

## Check list - before the conversion

### Check list for system conversion with R407H

System condition before the conversion

| Preparation before the conversion  | Comments |
|--|----------|
| <input type="checkbox"/> <b>Overall system impression</b><br>Is the refrigeration system in a reliable condition? Could a system failure cause major damage to products or to production processes?  |          |
| <input type="checkbox"/> <b>Inspection of the system log</b><br>Is it the logbook for this system? Has the system received regular maintenance? Has the system required frequent repairs? Are there any signs indicating problems with leak tightness? |          |
| <input type="checkbox"/> <b>Oil management</b><br>Flooded evaporator (yes/no)? Collector in suction gas stream? Compressor location? Liquid collector with oil return system?<br>Is the oil return system already critical before the conversion?      |          |
| <input type="checkbox"/> <b>Inspect the elastomers and other materials used for the construction of the system</b><br>Are the seals / O-rings / shaft seals / membranes inside the solenoid valves suitable for use with R407H?                        |          |
| <input type="checkbox"/> <b>Pressure / temperature measurements / performance data (see admission pressure)</b><br>Does the pressure / temperature match R404A / R507? Overheating?<br>Refrigerating performance / performance coefficient?            |          |
| <input type="checkbox"/> <b>Assessment of the convertibility to R407H</b><br>Does the information in hand suggest that the system is suitable for a conversion to R407H?   |          |
| <input type="checkbox"/> <b>Allocation of the necessary retrofitting components</b><br>e.g. filters / seals / expansion valve and any other materials  |          |

## Check list – during the conversion

### Check list for system conversion with R407H

System status during the conversion

| Conversion operations  | Comments  |
|--|---|
| <input type="checkbox"/> <b>Pressure / temperature measurements</b><br>Identify the refrigerant used by comparing the measured pressure / temperature values (e.g. at the condenser outlet) with the wet-vapor table | Pressure, bar _____<br>Temperature, °C _____<br>R404A / R507 used y/n ? _____                                 |
| <input type="checkbox"/> <b>Removal of the refrigerant with suction</b><br>Note: use clearly labeled cylinders to store the reclaimed refrigerant only.<br>Provide sufficient cylinder volume.                       | End pressure, bar _____<br>Weight after, kg _____<br>Weight before, kg _____<br>Net weight R404A / R507 _____ |
| <input type="checkbox"/> <b>Exchange of system components</b><br>Including if necessary the exchange of the refrigeration machine oil  |   |
| <input type="checkbox"/> <b>Evacuation and leak test</b><br>End pressure after evacuation < 10 mbar  | End pressure, mbar _____<br>after 1 hr., mbar _____<br>after 8 hrs., mbar _____<br>after 12 hrs., mbar _____  |
| <input type="checkbox"/> <b>Filling with R407H</b><br>90% of the reclaimed quantity of R404A / R507 remaining quantity depends on the system condition   |   |
| <input type="checkbox"/> <b>Inspection of oil return</b>   | Oil level ok _____<br>after 24 hrs. _____<br>after 1 week _____   |
| <input type="checkbox"/> <b>Optimization of the operating status</b><br>Adjust overheating, adjust the pressure control, add POE oil if necessary to improve oil return  | Overheating _____<br>Pressure check _____<br>Added POE, kg _____  |
| <input type="checkbox"/> <b>Labeling</b><br>In accordance with EU517/2014  |   |

