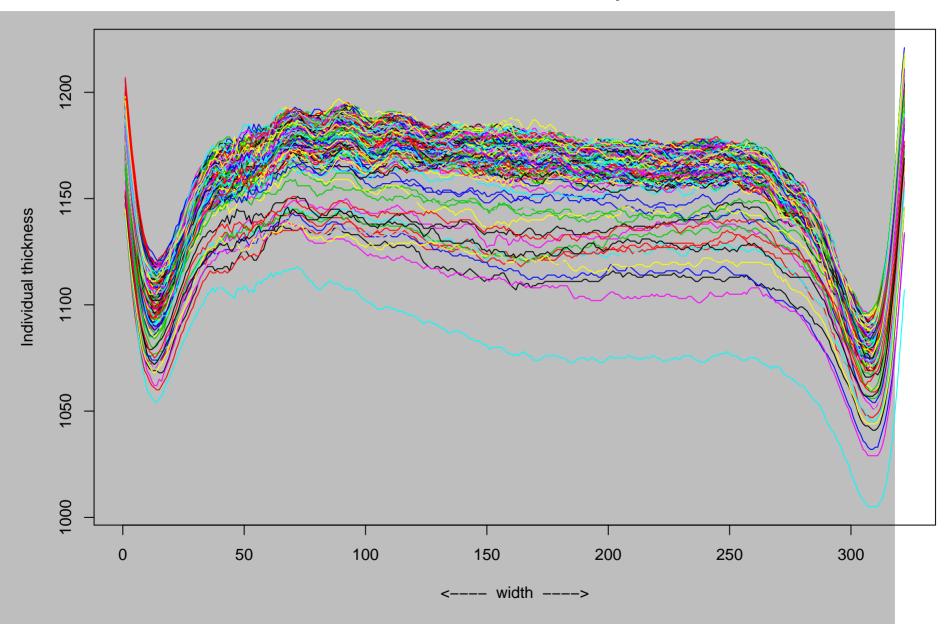
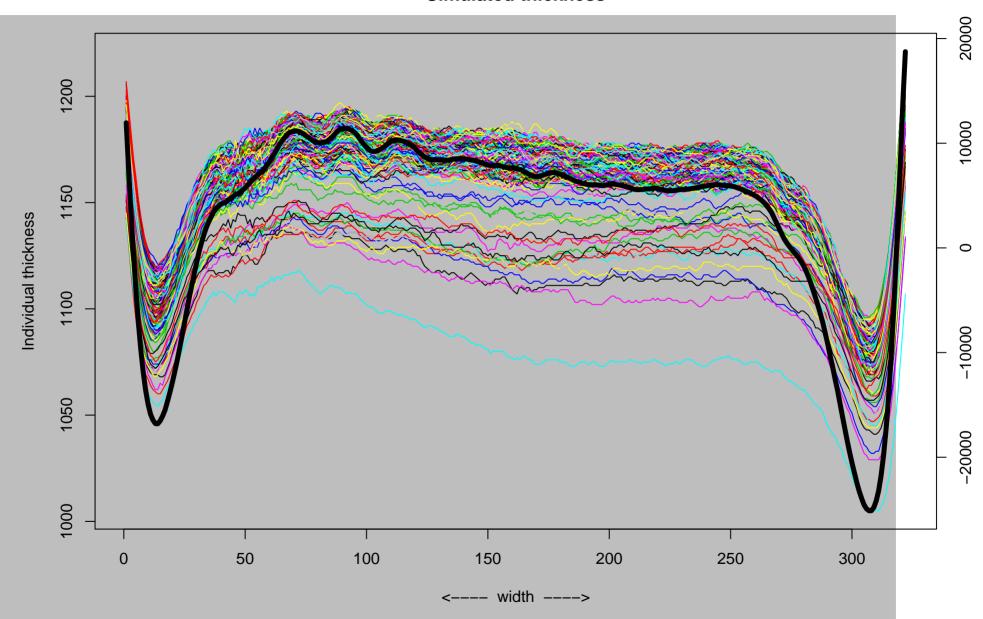
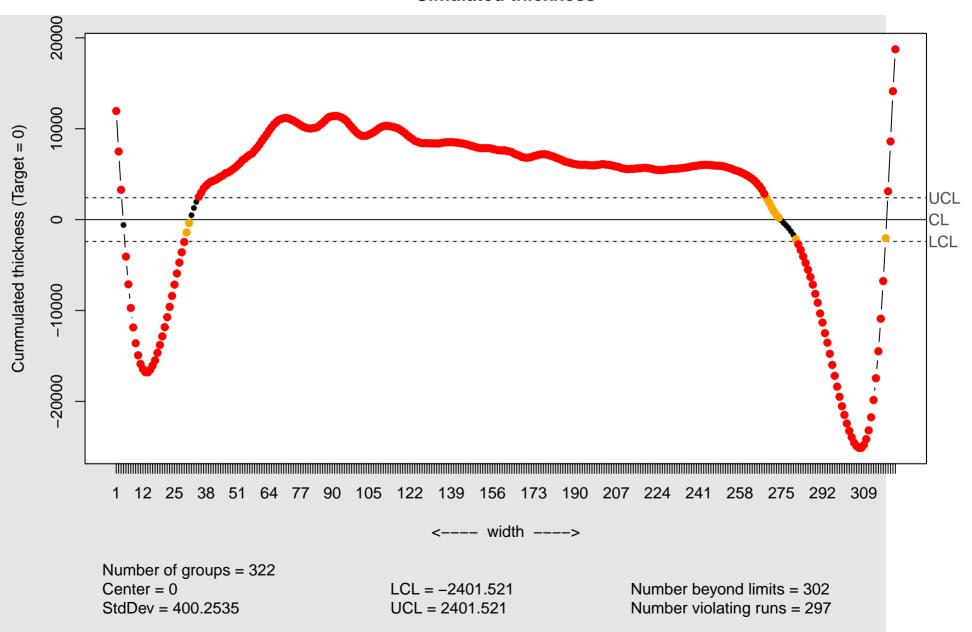
## Individual thickness only



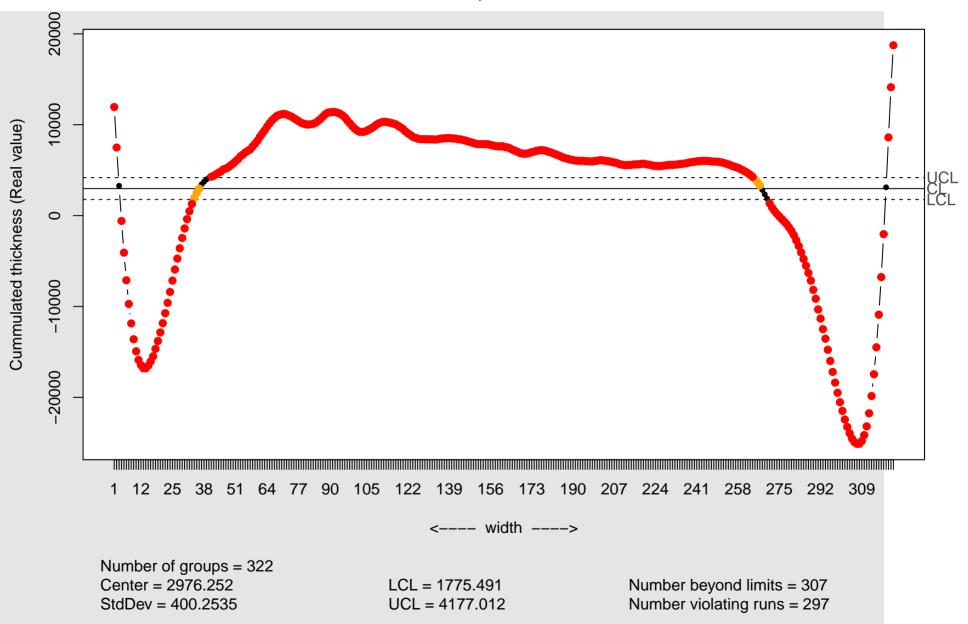
## Simulated thickness



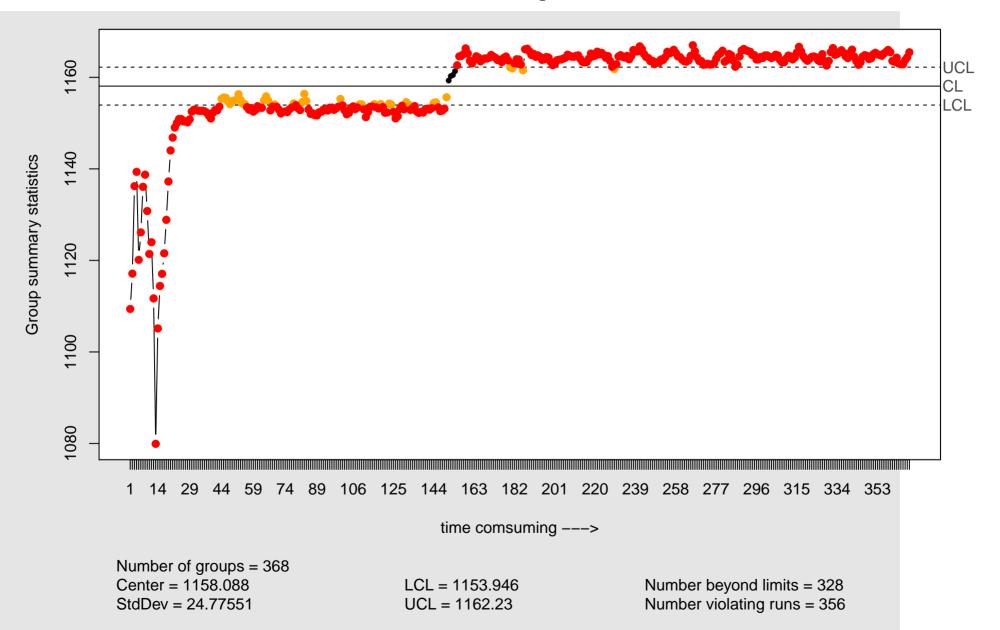
#### Simulated thickness



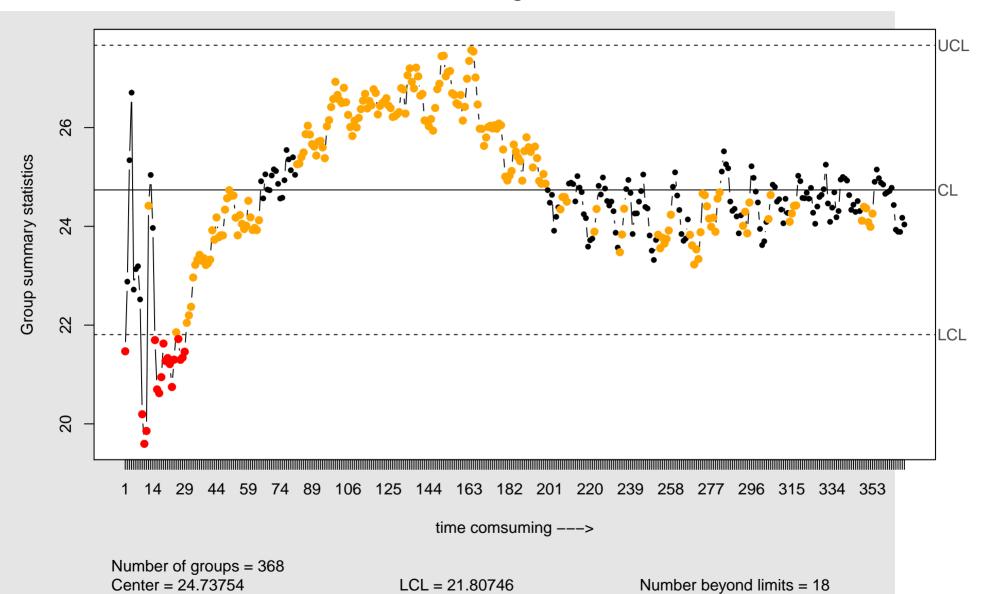
### Simulated thickness: Cpk is -0.1086 and z is -1.826.



### X-bar chart for a given dataset



### S chart for a given dataset

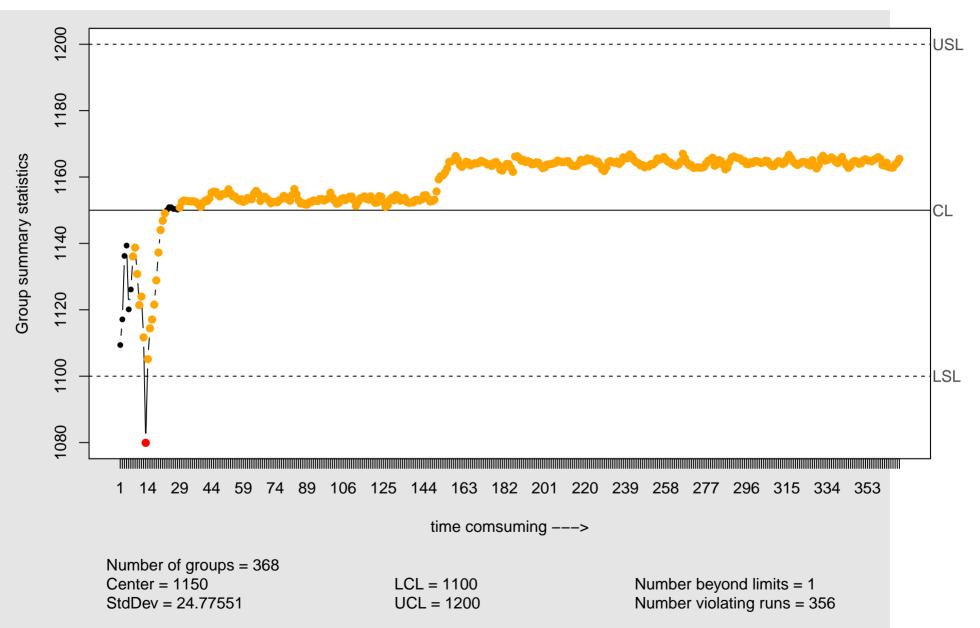


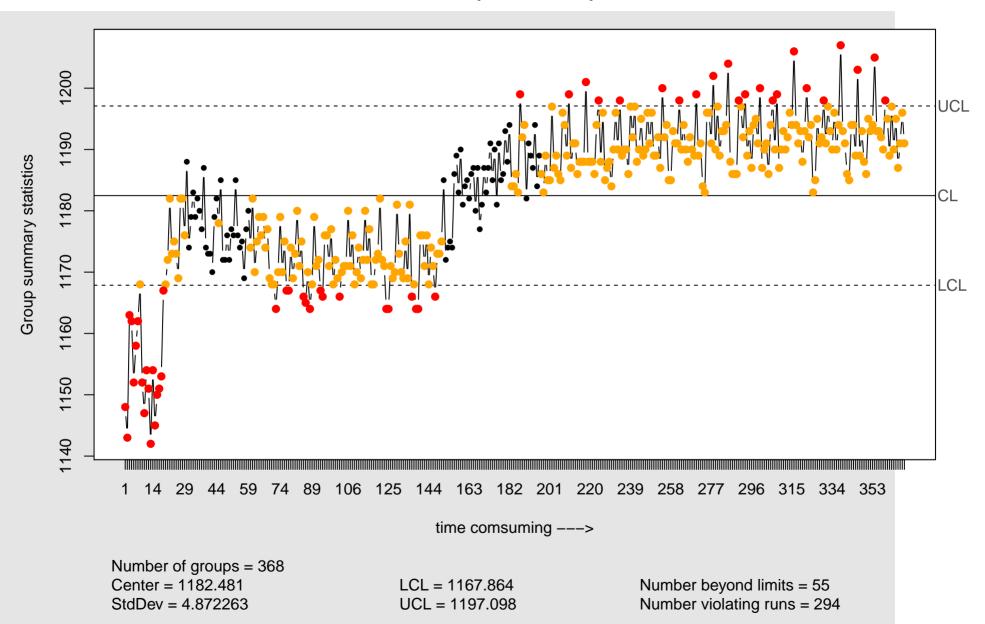
UCL = 27.66761

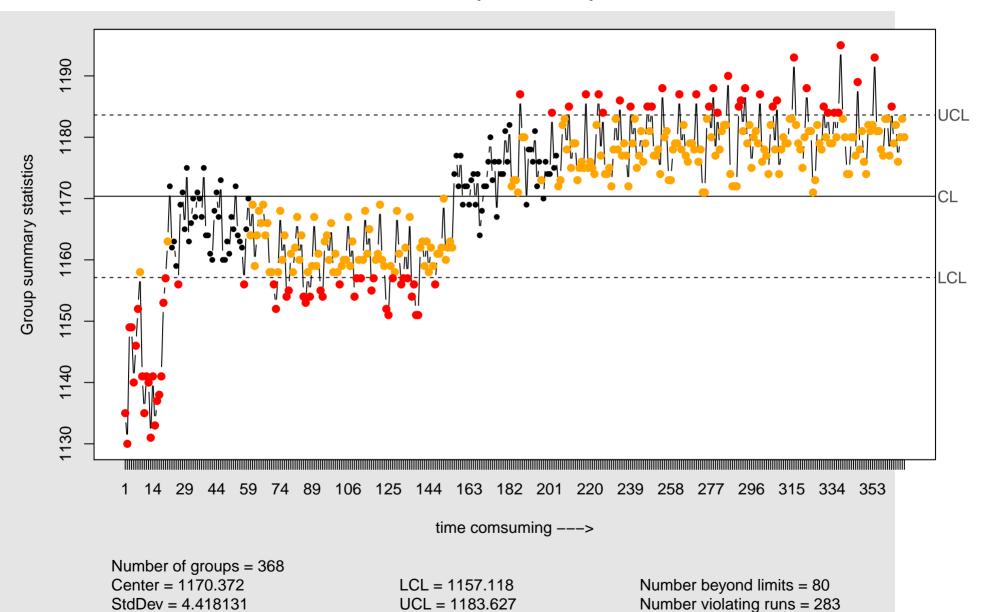
Number violating runs = 212

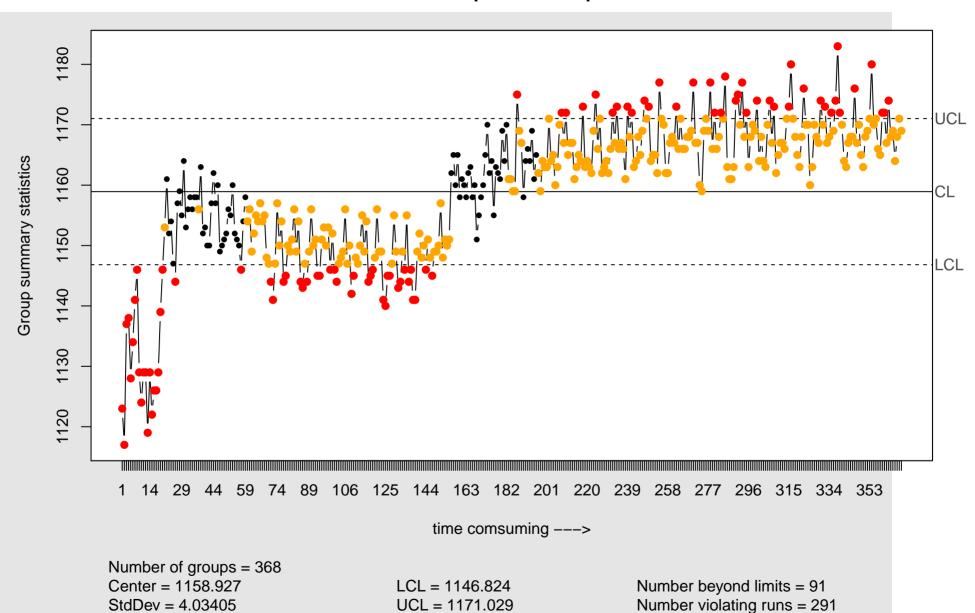
StdDev = 24.75681

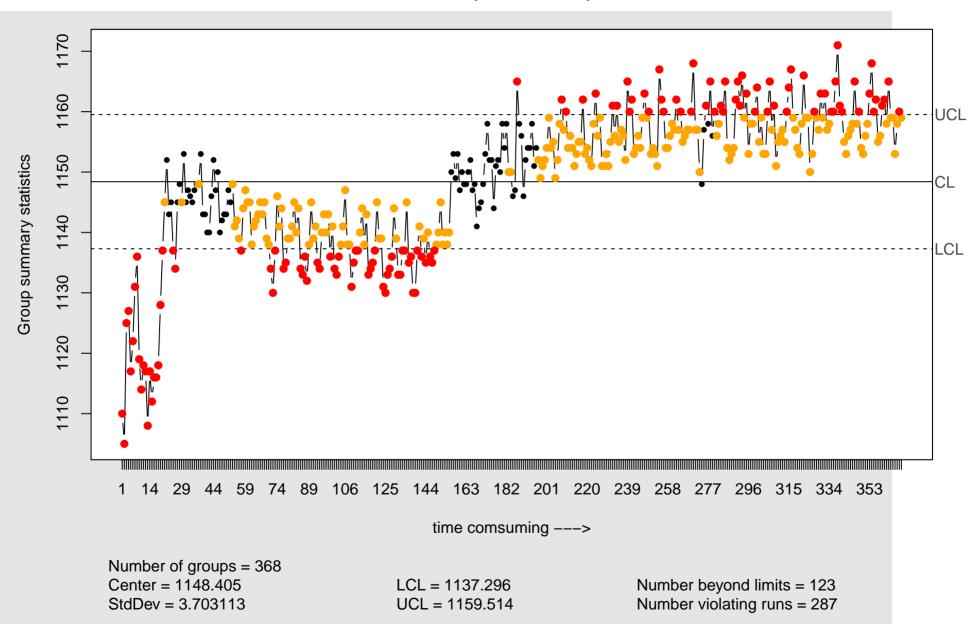
### X-bar chart using USL/LSL for a given dataset

