|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | N=2 | N=3 | N=4 | N=6 |
| 2-2s | Any two consecutive runs QC in same level > 2 SD on the same side, or;  Any two QC levels in the same run exceed 2SD on the same side. | | | |
| R-4s | Any two consecutive runs of QC in same level has difference > 4 SD, or;  Any two QC levels in the same run has difference > 4 SD. | | | |
| 4-1s | Any four consecutive runs and/or levels of QC exceeds 1 SD on same side, i.e. | | | |
| 4 runs of any QC level > 1 SD, or;  2 runs of both QC levels > 1 SD | 4 runs of any QC level > 1 SD, or;  1 run of all QC levels > 1 SD, then any level of QC > 1SD | 4 runs of any QC level > 1 SD, or;  1 run of all QC levels > 1 SD | 4 runs of any QC level > 1 SD, or;  1 run of at least 4 QC levels > 1 SD |
| 10-x̅ | Any ten consecutive runs and/or levels of QC on same side, i.e. | | | |
| 10 runs of any QC level on same side, or;  5 runs of both QC levels on same side | 10 runs of any QC level on same side, or;  3 runs of all QC levels on same side, then any level of QC on same side | 10 runs of any QC level on same side, or;  2 runs of all QC levels on same side, then any 2 levels of QC on same side | 10 runs of any QC level on same side, or;  1 run of all QC levels on same side, then any 4 levels of QC on same side |

Reset rules:

1. When the violation scenario was not satisfied, or;
2. That rule was just violated in the last run.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | **1-3s** | **2-2s** | **R-4s** | **4-1s** | **10-x̅** |
| **N=1** | **Probability** | 0.002638 | 0.00096 | 0.004341 | 0.001062 | 0.000951 |
| **95% CI** | 0.002537 - 0.002739 | 0.000899 - 0.001021 | 0.004212 - 0.004470 | 0.000998 - 0.001126 | 0.000891 - 0.001011 |
| **ARL** | 379.08 | 1041.67 | 230.36 | 941.62 | 1051.52 |
| **N=2** | **Probability** | 0.005422 | 0.002926 | 0.01219 | 0.003202 | 0.003186 |
| **95% CI** | 0.005278 - 0.005566 | 0.002820 - 0.003032 | 0.011975 - 0.012405 | 0.003091 - 0.003313 | 0.003076 - 0.003296 |
| **ARL** | 184.43 | 341.76 | 82.03 | 312.3 | 313.87 |
| **N=3** | **Probability** | 0.008101 | 0.005722 | 0.022727 | 0.006148 | 0.005562 |
| **95% CI** | 0.007925 - 0.008277 | 0.005574 - 0.005870 | 0.022435 - 0.023019 | 0.005995 - 0.006301 | 0.005416 - 0.005708 |
| **ARL** | 123.44 | 174.76 | 44.0 | 162.65 | 179.79 |
| **N=4** | **Probability** | 0.010696 | 0.009409 | 0.035565 | 0.005337 | 0.008459 |
| **95% CI** | 0.010494 - 0.010898 | 0.009220 - 0.009598 | 0.035202 - 0.035928 | 0.005194 - 0.005480 | 0.008279 - 0.008639 |
| **ARL** | 93.49 | 106.28 | 28.12 | 187.37 | 118.22 |
| **N=6** | **Probability** | 0.015924 | 0.019295 | 0.066404 | 0.020072 | 0.015551 |
| **95% CI** | 0.015679 - 0.016169 | 0.019025 - 0.019565 | 0.065916 - 0.066892 | 0.019797 - 0.020347 | 0.015308 - 0.015794 |
| **ARL** | 62.8 | 51.83 | 15.06 | 49.82 | 64.3 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | **1-3s** | **1-3s/2-2s/R-4s** | **1-3s/2-2s/R-4s/4-1s** | **1-3s/2-2s/R-4s/4-1s/10-x** |
| **N=1** | **Probability** | 0.002638 | 0.007278 | 0.008313 | 0.009258 |
| **95% CI** | 0.002537 - 0.002739 | 0.007111 - 0.007445 | 0.008135 - 0.008491 | 0.009070 - 0.009446 |
| **ARL** | 379.08 | 137.4 | 120.29 | 108.01 |
| **N=2** | **Probability** | 0.005422 | 0.017889 | 0.020914 | 0.024013 |
| **95% CI** | 0.005278 - 0.005566 | 0.017629 - 0.018149 | 0.020634 - 0.021194 | 0.023713 - 0.024313 |
| **ARL** | 184.43 | 55.9 | 47.81 | 41.64 |
| **N=3** | **Probability** | 0.008101 | 0.03092 | 0.036659 | 0.041947 |
| **95% CI** | 0.007925 - 0.008277 | 0.030581 - 0.031259 | 0.036291 - 0.037027 | 0.041554 - 0.042340 |
| **ARL** | 123.44 | 32.34 | 27.28 | 23.84 |
| **N=4** | **Probability** | 0.010696 | 0.046339 | 0.051144 | 0.059117 |
| **95% CI** | 0.010494 - 0.010898 | 0.045927 - 0.046751 | 0.050712 - 0.051576 | 0.058655 - 0.059579 |
| **ARL** | 93.49 | 21.58 | 19.55 | 16.92 |
| **N=6** | **Probability** | 0.015924 | 0.082453 | 0.098892 | 0.112845 |
| **95% CI** | 0.015679 - 0.016169 | 0.081914 - 0.082992 | 0.098307 - 0.099477 | 0.112225 - 0.113465 |
| **ARL** | 62.8 | 12.13 | 10.11 | 8.86 |