# Wet vapor table R404A / R507 / R407H\*

| Temp. | R404A |      |                   |                   | R507 |                   |                   | R407H |      |                   |                   |
|-------|-------|------|-------------------|-------------------|------|-------------------|-------------------|-------|------|-------------------|-------------------|
|       | p'    | p''  | Rho'              | Rho''             | p'   | Rho'              | Rho''             | p'    | p''  | Rho'              | Rho''             |
| °C    | bar   | bar  | kg/m <sup>3</sup> | kg/m <sup>3</sup> | bar  | kg/m <sup>3</sup> | kg/m <sup>3</sup> | bar   | bar  | kg/m <sup>3</sup> | kg/m <sup>3</sup> |
| -50   | 0.84  | 0.81 | 1317.83           | 4.44              | 0.86 | 1326.91           | 4.81              | 0.77  | 0.53 | 1367.87           | 2.31              |
| -49   | 0.89  | 0.85 | 1314.78           | 4.66              | 0.91 | 1323.82           | 5.04              | 0.81  | 0.56 | 1364.91           | 2.43              |
| -48   | 0.93  | 0.90 | 1311.72           | 4.88              | 0.95 | 1320.71           | 5.27              | 0.86  | 0.59 | 1361.95           | 2.56              |
| -47   | 0.98  | 0.94 | 1308.65           | 5.11              | 1.00 | 1317.60           | 5.52              | 0.90  | 0.62 | 1358.98           | 2.70              |
| -46   | 1.02  | 0.99 | 1305.58           | 5.35              | 1.05 | 1314.48           | 5.78              | 0.95  | 0.66 | 1356.00           | 2.84              |
| -45   | 1.07  | 1.04 | 1302.49           | 5.60              | 1.10 | 1311.36           | 6.04              | 0.99  | 0.69 | 1353.01           | 2.98              |
| -44   | 1.13  | 1.09 | 1299.40           | 5.86              | 1.15 | 1308.22           | 6.31              | 1.04  | 0.73 | 1350.02           | 3.14              |
| -43   | 1.18  | 1.14 | 1296.30           | 6.13              | 1.21 | 1305.07           | 6.60              | 1.09  | 0.77 | 1347.01           | 3.29              |
| -42   | 1.24  | 1.19 | 1293.19           | 6.40              | 1.27 | 1301.91           | 6.89              | 1.15  | 0.81 | 1344.00           | 3.46              |
| -41   | 1.29  | 1.25 | 1290.07           | 6.69              | 1.33 | 1298.75           | 7.20              | 1.20  | 0.85 | 1340.98           | 3.63              |
| -40   | 1.35  | 1.31 | 1286.93           | 6.98              | 1.39 | 1295.57           | 7.51              | 1.26  | 0.90 | 1337.96           | 3.81              |
| -39   | 1.41  | 1.37 | 1283.79           | 7.29              | 1.45 | 1292.38           | 7.83              | 1.32  | 0.94 | 1334.92           | 3.99              |
| -38   | 1.48  | 1.43 | 1280.64           | 7.61              | 1.52 | 1289.18           | 8.17              | 1.38  | 0.99 | 1331.87           | 4.18              |