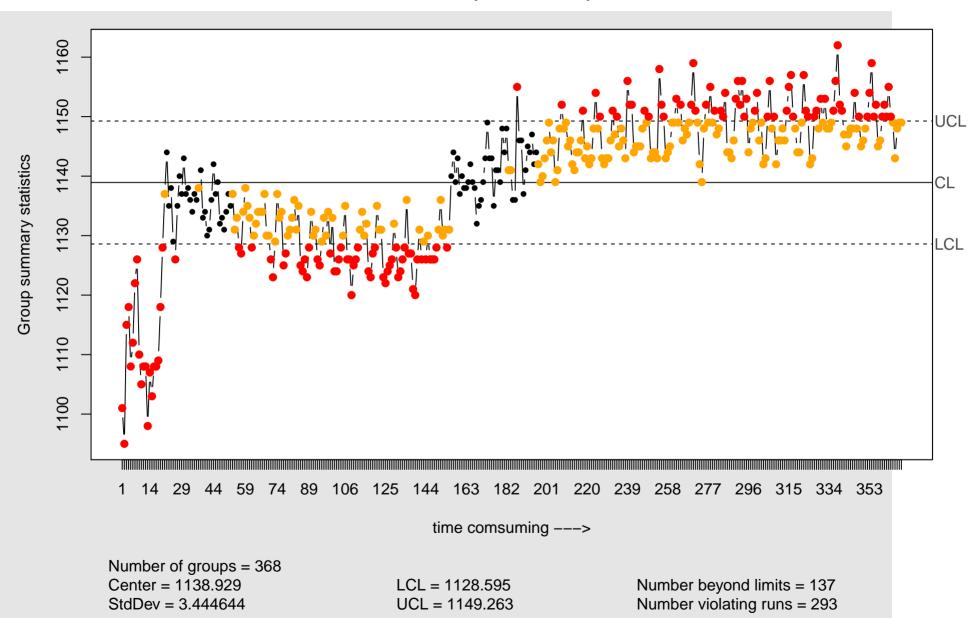


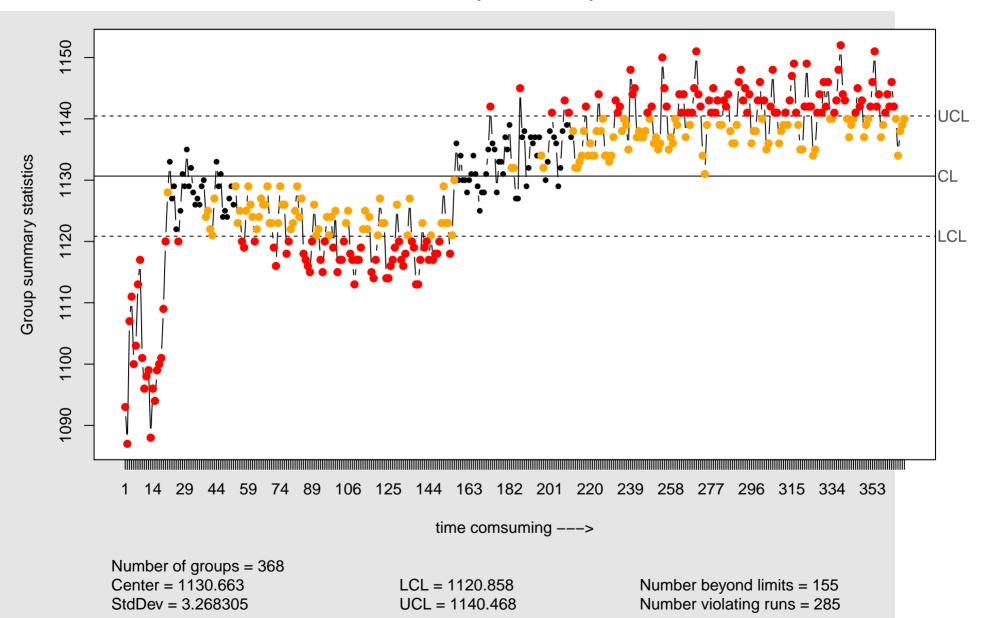


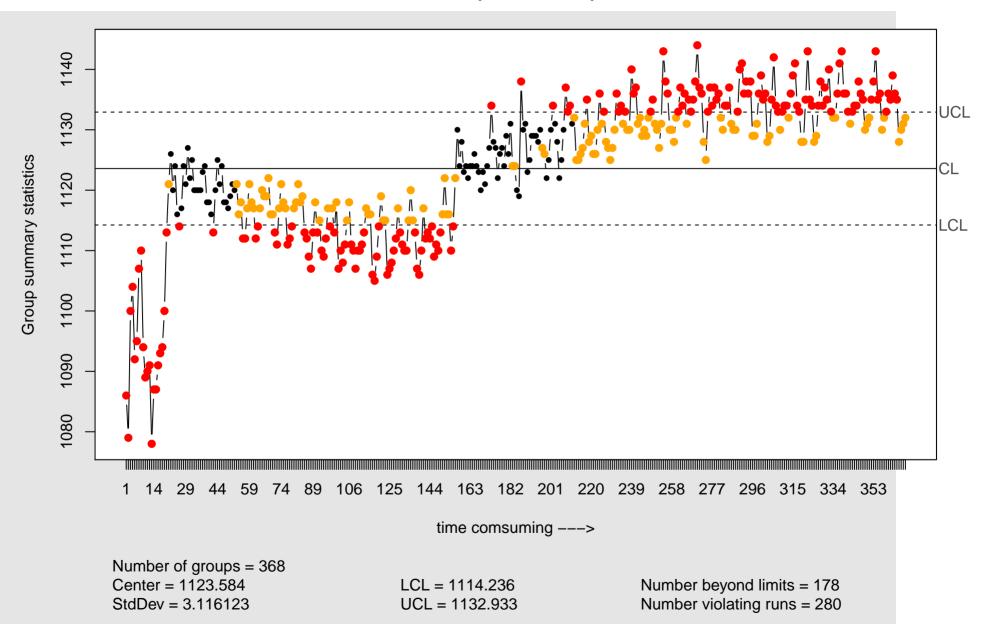


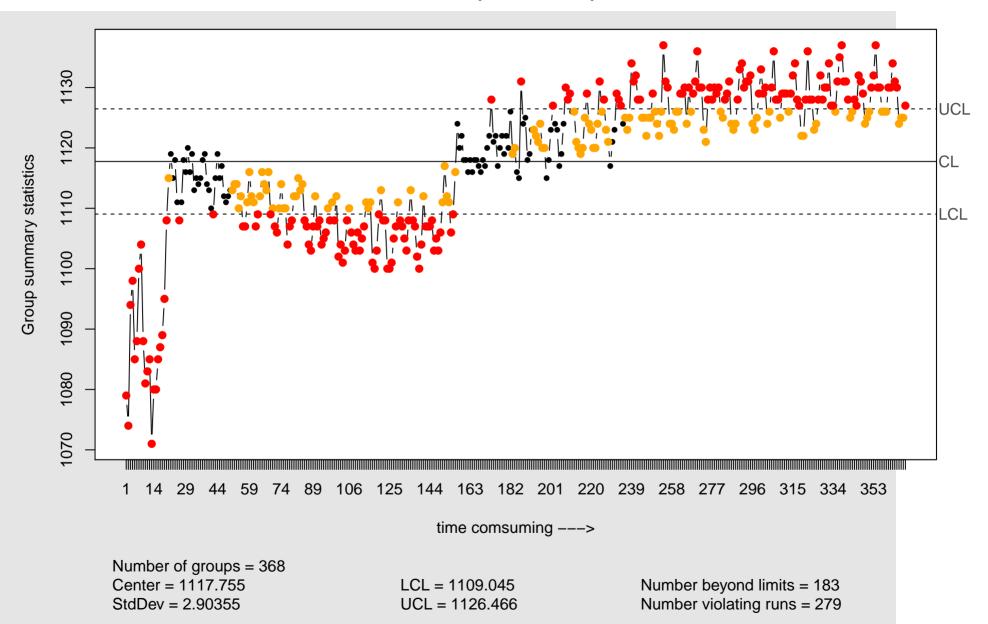


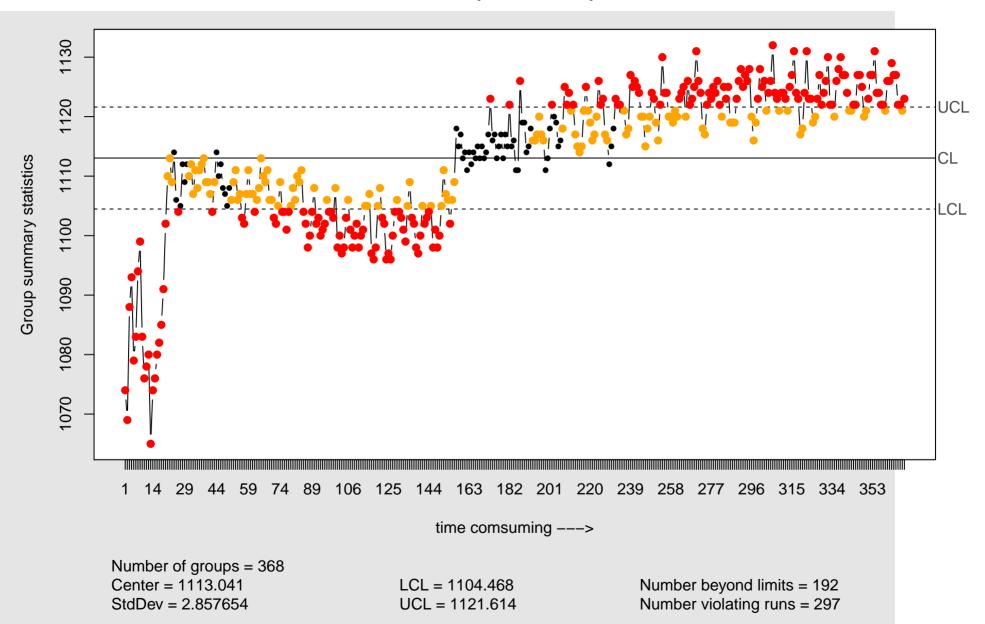


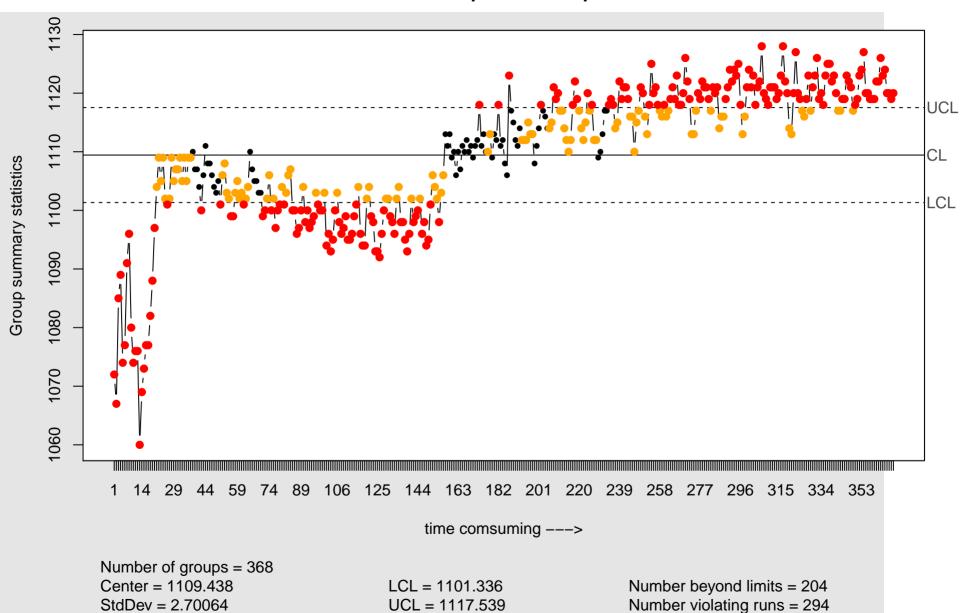


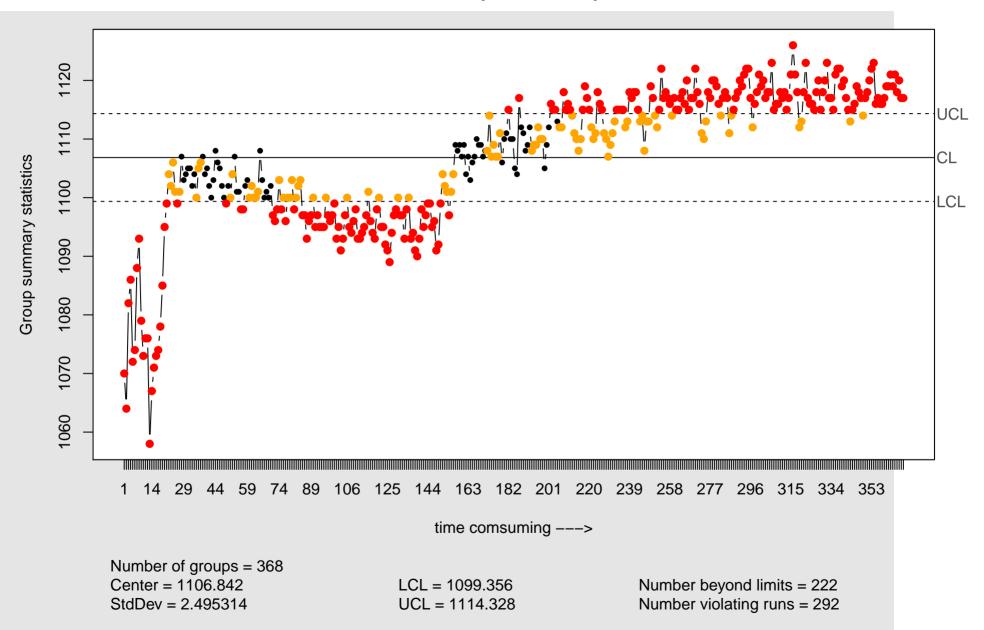


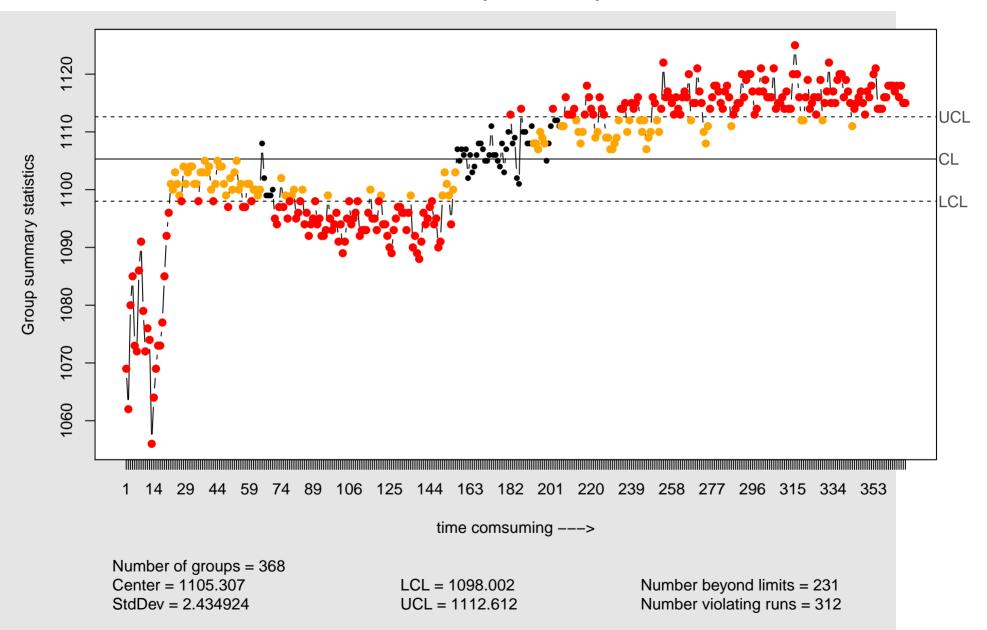


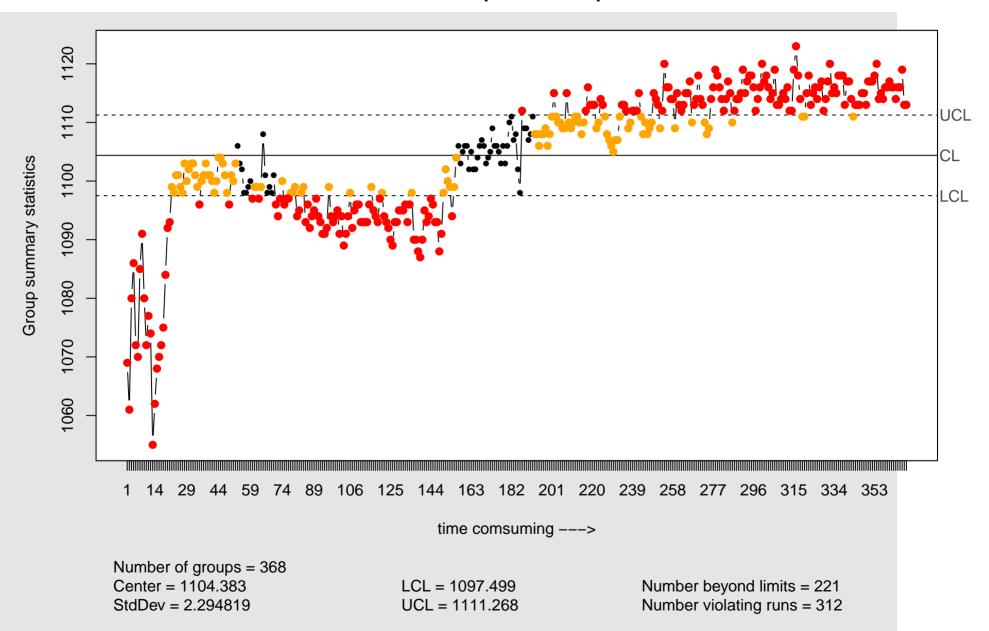


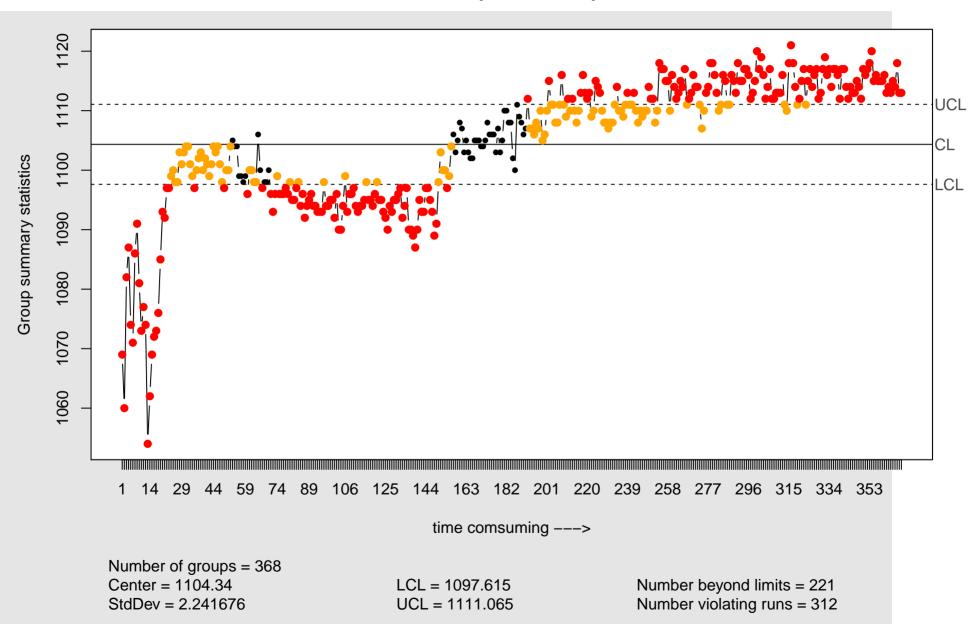


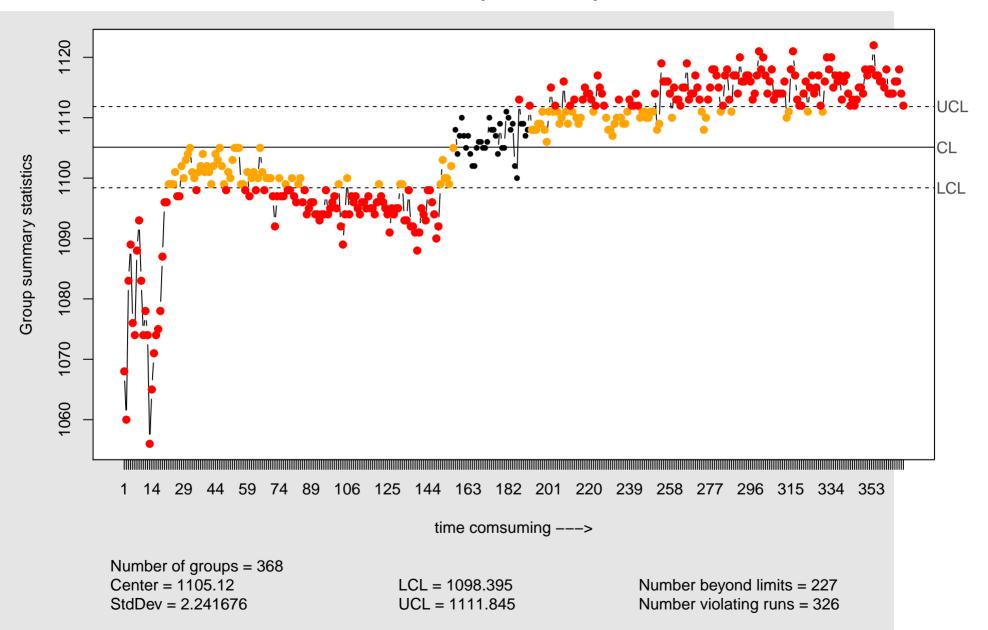


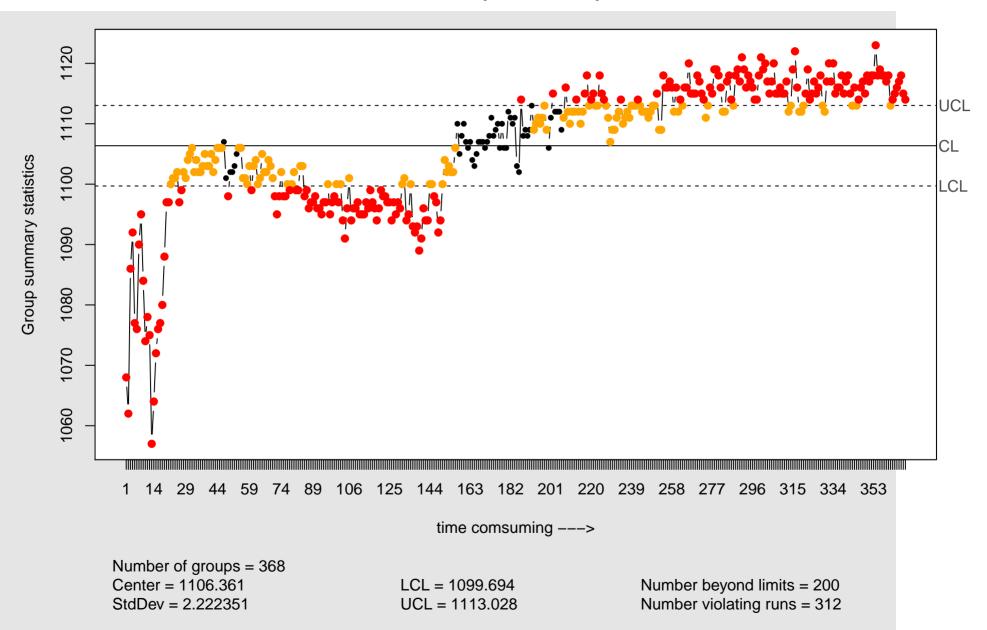


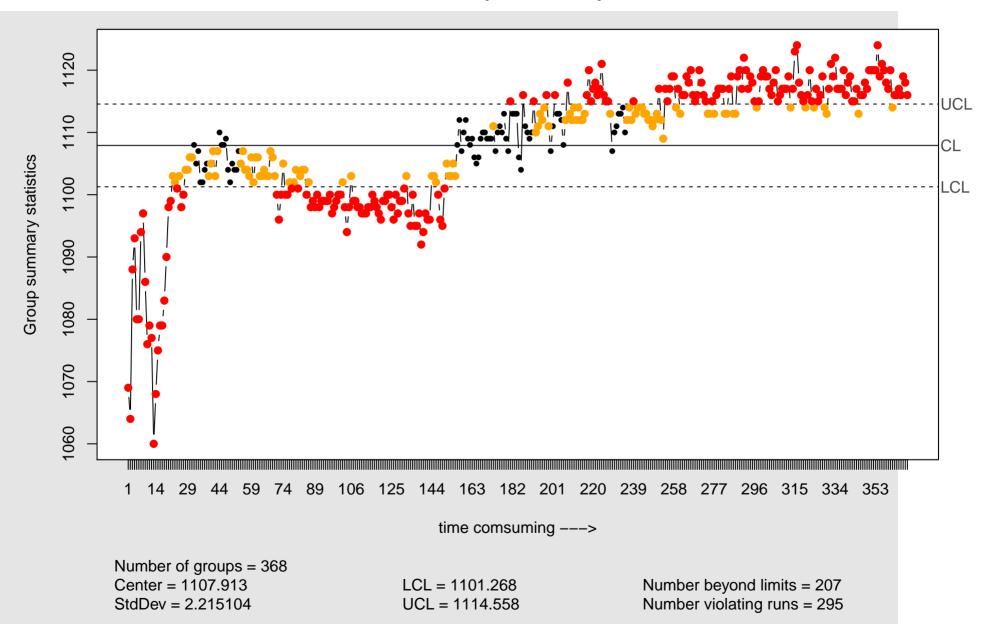


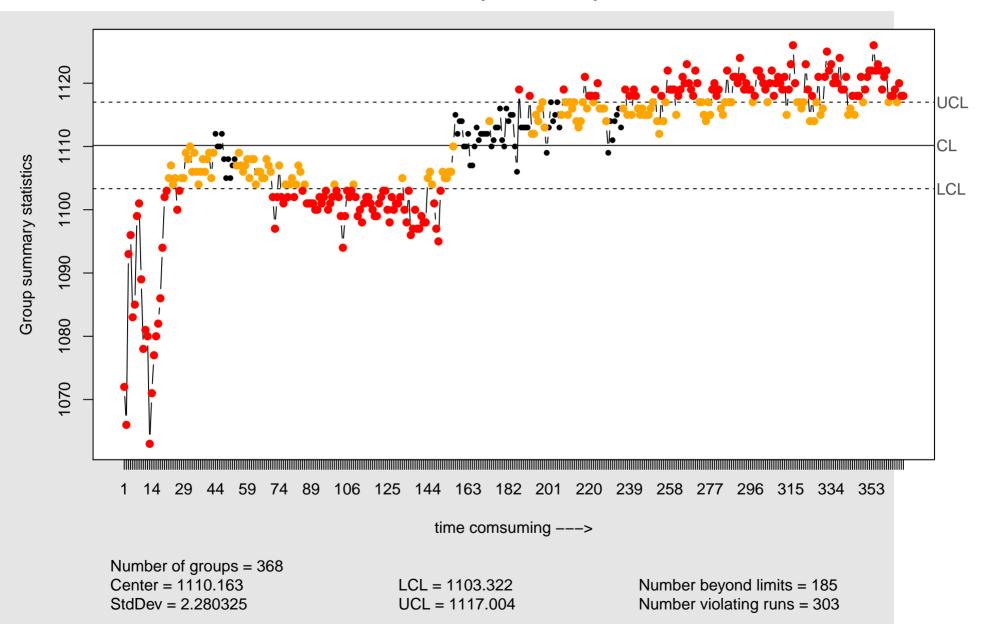


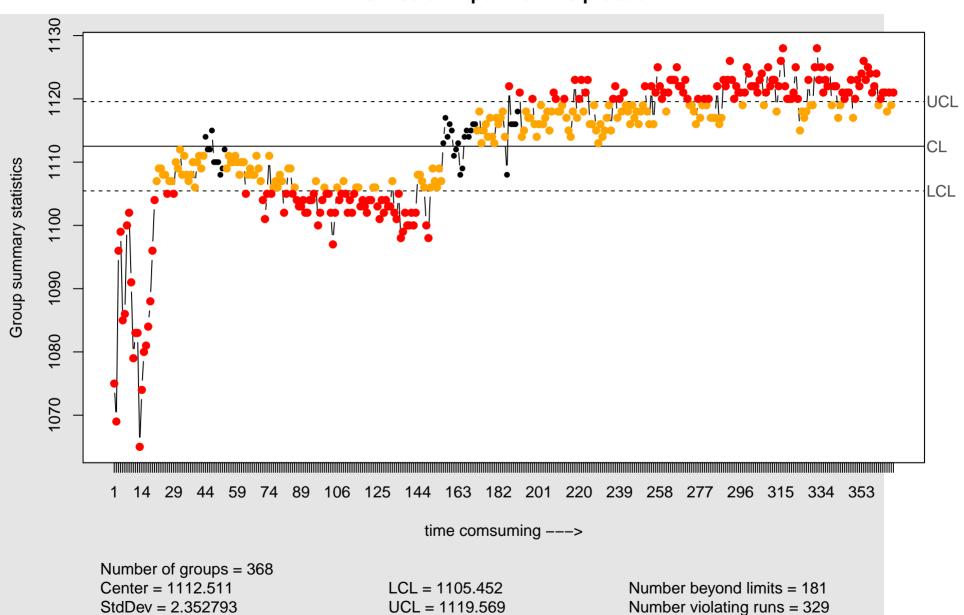


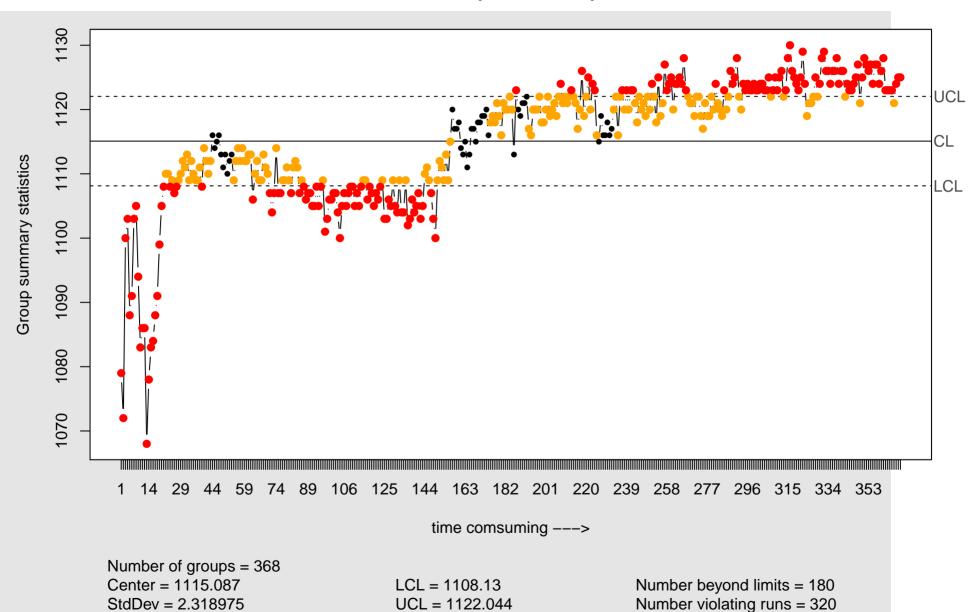


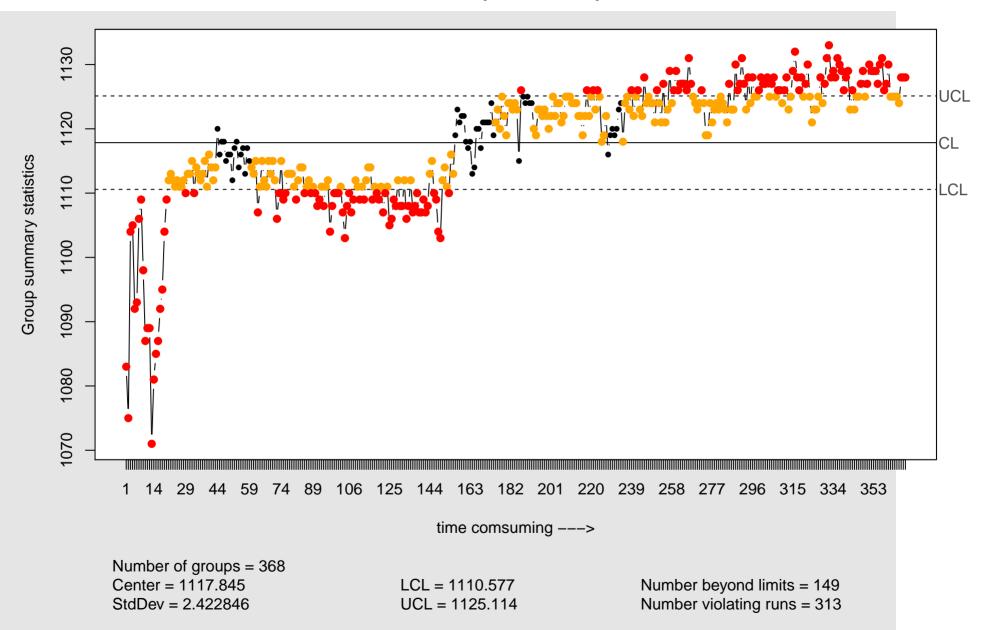


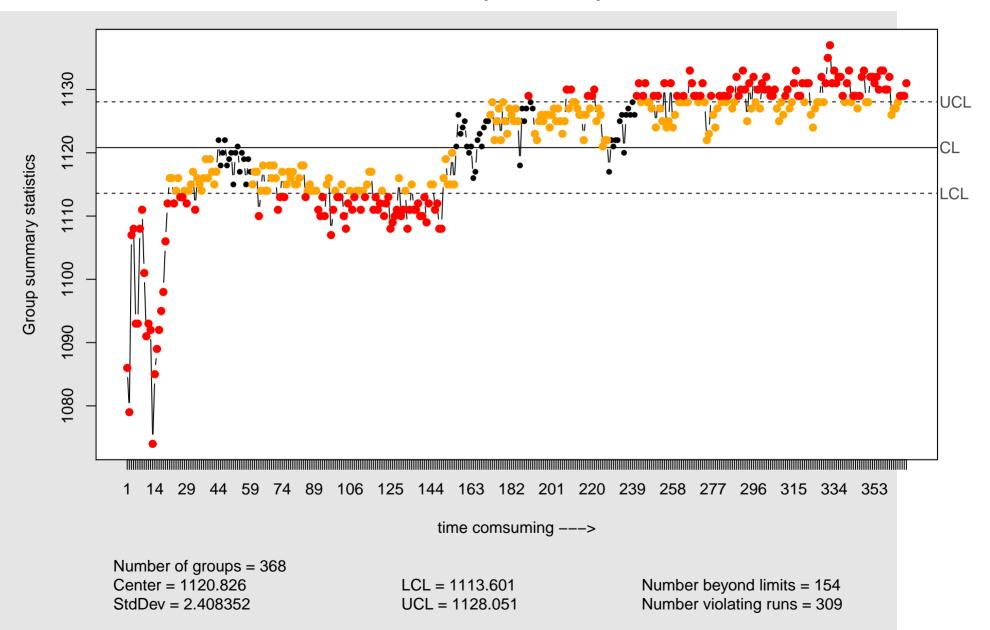


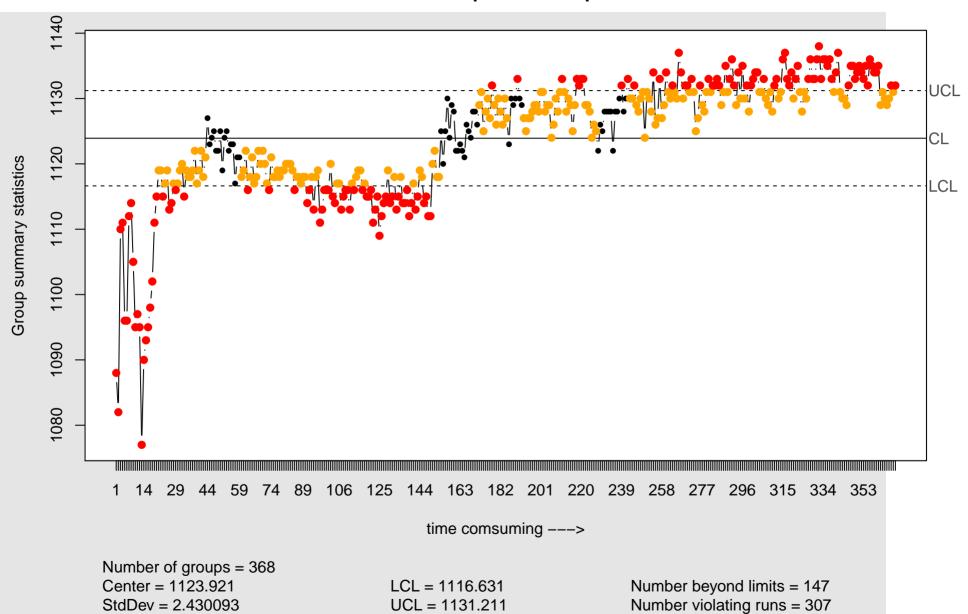


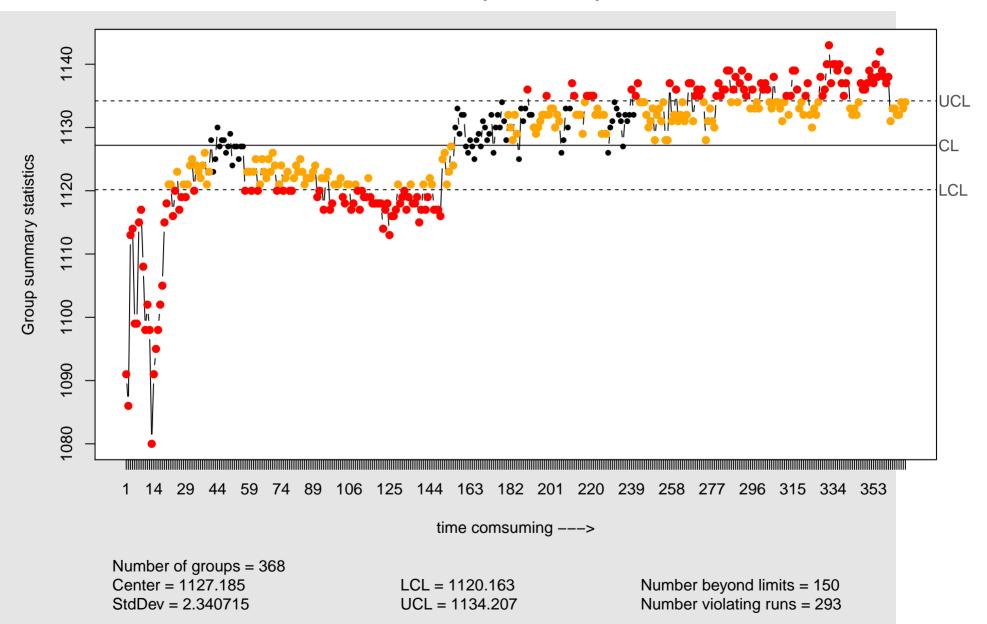


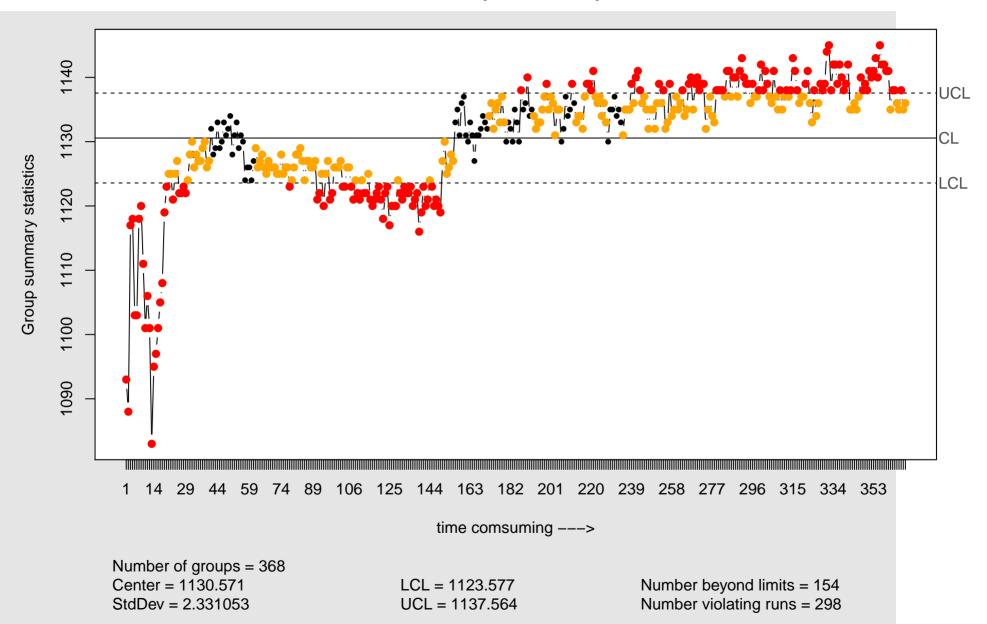


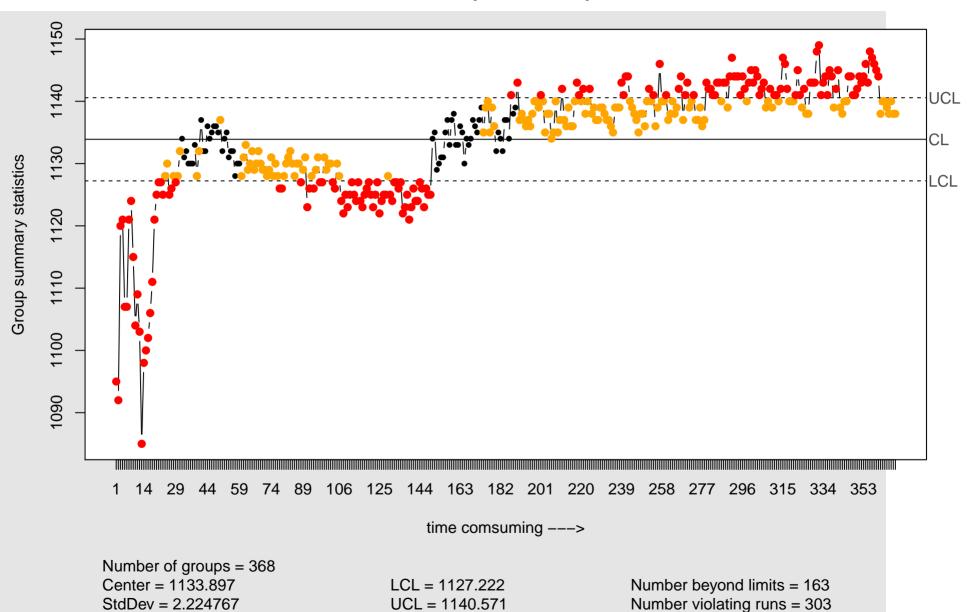


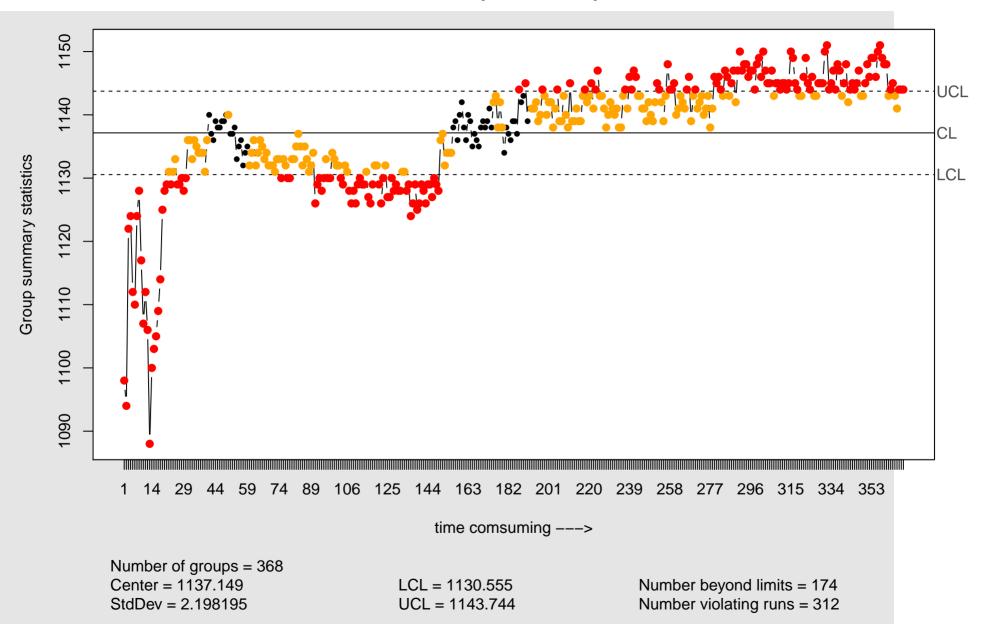


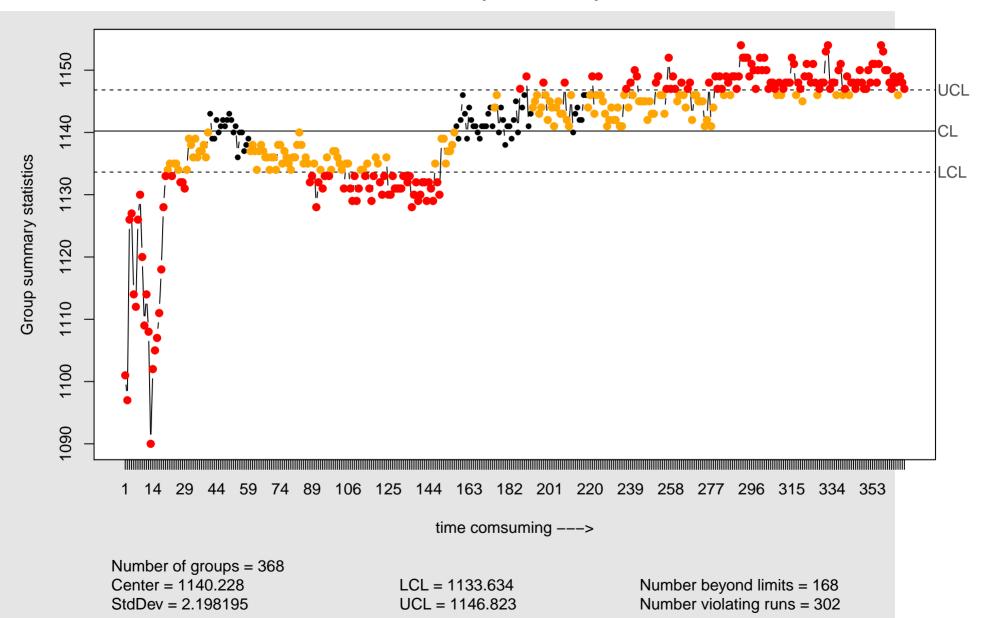


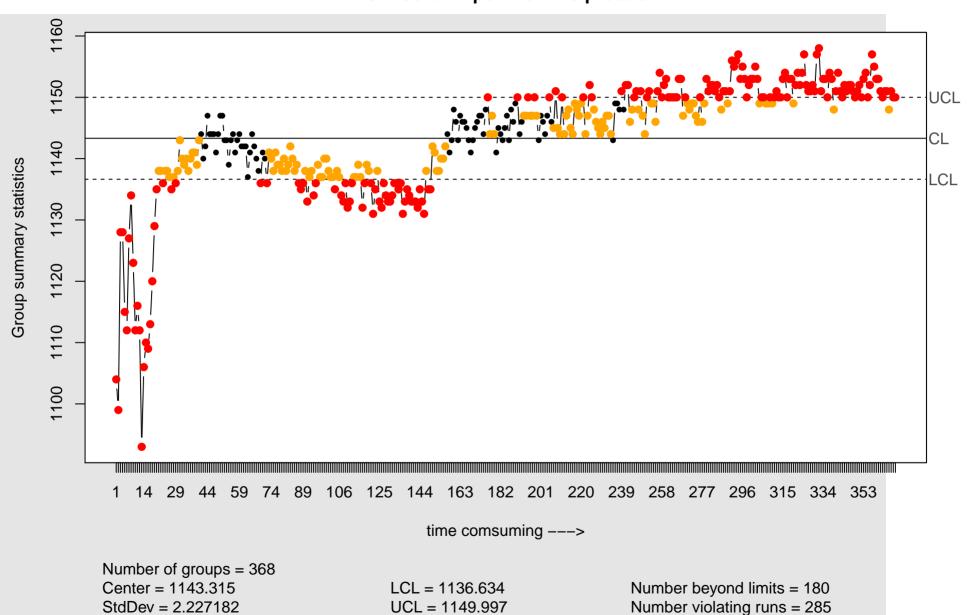


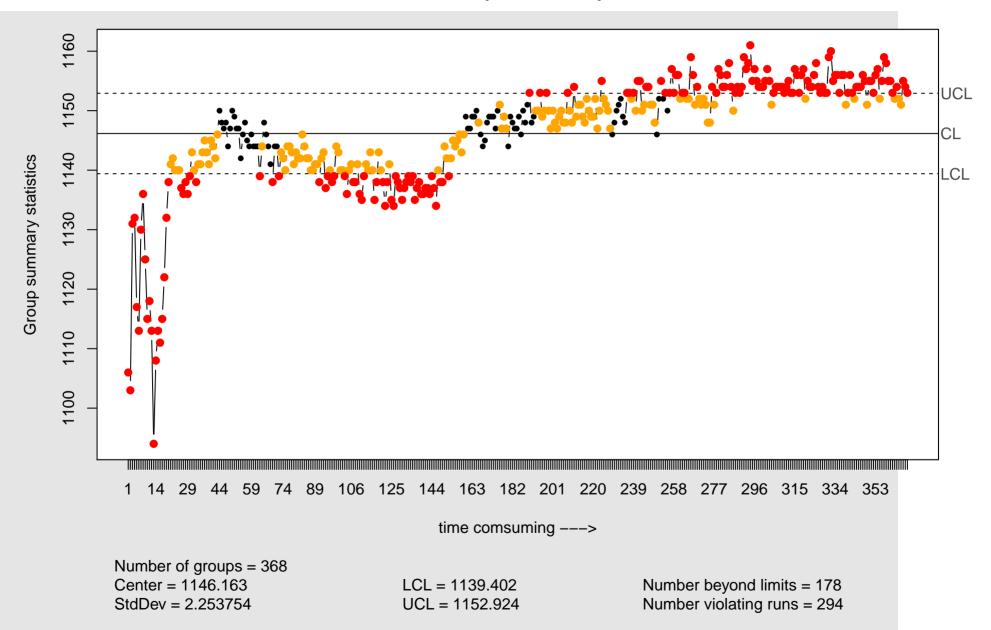


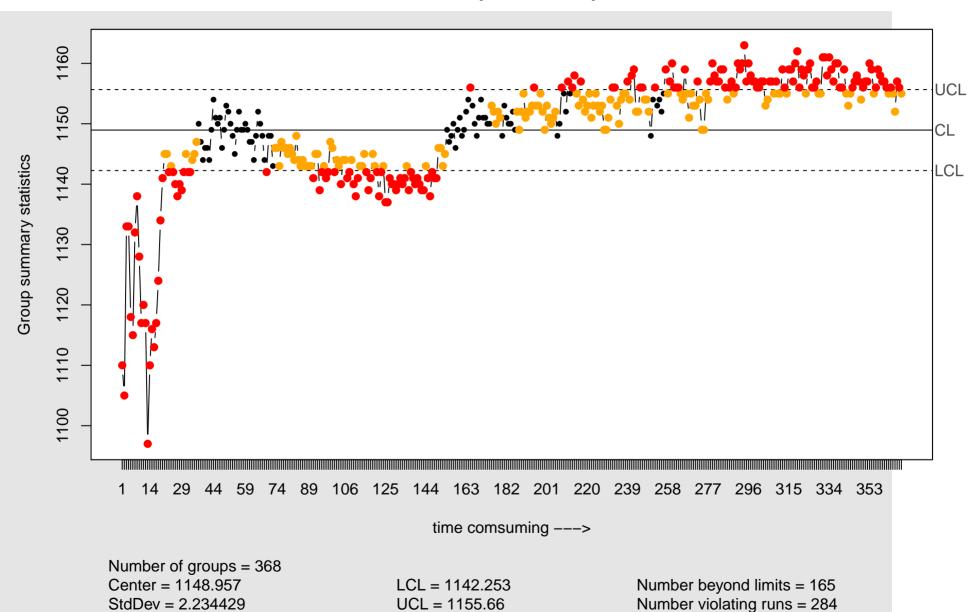


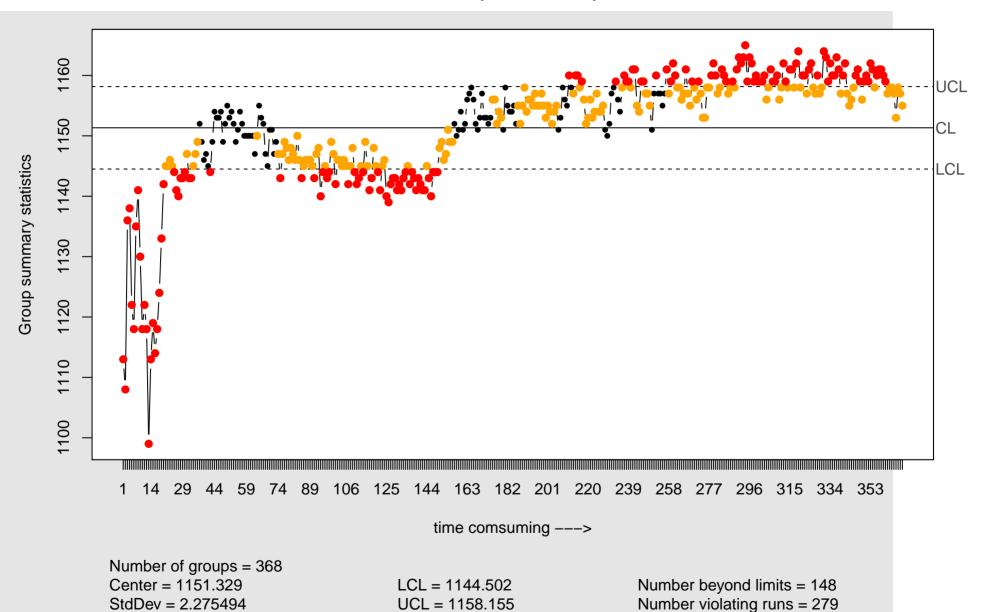


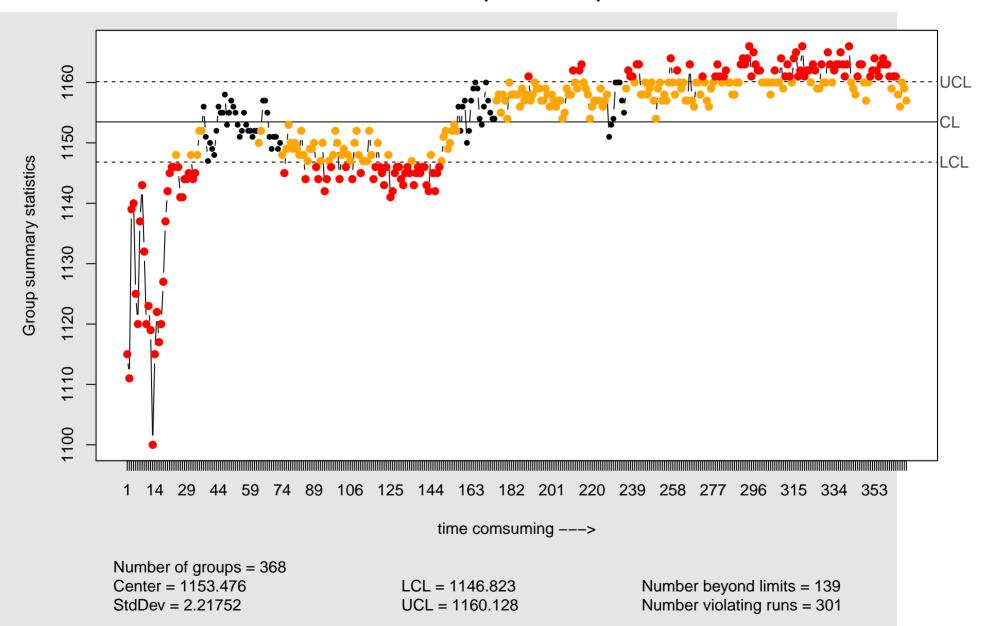


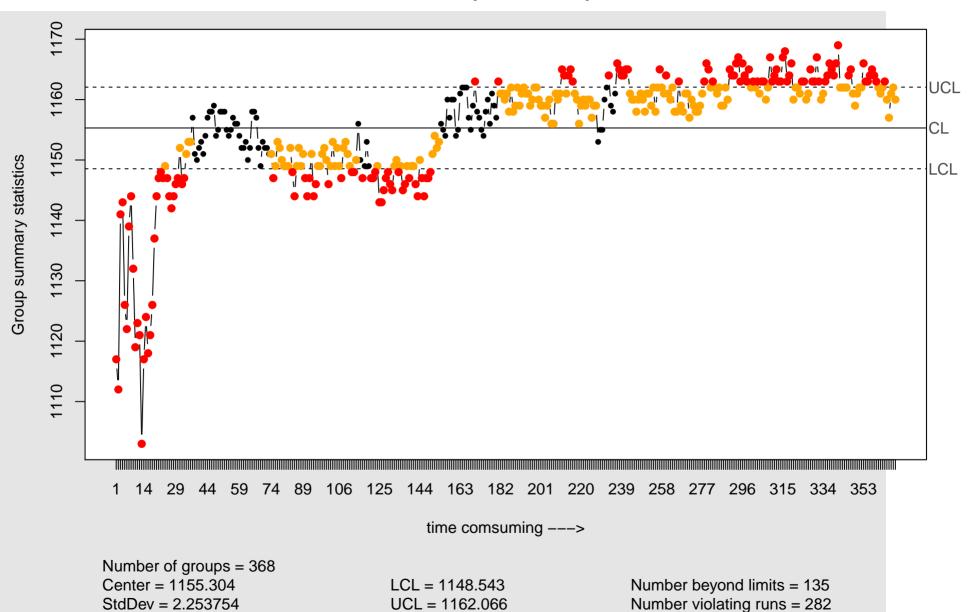


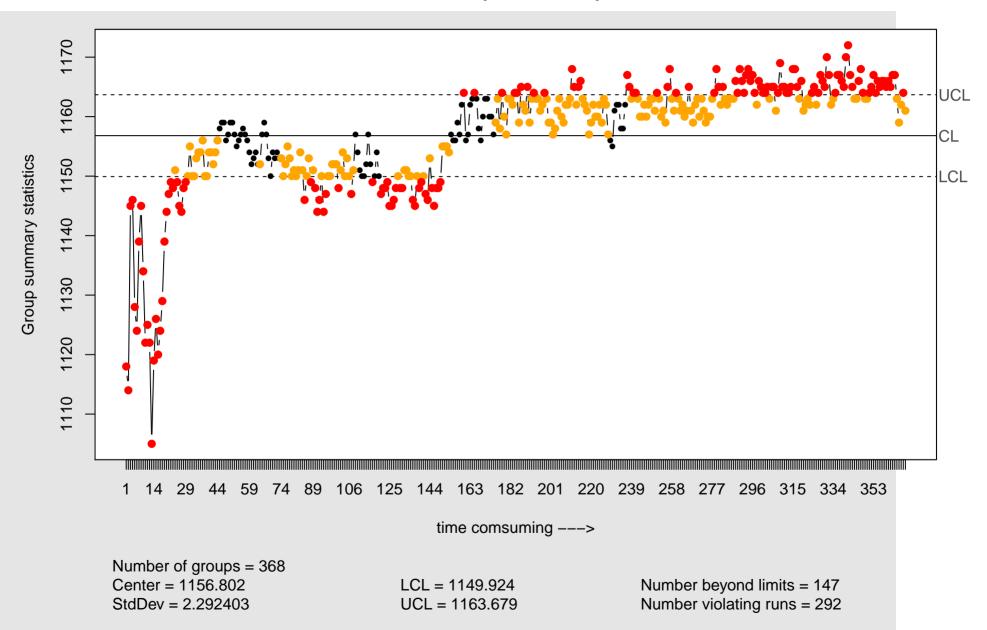


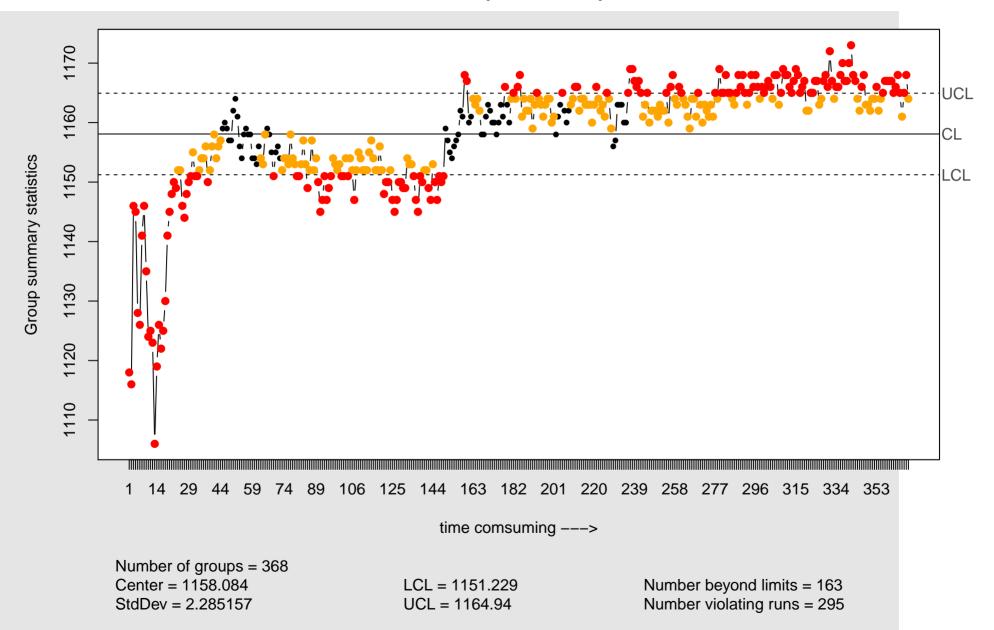


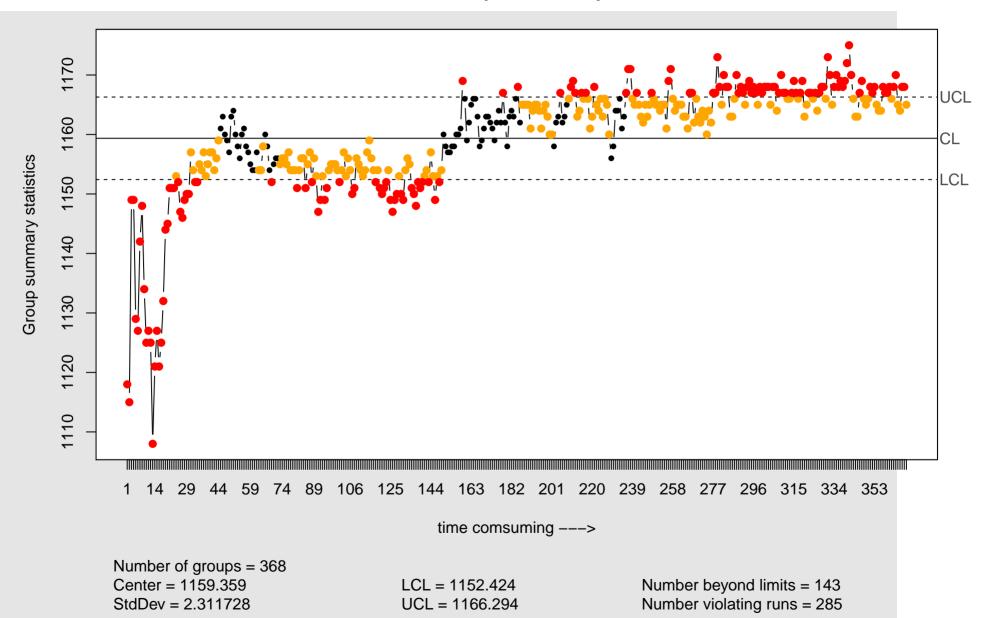


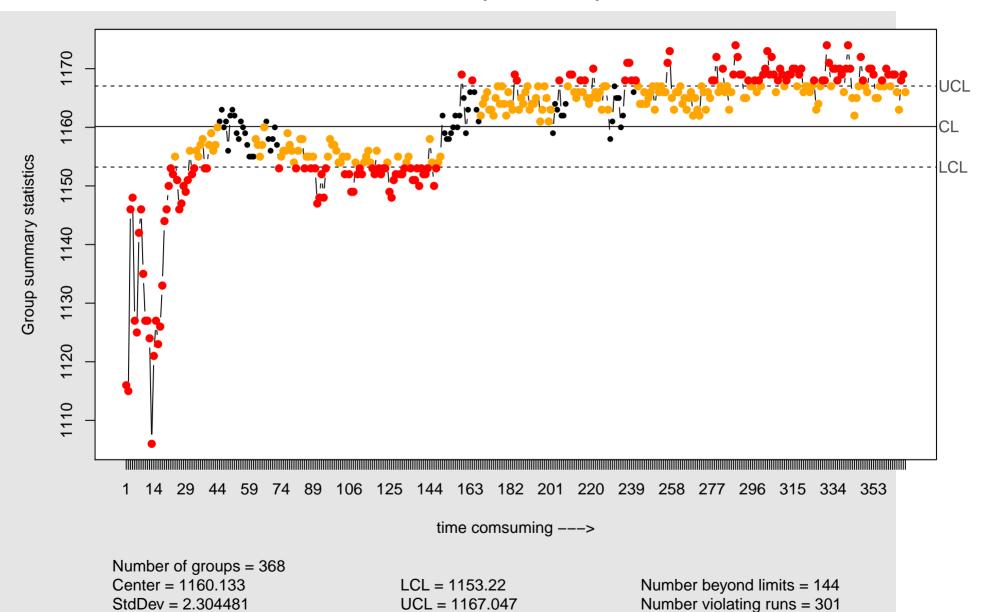


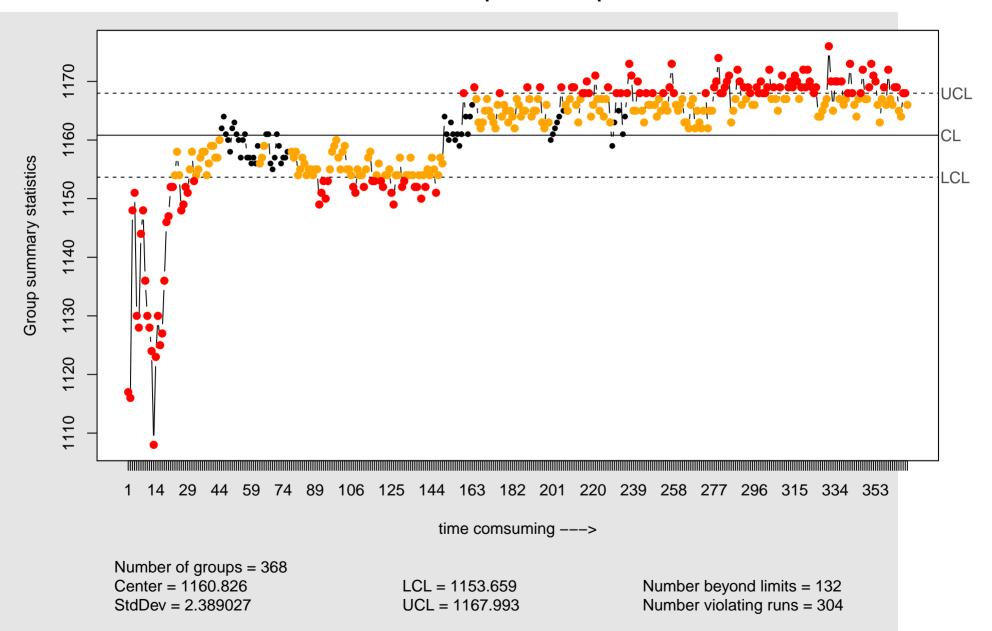


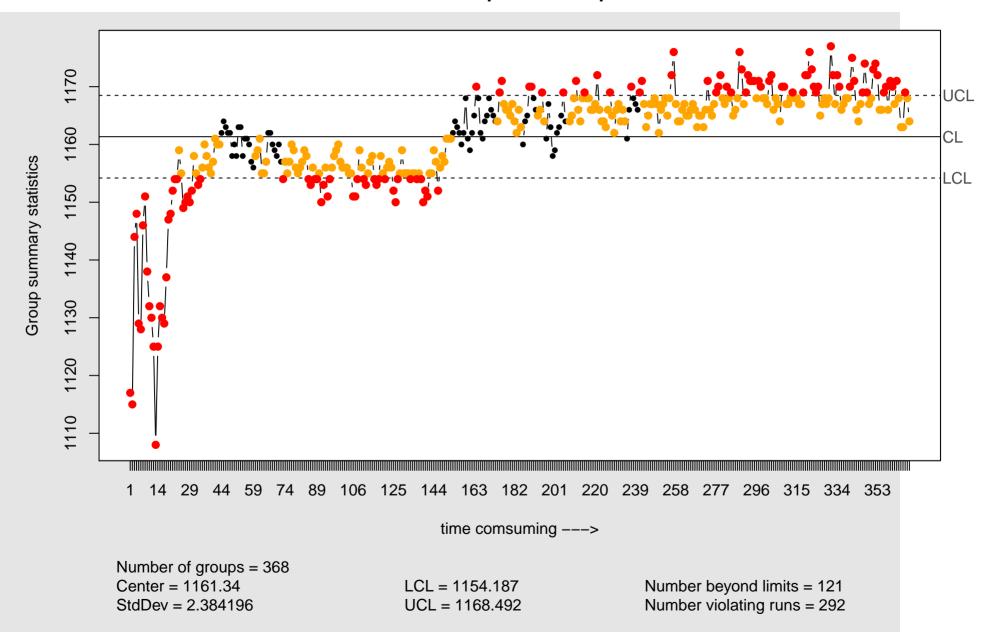


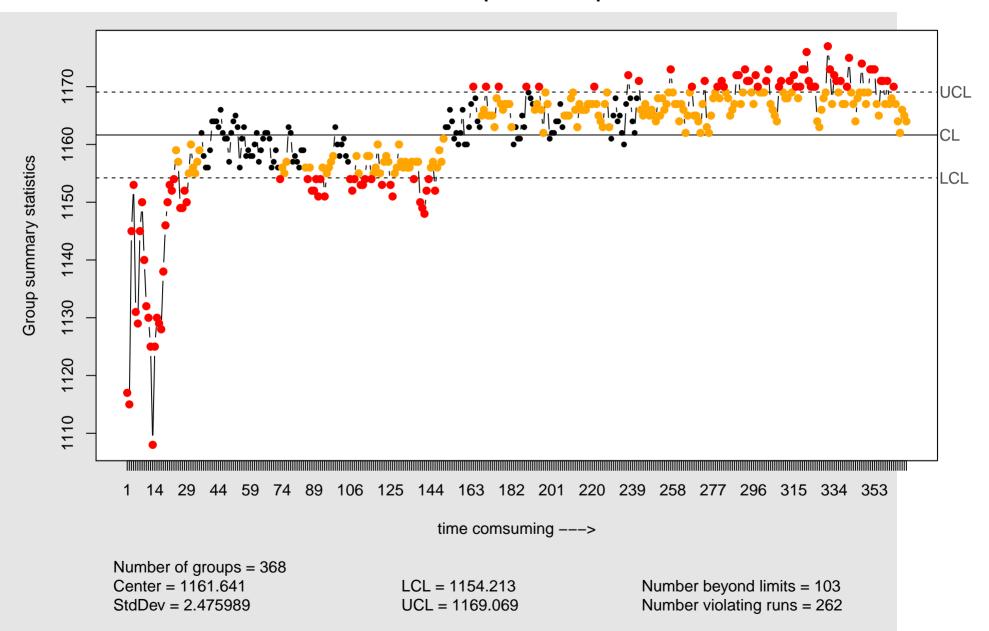


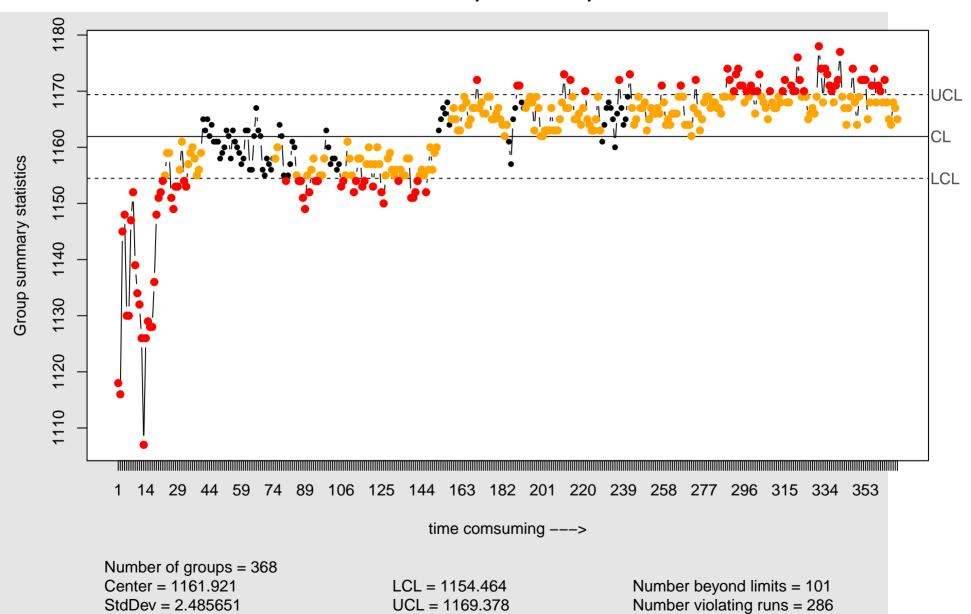


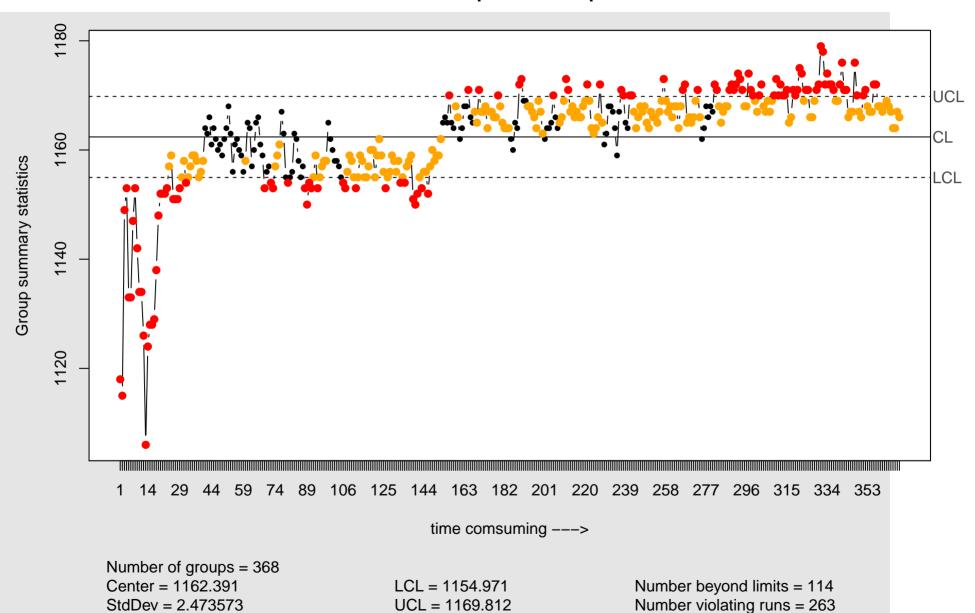


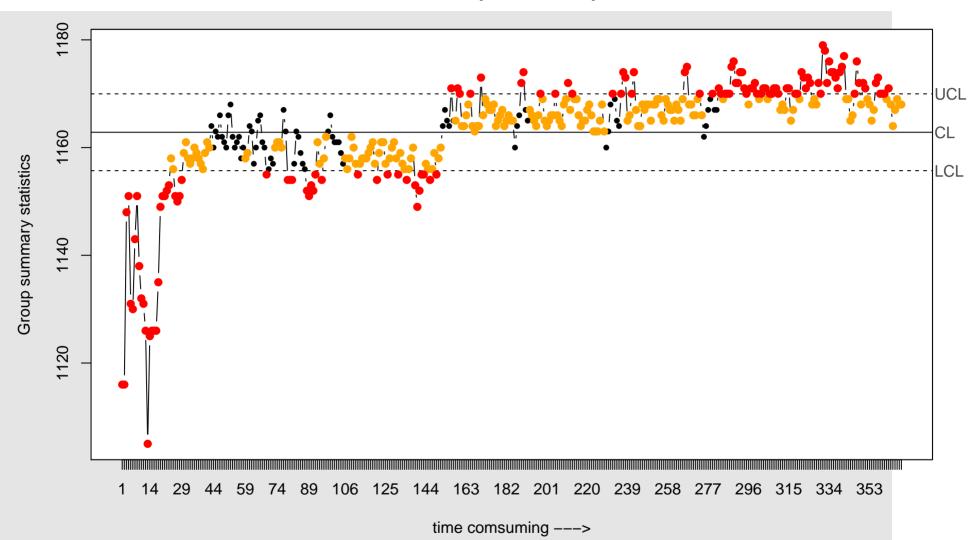












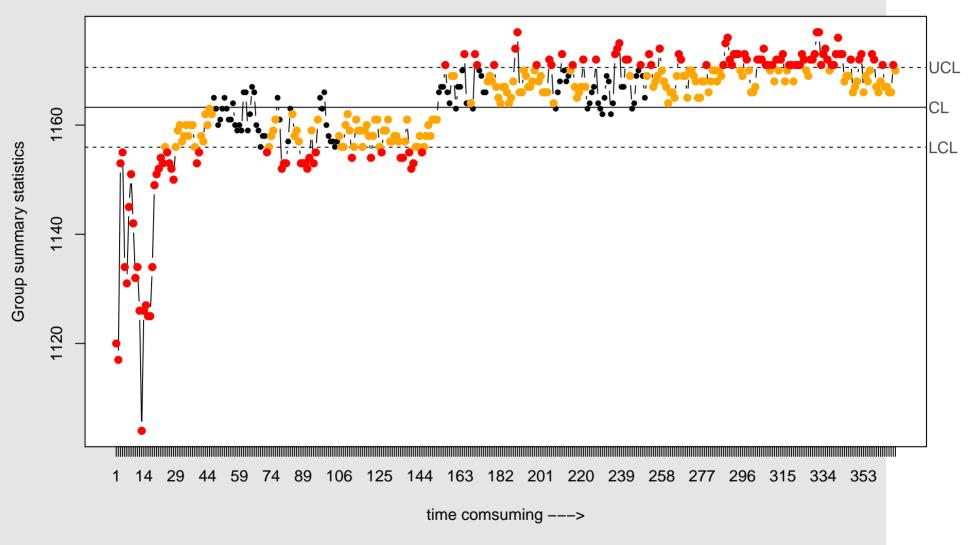
Number of groups = 368

Center = 1162.842

StdDev = 2.376949

LCL = 1155.712 UCL = 1169.973

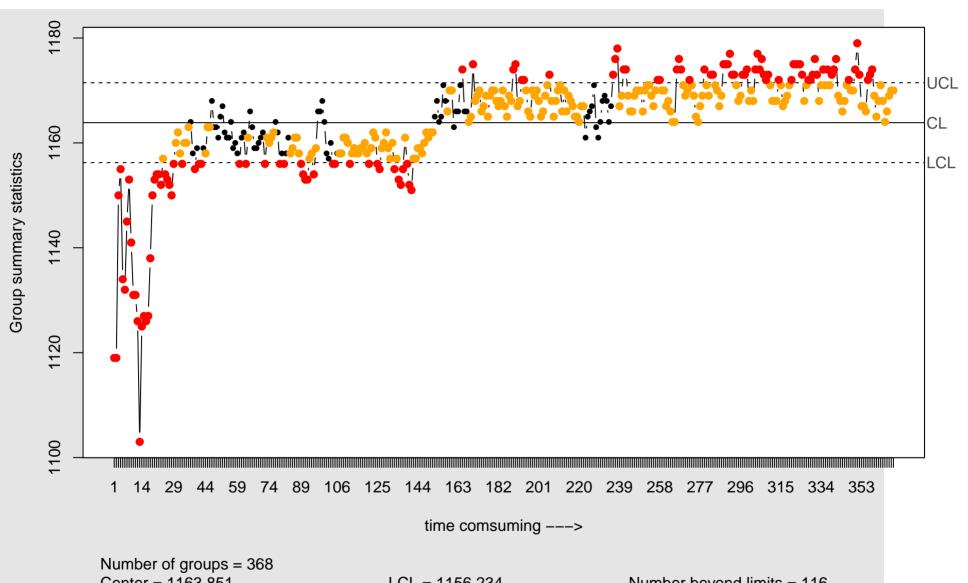
Number beyond limits = 128 Number violating runs = 286



Number of groups = 368 Center = 1163.25 StdDev = 2.434924

LCL = 1155.945 UCL = 1170.555

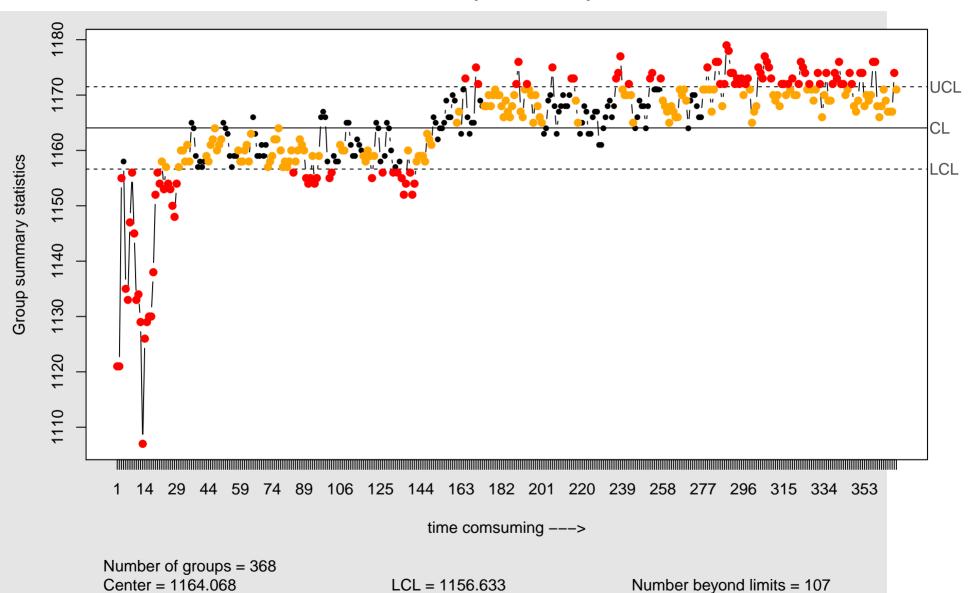
Number beyond limits = 124 Number violating runs = 268



Number of groups = 368 Center = 1163.851 StdDev = 2.538795

LCL = 1156.234 UCL = 1171.467

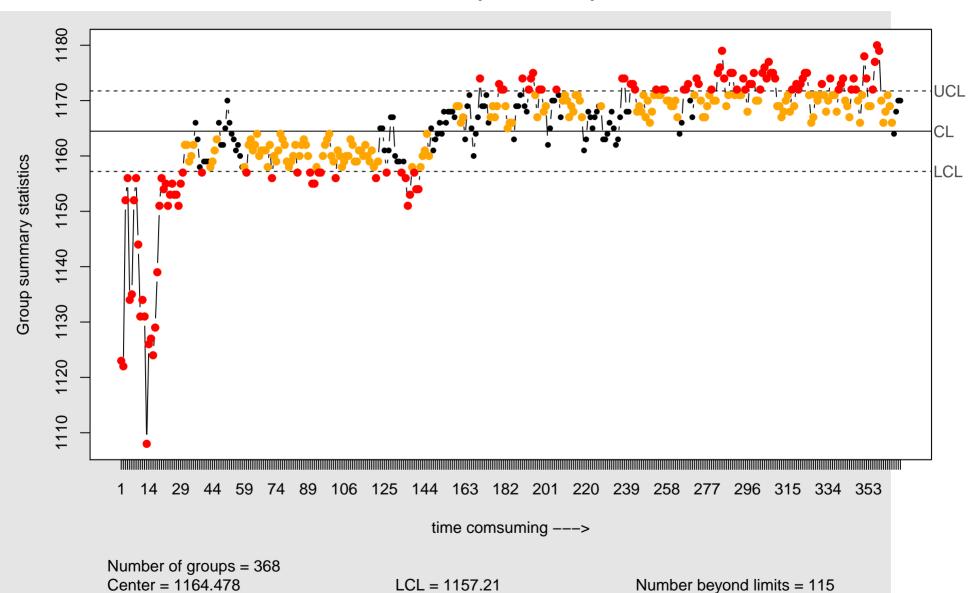
Number beyond limits = 116 Number violating runs = 289



UCL = 1171.503

StdDev = 2.478405

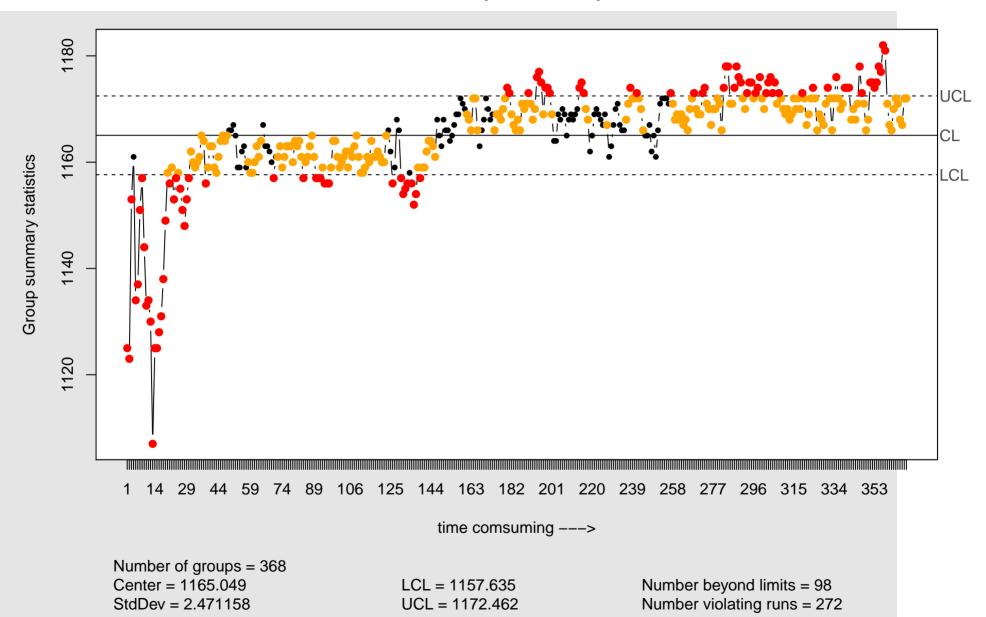
Number violating runs = 240

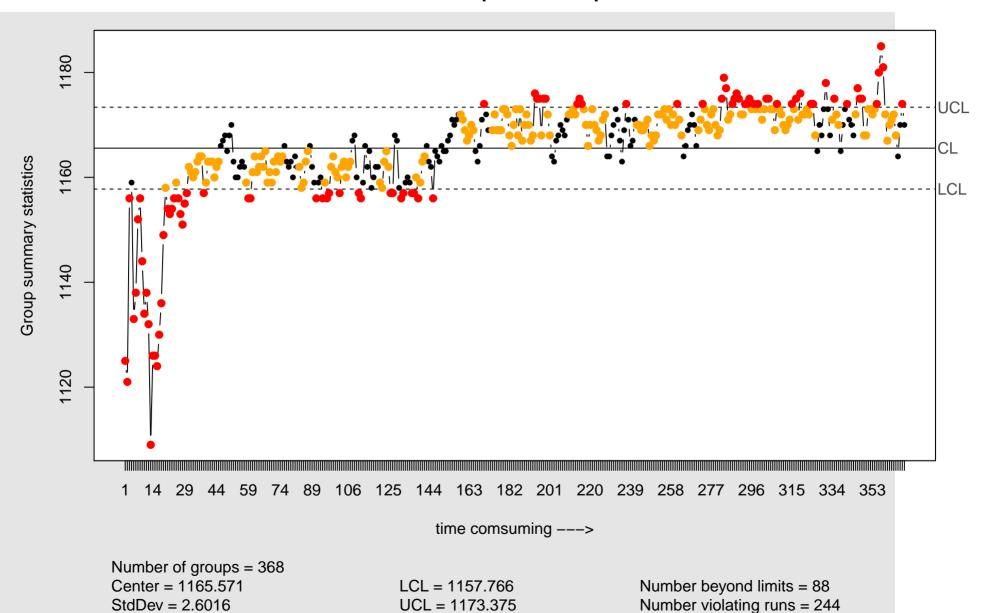


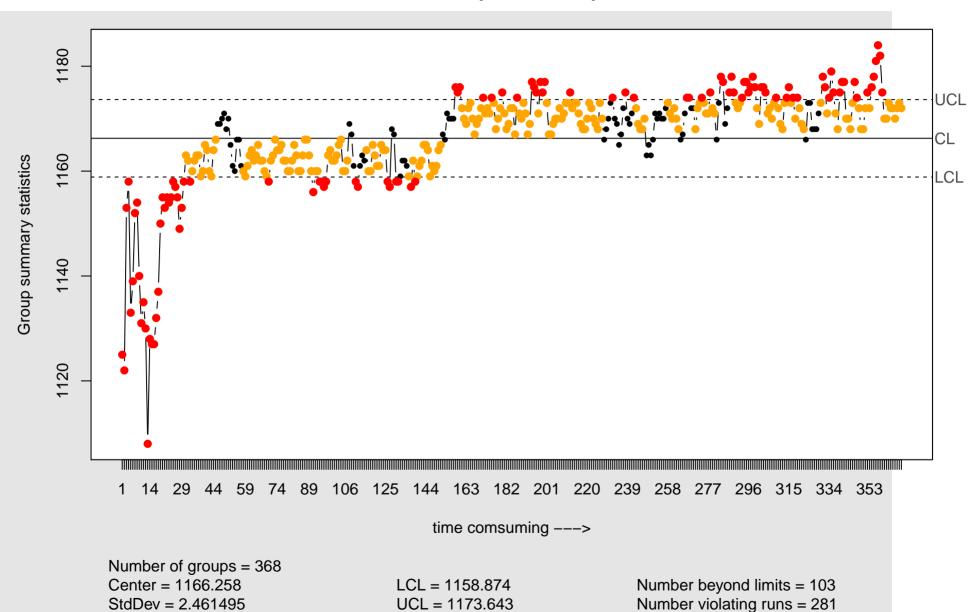
UCL = 1171.747

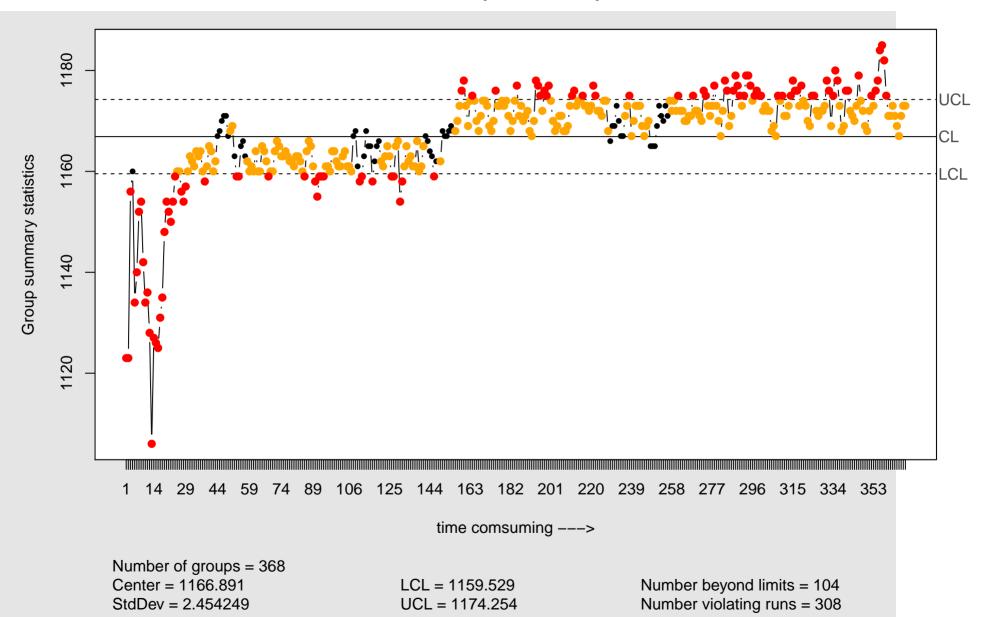
StdDev = 2.422846

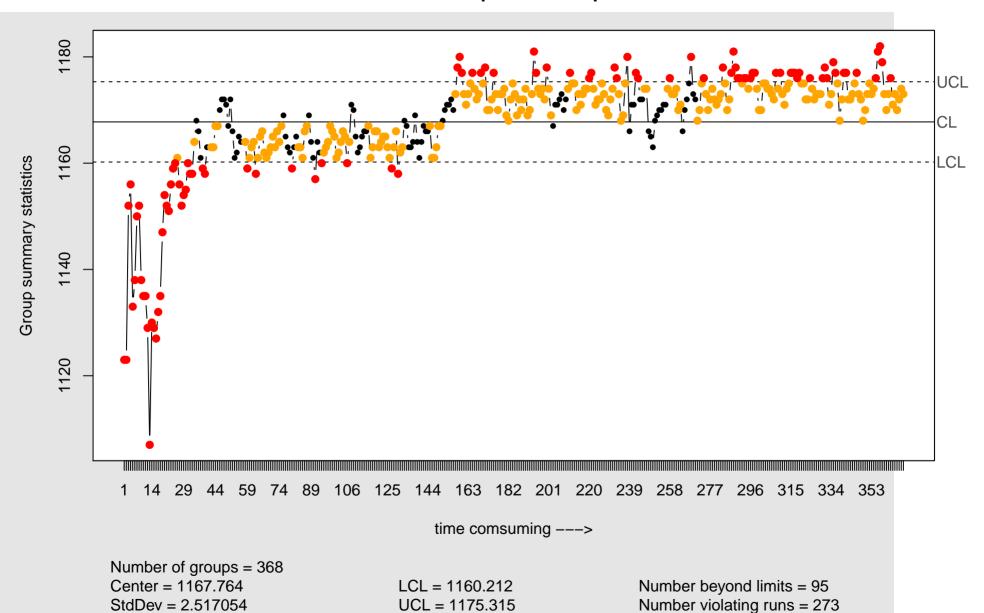
Number violating runs = 259

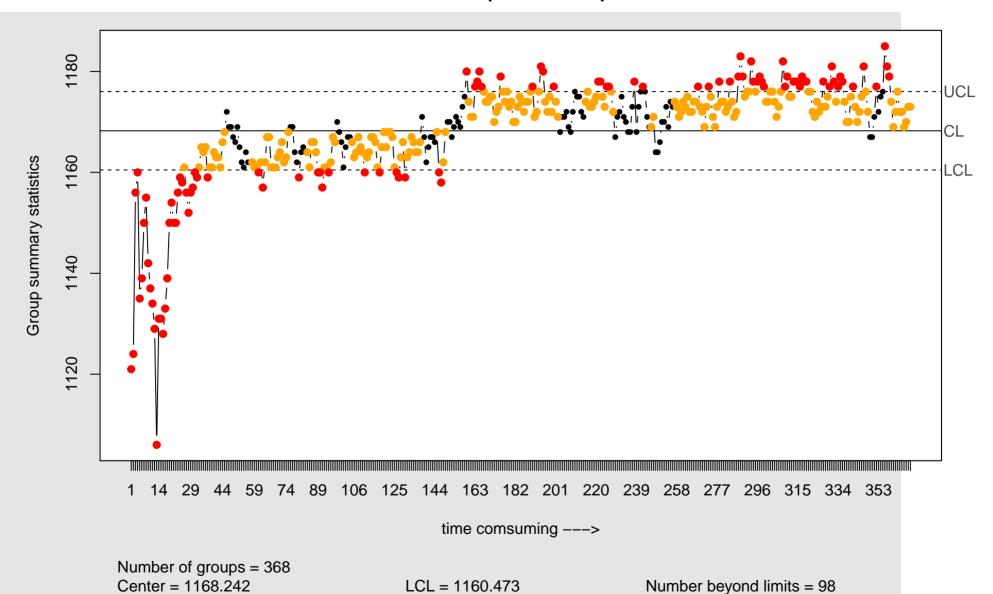








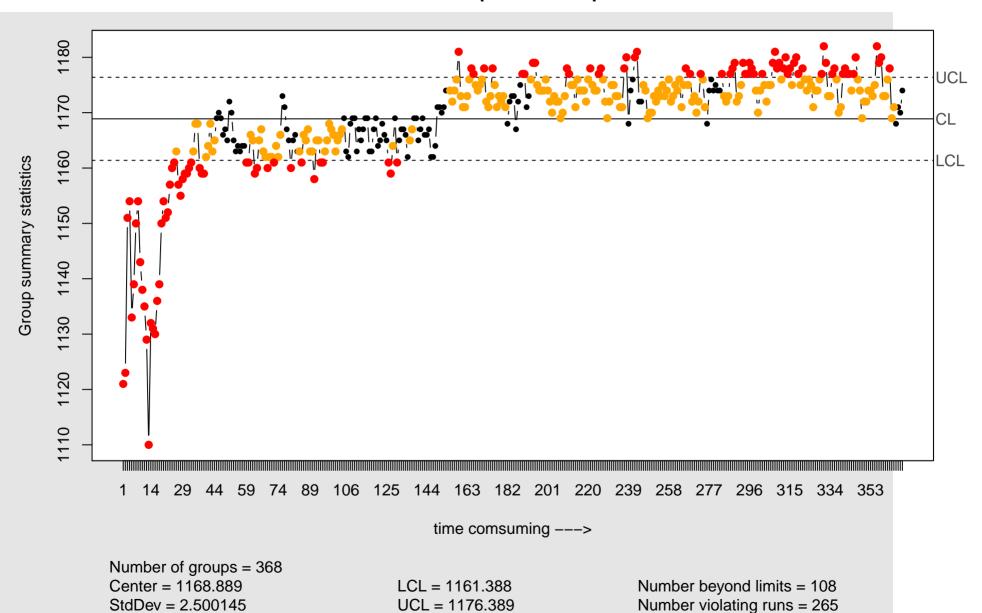


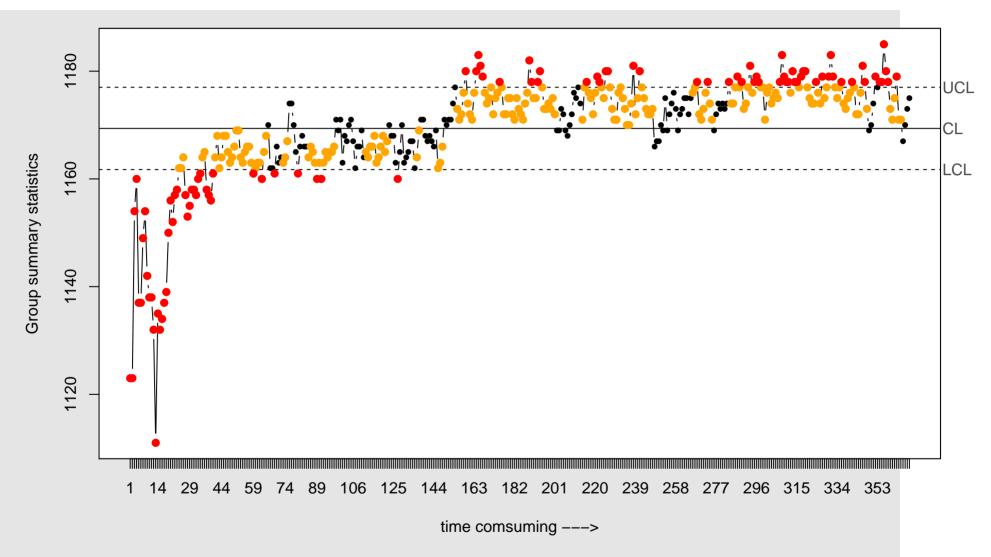


UCL = 1176.01

Number violating runs = 273

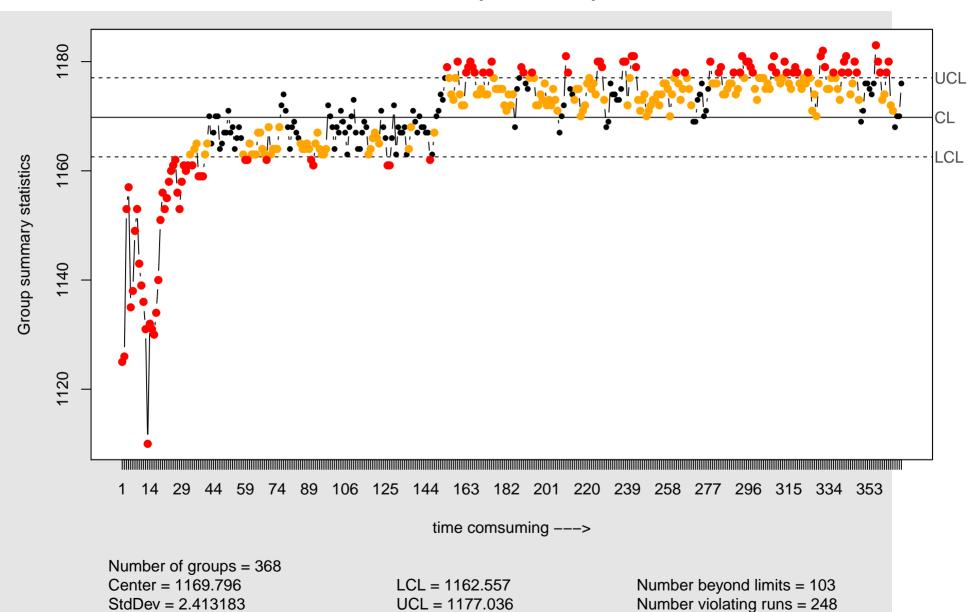
StdDev = 2.589522

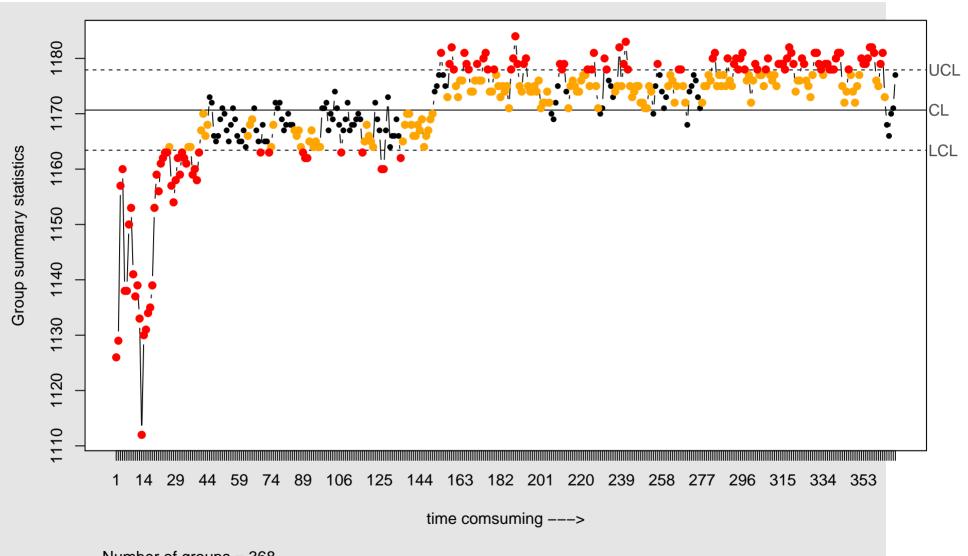




Number of groups = 368 Center = 1169.372 StdDev = 2.546041

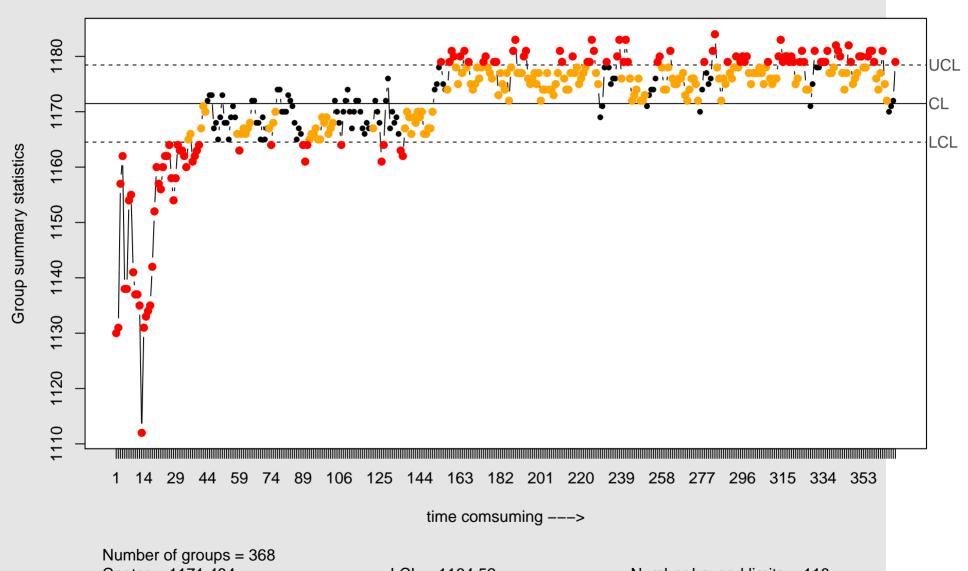
LCL = 1161.734 UCL = 1177.01 Number beyond limits = 95 Number violating runs = 257





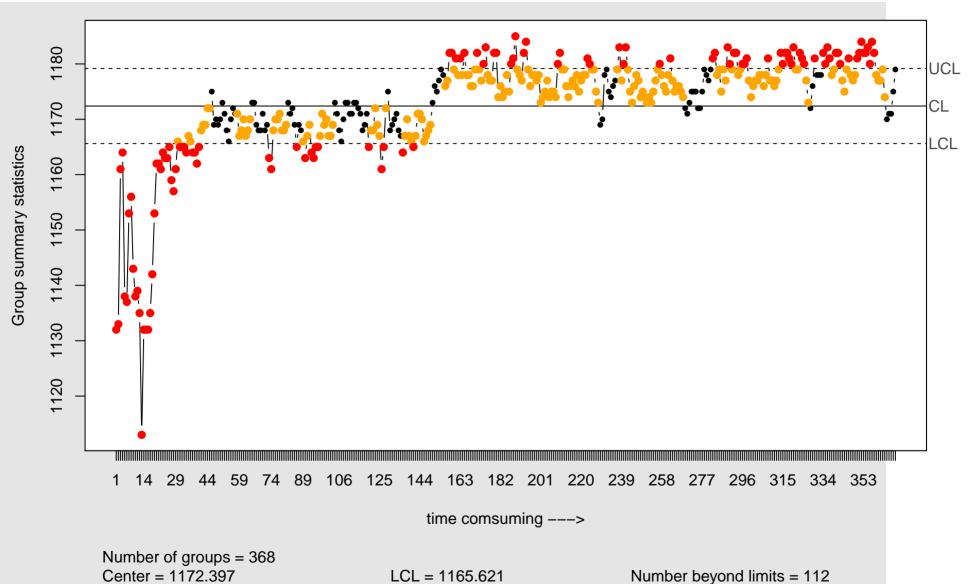
Number of groups = 368 Center = 1170.666 StdDev = 2.418015

LCL = 1163.412 UCL = 1177.92 Number beyond limits = 125 Number violating runs = 256



Number of groups = 368 Center = 1171.484 StdDev = 2.321391

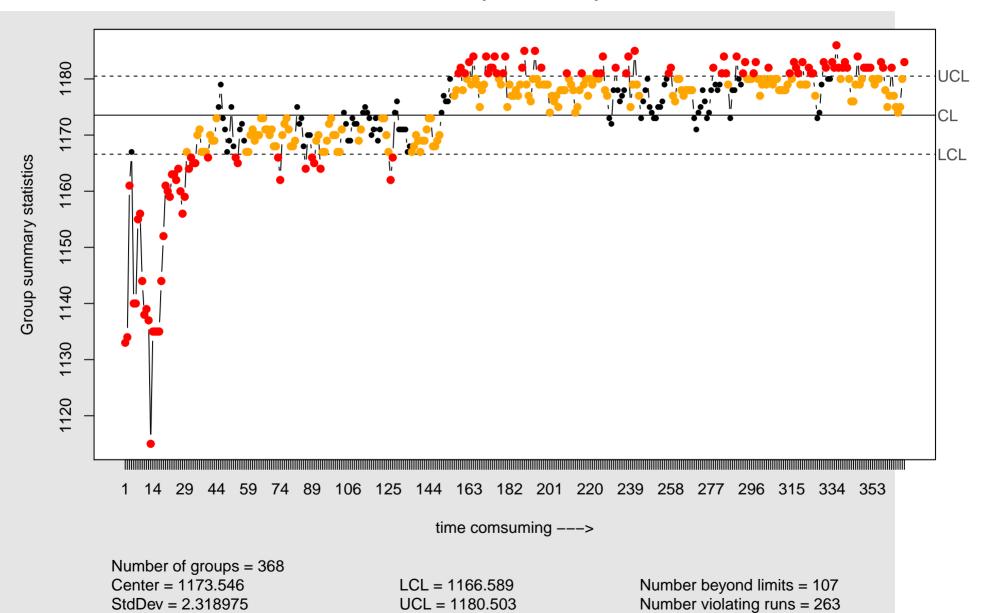
LCL = 1164.52 UCL = 1178.448 Number beyond limits = 118 Number violating runs = 257

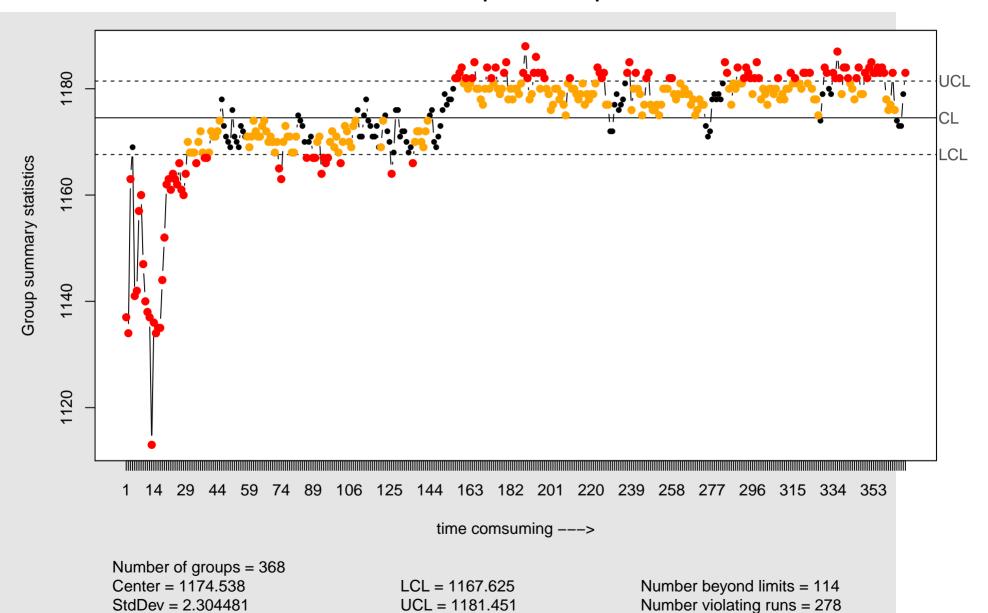


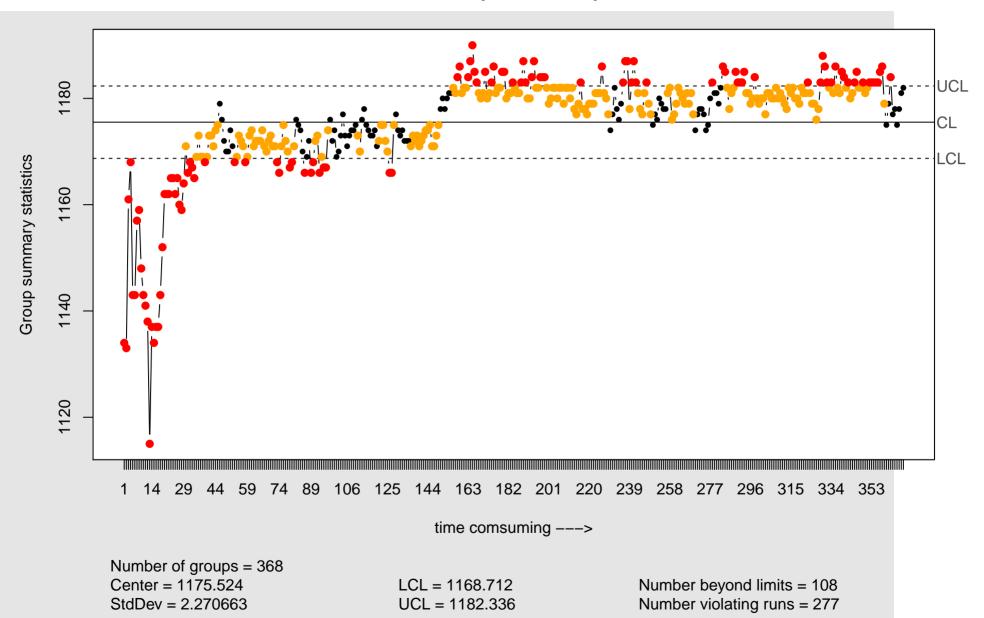
Center = 1172.397StdDev = 2.258585

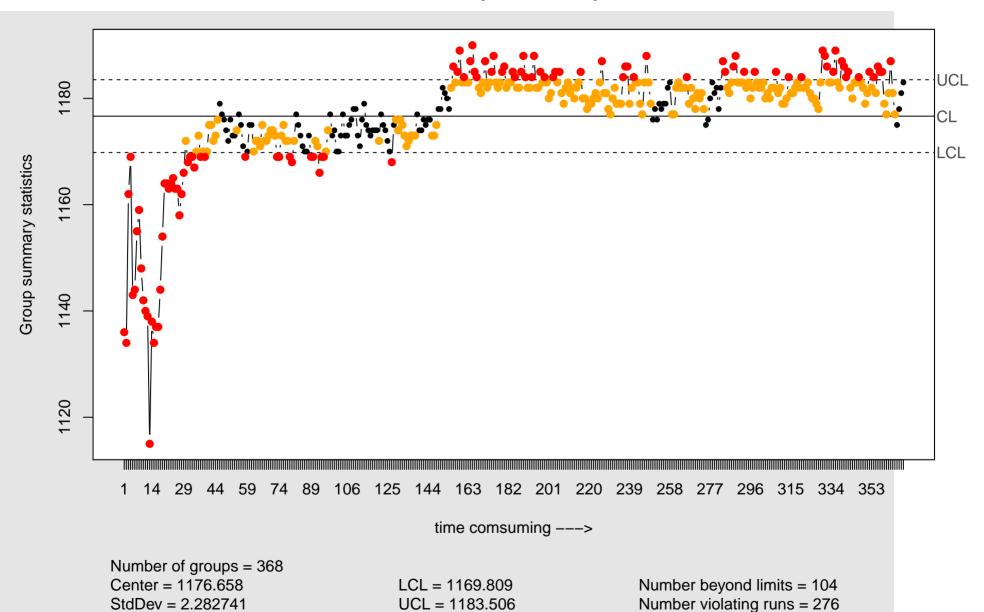
LCL = 1165.621 UCL = 1179.172

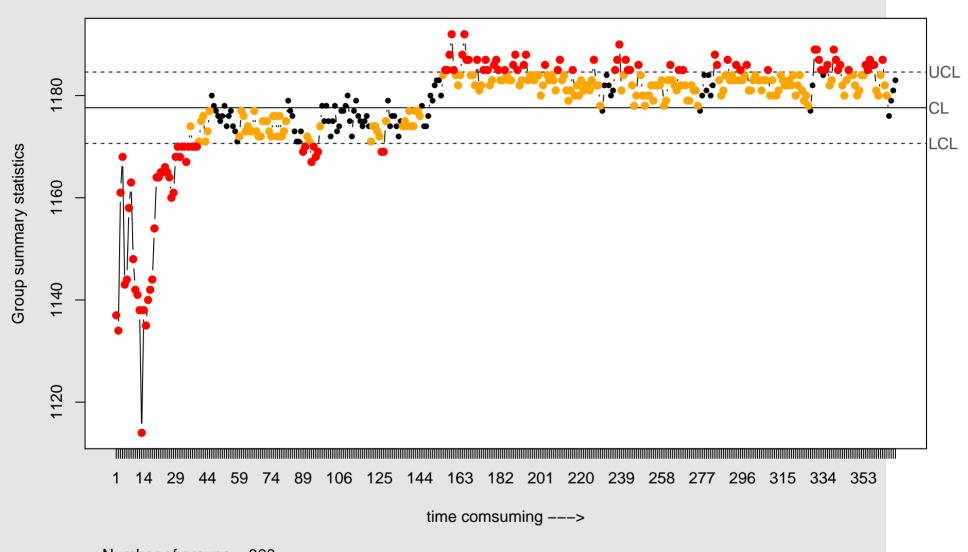
Number violating runs = 271





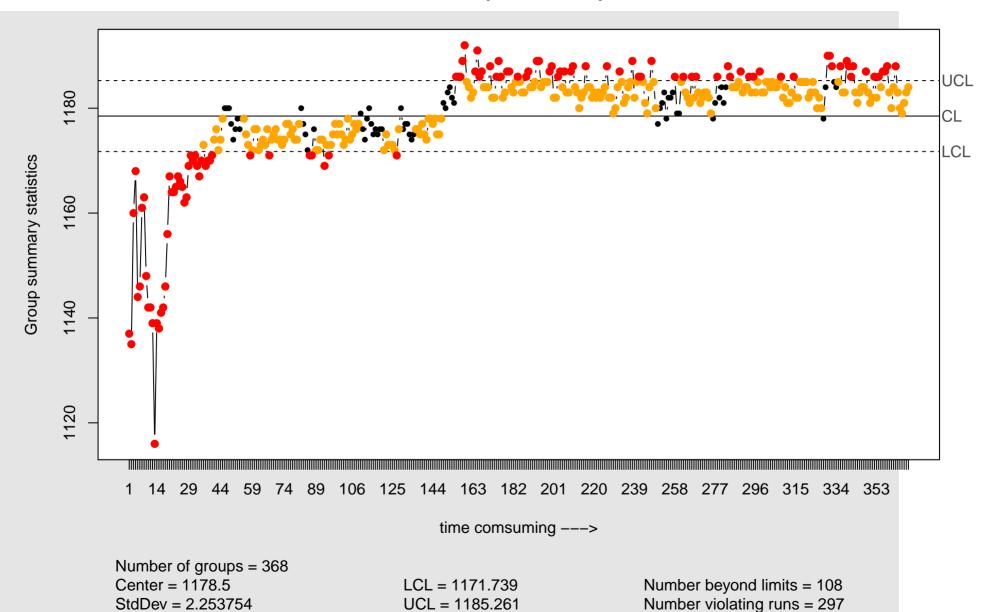


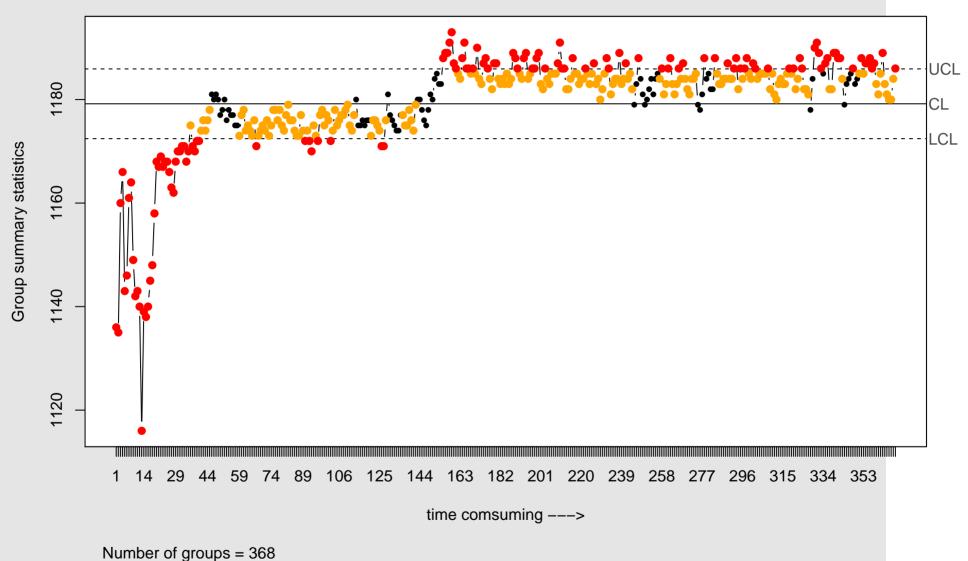




Number of groups = 368 Center = 1177.62 StdDev = 2.328637

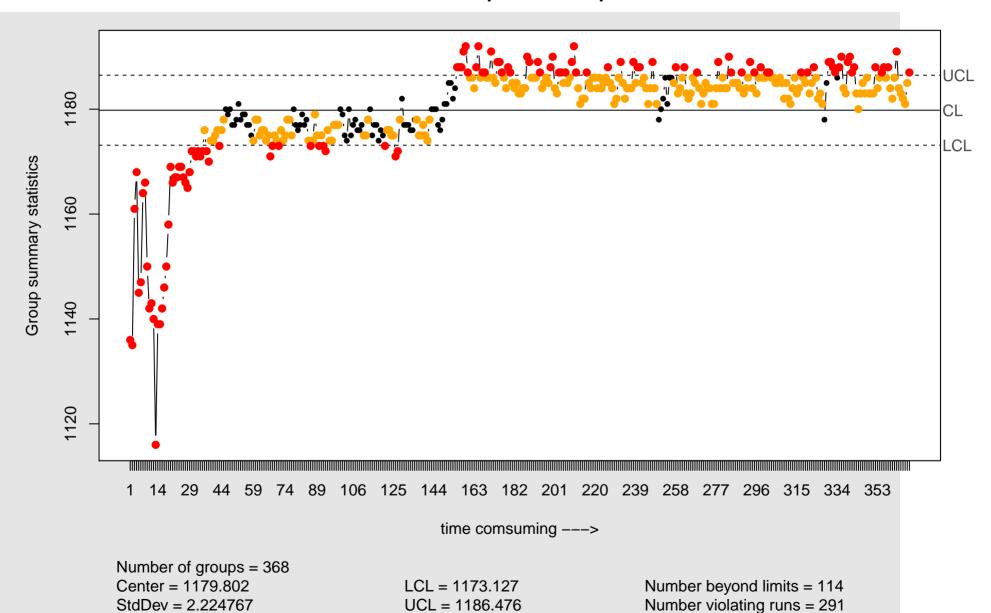
LCL = 1170.634 UCL = 1184.605 Number beyond limits = 107 Number violating runs = 277

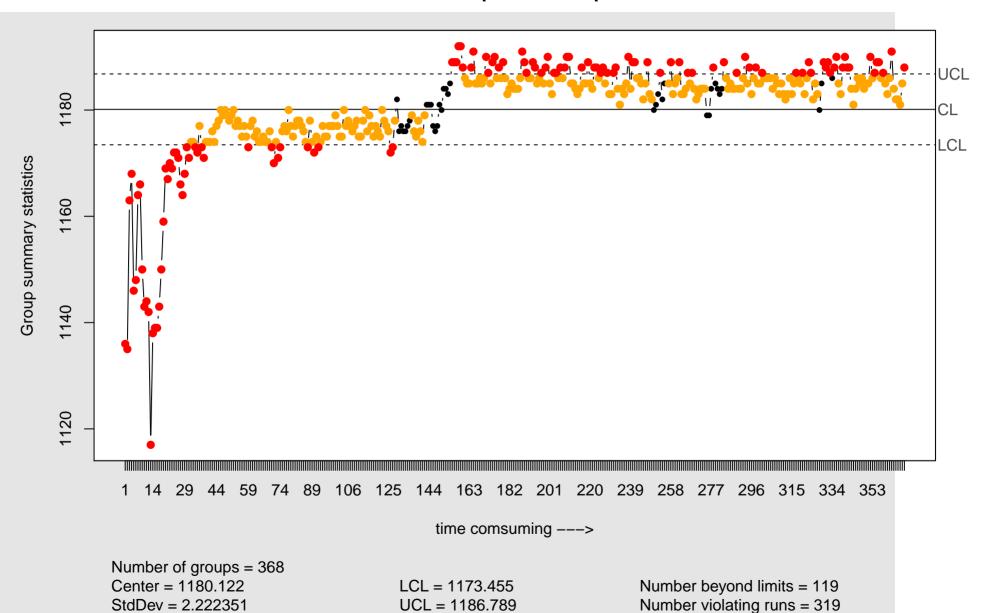


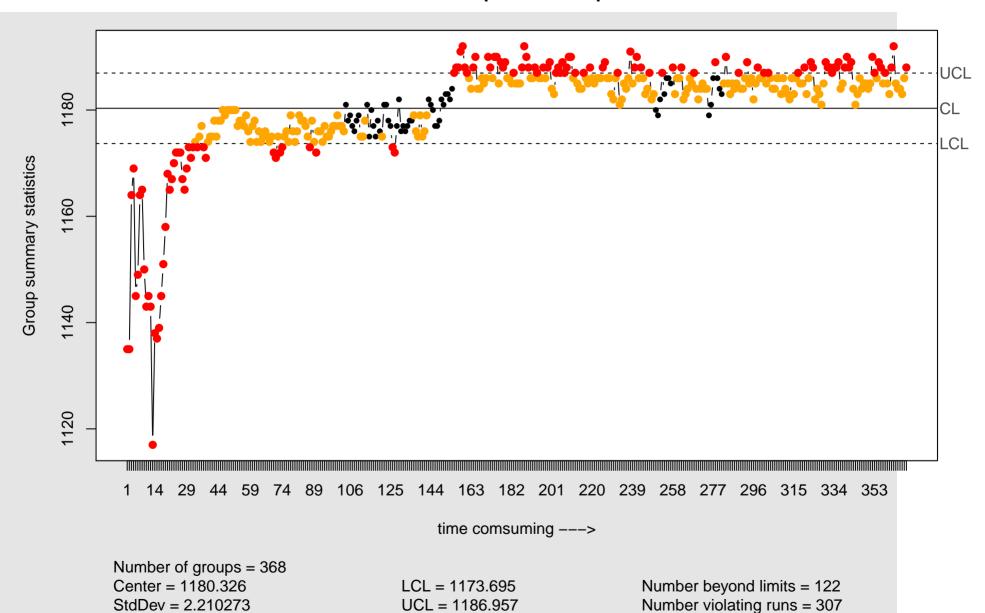


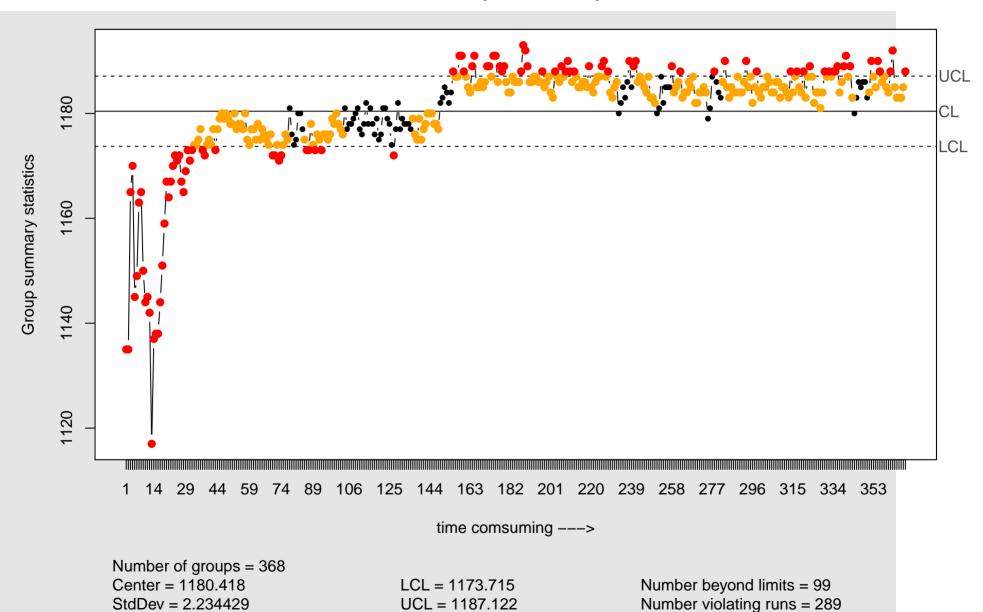
Number of groups = 368 Center = 1179.179 StdDev = 2.246507

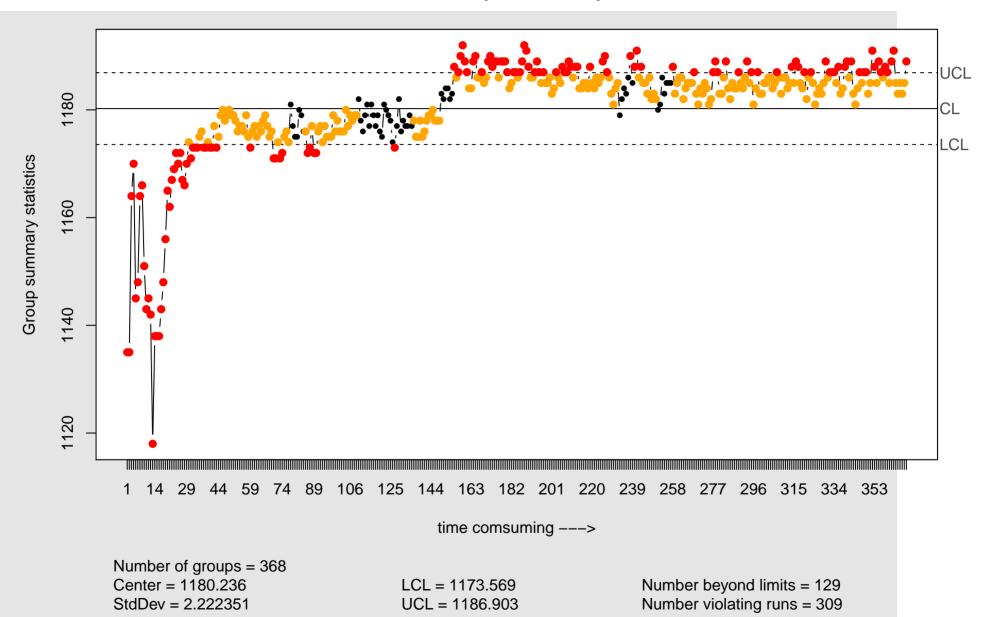
LCL = 1172.44 UCL = 1185.919 Number beyond limits = 126 Number violating runs = 289

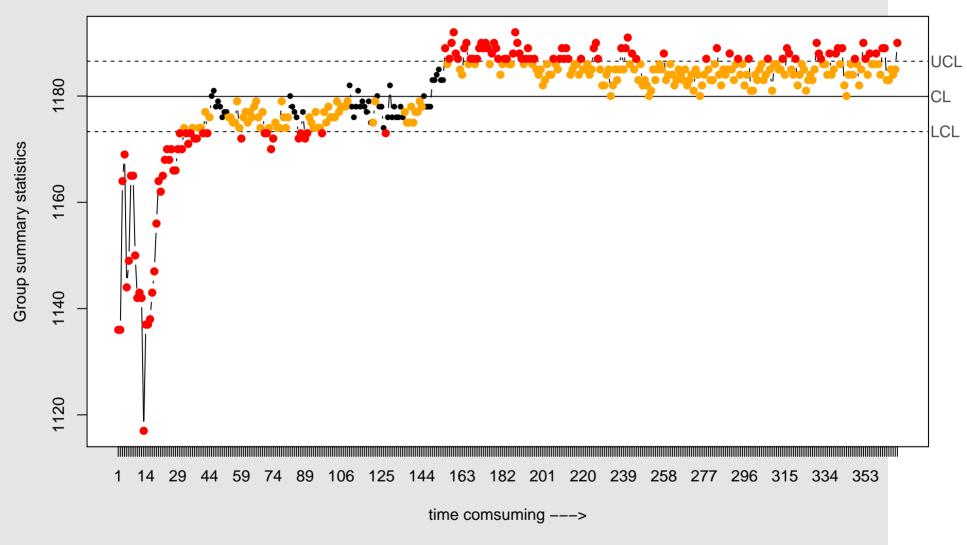






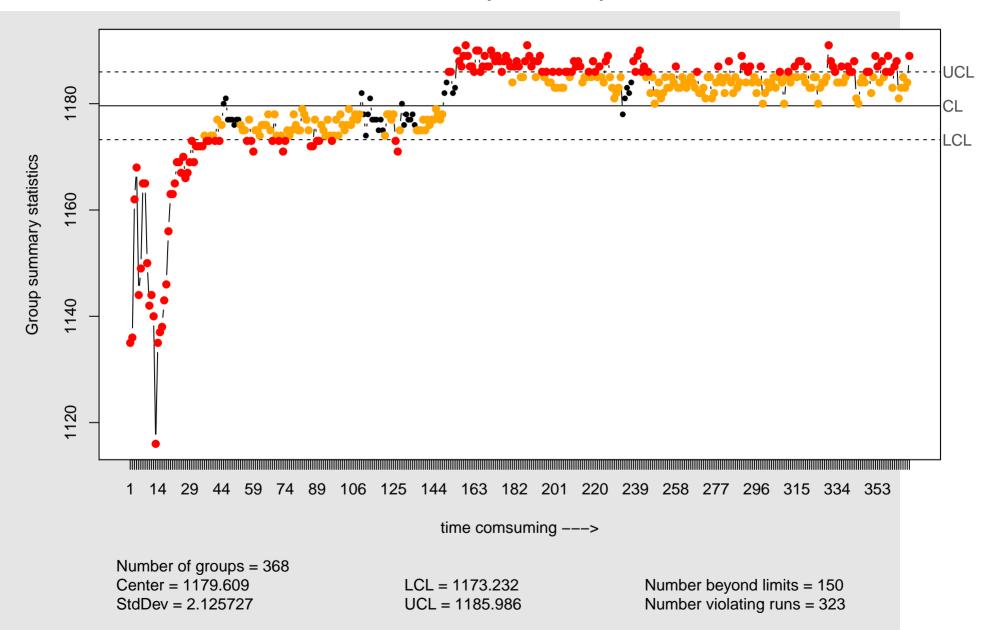


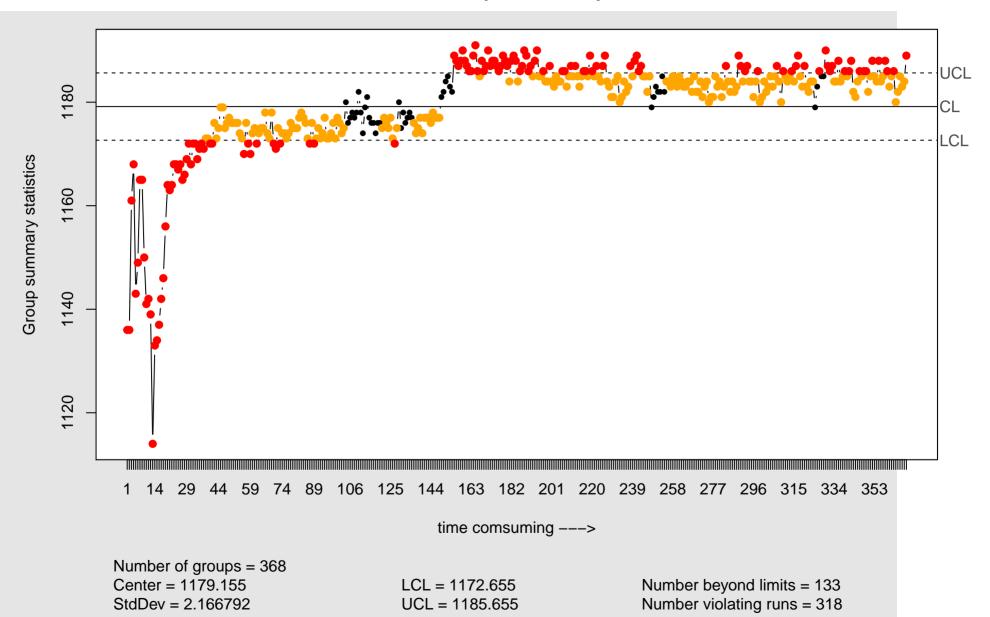


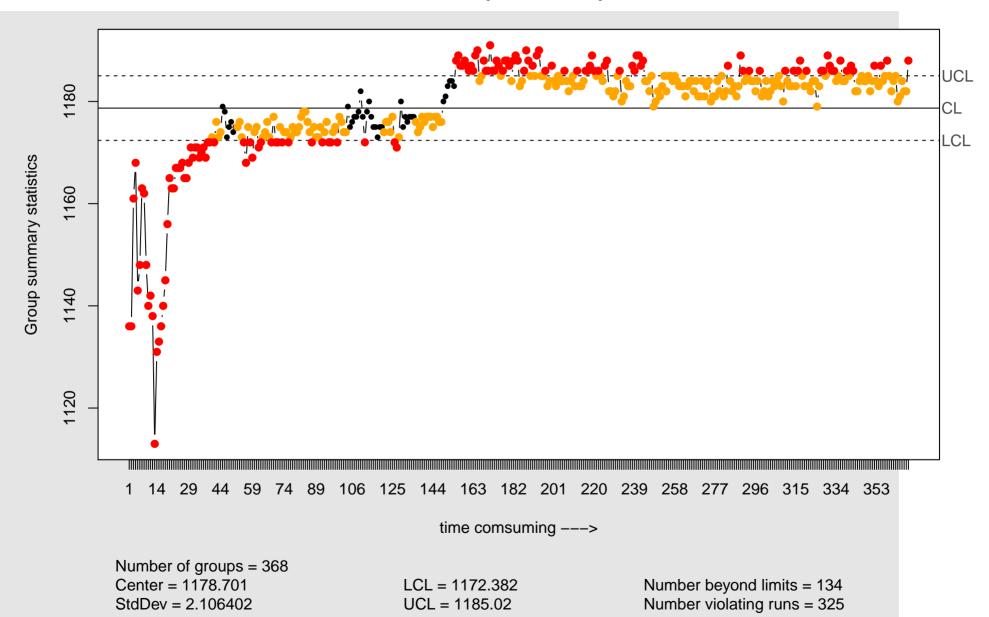


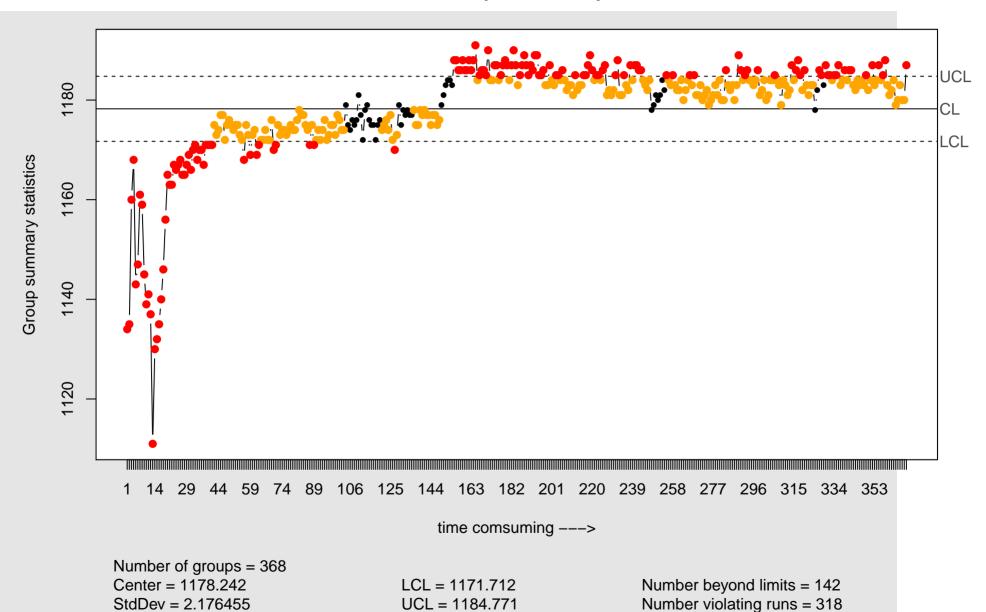
Number of groups = 368 Center = 1179.924 StdDev = 2.207857

