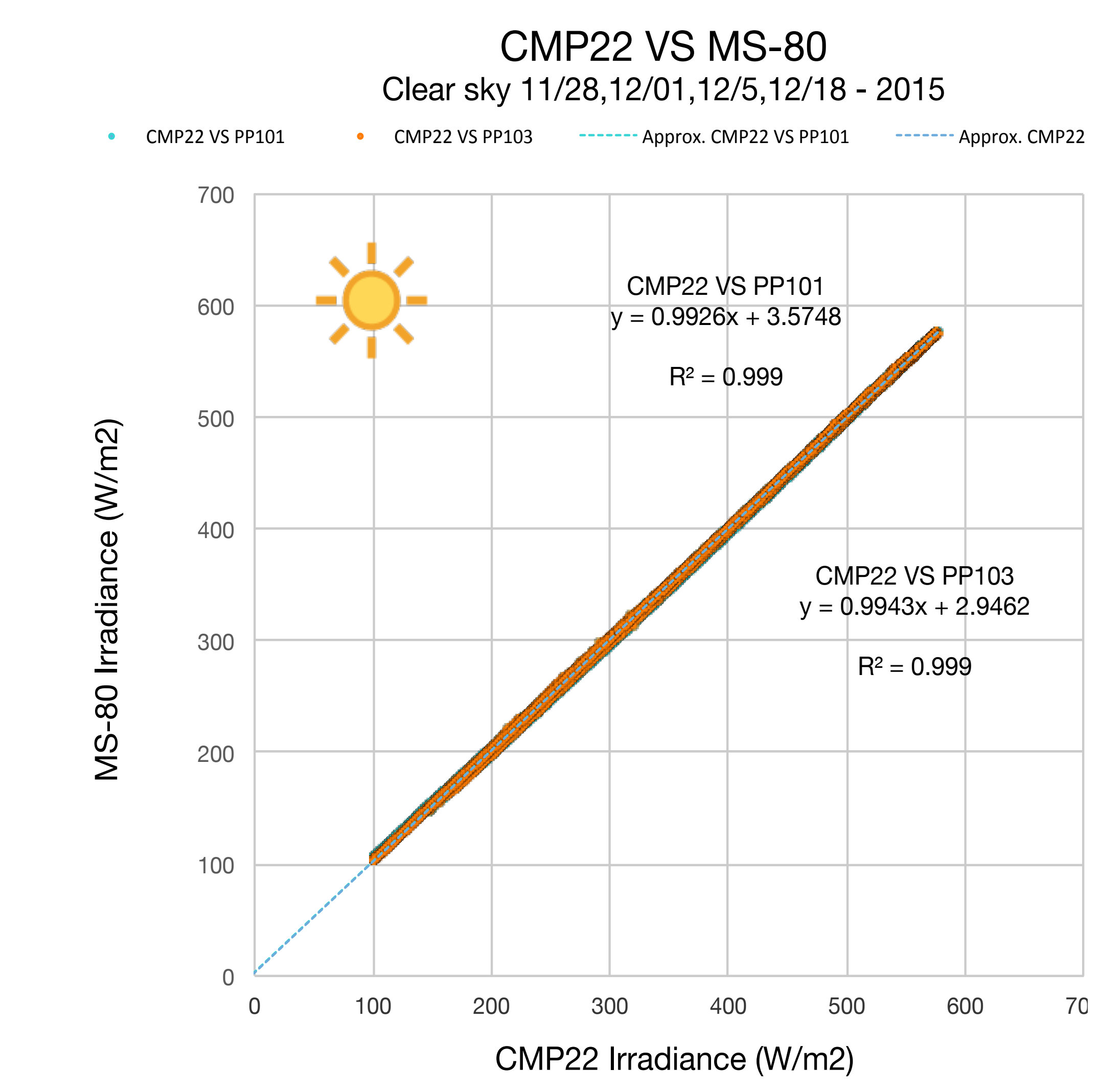


For roughly 100 years, the development of pyranometers has been slow with minor deviations from the original architecture and detector technology. EKO Instruments recently developed the MS-80 Secondary Standard Pyranometer which represents a large change in development history. The MS-80 uses a different detector technology and has a new sensor geometry to maximize benefits from this new technology. Test results of the typical sensor characteristics are shown.

	ISO9060	MS-80	MS-802
Response time 95% (s)	< 15	< 0.5	< 5
ZOA (W/m ²)	< 7	< 1	< 6
ZOB (W/m ²)	+/- 2	+/- 1	+/- 2
Non-stability (% / per year)	+/- 0.8	+/- 0.5 (5 years)	+/- 0.5
Non-linearity	+/- 0.5	+/- 0.2	+/- 0.2
Directional response (W/m ²)	+/- 10	+/- 10	+/- 10
Temperature response (%) (50K band)	< 2	< 1 (70K)*	< 1
Tilt response	+/- 0.5	+/- 0.2	+/- 0.2



10s data sampling



Conclusion:
 Comparing outdoor data from a high quality Kipp & Zonen CMP22 pyranometer, we found very good agreement between the MS-80 and the CMP22 under clear sky conditions. Due to the fast response time we also noticed great agreement amongst MS-80 sensors while measuring outdoors under variable atmospheric conditions.