| -37   | 1.55  | 1.50 | 1277.48           | 7.93              | 1.58 | 1285.97           | 8.52              | 1.44  | 1.04 | 1328.82           | 4.38              |
| -36   | 1.61  | 1.57 | 1274.31           | 8.27              | 1.65 | 1282.75           | 8.87              | 1.51  | 1.09 | 1325.76           | 4.59              |
| -35   | 1.69  | 1.64 | 1271.12           | 8.62              | 1.73 | 1279.52           | 9.24              | 1.58  | 1.15 | 1322.68           | 4.80              |
| -34   | 1.76  | 1.71 | 1267.93           | 8.98              | 1.80 | 1276.27           | 9.63              | 1.65  | 1.20 | 1319.60           | 5.02              |
| -33   | 1.83  | 1.78 | 1264.72           | 9.36              | 1.88 | 1273.01           | 10.02             | 1.72  | 1.26 | 1316.51           | 5.25              |
| -32   | 1.91  | 1.86 | 1261.50           | 9.74              | 1.96 | 1269.74           | 10.43             | 1.80  | 1.32 | 1313.41           | 5.49              |
| -31   | 1.99  | 1.94 | 1258.27           | 10.14             | 2.04 | 1266.46           | 10.85             | 1.87  | 1.39 | 1310.30           | 5.73              |
| -30   | 2.08  | 2.02 | 1255.02           | 10.55             | 2.13 | 1263.17           | 11.28             | 1.96  | 1.45 | 1307.17           | 5.99              |
| -29   | 2.16  | 2.11 | 1251.76           | 10.97             | 2.22 | 1259.86           | 11.73             | 2.04  | 1.52 | 1304.04           | 6.25              |
| -28   | 2.25  | 2.20 | 1248.49           | 11.41             | 2.31 | 1256.53           | 12.19             | 2.13  | 1.59 | 1300.90           | 6.52              |
| -27   | 2.35  | 2.29 | 1245.21           | 11.86             | 2.40 | 1253.20           | 12.66             | 2.21  | 1.66 | 1297.74           | 6.80              |
| -26   | 2.44  | 2.38 | 1241.91           | 12.32             | 2.50 | 1249.84           | 13.15             | 2.31  | 1.74 | 1294.58           | 7.09              |
| -25   | 2.54  | 2.48 | 1238.59           | 12.80             | 2.60 | 1246.48           | 13.66             | 2.40  | 1.81 | 1291.40           | 7.39              |
| -24   | 2.64  | 2.57 | 1235.27           | 13.29             | 2.70 | 1243.09           | 14.17             | 2.50  | 1.89 | 1288.21           | 7.70              |
| -23   | 2.74  | 2.68 | 1231.92           | 13.80             | 2.81 | 1239.70           | 14.71             | 2.60  | 1.98 | 1285.01           | 8.02              |
| -22   | 2.85  | 2.78 | 1228.57           | 14.32             | 2.92 | 1236.28           | 15.26             | 2.70  | 2.06 | 1281.80           | 8.36              |
| -21   | 2.96  | 2.89 | 1225.19           | 14.86             | 3.03 | 1232.85           | 15.83             | 2.81  | 2.15 | 1278.58           | 8.70              |
| -20   | 3.07  | 3.00 | 1221.81           | 15.41             | 3.15 | 1229.41           | 16.41             | 2.92  | 2.24 | 1275.34           | 9.05              |