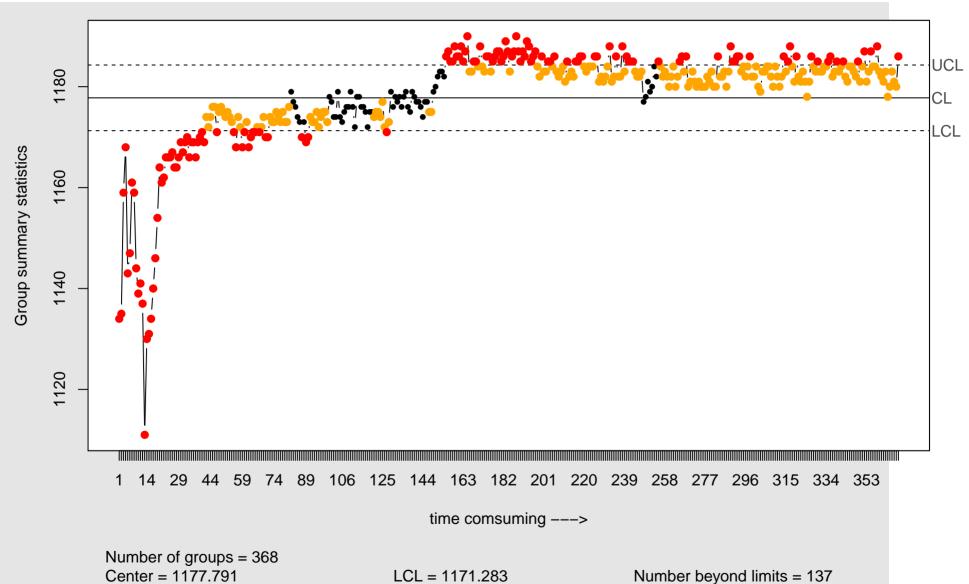
LCL = 1173.3 UCL = 1186.547 Number beyond limits = 121 Number violating runs = 313







