The light response curves of Isodon rubescens leaves at different leaf positions

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | PARi |  | Photo |
|  |  | in |  | out |
| 1 |  |  |  |  |
| 2500 uml |  | 2499.456 |  | 4.416608 |
| 2200 uml |  | 2199.303 |  | 5.056086 |
| 2000 uml |  | 2000.248 |  | 5.328747 |
| 1800 uml |  | 1800.882 |  | 5.400322 |
| 1600 uml |  | 1601.053 |  | 5.472927 |
| 1400 uml |  | 1400.328 |  | 5.473089 |
| 1200 uml |  | 1200.467 |  | 5.454795 |
| 1000 uml |  | 1000.342 |  | 5.375658 |
| 800 uml |  | 799.4027 |  | 5.273571 |
| 600 uml |  | 599.8408 |  | 5.082237 |
| 400 uml |  | 399.1791 |  | 4.711268 |
| 200 uml |  | 199.951 |  | 3.803421 |
| 150 uml |  | 149.5359 |  | 3.159843 |
| 100 uml |  | 100.0624 |  | 2.407595 |
| 50 uml |  | 50.03372 |  | 1.136187 |
| 20 uml |  | 20.03819 |  | -0.15418 |
| 10 uml |  | 10.37508 |  | -0.53814 |
| 3 |  |  |  |  |
| 2500 uml |  | 2499.426 |  | 3.665549 |
| 2200 uml |  | 2198.863 |  | 4.482571 |
| 2000 uml |  | 1999.793 |  | 4.813929 |
| 1800 uml |  | 1800.817 |  | 5.09454 |
| 1600 uml |  | 1600.167 |  | 5.275144 |
| 1400 uml |  | 1401.331 |  | 5.351946 |
| 1200 uml |  | 1199.907 |  | 5.335147 |
| 1000 uml |  | 999.9886 |  | 5.334386 |
| 800 uml |  | 799.3904 |  | 5.212142 |
| 600 uml |  | 600.2505 |  | 5.119827 |
| 400 uml |  | 399.7912 |  | 4.949397 |
| 200 uml |  | 199.13 |  | 4.108918 |
| 150 uml |  | 150.2527 |  | 3.285116 |
| 100 uml |  | 100.3487 |  | 2.187882 |
| 50 uml |  | 50.325 |  | 1.040637 |
| 20 uml |  | 20.09879 |  | -0.12093 |
| 10 uml |  | 9.152566 |  | -0.56717 |
| 5 |  |  |  |  |
| 2500 uml |  | 2498.773 |  | 2.53192 |
| 2200 uml |  | 2199.214 |  | 3.77867 |
| 2000 uml |  | 2000.288 |  | 4.437719 |
| 1800 uml |  | 1800.91 |  | 4.591133 |
| 1600 uml |  | 1599.979 |  | 4.624305 |
| 1400 uml |  | 1399.872 |  | 4.585306 |
| 1200 uml |  | 1200.402 |  | 4.507372 |
| 1000 uml |  | 1000.707 |  | 4.444725 |
| 800 uml |  | 800.0754 |  | 4.379375 |
| 600 uml |  | 599.2972 |  | 4.235533 |
| 400 uml |  | 399.493 |  | 4.177245 |
| 200 uml |  | 198.8831 |  | 3.490699 |
| 150 uml |  | 149.5808 |  | 3.247781 |
| 100 uml |  | 99.46734 |  | 2.439358 |
| 50 uml |  | 49.25346 |  | 1.104601 |
| 20 uml |  | 20.09447 |  | -0.13159 |
| 10 uml |  | 9.256811 |  | -0.27814 |
| 8 |  |  |  |  |
| 2500 uml |  | 2498.732 |  | 0.14779 |
| 2200 uml |  | 2199.688 |  | 0.550071 |
| 2000 uml |  | 2000.952 |  | 0.720299 |
| 1800 uml |  | 1799.952 |  | 0.76584 |
| 1600 uml |  | 1601.272 |  | 0.805314 |
| 1400 uml |  | 1399.815 |  | 0.852834 |
| 1200 uml |  | 1200.908 |  | 0.884029 |
| 1000 uml |  | 1000.04 |  | 0.90114 |
| 800 uml |  | 800.4343 |  | 0.938506 |
| 600 uml |  | 600.4725 |  | 0.942154 |
| 400 uml |  | 401.3547 |  | 0.920691 |
| 200 uml |  | 199.7897 |  | 0.883054 |
| 150 uml |  | 149.2906 |  | 0.873803 |
| 100 uml |  | 100.7992 |  | 0.792099 |
| 50 uml |  | 48.98687 |  | 0.478926 |
| 20 uml |  | 18.7131 |  | -0.08295 |
| 10 uml |  | 9.10701 |  | -0.30565 |