| Temp. | R404A |      |                   |                   | R507 |                   |                   | R407H |      |                   |                   |
|-------|-------|------|-------------------|-------------------|------|-------------------|-------------------|-------|------|-------------------|-------------------|
|       | p'    | p''  | Rho'              | Rho''             | p'   | Rho'              | Rho''             | p'    | p''  | Rho'              | Rho''             |
| °C    | bar   | bar  | kg/m <sup>3</sup> | kg/m <sup>3</sup> | bar  | kg/m <sup>3</sup> | kg/m <sup>3</sup> | bar   | bar  | kg/m <sup>3</sup> | kg/m <sup>3</sup> |
| -19   | 3.19  | 3.12 | 1218.40           | 15.98             | 3.26 | 1225.94           | 17.01             | 3.04  | 2.34 | 1272.09           | 9.41              |
| -18   | 3.31  | 3.24 | 1214.98           | 16.57             | 3.39 | 1222.46           | 17.63             | 3.15  | 2.44 | 1268.83           | 9.79              |
| -17   | 3.43  | 3.36 | 1211.54           | 17.17             | 3.51 | 1218.97           | 18.26             | 3.27  | 2.54 | 1265.55           | 10.18             |
| -16   | 3.56  | 3.48 | 1208.08           | 17.79             | 3.64 | 1215.45           | 18.92             | 3.40  | 2.64 | 1262.26           | 10.58             |
| -15   | 3.69  | 3.61 | 1204.61           | 18.43             | 3.77 | 1211.91           | 19.59             | 3.53  | 2.75 | 1258.96           | 10.99             |
| -14   | 3.82  | 3.74 | 1201.11           | 19.09             | 3.91 | 1208.36           | 20.28             | 3.66  | 2.86 | 1255.64           | 11.41             |
| -13   | 3.96  | 3.88 | 1197.60           | 19.76             | 4.05 | 1204.78           | 20.99             | 3.79  | 2.97 | 1252.31           | 11.85             |
| -12   | 4.10  | 4.02 | 1194.07           | 20.46             | 4.20 | 1201.19           | 21.72             | 3.93  | 3.09 | 1248.97           | 12.30             |
| -11   | 4.24  | 4.16 | 1190.52           | 21.17             | 4.34 | 1197.58           | 22.48             | 4.07  | 3.21 | 1245.60           | 12.77             |
| -10   | 4.39  | 4.31 | 1186.95           | 21.90             | 4.50 | 1193.94           | 23.25             | 4.22  | 3.34 | 1242.23           | 13.24             |
| -9    | 4.54  | 4.46 | 1183.36           | 22.66             | 4.65 | 1190.28           | 24.04             | 4.37  | 3.47 | 1238.84           | 13.74             |
| -8    | 4.70  | 4.61 | 1179.74           | 23.44             | 4.81 | 1186.60           | 24.86             | 4.53  | 3.60 | 1235.43           | 14.24             |
| -7    | 4.86  | 4.77 | 1176.11           | 24.23             | 4.98 | 1182.90           | 25.70             | 4.68  | 3.73 | 1232.00           | 14.76             |
| -6    | 5.02  | 4.94 | 1172.45           | 25.05             | 5.14 | 1179.17           | 26.56             | 4.85  | 3.87 | 1228.56           | 15.30             |
| -5    | 5.19  | 5.10 | 1168.77           | 25.90             | 5.32 | 1175.43           | 27.45             | 5.01  | 4.02 | 1225.10           | 15.85             |
| -4    | 5.37  | 5.27 | 1165.07           | 26.76             | 5.49 | 1171.65           | 28.36             | 5.19  | 4.17 | 1221.63           | 16.42             |
| -3    | 5.54  | 5.45 | 1161.34           | 27.65             | 5.67 | 1167.85           | 29.29             | 5.36  | 4.32 | 1218.13           | 17.01             |
| -2    | 5.73  | 5.63 | 1157.59           | 28.56             | 5.86 | 1164.03           | 30.25             | 5.54  | 4.48 | 1214.62           | 17.61             |
| -1    | 5.91  | 5.81 | 1153.82           | 29.50             | 6.05 | 1160.18           | 31.24             | 5.73  | 4.64 | 1211.09           | 18.23             |
| 0     | 6.10  | 6.00 | 1150.01           | 30.47             | 6.24 | 1156.30           | 32.25             | 5.92  | 4.80 | 1207.54           | 18.86             |
| 1     | 6.30  | 6.20 | 1146.18           | 31.46             | 6.44 | 1152.40           | 33.29             | 6.11  | 4.97 | 1203.98           | 19.51             |
| 2     | 6.50  | 6.40 | 1142.33           | 32.47             | 6.65 | 1148.46           | 34.36             | 6.31  | 5.15 | 1200.39           | 20.19             |
| 3     | 6.70  | 6.60 | 1138.44           | 33.52             | 6.86 | 1144.50           | 35.46             | 6.52  | 5.32 | 1196.78           | 20.88             |
| 4     | 6.91  | 6.81 | 1134.53           | 34.59             | 7.07 | 1140.51           | 36.59             | 6.72  | 5.51 | 1193.15           | 21.59             |
| 5     | 7.12  | 7.02 | 1130.59           | 35.69             | 7.29 | 1136.48           | 37.75             | 6.94  | 5.70 | 1189.50           | 22.32             |
| 6     | 7.34  | 7.24 | 1126.62           | 36.82             | 7.51 | 1132.43           | 38.93             | 7.16  | 5.89 | 1185.83           | 23.07             |
| 7     | 7.57  | 7.46 | 1122.61           | 37.99             | 7.74 | 1128.34           | 40.16             | 7.38  | 6.09 | 1182.13           | 23.84             |
| 8     | 7.80  | 7.69 | 1118.58           | 39.18             | 7.98 | 1124.22           | 41.41             | 7.61  | 6.29 | 1178.42           | 24.63             |
| 9     | 8.03  | 7.92 | 1114.51           | 40.40             | 8.22 | 1120.06           | 42.70             | 7.85  | 6.50 | 1174.68           | 25.44             |
| 10    | 8.27  | 8.16 | 1110.41           | 41.66             | 8.46 | 1115.87           | 44.03             | 8.09  | 6.72 | 1170.91           | 26.27             |