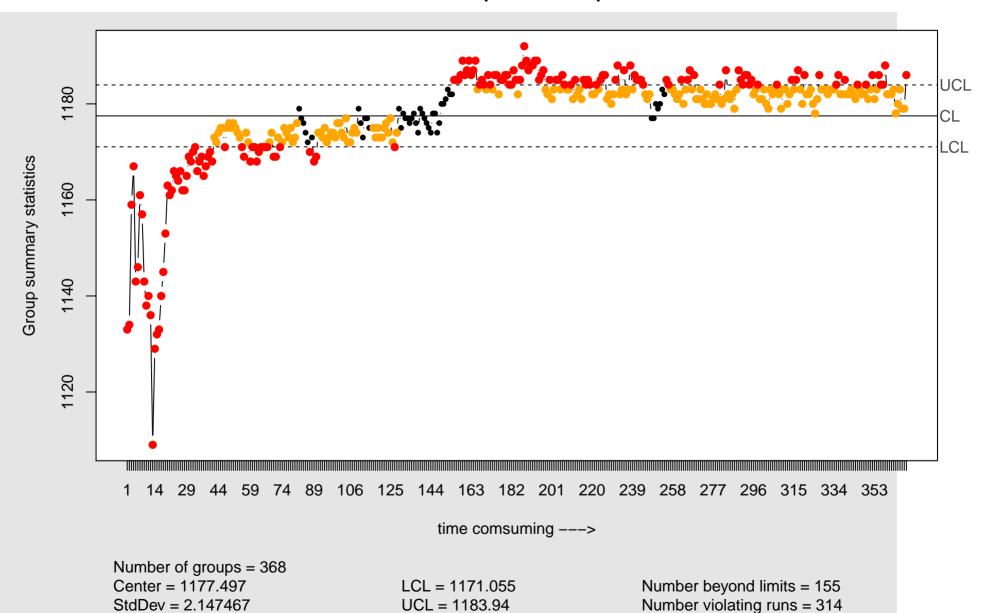


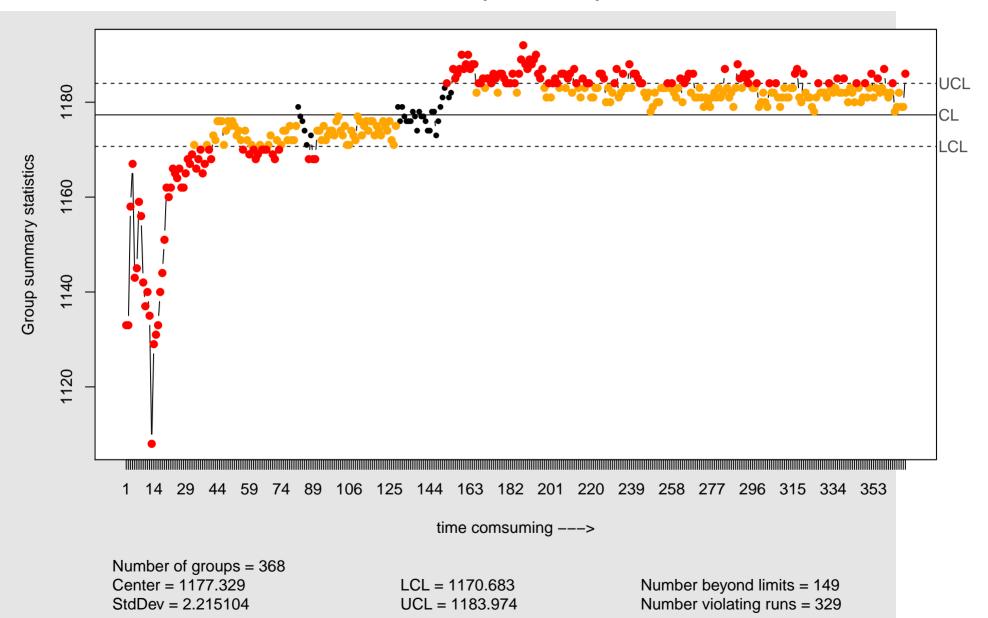


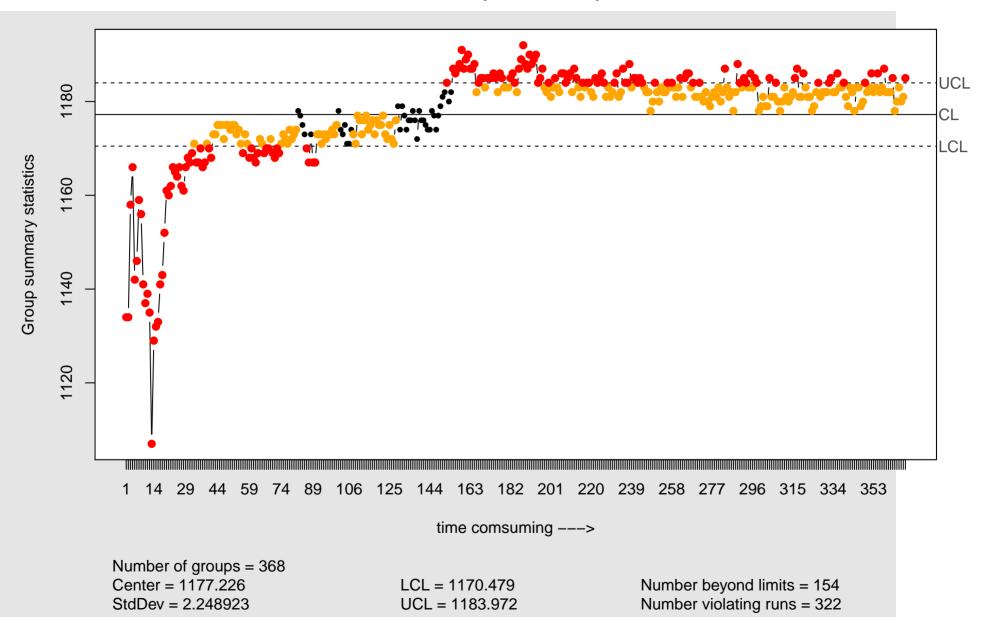
Center = 1177.791 StdDev = 2.169208

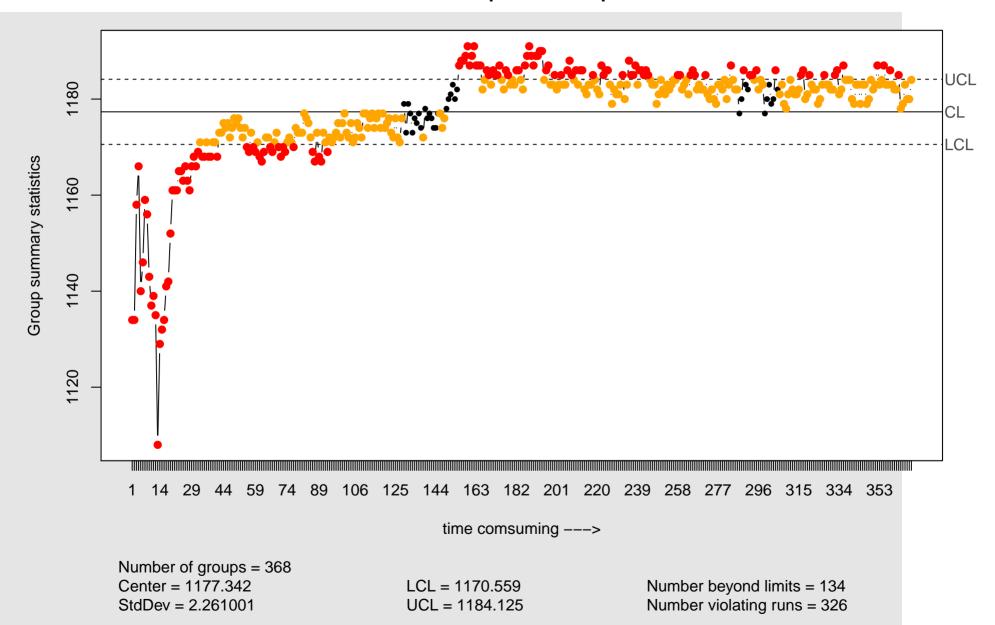
LCL = 1171.283 UCL = 1184.298

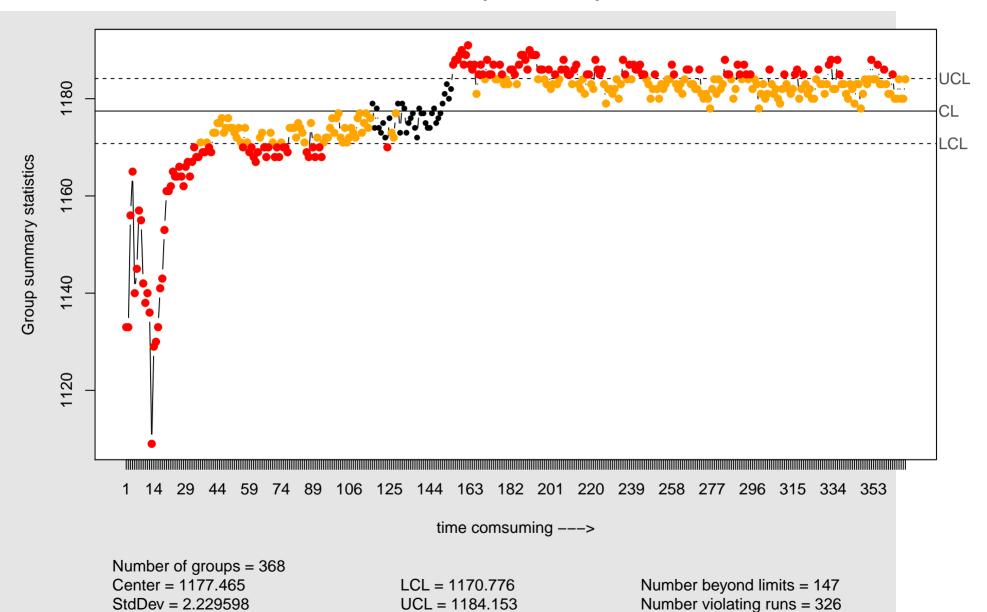
Number violating runs = 303

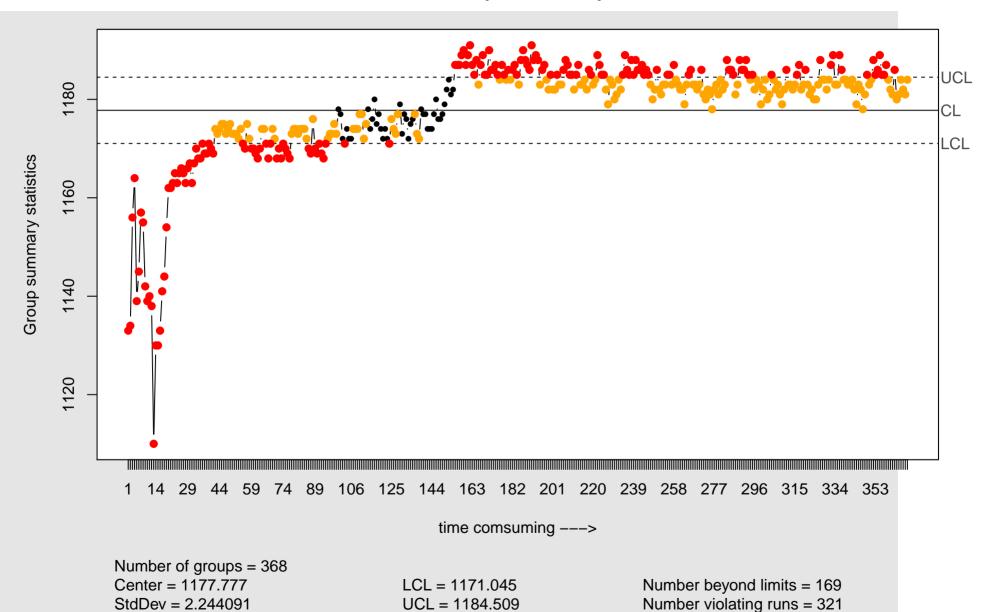


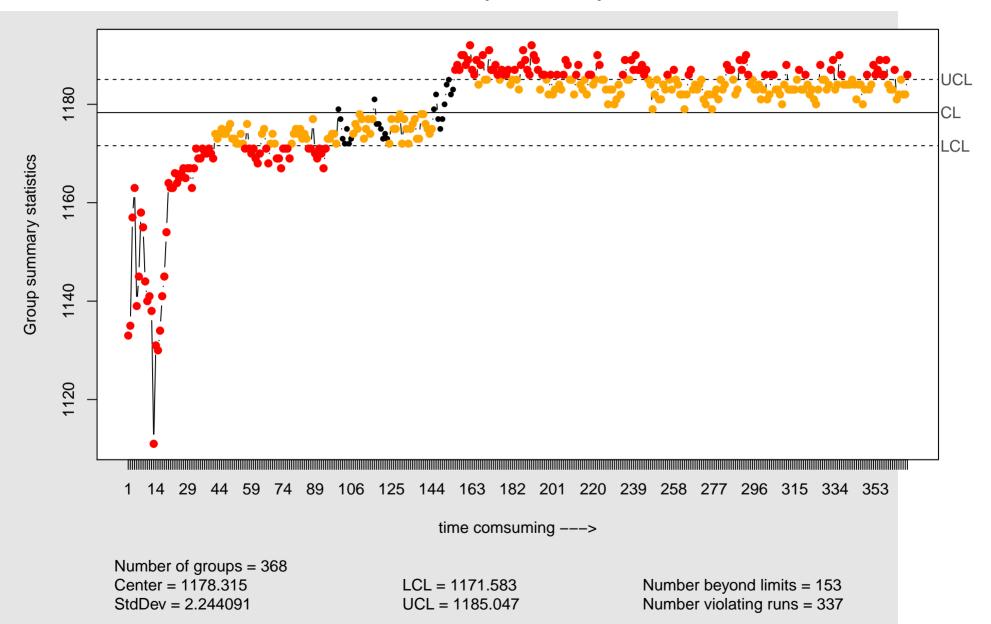


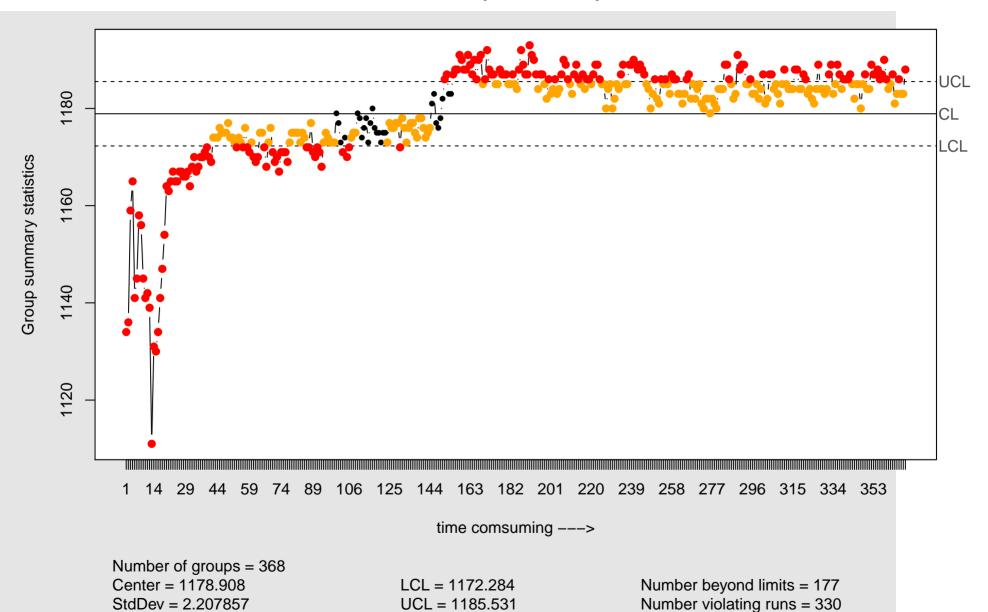


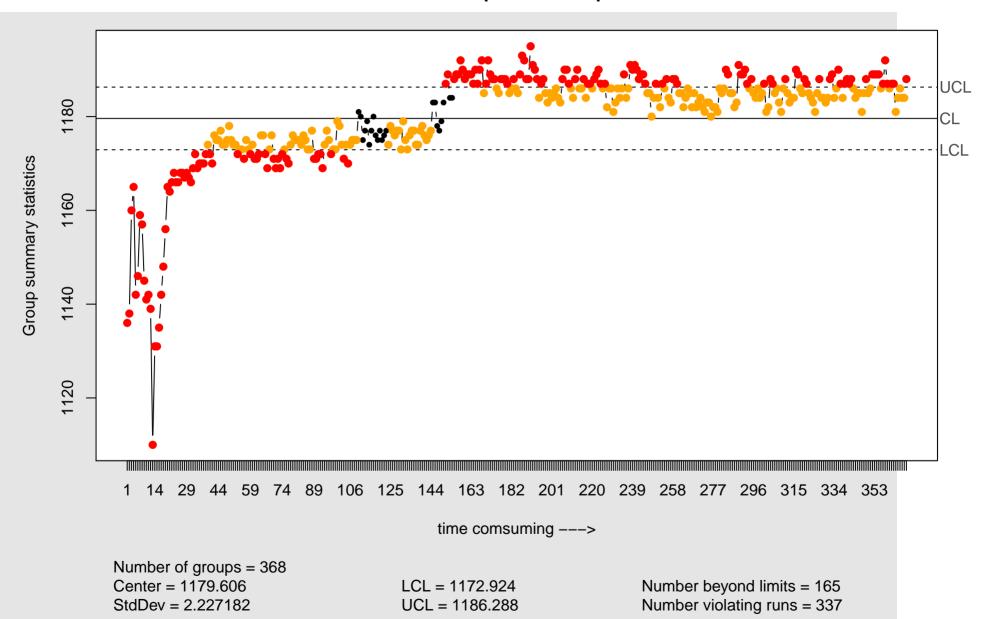


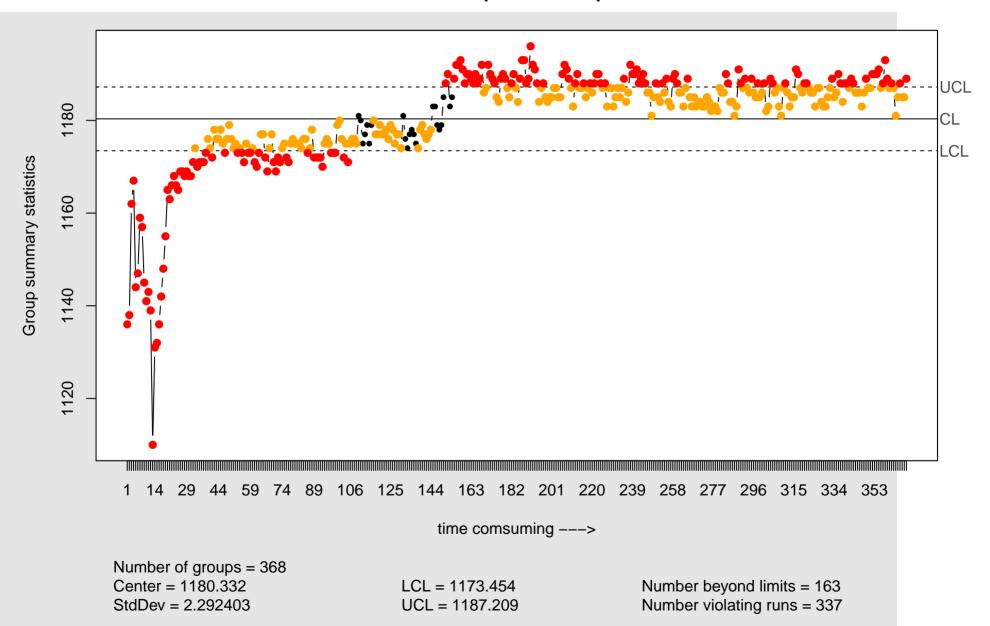


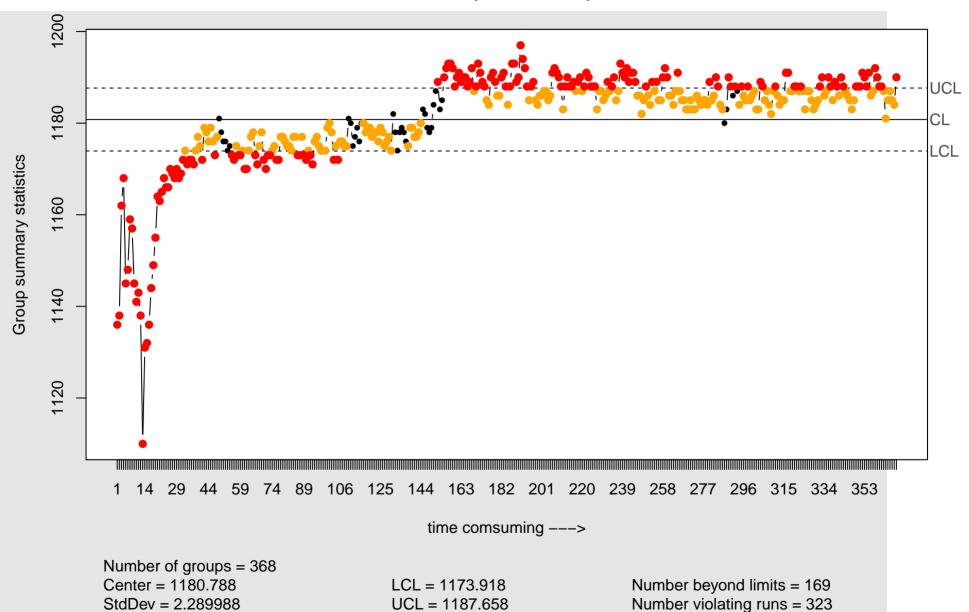


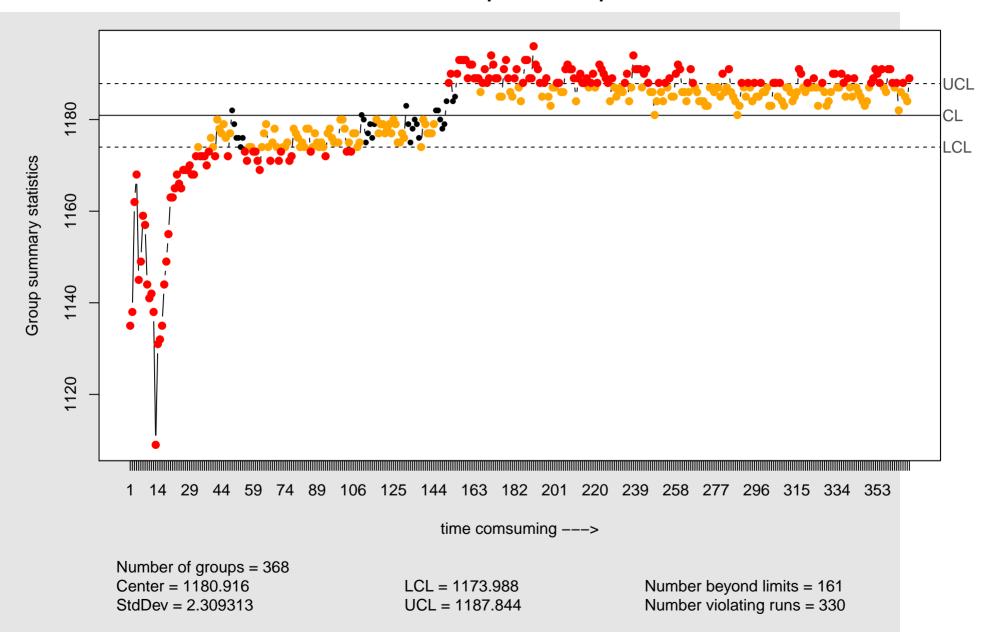


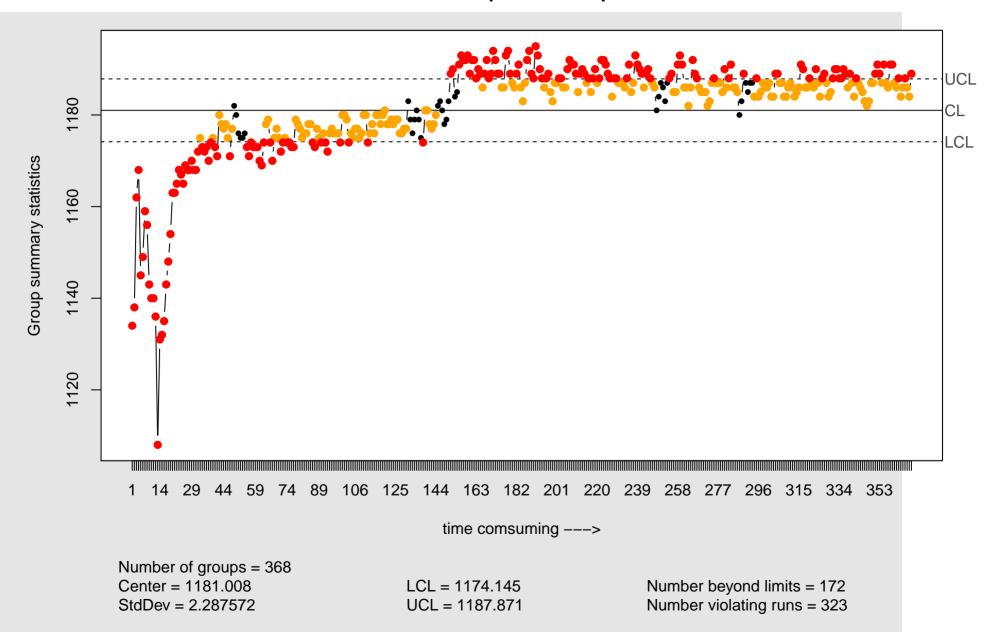


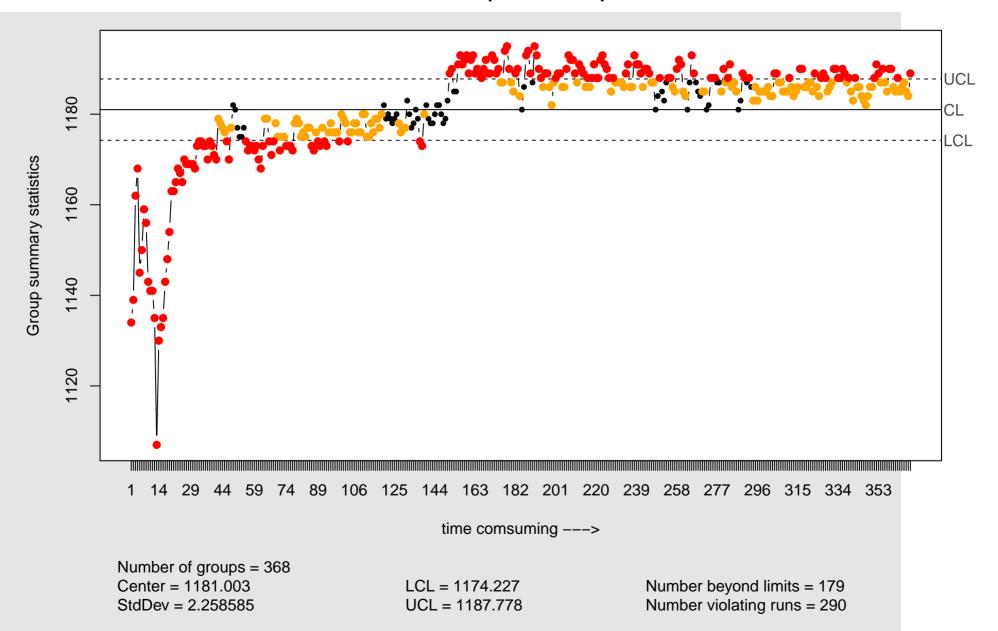


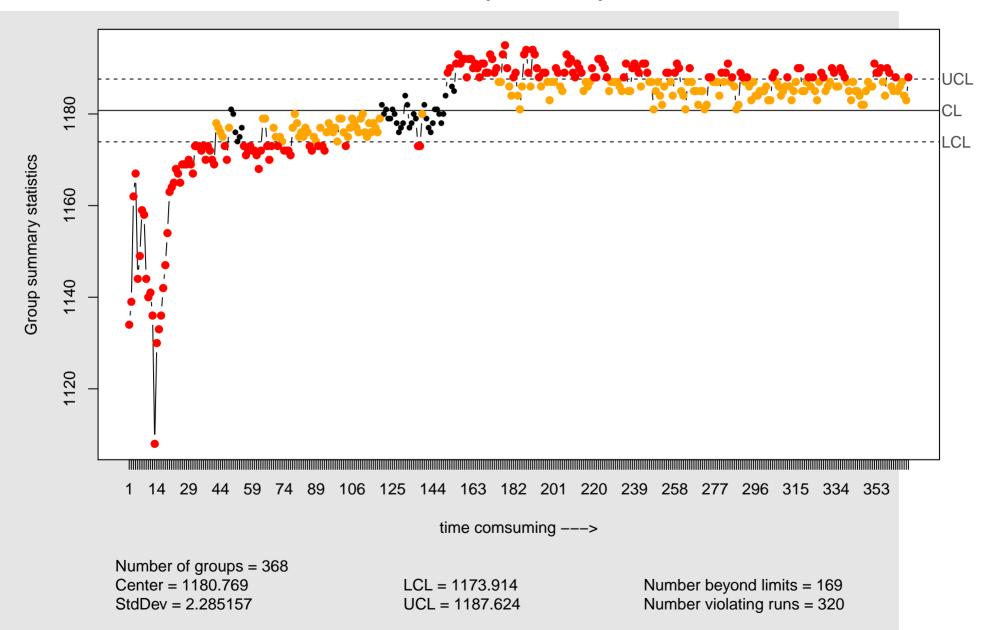


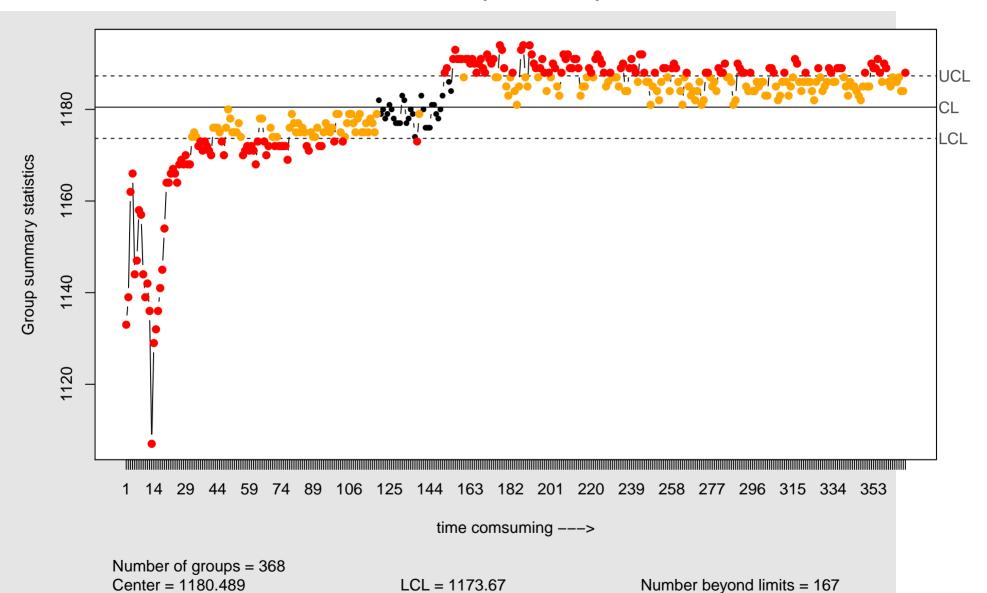








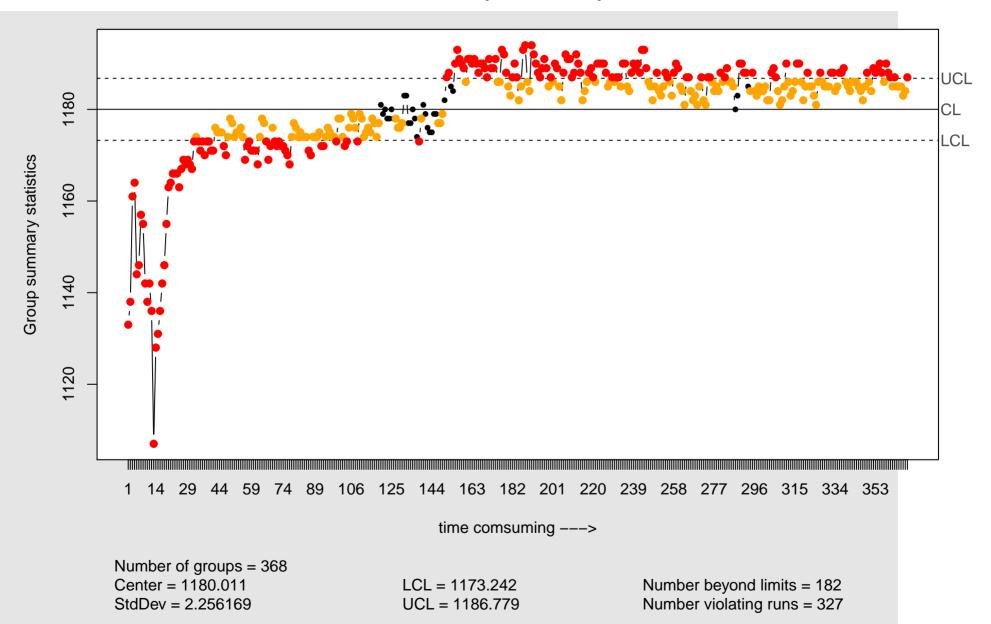


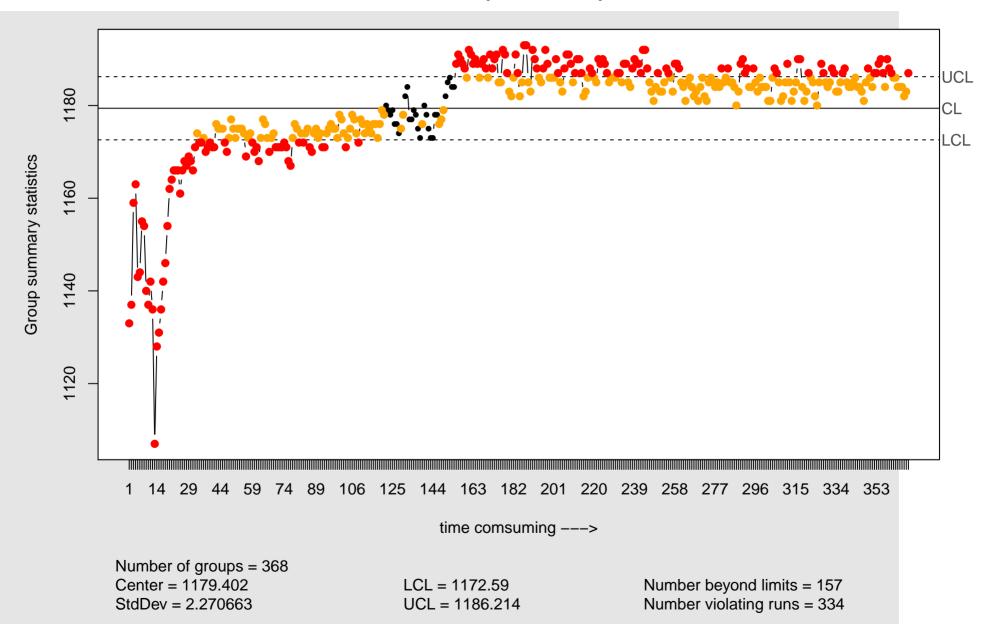


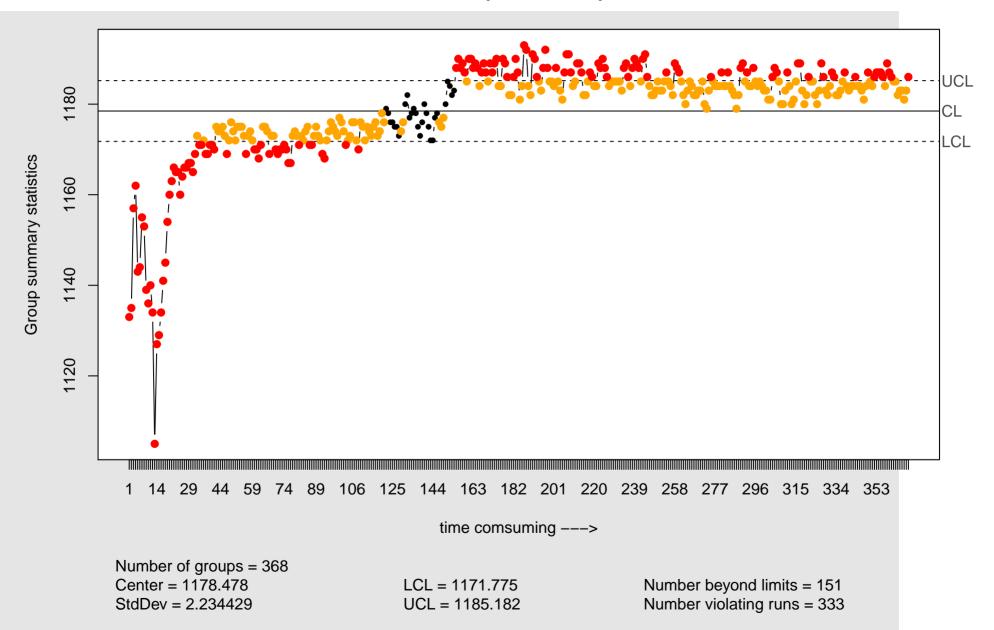
UCL = 1187.308

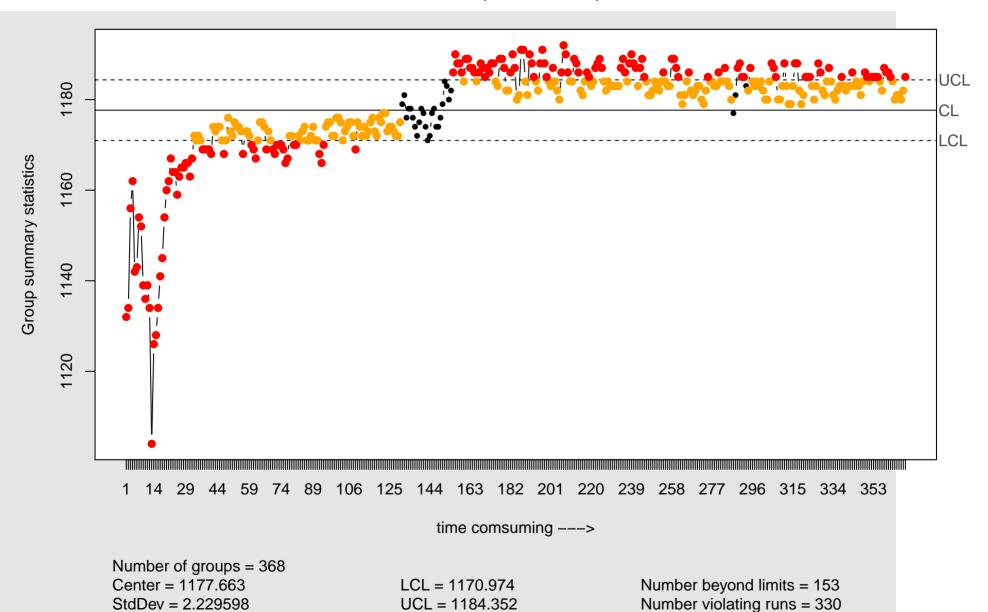
Number violating runs = 327

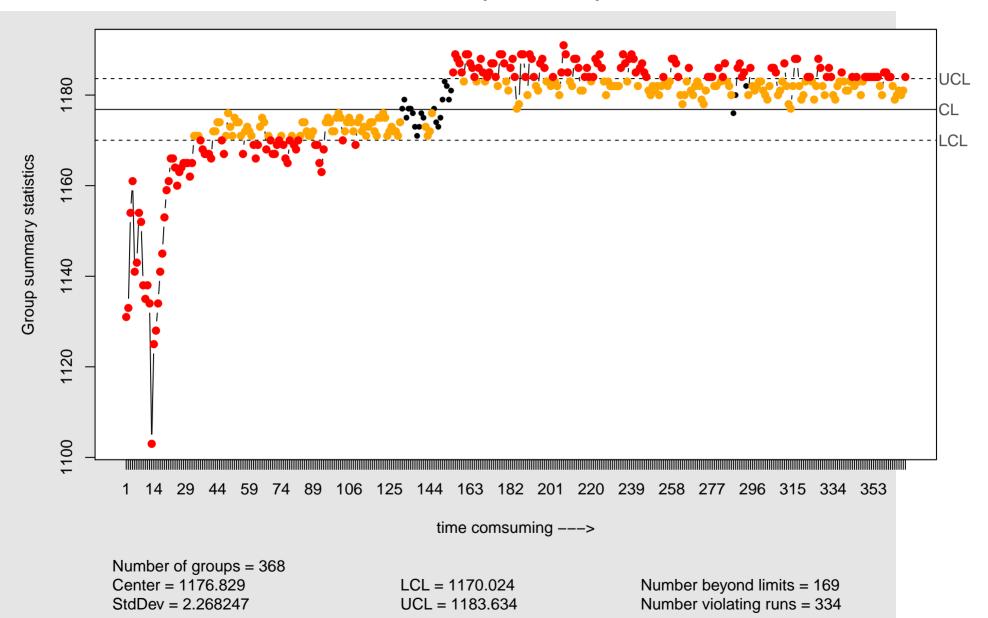
StdDev = 2.273079

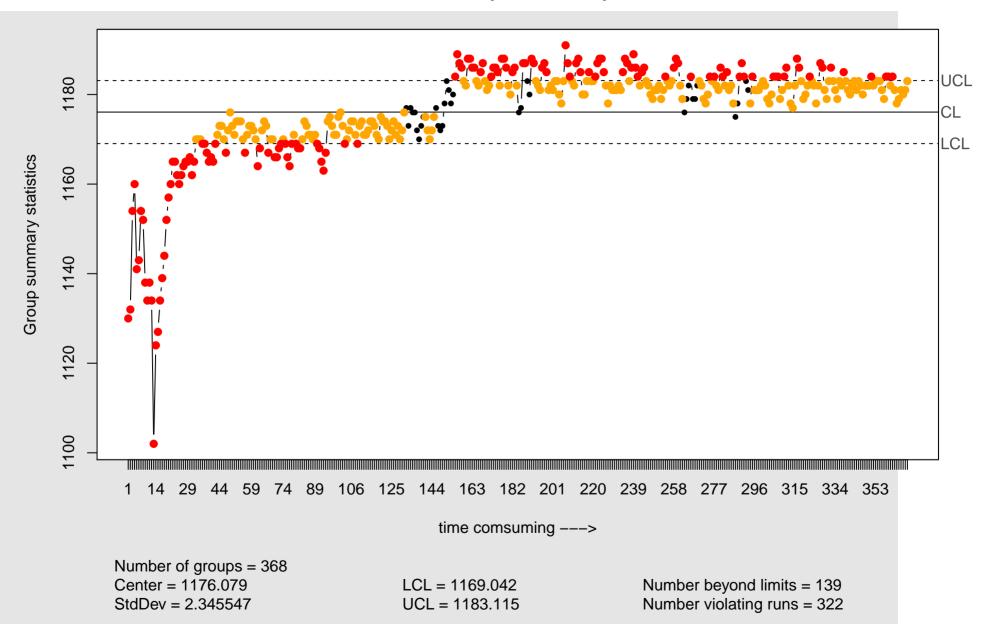


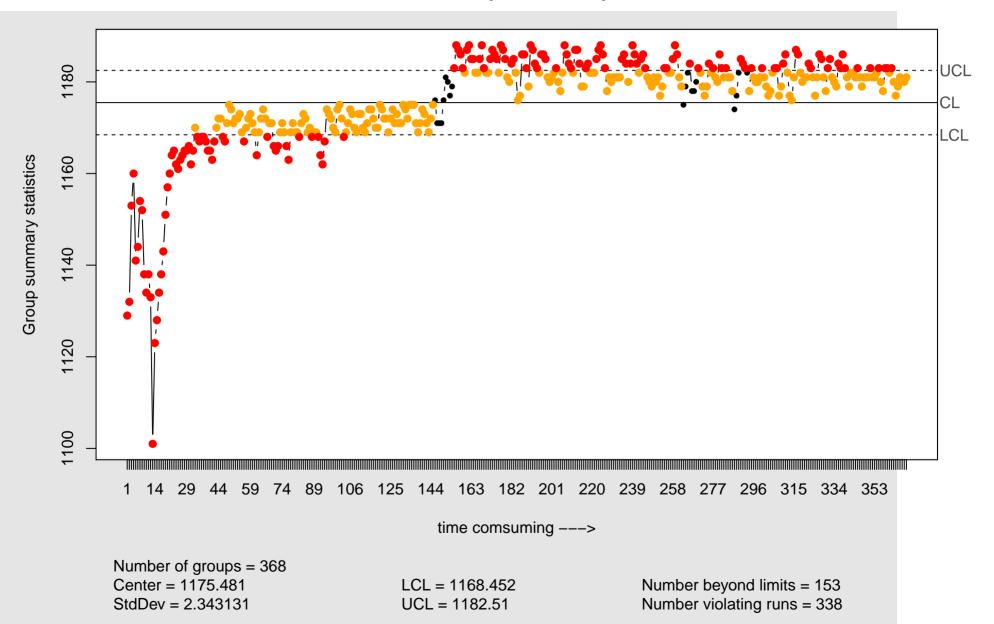


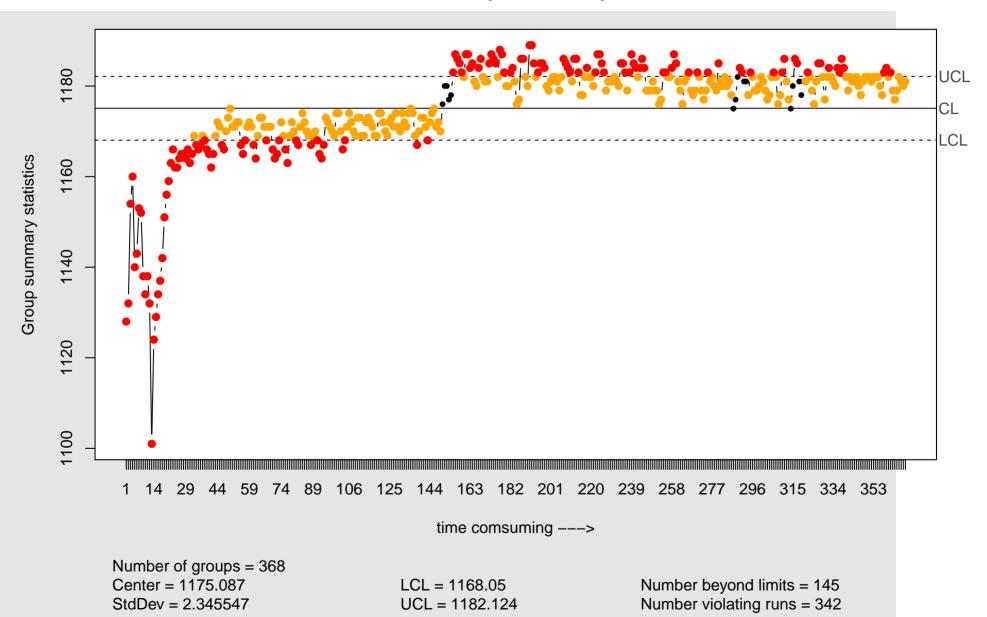


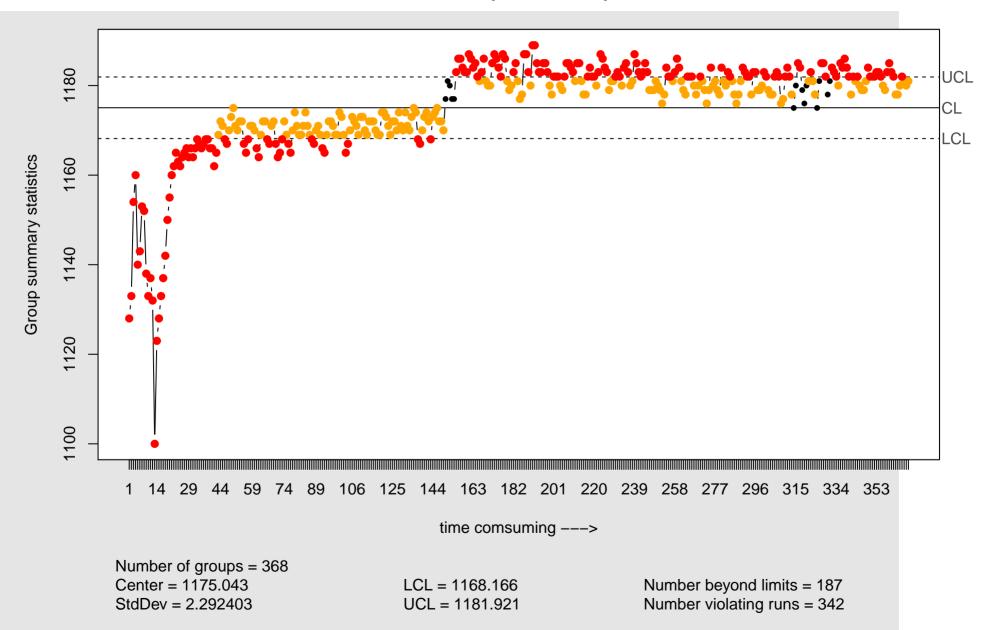


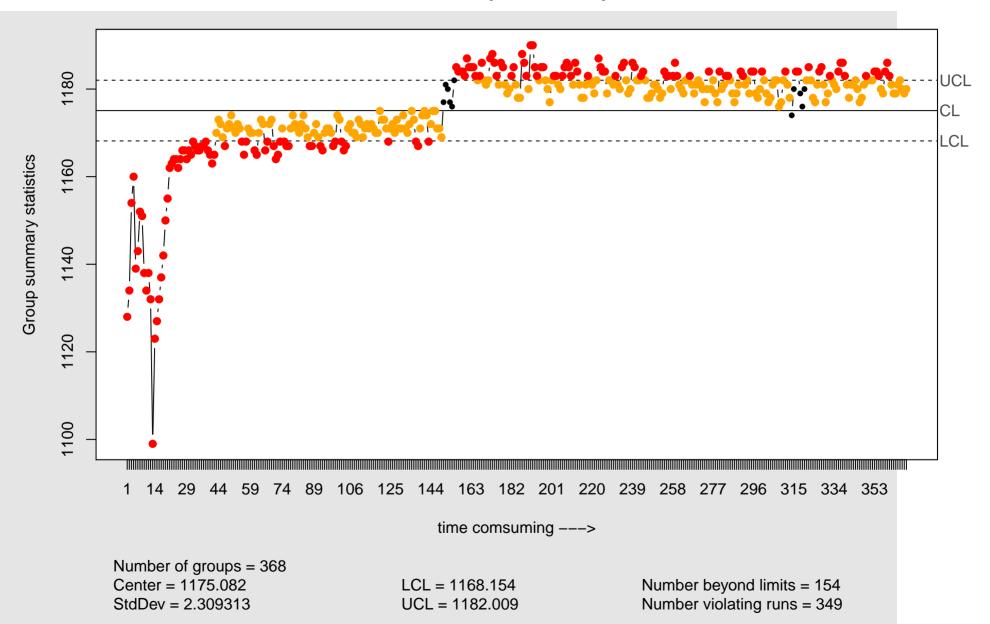


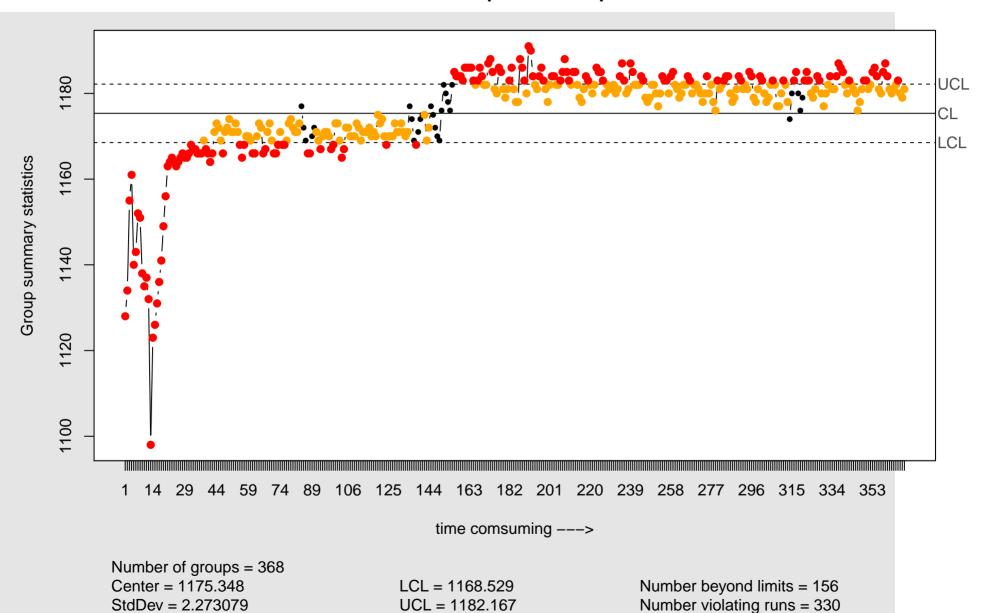


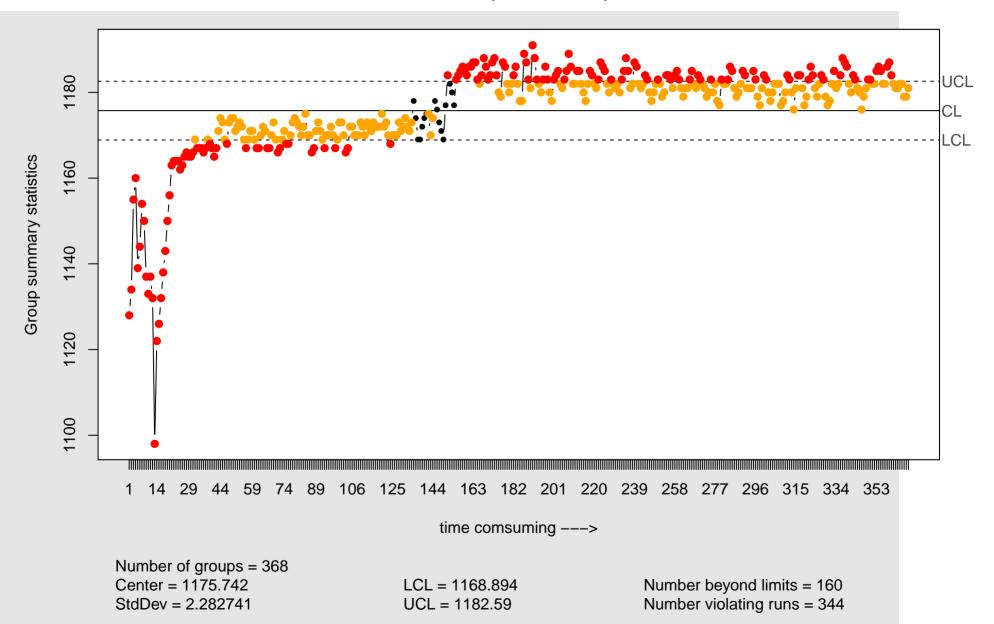


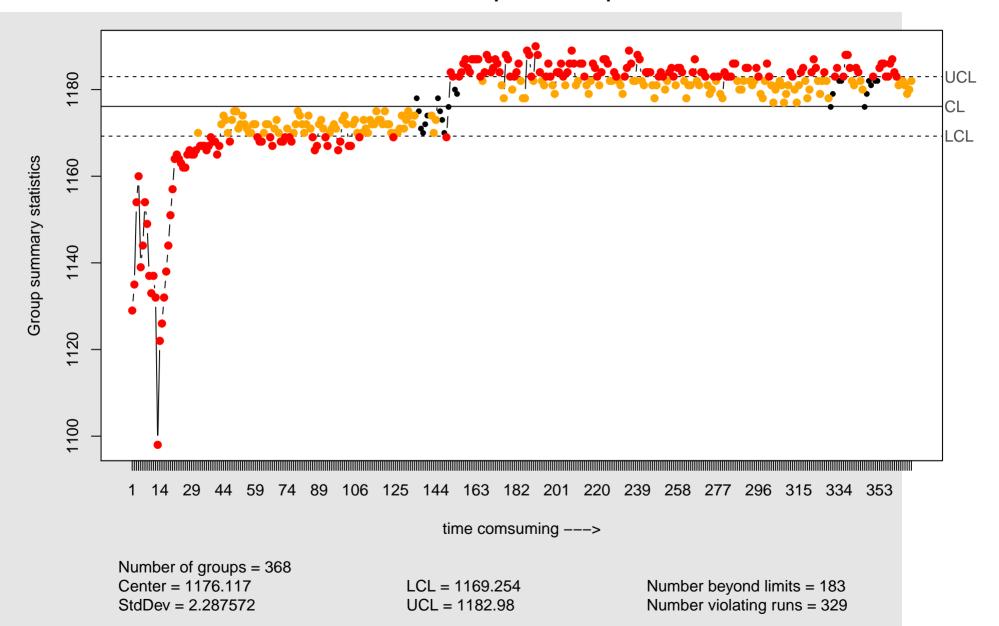


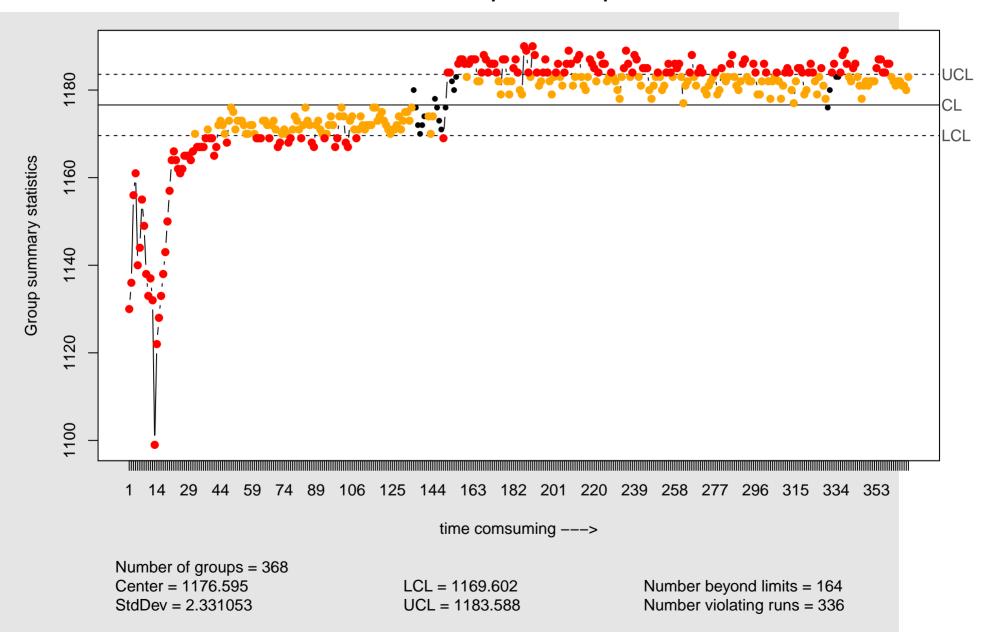


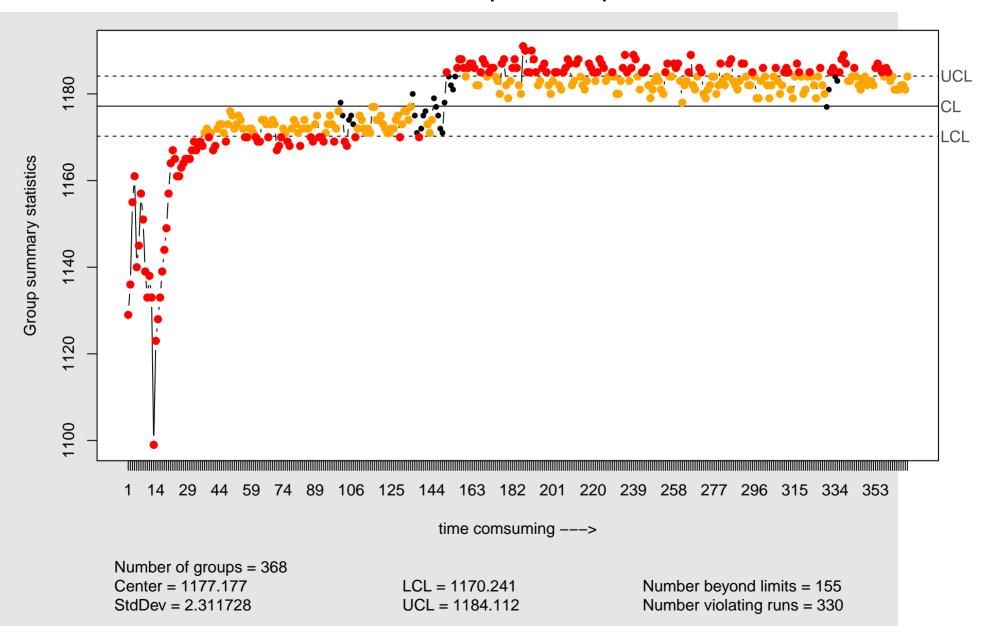


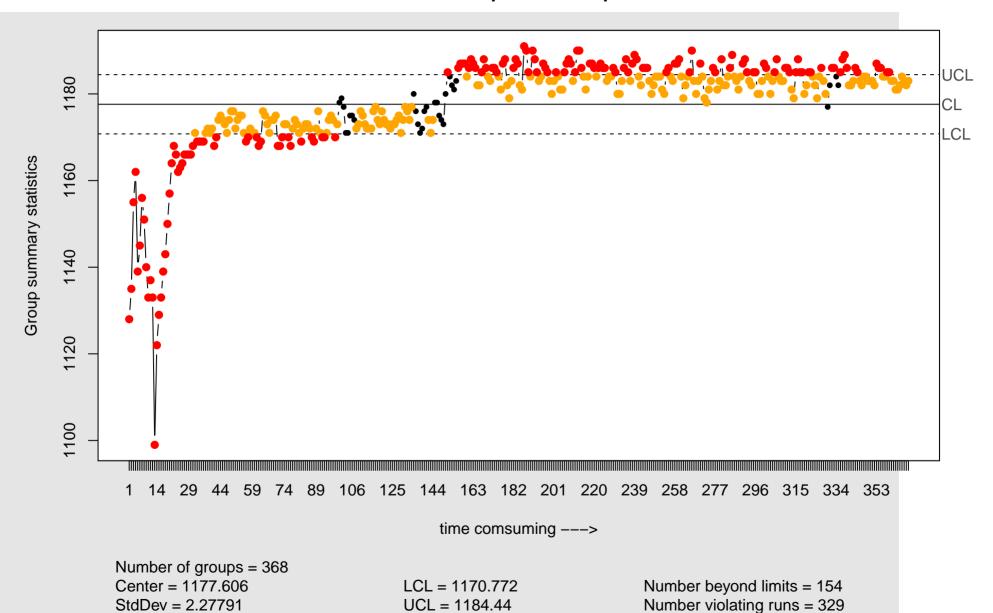


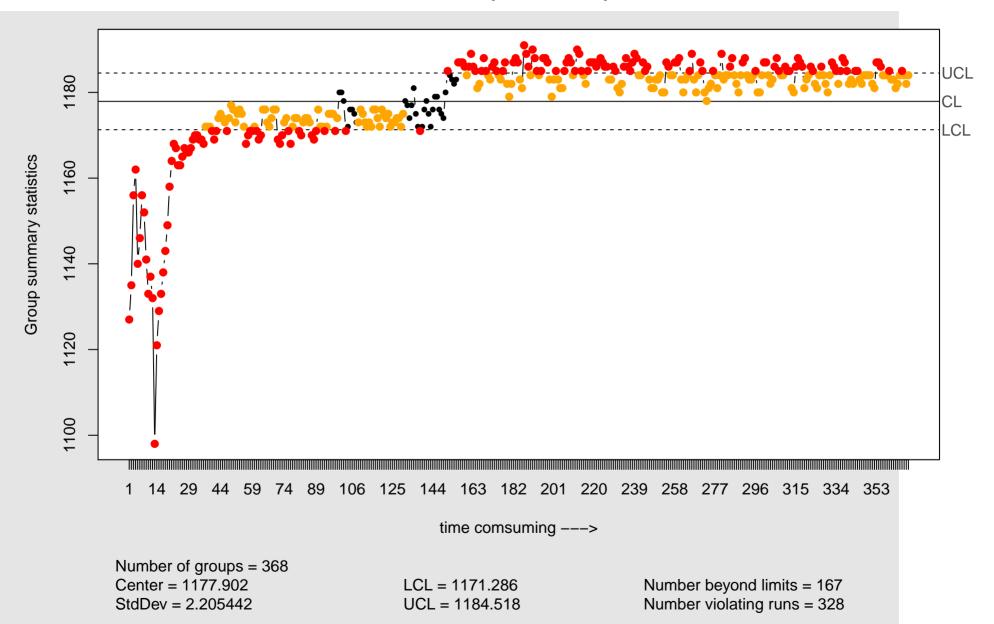


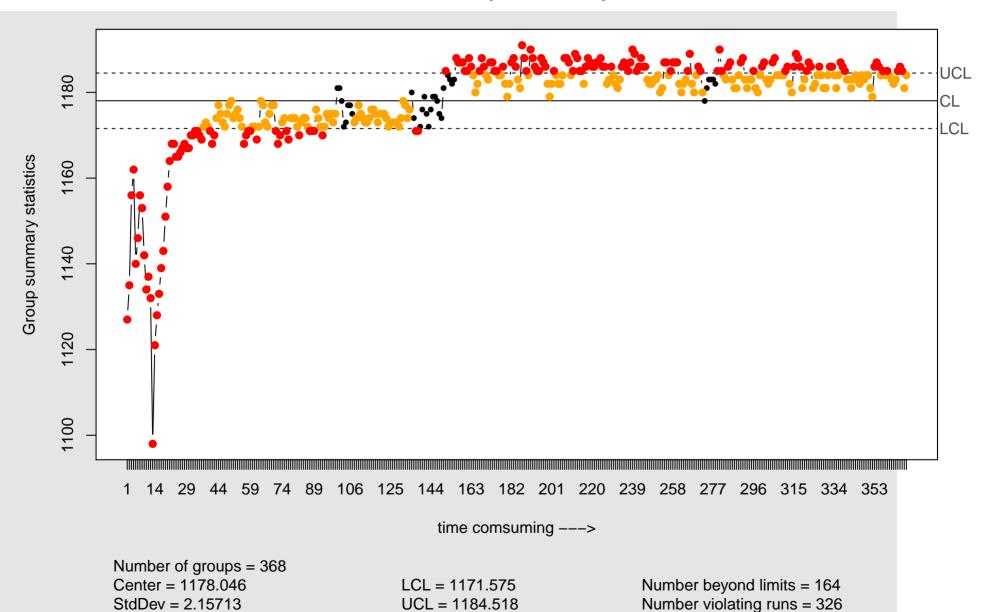


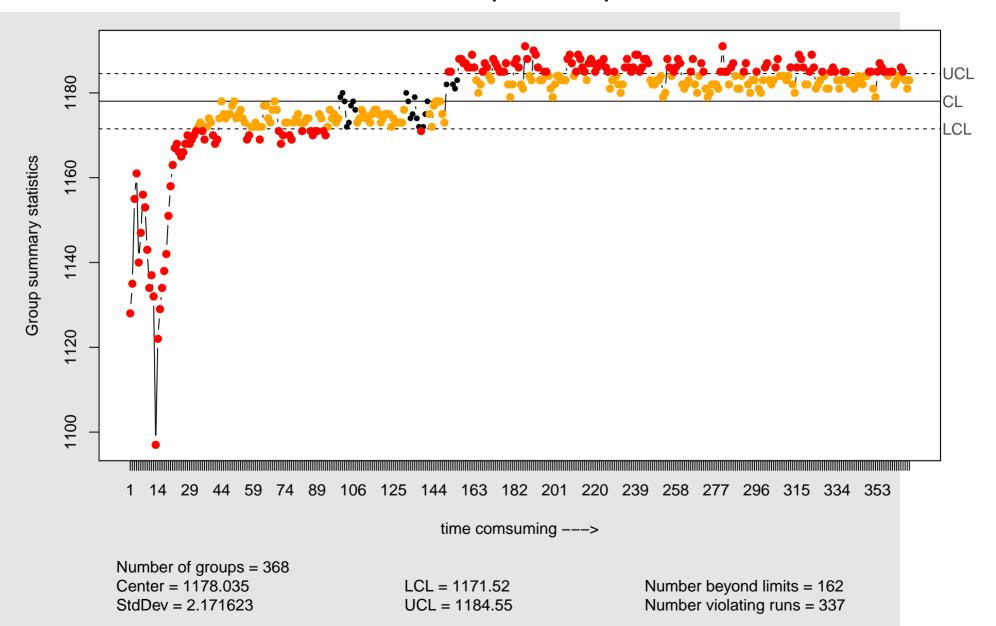


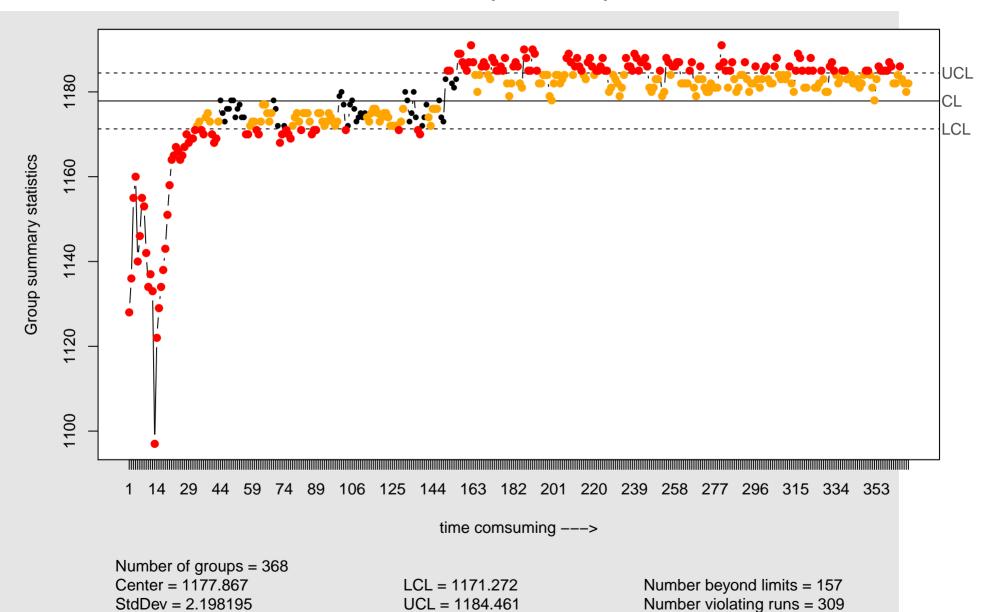


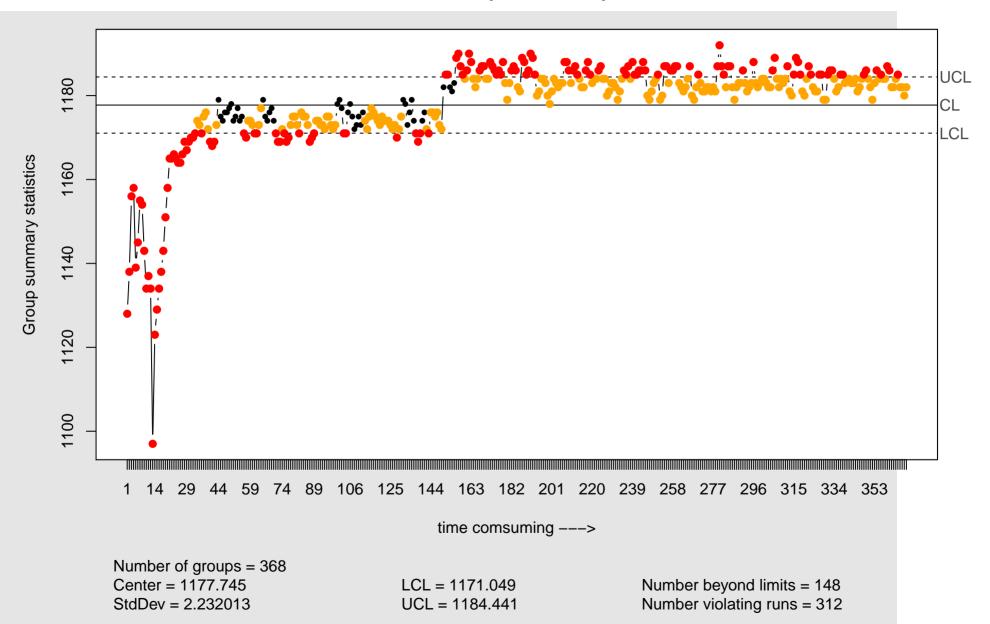


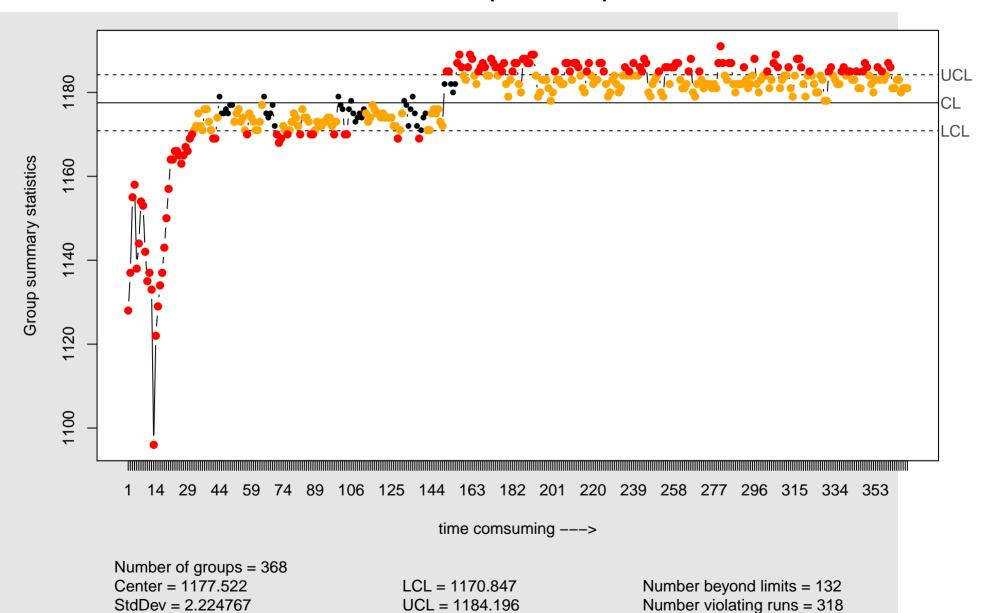


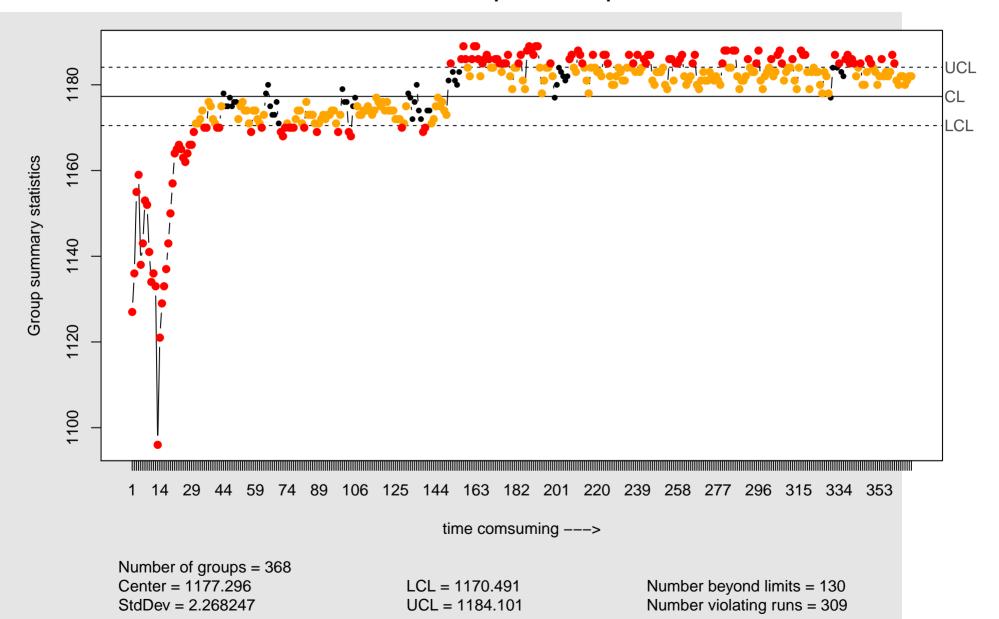


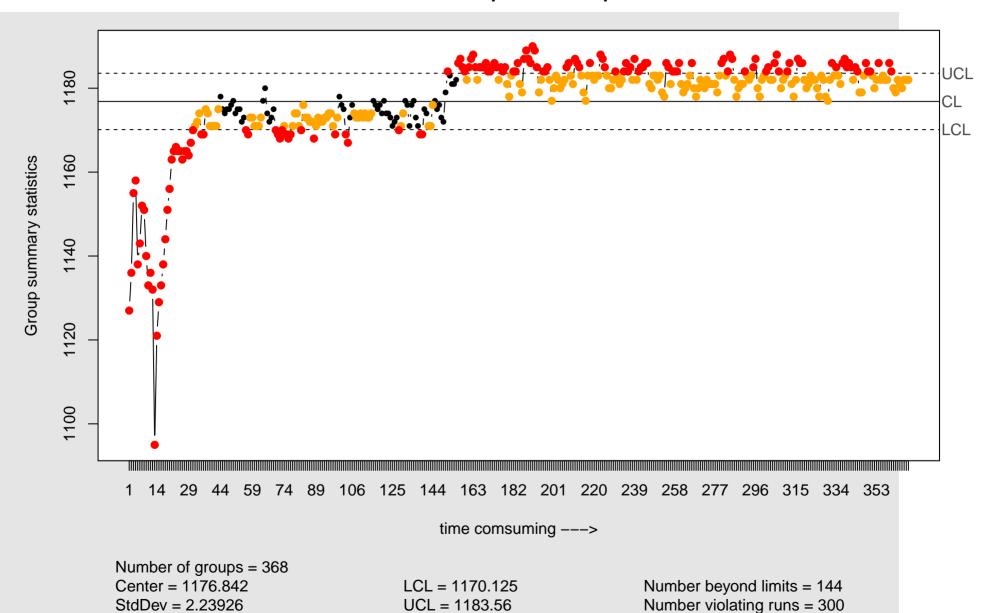


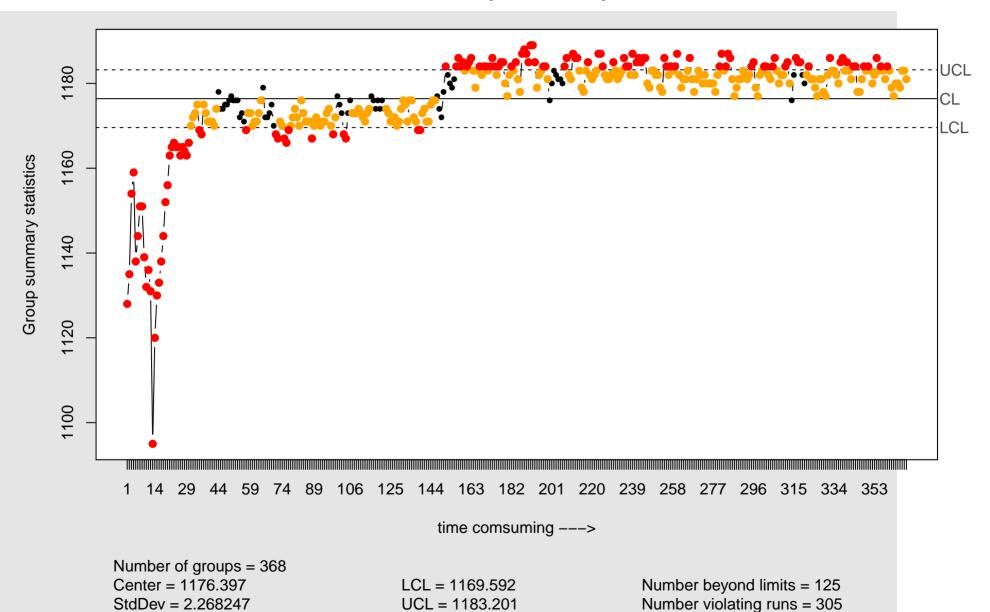


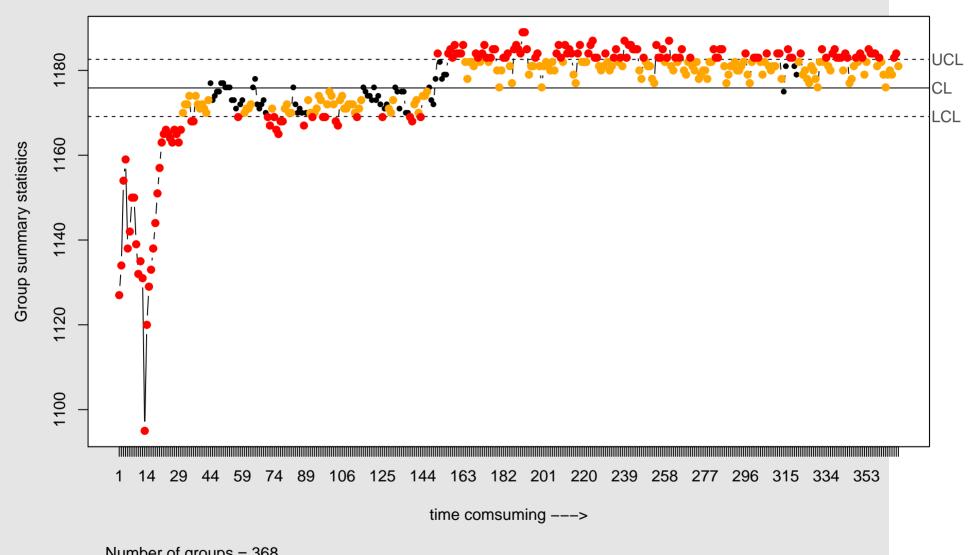








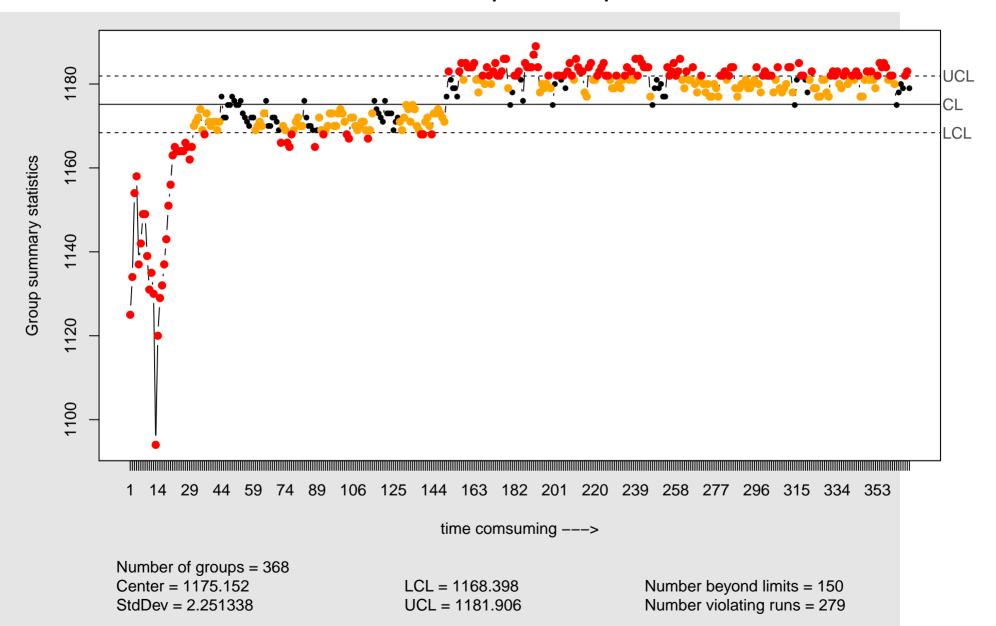


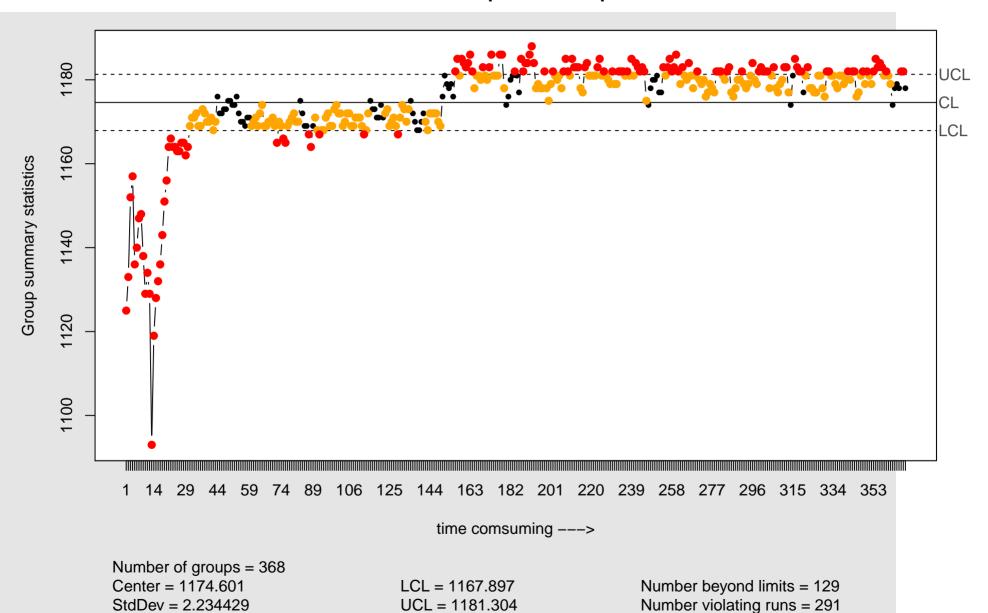


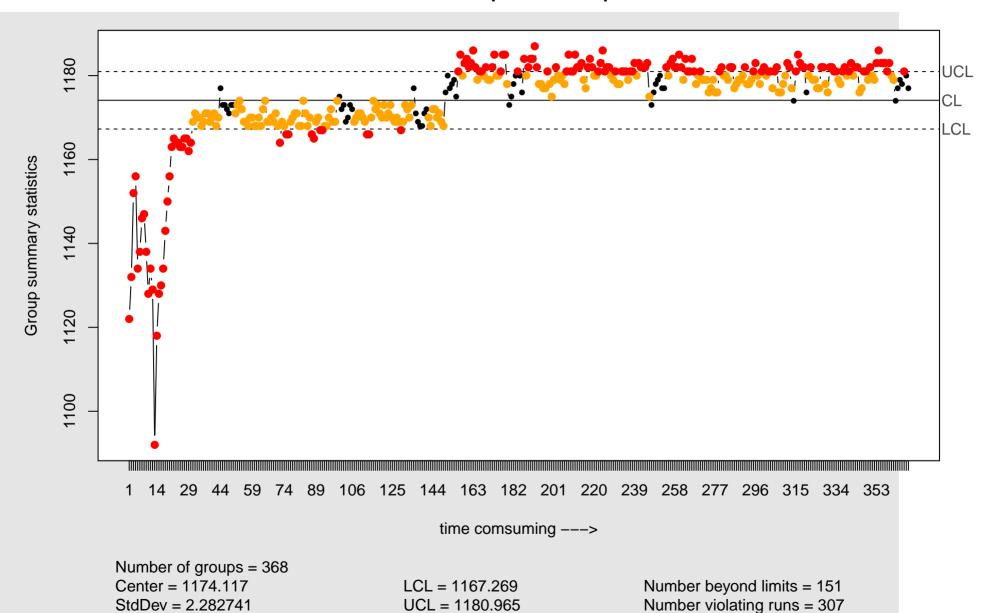
Number of groups = 368 Center = 1175.867 StdDev = 2.246507

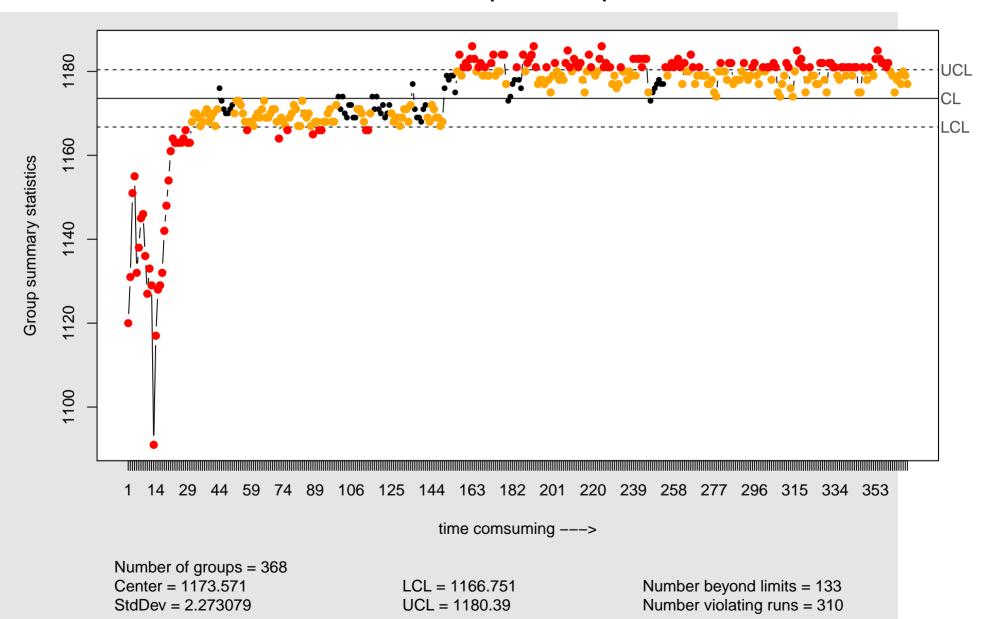
LCL = 1169.127 UCL = 1182.606

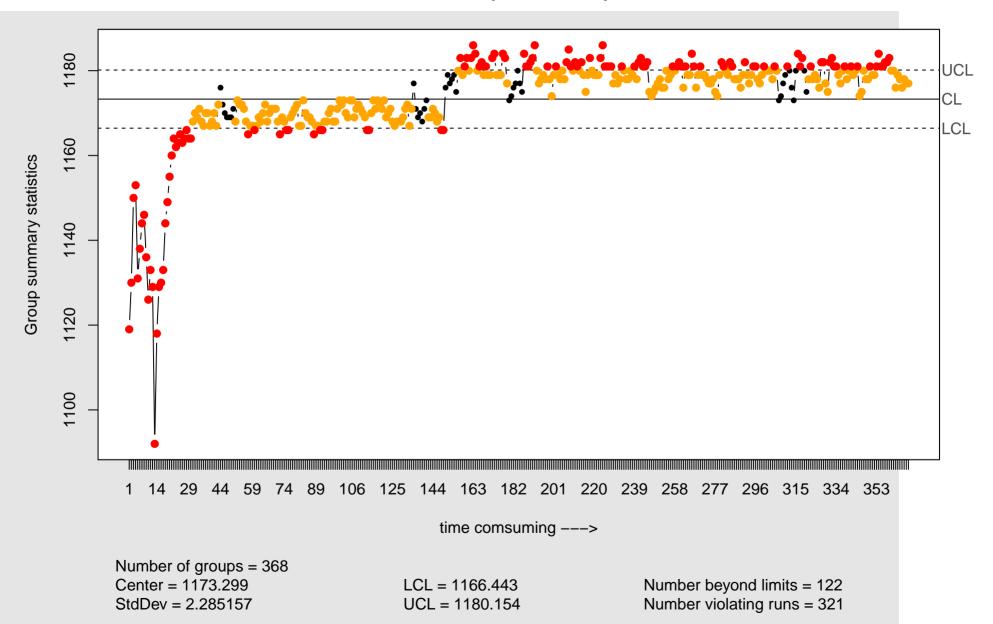
Number beyond limits = 151 Number violating runs = 296

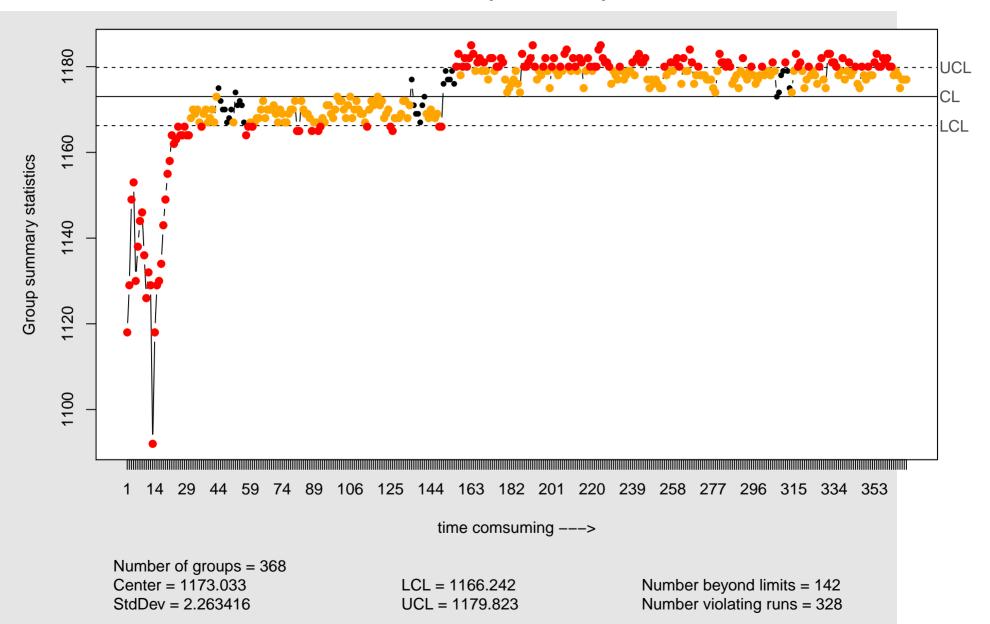


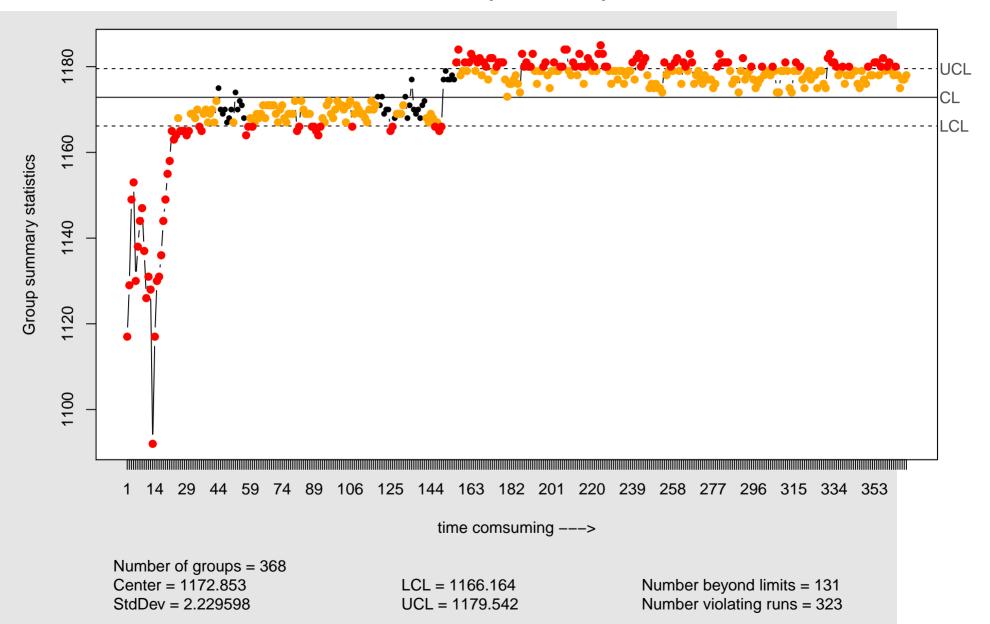


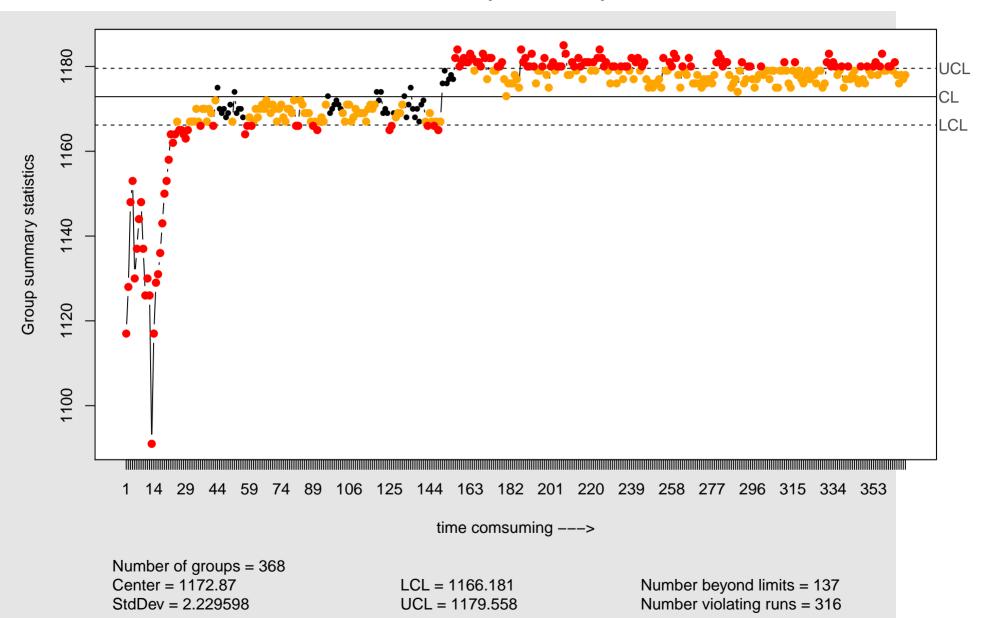


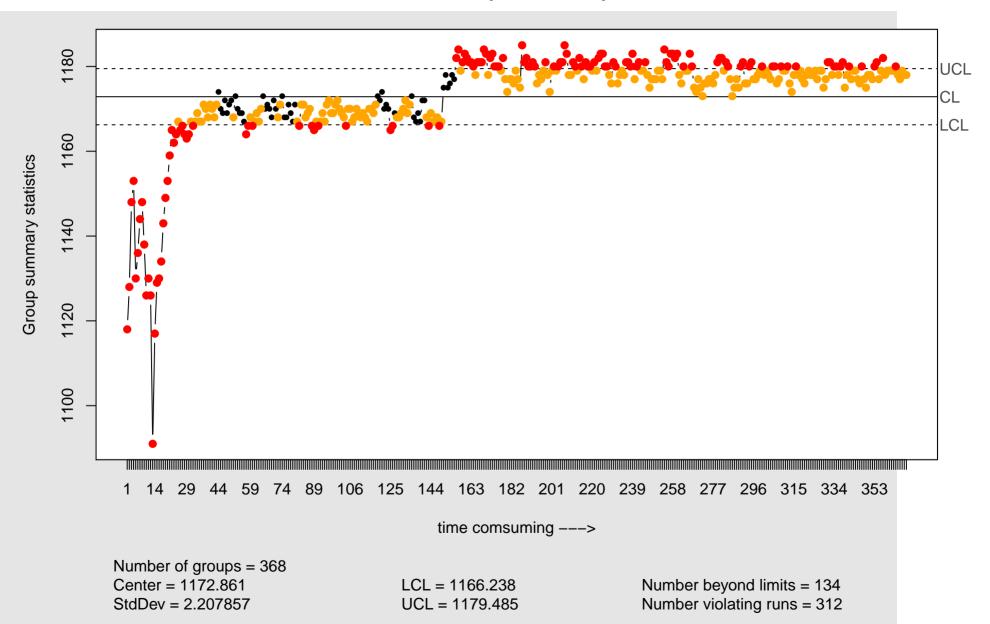


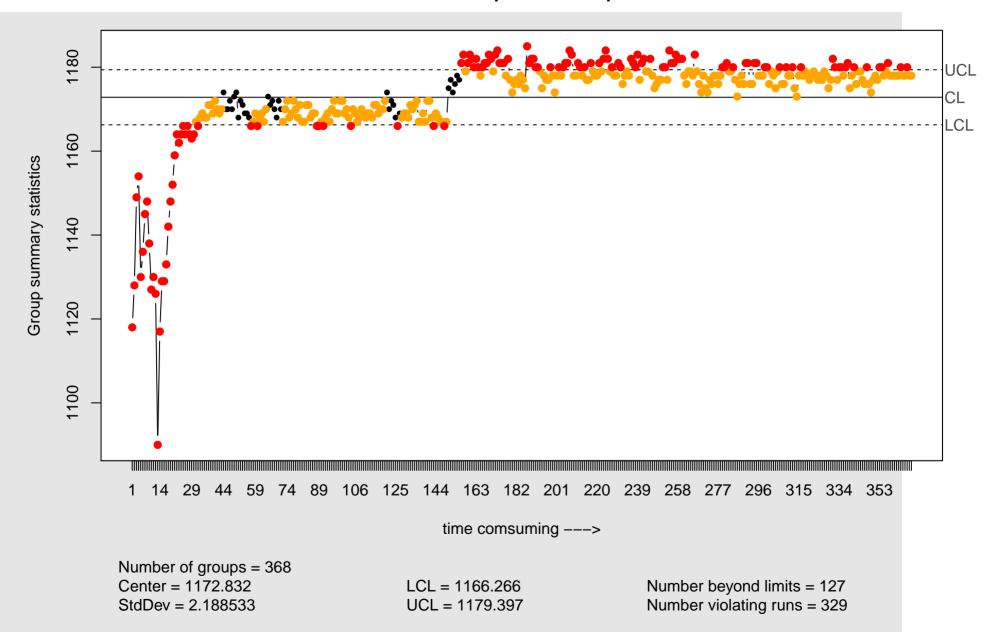


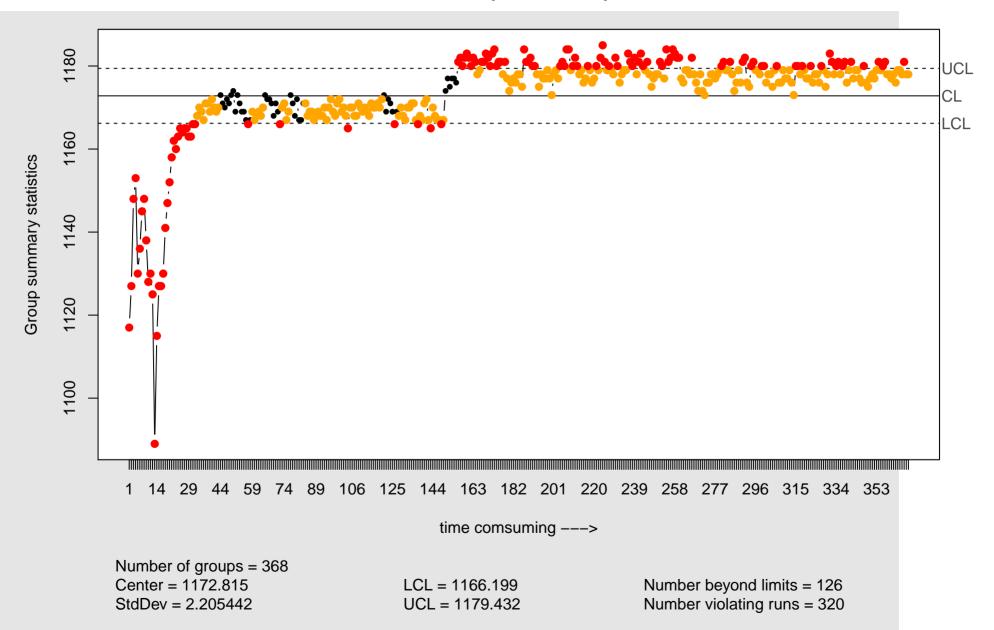


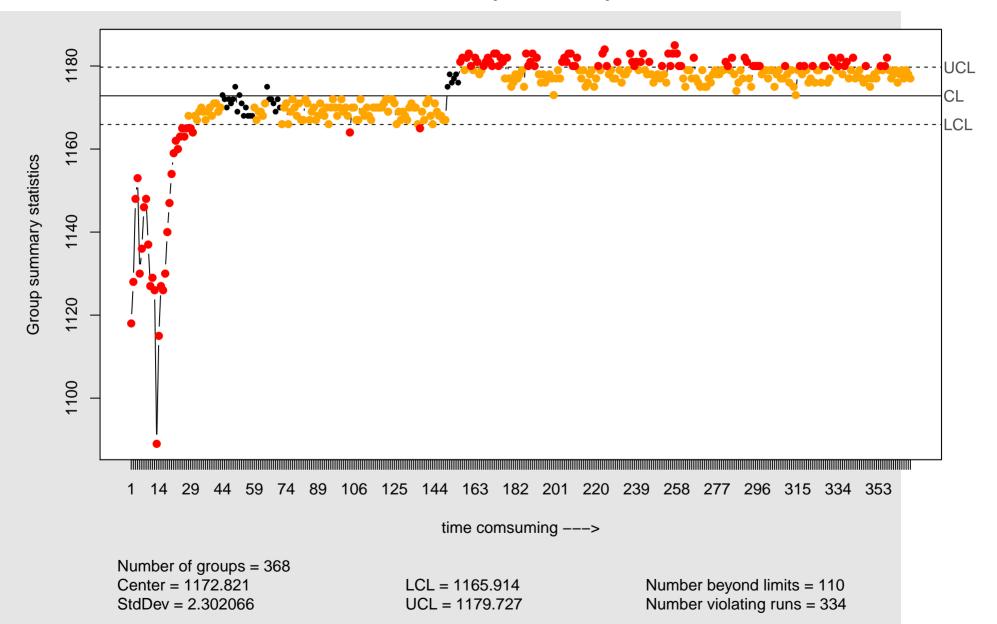


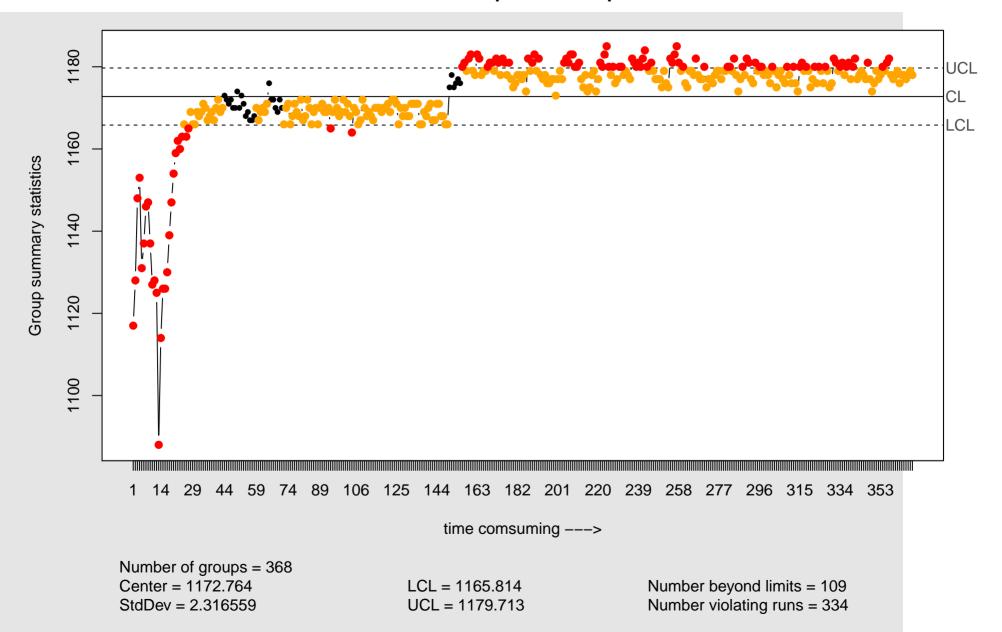


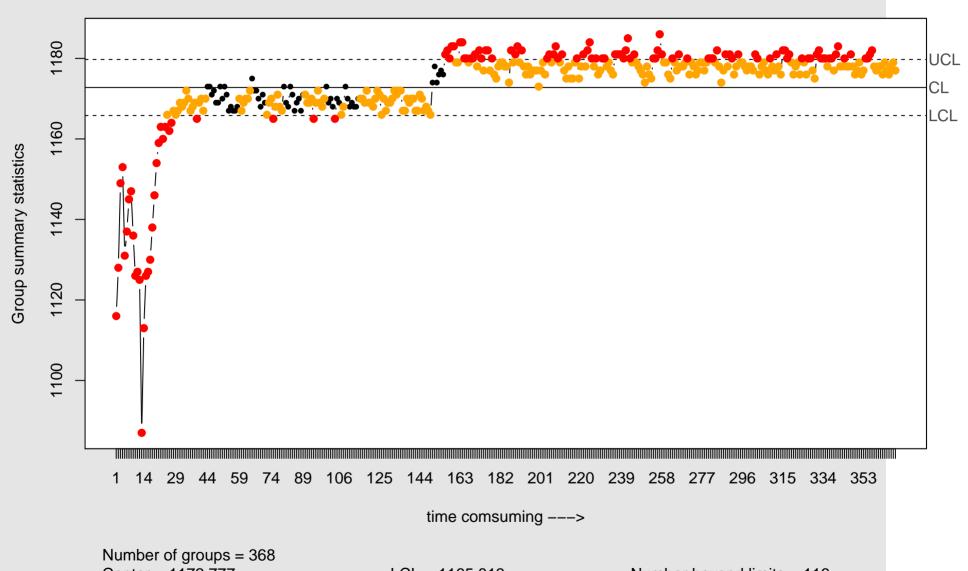






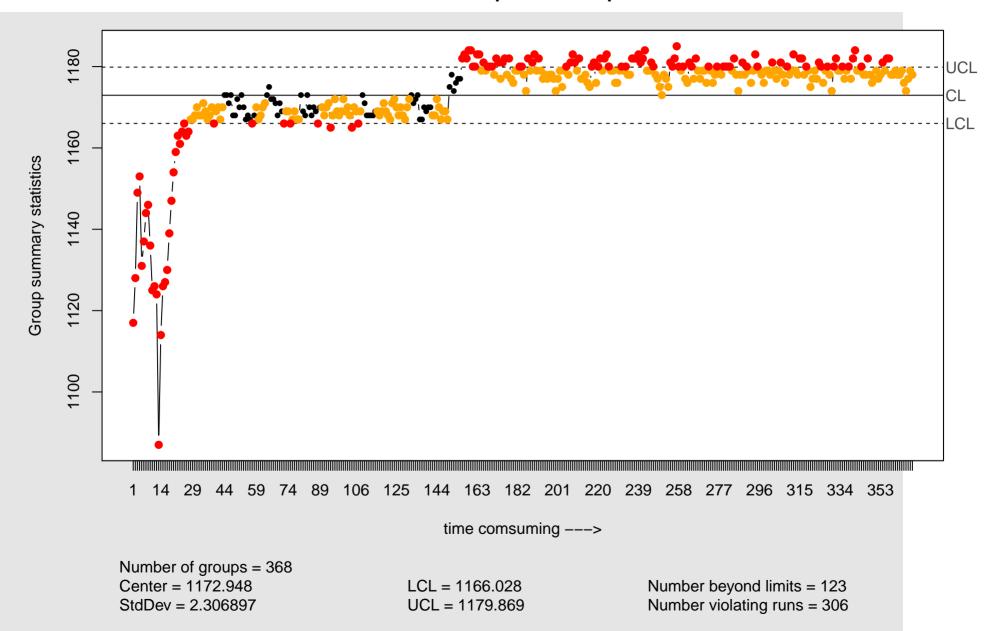


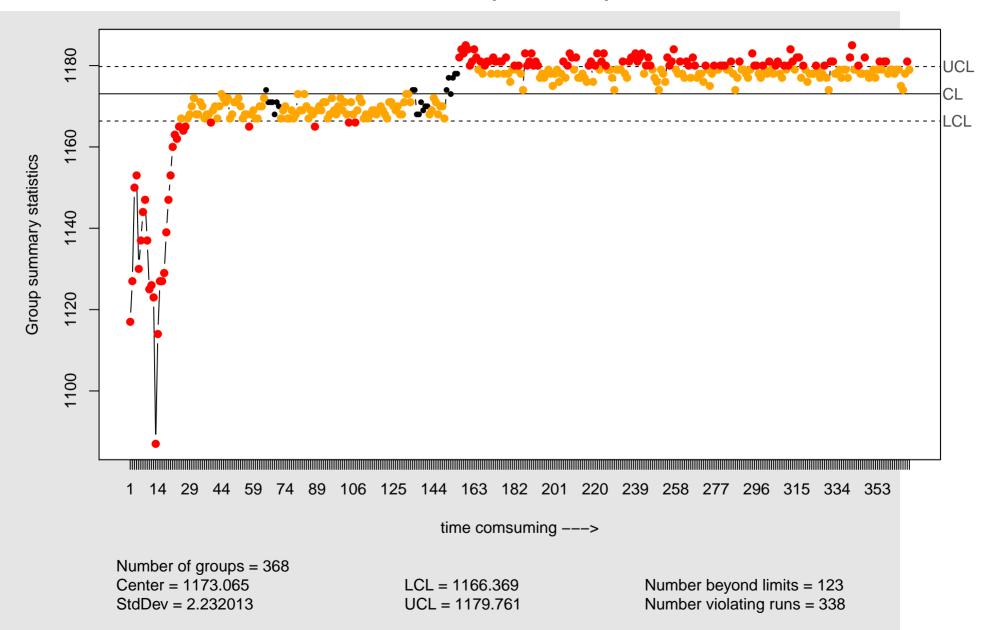


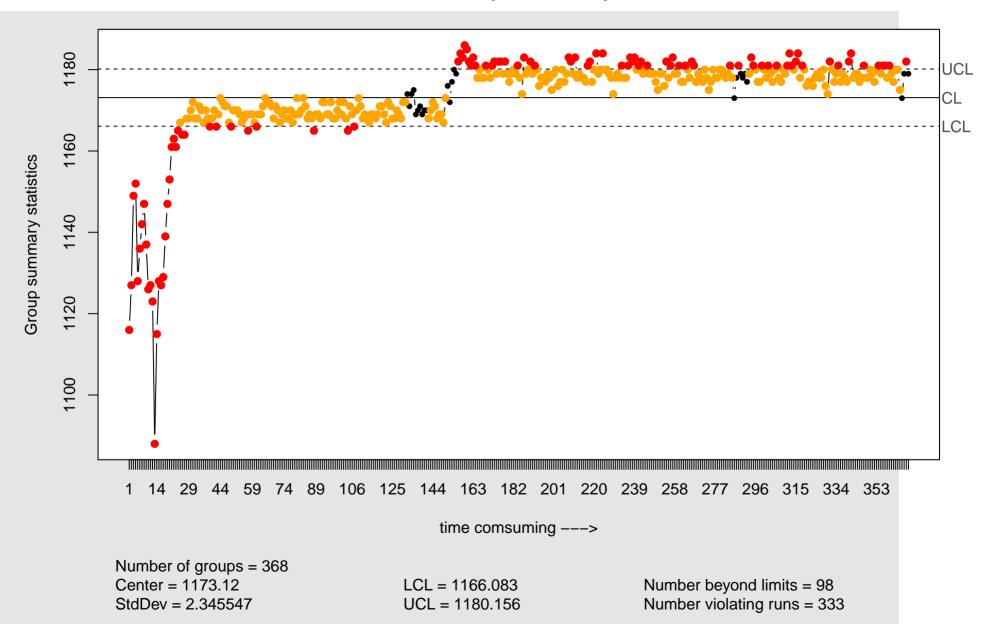


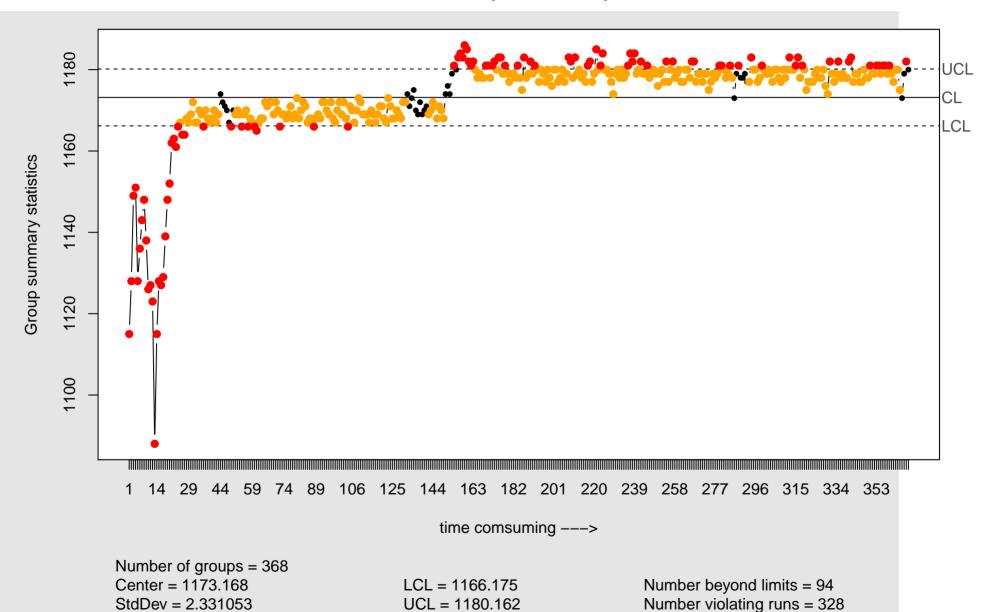
Number of groups = 368 Center = 1172.777 StdDev = 2.321391

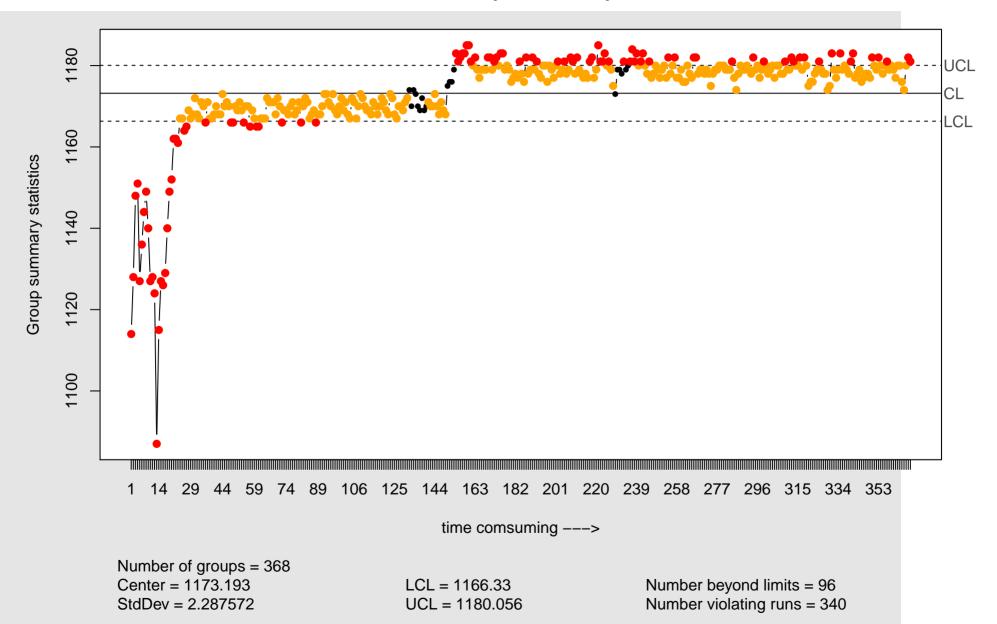
LCL = 1165.813 UCL = 1179.741 Number beyond limits = 116 Number violating runs = 310

