Elapsed Time,Sample\_Cell#,I\_ph(suns),V\_oc(V),mpp(V),J\_sc(mA),R\_sh,R\_ser,FF,PCE(%)

4.548572345574697,Mapi\_MM\_3\_1F\_120714,0.805,0.1136531233330235,0.0499999999999999,63.39101754385965,1.816776629345728,1.7915183111449906,0.247343878683836,1.7820105263157873

4.548881483078003,Mapi\_MM\_3\_1R\_120714,0.805,0.0772043776568212,0.0500000000000042,47.72791228070447,1.636519468348469,1.6454230997720032,0.2279948830938247,0.8401164035088435

6.264061558246612,Mapi\_MM\_3\_1F\_120857,0.805,0.0640777252174239,0.0249999999999999,40.10363157894734,1.5908346807970428,1.5942636046040182,0.2373893424326857,0.6100311403508749

6.264331324895223,Mapi\_MM\_3\_1R\_120857,0.805,0.0847096812220702,0.0500000000000042,53.8504210526344,1.5663298544709106,1.5758421300360317,0.2409980249602051,1.0993491228071113

7.412445362408956,Mapi\_MM\_3\_2F\_121006,0.805,-0.123476108667188,-0.05,-416.7396491228073,0.2995166033334191,0.2972479842960895,0.2409315839354713,12.3977105263158

7.412706903616587,Mapi\_MM\_3\_2R\_121006,0.805,0.2146724952040613,0.100000000000004,80.75568421052805,2.614725130665404,2.6042556644234605,0.2459021085447707,4.262964912280876

8.536676788330078,Mapi\_MM\_3\_4F\_121113,0.805,0.0,0.0,-607.9501754385967,0.5374197895584257,0.0,0.0,0.0

8.536908586819967,Mapi\_MM\_3\_4R\_121113,0.805,0.0,0.0,-581.2063157894652,0.517595622961598,0.0,0.0,0.0

9.198788368701935,Mapi\_MM\_3\_4F\_121153,0.805,0.0393116939125305,0.2499999999999999,550.5064912280707,-0.1322255608576718,0.2731344108802824,46.51422409605343,1006.6302631578944

9.198855821291604,Mapi\_MM\_3\_4R\_121153,0.805,0.0,0.0,-583.4094736842015,0.4983219662344857,0.0,0.0,0.0

11.02502636909485,Mapi\_MM\_4\_1F\_121342,0.805,-0.0134916674063368,-5.551115123125783e-17,-19.78678947368429,0.6826501842732651,0.6818522744322236,4.114476703241637e-15,1.0983874628547446e-15

11.0252867658933,Mapi\_MM\_4\_1R\_121342,0.805,0.0115352545377241,4.440892098500626e-15,16.92192456141002,0.6818185610295272,0.6816750952806649,3.84984317769123e-13,7.514844107616054e-14

12.07878423134486,Mapi\_MM\_4\_2F\_121446,0.805,-0.0548511379588633,-0.025,-77.22836842105272,0.7130729600960612,0.7085377506238499,0.2484113626906265,1.052286403508774

12.078984264532725,Mapi\_MM\_4\_2R\_121446,0.805,-0.0287092229018705,-0.0249999999999954,-39.82617543859029,0.7110017650665161,0.7172874273396468,0.113067992897437,0.1292795175438362

12.996147910753884,Mapi\_MM\_4\_F\_121541,0.805,-0.101885699400849,-0.05,-132.31401754385973,0.7697776302339279,0.7714669614800052,0.249829305547833,3.3679254385964947

12.996446979045867,Mapi\_MM\_4\_R\_121541,0.805,-0.076556376645094,-0.0499999999999953,-99.25459649122232,0.770506768471912,0.7710734787613749,0.2265446359771285,1.7214157894735251

14.017162811756132,Mapi\_MM\_4\_5F\_121642,0.805,-0.0251678556548272,-0.025,-0.4773587719298257,52.87400682239277,52.37647100283724,0.0066688143868961,8.011978070175454e-05

14.01742312113444,Mapi\_MM\_4\_5R\_121642,0.805,-0.0003315508908148,4.440892098500626e-15,-0.0069758666665721,46.7224190185742,47.52827235123686,-1.339430000518802e-11,-3.09790711601939e-17

14.92019250392914,Mapi\_MM\_4\_F\_121736,0.805,-0.0226257760676698,-5.551115123125783e-17,-11.167152631578976,2.030079770518811,2.026100727206548,2.453447389615867e-15,6.1990149855411795e-16

14.920333087444304,Mapi\_MM\_4\_R\_121736,0.805,0.0024186719866505,4.440892098500626e-15,1.1976700000021971,2.020194148172982,2.019481148100768,1.8360869613586664e-12,5.3187232396112446e-15

15.800638834635416,Mapi\_MM\_4\_F\_121829,0.805,-0.0337601612962119,-0.025,-54.26919298245625,0.621579830829427,0.620913030616177,0.1925145067504493,0.3527128947368428

15.800811151663462,Mapi\_MM\_4\_R\_121829,0.805,-0.007367774618089,4.440892098500626e-15,-11.869035087712136,0.6193070916832848,0.6207559893160741,-6.027453781770455e-13,-5.2709104137879325e-14

268.3465760310491,Mapi\_MM\_4\_F\_163102,0.805,0.0842080698198841,0.0499999999999999,7.533076999999998,11.137359548559616,11.222809993202688,0.2404697598870431,0.1525409999999998

268.34699432849885,Mapi\_MM\_4\_R\_163102,0.805,0.1073151881881674,0.05,9.677249000000009,11.097879797358864,11.107894264936192,0.2488464793723102,0.2584310000000002

272.18888745307925,Mapi\_MM\_4\_AP1.0\_F\_163452,0.805,0.0870099012875305,0.0499999999999999,7.785377999999997,11.179264443109584,11.209173946646889,0.244292863234673,0.1654851999999997

272.1892027139664,Mapi\_MM\_4\_AP1.0\_R\_163452,0.805,0.1103275146280626,0.05,9.873819000000008,11.140466867142374,11.229206429291816,0.2472732667394504,0.2693681000000002

276.8793103814125,Mapi\_MM\_4\_AP1.0\_F\_163934,0.805,0.117094449429335,0.0499999999999999,10.00988,11.70909946081795,11.614978695118072,0.244991391592683,0.2871547499999996

276.8796941439311,Mapi\_MM\_4\_AP1.0\_R\_163934,0.805,0.13736398904251962,0.07500000000000004,11.855130000000008,11.662105449218755,11.199387169535946,0.2497400397993201,0.4066936500000002

MM\_4\_AP1.0\_F\_163934

V\_oc(V) \

0.11709444942933508

mpp(V) J\_sc(mA) R\_sh R\_ser FF PCE(%)

0.05 10.00988 11.709099 11.614979 0.244991 0.287155

MM\_4\_AP1.0\_R\_163934

V\_oc(V) \

0.13736398904251962

mpp(V) J\_sc(mA) R\_sh R\_ser FF PCE(%)

0.075 11.85513 11.662105 11.199387 0.24974 0.406694

A graph of a voltage

Description automatically generated with medium confidence