\*based on Refprop 9.0

| Temp. | R404A |       |                   |                   | R507  |                   |                   | R407H |       |                   |                   |
|-------|-------|-------|-------------------|-------------------|-------|-------------------|-------------------|-------|-------|-------------------|-------------------|
|       | p'    | p''   | Rho'              | Rho''             | p'    | Rho'              | Rho''             | p'    | p''   | Rho'              | Rho''             |
| °C    | bar   | bar   | kg/m <sup>3</sup> | kg/m <sup>3</sup> | bar   | kg/m <sup>3</sup> | kg/m <sup>3</sup> | bar   | bar   | kg/m <sup>3</sup> | kg/m <sup>3</sup> |
| 11    | 8.52  | 8.40  | 1106.27           | 42.96             | 8.71  | 1111.64           | 45.39             | 8.33  | 6.93  | 1167.12           | 27.13             |
| 12    | 8.77  | 8.65  | 1102.10           | 44.29             | 8.97  | 1107.37           | 46.78             | 8.58  | 7.16  | 1163.31           | 28.01             |
| 13    | 9.02  | 8.90  | 1097.89           | 45.65             | 9.23  | 1103.07           | 48.22             | 8.84  | 7.39  | 1159.47           | 28.92             |
| 14    | 9.28  | 9.16  | 1093.64           | 47.05             | 9.49  | 1098.73           | 49.69             | 9.10  | 7.62  | 1155.61           | 29.85             |
| 15    | 9.55  | 9.43  | 1089.36           | 48.49             | 9.77  | 1094.34           | 51.21             | 9.37  | 7.87  | 1151.71           | 30.80             |
| 16    | 9.82  | 9.70  | 1085.03           | 49.97             | 10.04 | 1089.91           | 52.76             | 9.64  | 8.11  | 1147.79           | 31.78             |
| 17    | 10.10 | 9.98  | 1080.66           | 51.49             | 10.33 | 1085.44           | 54.36             | 9.92  | 8.37  | 1143.85           | 32.78             |
| 18    | 10.39 | 10.26 | 1076.25           | 53.05             | 10.62 | 1080.92           | 56.01             | 10.21 | 8.62  | 1139.87           | 33.82             |
| 19    | 10.68 | 10.55 | 1071.80           | 54.66             | 10.92 | 1076.36           | 57.70             | 10.50 | 8.89  | 1135.86           | 34.88             |
| 20    | 10.97 | 10.84 | 1067.30           | 56.31             | 11.22 | 1071.75           | 59.44             | 10.80 | 9.16  | 1131.83           | 35.96             |
| 21    | 11.27 | 11.15 | 1062.75           | 58.00             | 11.53 | 1067.08           | 61.22             | 11.11 | 9.44  | 1127.76           | 37.08             |
| 22    | 11.58 | 11.45 | 1058.15           | 59.74             | 11.84 | 1062.37           | 63.06             | 11.42 | 9.72  | 1123.66           | 38.23             |
| 23    | 11.90 | 11.77 | 1053.51           | 61.54             | 12.16 | 1057.60           | 64.95             | 11.73 | 10.01 | 1119.52           | 39.41             |