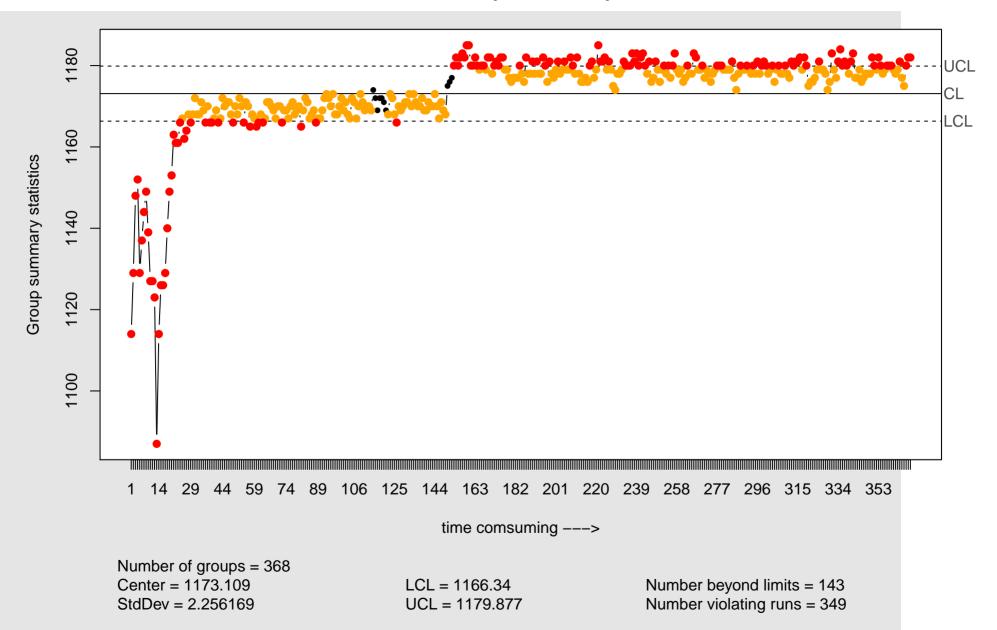


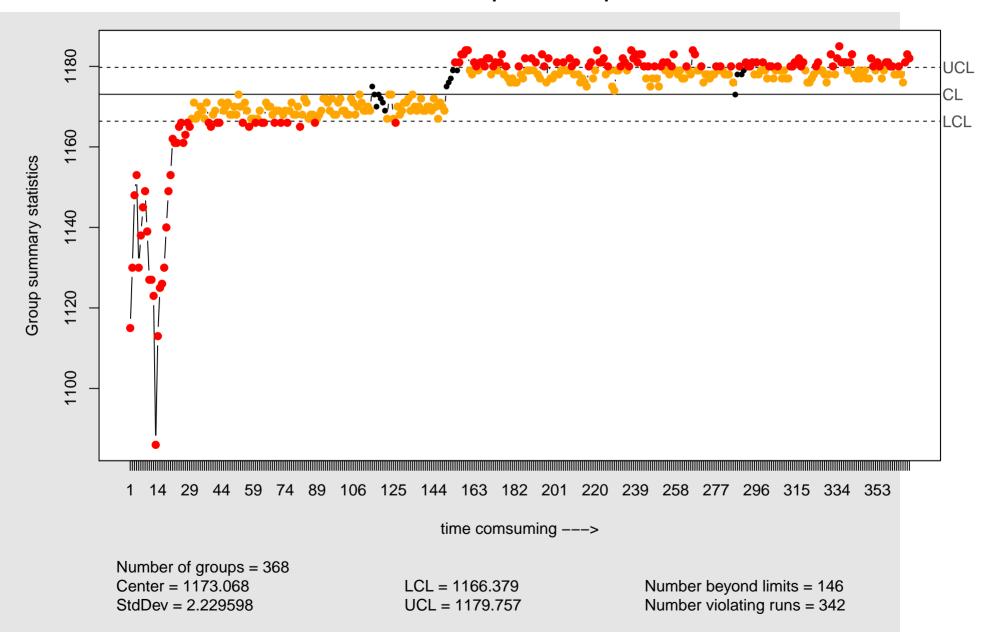


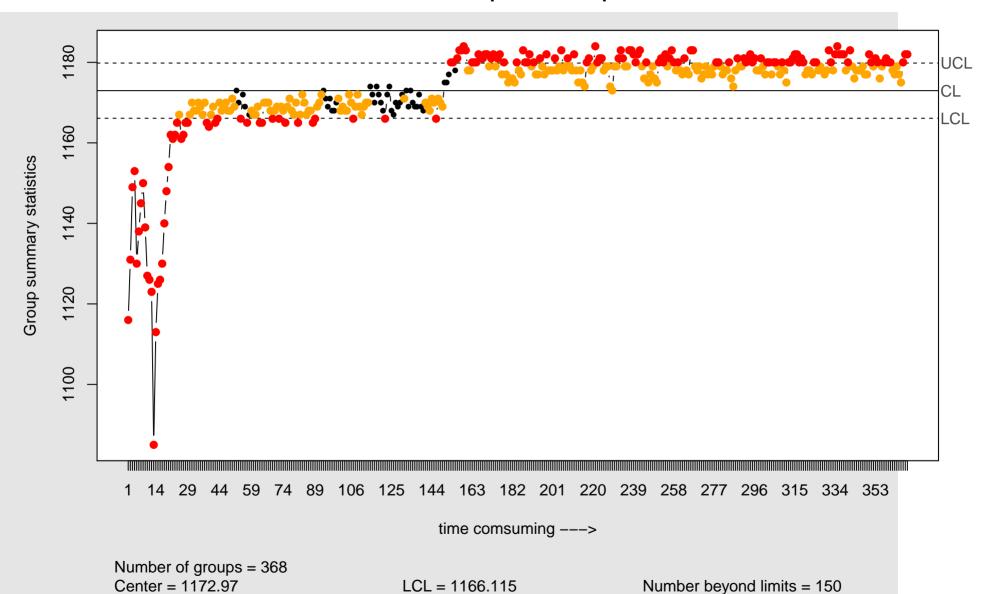








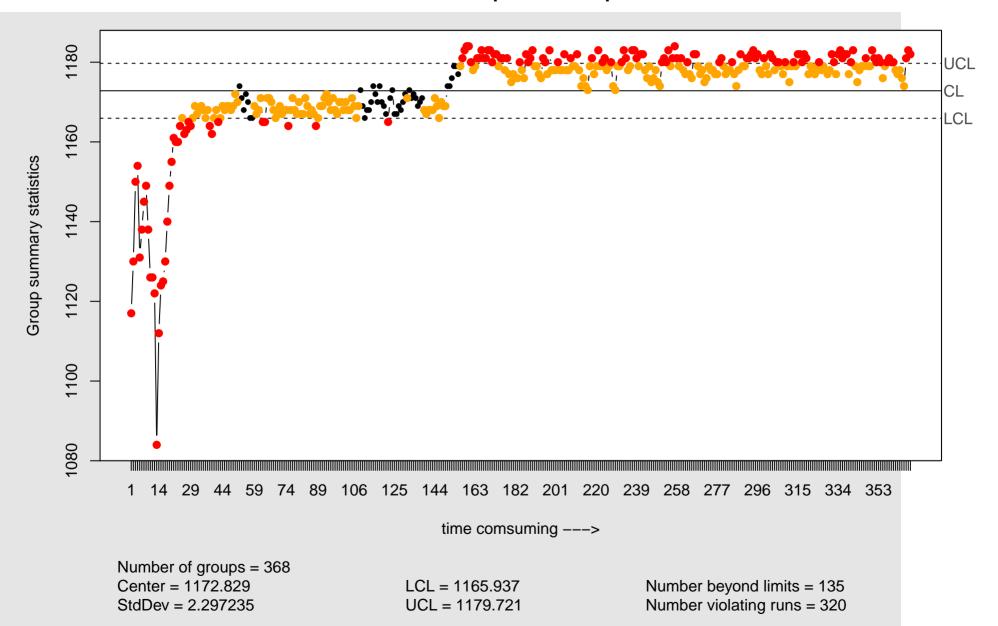


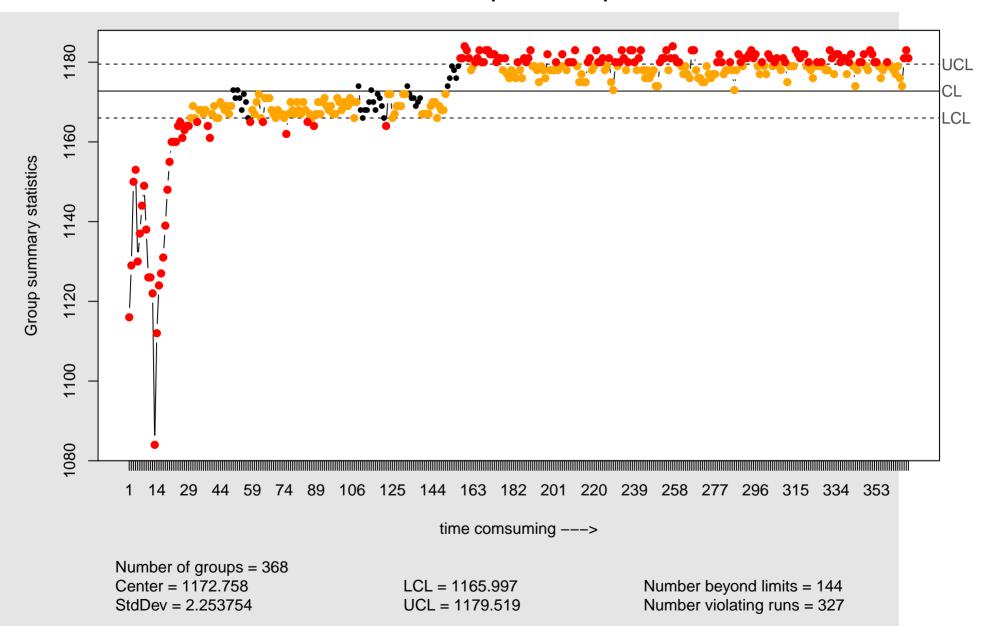


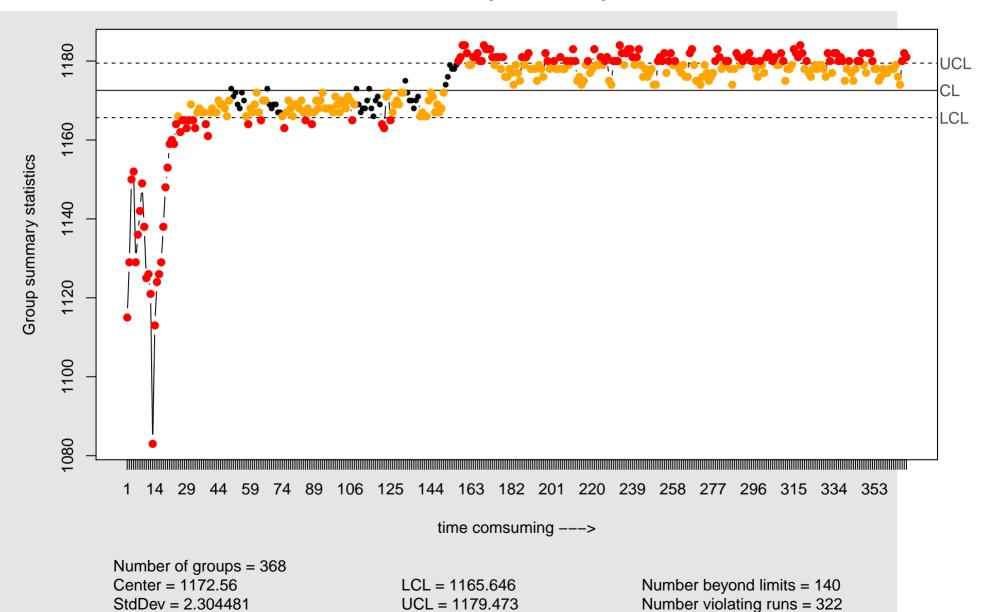
UCL = 1179.826

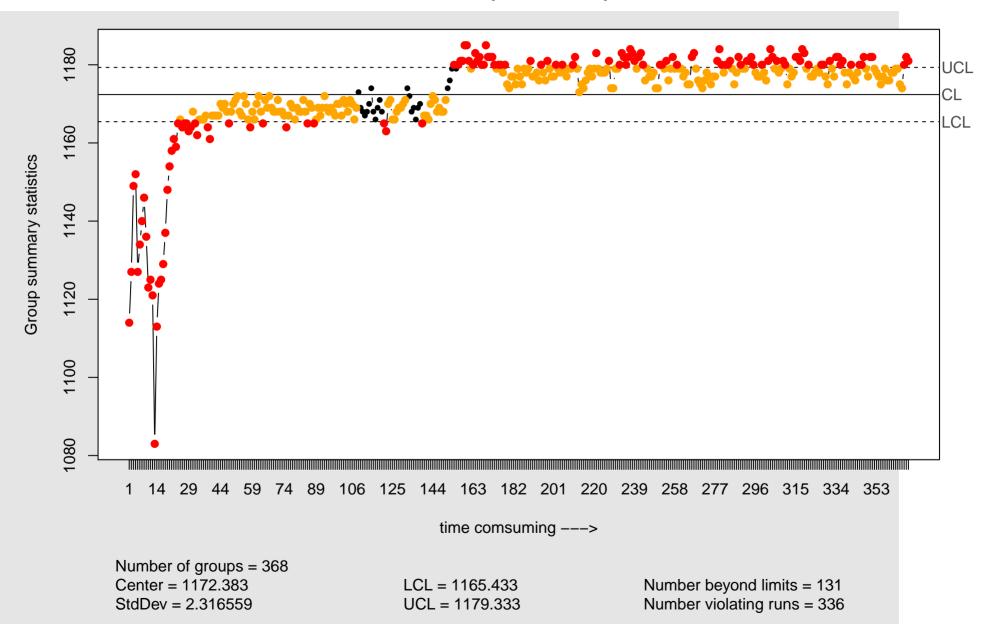
Number violating runs = 317

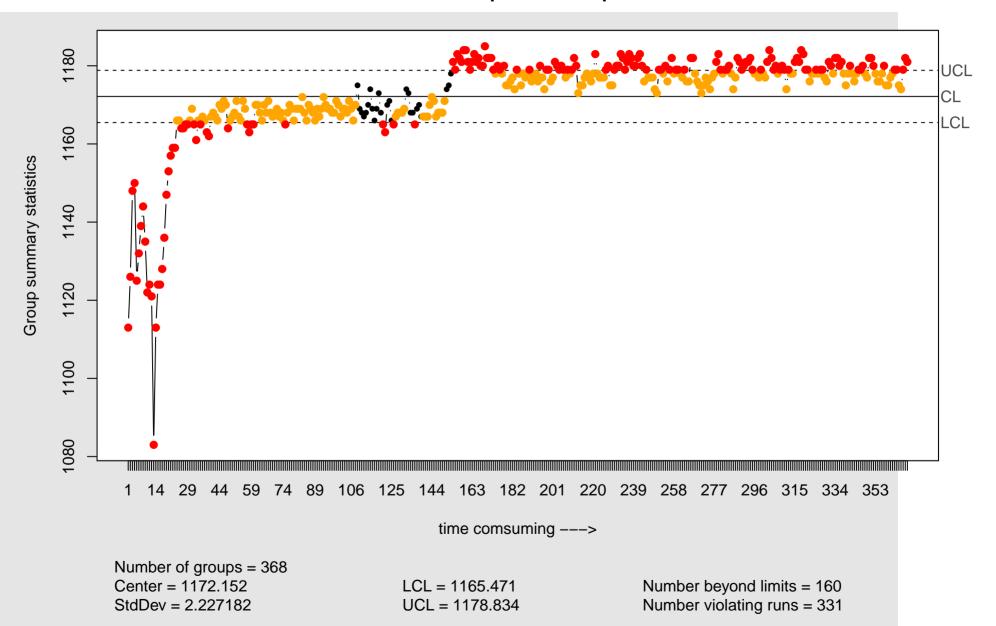
StdDev = 2.285157

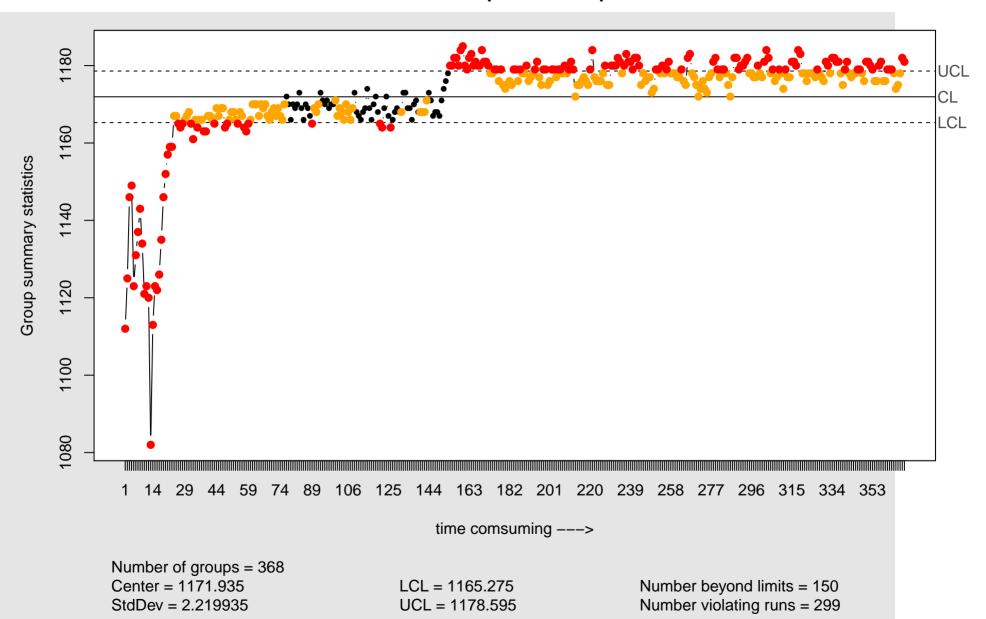


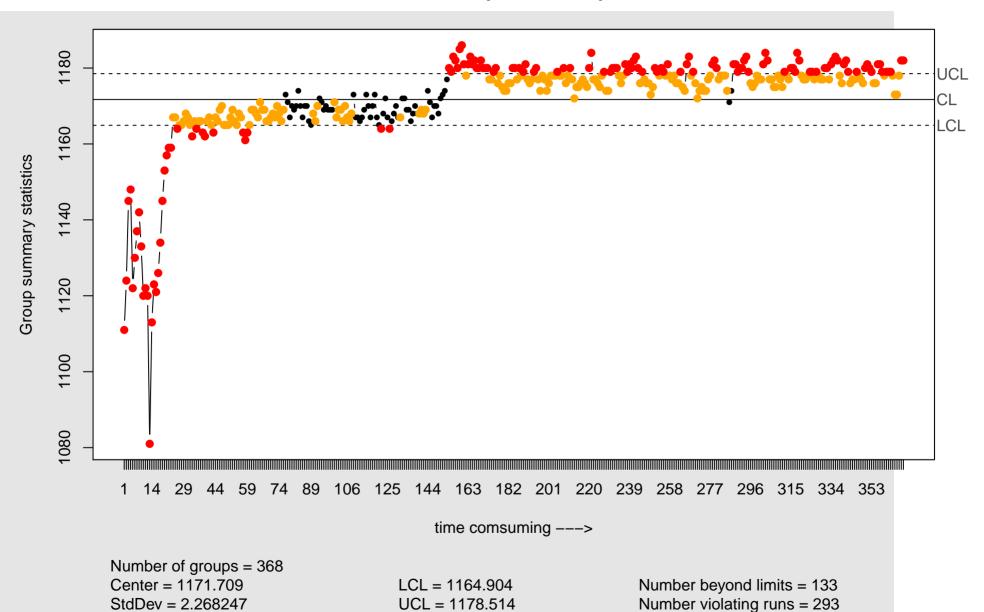


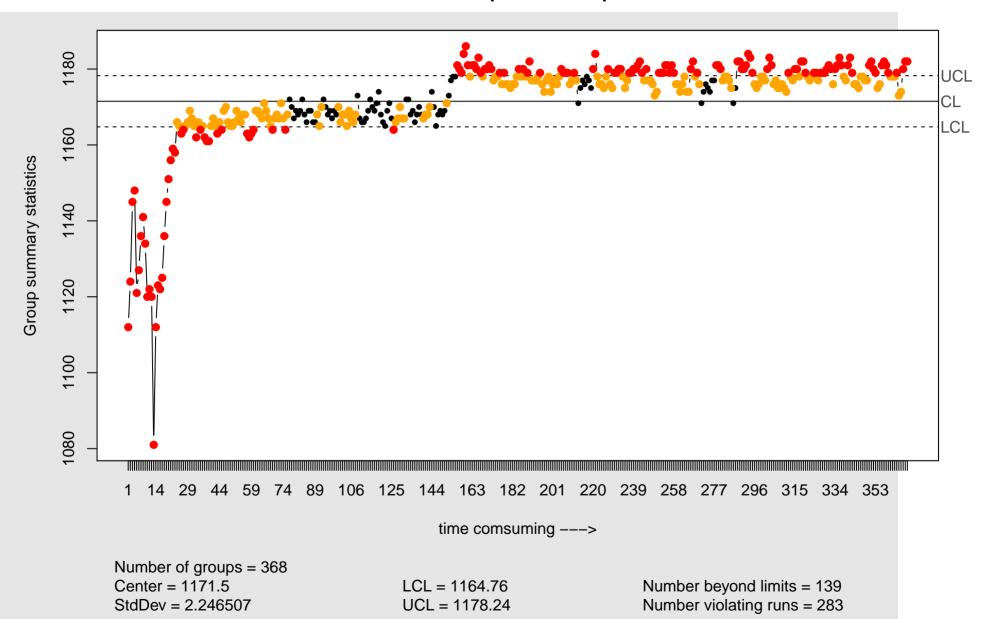


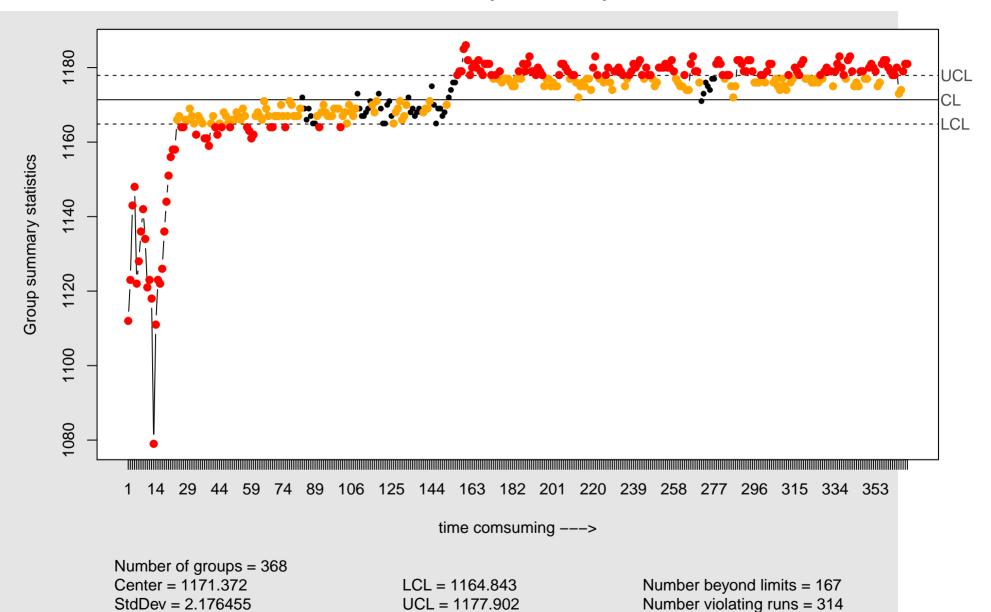


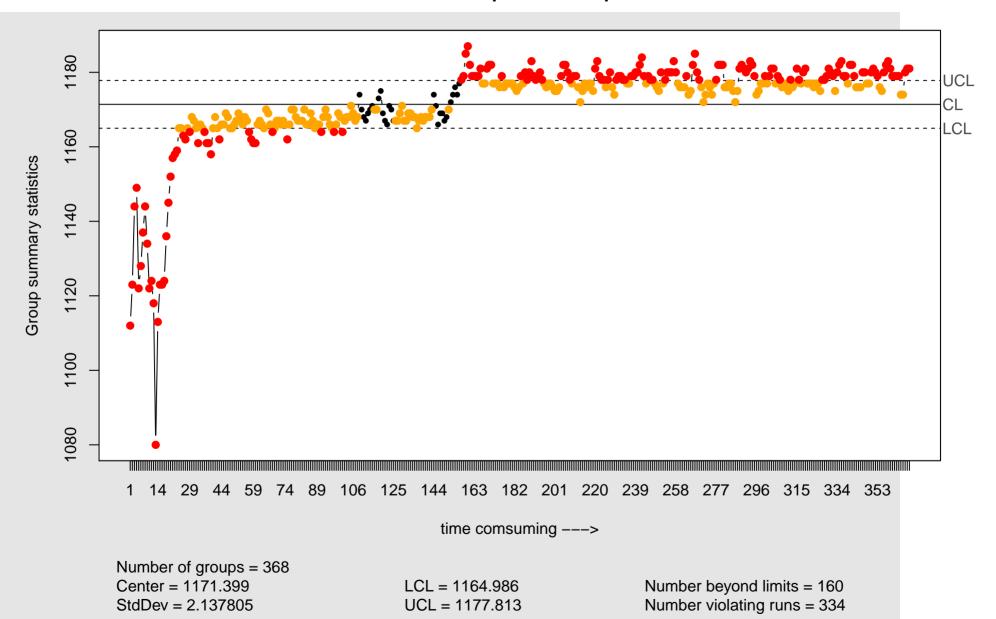


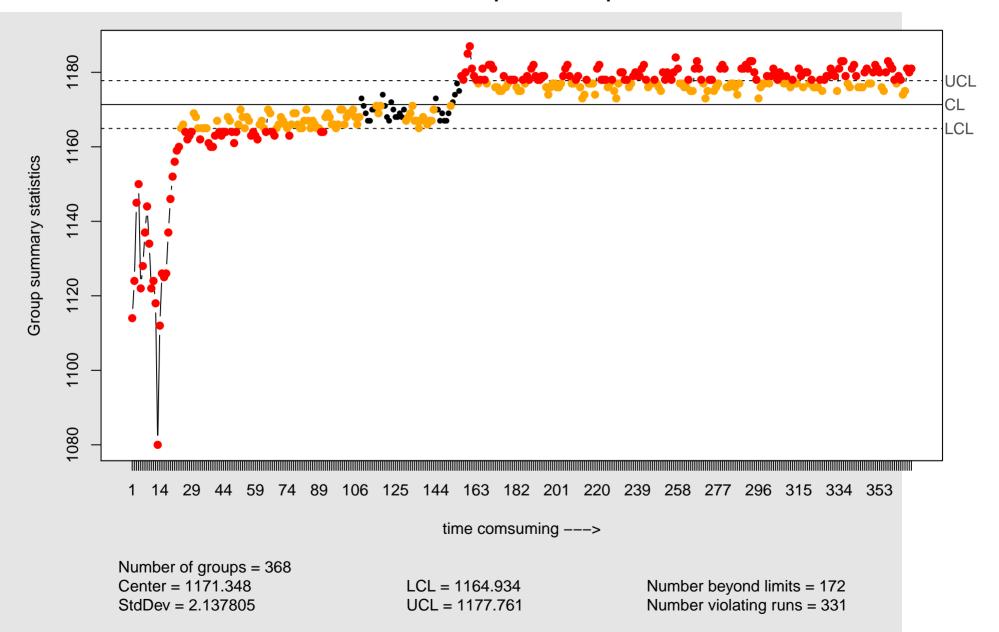


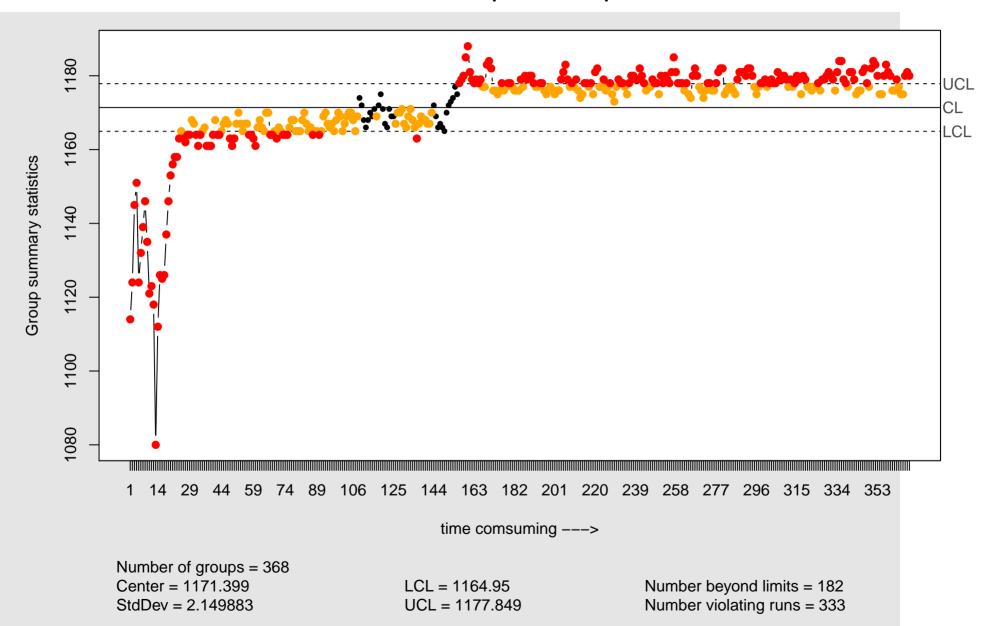


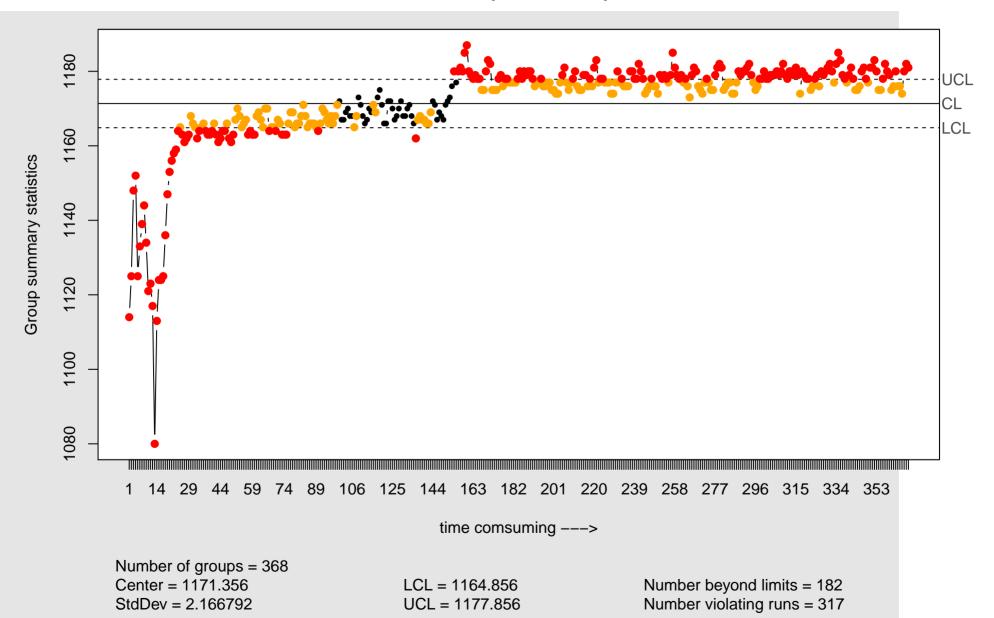


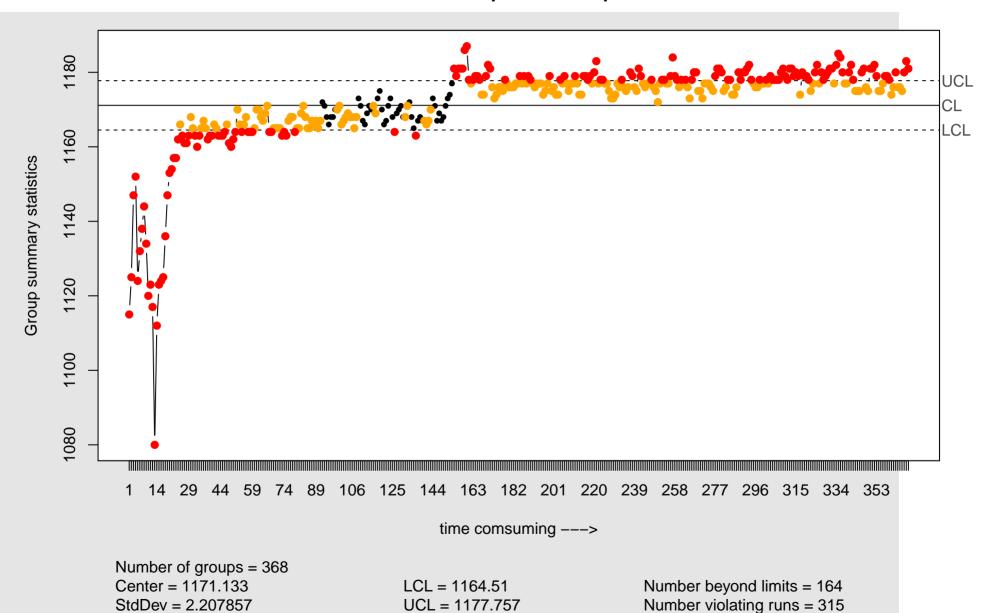


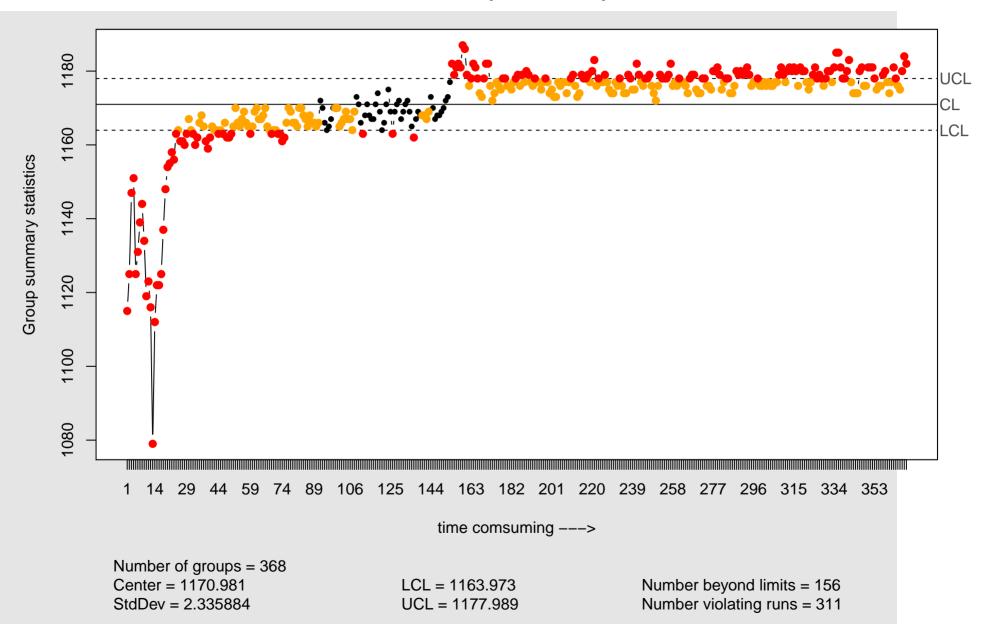


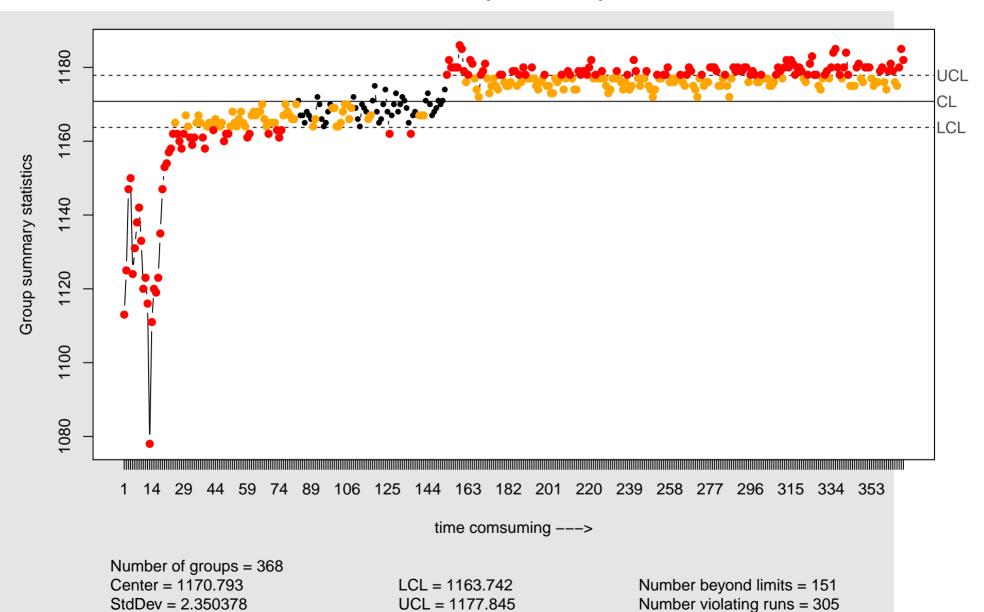


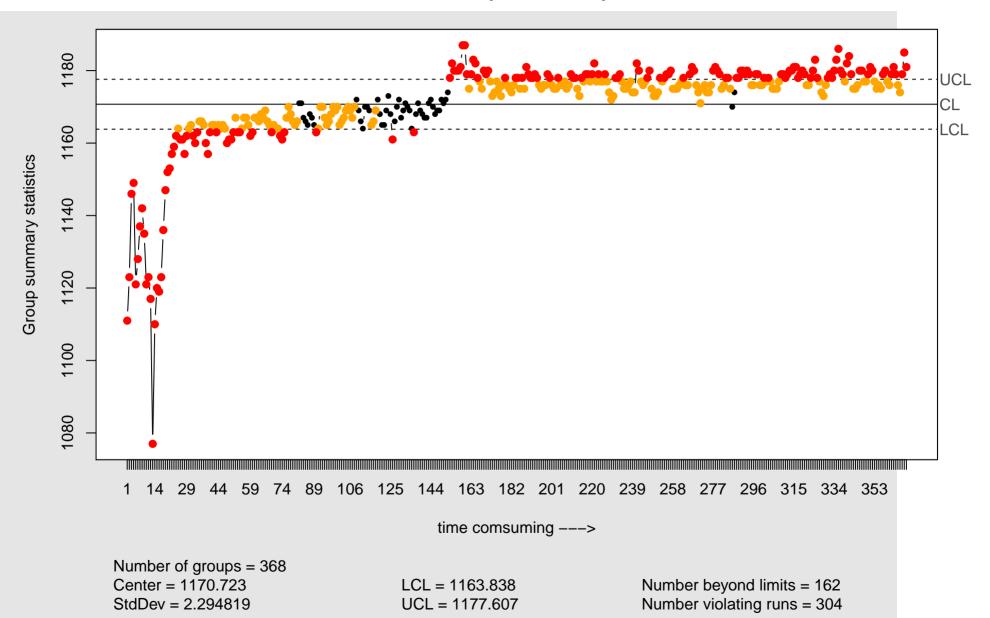


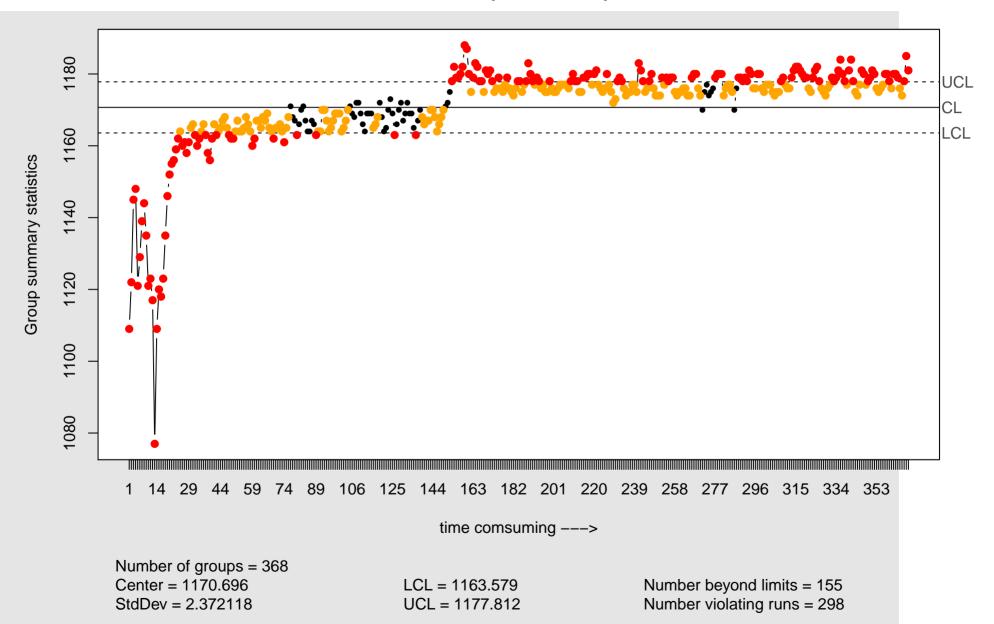


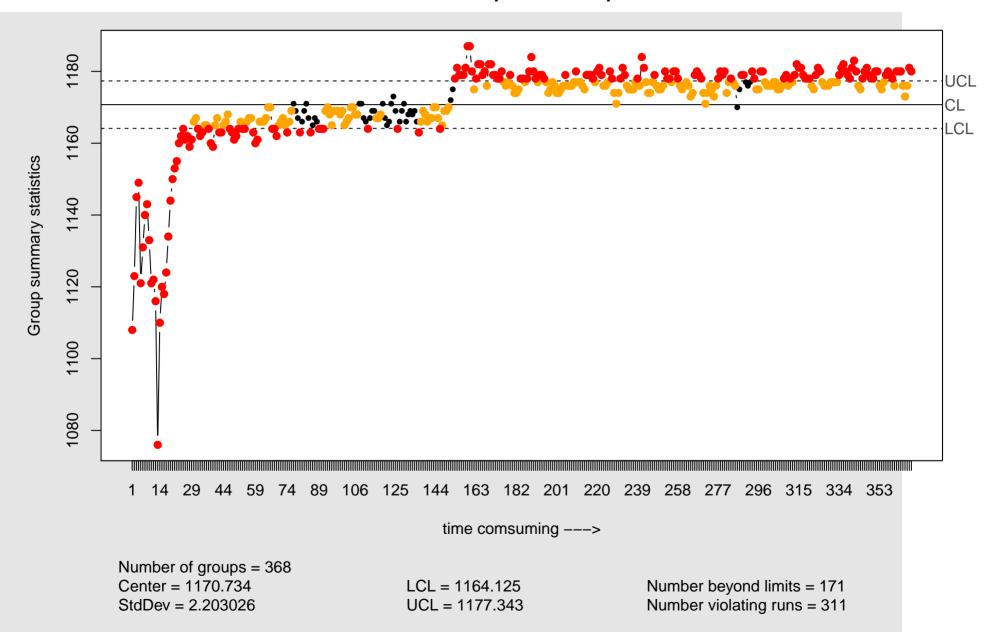


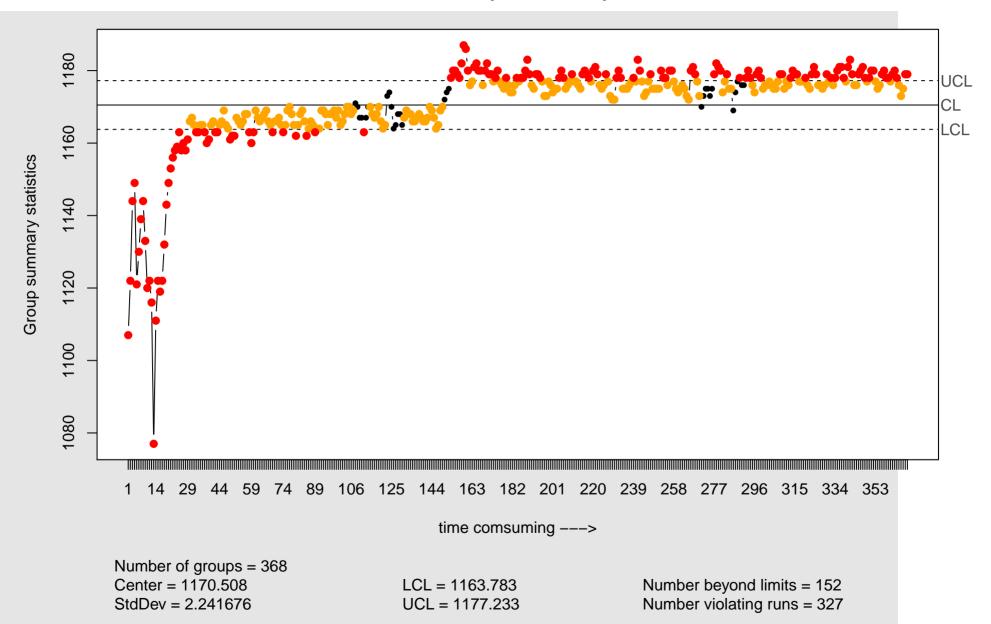


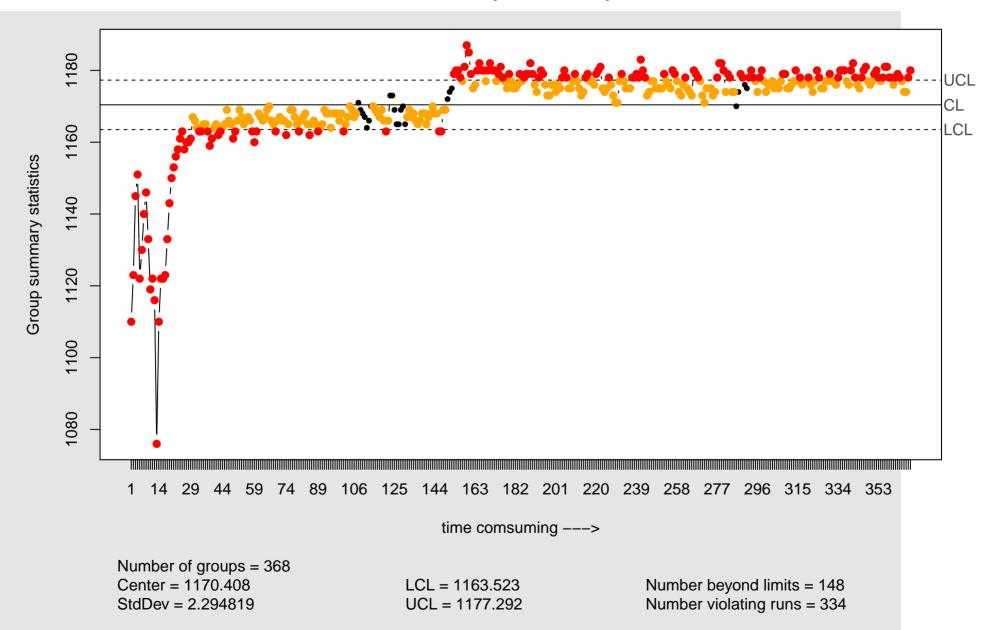


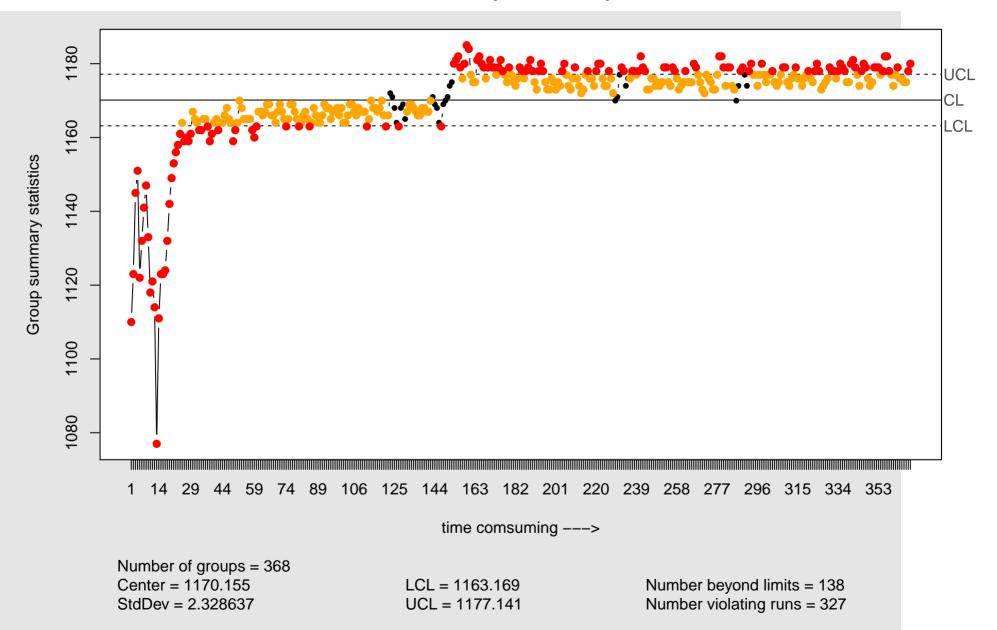


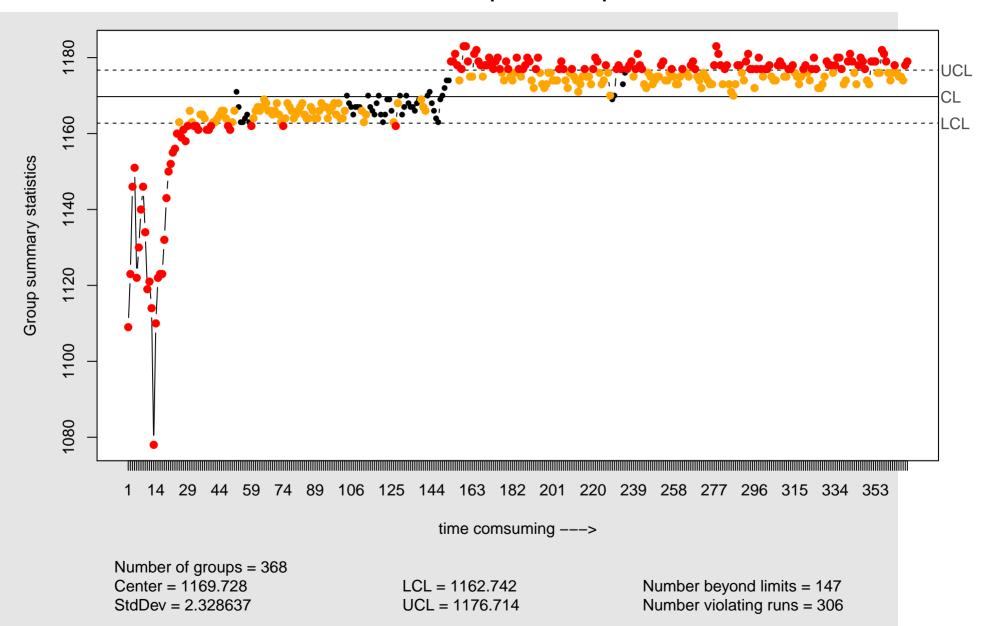


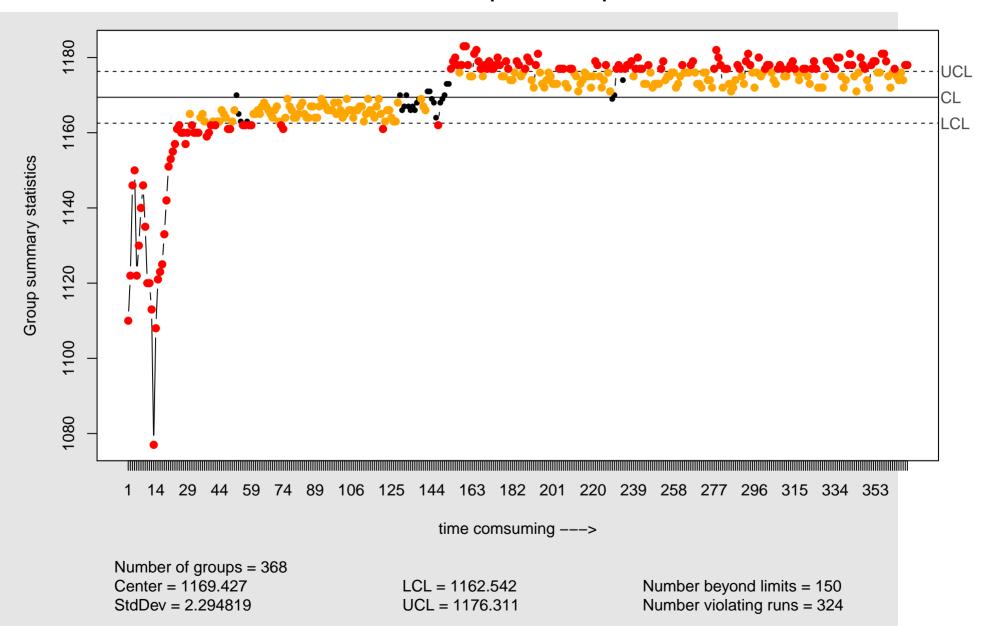


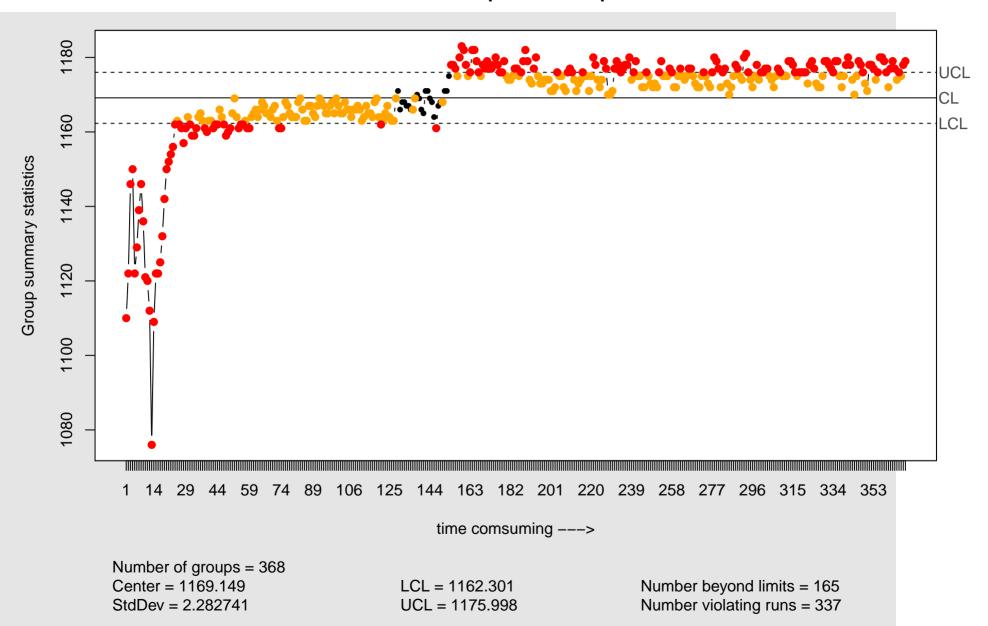


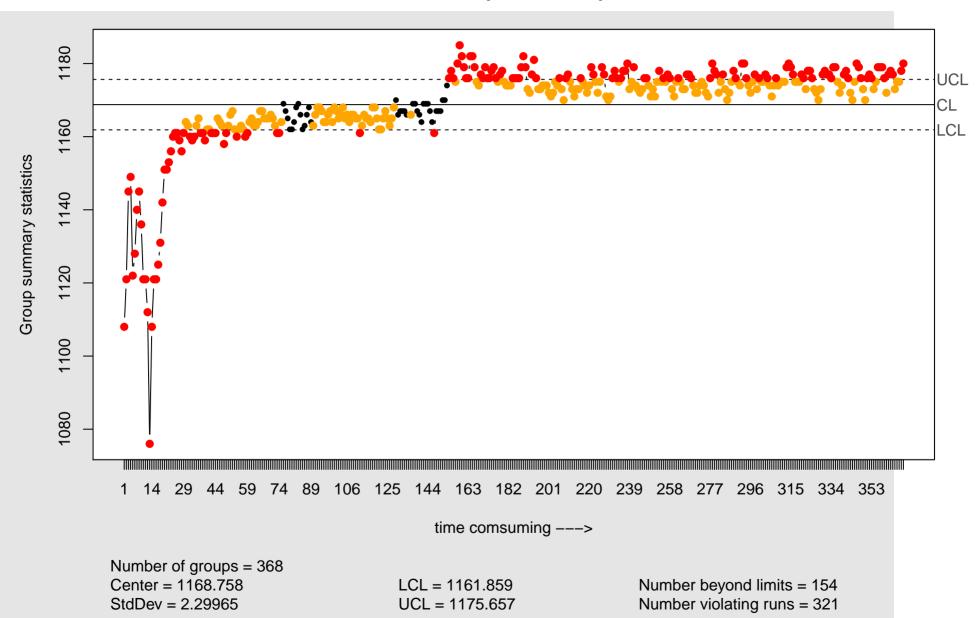


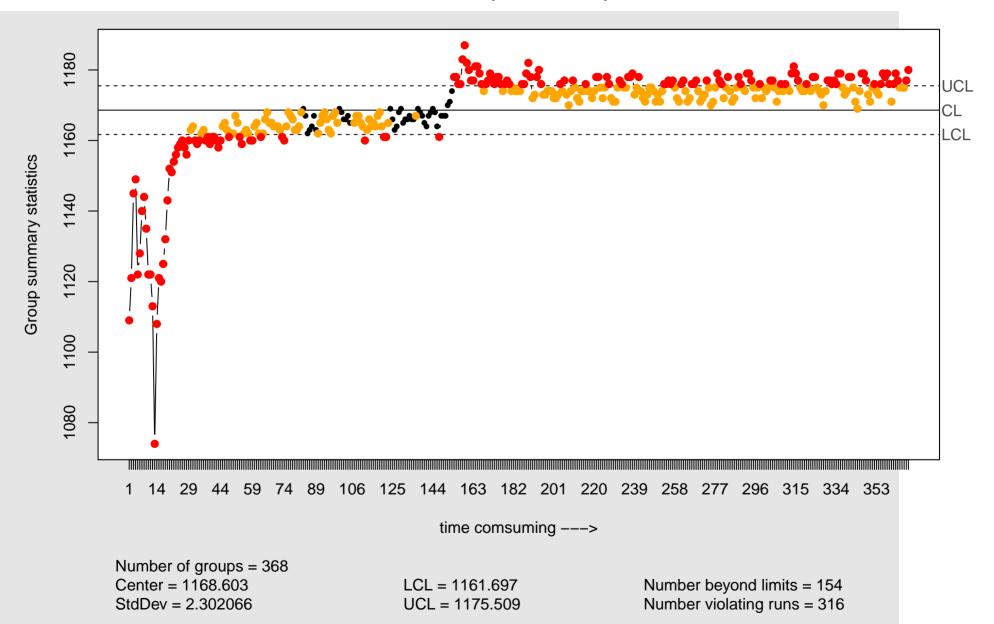


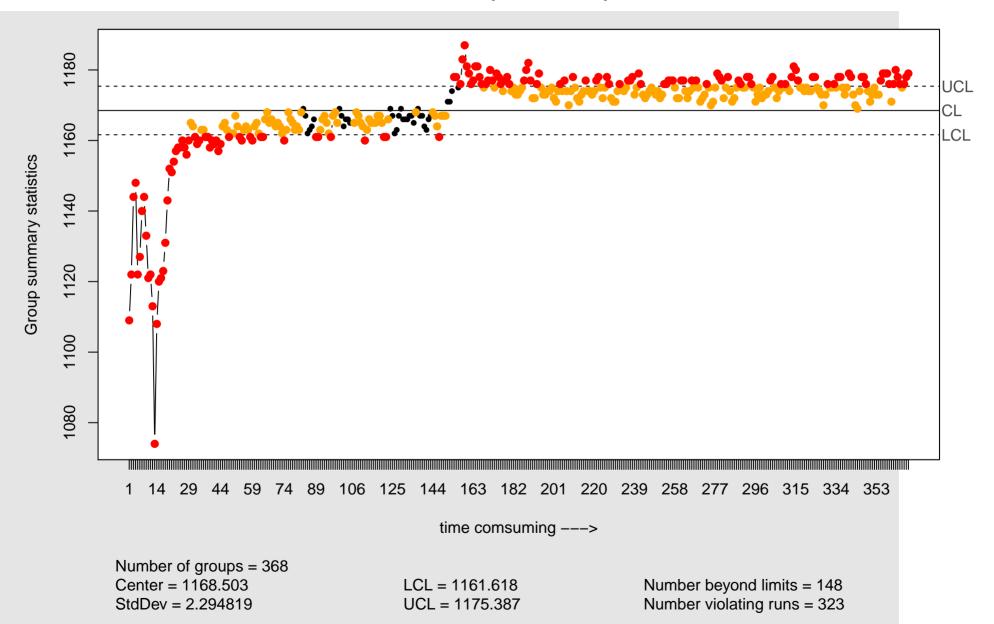


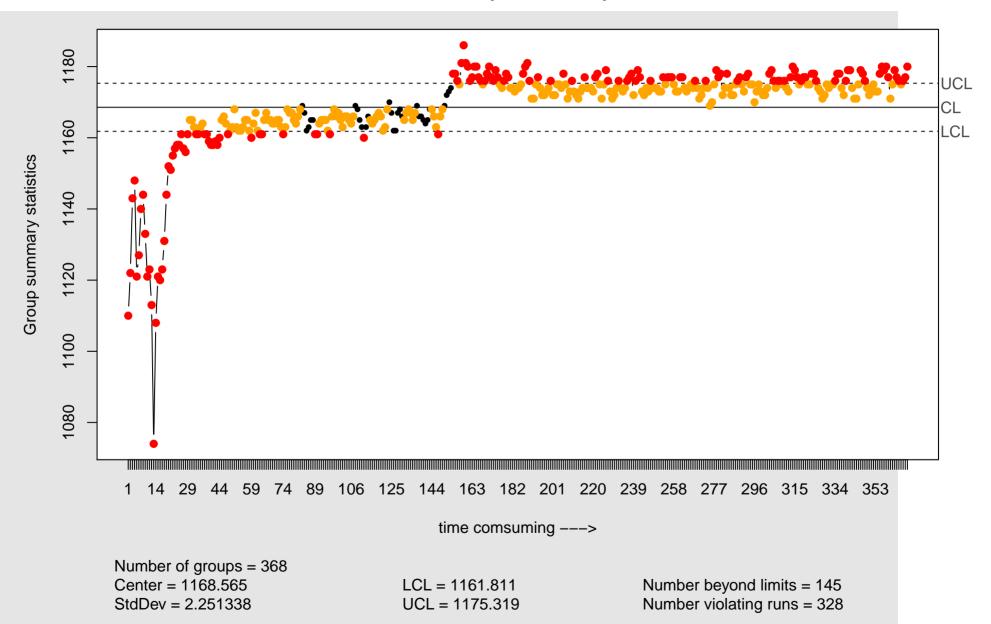


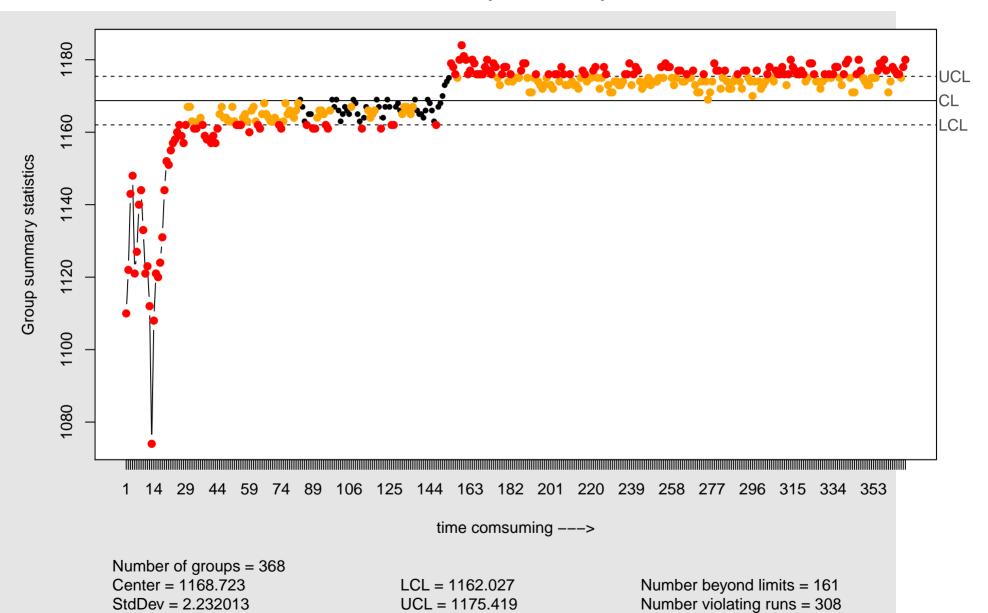


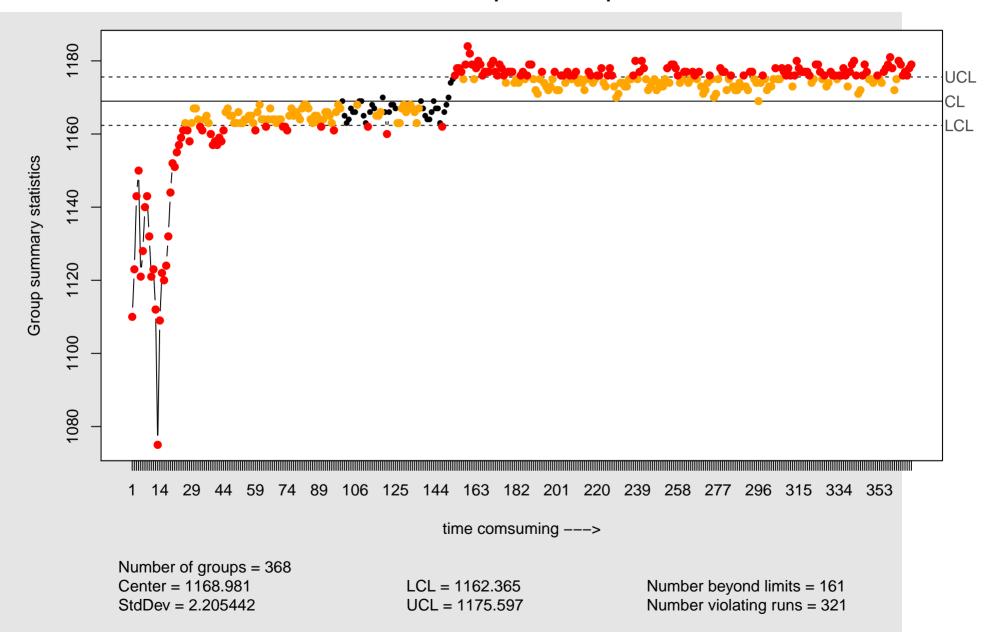


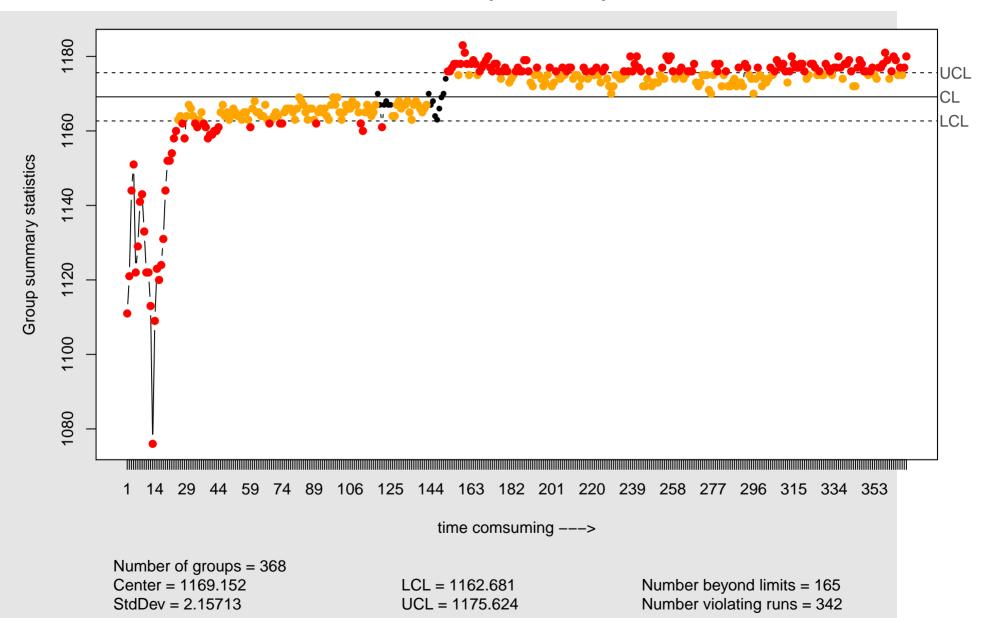


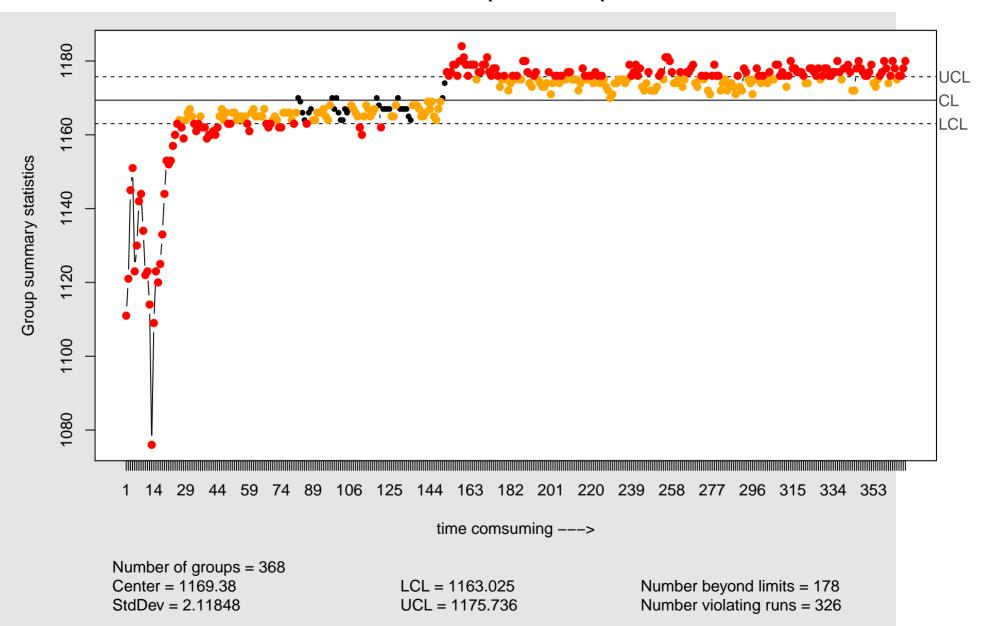


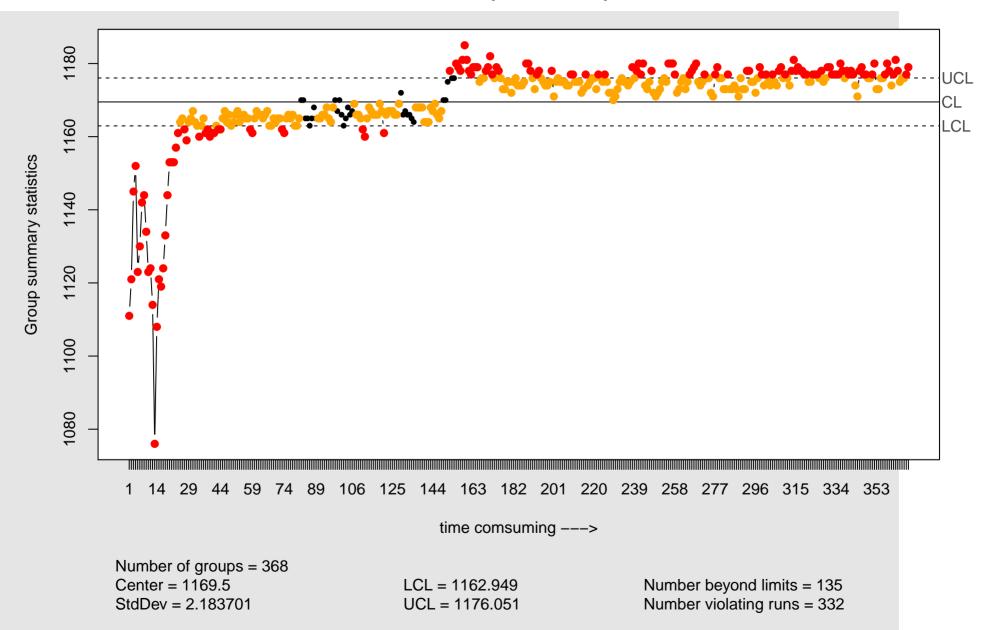


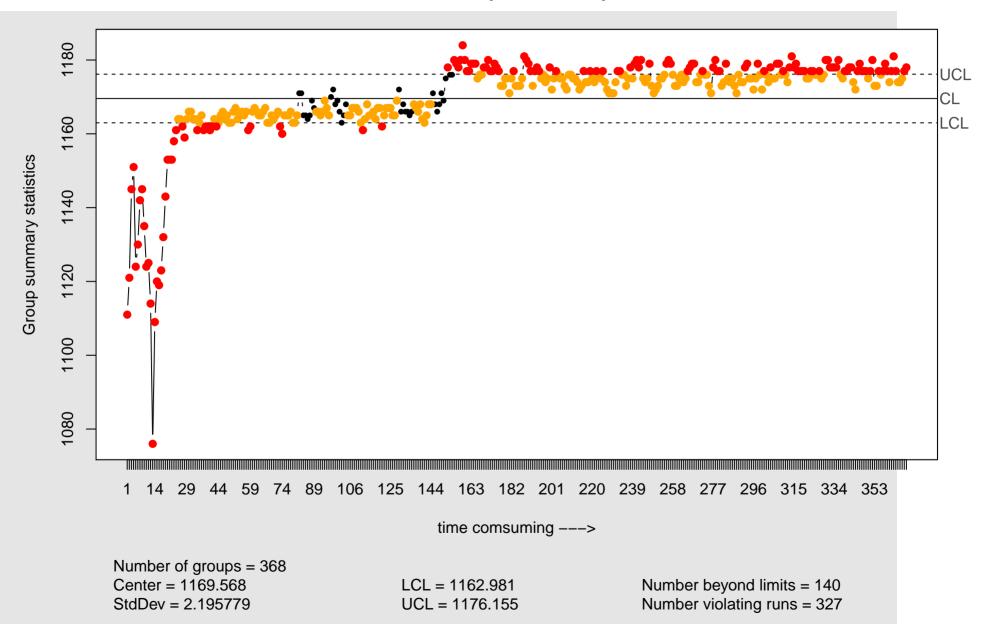


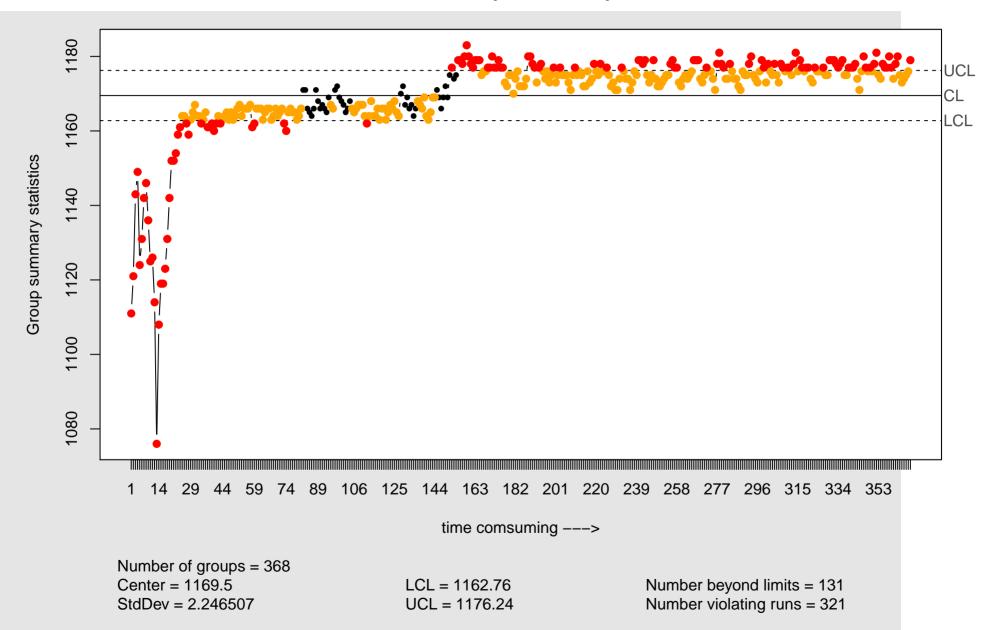


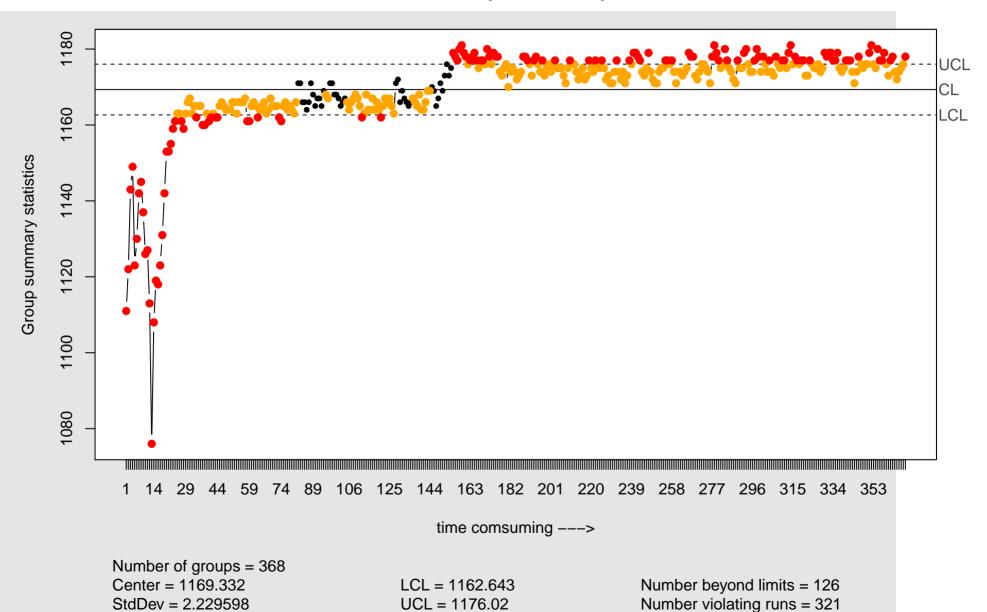


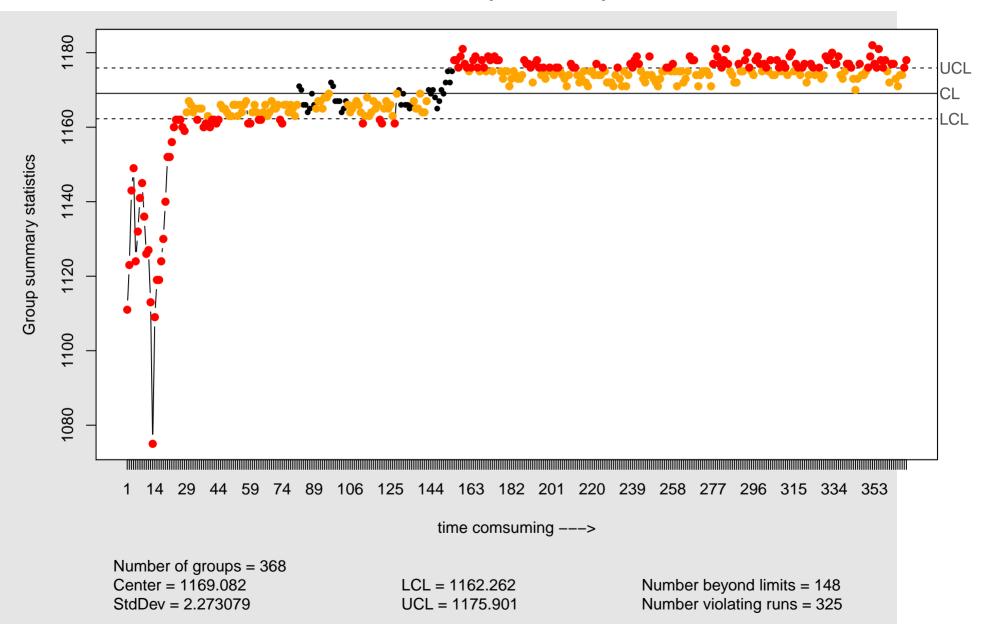


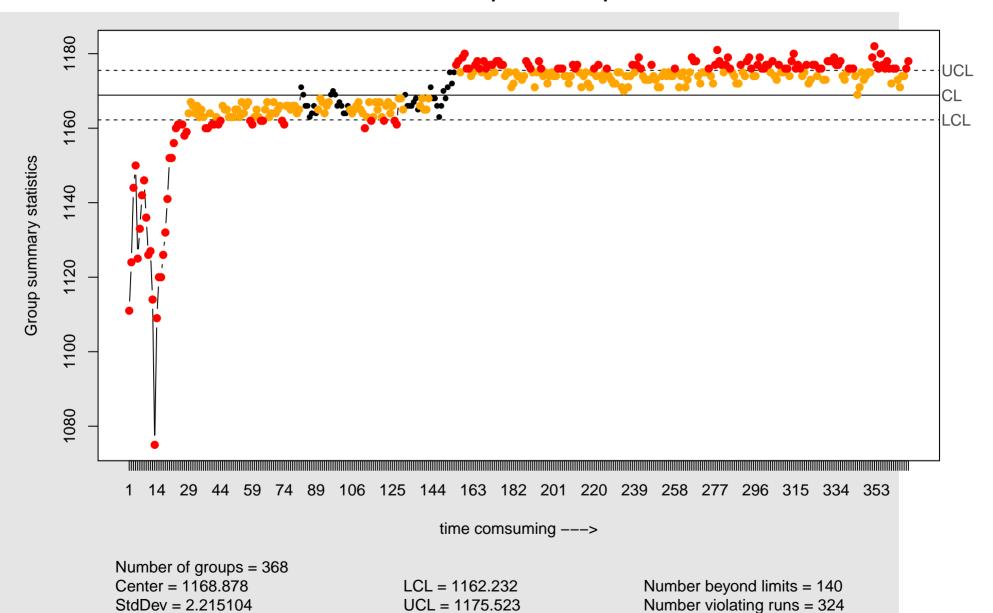


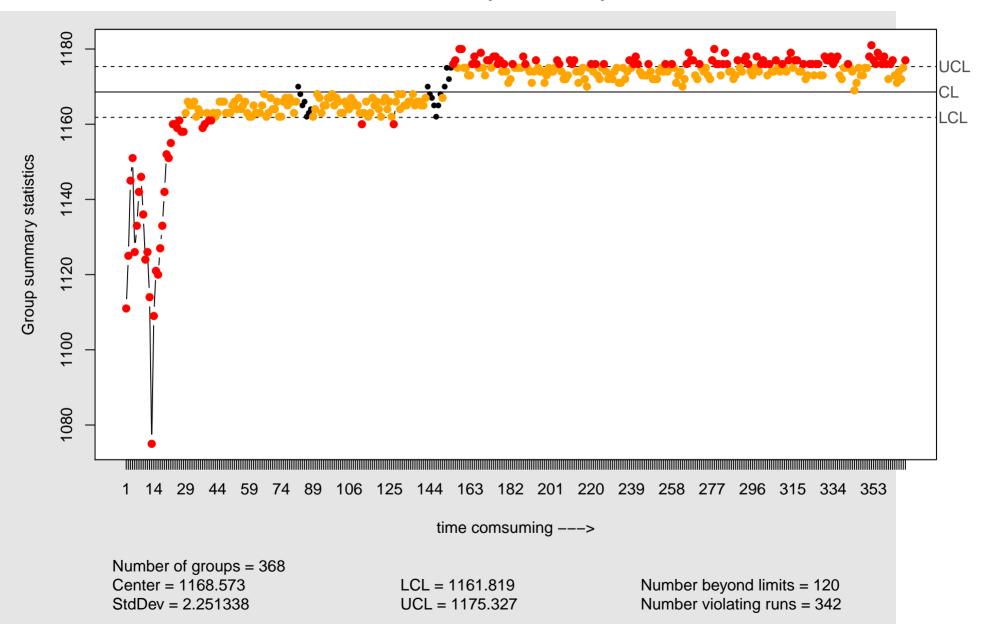


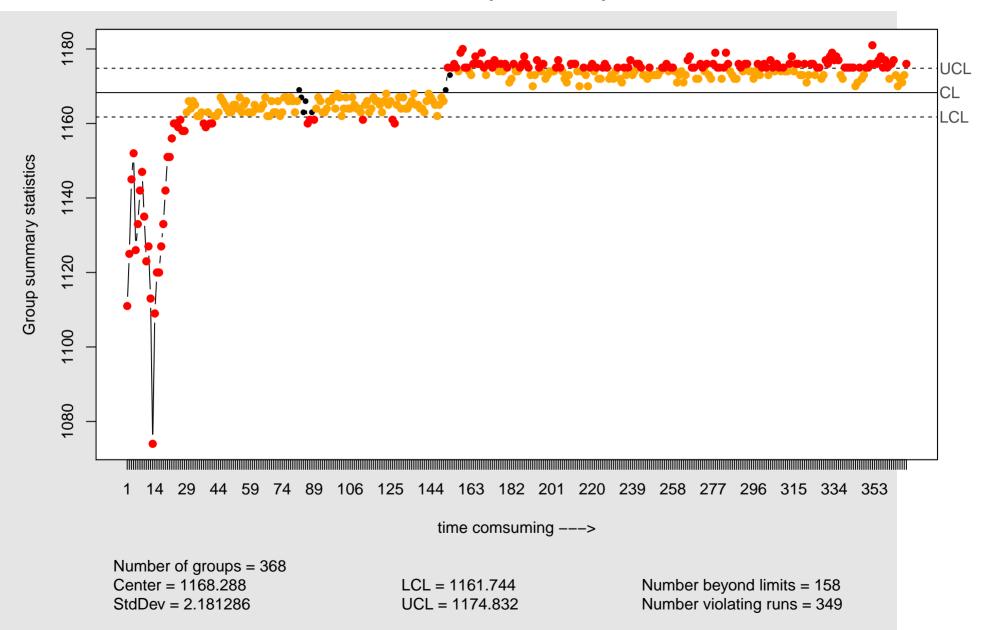


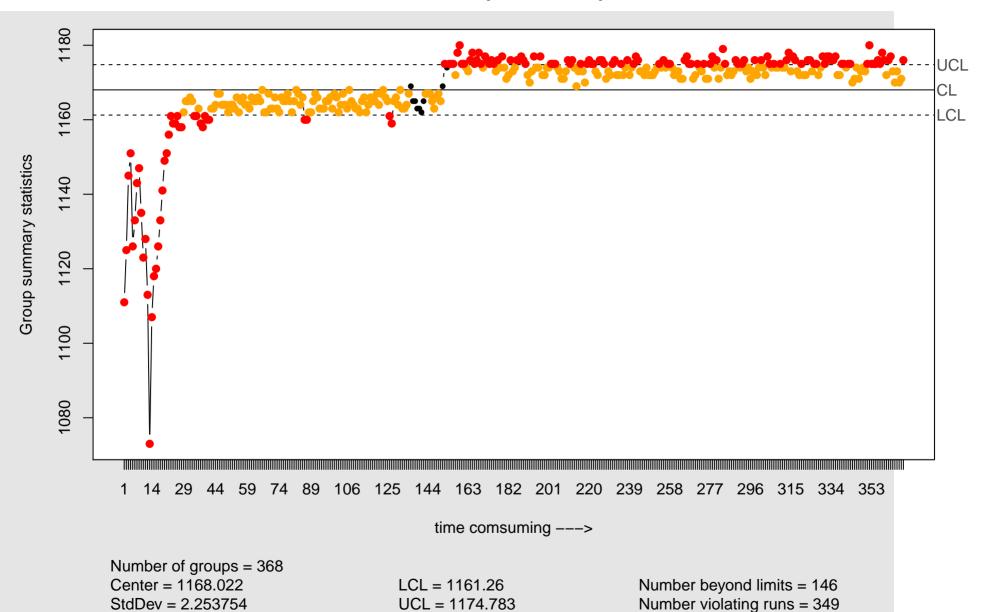


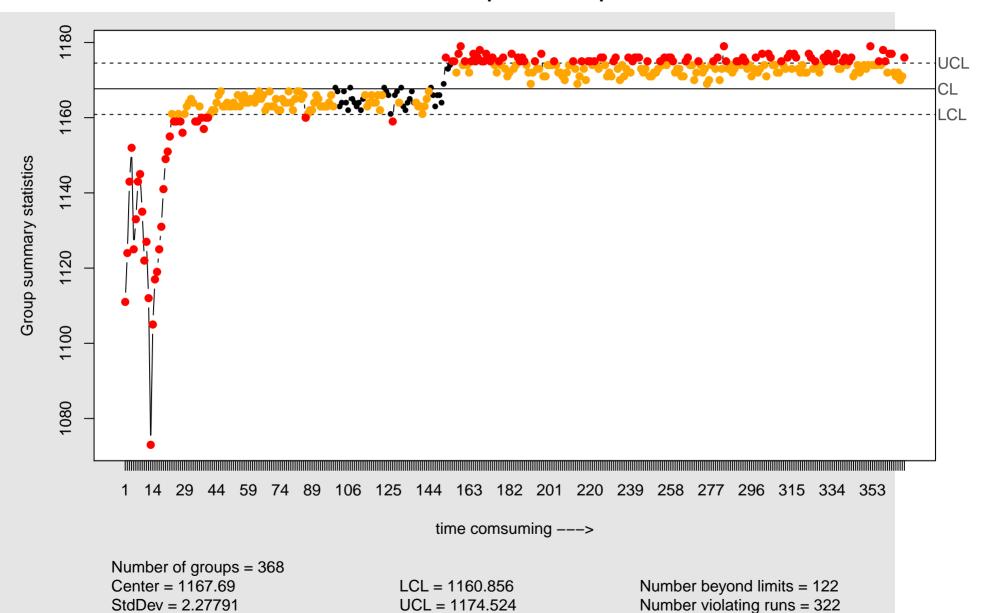


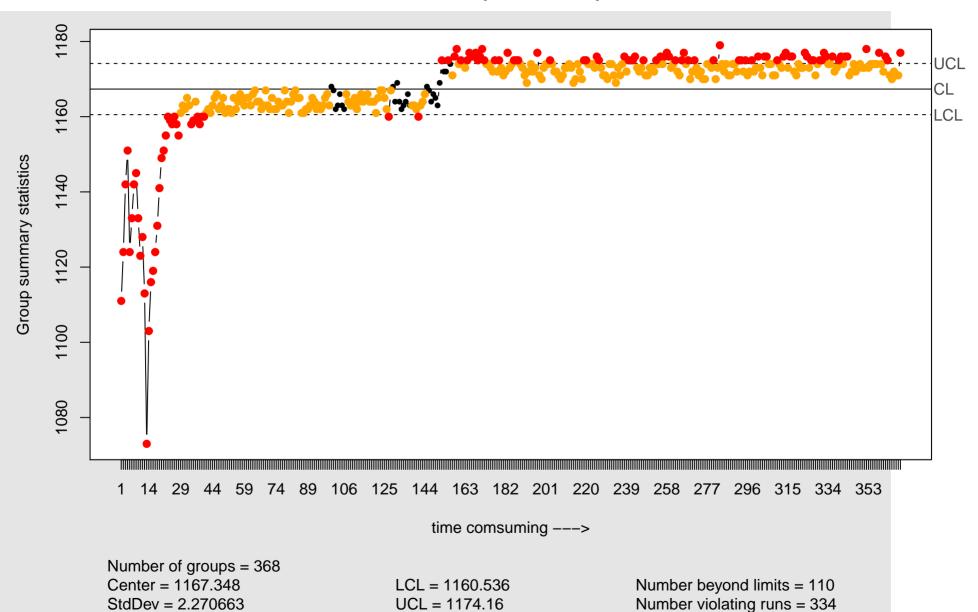


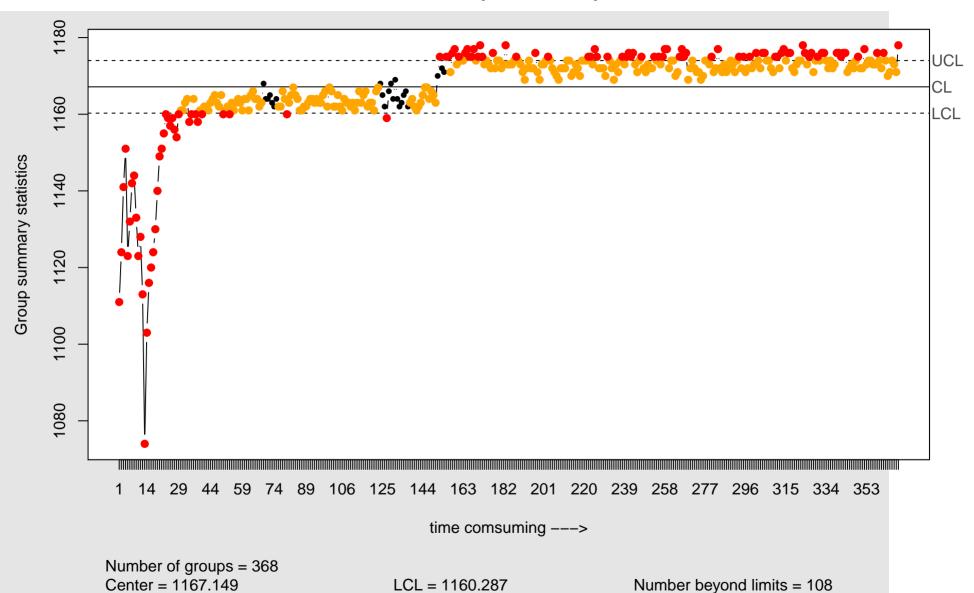








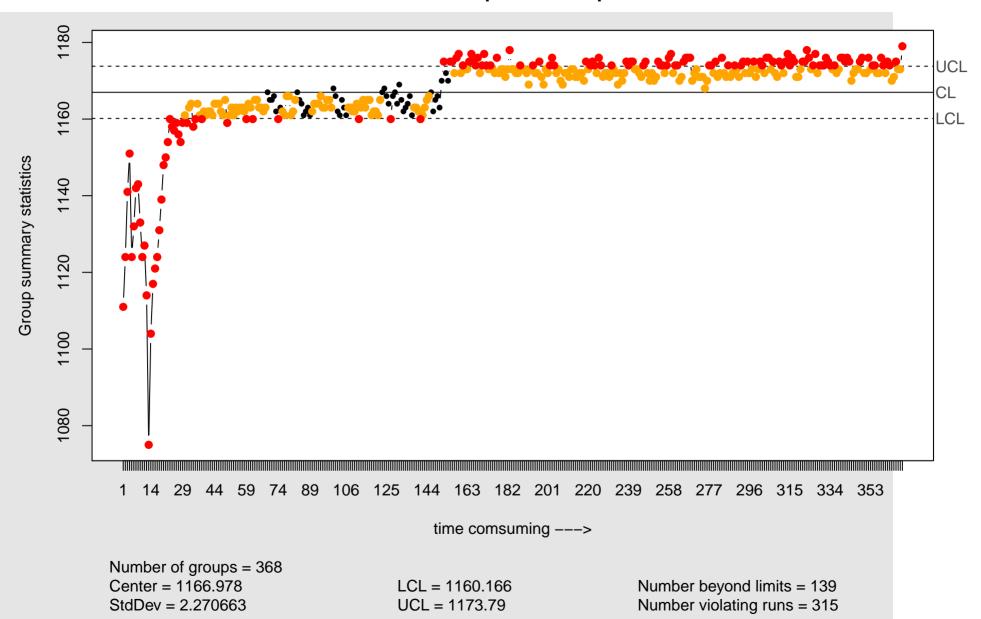


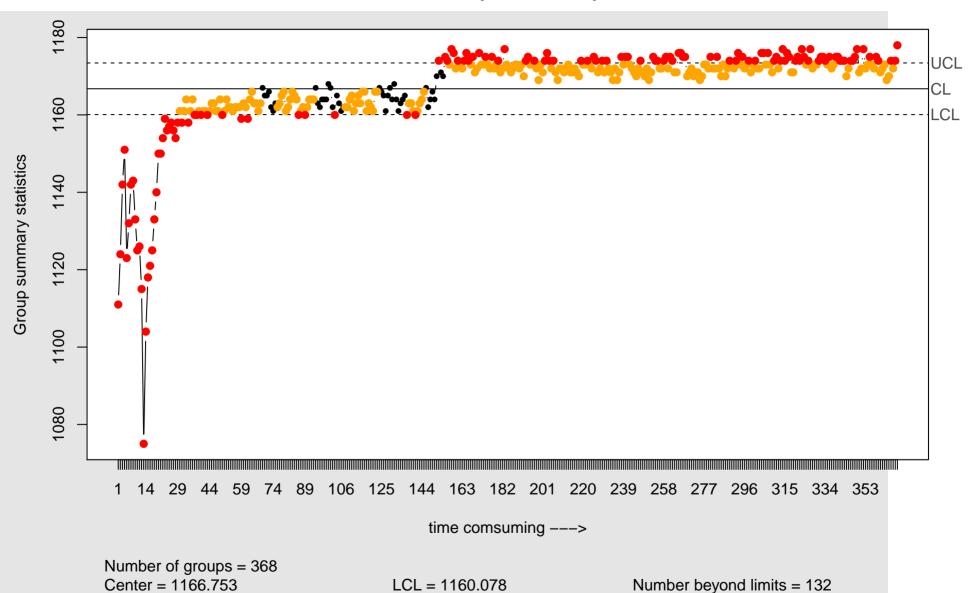


UCL = 1174.012

StdDev = 2.287572

Number violating runs = 335

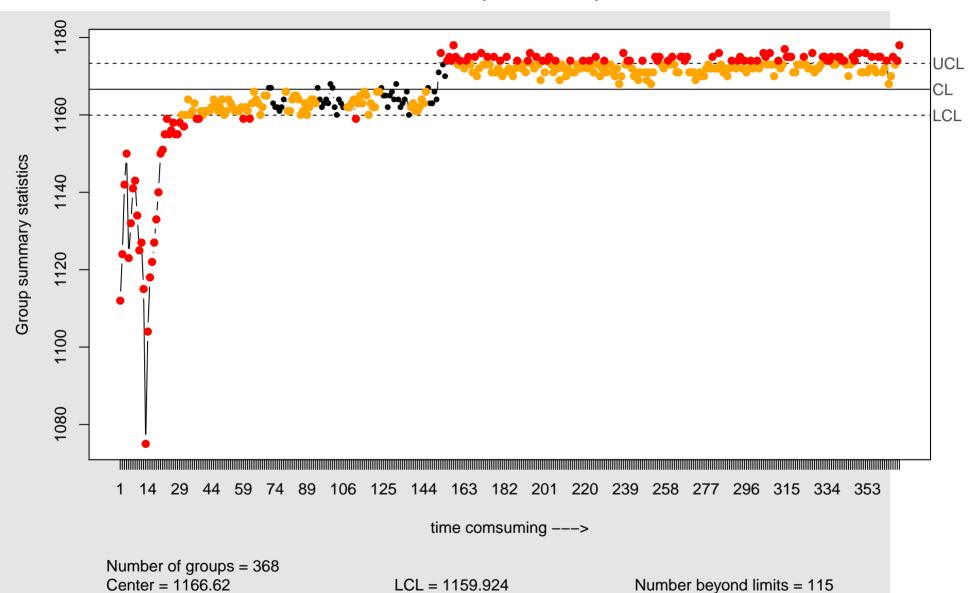




UCL = 1173.427

Number violating runs = 316

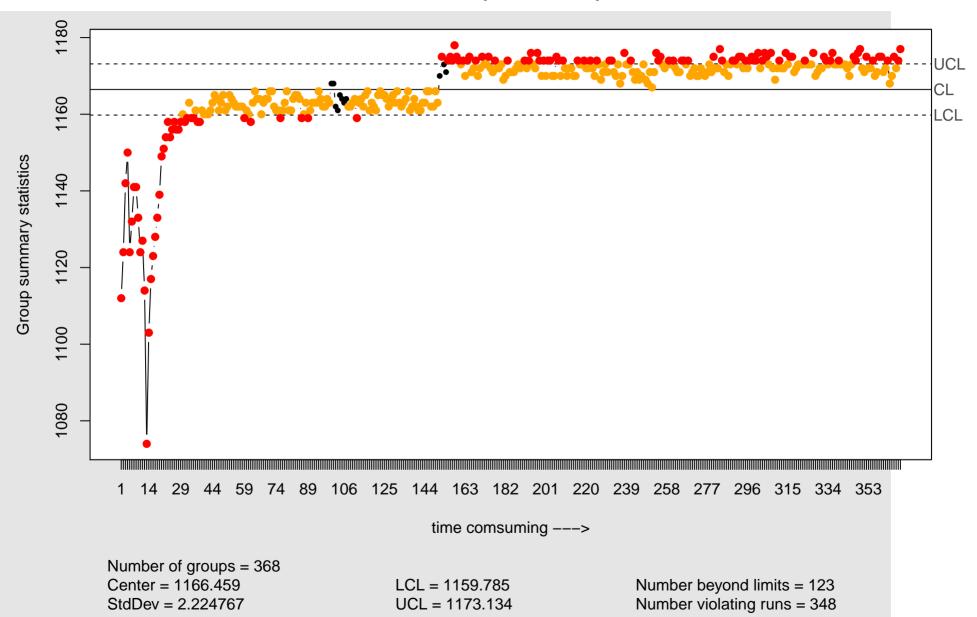
StdDev = 2.224767

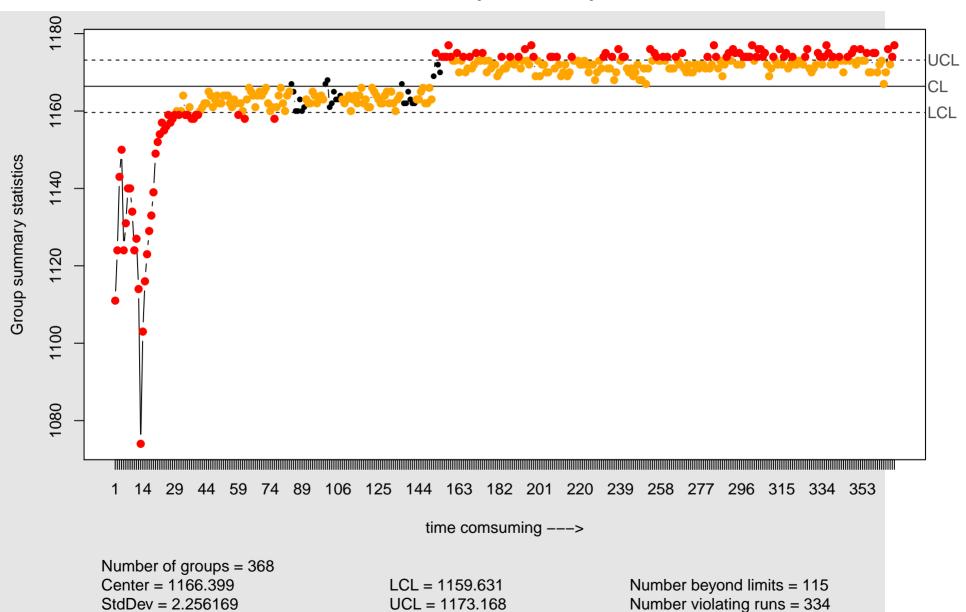


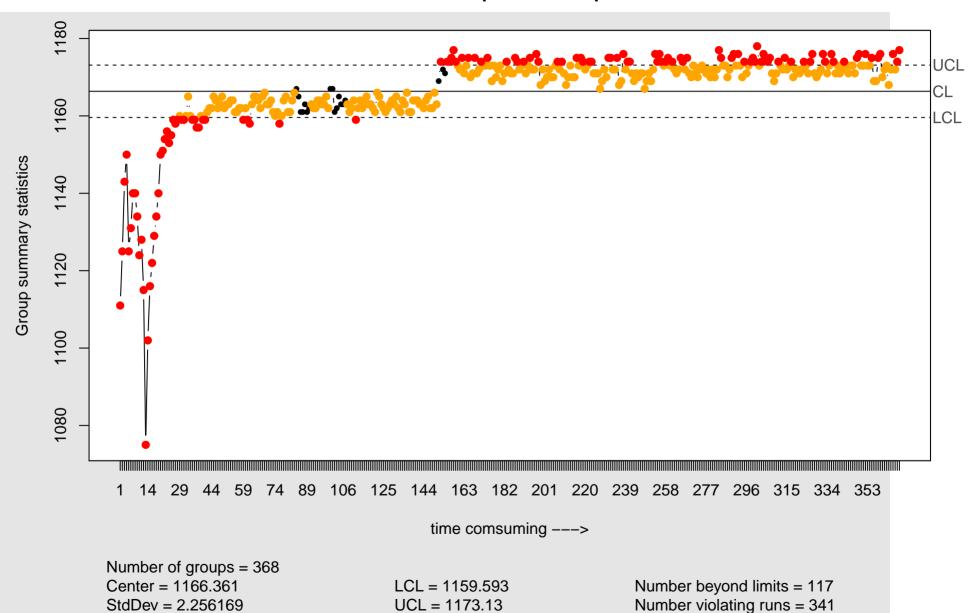
UCL = 1173.316

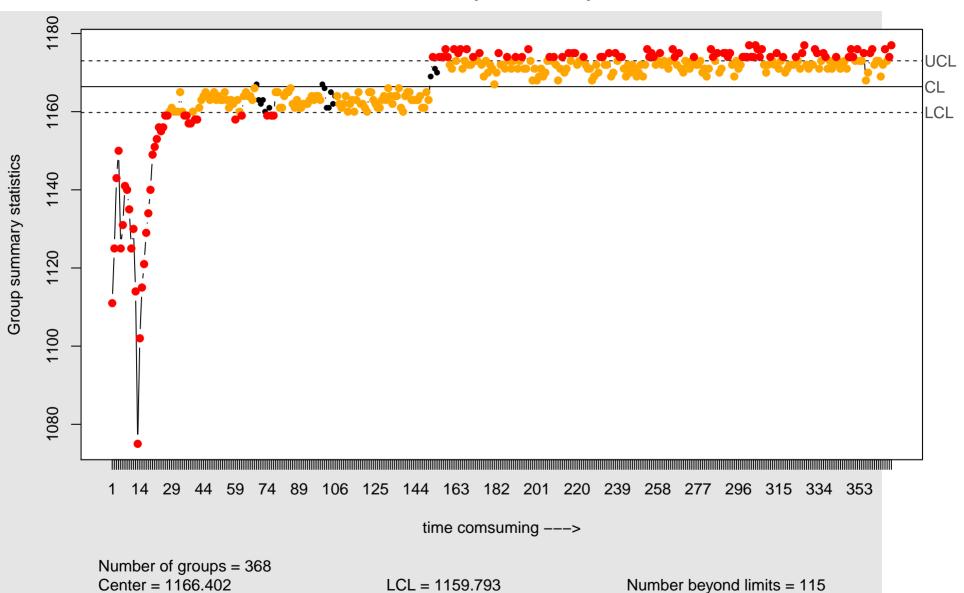
Number violating runs = 315

StdDev = 2.232013





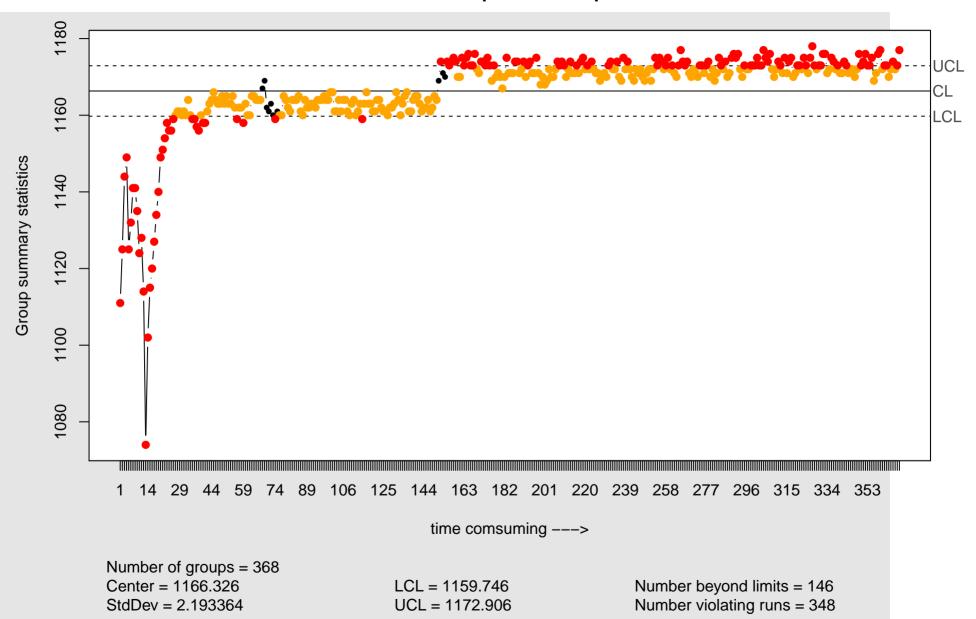


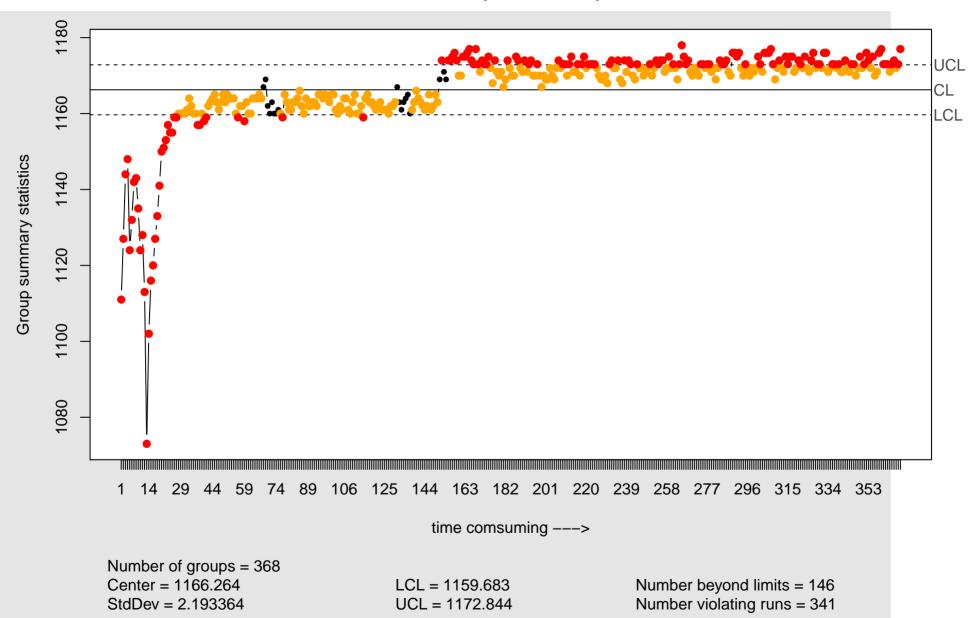


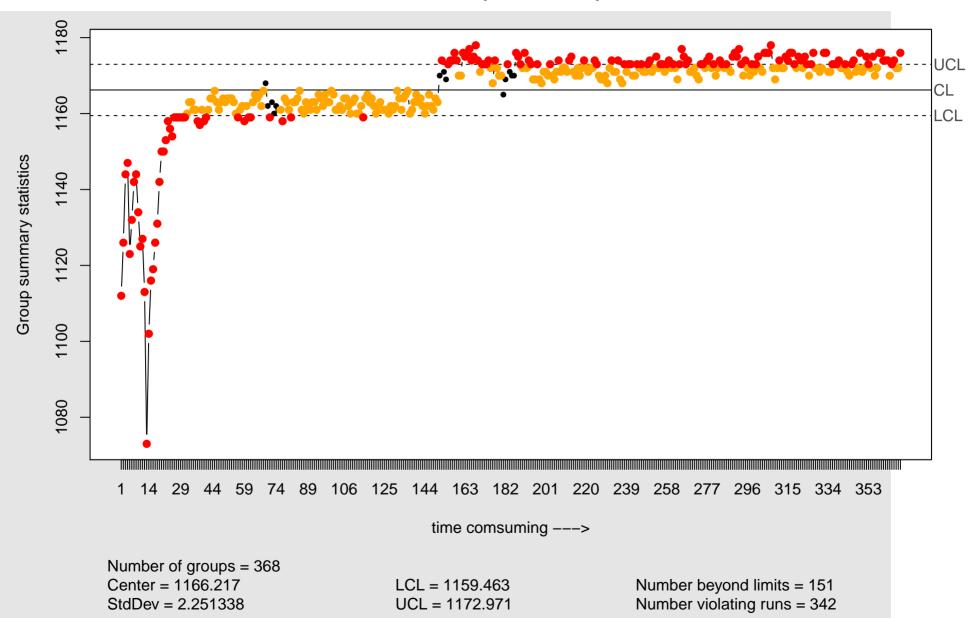
StdDev = 2.203026

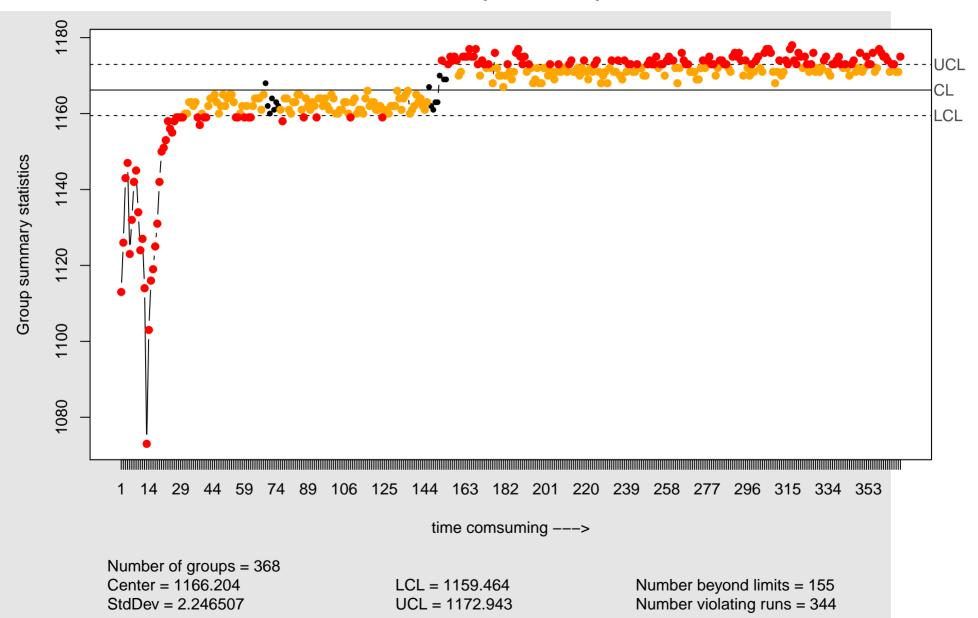
UCL = 1173.011

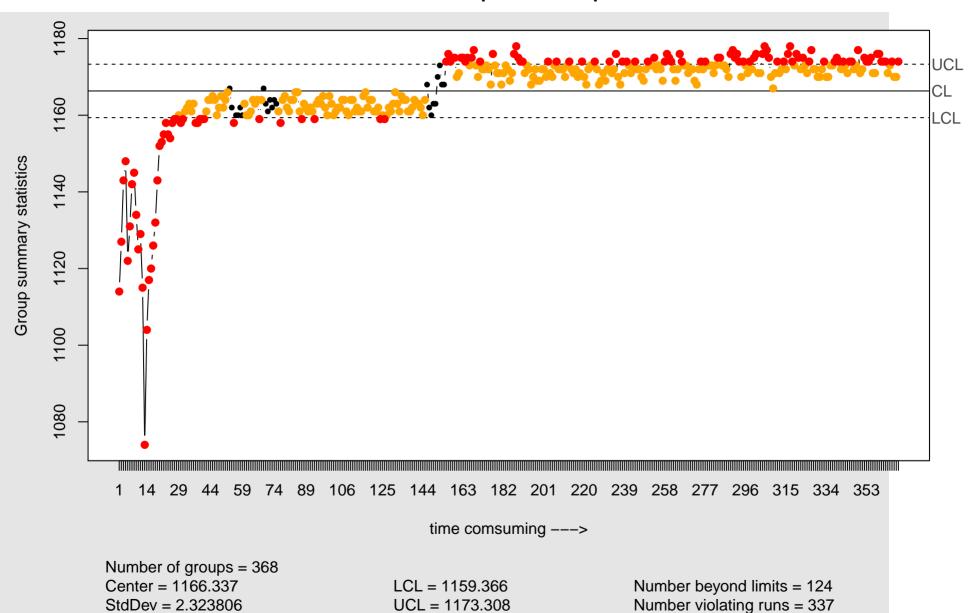
Number violating runs = 342

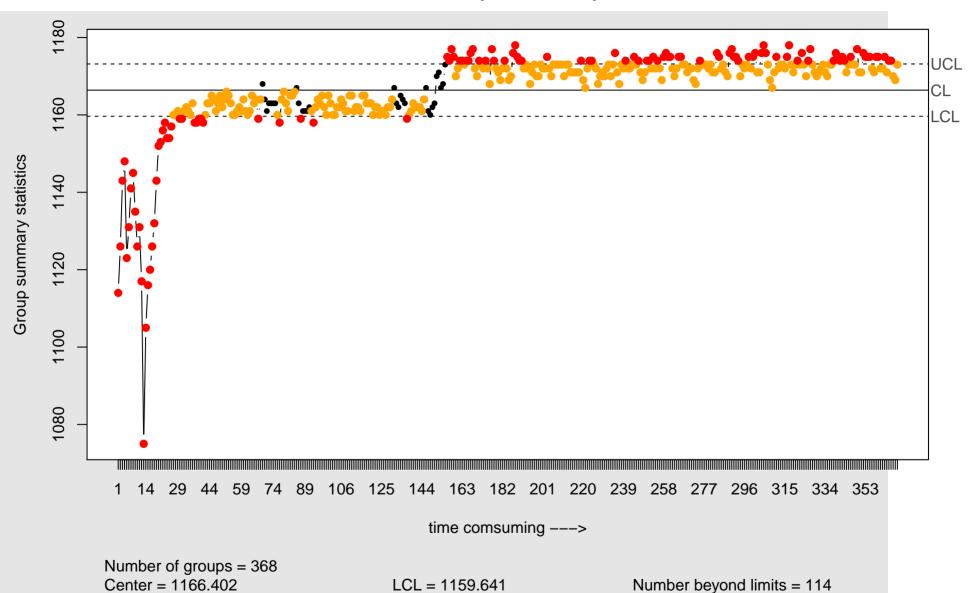