The photosynthetic rates of Isodon rubescens leaves at different positions

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Stem | position | Photo out | | PARi in |
|  |  |  |  |  |
| 1 | 1 | 0.733155 |  | 998.6764 |
|  | 2 | 0.787447 |  | 1004.069 |
|  | 3 | 0.896712 |  | 999.6727 |
|  | 4 | 1.127069 |  | 1000.065 |
|  | 5 | 1.207363 |  | 999.2006 |
|  | 6 | 1.345506 |  | 998.9974 |
|  | 7 | 0.476813 |  | 1000.511 |
| 2 | 1 | 0.855465 |  | 999.9524 |
|  | 2 | 0.959833 |  | 999.2016 |
|  | 3 | 1.148616 |  | 999.6816 |
|  | 4 | 1.26439 |  | 998.6203 |
|  | 5 | 1.171534 |  | 998.9819 |
|  | 6 | 1.155133 |  | 999.4396 |
|  | 7 | 1.092219 |  | 1000.139 |
|  | 8 | 1.187612 |  | 1000.845 |
|  | 9 | 0.429357 |  | 999.0245 |
| 3 | 1 | 2.264141 |  | 999.3026 |
|  | 2 | 2.53503 |  | 999.132 |
|  | 3 | 2.604013 |  | 999.8408 |
|  | 4 | 2.698943 |  | 999.3504 |
|  | 5 | 2.645189 |  | 1000.348 |
|  | 6 | 2.710677 |  | 999.3784 |
|  | 7 | 2.282832 |  | 999.858 |
| 4 | 1 | 3.641182 |  | 1000.062 |
|  | 2 | 3.99601 |  | 999.5928 |
|  | 3 | 4.10203 |  | 999.0441 |
|  | 4 | 4.285381 |  | 999.335 |
|  | 5 | 3.482464 |  | 999.9078 |
|  | 6 | 3.150564 |  | 1000.17 |
|  | 7 | 3.121365 |  | 1000.98 |
|  | 8 | 2.713084 |  | 1000.301 |
|  | 9 | 2.486874 |  | 1001.05 |
|  | 10 | 1.778882 |  | 1000.688 |
|  | 11 | 1.260318 |  | 999.8843 |
|  | 12 | 1.010587 |  | 1000.388 |
| 5 | 1 | 3.230921 |  | 999.6957 |
|  | 2 | 4.013757 |  | 1000.415 |
|  | 3 | 4.250097 |  | 1000.806 |
|  | 4 | 5.249328 |  | 1000.357 |
|  | 5 | 5.627132 |  | 999.8725 |
|  | 6 | 5.204871 |  | 999.1843 |
|  | 7 | 5.181924 |  | 999.7839 |
|  | 8 | 4.330434 |  | 999.9601 |
| 6 | 1 | 4.839727 |  | 999.298 |
|  | 2 | 5.253547 |  | 999.8599 |
|  | 3 | 5.271042 |  | 999.1523 |
|  | 4 | 5.850318 |  | 1000.241 |
|  | 5 | 5.840426 |  | 1000.783 |
|  | 6 | 5.426332 |  | 1000.739 |
|  | 7 | 5.324124 |  | 1000.358 |
|  | 8 | 4.703848 |  | 1000.511 |

The maximum electron transport rates in photosynthetic system II in Isodon rubescens leaves

|  |  |  |  |
| --- | --- | --- | --- |
|  | ETRmax=IK/(a•IK2+b•IK+c) | | |
|  | ETRmax |  | Leaf positions |
| stem 1 | 34.70 |  | 1 |
|  | 35.20 |  | 2 |
|  | 42.30 |  | 3 |
|  | 45.00 |  | 4 |
|  | 47.40 |  | 5 |
|  | 48.30 |  | 6 |
|  | 48.80 |  | 7 |
|  | 45.90 |  | 8 |
|  | 33.20 |  | 9 |
|  |  |  |  |
| stem 2 | 30.50 |  | 1 |
|  | 32.10 |  | 2 |
|  | 36.70 |  | 3 |
|  | 49.50 |  | 4 |
|  | 51.10 |  | 5 |
|  | 74.50 |  | 6 |
|  | 50.40 |  | 7 |
|  | 40.00 |  | 8 |
|  | 24.80 |  | 9 |
|  |  |  |  |
| stem 3 | 30.60 |  | 1 |
|  | 43.80 |  | 2 |
|  | 48.50 |  | 3 |
|  | 63.50 |  | 4 |
|  | 92.30 |  | 5 |
|  | 56.90 |  | 6 |
|  | 39.90 |  | 7 |
|  |  |  |  |
| stem 4 | 21.8 |  | 1 |
|  | 22.2 |  | 2 |
|  | 27.9 |  | 3 |
|  | 34.6 |  | 4 |
|  | 38.7 |  | 5 |
|  | 49 |  | 6 |
|  | 57.3 |  | 7 |
|  | 67.4 |  | 8 |
|  | 43.80 |  | 9 |
|  | 40.6 |  | 10 |
|  | 31.8 |  | 11 |
|  | 24.6 |  | 12 |
|  |  |  |  |
| stem 5 | 36 |  | 1 |
|  | 39.8 |  | 2 |
|  | 45.7 |  | 3 |
|  | 46.9 |  | 4 |
|  | 54.2 |  | 5 |
|  | 55.6 |  | 6 |
|  | 57.7 |  | 7 |
|  | 35.6 |  | 8 |
|  |  |  |  |
| stem 6 | 21.5 |  | 1 |
|  | 26.4 |  | 2 |
|  | 29 |  | 3 |
|  | 29.8 |  | 4 |
|  | 34.3 |  | 5 |
|  | 33.6 |  | 6 |
|  | 37.2 |  | 7 |
|  | 29.4 |  | 8 |
|  | 19.9 |  | 9 |