| 24    | 12.22 | 12.09 | 1048.81           | 63.38             | 12.49 | 1052.78           | 66.89             | 12.06 | 10.31 | 1115.36           | 40.62             |
| 25    | 12.55 | 12.41 | 1044.05           | 65.27             | 12.83 | 1047.90           | 68.89             | 12.39 | 10.61 | 1111.15           | 41.86             |
| 26    | 12.88 | 12.74 | 1039.24           | 67.22             | 13.17 | 1042.96           | 70.94             | 12.73 | 10.92 | 1106.91           | 43.14             |
| 27    | 13.22 | 13.08 | 1034.38           | 69.23             | 13.51 | 1037.96           | 73.06             | 13.07 | 11.24 | 1102.64           | 44.45             |
| 28    | 13.57 | 13.43 | 1029.45           | 71.29             | 13.87 | 1032.89           | 75.24             | 13.42 | 11.56 | 1098.33           | 45.79             |
| 29    | 13.92 | 13.78 | 1024.46           | 73.42             | 14.23 | 1027.76           | 77.48             | 13.78 | 11.89 | 1093.97           | 47.17             |
| 30    | 14.28 | 14.14 | 1019.41           | 75.61             | 14.60 | 1022.56           | 79.80             | 14.14 | 12.23 | 1089.58           | 48.59             |
| 31    | 14.65 | 14.51 | 1014.29           | 77.86             | 14.98 | 1017.29           | 82.18             | 14.52 | 12.57 | 1085.15           | 50.05             |
| 32    | 15.03 | 14.89 | 1009.09           | 80.18             | 15.36 | 1011.94           | 84.63             | 14.90 | 12.93 | 1080.67           | 51.55             |
| 33    | 15.41 | 15.27 | 1003.83           | 82.57             | 15.75 | 1006.52           | 87.16             | 15.28 | 13.28 | 1076.15           | 53.09             |
| 34    | 15.80 | 15.66 | 998.49            | 85.04             | 16.15 | 1001.01           | 89.77             | 15.68 | 13.65 | 1071.59           | 54.67             |
| 35    | 16.20 | 16.05 | 993.07            | 87.58             | 16.55 | 995.42            | 92.46             | 16.08 | 14.03 | 1066.98           | 56.29             |
| 36    | 16.60 | 16.45 | 987.57            | 90.20             | 16.97 | 989.73            | 95.24             | 16.49 | 14.41 | 1062.32           | 57.96             |
| 37    | 17.01 | 16.87 | 981.98            | 92.91             | 17.39 | 983.96            | 98.11             | 16.90 | 14.80 | 1057.61           | 59.68             |
| 38    | 17.43 | 17.28 | 976.30            | 95.70             | 17.81 | 978.09            | 101.08            | 17.33 | 15.20 | 1052.84           | 61.44             |
| 39    | 17.86 | 17.71 | 970.52            | 98.59             | 18.25 | 972.11            | 104.15            | 17.76 | 15.61 | 1048.03           | 63.26             |
| 40    | 18.29 | 18.15 | 964.65            | 101.57            | 18.70 | 966.03            | 107.32            | 18.20 | 16.02 | 1043.16           | 65.12             |