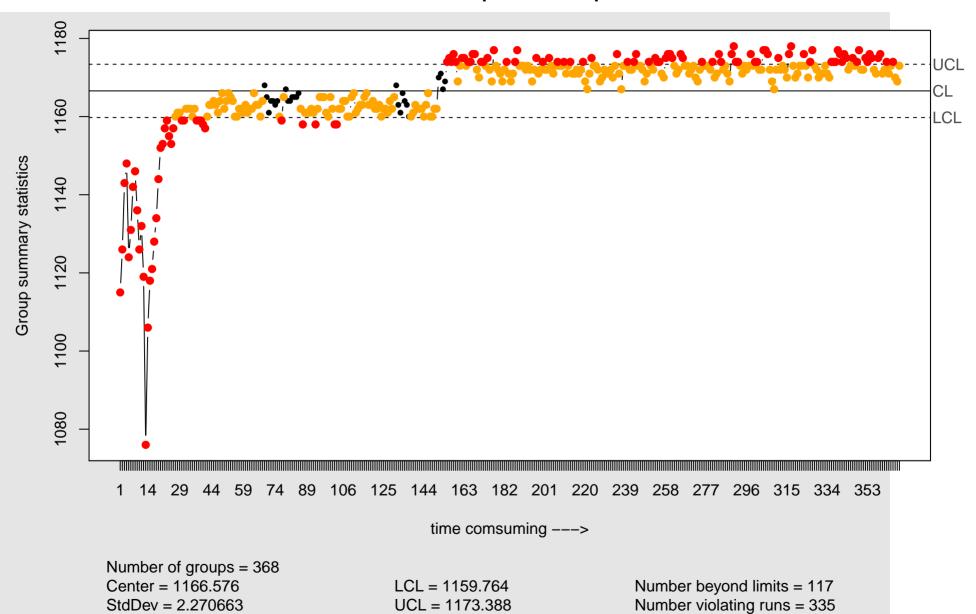


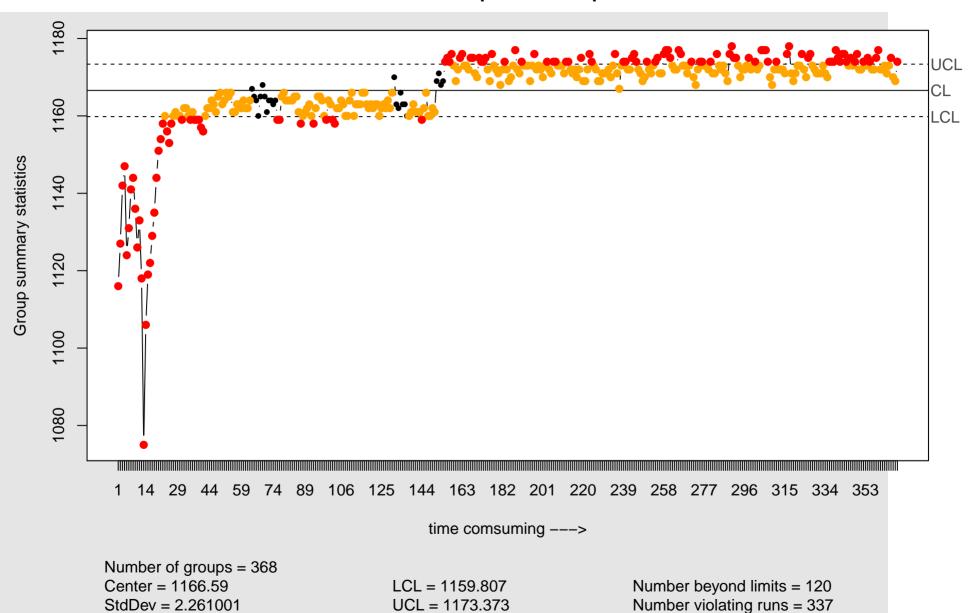


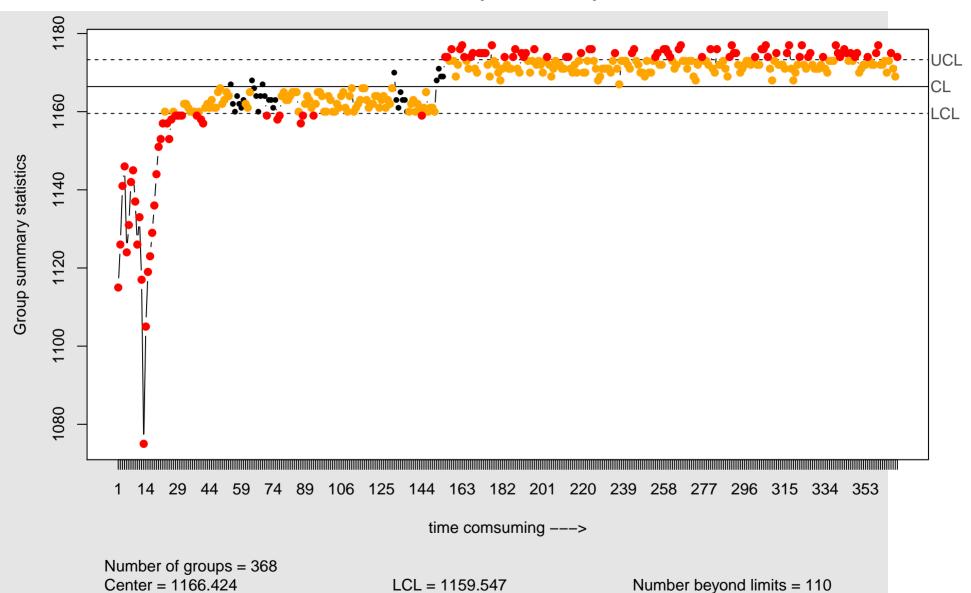
UCL = 1173.163

Number violating runs = 330

StdDev = 2.253754



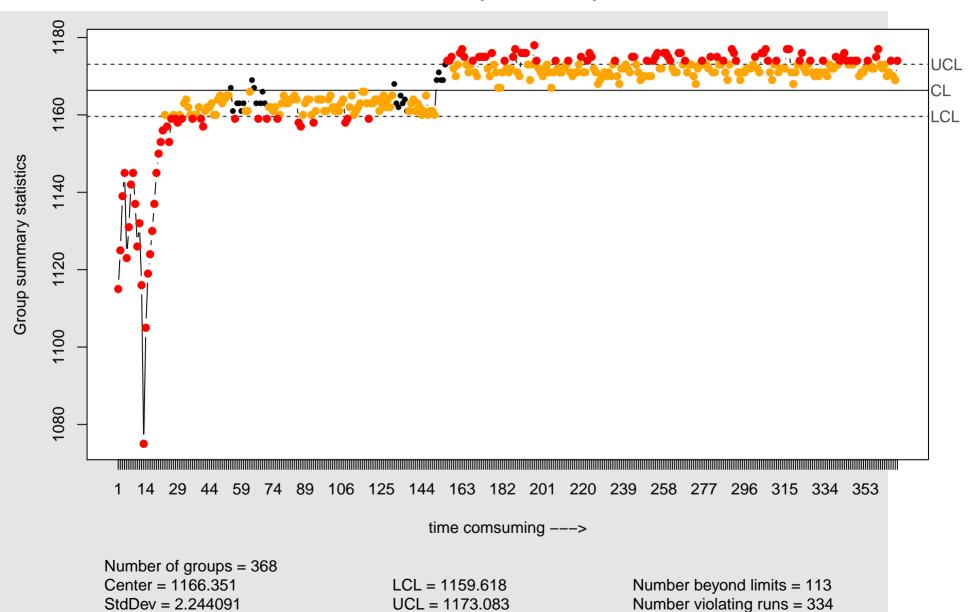


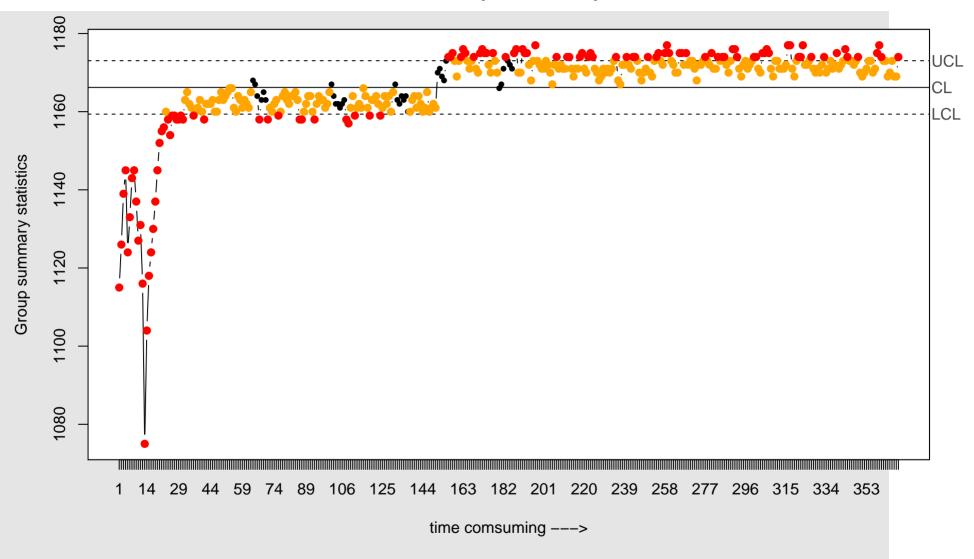


UCL = 1173.301

Number violating runs = 330

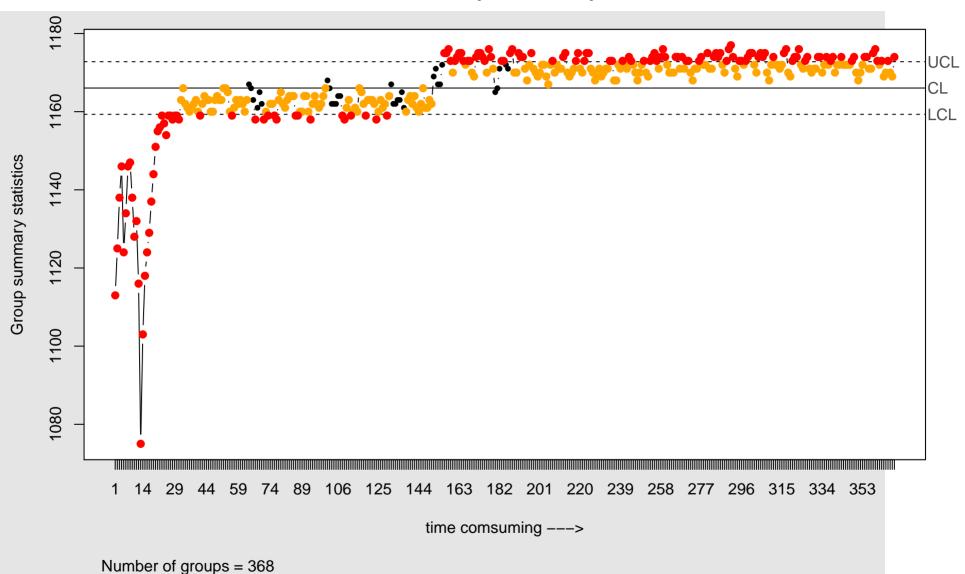
StdDev = 2.292403





Number of groups = 368 Center = 1166.209 StdDev = 2.27791

LCL = 1159.376 UCL = 1173.043 Number beyond limits = 112 Number violating runs = 327



LCL = 1159.322

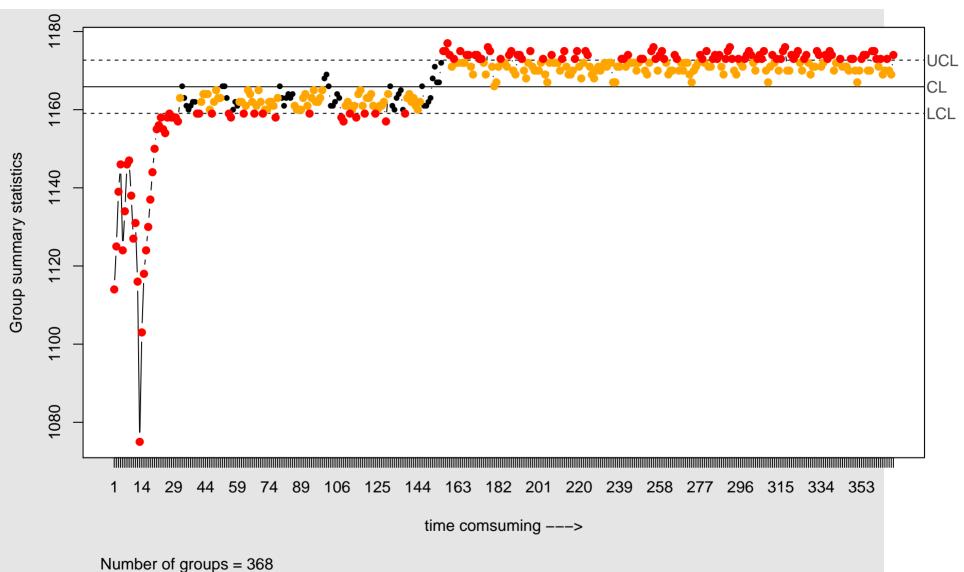
UCL = 1172.787

Number beyond limits = 145

Number violating runs = 327

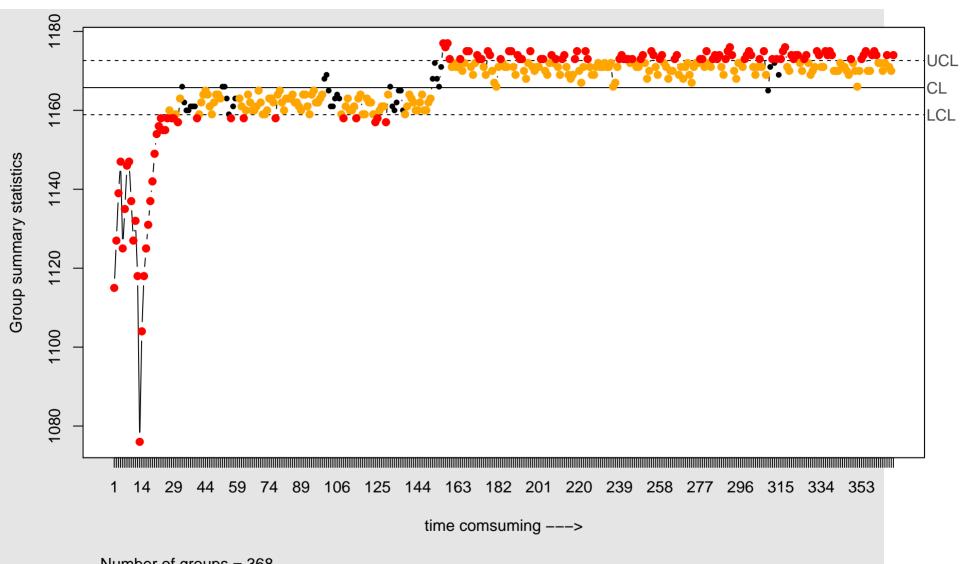
Center = 1166.054

StdDev = 2.244091



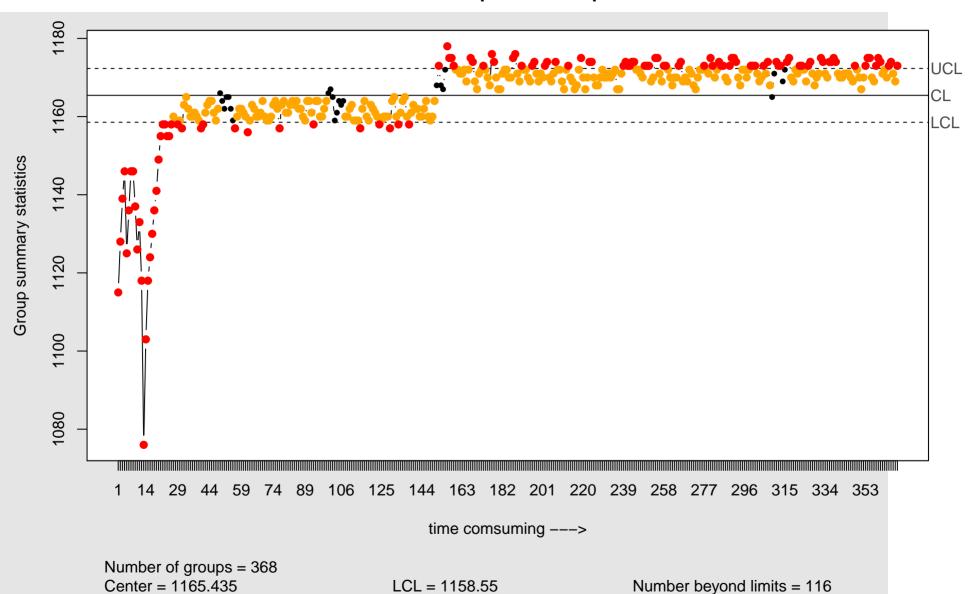
Number of groups = 368 Center = 1165.867 StdDev = 2.270663

LCL = 1159.055 UCL = 1172.679 Number beyond limits = 140 Number violating runs = 313



Number of groups = 368 Center = 1165.755 StdDev = 2.287572

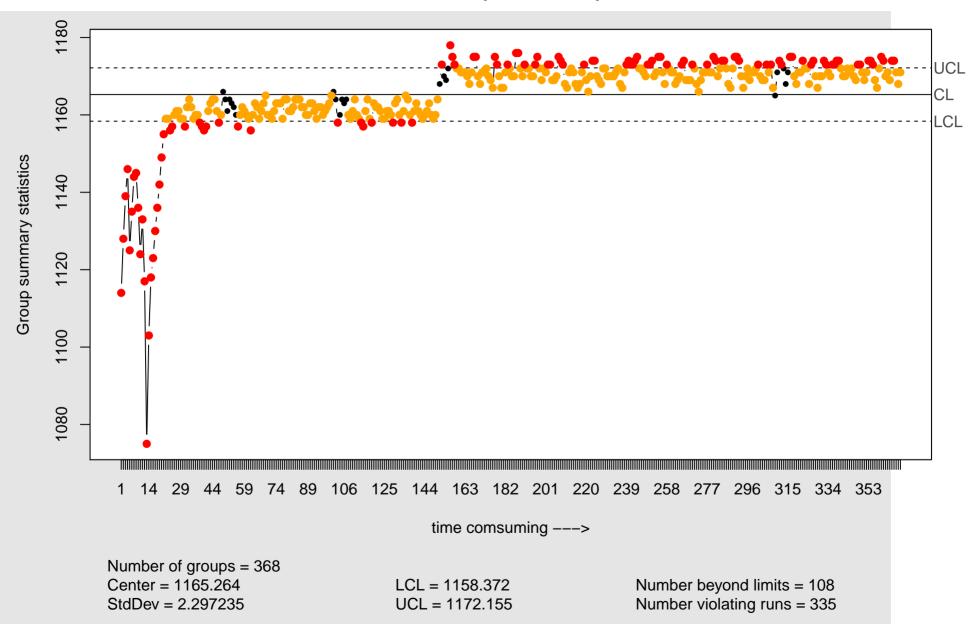
LCL = 1158.893 UCL = 1172.618 Number beyond limits = 124 Number violating runs = 319

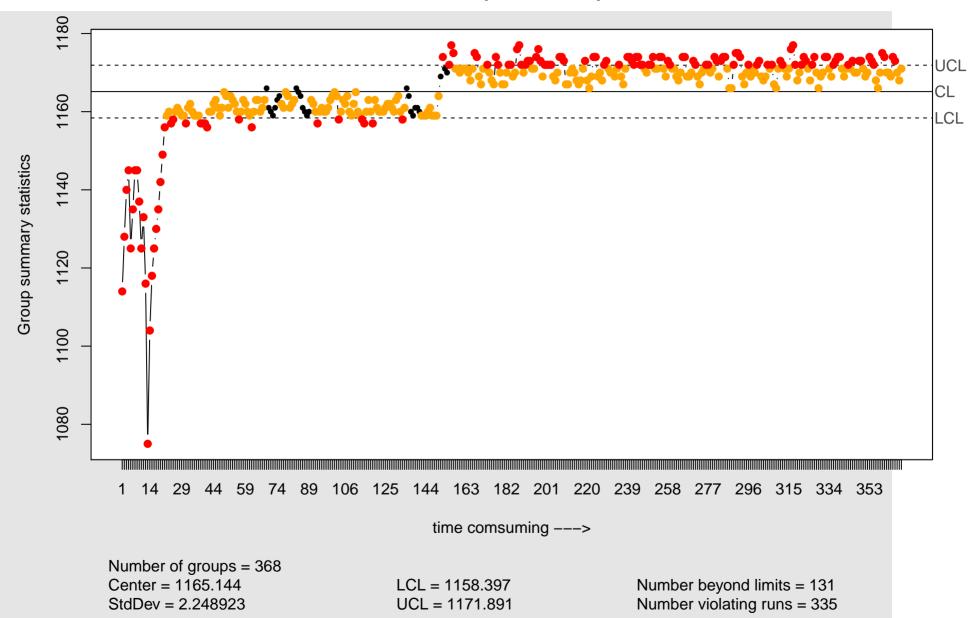


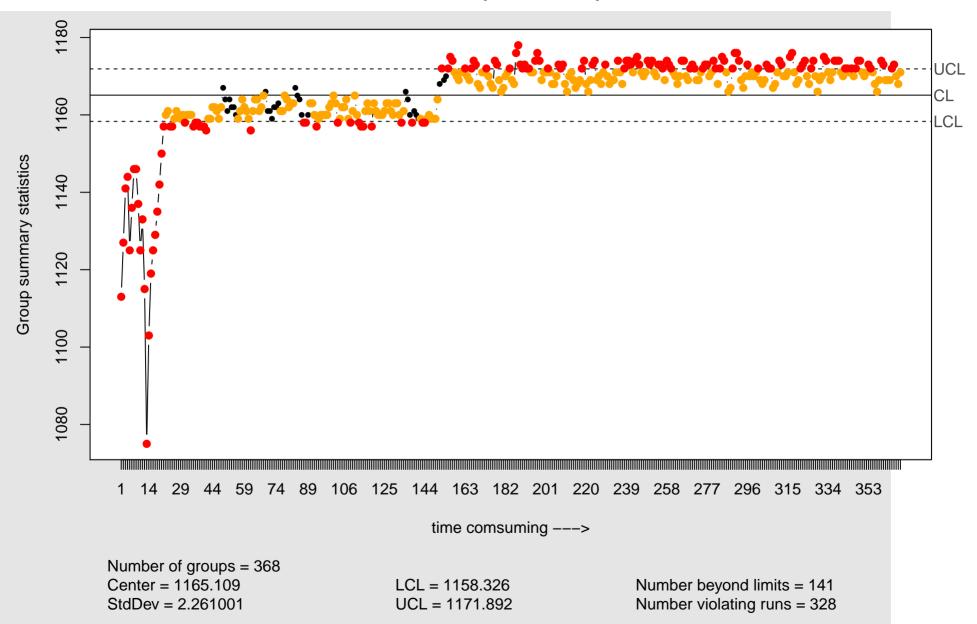
UCL = 1172.319

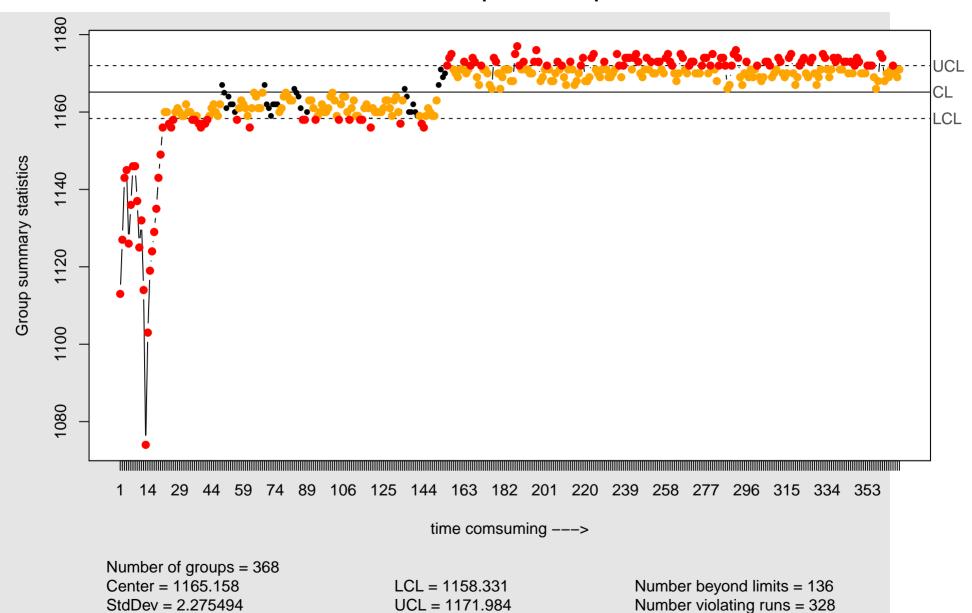
Number violating runs = 334

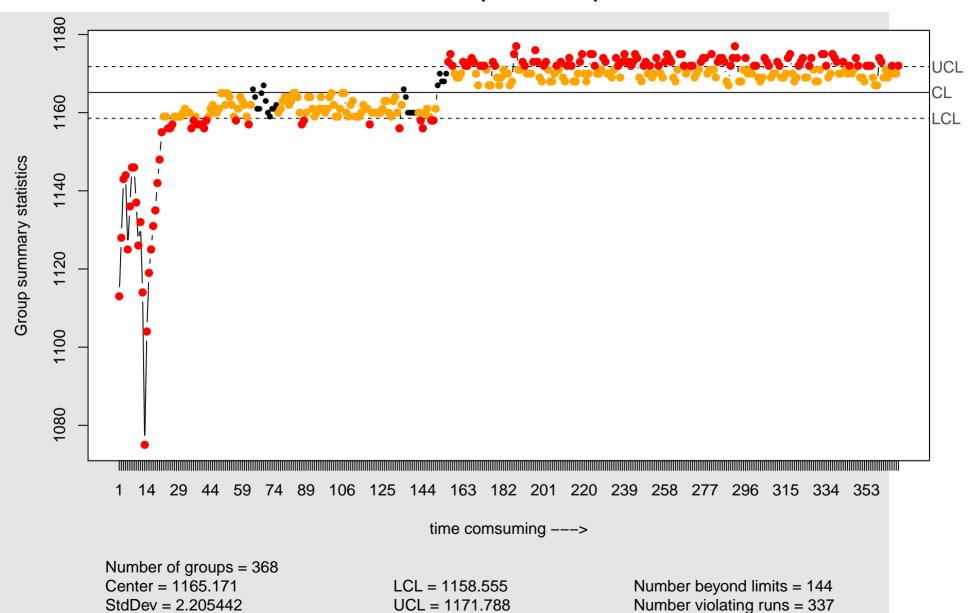
StdDev = 2.294819

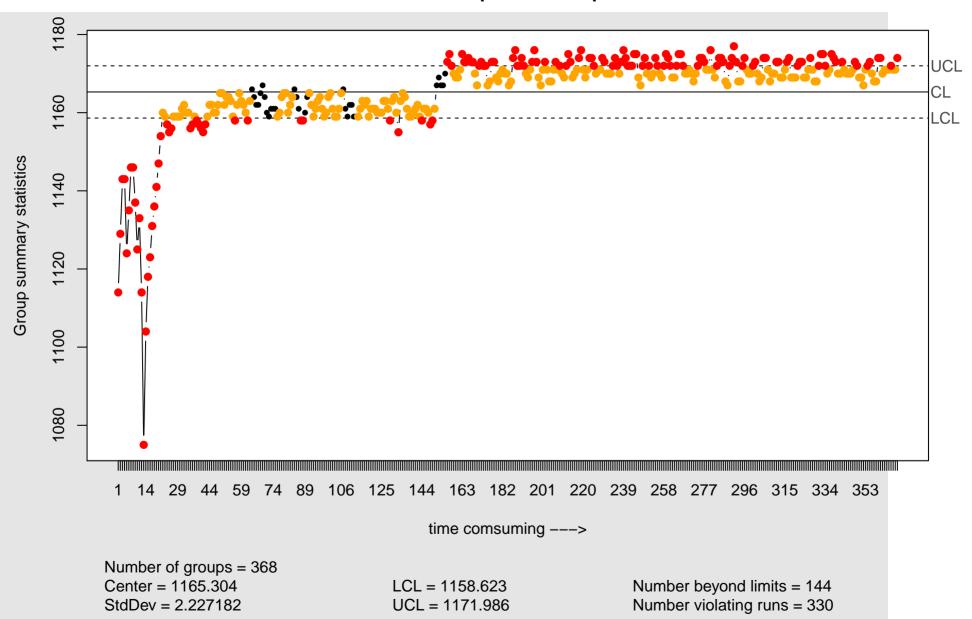


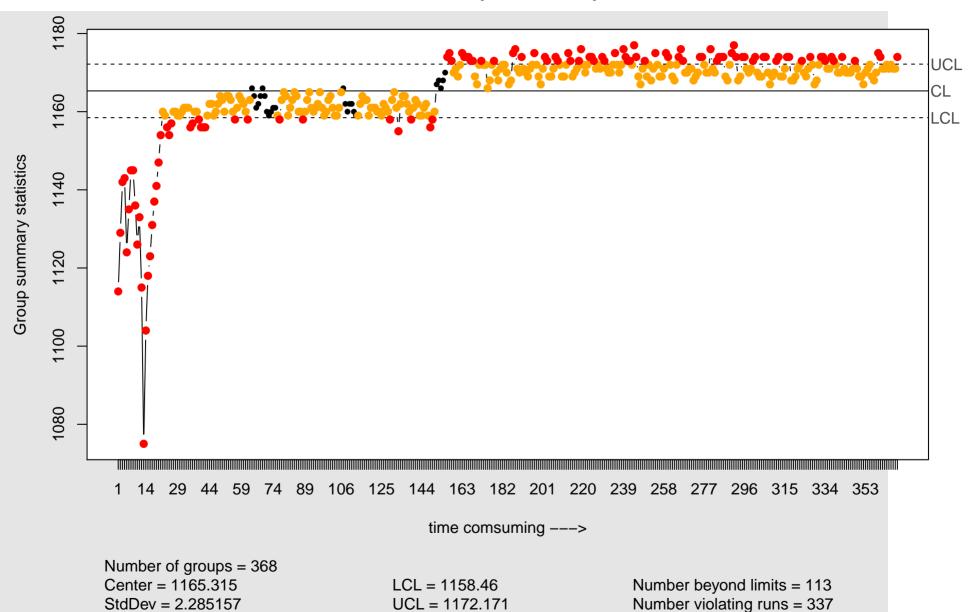


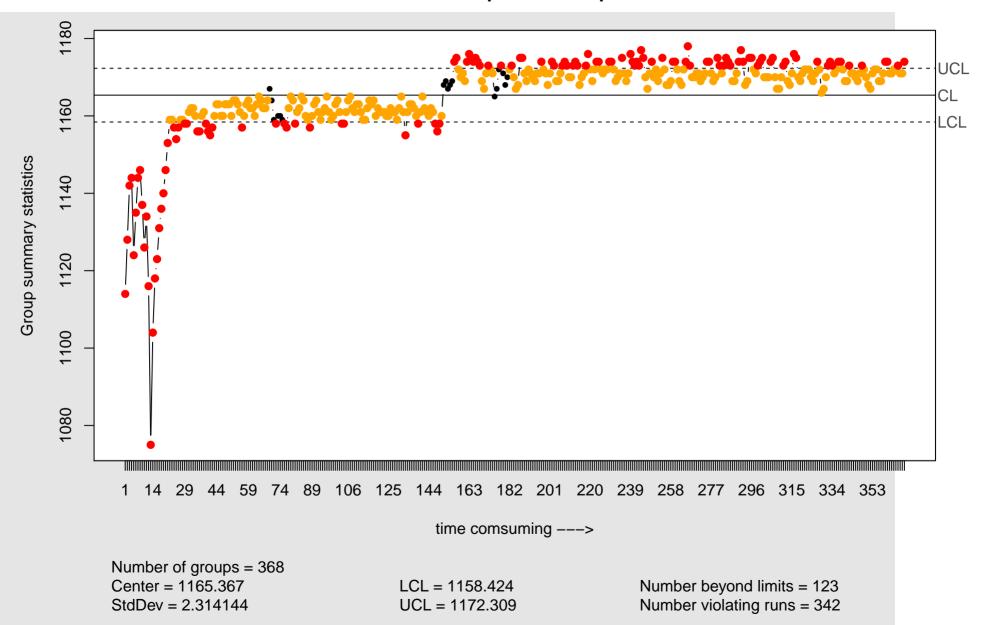


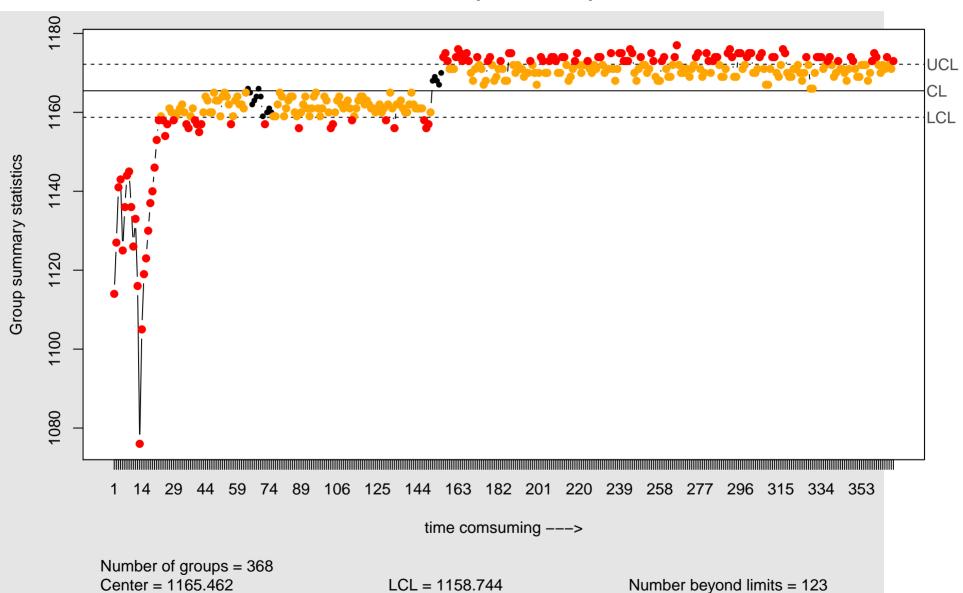








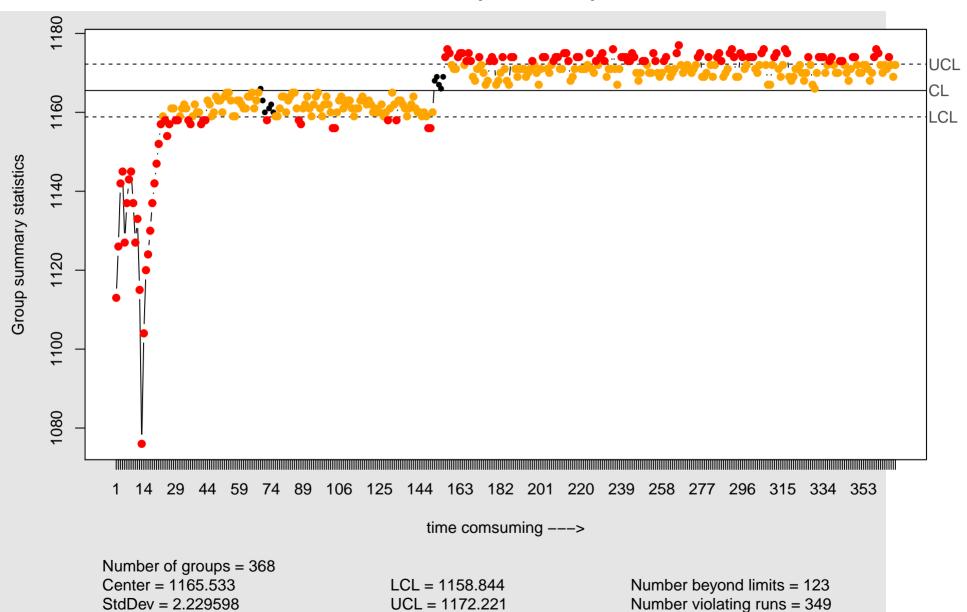


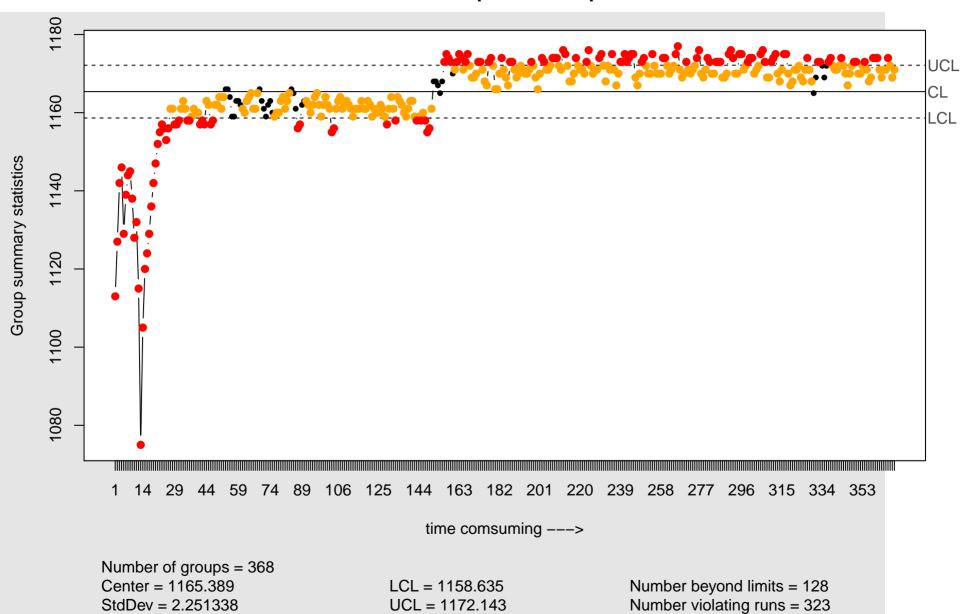


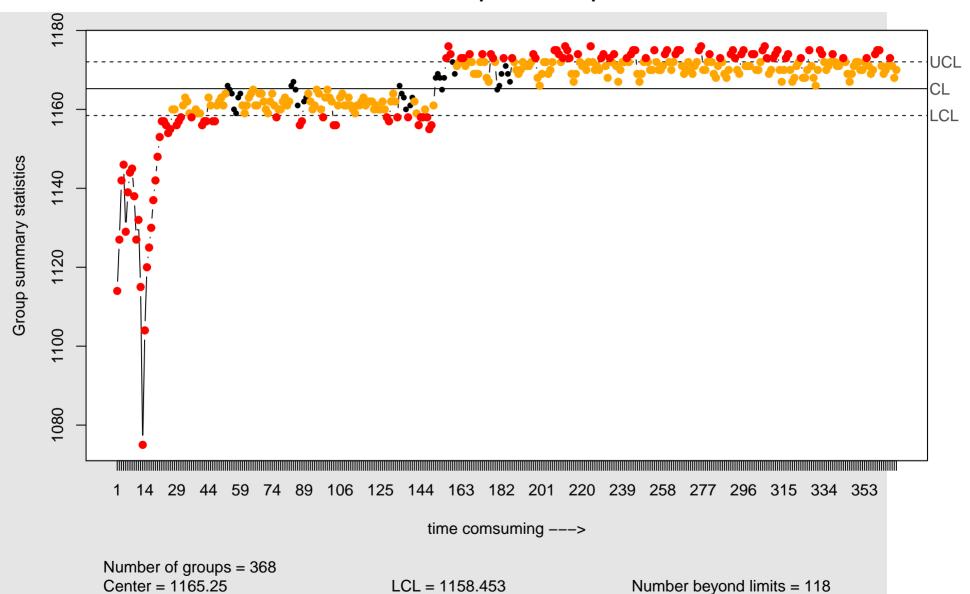
UCL = 1172.18

Number violating runs = 344

StdDev = 2.23926



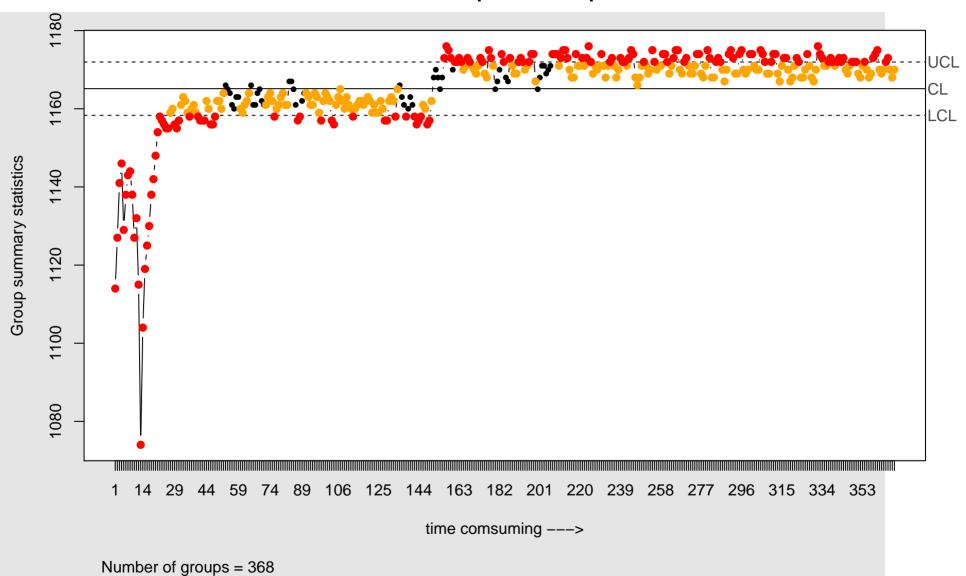




UCL = 1172.047

Number violating runs = 323

StdDev = 2.265832



LCL = 1158.315

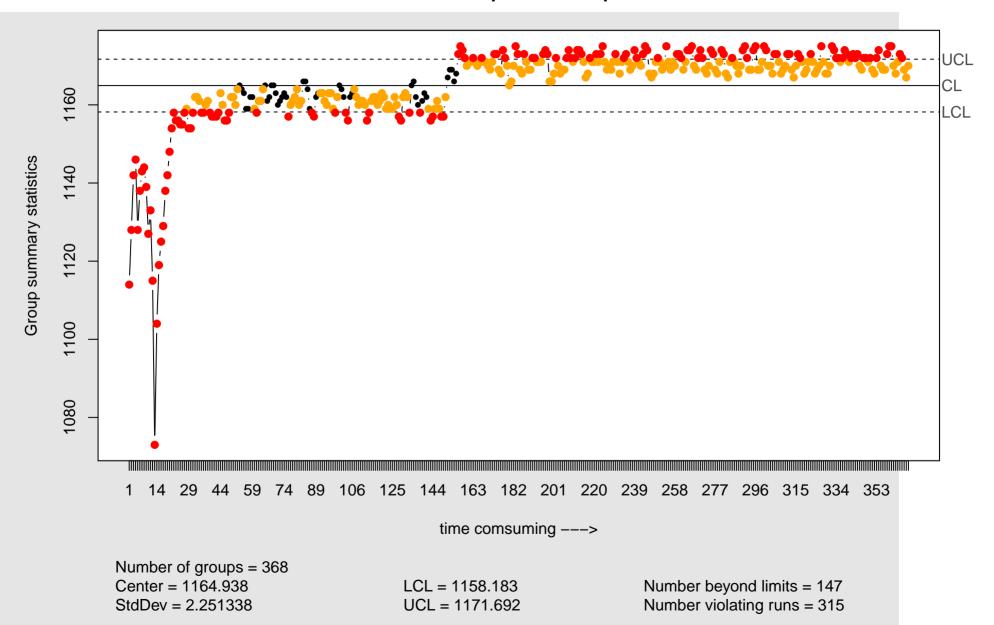
UCL = 1171.968

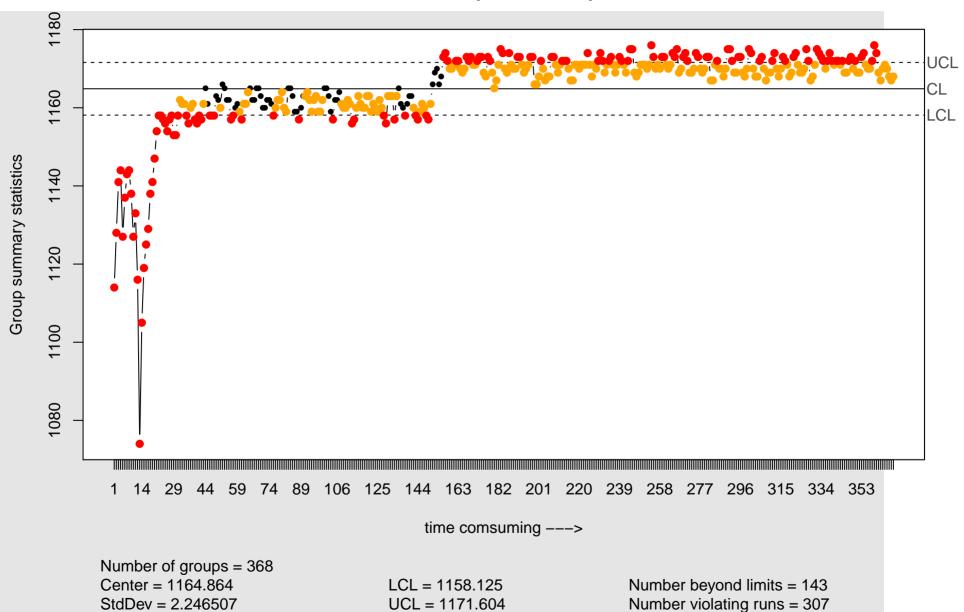
Number beyond limits = 153

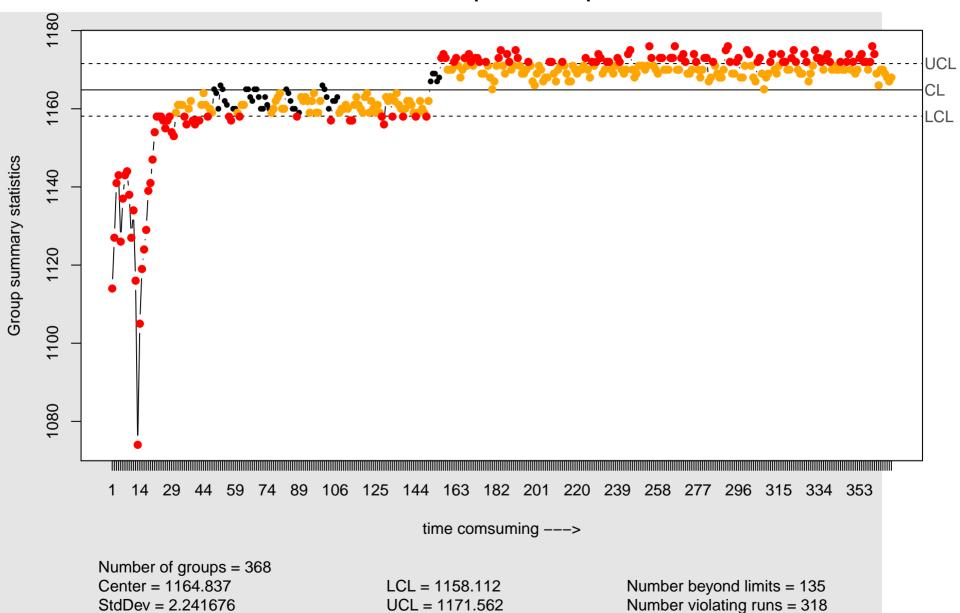
Number violating runs = 309

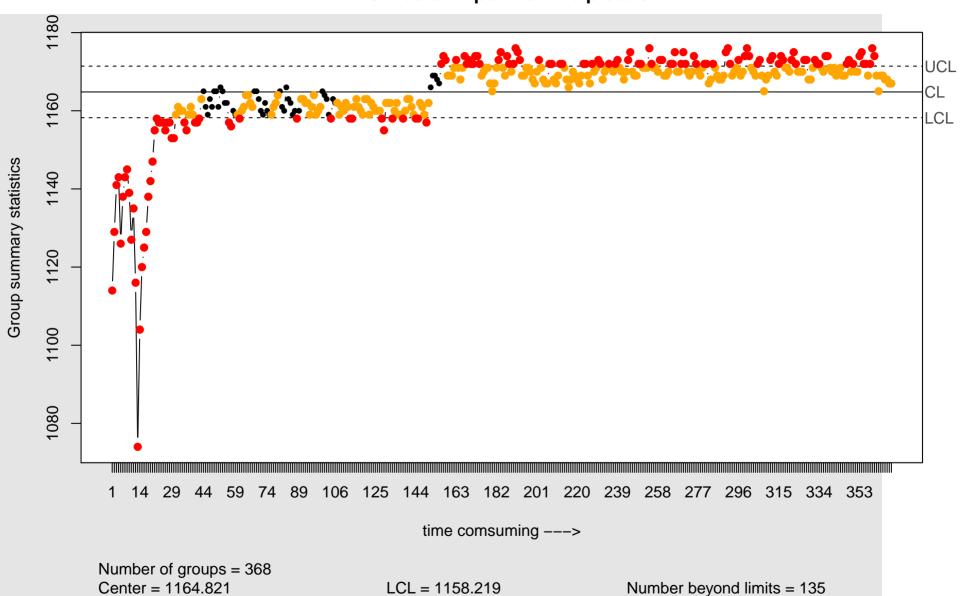
Center = 1165.141

StdDev = 2.275494





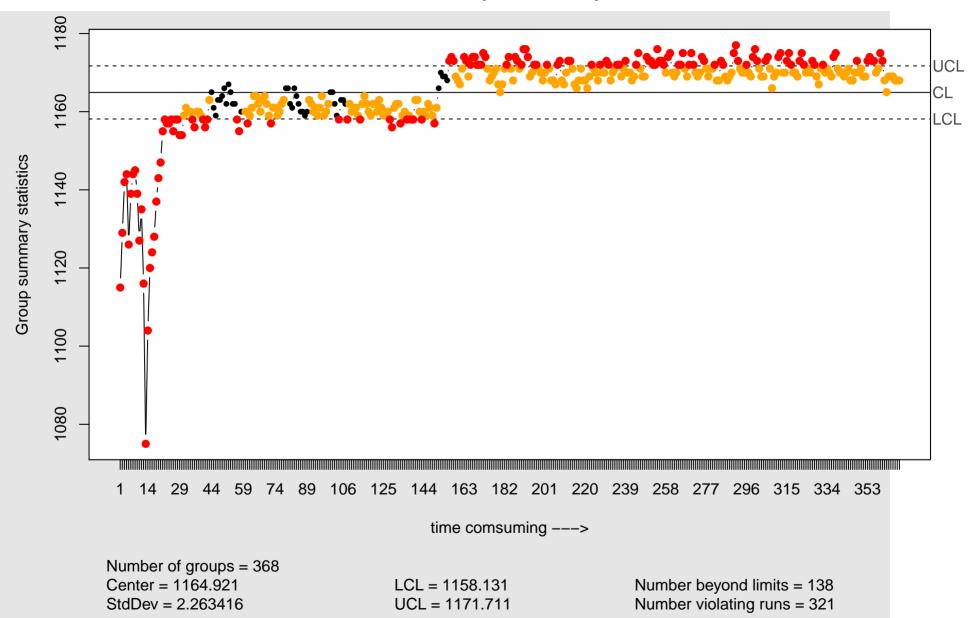


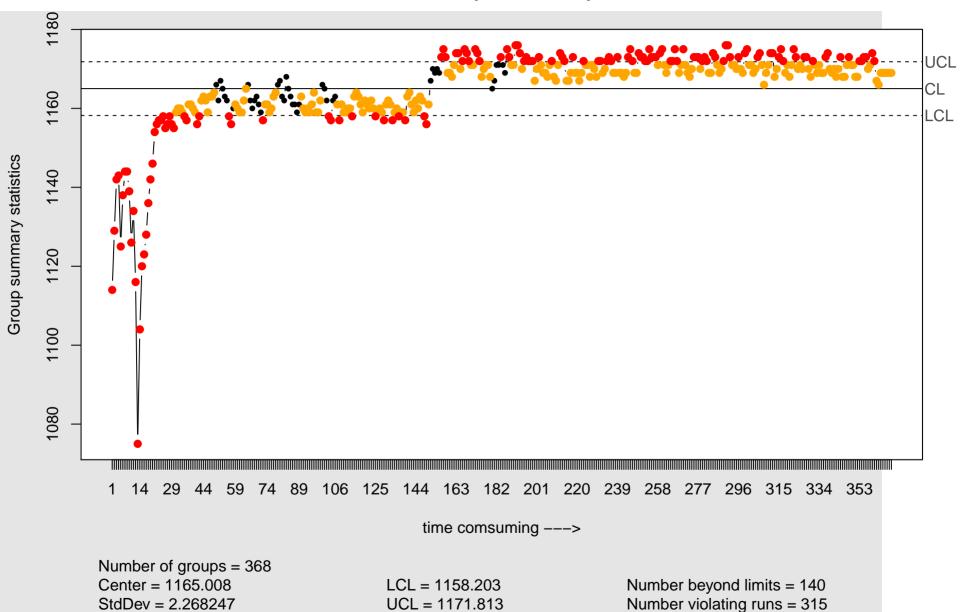


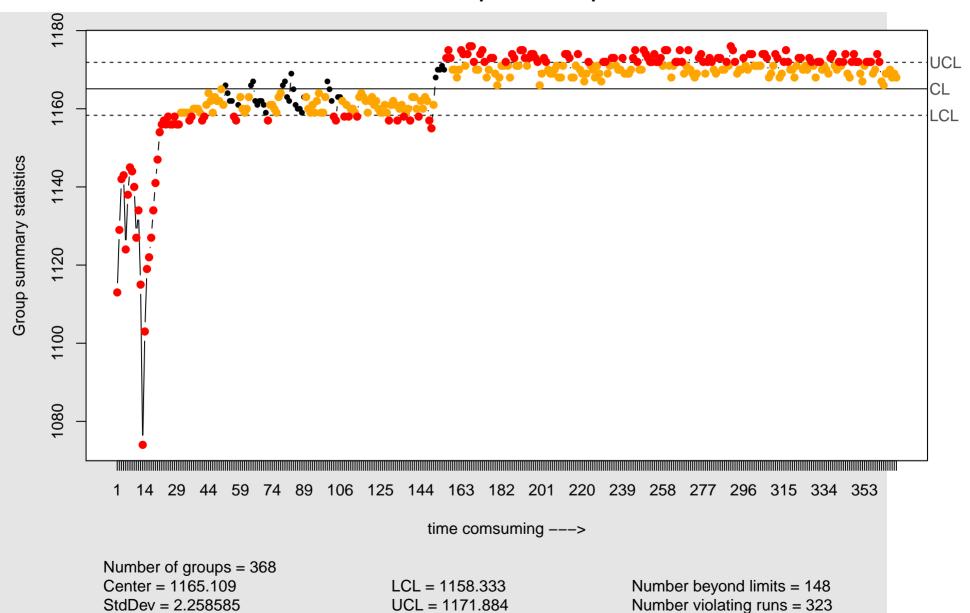
UCL = 1171.422

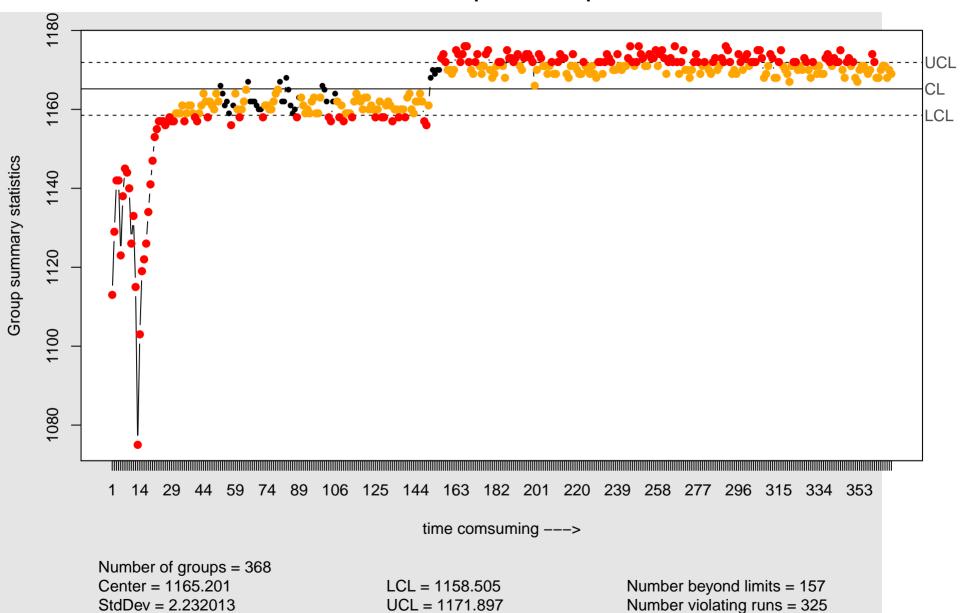
Number violating runs = 315

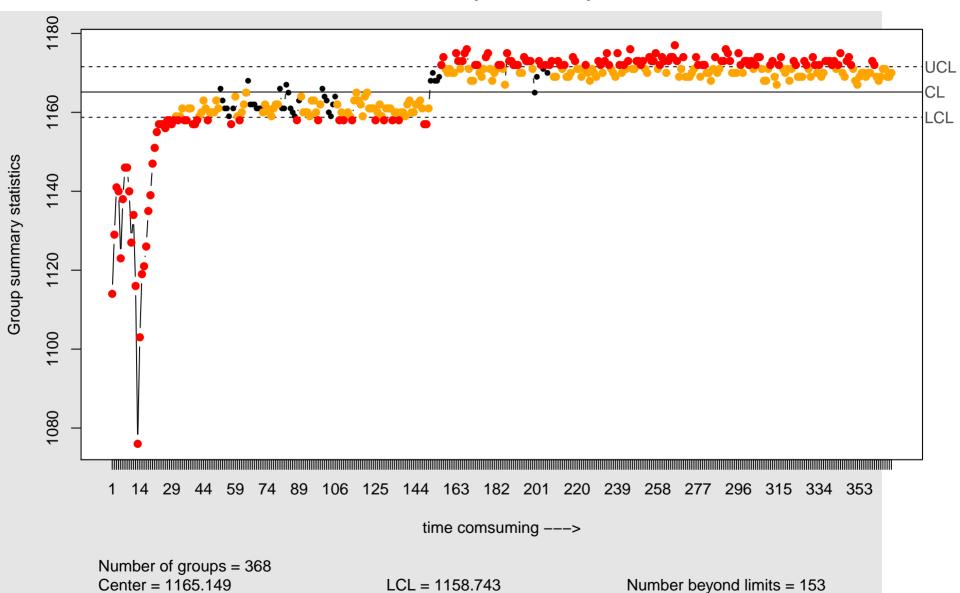
StdDev = 2.200611







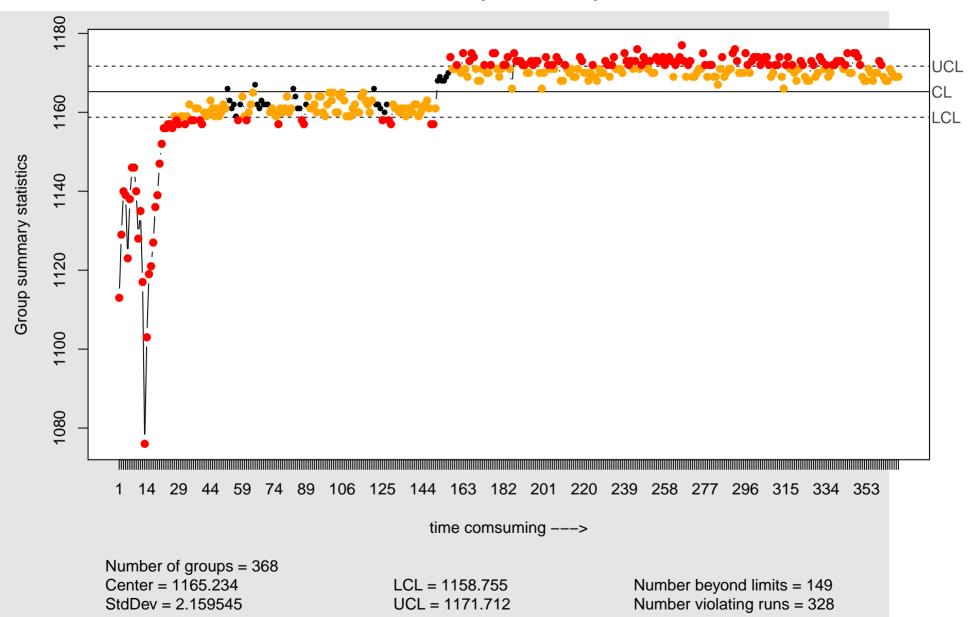


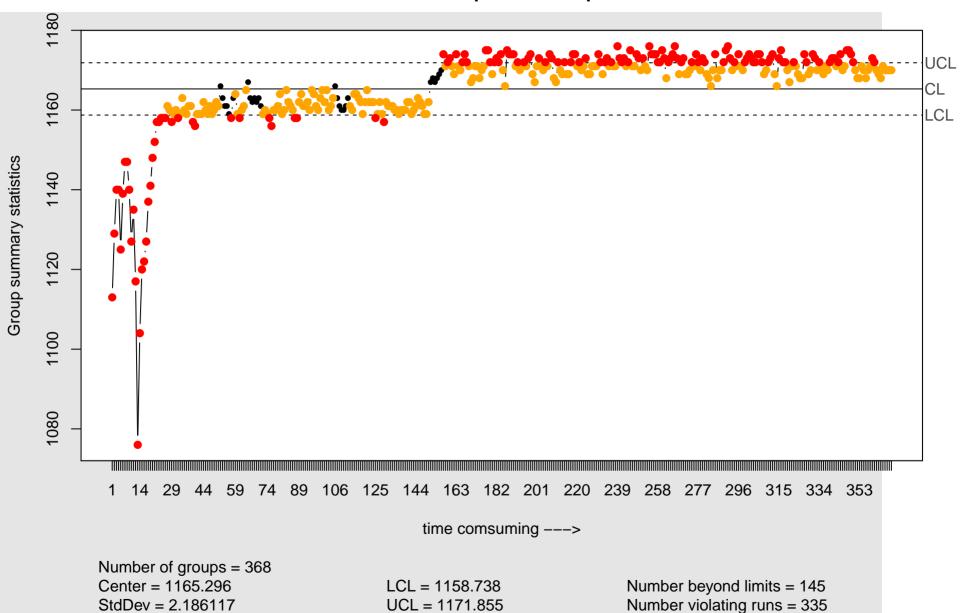


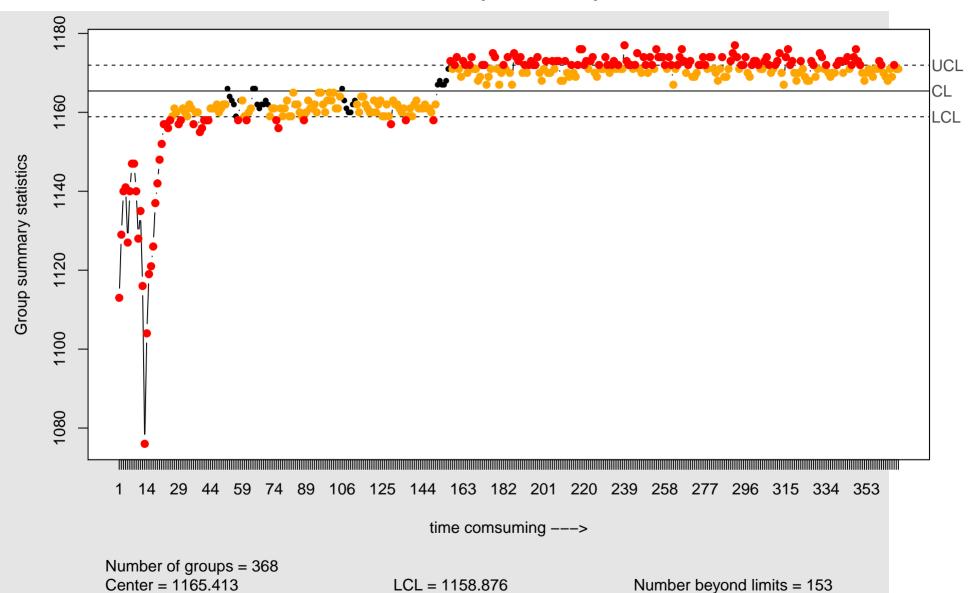
UCL = 1171.556

Number violating runs = 318

StdDev = 2.135389



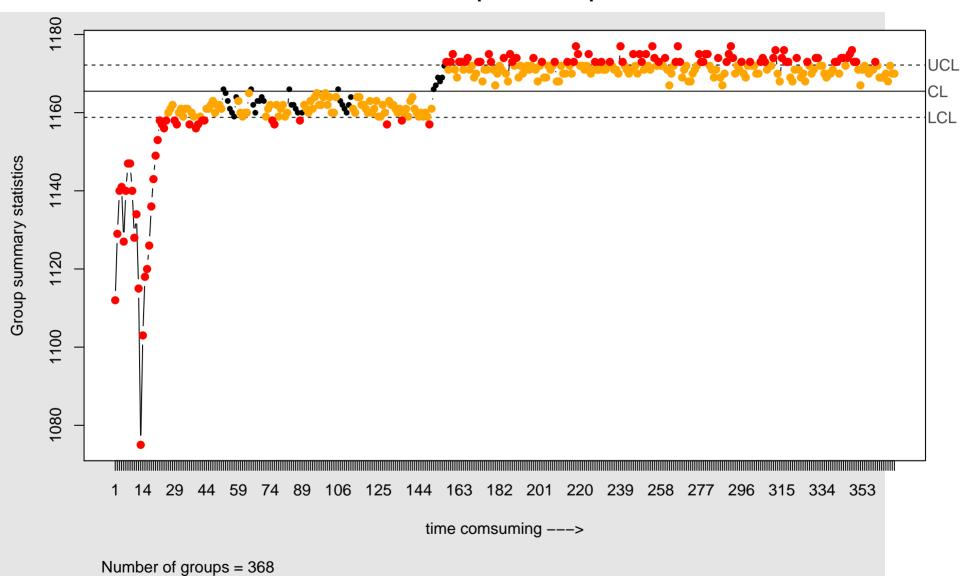




UCL = 1171.95

Number violating runs = 334

StdDev = 2.17887



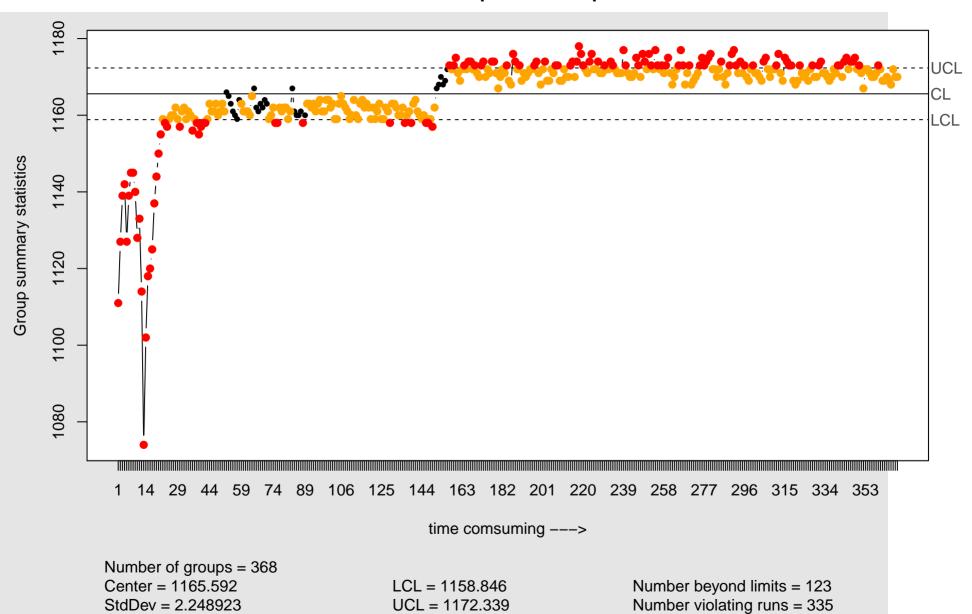
LCL = 1158.799

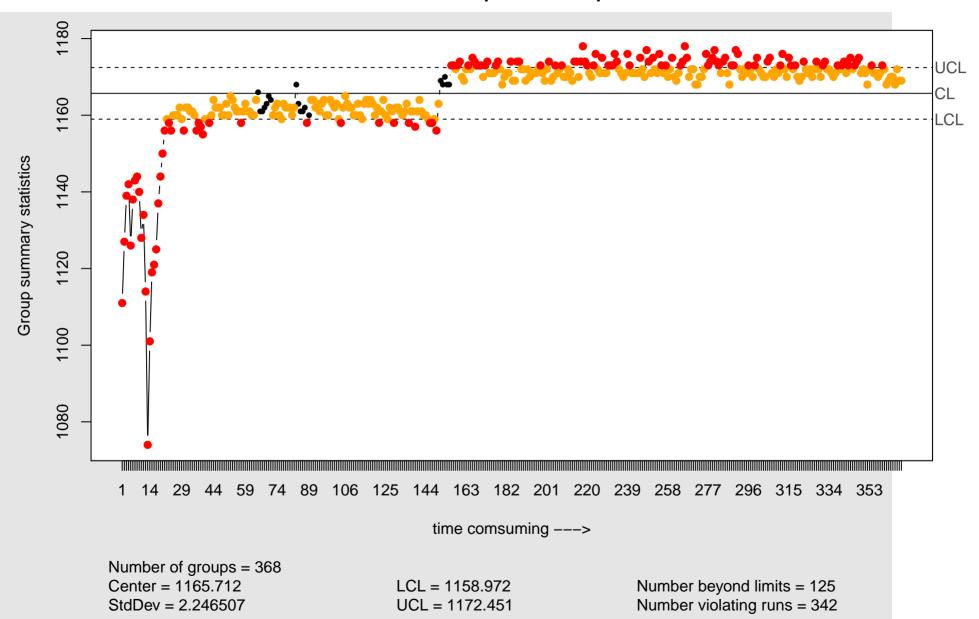
UCL = 1172.191

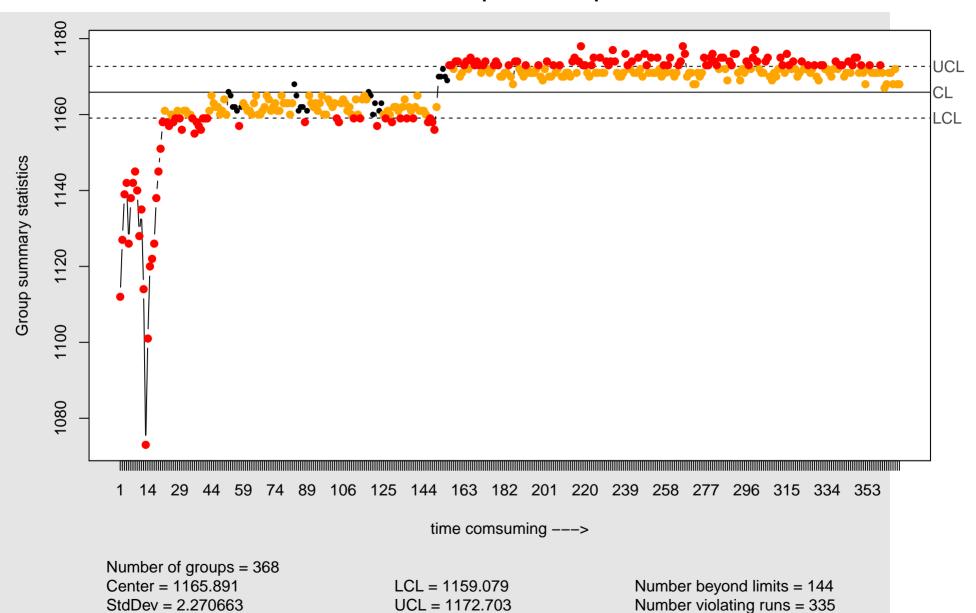
Number beyond limits = 112 Number violating runs = 328

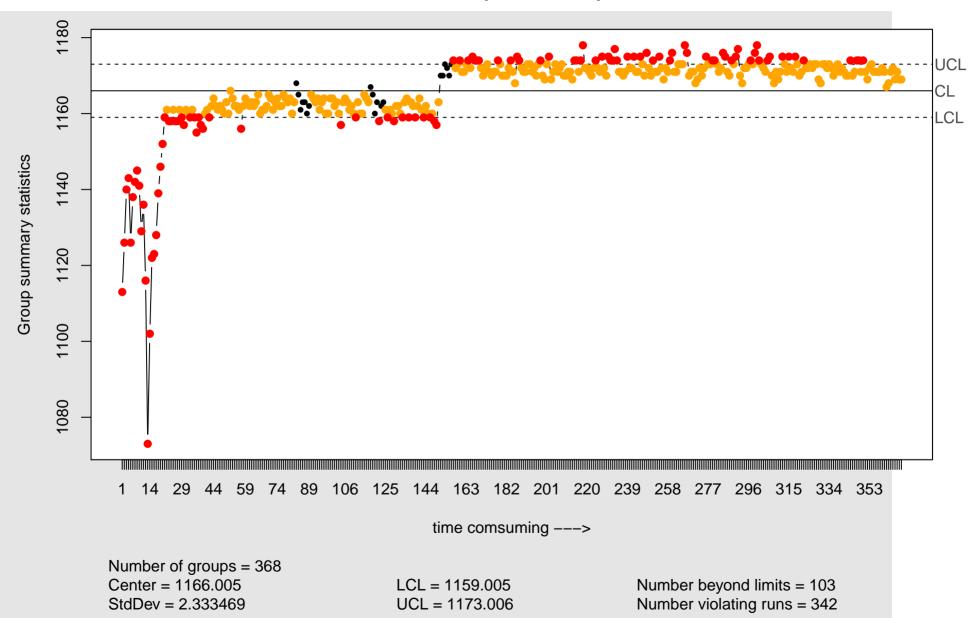
Center = 1165.495

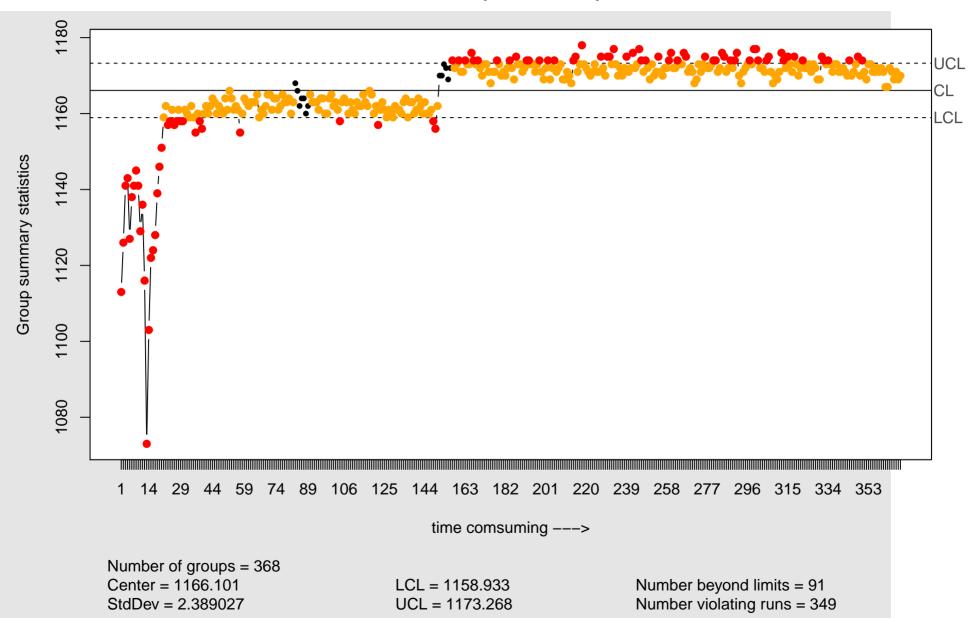
StdDev = 2.232013

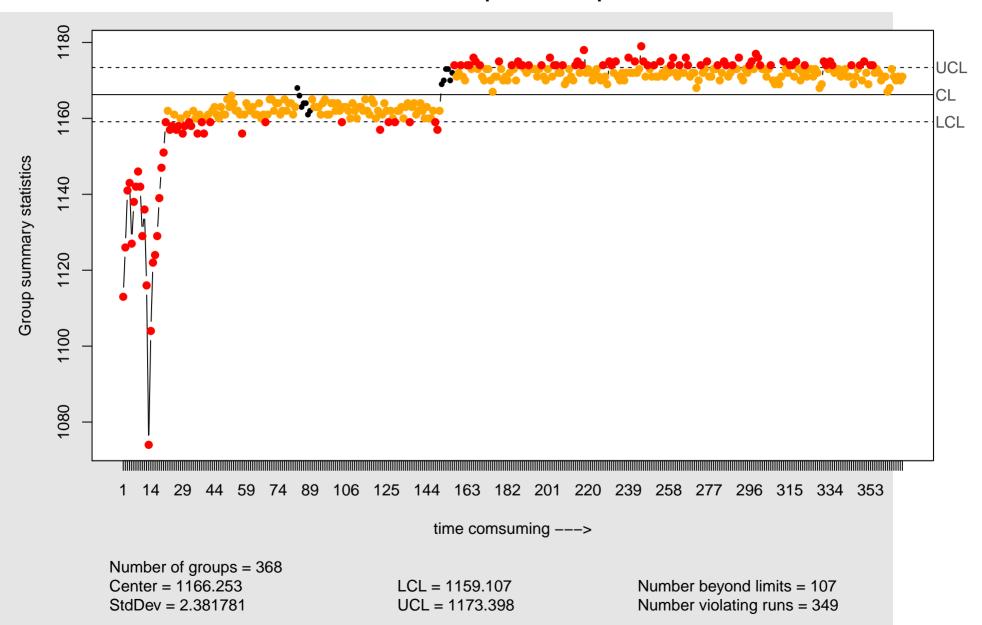


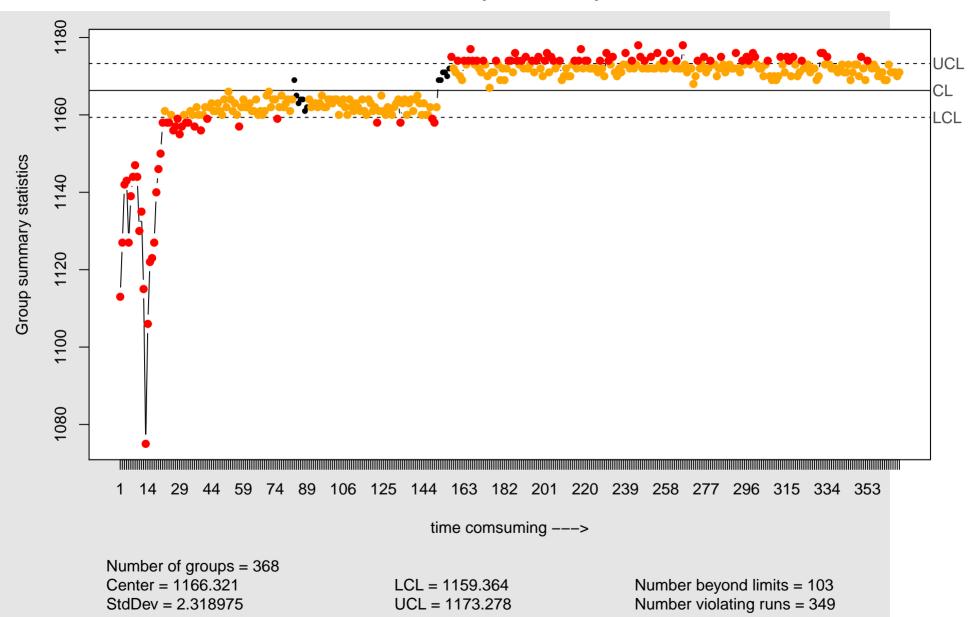


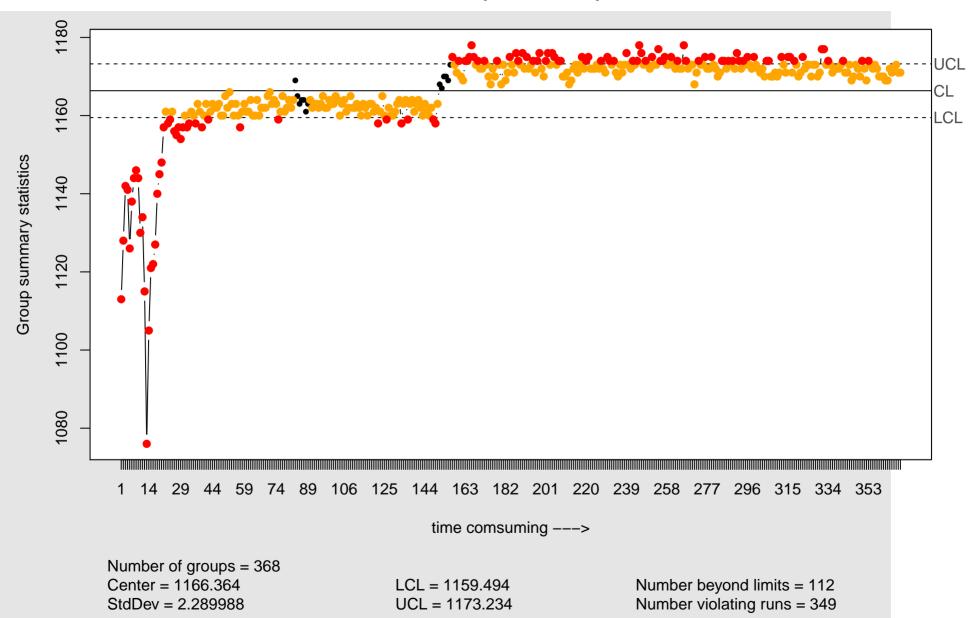


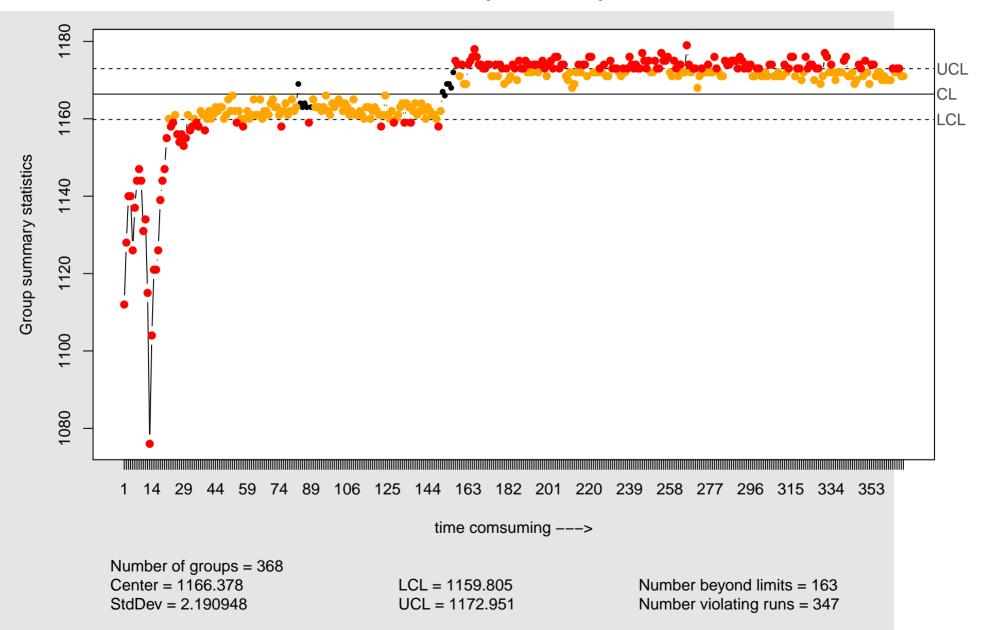


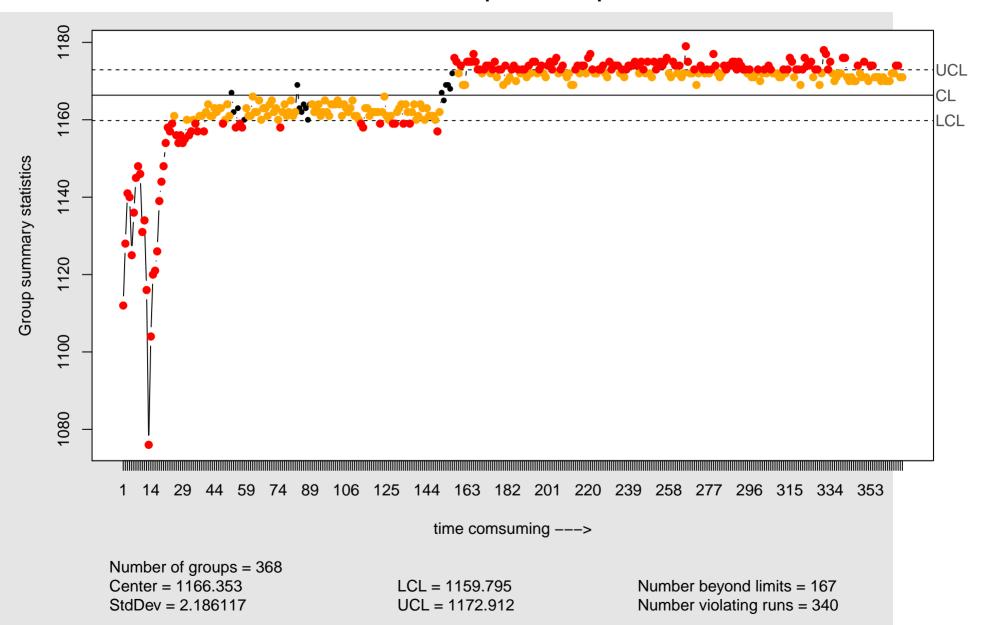


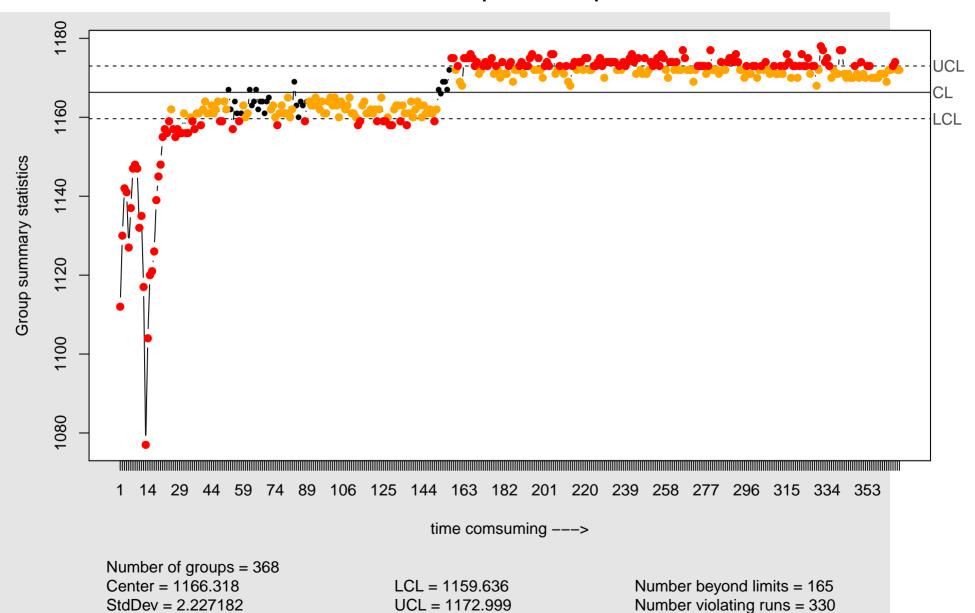


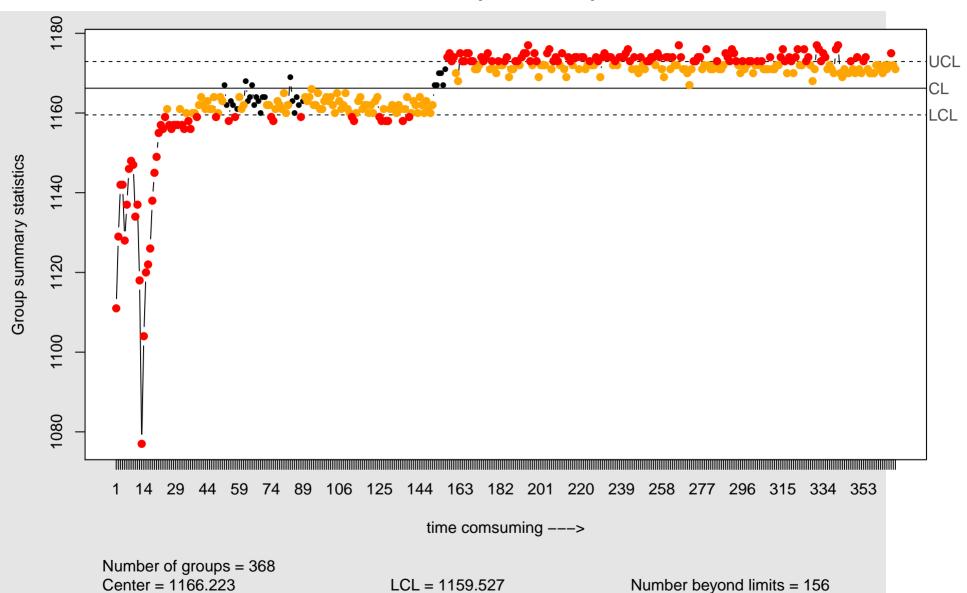








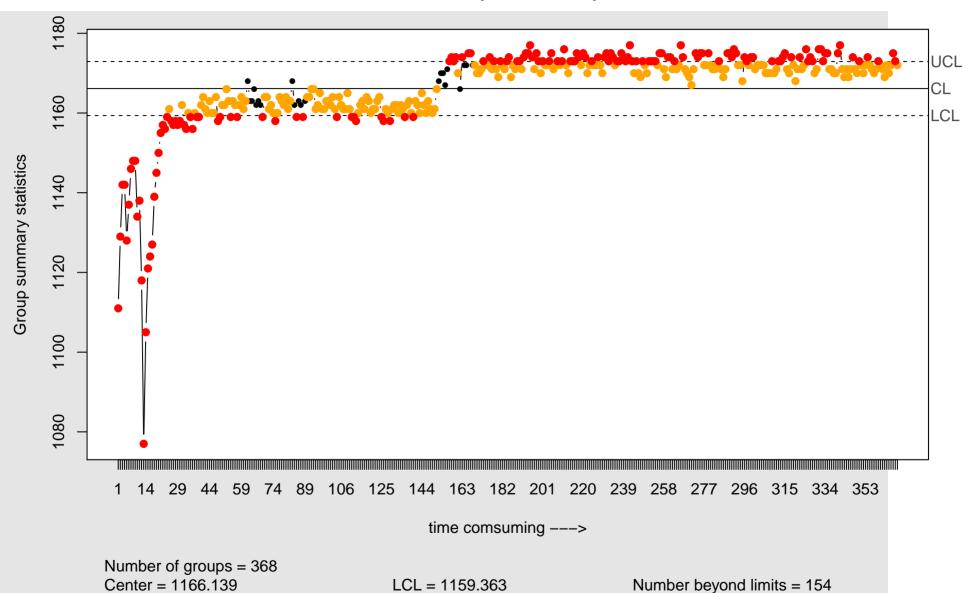




UCL = 1172.919

Number violating runs = 332

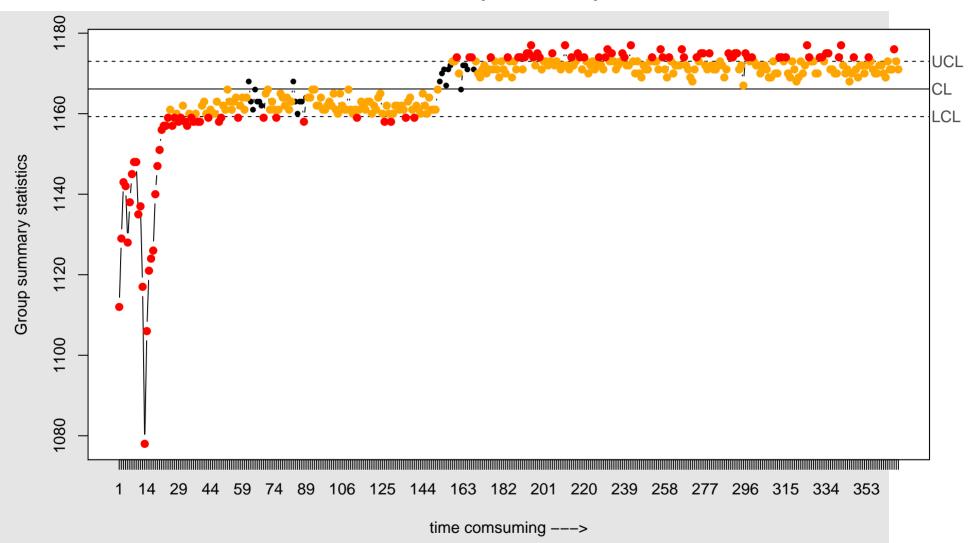
StdDev = 2.232013



UCL = 1172.914

Number violating runs = 335

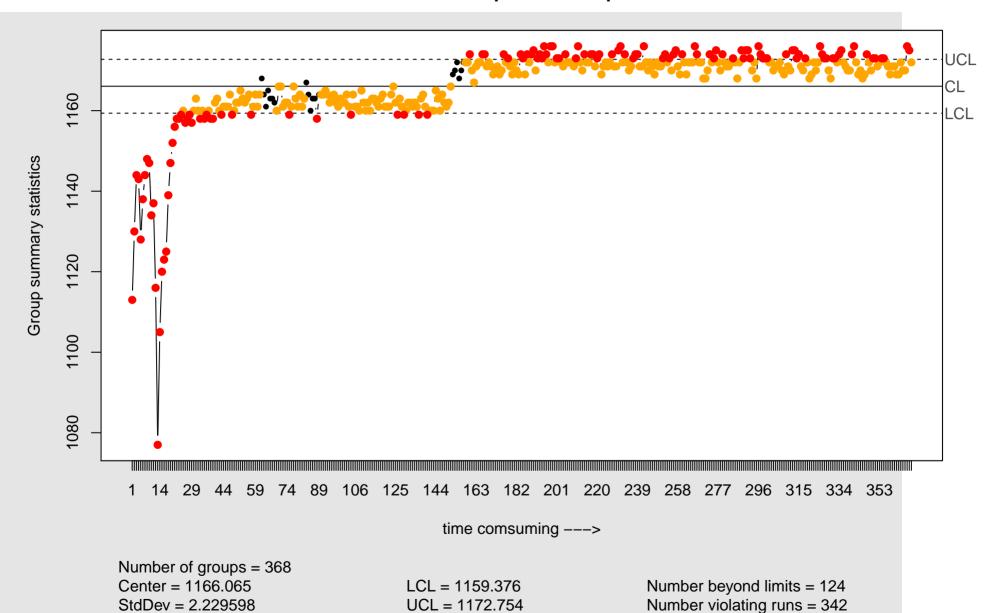
StdDev = 2.258585

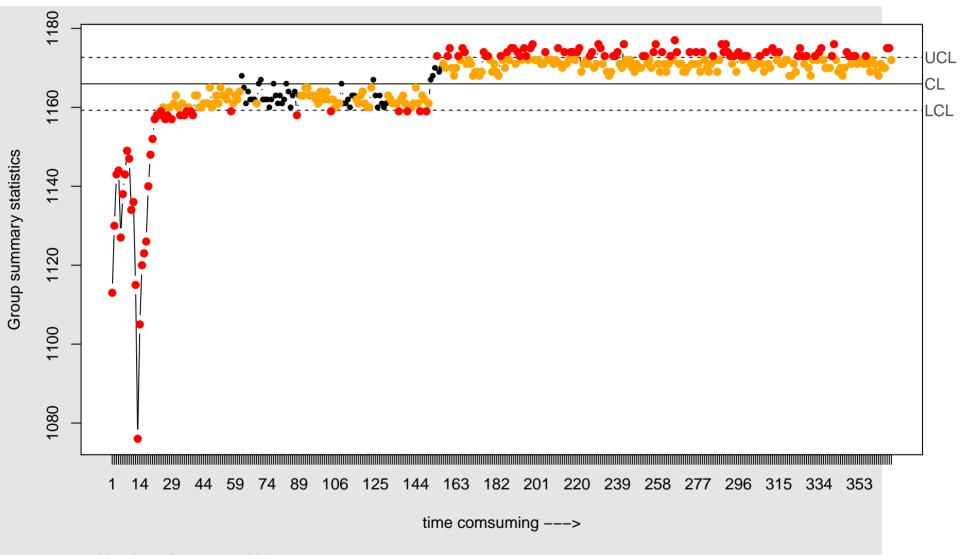


Number of groups = 368 Center = 1166.141

StdDev = 2.287572

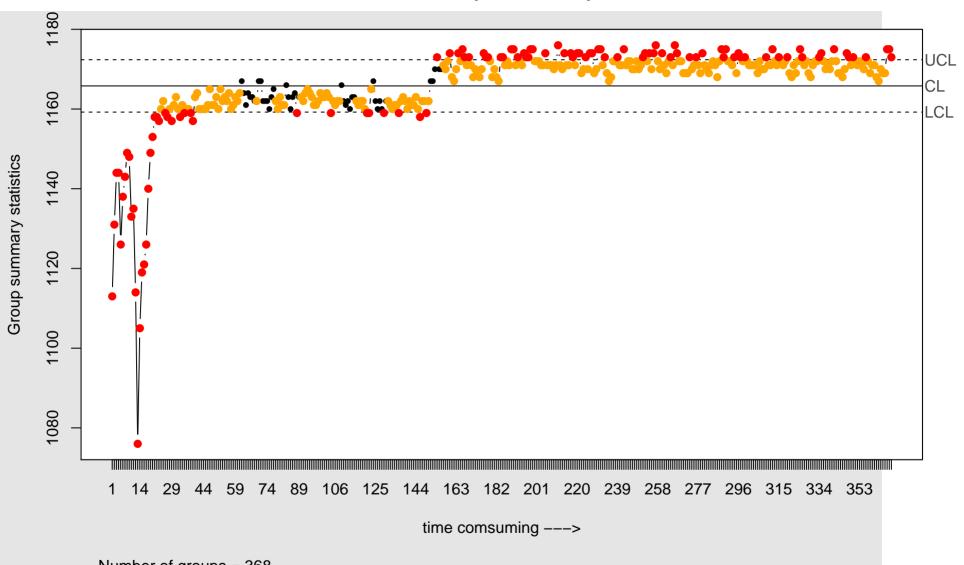
LCL = 1159.279 UCL = 1173.004 Number beyond limits = 105 Number violating runs = 335





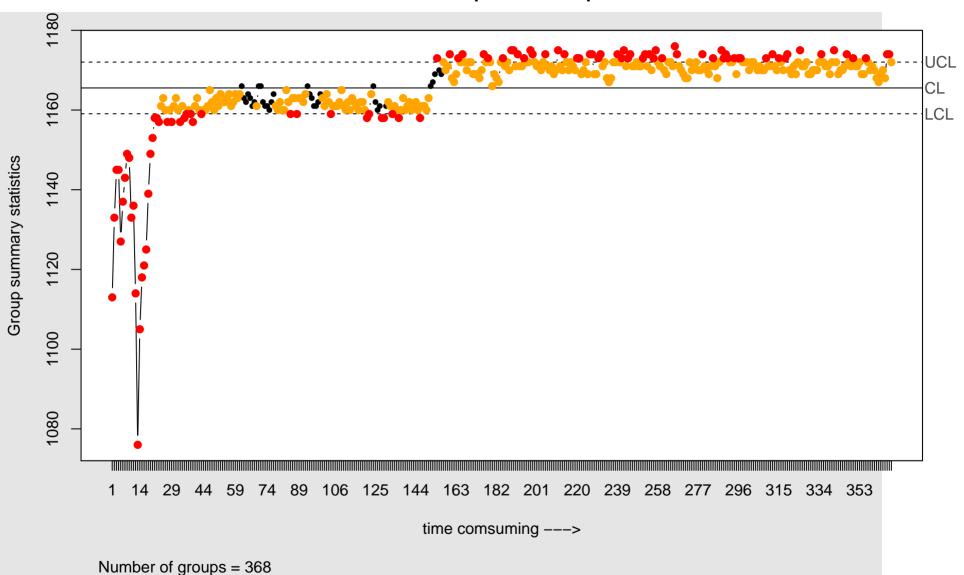
Number of groups = 368 Center = 1165.957 StdDev = 2.234429

LCL = 1159.253 UCL = 1172.66 Number beyond limits = 117 Number violating runs = 315



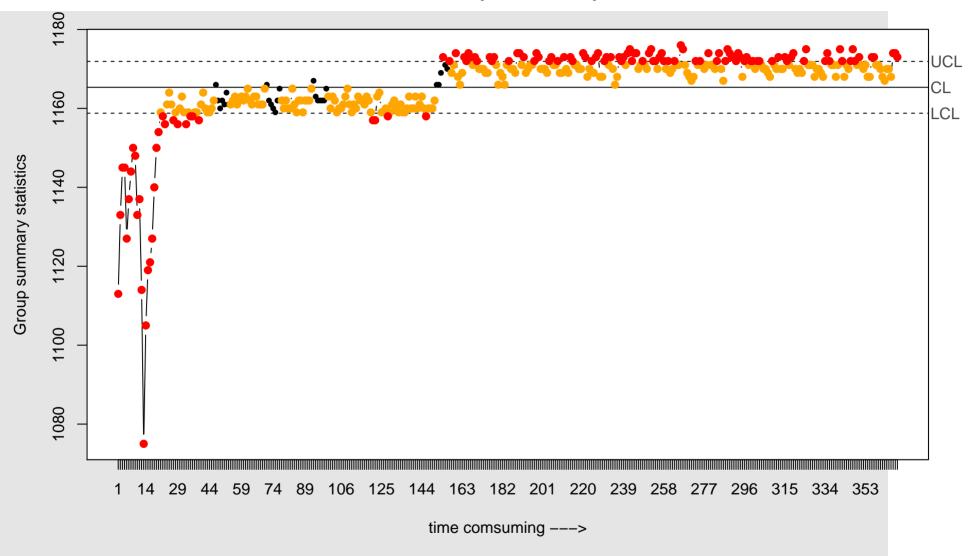
Number of groups = 368 Center = 1165.799 StdDev = 2.188533

LCL = 1159.233 UCL = 1172.365 Number beyond limits = 107 Number violating runs = 320



Number of groups = 368 Center = 1165.541 StdDev = 2.161961

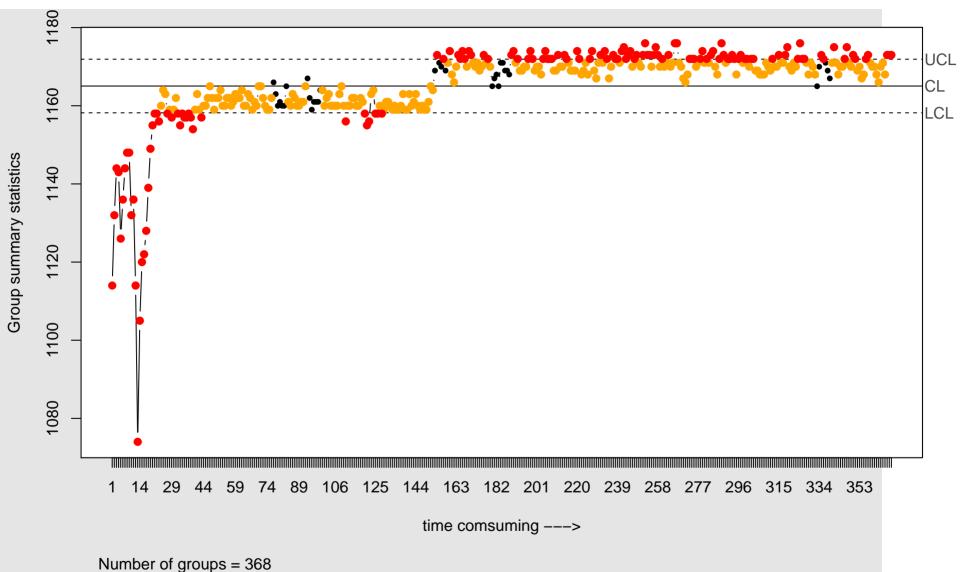
LCL = 1159.055 UCL = 1172.027 Number beyond limits = 98 Number violating runs = 327



Number of groups = 368 Center = 1165.345 StdDev = 2.188533

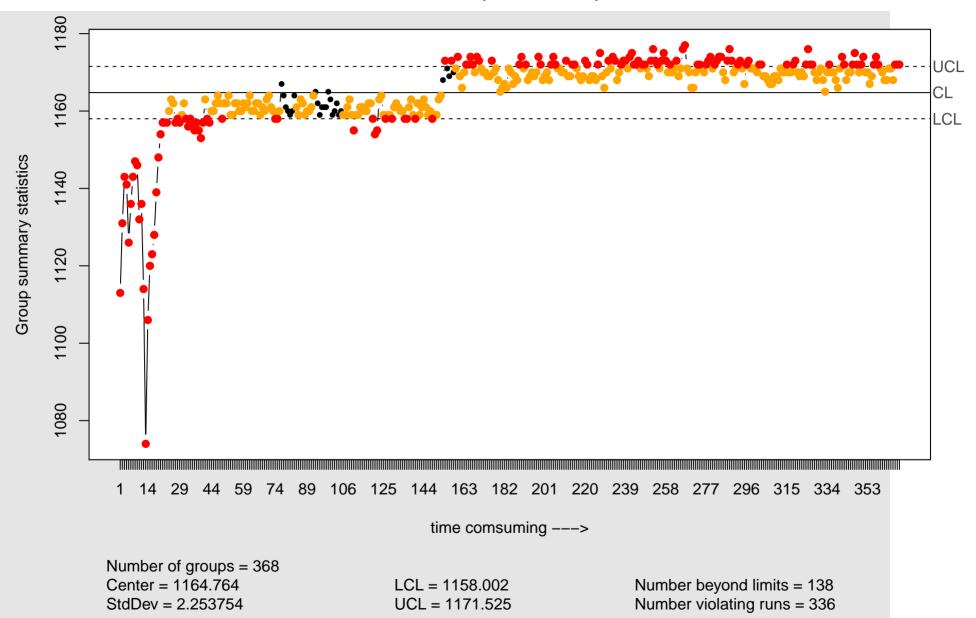
LCL = 1158.78 UCL = 1171.911

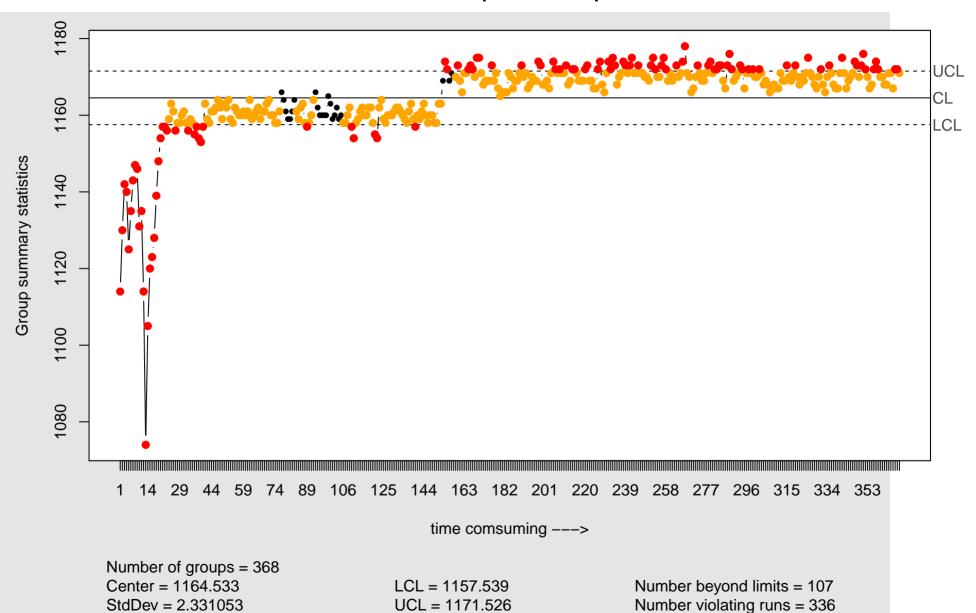
Number beyond limits = 126 Number violating runs = 335

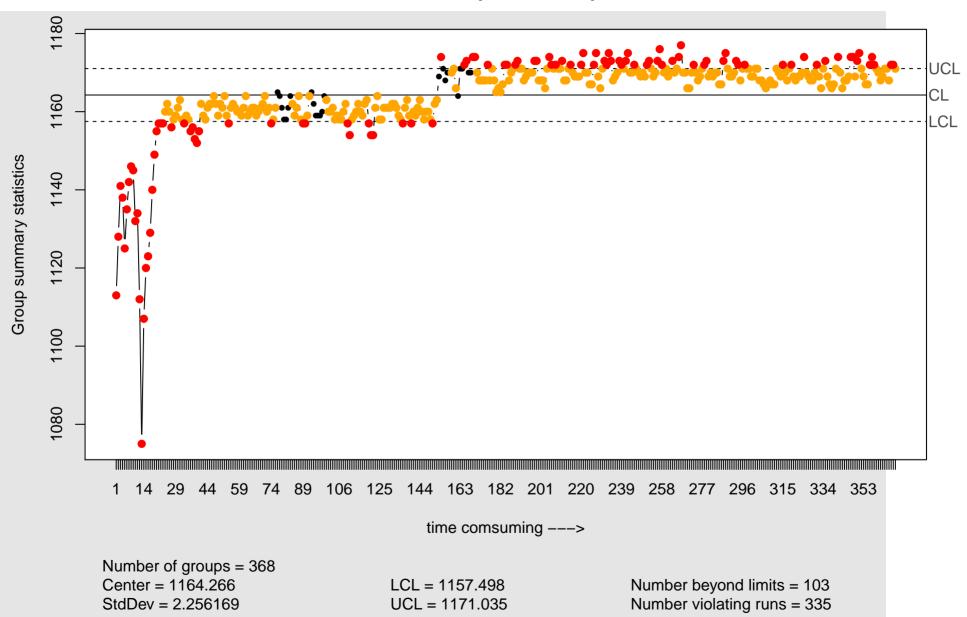


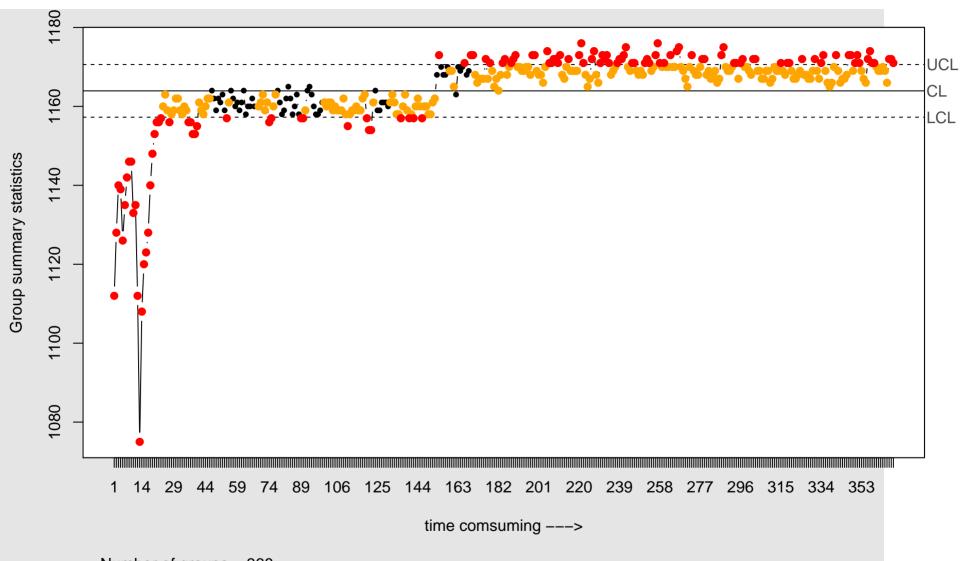
Number of groups = 368 Center = 1165.054 StdDev = 2.287572

LCL = 1158.192 UCL = 1171.917 Number beyond limits = 135 Number violating runs = 325





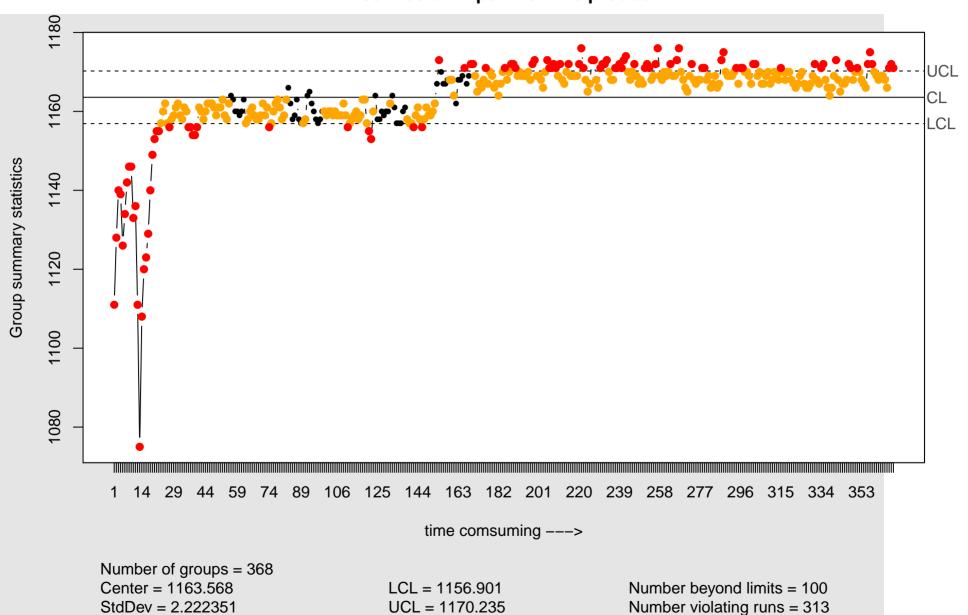


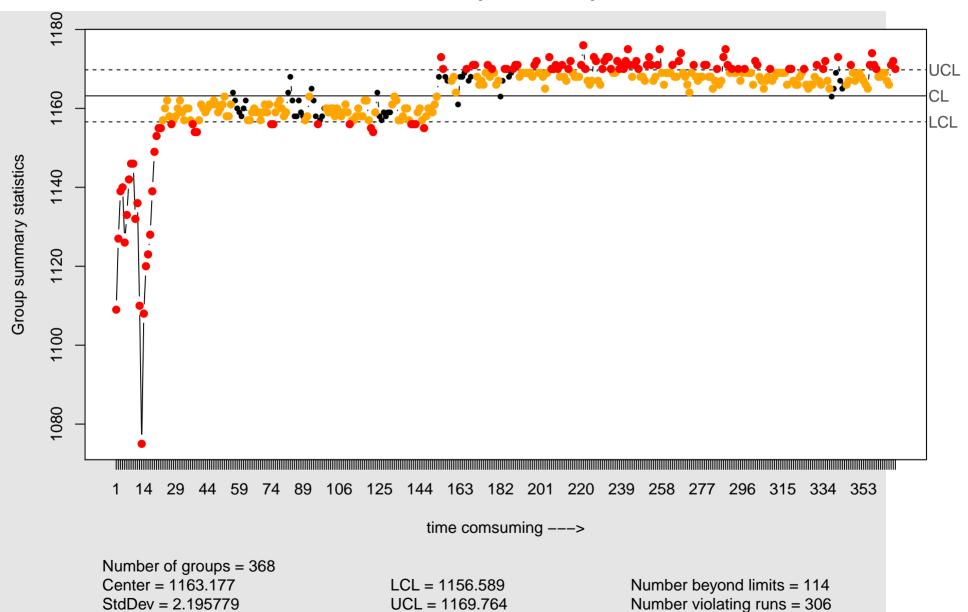


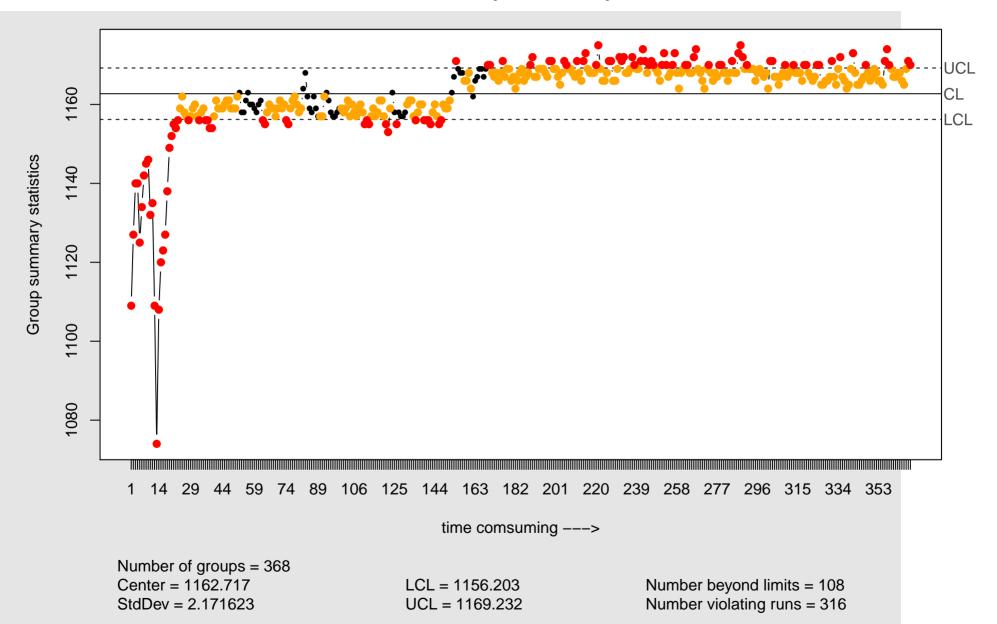
Number of groups = 368 Center = 1163.935 StdDev = 2.224767

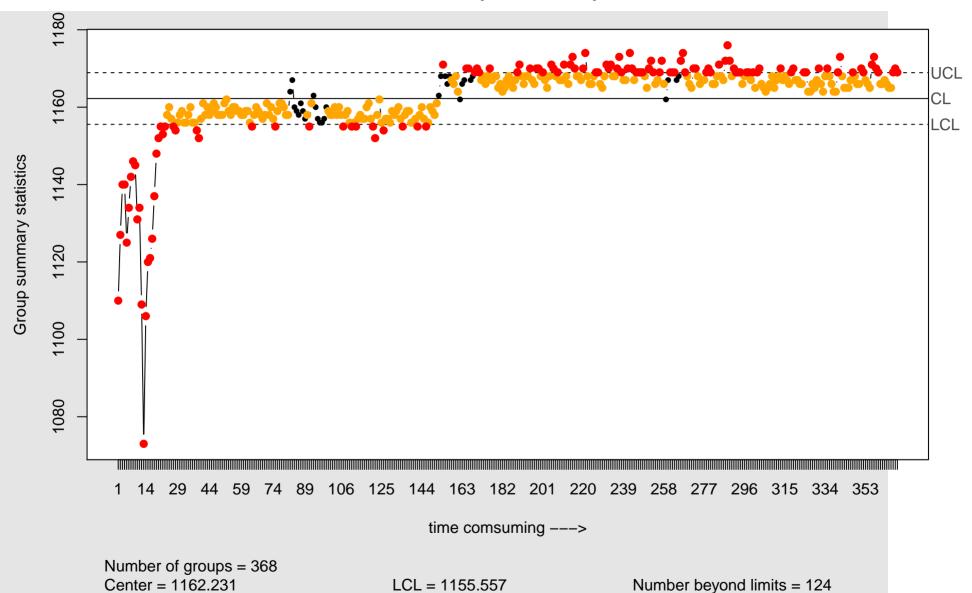
LCL = 1157.26 UCL = 1170.609

Number beyond limits = 121 Number violating runs = 302





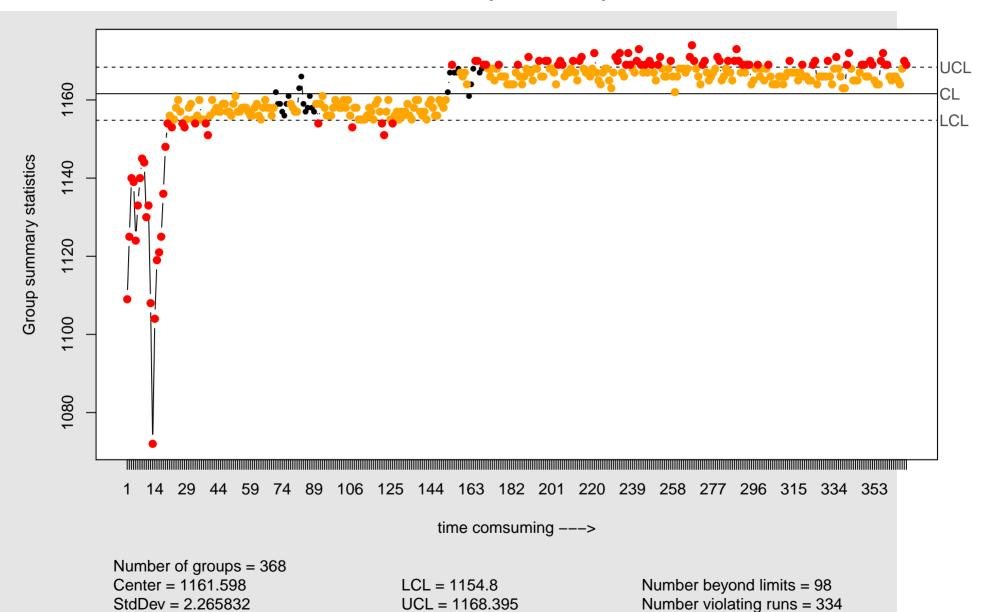


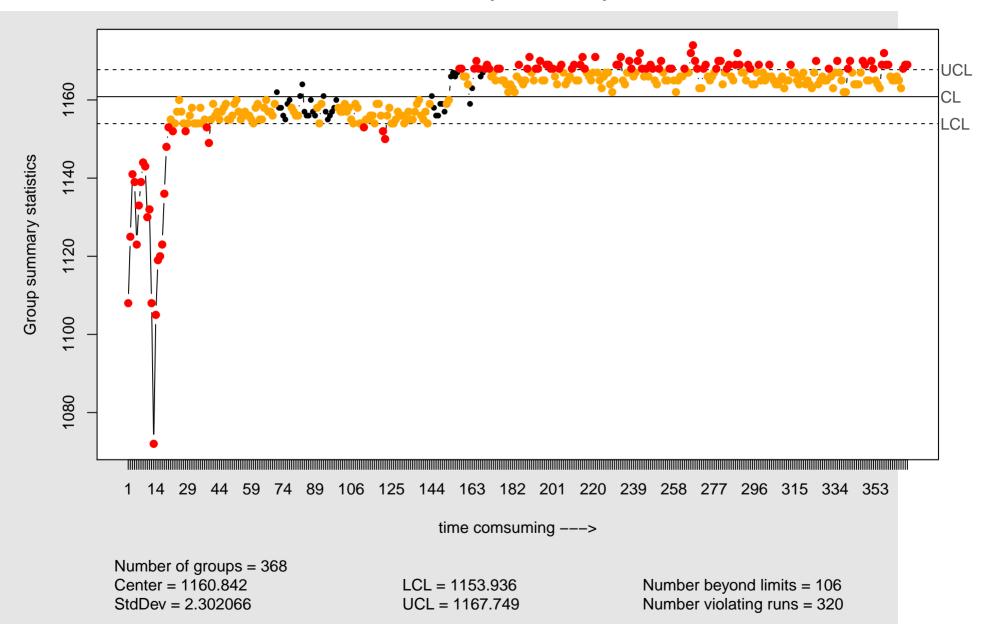


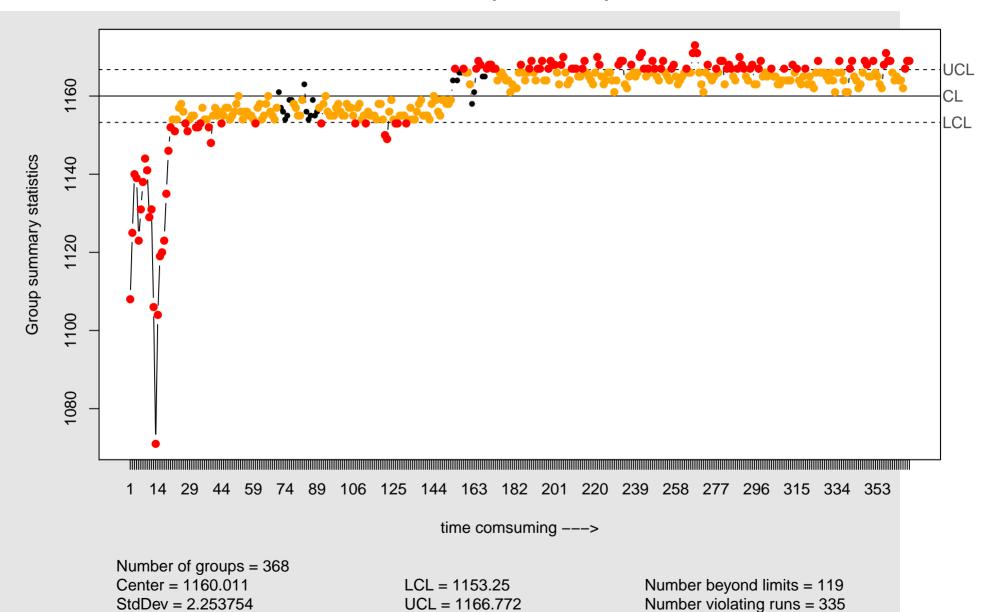
UCL = 1168.905

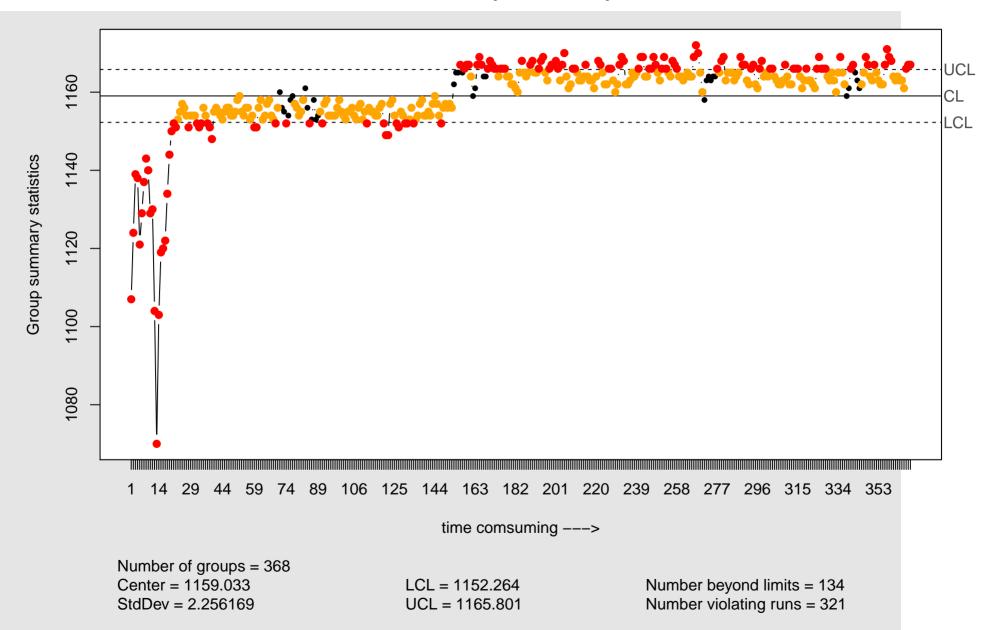
Number violating runs = 327

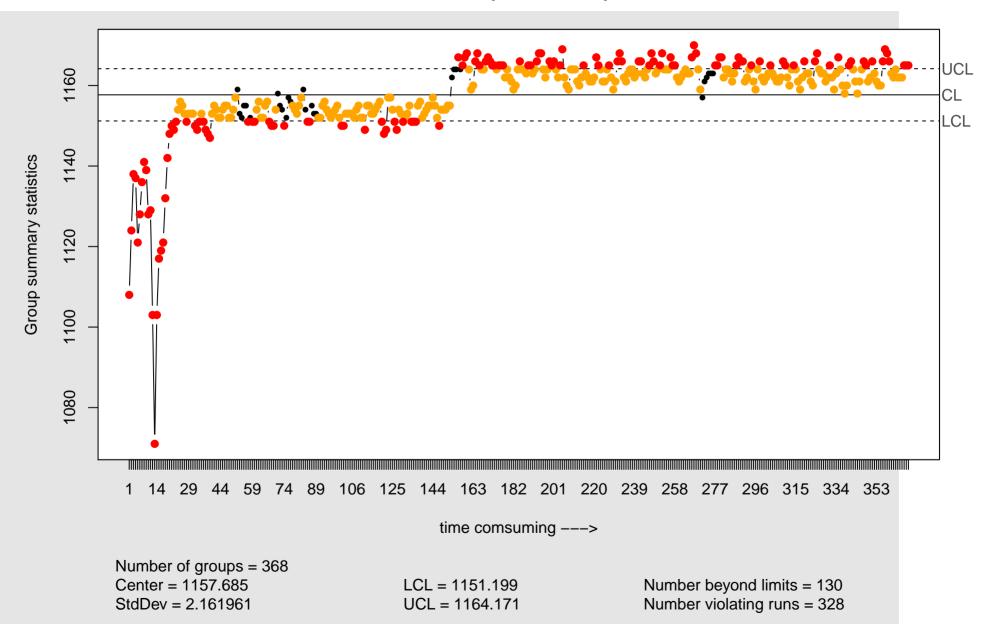
StdDev = 2.224767

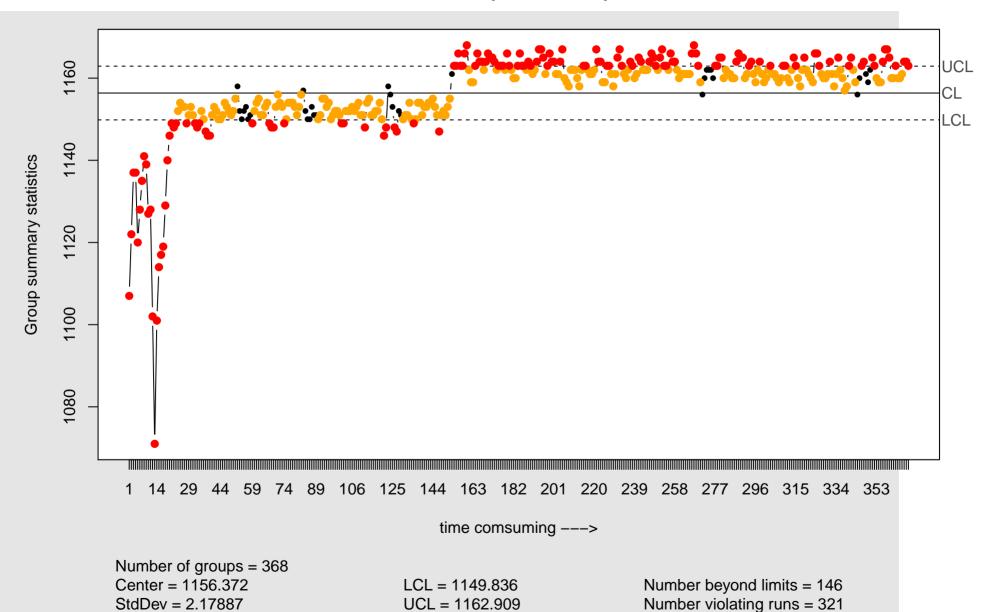


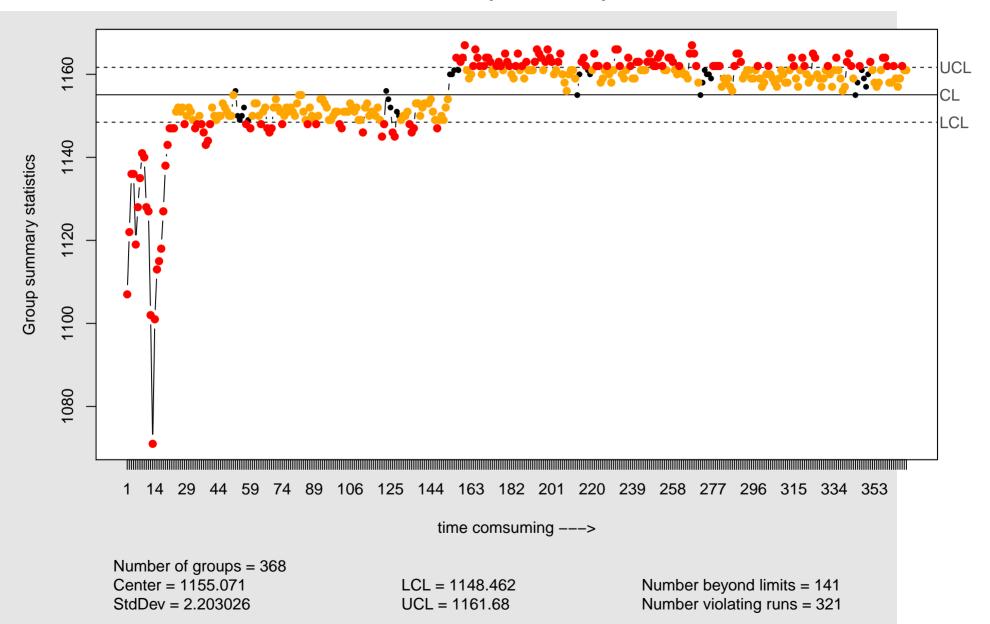


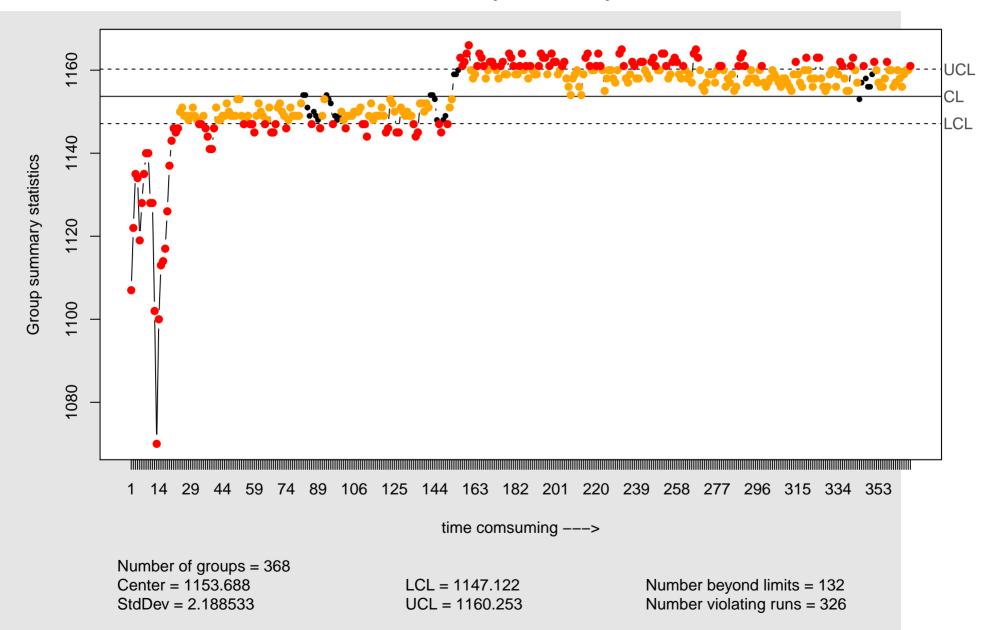


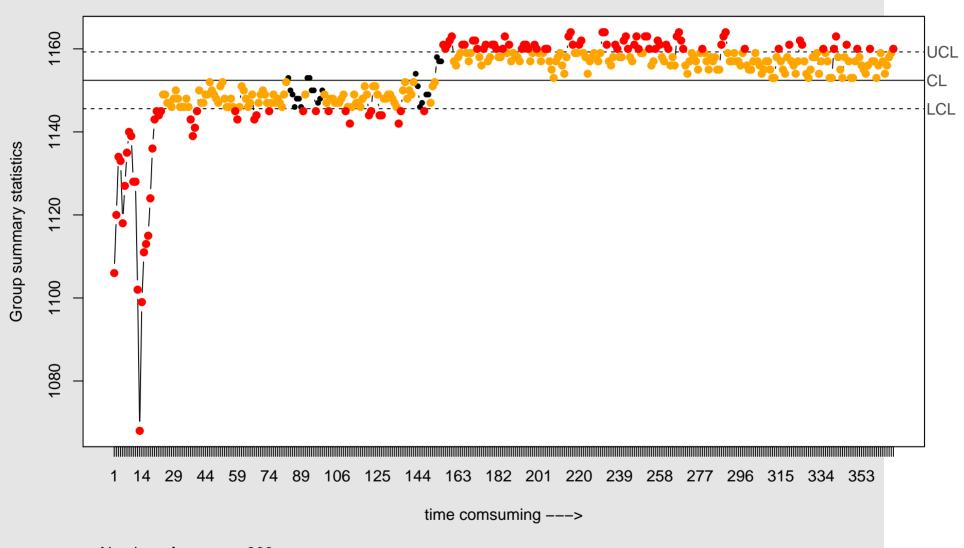






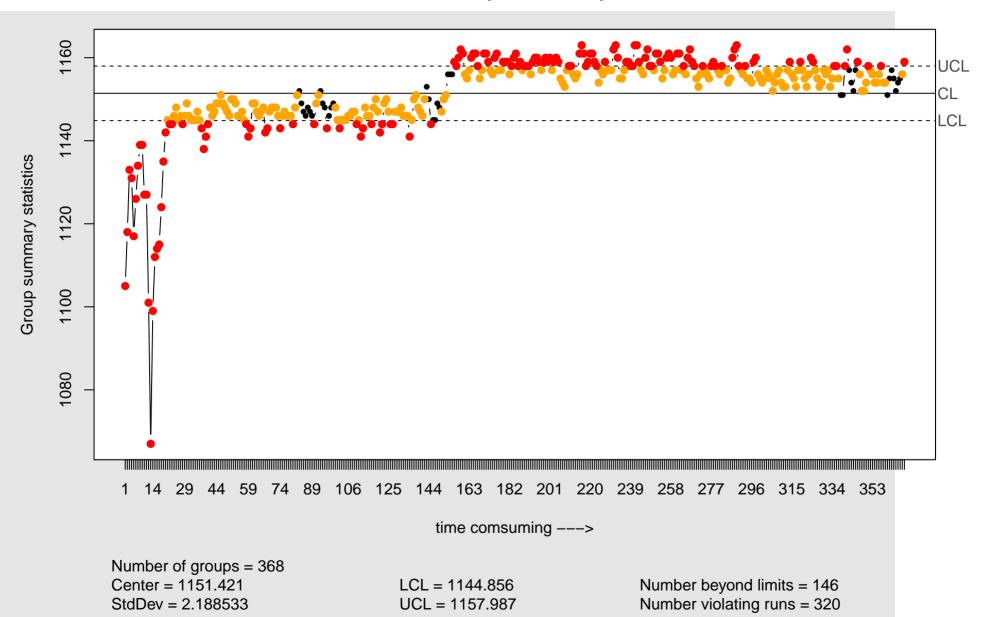


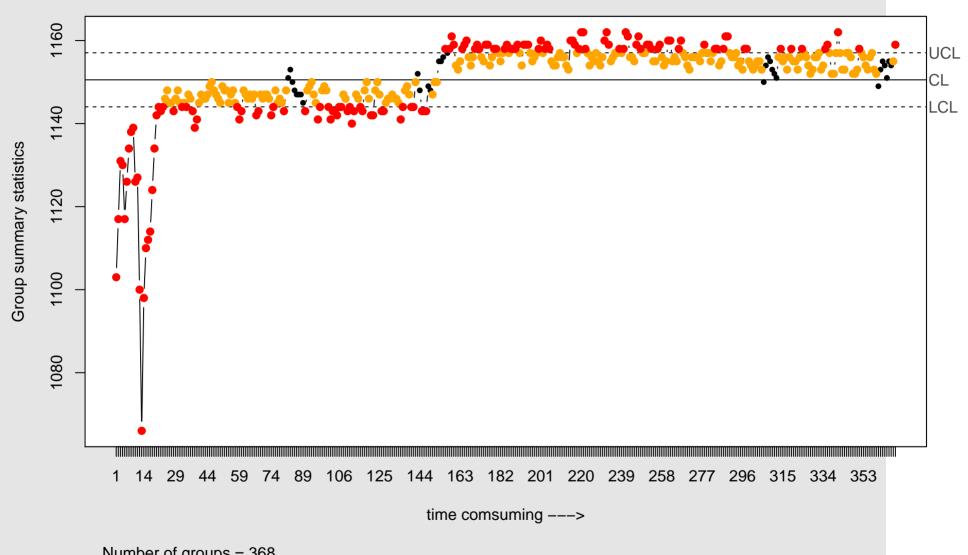




Number of groups = 368 Center = 1152.421 StdDev = 2.280325

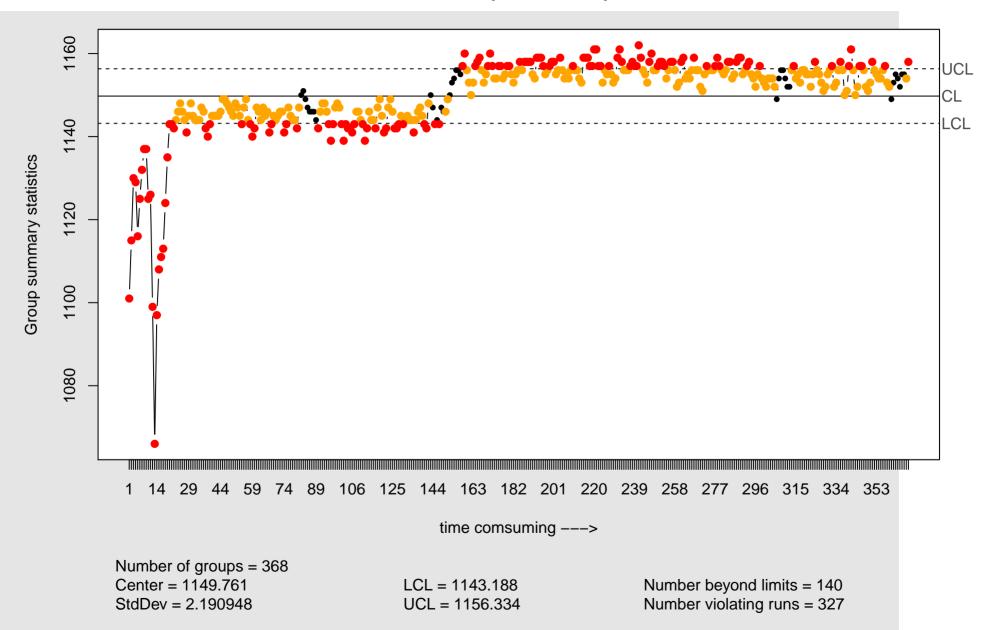
LCL = 1145.58 UCL = 1159.262 Number beyond limits = 114 Number violating runs = 334

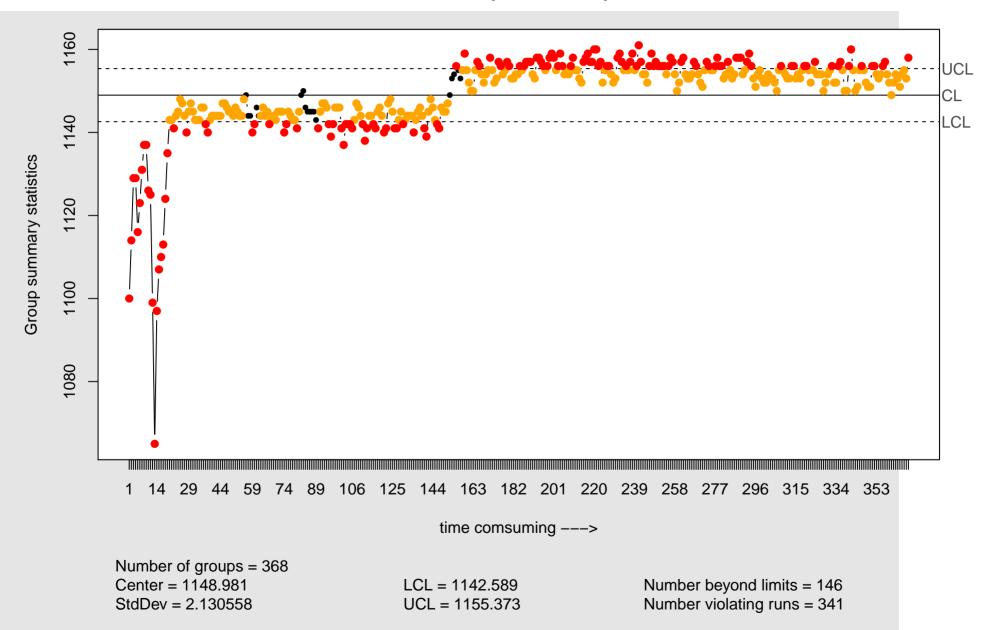


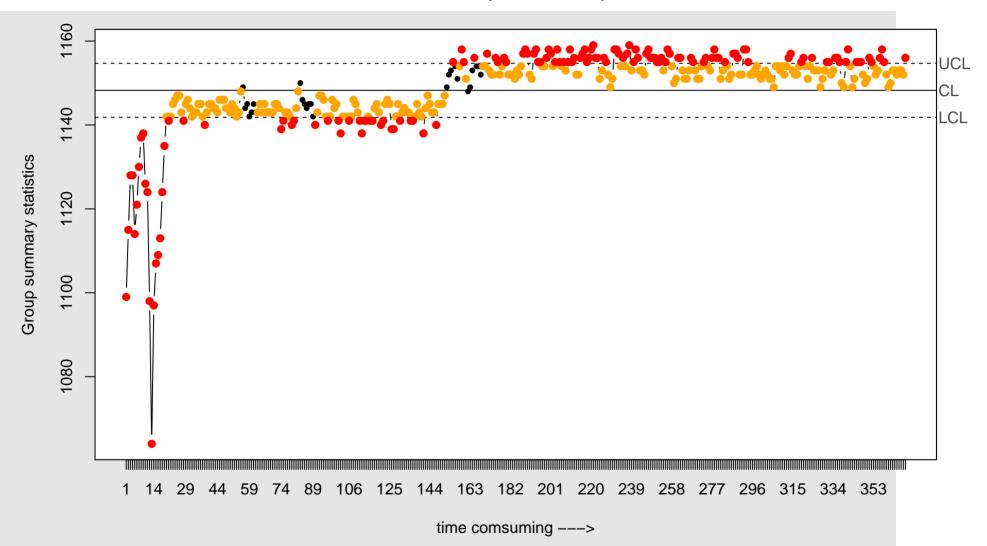


Number of groups = 368 Center = 1150.538 StdDev = 2.169208

LCL = 1144.03 UCL = 1157.046 Number beyond limits = 134 Number violating runs = 327



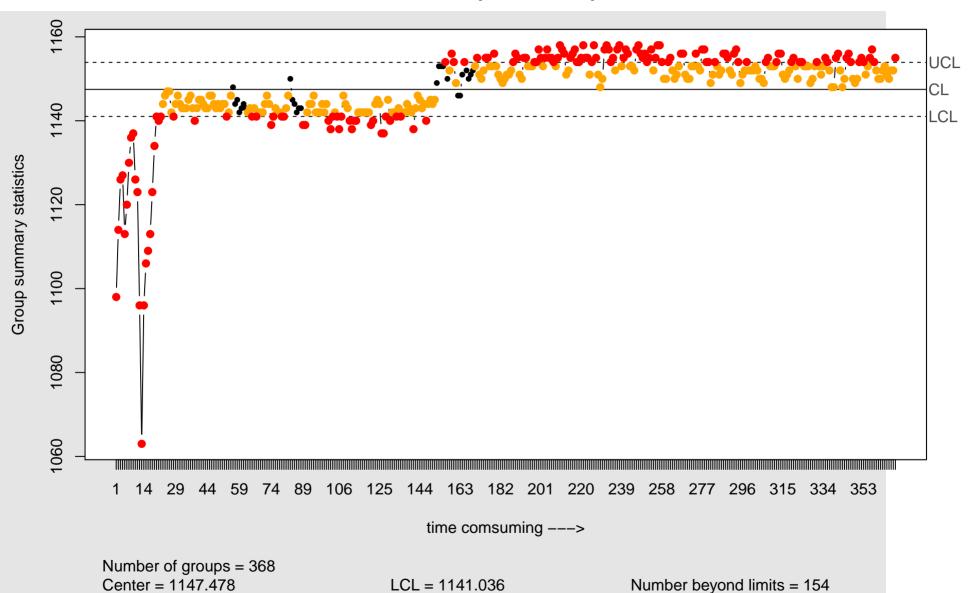




Number of groups = 368 Center = 1148.253

StdDev = 2.147467

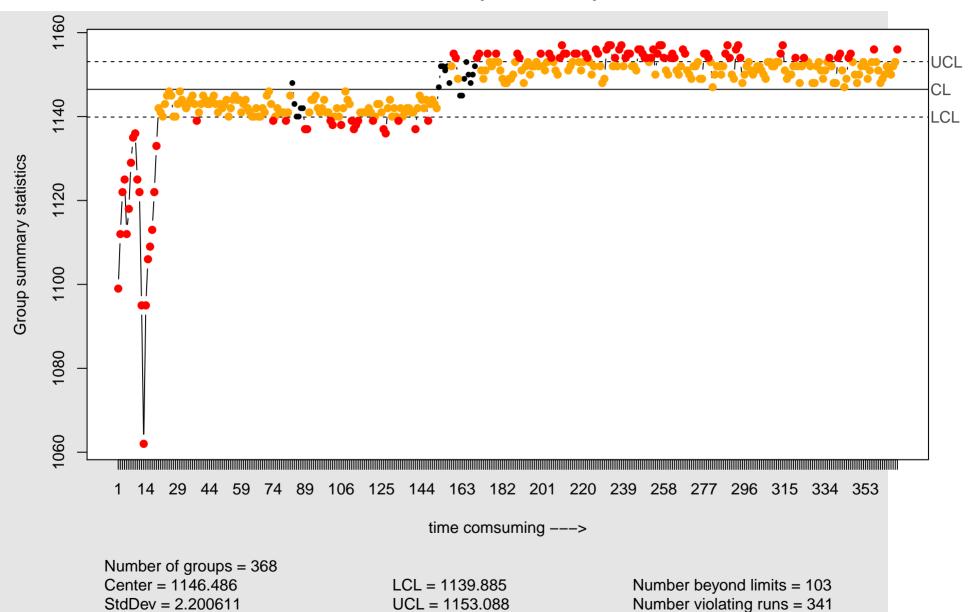
LCL = 1141.81 UCL = 1154.695 Number beyond limits = 142 Number violating runs = 335