| Temp. | R404A |       |                   |                   | R507  |                   |                   | R407H |       |                   |                   |
|-------|-------|-------|-------------------|-------------------|-------|-------------------|-------------------|-------|-------|-------------------|-------------------|
|       | p'    | p''   | Rho'              | Rho''             | p'    | Rho'              | Rho''             | p'    | p''   | Rho'              | Rho''             |
| °C    | bar   | bar   | kg/m <sup>3</sup> | kg/m <sup>3</sup> | bar   | kg/m <sup>3</sup> | kg/m <sup>3</sup> | bar   | bar   | kg/m <sup>3</sup> | kg/m <sup>3</sup> |
| 41    | 18.74 | 18.59 | 958.67            | 104.65            | 19.15 | 959.83            | 110.60            | 18.65 | 16.44 | 1038.23           | 67.04             |
| 42    | 19.19 | 19.04 | 952.58            | 107.84            | 19.61 | 953.52            | 114.00            | 19.10 | 16.88 | 1033.25           | 69.01             |
| 43    | 19.65 | 19.50 | 946.38            | 111.15            | 20.08 | 947.07            | 117.52            | 19.57 | 17.32 | 1028.20           | 71.04             |
| 44    | 20.12 | 19.97 | 940.05            | 114.57            | 20.56 | 940.50            | 121.17            | 20.04 | 17.77 | 1023.09           | 73.13             |
| 45    | 20.59 | 20.44 | 933.59            | 118.12            | 21.04 | 933.78            | 124.97            | 20.52 | 18.22 | 1017.91           | 75.28             |
| 46    | 21.08 | 20.93 | 927.00            | 121.80            | 21.54 | 926.91            | 128.91            | 21.01 | 18.69 | 1012.67           | 77.50             |
| 47    | 21.57 | 21.42 | 920.26            | 125.62            | 22.04 | 919.88            | 133.00            | 21.51 | 19.17 | 1007.35           | 79.78             |
| 48    | 22.07 | 21.92 | 913.37            | 129.59            | 22.56 | 912.68            | 137.27            | 22.01 | 19.65 | 1001.96           | 82.13             |
| 49    | 22.59 | 22.44 | 906.31            | 133.73            | 23.08 | 905.29            | 141.72            | 22.53 | 20.15 | 996.49            | 84.56             |
| 50    | 23.11 | 22.96 | 899.07            | 138.04            | 23.61 | 897.71            | 146.36            | 23.05 | 20.65 | 990.95            | 87.06             |
| 51    | 23.64 | 23.49 | 891.65            | 142.53            | 24.15 | 889.91            | 151.21            | 23.59 | 21.17 | 985.31            | 89.63             |
| 52    | 24.18 | 24.03 | 884.02            | 147.22            | 24.70 | 881.88            | 156.29            | 24.13 | 21.69 | 979.59            | 92.30             |
| 53    | 24.72 | 24.58 | 876.17            | 152.13            | 25.27 | 873.61            | 161.62            | 24.68 | 22.23 | 973.78            | 95.04             |
| 54    | 25.28 | 25.14 | 868.07            | 157.28            | 25.84 | 865.05            | 167.21            | 25.24 | 22.77 | 967.86            | 97.88             |
| 55    | 25.85 | 25.71 | 859.72            | 162.68            | 26.42 | 856.20            | 173.11            | 25.81 | 23.33 | 961.85            | 100.81            |
| 56    | 26.43 | 26.29 | 851.09            | 168.36            | 27.01 | 847.02            | 179.34            | 26.39 | 23.89 | 955.73            | 103.84            |
| 57    | 27.02 | 26.88 | 842.13            | 174.35            | 27.61 | 837.46            | 185.93            | 26.98 | 24.47 | 949.49            | 106.98            |
| 58    | 27.62 | 27.48 | 832.83            | 180.69            | 28.23 | 827.50            | 192.94            | 27.58 | 25.06 | 943.14            | 110.23            |
| 59    | 28.23 | 28.09 | 823.14            | 187.41            | 28.85 | 817.06            | 200.42            | 28.19 | 25.66 | 936.66            | 113.59            |
| 60    | 28.85 | 28.71 | 813.01            | 194.57            | 29.49 | 806.09            | 208.43            | 28.80 | 26.27 | 930.04            | 117.08            |
| 61    | 29.48 | 29.34 | 802.38            | 202.22            | 30.13 | 794.50            | 217.06            | 29.43 | 26.89 | 923.28            | 120.70            |
| 62    | 30.12 | 29.99 | 791.18            | 210.43            | 30.79 | 782.18            | 226.43            | 30.07 | 27.52 | 916.36            | 124.46            |
| 63    | 30.78 | 30.65 | 779.31            | 219.32            | 31.46 | 768.99            | 236.67            | 30.72 | 28.17 | 909.29            | 128.37            |
| 64    | 31.45 | 31.32 | 766.64            | 228.99            | 32.15 | 754.73            | 247.99            | 31.38 | 28.83 | 902.03            | 132.44            |
| 65    | 32.13 | 32.00 | 753.01            | 239.62            | 32.85 | 739.11            | 260.67            | 32.05 | 29.50 | 894.59            | 136.68            |
| 66    | 32.82 | 32.70 | 738.18            | 251.43            | 33.56 | 721.72            | 275.14            | 32.73 | 30.18 | 886.94            | 141.10            |
| 67    | 33.52 | 33.41 | 721.80            | 264.78            | 34.28 | 701.83            | 292.12            | 33.42 | 30.88 | 879.07            | 145.72            |
| 68    | 34.24 | 34.14 | 703.33            | 280.19            | 35.03 | 678.14            | 312.90            | 34.12 | 31.59 | 870.96            | 150.55            |
| 69    | 34.98 | 34.88 | 681.82            | 298.59            | 35.78 | 647.65            | 340.43            | 34.83 | 32.31 | 862.58            | 155.62            |
| 70    | 35.72 | 35.64 | 655.33            | 321.83            | 36.56 | 599.65            | 385.06            | 35.56 | 33.05 | 853.92            | 160.94            |