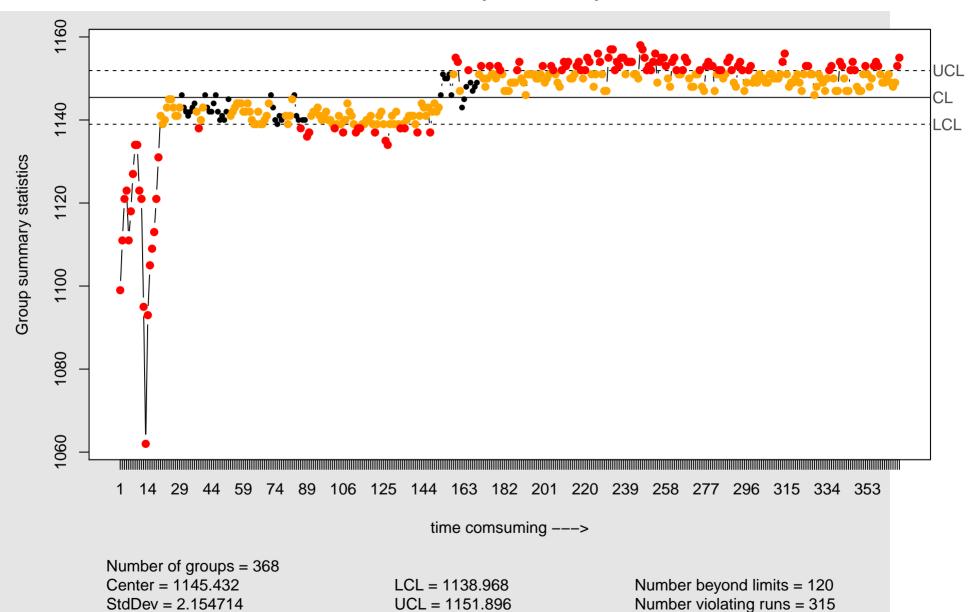


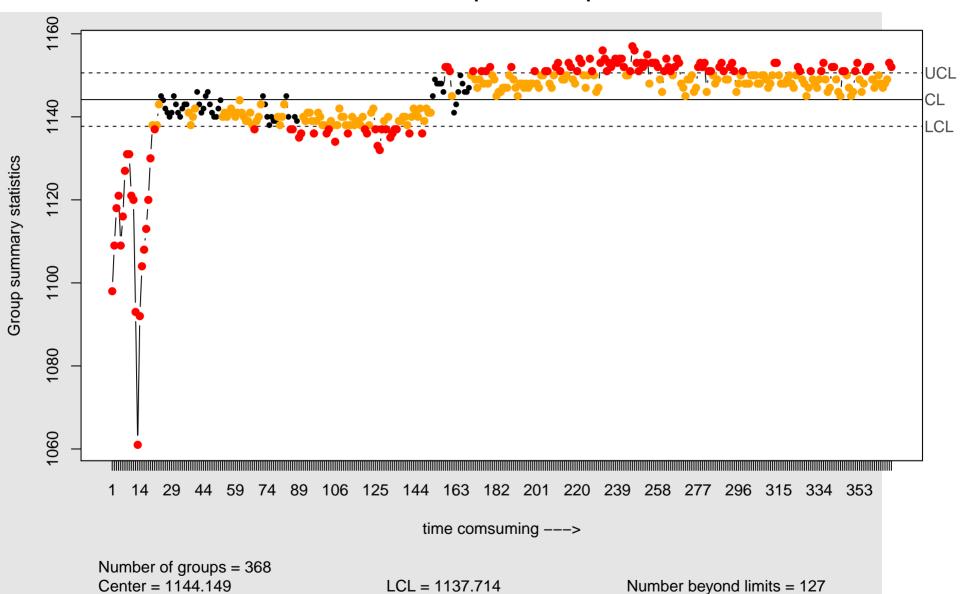
UCL = 1153.921

Number violating runs = 334

StdDev = 2.147467



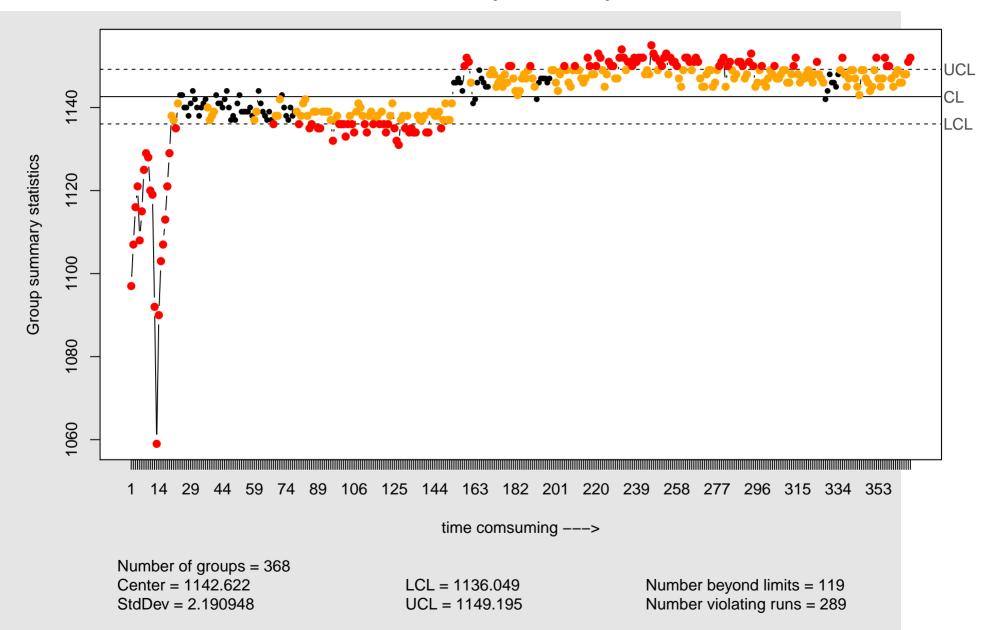


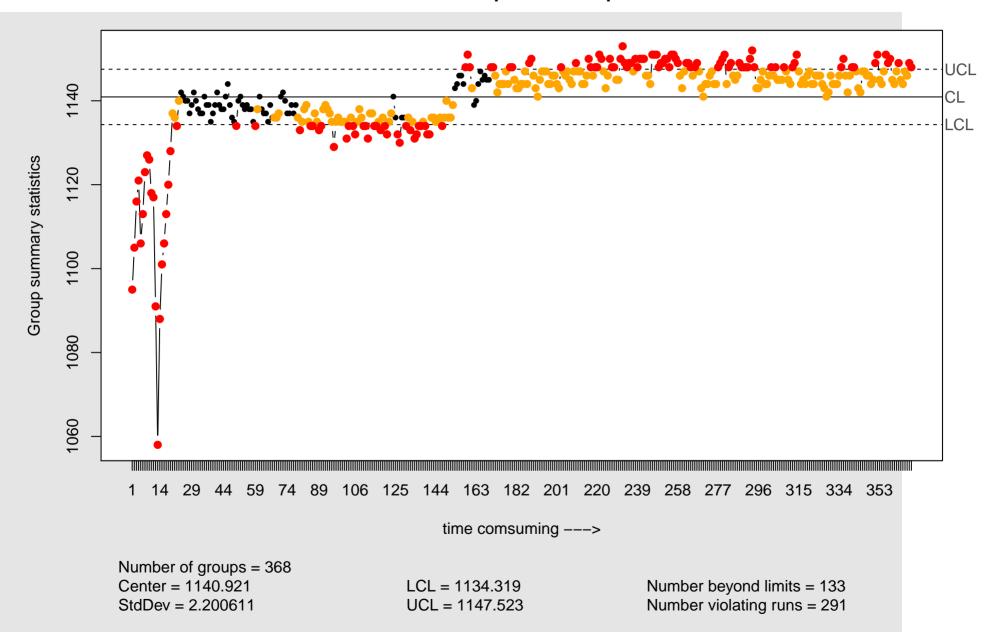


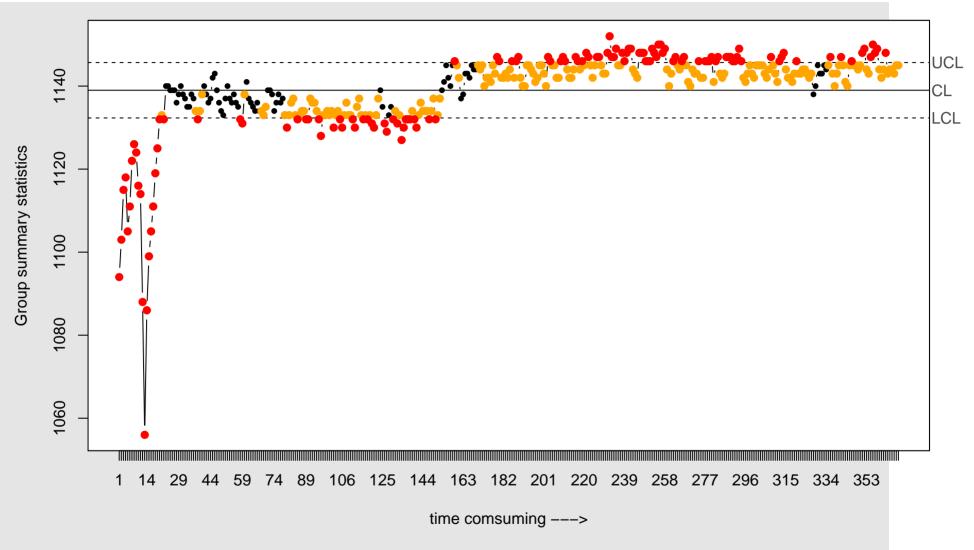
UCL = 1150.585

Number violating runs = 309

StdDev = 2.145052

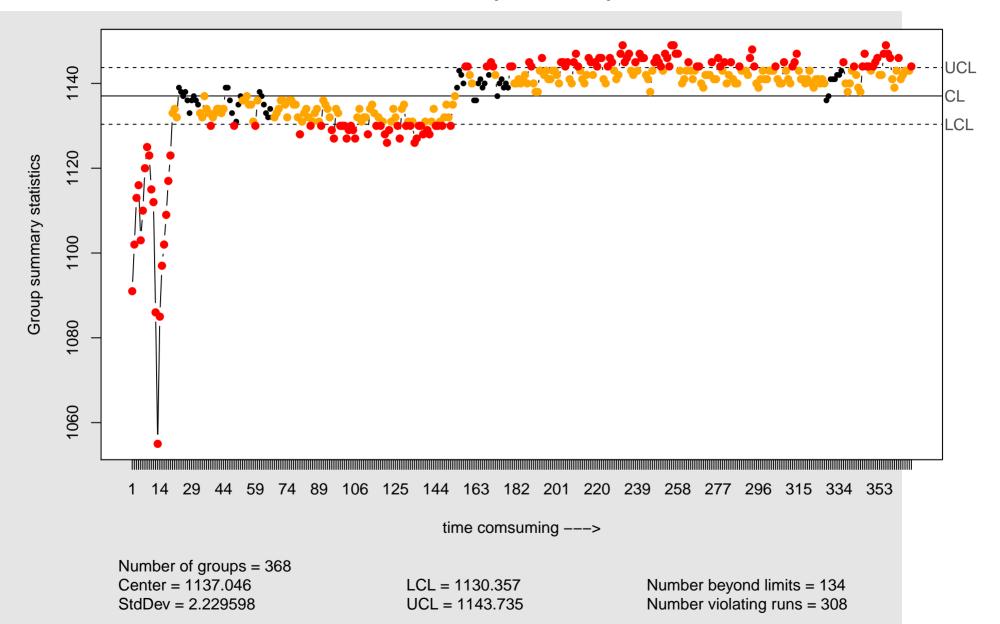


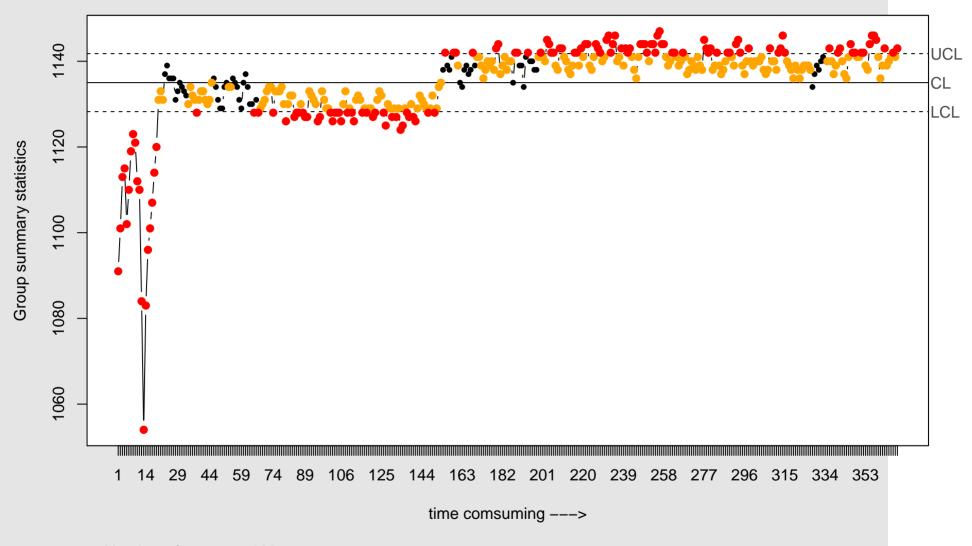




Number of groups = 368 Center = 1138.995 StdDev = 2.224767

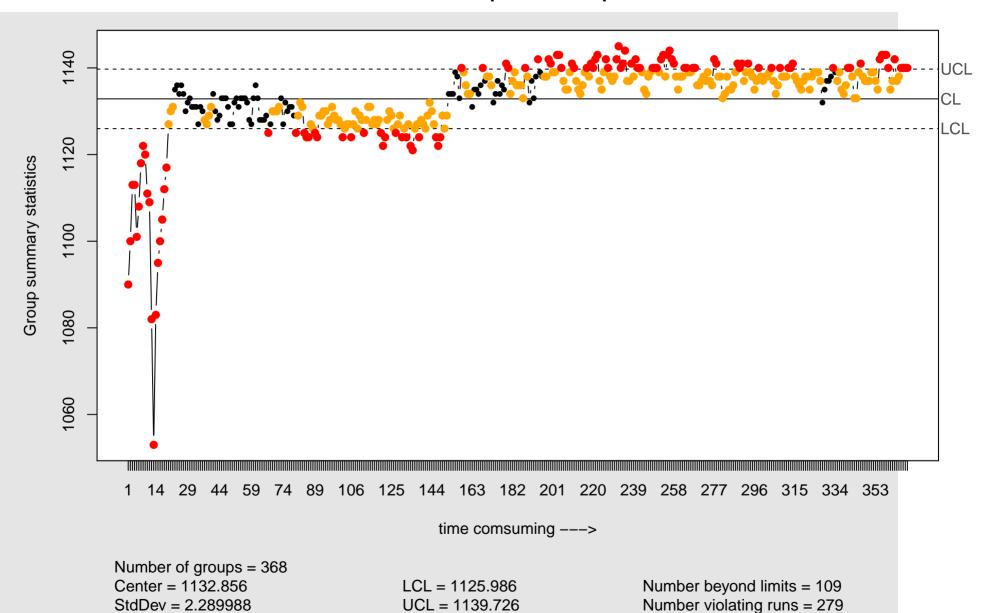
LCL = 1132.32 UCL = 1145.669 Number beyond limits = 127 Number violating runs = 287

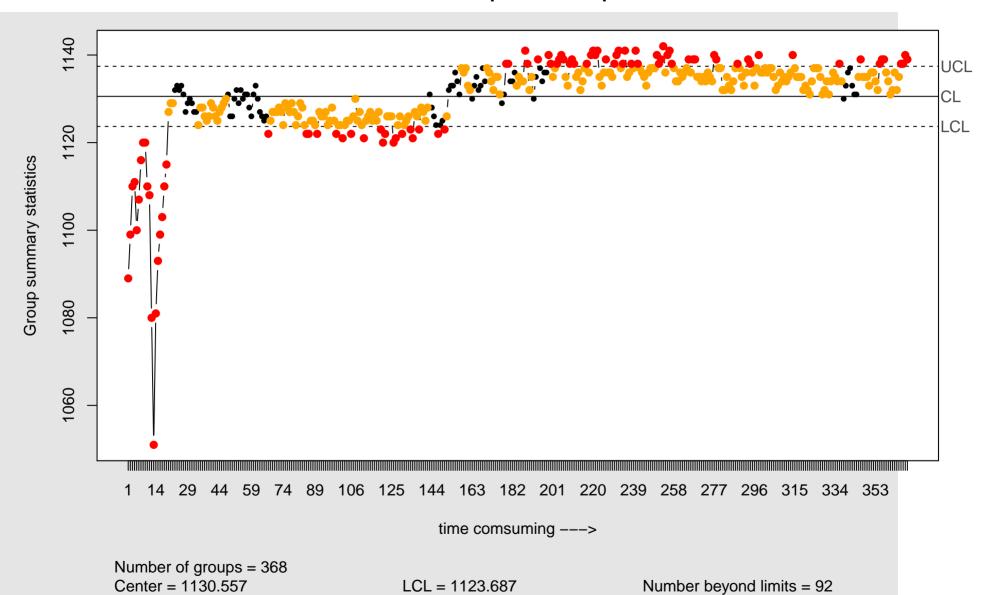




Number of groups = 368 Center = 1135.008 StdDev = 2.256169

LCL = 1128.24 UCL = 1141.777 Number beyond limits = 135 Number violating runs = 298

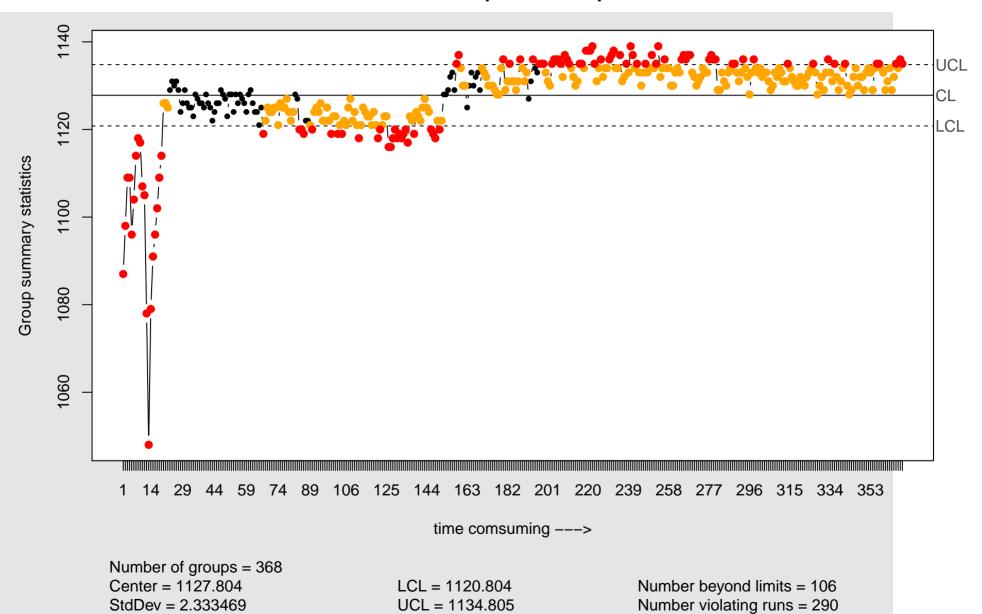




UCL = 1137.427

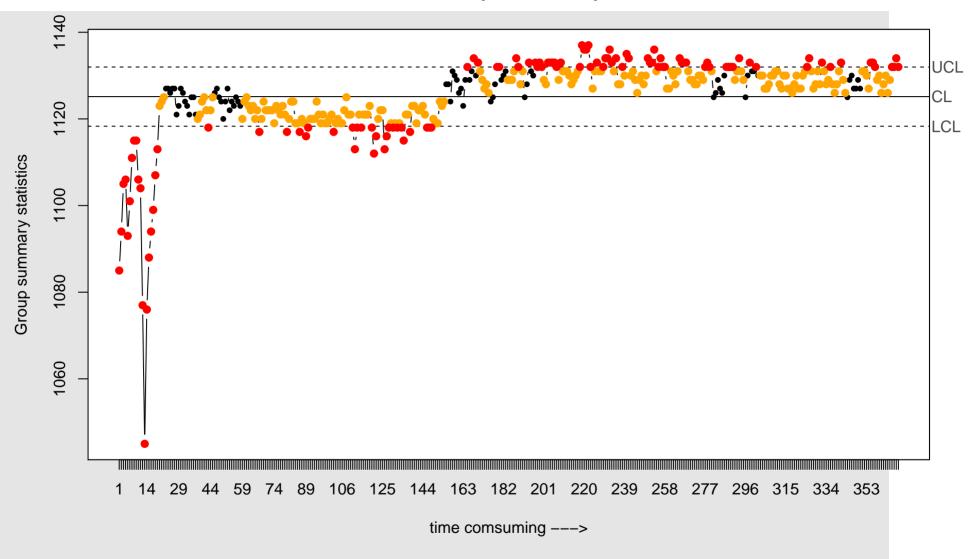
Number violating runs = 290

StdDev = 2.289988



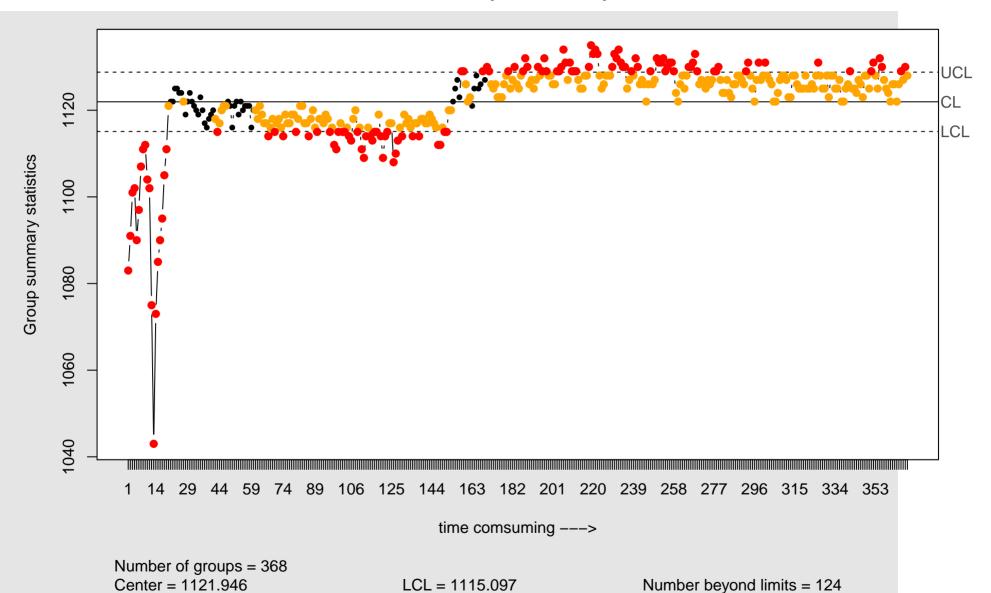
UCL = 1134.805

StdDev = 2.333469



Number of groups = 368 Center = 1125.141 StdDev = 2.27791

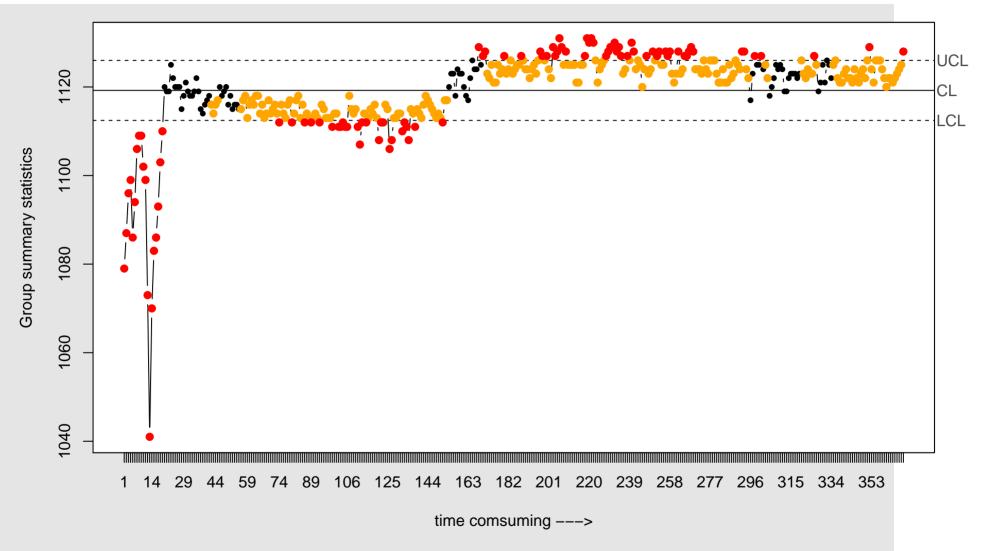
LCL = 1118.308 UCL = 1131.975 Number beyond limits = 112 Number violating runs = 283



UCL = 1128.794

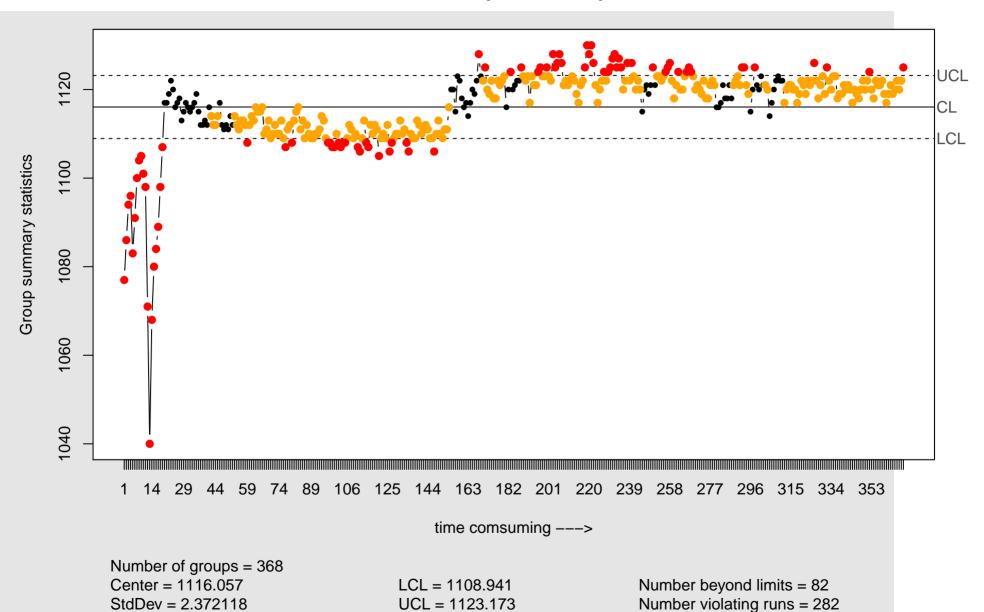
Number violating runs = 316

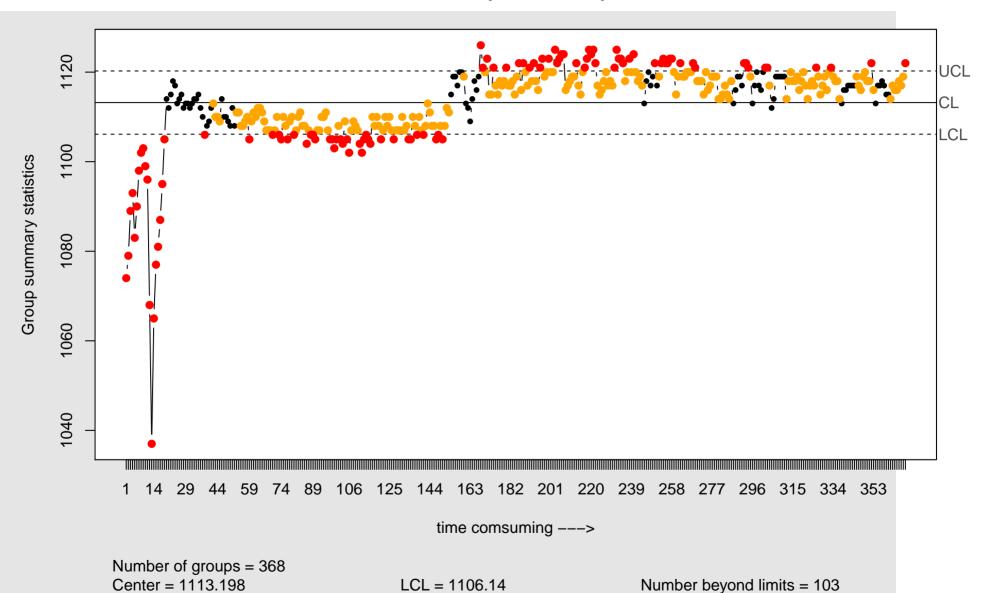
StdDev = 2.282741



Number of groups = 368 Center = 1119.226 StdDev = 2.258585

LCL = 1112.45 UCL = 1126.001 Number beyond limits = 95 Number violating runs = 285

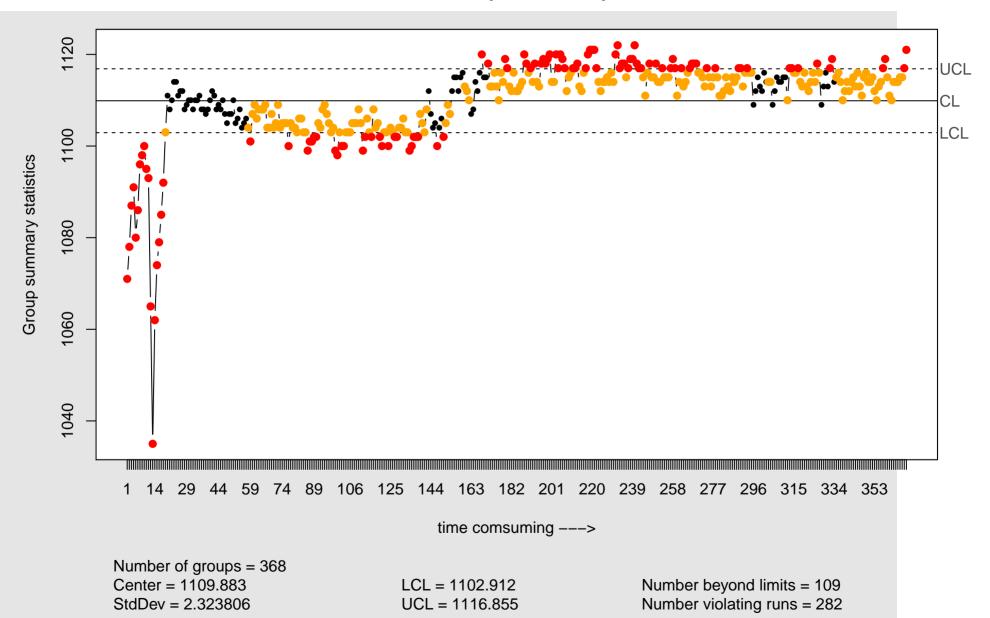


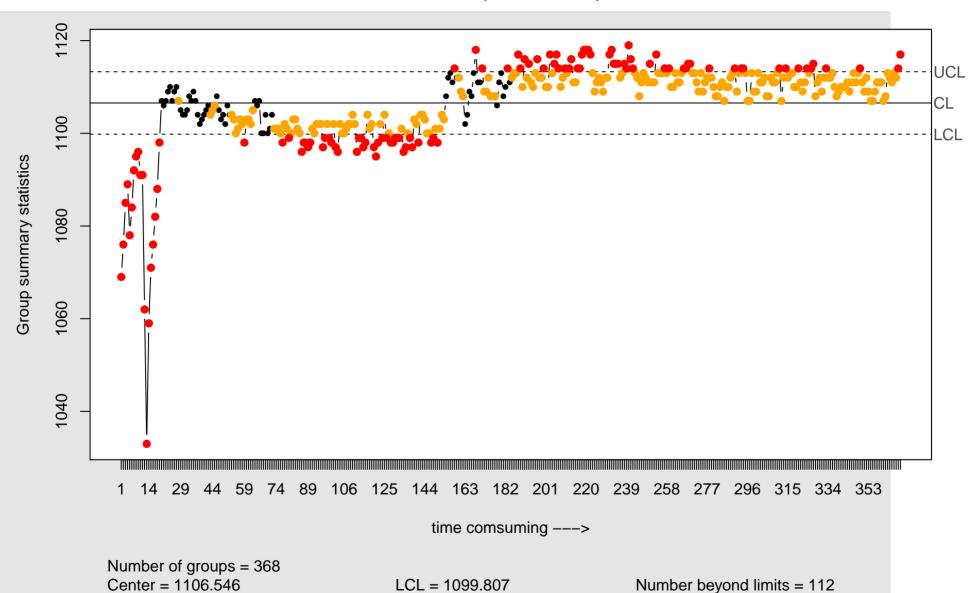


UCL = 1120.257

Number violating runs = 276

StdDev = 2.352793

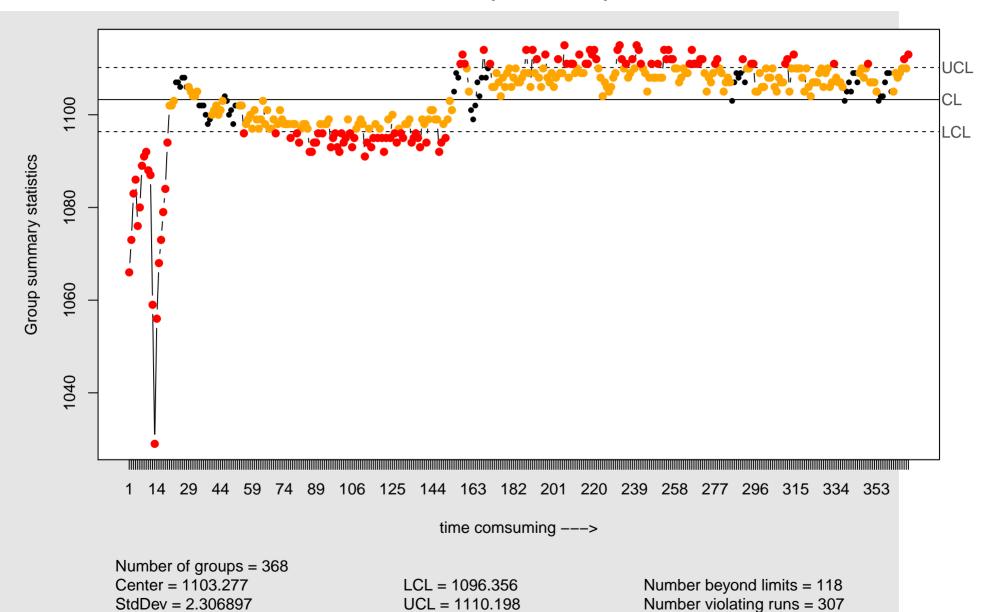


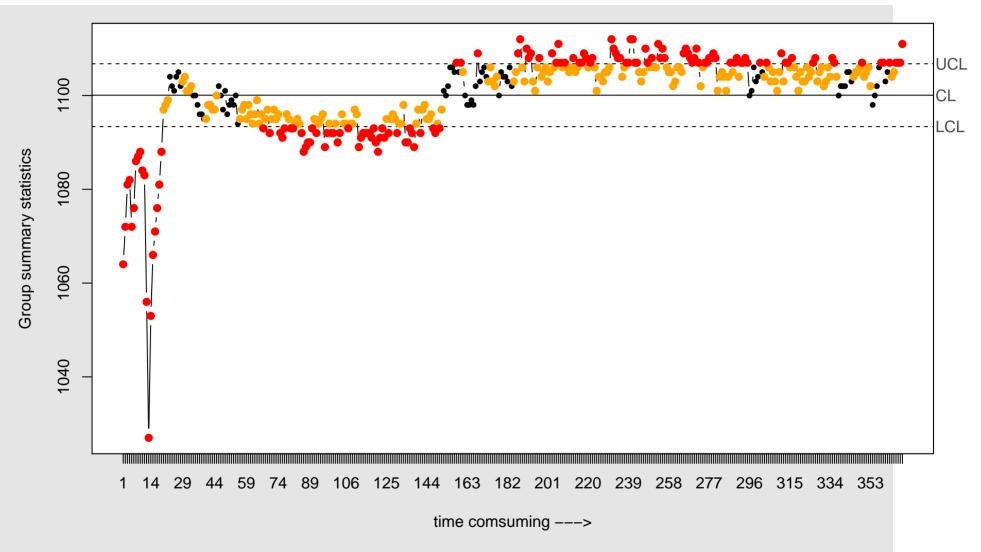


UCL = 1113.286

Number violating runs = 303

StdDev = 2.246507

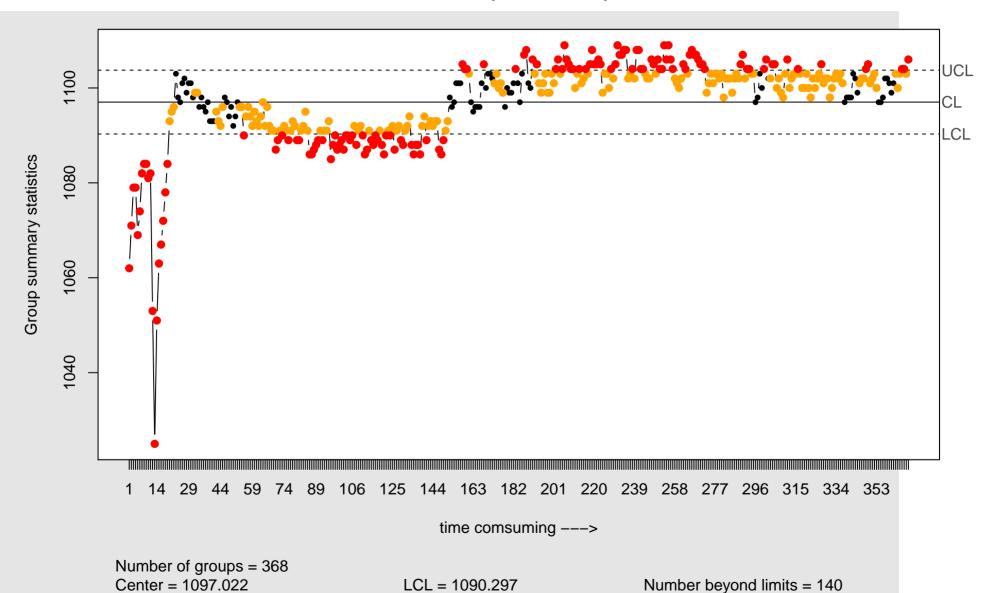




Number of groups = 368 Center = 1100.068 StdDev = 2.234429

LCL = 1093.365 UCL = 1106.771

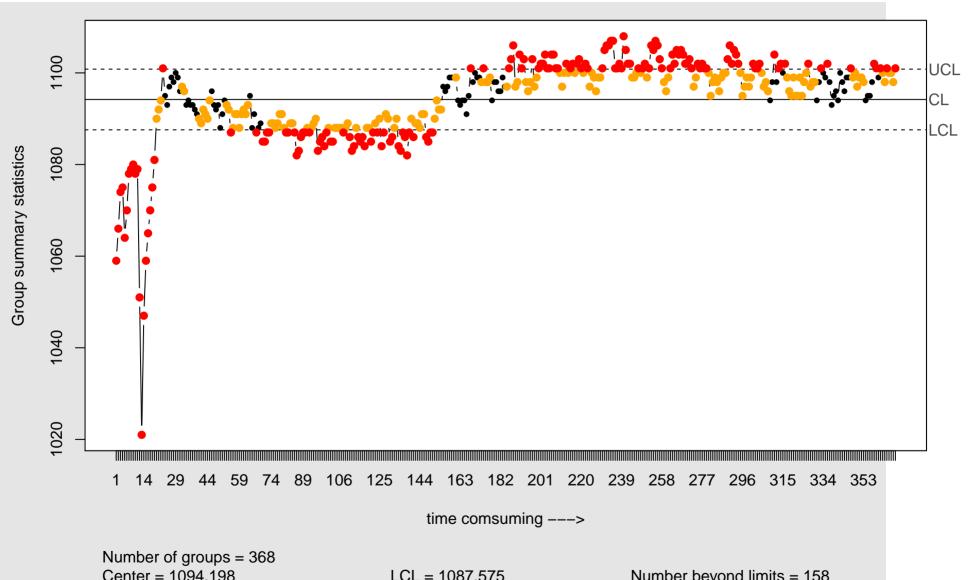
Number beyond limits = 142 Number violating runs = 292



UCL = 1103.747

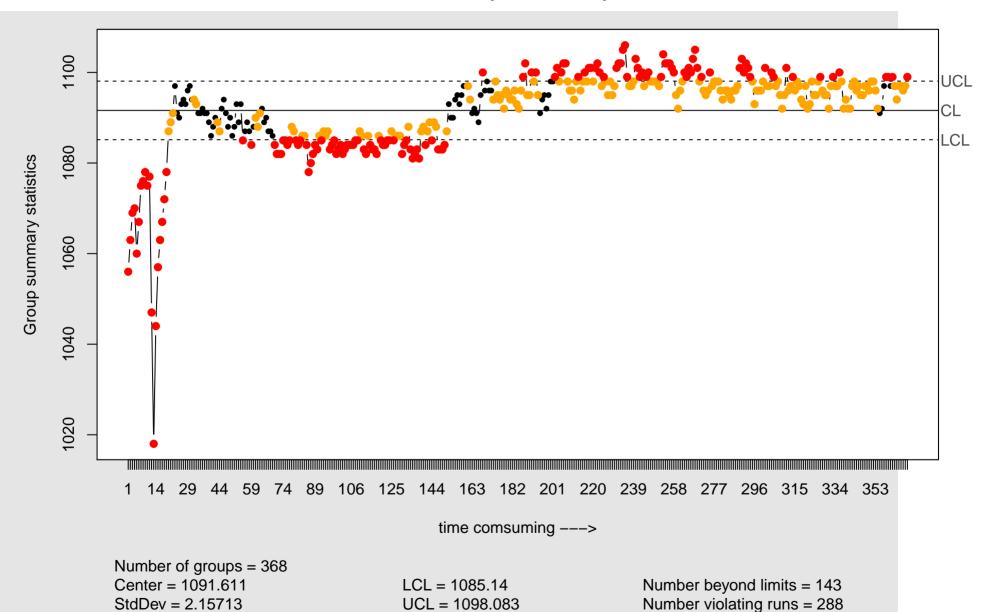
Number violating runs = 282

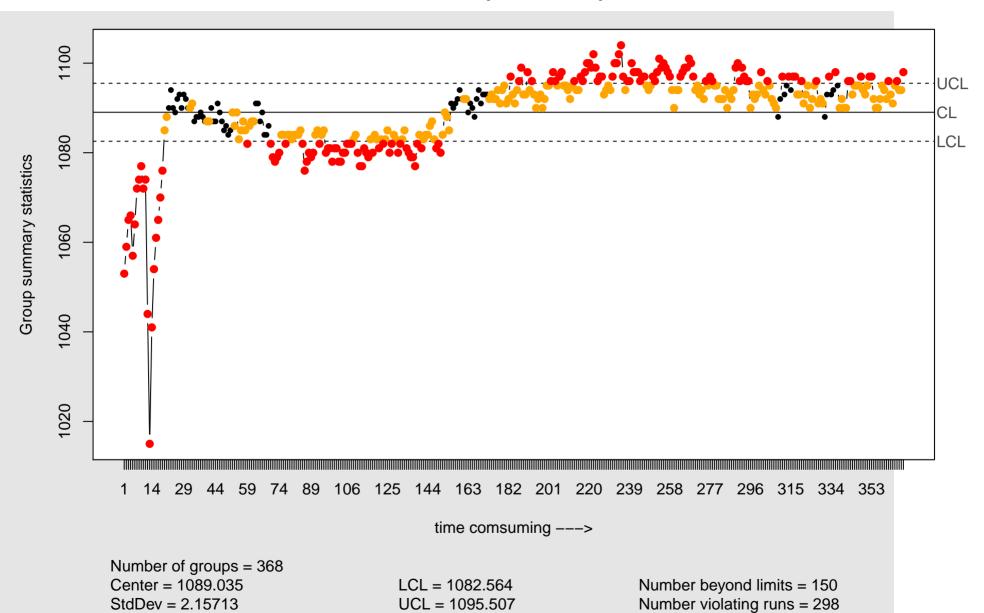
StdDev = 2.241676

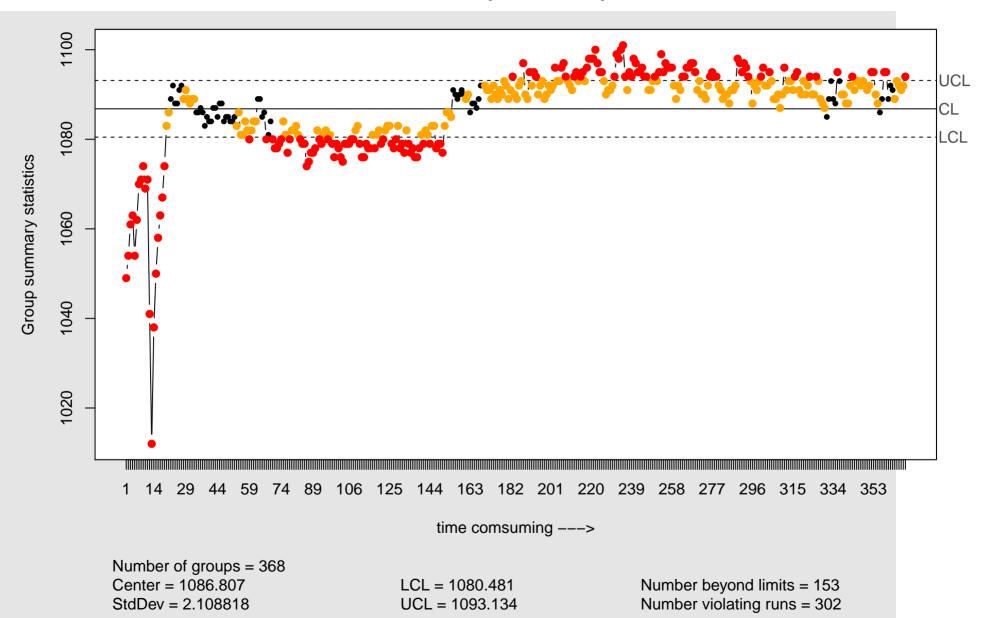


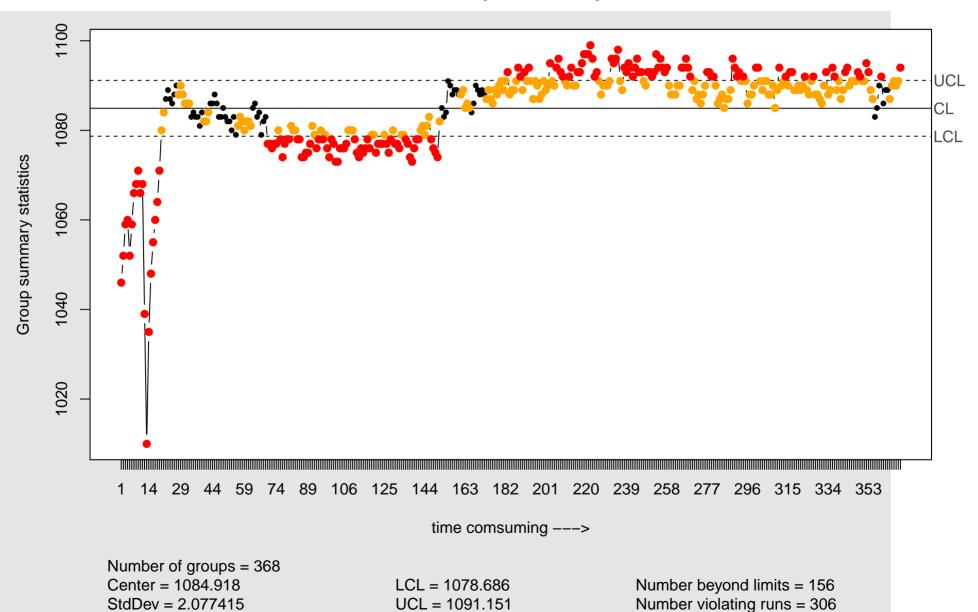
Center = 1094.198 StdDev = 2.207857

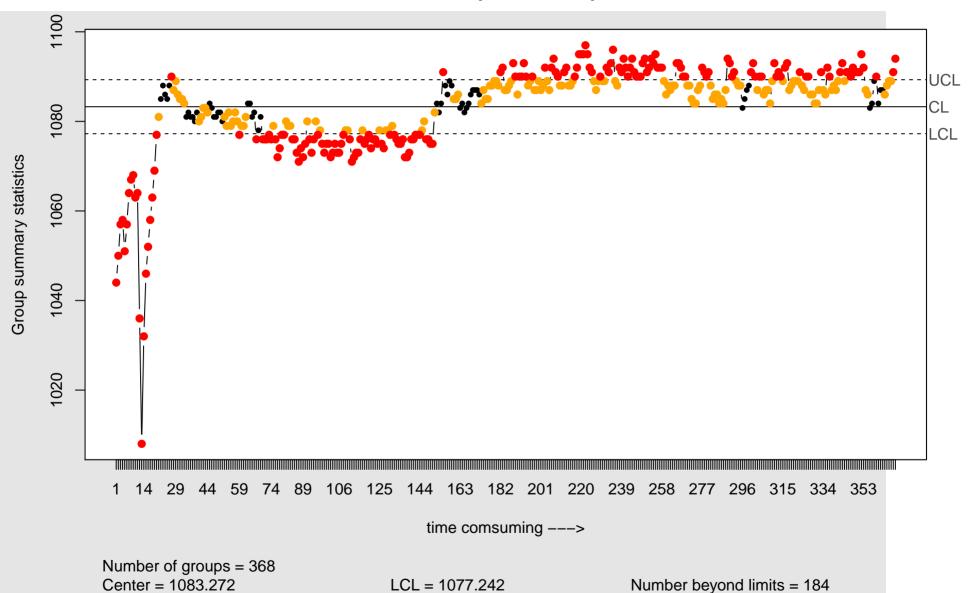
LCL = 1087.575 UCL = 1100.822 Number beyond limits = 158 Number violating runs = 278







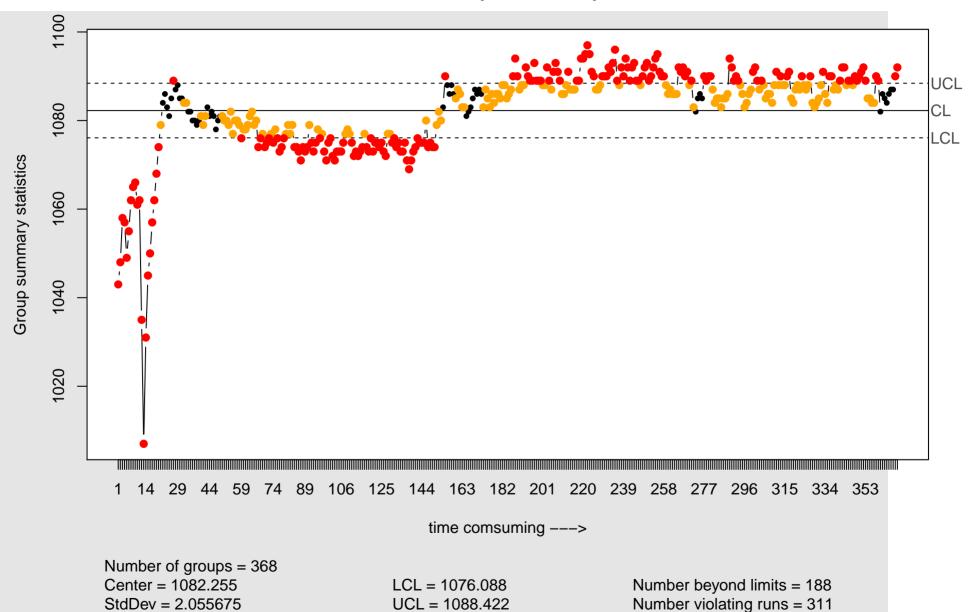


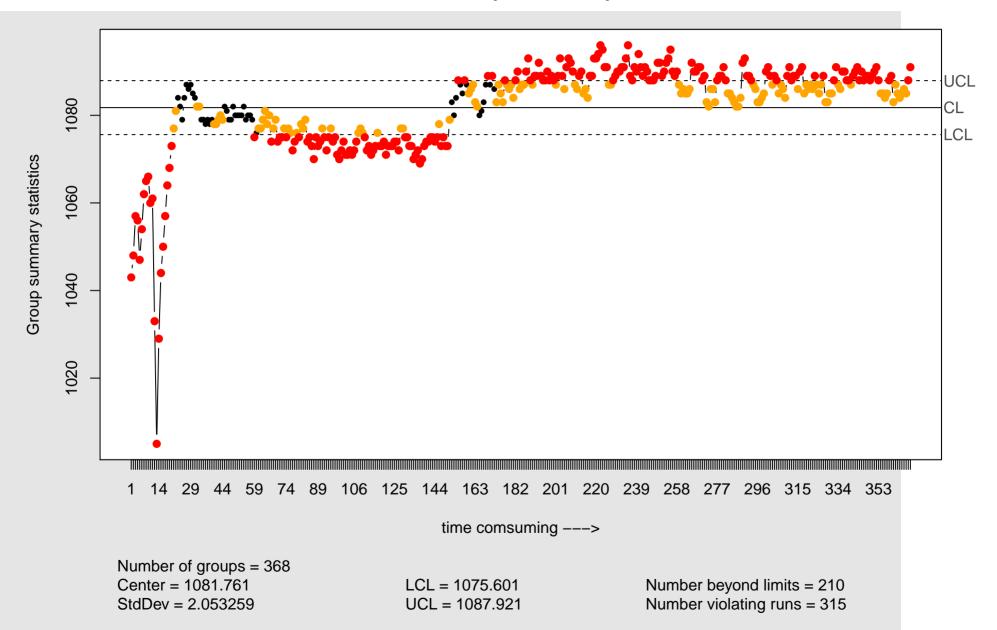


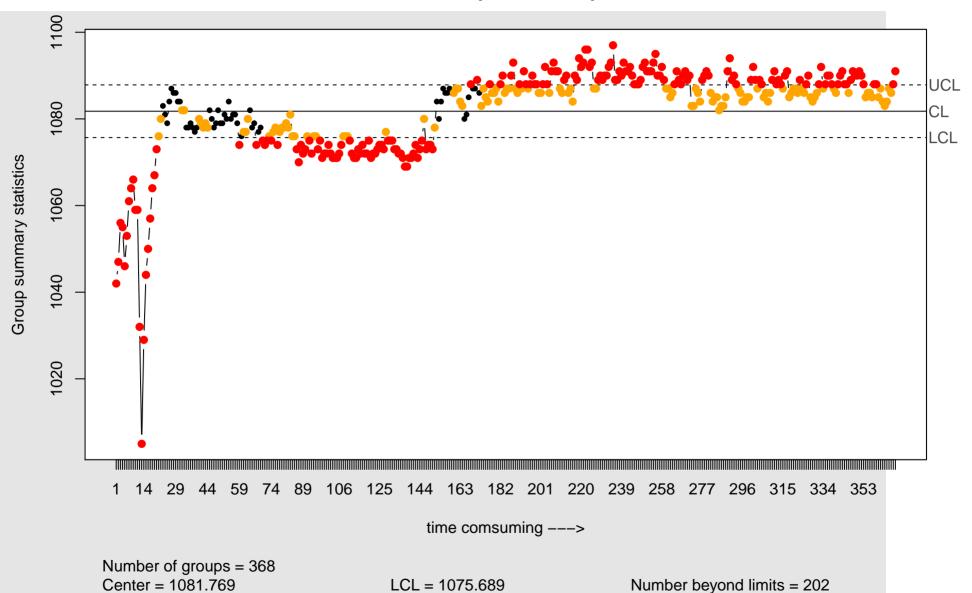
UCL = 1089.301

Number violating runs = 303

StdDev = 2.009778



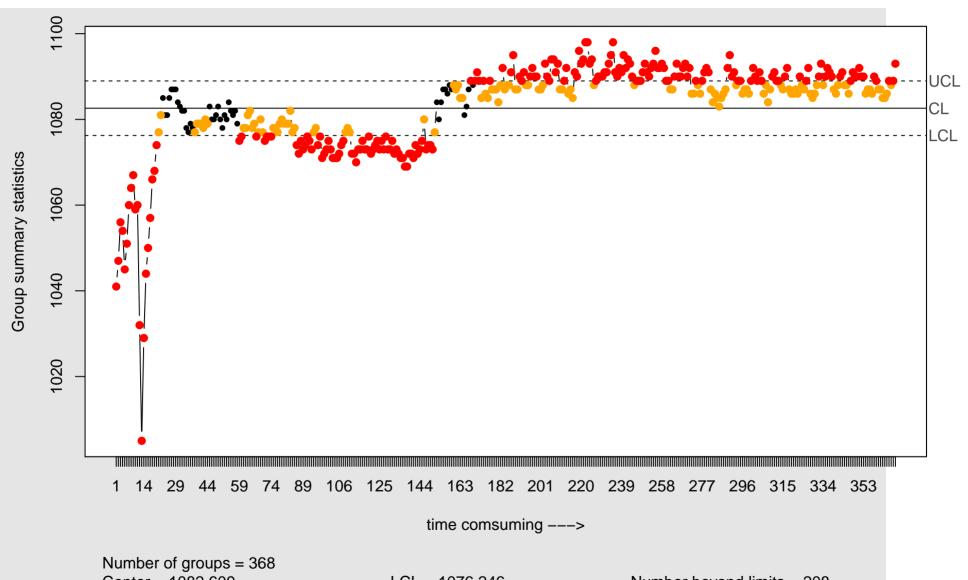




UCL = 1087.849

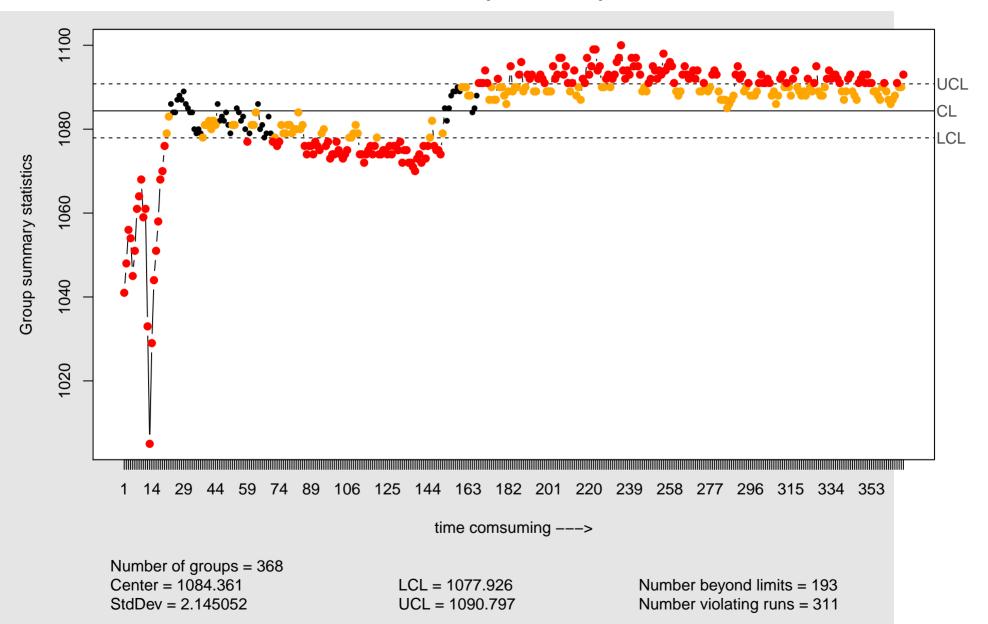
Number violating runs = 308

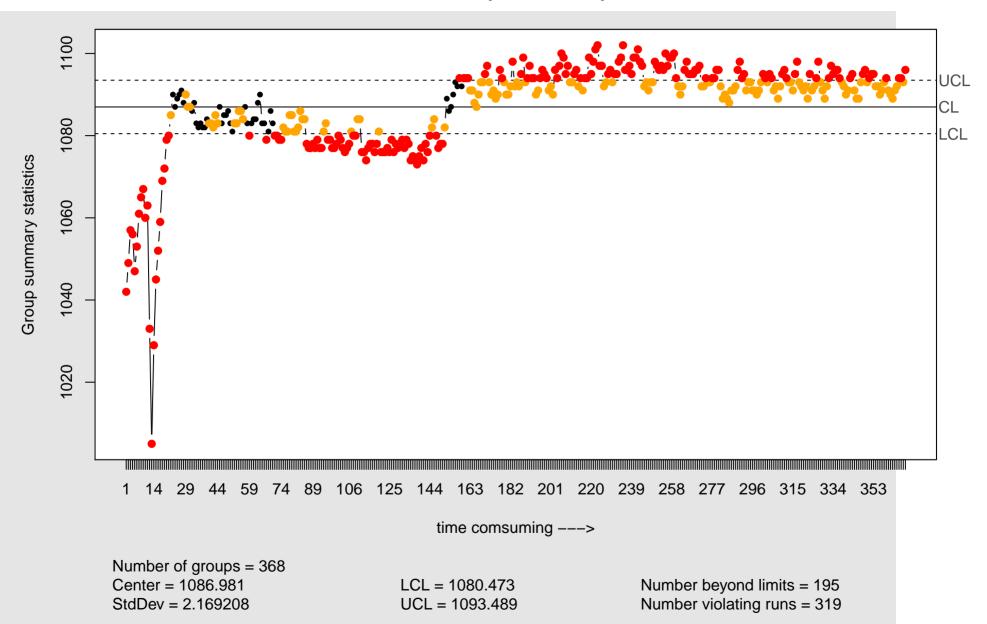
StdDev = 2.026688

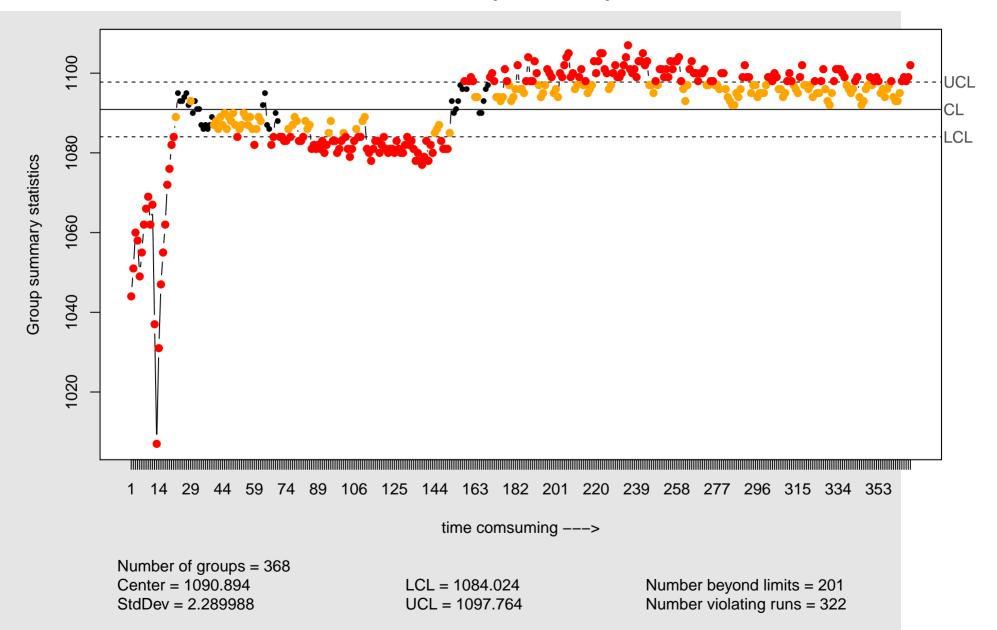


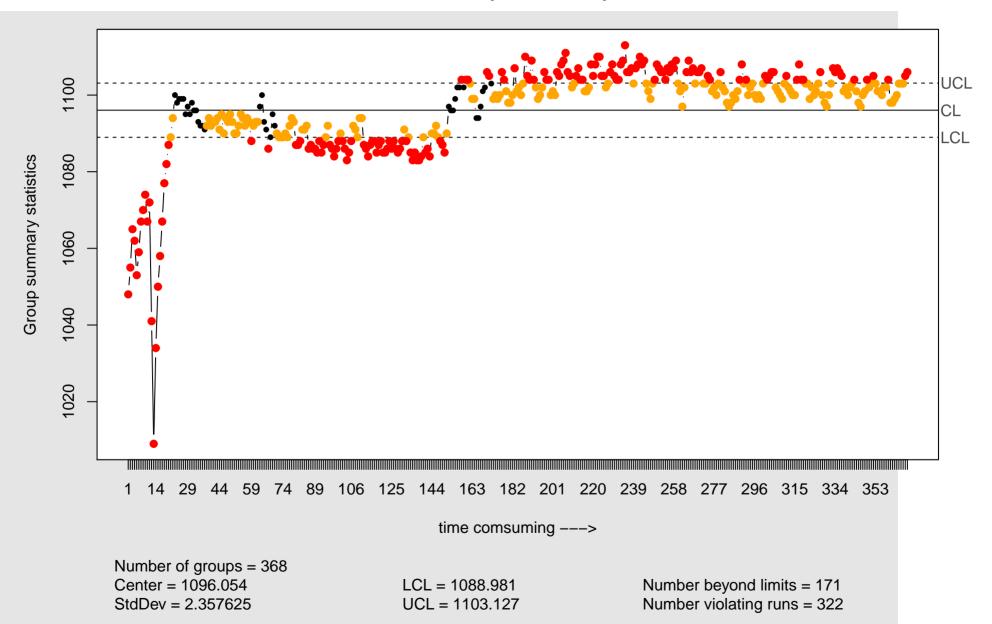
Number of groups = 368 Center = 1082.609 StdDev = 2.120896

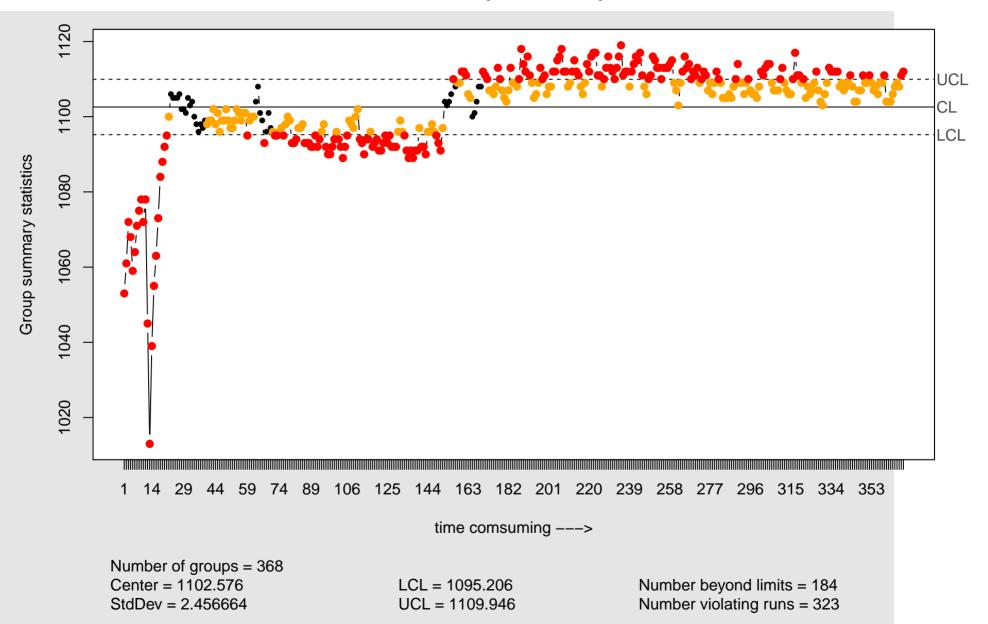
LCL = 1076.246 UCL = 1088.971 Number beyond limits = 208 Number violating runs = 316

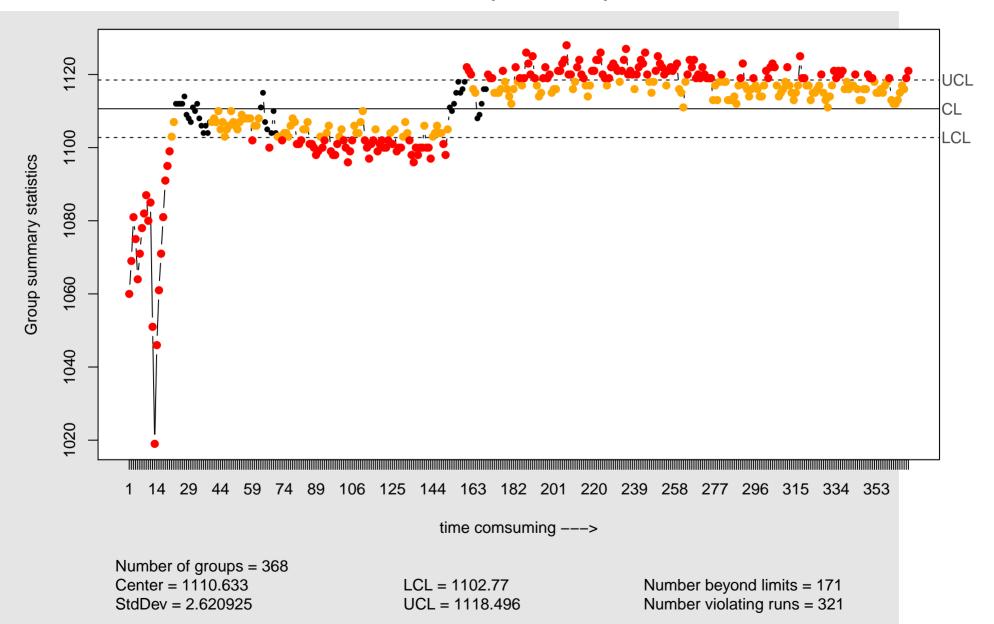


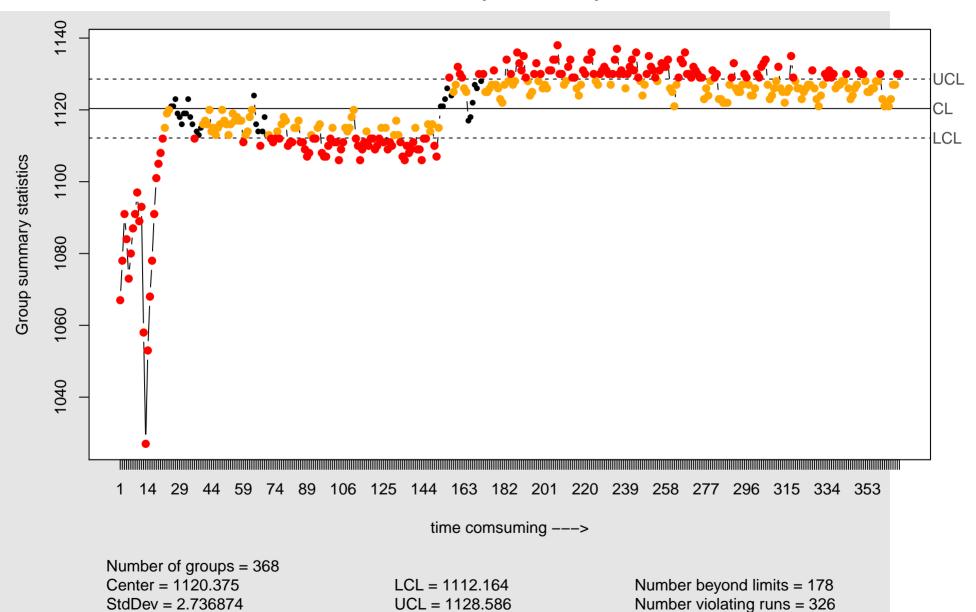


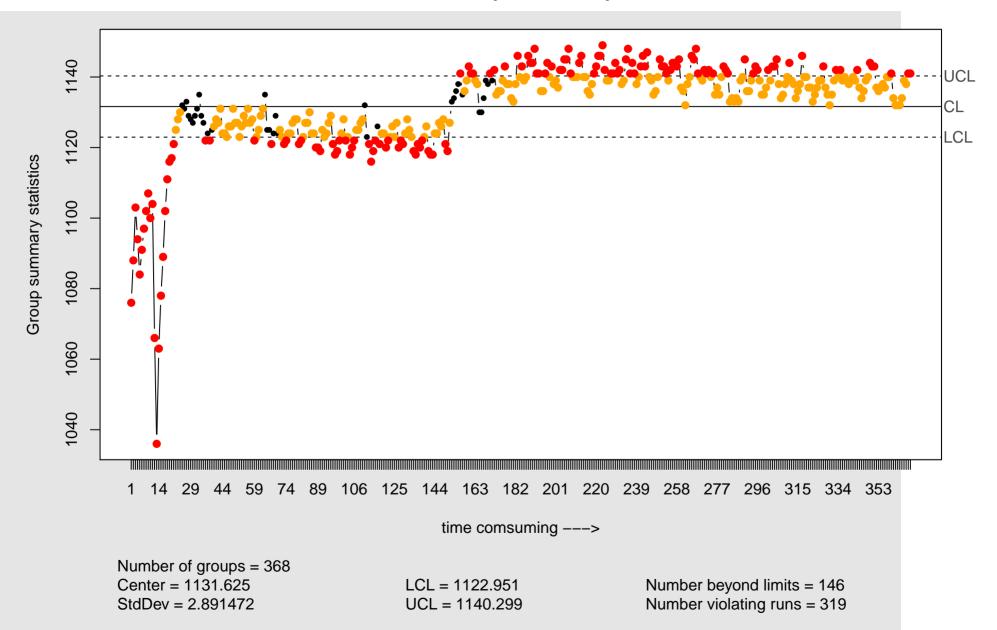


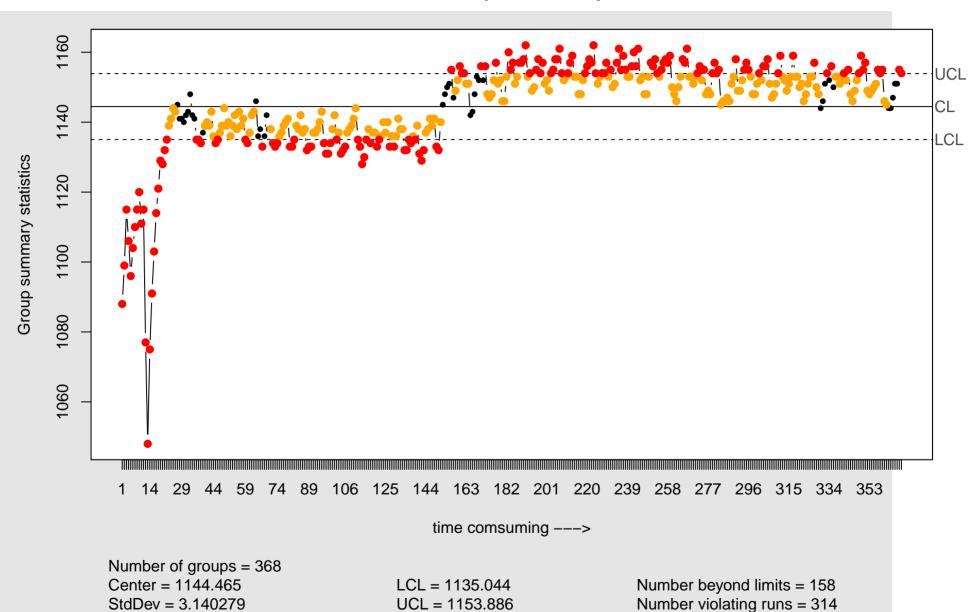


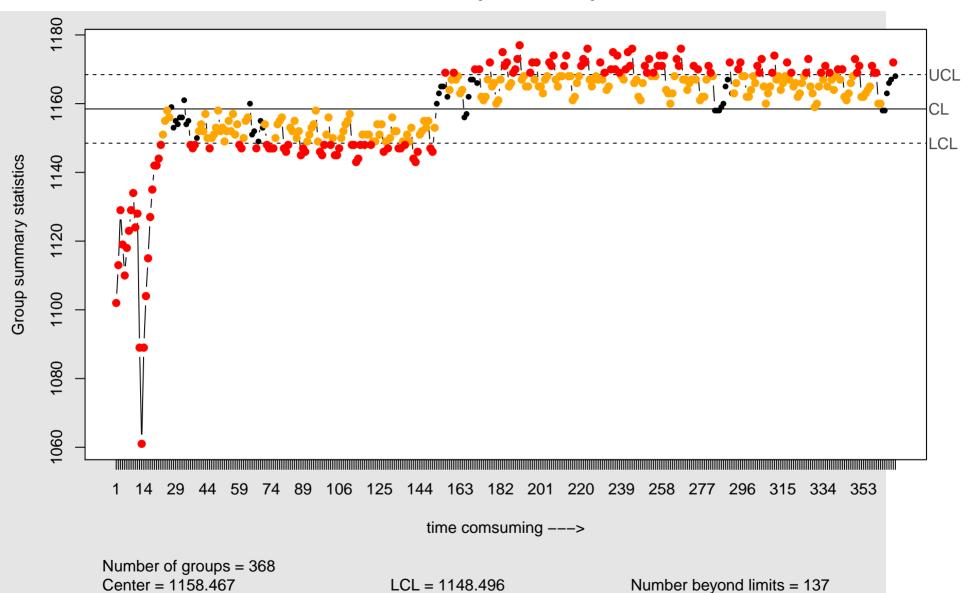












UCL = 1168.439

Number violating runs = 312

StdDev = 3.323864

